

# e-SV Series

VERTICAL MULTISTAGE ELECTRIC PUMPS

EQUIPPED WITH IE2, IE3 MOTORS (REG. (EU) 2019/1781)

**ErP 2009/125/EC**

 **LOWARA**  
a **xylem** brand

## Directive 2009/125/EC of the European Union

The **Directive 2005/32/EC** on energy-using products (**EuP**) and the subsequent **Directive 2009/125/EC** on energy-related products (**ErP**) established the ecodesign requirements for products to reduce their energy consumption and consequently their environmental impact.

These requirements apply to products placed and used in the European Economic Area (European Union plus Iceland, Liechtenstein and Norway) as a stand-alone unit or as integrated parts in other products.

The table shows the Regulations that define the requirements for Lowara products::

Product	Regulations	From	Target
Pumps*	(EU) N. 547/2012	1 January 2015	<b>MEI</b> $\geq 0,4$
Circulators**	(EC) N. 641/2009, (EU) N. 622/2012 e (EU) 2019/1781	1 August 2015	<b>EEI</b> $< 0,23$
Electric motors	(EU) 2019/1781 e 2021/341	1 July 2021	<b>IE2</b> : three-phase motors with a rated output $\geq 0,12$ and $< 0,749$ kW <b>IE3</b> : three-phase motors with a rated output $\geq 0,75$ and $< 1000$ kW
Variable speed drives (VSD)***	(EU) 2019/1781 e 2021/341	1 July 2021	<b>IE2</b>

\* some types of pump, used for pumping clean water.

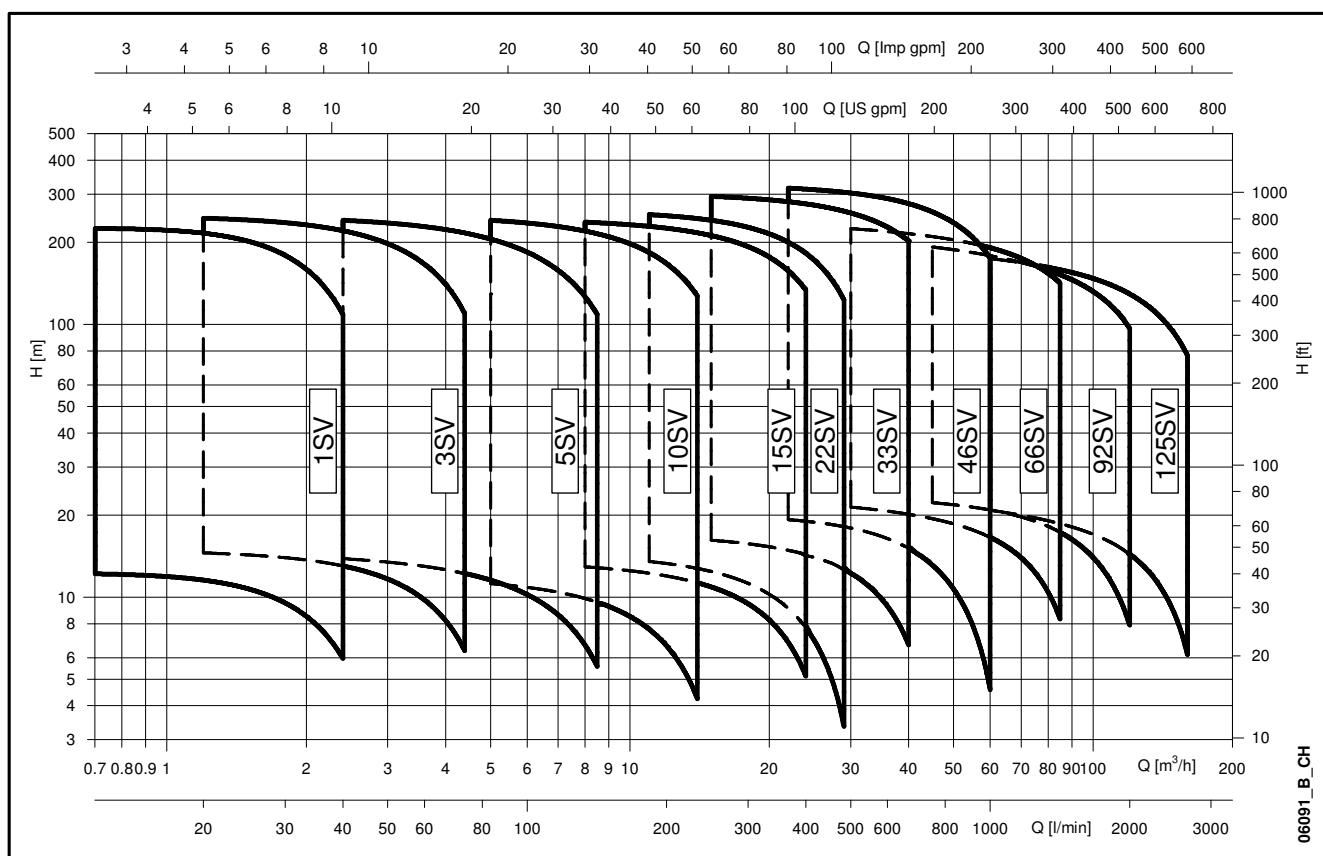
\*\* circulators with a rated hydraulic output power of between 1 and 2500 W, designed for use in heating systems or in secondary circuits of cooling distribution systems.

\*\*\* variable speed drives with three-phase input and rated output power from 0,12 kW up to 1000 kW, rated for operating with motor included in the same regulations.

From 1 July 2023 it will be introduced additional requirements.

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**e-SV SERIES**
**HYDRAULIC PERFORMANCE RANGE AT 50 Hz**


## e-SV SERIES

### VERTICAL MULTISTAGE ELECTRIC PUMP

#### GENERAL INTRODUCTION

The e-SV pump is a non-self priming vertical multistage pump coupled to a standard motor.

The liquid end, located between the upper cover and the pump casing, is held in place by tie rods. The pump casing is available with different configurations and connection types.

#### MARKET SECTORS

- Civil
- Agricultural
- Light industry
- Water treatment
- Heating and air conditioning.



#### APPLICATIONS

- Handling of water, free of suspended solids, in the civil, industrial and agricultural sectors.
- Pressure boosting and water supply systems.
- Irrigation systems.
- Wash systems.
- Water treatment plants.
- Handling of moderately aggressive liquids, demineralised water, water and glycol, etc.
- Circulation of hot and cold water for heating, cooling and conditioning systems.
- Boiler feed.
- Pharmaceutical food & beverage industries.

**LIQUID END MADE ENTIRELY OF STAINLESS STEEL IN THE 1, 3, 5, 10, 15, 22 m<sup>3</sup>/h STANDARD VERSION**

**STANDARD MECHANICAL SEAL CAN BE REPLACED WITHOUT REMOVING THE MOTOR FROM THE PUMP (FOR 10, 15, 22, 33, 46, 66, 92, 125SV)**

**STANDARD MOTOR FOR POWER EQUAL TO OR ABOVE 3 kW (MEC 132)**

**CAN BE USED WITH THE HYDROVAR OR THE e-SM DRIVE CONTROL SYSTEM IN ORDER TO MANAGE THE OPERATION OF THE PUMP BASED ON THE SYSTEM CONDITIONS AND SAVE ENERGY**

#### SPECIFICATIONS

##### PUMP

- Delivery: up to **160 m<sup>3</sup>/h**.
- Head: up to **330 m**.
- Temperature of pumped liquid:  
- from -30°C to +120°C for standard version.
- Maximum operating **pressure**:  
- 1, 3, 5, 10, 15, 22SV with oval flanges:  
16 bar (PN16).  
- 1, 3, 5, 10, 15, 22SV with round flanges or Victaulic®, Clamp or DIN 11851 connections: 25 bar (PN 25).  
- 33, 46SV: 16, 25, 40 bar (PN 16, PN 25 or PN 40).  
- 66, 92, 125SV: 16 or 25 bar (PN 16 or PN 25).
- Hydraulic performance compliant with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).
- Direction of rotation: clockwise looking at the pump from the top down (marked with an arrow on the adapter and on the coupling).

##### MOTOR

- Squirrel cage in short circuit, enclosed construction with external ventilation.
- IP55 protection.
- Class 155 (F) insulation.
- Performances according to EN 60034-1.
- Standard voltage:  
- Single-phase version:  
220-240 V, 50 Hz.  
- Three-phase version:  
220-240/380-415 V, 50 Hz for power up to 3 kW,  
380-415/660-690 V, 50 Hz for power above 3 kW.

## CHARACTERISTICS OF 1, 3, 5, 10, 15, 22SV SERIES

- Vertical multistage centrifugal pump. All metal parts in contact with the pumped liquid are made of stainless steel.
- The following versions are available:
  - **F**: round flanges, in-line delivery and suction ports, AISI 304.
  - **T**: oval flanges, in-line delivery and suction ports, AISI 304.
  - **R**: round flanges, delivery port above the suction port, with four adjustable positions, AISI 304.
  - **N**: round flanges, in-line delivery and suction ports, AISI 316.
  - **V, P**: Victaulic® couplings, in-line delivery and suction ports, AISI 316.
  - **C**: Clamp couplings (DIN 32676), in-line delivery and suction ports, AISI 316.
  - **K**: threaded couplings, (DIN 11851), in-line delivery and suction ports, AISI 316.
- Reduced axial thrusts enable the use of **standard motors** that are easily found in the market.
- Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069 for 1, 3, 5SV and 10, 15, 22SV ( $\leq$  of 4 kW) series.
- **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor from the pump** for 10, 15 and 22SV ( $\geq$  of 5,5 kW) series.
- Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
- A second plug is available for 10, 15, 22SV series.
- Versions with round flanges that can be coupled to counter-flanges, according to EN 1092.
- Threaded, oval counter-flanges made of stainless steel are standard supply for the T versions.
- Round counter-flanges made of stainless steel are available on request for the F, R and N versions.
- Easy maintenance. No special tools required for assembly or disassembly.
- **The pumps for drinking water use are WRAS, ACS and D.M. 174 certified for F, T, R, N versions.**
- Standard version for temperatures ranging from -30°C to +120°C.

## CHARACTERISTICS OF 33, 46, 66, 92, 125SV SERIES

- The following versions are available:
  - **G**: vertical multistage centrifugal pump with impellers, diffusers and outer sleeve made entirely of stainless steel, and with pump casing and motor adaptor made of cast iron.
  - **N, P**: version made entirely of AISI 316 stainless steel.
- Innovative axial load compensation system on pumps with higher head. This ensures reduced axial thrusts and enables the use of **standard motors** that are easily found in the market.
- **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor from the pump**.
- Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
- **The pumps for drinking water use are WRAS, ACS and D.M. 174 certified for G, N versions.**
- Standard version for temperatures ranging from -30°C to +120°C.
- Pump body fitted with couplings for installing pressure gauges on both suction and delivery flanges.
- In-line ports with round flanges that can be coupled to counter-flanges, in compliance with EN 1092.
- Mechanical sturdiness and easy maintenance. No special tools required for assembly or disassembly.

Inlet pressure of the pump plus static pressure of the water within the pump cannot exceed the nominal pressure (PN). Using different motors from those provided could limit inlet pressure.  
In this event please contact customer services.

## AVAILABLE ON REQUEST

Special versions are available to suit many applications. For details see page 152.

**e-SV SERIES**
**GENERAL CHARACTERISTICS, 2 POLES**

	<b>1SV</b>	<b>3SV</b>	<b>5SV</b>	<b>10SV</b>	<b>15SV</b>	<b>22SV</b>	<b>33SV</b>	<b>46SV</b>	<b>66SV</b>	<b>92SV</b>	<b>125SV</b>
Max efficiency flow (m³/h)	1,7	3	5,5	10,5	16,5	20,5	31	43	72	90	120
Flow range (m³/h)	0,7÷2,4	1,2÷4,4	2,4÷8,5	5÷14	8÷24	11÷29	15÷40	22÷60	30÷85	45÷120	60÷160
Maximum head ( m )	230	250	250	250	250	260	300	360	230	210	220
Motor power ( kW )	0,37÷2,2	0,37÷3	0,37÷5,5	0,75÷11	1,1÷15	1,1÷18,5	2,2÷30	3÷45	4÷45	5,5÷45	7,5÷55
Max η (%) of pump	50	60	70	71	72	73	77	79	78	80	78
Standard temperature ( °C )						-30 +120					

1-125sv\_2p50-en\_b\_tg

**1, 3, 5, 10, 15, 22SV VERSIONS**

TYPE	<b>2 POLES</b>					
	<b>1SV</b>	<b>3SV</b>	<b>5SV</b>	<b>10SV</b>	<b>15SV</b>	<b>22SV</b>
<b>F</b> AISI 304, PN25. IN-LINE PORTS, ROUND FLANGES	•	•	•	•	•	•
<b>T</b> AISI 304, PN16. IN-LINE PORTS, OVAL FLANGES	•	•	•	•	•	•
<b>R</b> AISI 304, PN25. DISCHARGE PORT ABOVE SUCTION, ROUND FLANGES	•	•	•	•	•	•
<b>N</b> AISI 316, PN25. IN-LINE PORTS, ROUND FLANGES	•	•	•	•	•	•
<b>V</b> AISI 316, PN25. VICTAULIC® COUPLINGS	•	•	•	•	•	•
<b>P</b> AISI 316, PN40. REINFORCED SLEEVE. VICTAULIC® COUPLINGS	•	•	•	•	•	•
<b>C</b> AISI 316, PN25. CLAMP COUPLINGS (DIN 32676)	•	•	•	•	•	•
<b>K</b> AISI 316, PN25. THREADED COUPLINGS (DIN 11851)	•	•	•	•	•	•

• = Available.

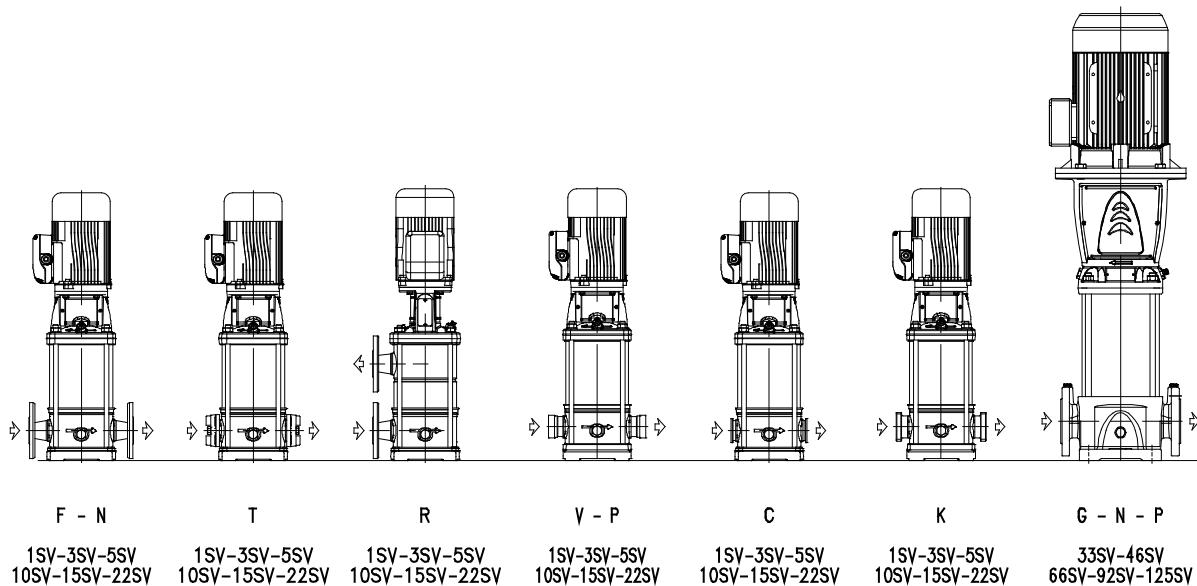
1-22sv\_2p50-en\_c\_tc

**33, 46, 66, 92, 125SV VERSIONS**

TYPE	<b>2 POLES SV</b>				
	<b>33SV</b>	<b>46SV</b>	<b>66SV</b>	<b>92SV</b>	<b>125SV</b>
<b>G</b> CAST IRON PUMP CASING, LIQUID END MADE OF STAINLESS STEEL, IN-LINE ROUND FLANGES PN16, PN25 OR PN40 DEPENDING ON NUMBER OF STAGES AND MODEL.	•	•	•	•	•
<b>N</b> ALL AISI 316 STAINLESS STEEL, IN-LINE ROUND FLANGES, PN16, PN25 OR PN40 DEPENDING ON NUMBER OF STAGES AND MODEL.	•	•	•	•	•
<b>P</b> ALL AISI 316 STAINLESS STEEL. FLANGES, IN-LINE ROUND, PN40. REINFORCED SLEEVE.	•	•	•	•	•

• = Available.

33-125sv\_2p50-en\_b\_tc

**VERSION DIAGRAM**

For Dual Pump System (DPS) version, please see [e-SV Special Versions catalog](#).

## e-SV SERIES TYPICAL APPLICATIONS

### WATER SUPPLY AND PRESSURE BOOSTING

- Pressure boosting in building, hotel, residential complexes.
- Pressure booster stations, supply of water networks.
- Booster packages.

### WATER TREATMENT

- Ultrafiltration systems.
- Reverse osmosis systems.
- Water softeners and de-mineralization.
- Distillation systems.
- Filtration.

### LIGHT INDUSTRY

- Washing and cleaning plants (washing and degreasing of mechanical parts, car and truck wash tunnels, washing of electronic industry circuits).
- Commercial washers.
- Firefighting system pumps.



### PHARMACEUTICAL AND FOOD & BEVERAGE INDUSTRIES

- Production plant where specific sanitary standards are required.

### IRRIGATION AND AGRICULTURE

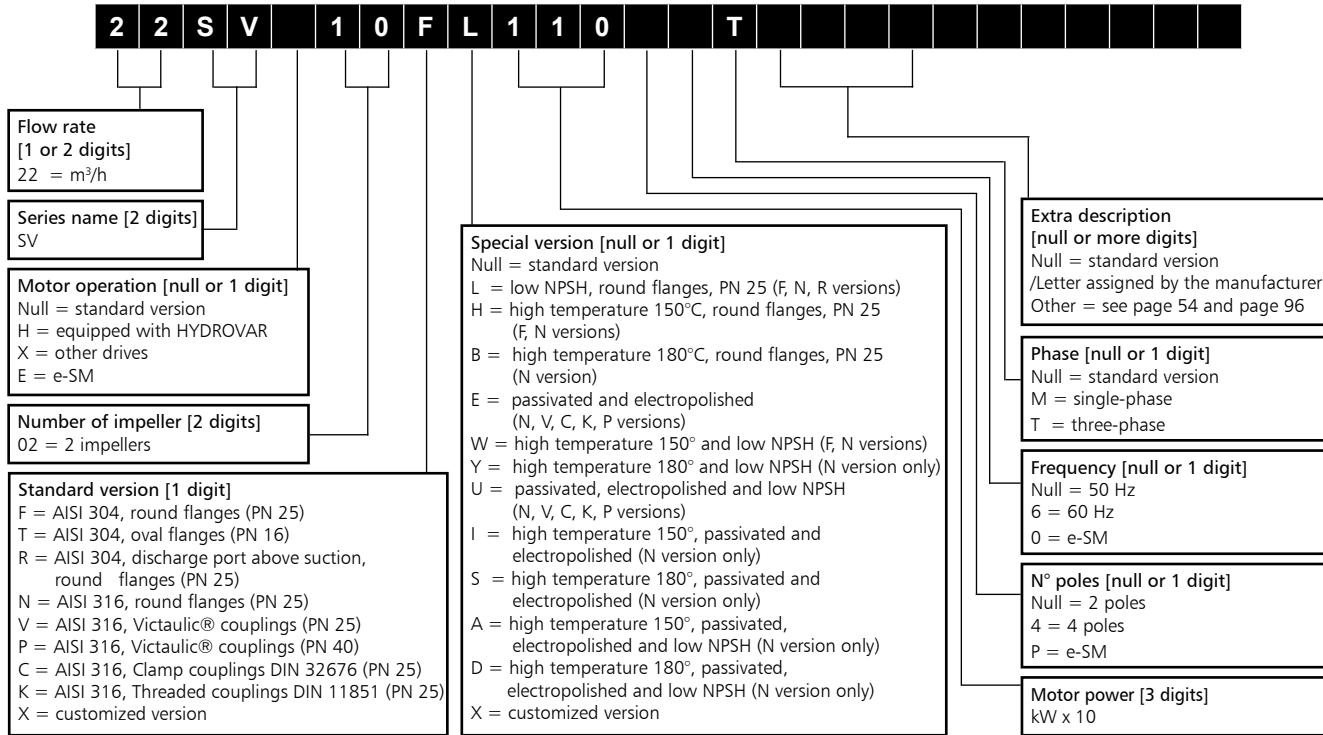
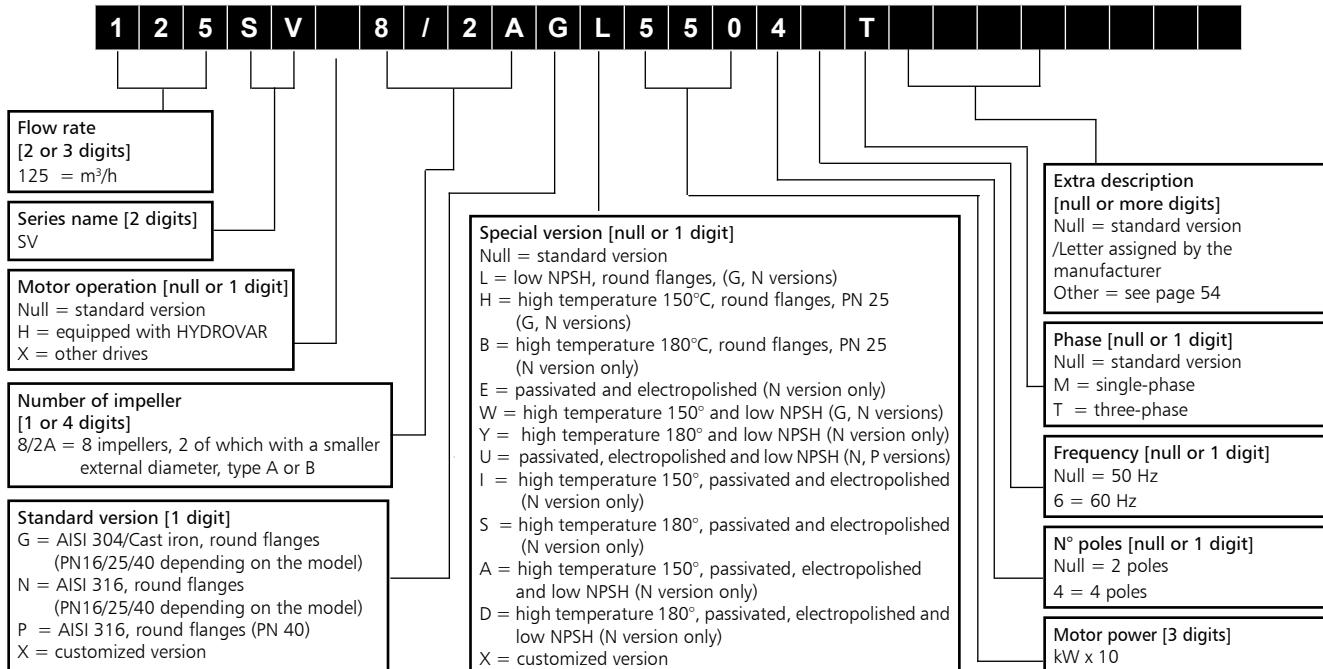
- Greenhouses.
- Humidifiers.
- Sprinkler irrigation.



### HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

- Cooling towers and systems.
- Temperature control systems.
- Refrigerators.
- Induction heating.
- Heat exchangers.
- Boilers, water recirculation and heating.



**IDENTIFICATION CODE**
**1, 3, 5, 10, 15, 22SV SERIES**

**33, 46, 66, 92, 125SV SERIES**

**EXAMPLE: 22SV10F110T**

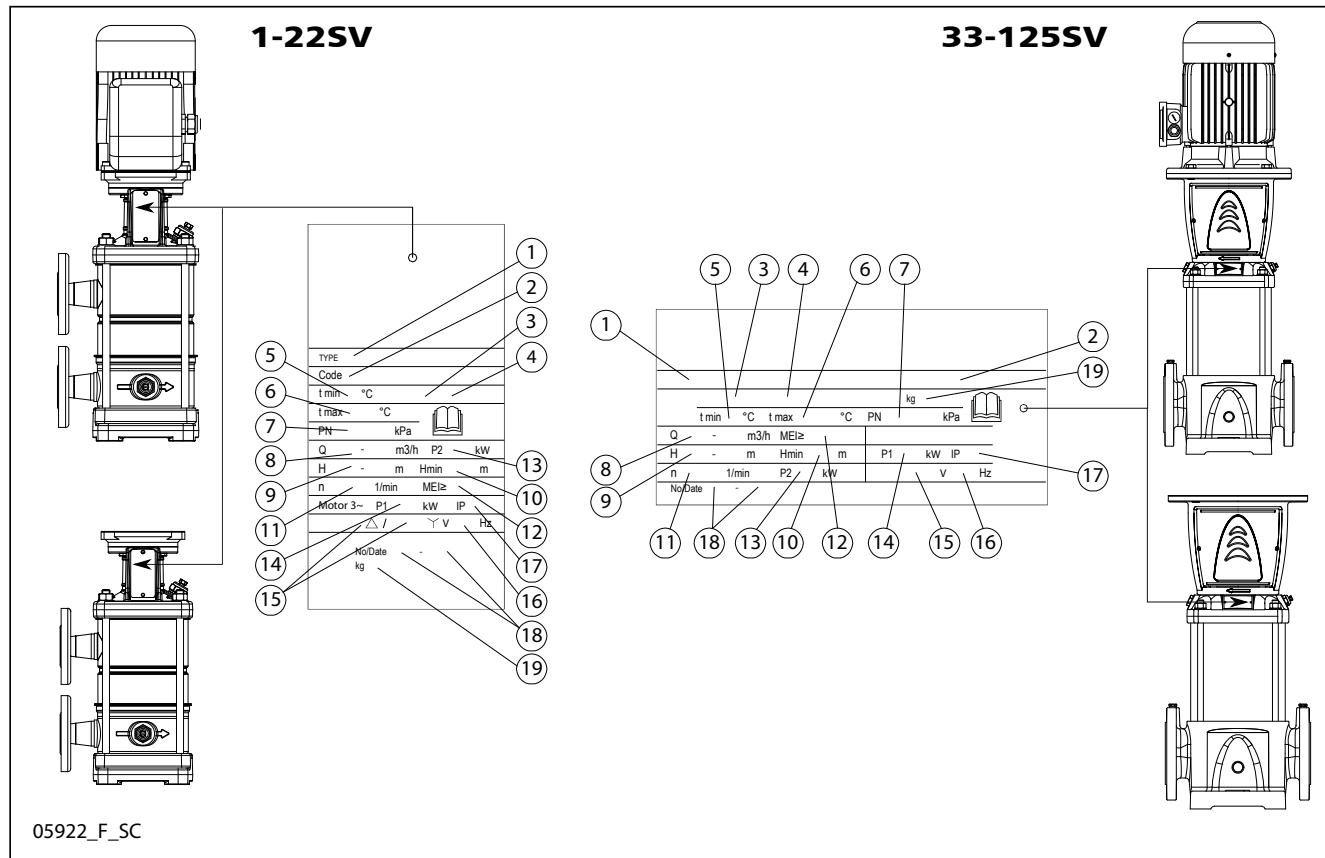
e-SV series electric pump, flow rate 22 m<sup>3</sup>/h, number of impellers 10, F version (AISI 304), round flanges, rated motor power 11 kW, 2 poles, 50 Hz frequency, three-phase.

**EXAMPLE: 22SVE02F015P0M/2**

e-SV series electric pump, Flow rate 22 m<sup>3</sup>/h, e-SM (SMART) coupling, number of impellers 2, F version (AISI 304), round flanges, rated motor power 1,5 kW, e-SM motor type, single-phase, e-SM power supply 1x208-240.

**EXAMPLE: 125SV8/2AG550T**

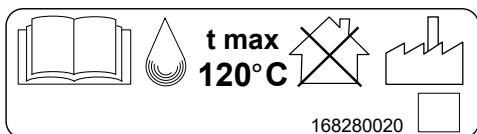
e-SV series electric pump, flow rate 125 m<sup>3</sup>/h, number of impellers 8, 2 of which with a smaller external diameter (type A), G version (AISI 304/Cast iron), round flanges, rated motor power 55 kW, 50 Hz frequency, three-phase.

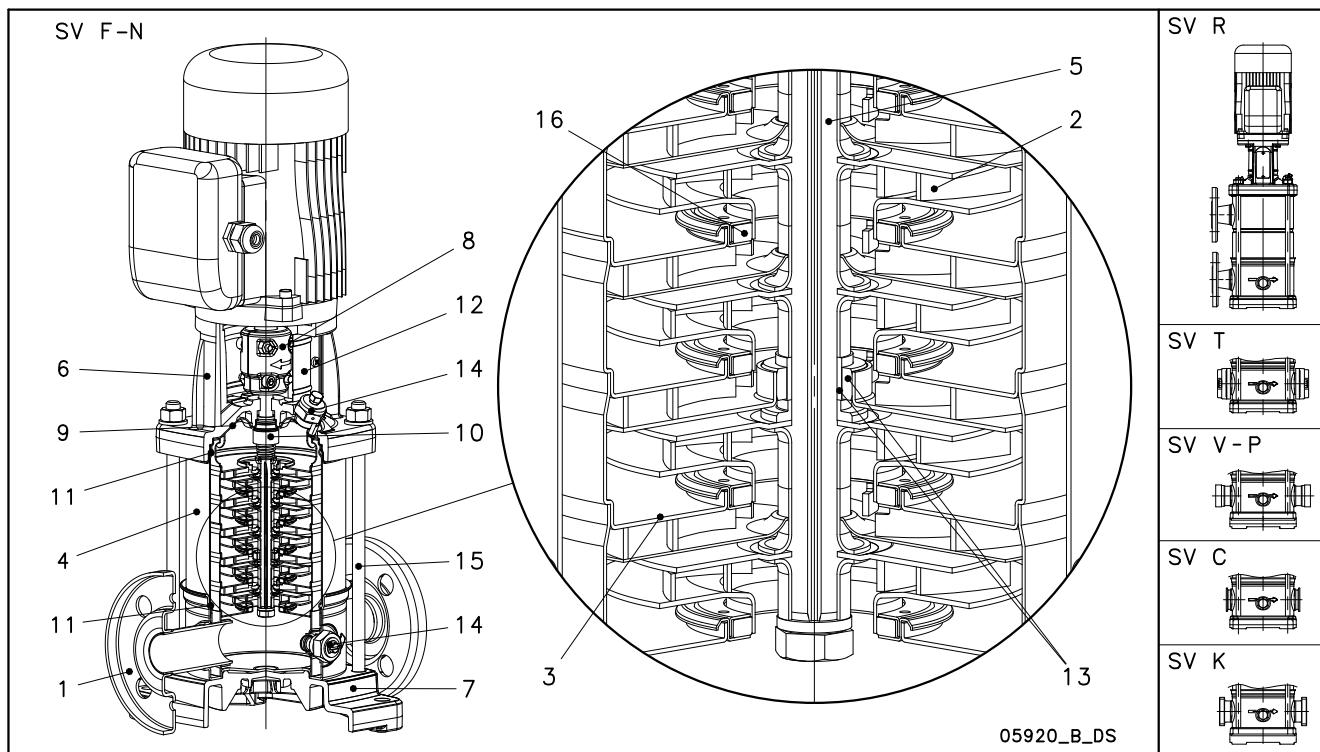
**e-SV SERIES  
RATING PLATE**

**LEGEND**

- |  |  |
|--|--|
| 1 - Pump / electric pump unit type               | 11 - Speed                                     |
| 2 - Product code                                 | 12 - Minimum efficiency index                  |
| 3 - Mechanical seal material identification code | 13 - Pump rated power                          |
| 4 - O-ring material identification code          | 14 - Pump unit power consumption (*)           |
| 5 - Minimum operating liquid temperature         | 15 - Rated voltage range (*)                   |
| 6 - Maximum operating liquid temperature         | 16 - Frequency (*)                             |
| 7 - Maximum operating pressure                   | 17 - Protection class (*)                      |
| 8 - Capacity range                               | 18 - Serial number + manufacturing date        |
| 9 - Head range                                   | 19 - Weight                                    |
| 10 - Minimum head                                | (*) Data present only on the pump rating plate |

**Additional liquid temperature plate**

It is applied on the units where the maximum working temperature of the liquid exceeds the limit of 90°C (194°F), foreseen by the standard EN 60335-2-41, with Un (V) ≤ 480 V (3~) or ≤ 250 V (1~).



**1, 3, 5SV SERIES - 10, 15, 22SV SERIES ≤ 4 kW**
**ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS**

**F, T, R VERSIONS**

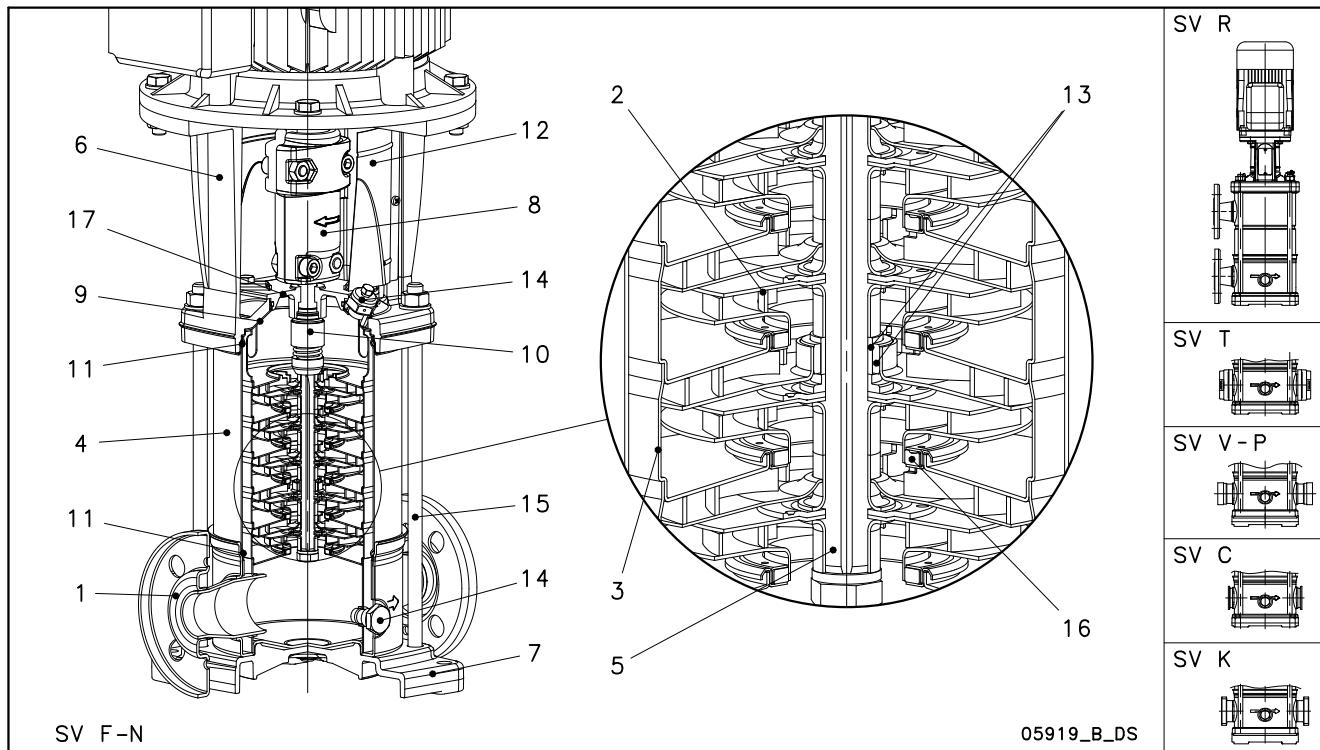
REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
2	Impeller	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
3	Diffuser	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
4	Outer sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Shaft	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
6	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
7	Base	Aluminium	EN 1706-AC-AISi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AISi11Cu2 (Fe) (AC46100)	-
9	Seal housing	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Fill / drain plugs	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
15	Tie rods	Galvanized steel	EN 10277-3-36SMnPb14 (1.0765)	
16	Wear ring	Technopolymer PPS		

1-22sv-ftr-en\_a\_tm

**N, V, C, K VERSIONS**

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser and upper spacer	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Outer sleeve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
7	Base	Aluminium	EN 1706-AC-AISi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AISi11Cu2 (Fe) (AC46100)	-
9	Seal housing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Fill / drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
15	Tie rods	Stainless steel	EN 10088-1-X17CrNi16-2 (1.4057)	AISI 431
16	Wear ring	Technopolymer PPS		

1-22sv-nvck-en\_a\_tm

**10, 15, 22SV SERIES ≥ 5,5 kW  
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS**

**F, T, R VERSIONS**

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
2	Impeller	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
3	Diffuser	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
4	Outer sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Shaft	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
6	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
7	Base	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
9	Seal plate	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Fill / drain plugs	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
15	Tie rods	Stainless steel	EN 10277-3-36SMnPb14 (1.0765)	
16	Wear ring	Technopolymer PPS		
17	Seal gland	Stainless steel	EN 10213-4-GX5CrNi19-10 (1.4308)	AISI 304

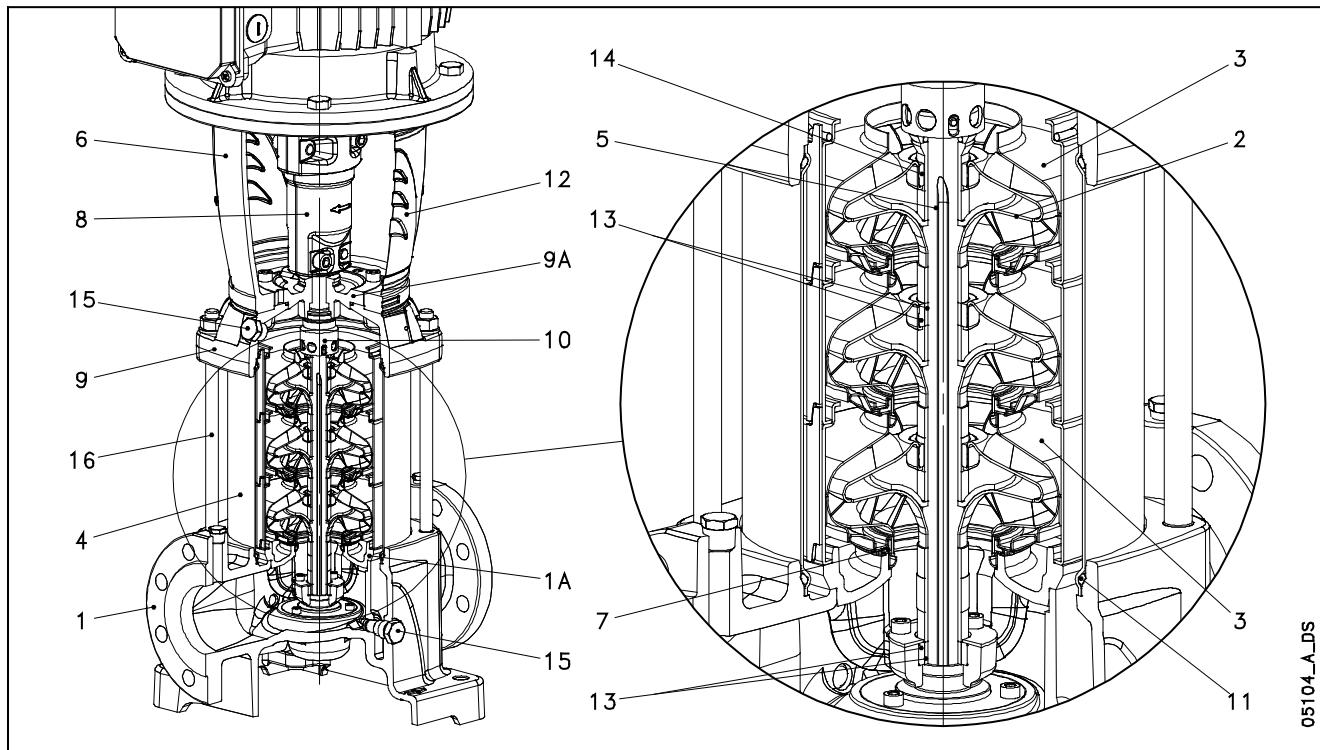
**N, V, C, K VERSIONS**

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Outer sleeve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
7	Base	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
9	Seal plate	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Fill / drain plugs	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4401)	AISI 316
15	Tie rods	Stainless steel	EN 10088-1-X17CrNi16-2 (1.4057)	AISI 431
16	Wear ring	Technopolymer PPS		
17	Seal gland	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	AISI 316

10-22sv-ftr-en\_a\_tm

10-22sv-nvck-en\_a\_tm

## 33, 46, 66, 92SV SERIES ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



### G VERSIONS

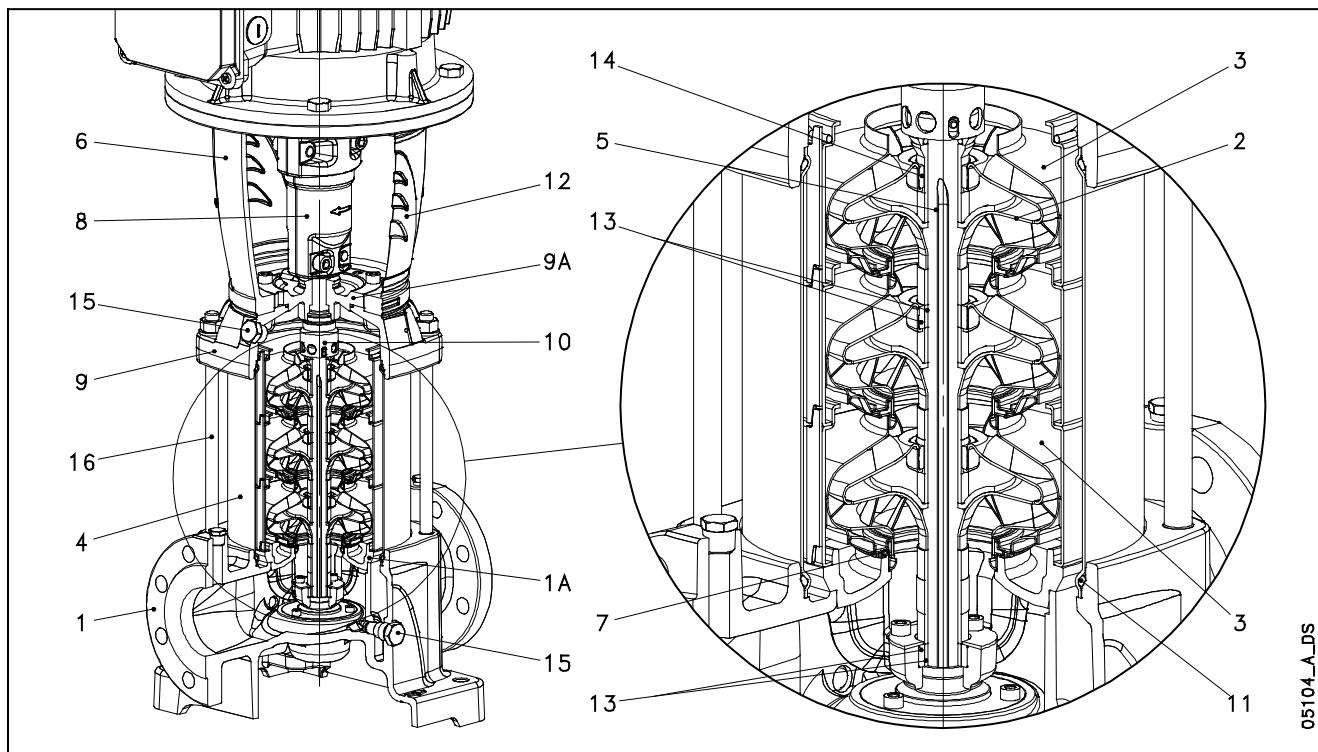
REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
1A	Lower support	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
4	Outer sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Shaft	Stainless steel	EN 10088-1 - X17CrNi16-2 (1.4057)	AISI 431
6	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
7	Wear ring	Technopolymer PPS		
8	Coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
9	Upper head	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
9A	Seal housing	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Bushing for diffuser	Carbon		
15	Fill / Drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Tie rods	Galvanized steel	EN 10277-3-36SMnPb14 (1.0765)	-

33-92sv-g-en\_a\_tm

### N VERSIONS

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
1A	Lower support	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Outer sleeve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Duplex stainless steel	EN 10088-1-X2CrNiMoN22-5-3 (1.4462)	UNS S 31803
6	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
7	Wear ring	Technopolymer PPS		
8	Coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
9	Upper head	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
9A	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Bushing for diffuser	Carbon		
15	Fill / drain / air plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Tie rods	Stainless steel	EN 10088-1-X17CrNi16-2 (1.4057)	AISI 431

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**125SV SERIES**
**ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS**


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**G VERSIONS**

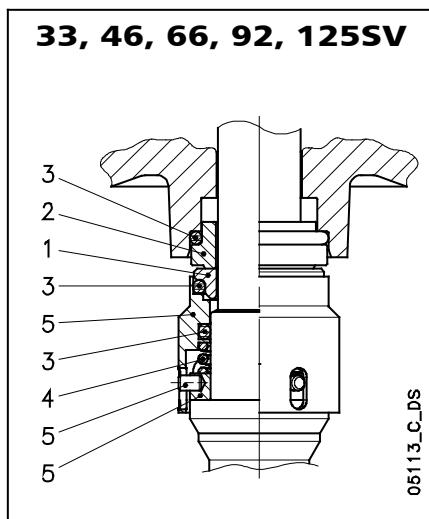
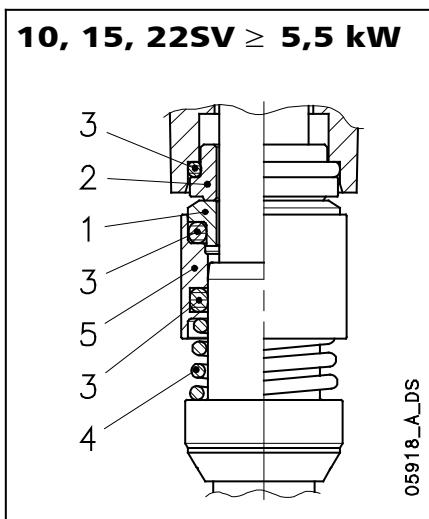
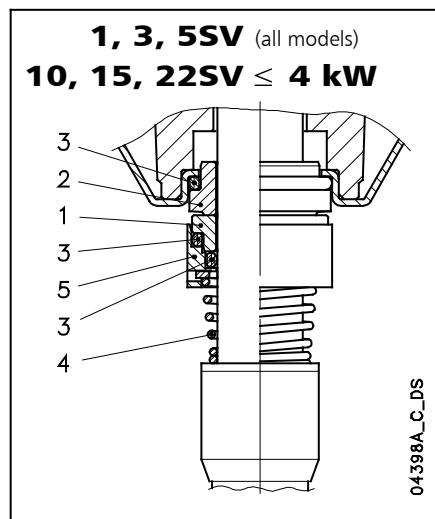
REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
1A	Lower support	Stainless steel	EN 10213-GX5CrNi19-10 (1.4308)	AISI 304
2-3	Impeller, Diffuser	Stainless steel	EN 10213-GX5CrNi19-10 (1.4308)	AISI 304
4	Outer sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Shaft	Stainless steel	EN 10088-1-X17CrNi16-2 (1.4057)	AISI 431
6	Adapter ( up to 45kW )	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Adapter ( for higher powers )	Cast iron	EN 1563-GJS-500-7 (JS1050)	ASTM A 536 80-55-06
7	Wear ring	Technopolymer PPS		
8	Coupling ( up to 45kW )	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Coupling ( for higher powers )	Cast iron	EN 1563-GJS-500-7 (JS1050)	ASTM A 536 80-55-06
9-9A	Upper head, Seal housing	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Bushing for diffuser	Carbon		
15	Fill / drain / air plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Tie rods	Galvanized steel	EN 10277-3-36MnPb14 (1.0765)	-
17	Adapter ring	Stainless steel	EN 10213-GX5CrNi19-10 (1.4308)	AISI 304

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**N VERSIONS**

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316)
1A	Lower support	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316)
2-3	Impeller, Diffuser	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316)
4	Outer sleeve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Duplex stainless steel	EN 10088-1-X2CrNiMo22-5-3 (1.4462)	UNS S 31803
6	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Adapter	Cast iron	EN 1563-GJS-500-7 (JS1050)	
7	Wear ring	Technopolymer PPS		
8	Coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Coupling	Cast iron	EN 1563-GJS-500-7 (JS1050)	
9-9A	Upper head, Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316)
10	Mechanical seal	Silicon carbide / Carbon / EPDM		
11	Elastomers	EPDM		
12	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
13	Shaft sleeve and bushing	Tungsten carbide		
14	Bushing for diffuser	Carbon		
15	Fill / drain / air plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Tie rods	Stainless steel	EN 10088-1-X17CrNi16-2 (1.4057)	AISI 431
17	Adapter ring	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316)

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**e-SV SERIES**
**MECHANICAL SEALS, ACCORDING TO EN 12756**

**LIST OF MATERIALS**

POSITION 1 - 2		POSITION 3		POSITION 4 - 5	
<b>Q<sub>1</sub></b> : Silicon Carbide		<b>E</b> : EPDM		<b>G</b> : AISI 316	
<b>B</b> : Resin impregnated carbon		<b>V</b> : FKM (FPM)			
<b>C</b> : Special resin impregnated carbon		<b>T</b> : PTFE			

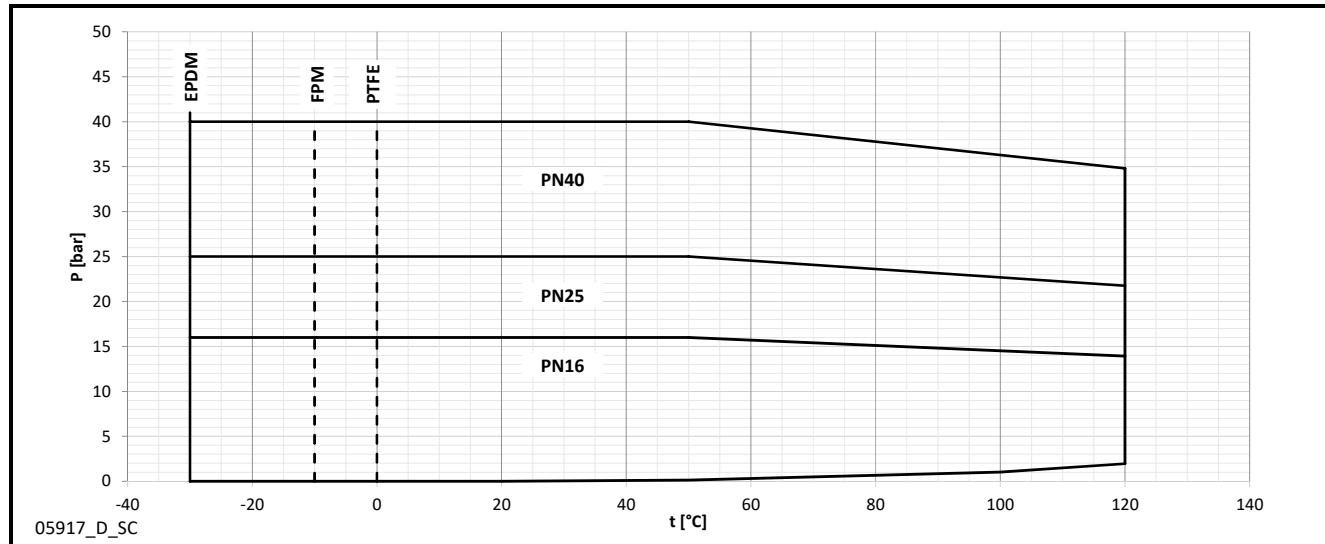
**TYPE OF SEAL**

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TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING PART	2 STATIONARY PART	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
Q <sub>1</sub> B E G G	Q <sub>1</sub>	B	E	G	G	-30 +120
OTHER TYPES OF AVAILABLE MECHANICAL SEAL						
Q <sub>1</sub> Q <sub>1</sub> E G G	Q <sub>1</sub>	Q <sub>1</sub>	E	G	G	-30 +120
Q <sub>1</sub> B V G G	Q <sub>1</sub>	B	V	G	G	-10 +120
Q <sub>1</sub> Q <sub>1</sub> V G G	Q <sub>1</sub>	Q <sub>1</sub>	V	G	G	-10 +120
*Q <sub>1</sub> C T G G	Q <sub>1</sub>	C	T	G	G	0 +120
*Q <sub>1</sub> Q <sub>1</sub> T G G	Q <sub>1</sub>	Q <sub>1</sub>	T	G	G	0 +120

\* Versions with anti-rotation lock pin of the fixed part.

sv\_tipi-ten-mec-en\_b\_tc

**PRESSURE/TEMPERATURE APPLICATION LIMITS FOR COMPLETE PUMP**


**COMPATIBILITY CHART FOR MATERIALS  
IN CONTACT WITH MOST COMMONLY USED LIQUIDS**

LIQUID	CONCENTRATION (%)	TEMPERAT. MIN/MAX (°C)	SPECIF. WEIGHT (Kg/dm <sup>3</sup> )	1, 3, 5, 10, 15, 22 SV VERSION		33, 46, 66, 92, 125 SV VERSION		RECOMMEND. SEAL	ELASTOM.
				Standard	N	Standard	N		
Acetic acid	80	-10 +70	1,05	•	•		•	Q <sub>1</sub> BEGG	E
Alkaline degreaser	5	80		•	•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Aluminium sulfate	30	-5 +50	2,71		•		•	Q <sub>1</sub> Q <sub>1</sub> EGG	E
Ammonia in water	25	-20 +50	0,99	•	•		•	Q <sub>1</sub> BEGG	E
Ammonium sulfate	10	-10 +60	1,77		•		•	Q <sub>1</sub> Q <sub>1</sub> EGG	E
Benzoic acid	70	0 +70	1,31	•	•		•	Q <sub>1</sub> BVGG	V
Boric acid	saturated	-10 +90	1,43	•	•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Butyl alcohol	100	-5 +80	0,81	•	•	•	•	Q <sub>1</sub> BVGG	V
Caustic soda	25	0 +70	2,13	•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> EGG	E
Chloroform	100	-10 +30	1,48	•	•	•	•	Q <sub>1</sub> BVGG	V
Citric acid	5	-10 +70	1,54	•	•		•	Q <sub>1</sub> BEGG	E
Cleaning products	10	-5 +100		•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Copper sulfate	20	0 +30	2,28		•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Cutting fluid	100	-5 +110	0,90	•	•	•	•	Q <sub>1</sub> BVGG	V
Deionised, demineralised water	100	-25 +110	1	•	•	•	•	Q <sub>1</sub> BEGG	E
Denatured alcohol	100	-5 +70	0,81	•	•	•	•	Q <sub>1</sub> BEGG	E
Diathermic oil	100	-5 +110	0,90	•	•	•	•	Q <sub>1</sub> BVGG	V
Emulsion oil and water	any	-5 +90		•	•	•	•	Q <sub>1</sub> BVGG	V
Ethyl alcohol	100	-5 +40	0,81	•	•	•	•	Q <sub>1</sub> BEGG	E
Ethylene glycol	30	-30 +120			•		•	Q <sub>1</sub> BEGG	E
Formaldehyde	100	0 +30	1,13	•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> TGG	T
Formic acid	5	-15 +25	1,22	•	•		•	Q <sub>1</sub> BEGG	E
Glycerine	100	+20 +90	1,26	•	•	•	•	Q <sub>1</sub> BEGG	E
Hydraulic oil	100	-5 +110		•	•	•	•	Q <sub>1</sub> BVGG	V
Hydrochloric acid	2	-5 +25	1,20		•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Hydroxide sodium	25	0 +70		•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> EGG	E
Iron sulfate	10	-5 +30	2,09		•		•	Q <sub>1</sub> BEGG	E
Methyl alcohol	100	-5 +40	0,79	•	•	•	•	Q <sub>1</sub> BEGG	E
Mineral oil	100	-5 +110	0,94	•	•	•	•	Q <sub>1</sub> BVGG	V
Nitric acid	50	-5 +30	1,48	•	•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Perchloroethylene	100	-10 +30	1,60	•	•	•	•	Q <sub>1</sub> BVGG	V
Phosphates-polyphosphates	10	-5 +90			•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Phosphoric acid	10	-5 +30	1,33		•		•	Q <sub>1</sub> BEGG	E
Propyl alcohol (Propanol)	100	-5 +80	0,80	•	•	•	•	Q <sub>1</sub> BEGG	E
Propylene glycol	30	-30 +120		•	•	•	•	Q <sub>1</sub> BEGG	E
Sodium bicarbonate (Baking soda)	saturated				•		•	Q <sub>1</sub> BEGG	E
Sodium hypochlorite	1	-10 +25			•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Sodium nitrate	saturated	-10 +80	2,25	•	•	•	•	Q <sub>1</sub> BEGG	E
Sodium sulfate	15	-10 +40	2,60	•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> EGG	E
Sulphuric acid	2	-10 +25	1,84		•		•	Q <sub>1</sub> BVGG	V
Tannic acid	20	0 +50			•		•	Q <sub>1</sub> BEGG	E
Tartaric acid	50	-10 +25	1,76	•	•		•	Q <sub>1</sub> Q <sub>1</sub> VGG	V
Trichloroethylene	100	-10 +40	1,46	•	•	•	•	Q <sub>1</sub> BVGG	V
Uric acid	80	-10 +80	1,89	•	•		•	Q <sub>1</sub> BEGG	E
Vegetable oil	100	-5 +110	0,95	•	•	•	•	Q <sub>1</sub> BEGG	E
Water	100	-5 +120		•	•	•	•	Q <sub>1</sub> BEGG	E
Water condensate	100	-5 +100	1	•	•	•	•	Q <sub>1</sub> BEGG	E
Water detergents, mineral oils mixture	10	-5 +80		•	•	•	•	Q <sub>1</sub> Q <sub>1</sub> VGG	V

tab-comp-sv-en\_b\_tm

The above table indicates the compatibility of materials depending on the pumped liquid.

Check the specific weight of the liquid or the viscosity as this could affect the power input of the motor and hydraulic performance. For further details, please contact the sales network.

## e-SV SERIES MOTORS (ErP 2009/125/EC)

- Short-circuit squirrel-cage motor, enclosed construction with external ventilation (TEFC).
- **IP55** protection degree.
- Insulation class **155 (F)**.
- Electrical performances according to EN 60034-1.
- **Supplied three-phase surface motors with IE2 efficiency level for power < 0,75 kW, IE3 efficiency level for power ≥ 0,75 kW as standard according to EN 60034-30:2009 and EN 60034-30-1:2014.**
- Metric cable gland according to EN 50262.
- PTC included in motors from 30 to 55 kW (one per phase, 155°C).

- **Single-phase** version:  
0,37 to 2,2 kW (2-pole)  
220-240 V 50 Hz  
Built-in automatic reset overload protection up to 1,5 kW. For higher powers the protection must be provided by the user.  
Maximum ambient temperature: 40 °C.
- **Three-phase** version:  
0,37 to 55 kW (2-pole)  
220-240/380-415 V 50 Hz for power up to 3 kW.  
380-415/660-690 V 50 Hz for power above 3 kW.  
Overload protection to be provided by the user.  
Maximum ambient temperature: 50 °C,  
(40 °C, for model with power of 0,37 kW)

From 1 July 2021 in accordance with the **Regulations (EU) 2019/1781 and 2021/341**, the three-phase 50 Hz, 60 Hz or 50/60 Hz **surface motors** with **power outputs ranging from 0,12 to 0,749 kW** must have a minimum level **IE2** efficiency; the ones with power outputs ranging **from 0,75 and 1000 kW** must have a minimum level of **IE3** efficiency.

From 1 July 2023, it will be introduced additional requirements.

The following tables also contain the mandatory information pursuant to Annex I, section 2, of the aforementioned Regulations.

### SINGLE-PHASE MOTORS AT 50 Hz, 2-POLE

P <sub>N</sub> kW	MOTOR TYPE	IEC SIZE*	Construction Design	INPUT CURRENT		CAPACITOR		DATA FOR 230 V 50 Hz VOLTAGE						OPERATING CONDITIONS **			
				In (A)	220-240 V	μF	V	min <sup>-1</sup>	I <sub>s</sub> / I <sub>n</sub>	η %	cosφ	T <sub>n</sub>	Nm	T <sub>s/Tn</sub>	T <sub>m/Tn</sub>	Altitude asl m	T. amb min/max °C
0,37	SM71RB14/104	71R V18/B14	V18/B14	2,79-2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68	1,63			VI 1000 -15/+40	No
0,55	SM71B14/105			3,76-3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61	2,00				
0,75	SM80RB14/107			4,90-4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58	1,75				
1,1	SM80B14/111			6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46	1,72				
1,5	SM90RB14/115			9,21-8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39	1,74				
2,2	PLM90B14/122			12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53	1,87				

\* R = Reduced size of motor casing as compared to shaft extension and flange.

1-22sv-motm\_2p50-en\_c\_te

\*\* Operating conditions related only to the motor. For the electric pump refer to the IOM.



**e-SV SERIES**
**THREE-PHASE MOTORS AT 50 Hz, 2-POLE (from 30 to 55 kW)**

P <sub>N</sub> kW	Manufacturer		IEC SIZE	Construction Design	N. of Poles	f <sub>N</sub> Hz	Data for 400 V / 50 Hz Voltage								
	OMEGA MOTOR SANAYI A.S. Dudullu Organize Sanayi Bölgesi 2. Cadde No: 10 34775 Ümraniye ISTANBUL/TURKEY Reg. No. 913733														
	Model														
30	3MAS 200LA2 V1 30KW E3	200	V1	2	50	0,89	7,80	96,90	2,60	3,10					
37	3MAS 200LB2 V1 37KW	200				0,90	8,00	119,4	2,90	3,20					
45	3MAS 225M2 V1 45KW E3	225				0,91	8,20	144,4	2,70	3,30					
55	3MGS 250M2 V1 55KW E3	250				0,90	7,60	176,4	2,50	3,00					

P <sub>N</sub> kW	Voltage U <sub>N</sub> V					n <sub>N</sub> min <sup>-1</sup>	Operating conditions **			
	Δ		Y				Altitude Above Sea Level (m)	T. amb min/max °C	ATEX	
	380 V	400 V	415 V	660 V	690 V		I <sub>N</sub> (A)			
30	55,3	52,2	50,8	31,8	30,3	2965				
37	66,6	63,9	61,5	38,4	37,0	2965				
45	80,6	75,9	73,7	46,4	44,0	2975				
55	98,2	92,7	89,7	56,5	53,7	2975				

P <sub>N</sub> kW	Efficiency η <sub>N</sub> %									IE	
	Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
30	93,0	93,1	93,0	93,3	93,5	93,4	93,4	93,6	93,4		
37	93,5	94,0	93,7	93,7	94,1	93,8	93,8	94,2	93,9		
45	93,8	94,0	93,5	94,0	94,2	93,6	94,2	94,4	93,8	3	
55	93,8	94,0	93,9	94,3	94,6	94,5	94,4	94,7	94,5		

\*\* Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

sv-IE3-mott55-2p50-en\_c\_te

Note: Observe the regulations and codes locally in force regarding sorted waste disposal.

**MOTOR NOISE 2-POLE MOTORS**

POWER kW	MOTOR TYPE	NOISE L <sub>pA</sub> dB
0.37	71R	<70
0.55	71	<70
0.75	80-80R	<70
1.1	80	<70
1.5	90-90R	<70
2.2	90	<70
3	100R	<70
4	112R	<70
5.5	132R	<70
7.5	132	<70
11	160R	73
15	160	75
18.5	160	75
22	180R	75
30	200	71
37	200	71
45	225	73
55	250	75

\*R = Reduced motor casing size with respect to shaft extension and related flange.

1-125sv\_mott\_2p50-en\_d\_tr

The tables below show the mean sound pressure levels (L<sub>p</sub>) measured at 1 meter distance in a free field according to EN ISO 11203. The noise values are measured on 50 Hz motors and have a tolerance of 3 dB (A) according to EN ISO 4871.

**AVAILABLE VOLTAGES**
**0.37 to 22 kW MOTORS FOR e-SV SERIES, 2-POLE**

P <sub>N</sub> kW	SINGLE-PHASE					
	50 Hz		60 Hz			
1 x 220-240			1 x 100	1 x 110-120	1 x 220-230	
1 x 100	s	o				-
1 x 110-120						-
1 x 220-230						-
1 x 100						-
1 x 110-115						-
1 x 120-127						-
1 x 200-210						-

P <sub>N</sub> kW	THREE-PHASE					
	50 Hz			60 Hz		
3 x 220-230-240/380-400-415						
3 x 380-400-415/660-690	s	o	o			
3 x 200-208/346-360						
3 x 255-265/440-460						
3 x 290-300/500-525						
3 x 440-460/-						
3 x 500-525/-						
3 x 220-230/380-400						
3 x 255-265-277/440-460-480						
3 x 380-400/660-690	s	o	o	o	o	o
3 x 440-460-480/-						
3 x 110-115/190-200						
3 x 200-208/346-360						
3 x 330-346/575-600						
3 x 575/-						
3 x 230/400 50 Hz						
3 x 265/460 60 Hz						
3 x 400/690 50 Hz						
3 x 460/- 60 Hz						

s = Standard voltage

o = voltage upon request

- = Not available

sv-volt-low-a-en\_b\_te

Please contact the sales network to check other available voltages.

**Tolerances on nominal voltages**
**• 50 Hz:**

- ± 10% on the single voltage value shown on the rating plate.
- ± 5% on voltage range shown on the rating plate.

**• 60 Hz:**

- ± 10% on the voltage values shown on the rating plate.

**e-SV SERIES****PUMPS (ErP 2009/125/EC)**

With the **Regulation (EU) N. 547/2012**, the European Commission has established the requirements of ecodesign for some typologies of pumps used for pumping clean water, placed on the market and operated as stand-alone units or as parts of other products.

For vertical multi-stage pumps (MS-V for the Regulations), the requirements refers to:

- just the pump and not the pump and motor assembly (electric or combustion);
- pumps with:
  - a nominal pressure PN not higher than 25 bar (2500 kPa);
  - a speed of 2900 min<sup>-1</sup> (for electric pumps this means 50 Hz 2-pole electric motors);
  - a maximum flow of 100 m<sup>3</sup>/h;
- use with clean water at a temperature ranging from -10°C to 120°C (the test is performed with cold water at a temperature not higher than 40°C).

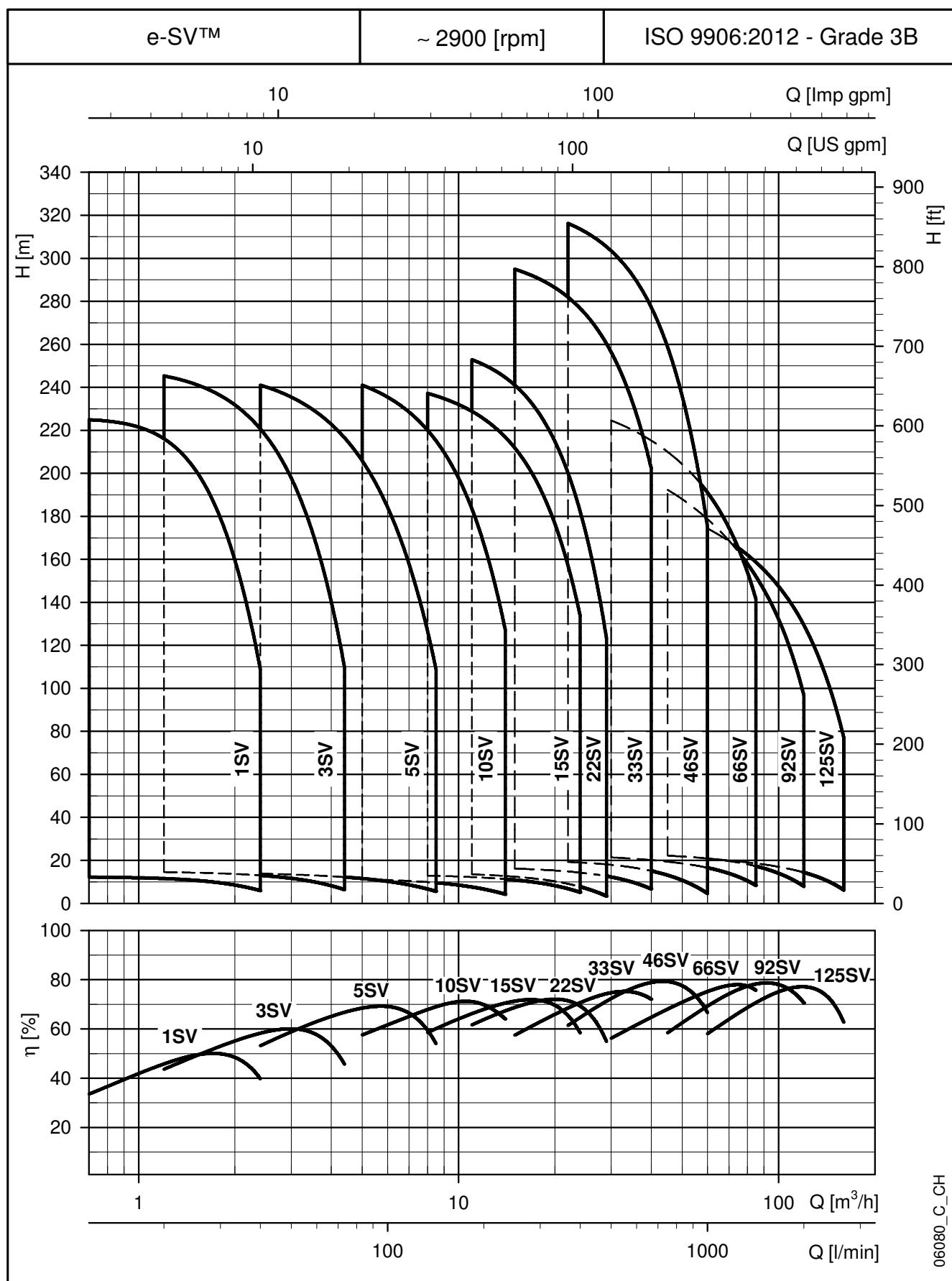
This regulation states that water pumps shall have index MEI coming from a dedicated formula which considers hydraulic efficiency values at 'best efficiency point' (BEP), 75 % of the flow at BEP (Part load – PL) and 110 % of the flow at BEP (Over load – OL).

The Regulation also establishes the following deadline:

from	minimum efficiency index (MEI)
1 <sup>st</sup> January 2015	MEI ≥ 0,4

**Regulation (EU) n. 547/2012 – Annex II – point 2 (Product information requirements)**

- 1) Minimum efficiency index: see the MEI column in the tables in the *Hydraulic performance* section.
- 2) The benchmark for most efficient water pumps is MEI ≥ 0,70.
- 3) Year of manufacture: see date on rating plate ( $\geq$  2013).
- 4) Manufacturer: Xylem Service Italia Srl - Reg. No 07520560967 - Montecchio Maggiore, Vicenza, Italy.
- 5) Product type: see the PUMP TYPE column in the tables in the *Hydraulic performance* section.
- 6) Hydraulic pump efficiency with trimmed impeller: not applicable to these products.
- 7) Pump performance curves, including the performance curve: see the *Operating Characteristics* graphs in the following pages.
- 8) The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.
- 9) The operation of this water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
- 10) Information relevant for disassembly, recycling or disposal at end-of-life: observe the current laws and by-laws governing sorted waste disposal. Consult the product operating manual.
- 11) "Designed for use below – 10 °C only": note not applicable to these products.
- 12) "Designed for use above 120 °C only": note not applicable to these products.
- 13) Specific instructions for pumps as per points 11 and 12: not applicable to these products.
- 14) "Information on benchmark efficiency is available at": [www.europump.org](http://www.europump.org) (Ecodesign section).
- 15) The benchmark efficiency graphs with MEI = 0.7 and MEI = 0.4 are available at [www.europump.org](http://www.europump.org), (Ecodesign, Efficiency charts). Refer to "Multistage Vertical 2900 rpm"

**e-SV SERIES**
**HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES**




**10, 15, 22SV SERIES**
**HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	RATED POWER		MEI ≥ (1)	Q = DELIVERY													
	kW	HP		l/min 0	83,34	100	133	170	183,34	233	270	330	350	400	430	460	483,33
				H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
10SV01	0,75	1	0,70	11,8	11,2	10,9	9,9	8,3	7,6	4,3							
10SV02	0,75	1	0,70	23,6	21,9	21,3	19,6	17,0	15,8	10,0							
10SV03	1,1	1,5	0,70	35,7	33,0	32,1	29,6	25,8	24,1	16,0							
10SV04	1,5	2	0,70	47,7	44,2	43,0	39,9	34,8	32,6	21,7							
10SV05	2,2	3	0,70	60,0	56,1	54,7	50,9	44,9	42,2	29,0							
10SV06	2,2	3	0,70	71,8	66,8	65,0	60,4	53,1	49,8	33,9							
10SV07	3	4	0,70	83,6	78,3	76,2	70,8	62,1	58,3	39,8							
10SV08	3	4	0,70	95,3	88,9	86,5	80,1	70,2	65,7	44,5							
10SV09	4	5,5	0,70	106,3	100,1	97,5	90,8	80,0	75,1	52,1							
10SV10	4	5,5	0,70	118,0	110,8	107,9	100,3	88,2	82,8	57,2							
10SV11	4	5,5	0,70	129,6	121,3	118,1	109,6	96,3	90,3	62,1							
10SV13	5,5	7,5	0,70	156,0	146,5	142,7	132,6	116,4	109,2	74,3							
10SV15	5,5	7,5	0,70	179,5	167,9	163,4	151,6	132,8	124,3	83,9							
10SV17	7,5	10	0,70	205,0	193,2	188,5	175,7	154,7	145,2	98,8							
10SV18	7,5	10	0,70	216,9	204,2	199,1	185,5	163,2	153,1	104,0							
10SV20	7,5	10	0,70	240,6	226,0	220,3	205,0	180,2	168,9	114,3							
10SV21	11	15	0,70	253,6	241,0	235,5	220,2	195,0	183,5	127,5							
15SV01	1,1	1,5	0,70	14,0			12,9	12,4	12,2	11,3	10,4	8,4	7,6	5,1			
15SV02	2,2	3	0,70	28,7			26,7	25,9	25,5	23,9	22,4	18,9	17,4	13,1			
15SV03	3	4	0,70	43,3			40,4	39,1	38,6	36,2	33,8	28,7	26,5	20,1			
15SV04	4	5,5	0,70	58,4			54,7	53,1	52,5	49,4	46,3	39,7	36,9	28,7			
15SV05	4	5,5	0,70	72,7			67,8	65,8	65,0	61,0	57,1	48,7	45,2	34,9			
15SV06	5,5	7,5	0,70	87,6			81,5	79,4	78,4	74,1	69,9	60,3	56,3	44,2			
15SV07	5,5	7,5	0,70	101,9			94,5	91,9	90,8	85,7	80,6	69,4	64,7	50,5			
15SV08	7,5	10	0,70	117,4			110,9	108,0	106,8	100,8	94,9	82,0	76,7	60,6			
15SV09	7,5	10	0,70	131,9			124,4	121,0	119,6	112,8	106,1	91,5	85,5	67,4			
15SV10	11	15	0,70	147,7			138,8	135,3	133,8	126,7	119,6	103,9	97,4	77,5			
15SV11	11	15	0,70	162,3			152,4	148,5	146,8	138,9	131,1	113,8	106,5	84,7			
15SV13	11	15	0,70	191,3			179,2	174,5	172,5	163,1	153,7	133,1	124,5	98,6			
15SV15	15	20	0,70	222,1			209,9	204,8	202,6	192,2	181,7	158,3	148,5	118,8			
15SV17	15	20	0,70	251,6			237,3	231,4	228,9	216,9	205,0	178,4	167,3	133,6			
22SV01	1,1	1,5	0,70	14,7					13,5	12,7	12,0	10,4	9,7	7,7	6,3	4,7	3,4
22SV02	2,2	3	0,70	30,4					28,4	27,2	26,0	23,3	22,2	18,9	16,6	13,8	11,5
22SV03	3	4	0,70	45,4					42,2	40,4	38,5	34,5	32,8	27,8	24,2	20,2	16,6
22SV04	4	5,5	0,70	60,9					56,8	54,4	51,9	46,6	44,4	37,9	33,1	27,7	23,0
22SV05	5,5	7,5	0,70	76,0					70,9	67,9	64,9	58,3	55,6	47,4	41,4	34,7	28,8
22SV06	7,5	10	0,70	93,2					88,8	85,7	82,5	75,4	72,4	63,3	56,7	49,1	42,6
22SV07	7,5	10	0,70	108,5					103,1	99,4	95,7	87,2	83,7	73,1	65,3	56,5	48,8
22SV08	11	15	0,70	124,6					119,2	115,2	111,0	101,6	97,7	85,7	77,0	66,9	58,2
22SV09	11	15	0,70	140,1					133,7	129,2	124,4	113,8	109,3	95,8	86,0	74,6	64,8
22SV10	11	15	0,70	155,4					148,2	143,1	137,8	125,9	120,9	105,8	94,8	82,3	71,3
22SV12	15	20	0,70	186,1					178,6	172,9	166,8	152,9	147,0	129,1	115,9	100,7	87,4
22SV14	15	20	0,70	216,6					207,7	200,9	193,7	177,4	170,4	149,4	133,9	116,1	100,6
22SV17	18,5	25	0,70	263,5					252,8	244,7	236,0	216,2	207,8	182,3	163,6	142,0	123,2

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

10-22sv-2p50-en\_d\_th



**66, 92SV SERIES**
**HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	RATED POWER		MEI ≥ (1)	Q = DELIVERY												
				l/min 0	500	600	700	750	900	1000	1200	1300	1417	1600	1800	2000
	kW	HP		m <sup>3</sup> /h 0	30	36	42	45	54	60	72	78	85	96	108	120
H = TOTAL HEAD METRES COLUMN OF WATER																
66SV1/1A	4	5,5	0,70	23,8	21,4	20,7	19,9	19,4	17,8	16,6	13,3	11,2	8,3			
66SV1	5,5	7,5	0,70	29,2	25,8	24,8	23,8	23,3	21,8	20,7	17,9	16,1	13,5			
66SV2/2A	7,5	10	0,70	47,5	42,6	41,2	39,5	38,6	36	32,9	26,4	22,2	16,4			
66SV2/1A	11	15	0,70	54,2	49,6	48,2	46,7	45,8	42,9	40,6	34,8	31,2	26,2			
66SV2	11	15	0,70	60,4	55,7	54,4	52,8	52	49,3	47,1	42	38,9	34,7			
66SV3/2A	15	20	0,70	78,4	71,6	70	67	66	62	58	49	43,3	35,3			
66SV3/1A	15	20	0,70	84,7	77,8	76	74	72	68	65	56	51	44,0			
66SV3	18,5	25	0,70	91,4	84,7	83	81	79	75	72	64	60	53,5			
66SV4/2A	18,5	25	0,70	108,9	99,6	97	94	92	86	82	70	63	52,8			
66SV4/1A	22	30	0,70	115,2	105,9	103	100	99	93	89	78	71	61,8			
66SV4	22	30	0,70	121,6	112,5	110	107	105	100	96	86	79	70,8			
66SV5/2A	30	40	0,70	139,1	127,5	124	120	118	111	106	92	83	70,4			
66SV5/1A	30	40	0,70	145,6	134	131	127	125	118	112	99	91	79,5			
66SV5	30	40	0,70	152	140,4	137	133	131	125	119	107	99	88,5			
66SV6/2A	30	40	0,70	169,5	155,6	152	147	144	136	129	113	103	88,1			
66SV6/1A	30	40	0,70	176	162	158	153	151	143	136	121	111	97,2			
66SV6	37	50	0,70	182,4	168,5	164	160	158	150	143	128	119	106,2			
66SV7/2A	37	50	0,70	199,9	183,7	179	174	171	161	153	134	122	105,8			
66SV7/1A	37	50	0,70	206,4	190,1	185	180	177	168	160	142	131	114,9			
66SV7	45	60	0,70	212,8	196,5	192	187	184	174	167	150	139	123,9			
66SV8/2A	45	60	0,70	230,3	211,8	206	200	197	186	177	156	142	123,5			
66SV8/1A	45	60	0,70	236,8	218,2	213	207	204	193	184	163	150	132,6			
66SV8	45	60	0,70	243,2	224,6	219	213	210	199	191	171	159	141,6			
92SV1/1A	5,5	7,5	0,60	24,5				22,2	21,5	20,9	19,4	18,5	17,3	15	11,8	7,9
92SV1	7,5	10	0,60	33,5				28,7	27,2	26,2	24,3	23,3	22,2	20,2	17,6	14,3
92SV2/2A	11	15	0,60	49,4				45,1	43,7	42,5	39,6	37,9	35,5	30,9	24,6	16,8
92SV2	15	20	0,60	67,8				58,2	55	53	49,5	47,6	45,2	41,4	36,3	29,6
92SV3/2A	18,5	25	0,60	82,4				74,4	72	70	65	62	59	52	43,6	32,9
92SV3	22	30	0,60	102,2				88,2	84	81	76	73	69	63	56	46,3
92SV4/2A	30	40	0,60	115,7				104	100	97	90	87	82	74	63	49
92SV4	30	40	0,60	133,1				117	112	108	101	97	92	85	75	62,5
92SV5/2A	37	50	0,60	149				133,2	128	124	116	111	105	95	81	64,6
92SV5	37	50	0,60	166,4				146,3	140	135	126	121	115	106	94	78,1
92SV6/2A	45	60	0,60	183,3				163,1	156	152	141	135	129	117	101	81
92SV6	45	60	0,60	200,9				175,9	168	163	151	146	139	127	113	94,2
92SV7/2A	45	60	0,60	216,8				192,4	184	179	167	160	152	138	120	96,7

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

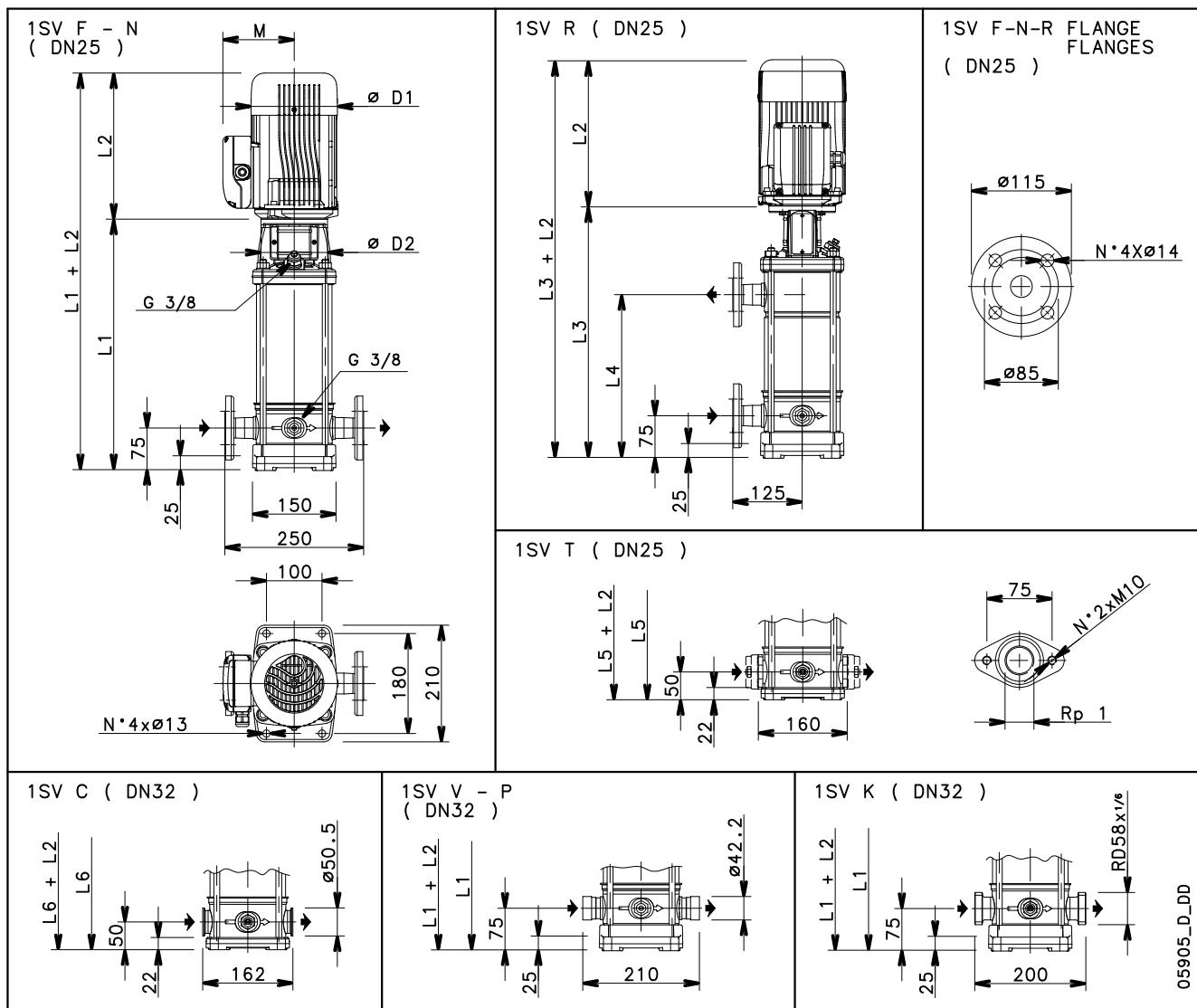
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**125SV SERIES**
**HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	RATED POWER		MEI ≥	Q = DELIVERY														
	kW	HP		V/min 0	500	600	750	900	1000	1200	1416	1700	1900	2000	2150	2300	2666	
				m <sup>3</sup> /h 0	30,0	36,0	45,0	54,0	60,0	72,0	85,0	102,0	114,0	120,0	129,0	138,0	160,0	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER																		
125SV1	7,5	10	-	27,6						20,8	19,8	18,6	16,8	15,3	14,4	12,9	11,3	6,2
125SV2	15	20	-	53,8						44,4	42,5	40,4	37,1	34,4	32,9	30,4	27,7	19,6
125SV3	22	30	-	80,7						66,5	63,8	60,6	55,7	51,6	49,4	45,7	41,5	29,4
125SV4	30	40	-	107,6						88,7	85,0	80,7	74,2	68,8	65,8	60,9	55,4	39,2
125SV5	37	50	-	134,5						110,9	106,3	100,9	92,8	86,0	82,3	76,1	69,2	49,0
125SV6	45	60	-	161,4						133,1	127,6	121,1	111,3	103,2	98,7	91,3	83,1	58,8
125SV7	55	75	-	188,3						155,2	148,8	141,3	129,9	120,4	115,2	106,6	96,9	68,6
125SV8/2A	55	75	-	211,5						174,4	167,2	158,7	145,9	135,3	129,4	119,7	108,9	77,1

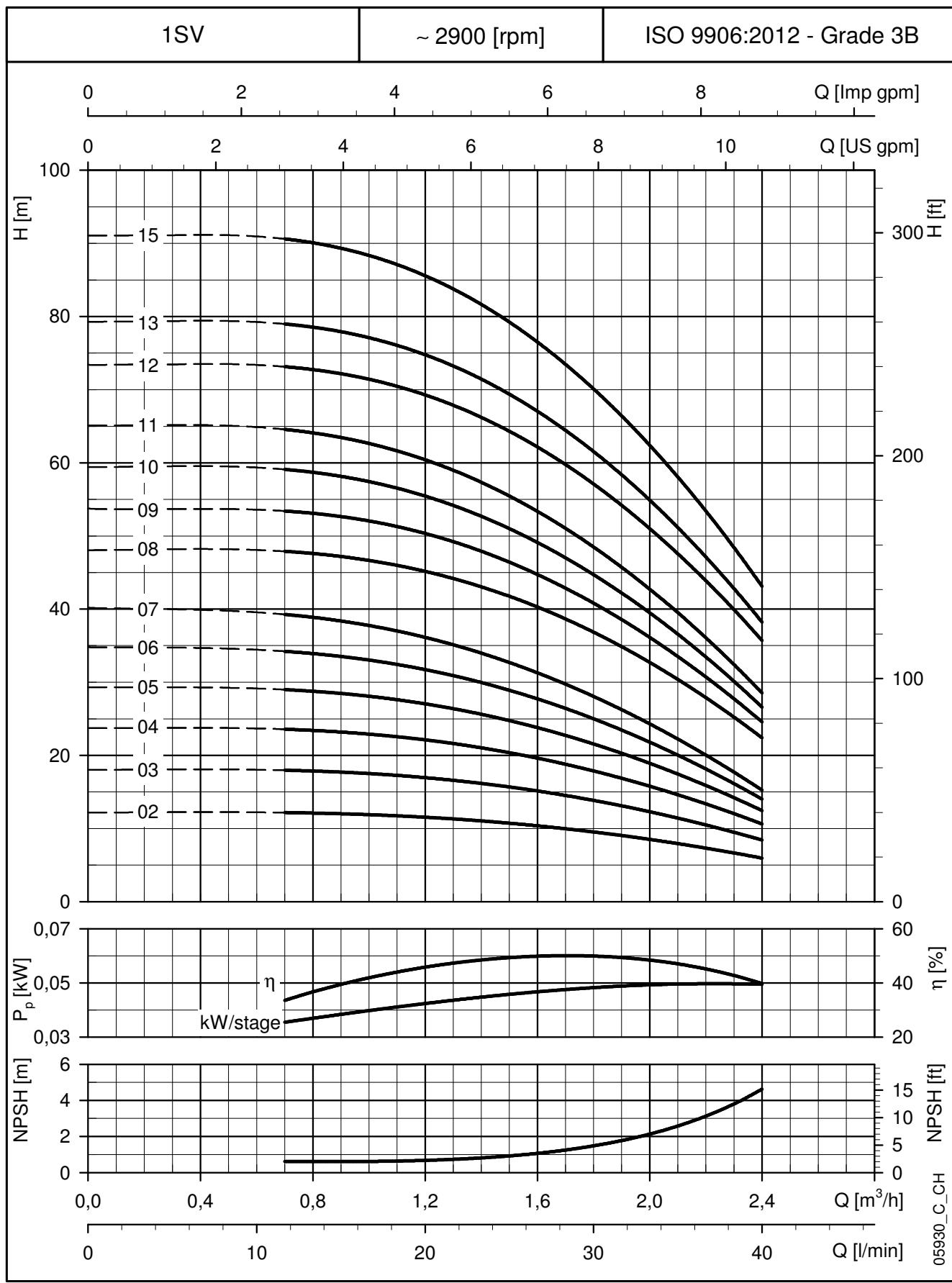
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

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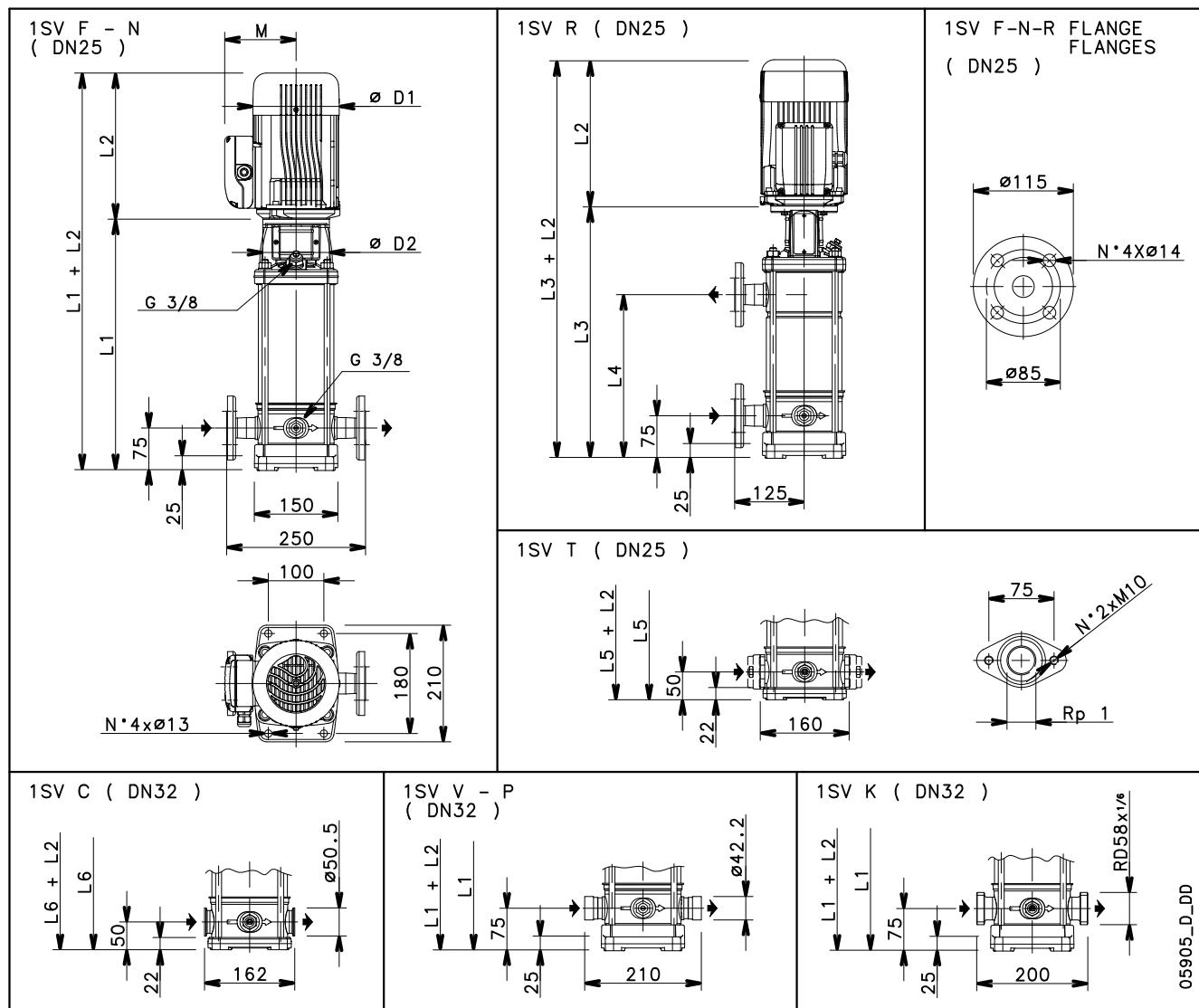
**1SV SERIES, 2 TO 15 STAGES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg			
	kW	SIZE	L1	1~	3~	L2	L3	L4	L5	L6	M	1~	3~	D1	1~	3~	D2	PUMP
1SV02..	0,37	71	278	209	209	-	-	-	253	253	111	111	120	120	105	105	8,3	13
1SV03..	0,37	71	278	209	209	-	-	-	253	253	111	111	120	120	105	105	8,6	13,4
1SV04..	0,37	71	298	209	209	-	-	-	273	273	111	111	120	120	105	105	9	13,8
1SV05..	0,37	71	318	209	209	-	-	-	293	293	111	111	120	120	105	105	9,4	14,2
1SV06..	0,37	71	338	209	209	-	-	-	313	313	111	111	120	120	105	105	9,8	14,6
1SV07..	0,37	71	358	209	209	358	207	333	333	111	111	120	120	105	105	10,2	14,9	
1SV08..	0,55	71	378	231	231	378	227	353	353	121	121	140	140	105	105	10,5	15,2	
1SV09..	0,55	71	398	231	231	398	247	373	373	121	121	140	140	105	105	10,9	15,6	
1SV10..	0,55	71	418	231	231	418	267	393	393	121	121	140	140	105	105	11,3	16	
1SV11..	0,55	71	438	231	231	438	287	413	413	121	121	140	140	105	105	11,7	16,4	
1SV12./D	0,75	80	468	226	263	468	307	443	443	121	129	140	155	120	120	12,7	22,3	
1SV13./D	0,75	80	488	226	263	488	327	463	463	121	129	140	155	120	120	13,1	22,7	
1SV15./D	0,75	80	528	226	263	528	367	503	503	121	129	140	155	120	120	13,9	23,5	

1sv-1-2p50-en\_b\_td

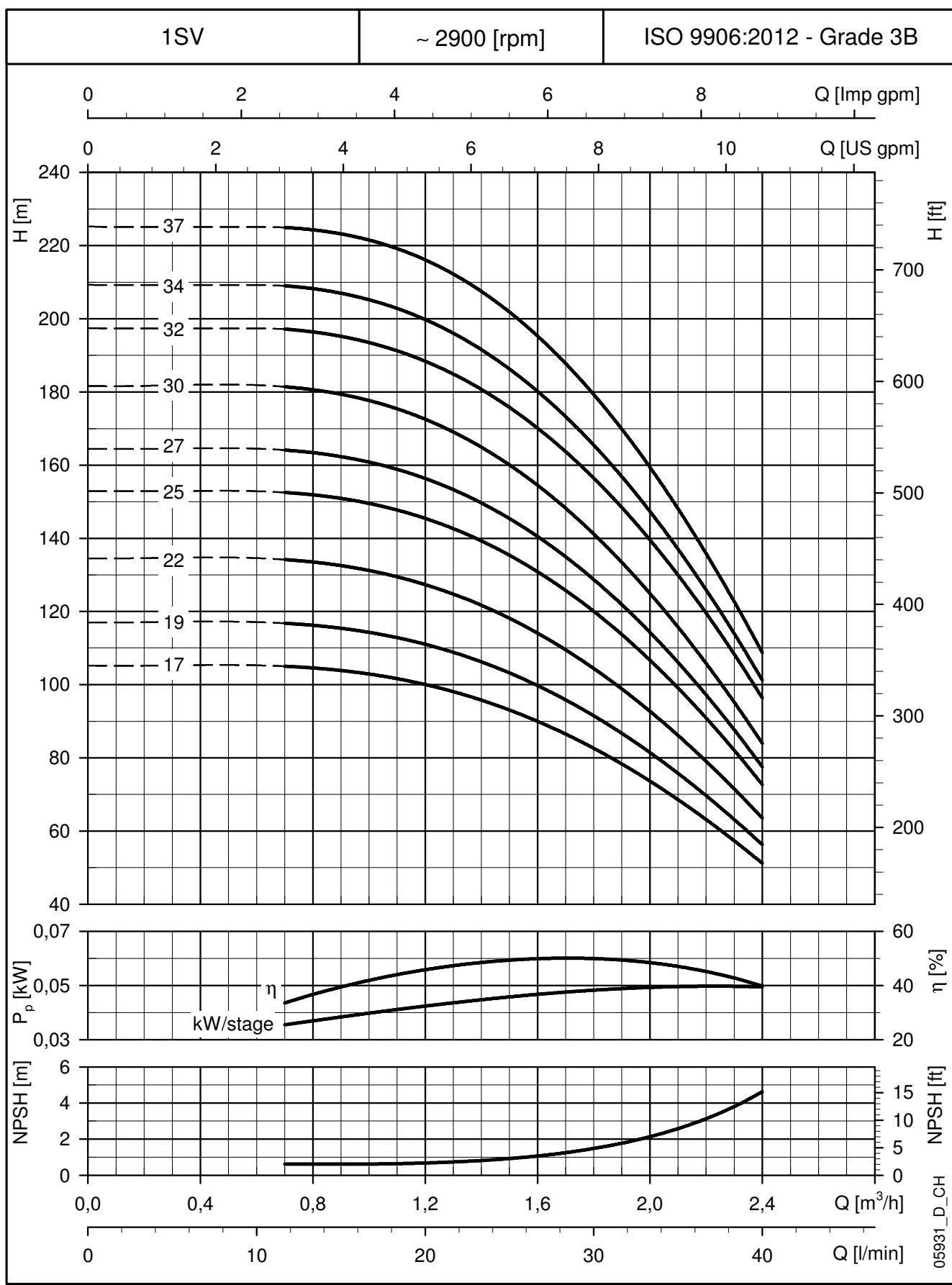
**1SV SERIES, 2 TO 15 STAGES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0$  Kg/dm<sup>3</sup> and kinematic viscosity  $\nu = 1$  mm<sup>2</sup>/sec.

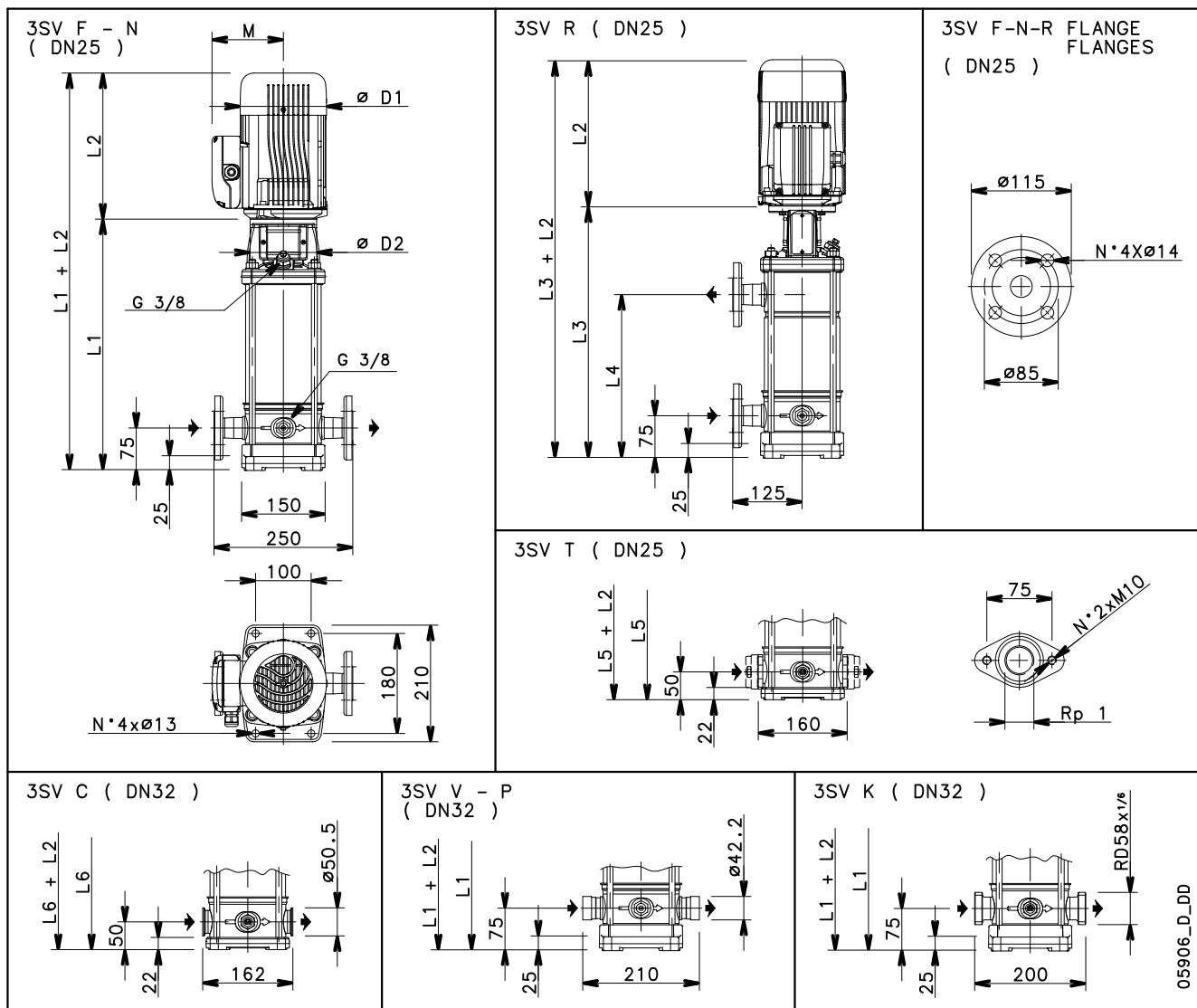
**1SV SERIES, 17 TO 37 STAGES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		L1	L2		L3	L4	L5	L6	DIMENSIONS (mm)		D1	D2	WEIGHT kg	
	kW	SIZE		1 ~	3 ~					1 ~	3 ~			PUMP	ELECTRIC PUMP
1SV17./D	1,1	80	568	263	263	568	407	543	543	137	129	155	155	120	14,7
1SV19./D	1,1	80	608	263	263	608	447	583	583	137	129	155	155	120	15,5
1SV22./D	1,1	80	668	263	263	668	507	643	643	137	129	155	155	120	16,7
1SV25./D	1,5	90	738	263	263	738	567	713	713	137	129	155	155	140	18,7
1SV27./D	1,5	90	778	263	263	778	607	-	753	137	129	155	155	140	19,5
1SV30./D	1,5	90	838	263	263	838	667	-	813	137	129	155	155	140	20,7
1SV32./D	2,2	90	878	298	298	878	707	-	853	151	134	174	174	140	21,5
1SV34./D	2,2	90	918	298	298	918	747	-	893	151	134	174	174	140	22,3
1SV37./D	2,2	90	978	298	298	978	807	-	953	151	134	174	174	140	23,5

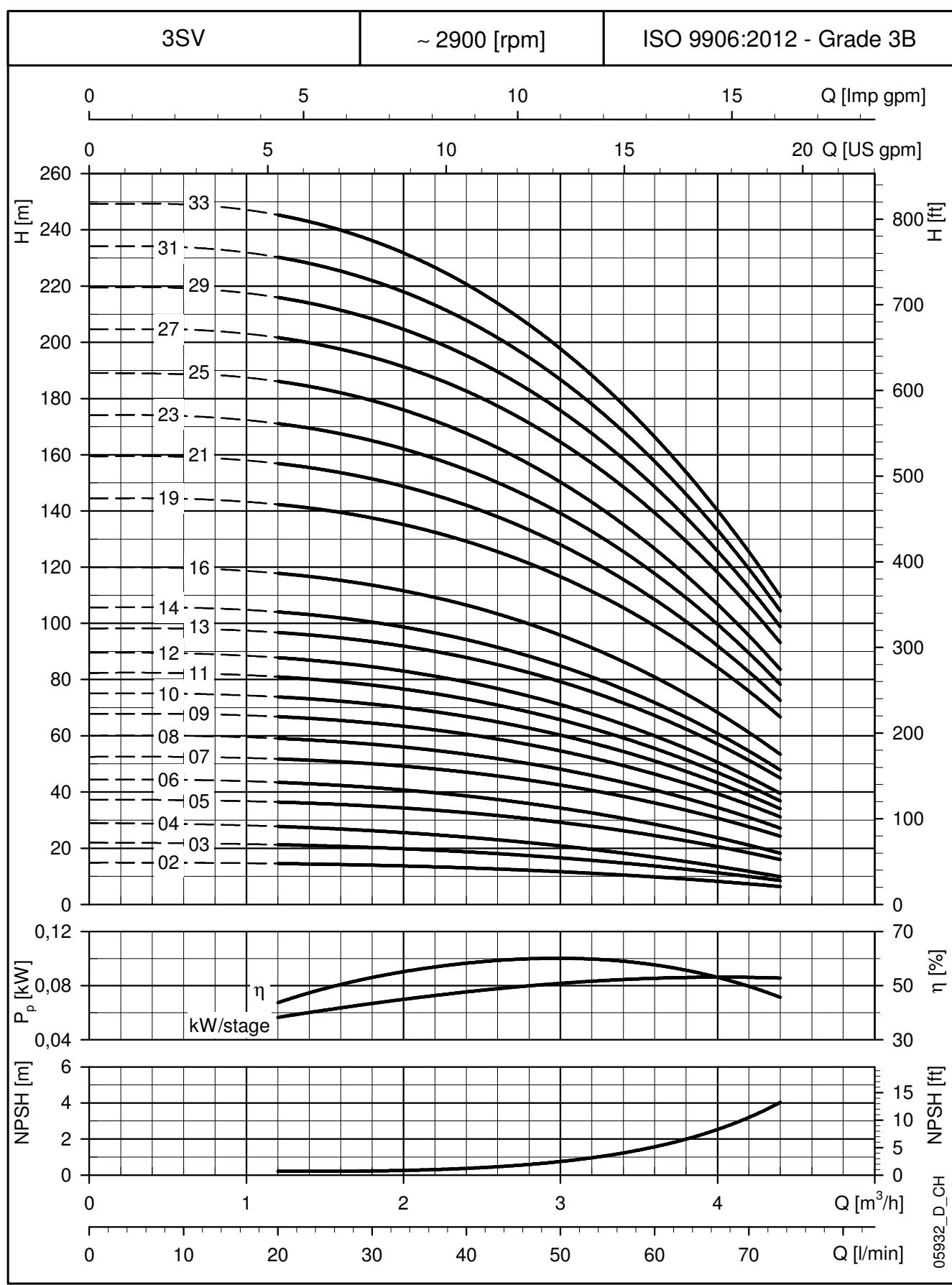
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**1SV SERIES, 17 TO 37 STAGES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


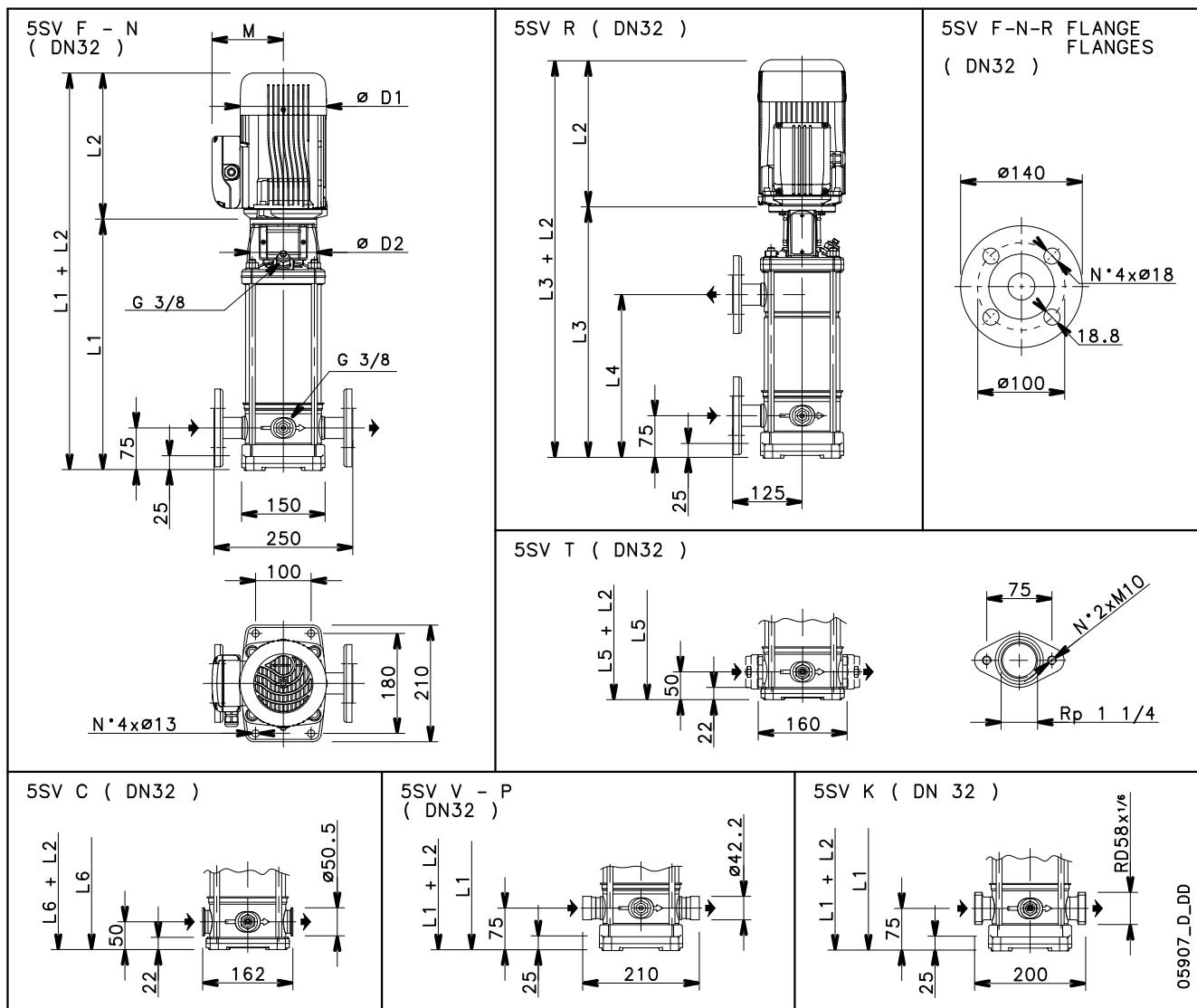
These performances are valid for liquids with density  $\rho = 1.0$  Kg/dm<sup>3</sup> and kinematic viscosity  $\nu = 1$  mm<sup>2</sup>/sec.

**3SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


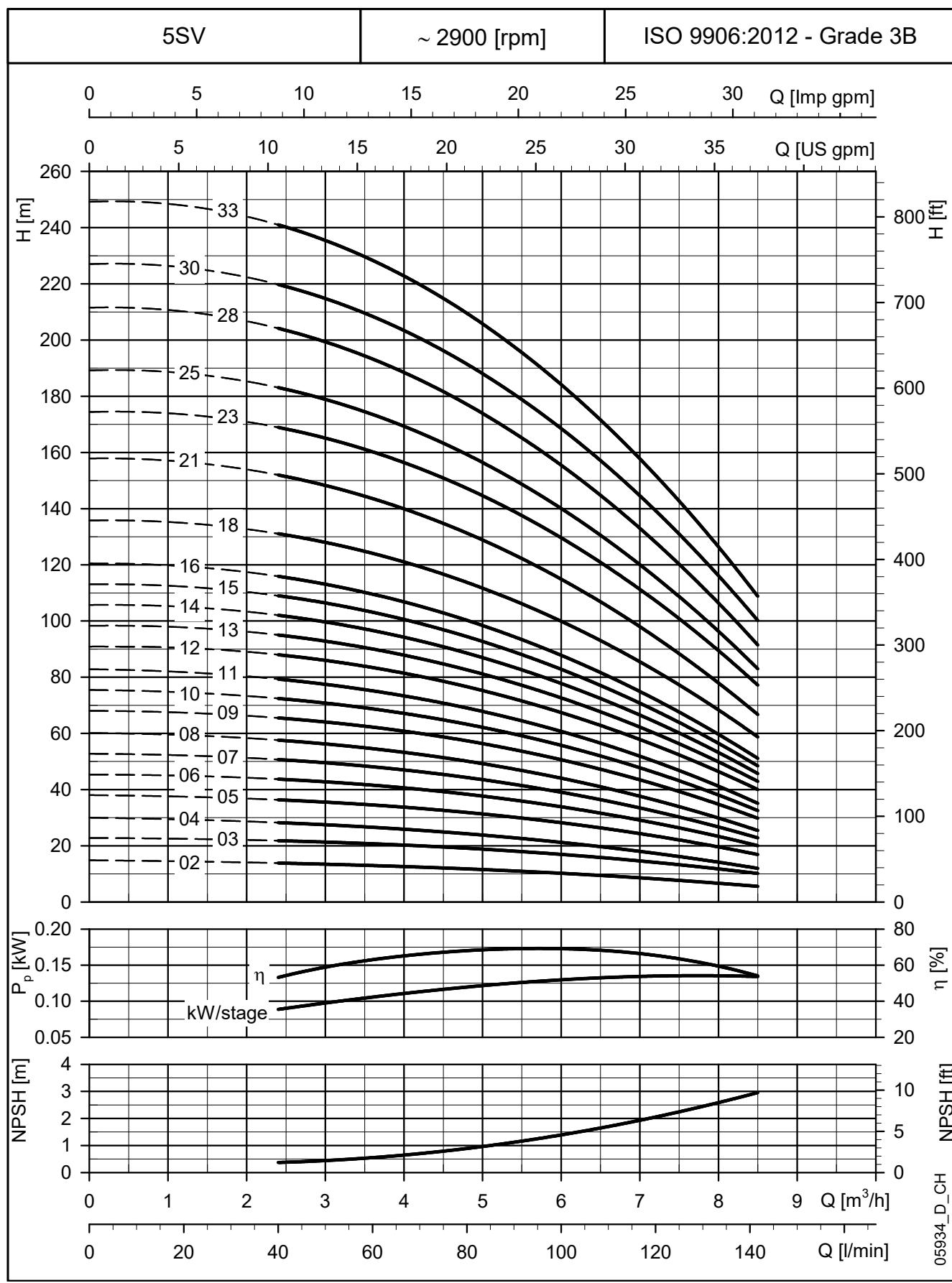
PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg			
	kW	SIZE	L1	1 ~	3 ~	L2	L3	L4	L5	L6	M	1 ~	3 ~	1 ~	3 ~	D1	D2	PUMP
3SV02..	0,37	71	278	209	209	-	-	-	253	253	111	111	120	120	105	8	12,8	
3SV03..	0,37	71	278	209	209	-	-	-	253	253	111	111	120	120	105	8,4	13,2	
3SV04..	0,37	71	298	209	209	-	-	-	273	273	111	111	120	120	105	8,8	13,6	
3SV05..	0,55	71	318	231	231	-	-	-	293	293	121	121	140	140	105	9,2	14	
3SV06..	0,55	71	338	231	231	-	-	-	313	313	121	121	140	140	105	9,7	16,4	
3SV07..//D	0,75	80	368	226	263	368	207	207	343	343	121	129	140	155	120	10,9	20,5	
3SV08..//D	0,75	80	388	226	263	388	227	227	363	363	121	129	140	155	120	11,3	20,9	
3SV09..//D	1,1	80	408	263	263	408	247	247	383	383	137	129	155	155	120	11,7	23,1	
3SV10..//D	1,1	80	428	263	263	428	267	267	403	403	137	129	155	155	120	12,1	23,5	
3SV11..//D	1,1	80	448	263	263	448	287	287	423	423	137	129	155	155	120	12,5	23,9	
3SV12..//D	1,1	80	468	263	263	468	307	307	443	443	137	129	155	155	120	13,3	24,7	
3SV13..//D	1,5	90	498	263	263	498	327	327	473	473	137	129	155	155	140	14	27	
3SV14..//D	1,5	90	518	263	263	518	347	347	493	493	137	129	155	155	140	14,4	27,5	
3SV16..//D	1,5	90	558	263	263	558	387	387	533	533	137	129	155	155	140	15,2	28,2	
3SV19..//D	2,2	90	618	298	298	618	447	447	593	593	151	134	174	174	140	16,4	34,4	
3SV21..//D	2,2	90	658	298	298	658	487	487	633	633	151	134	174	174	140	17,2	35,2	
3SV23..//D	2,2	90	698	298	298	698	527	527	-	673	151	134	174	174	140	18	36	
3SV25..//D	2,2	90	738	298	298	738	567	567	-	713	151	134	174	174	140	18,9	36,8	
3SV27..//D	3	100	788	-	298	788	607	607	-	763	-	134	-	174	160	20,7	42,6	
3SV29..//D	3	100	828	-	298	828	647	647	-	803	-	134	-	174	160	21,5	43,4	
3SV31..//D	3	100	868	-	298	868	687	687	-	843	-	134	-	174	160	22,3	44,2	
3SV33..//D	3	100	908	-	298	908	727	727	-	883	-	134	-	174	160	23,1	45	

**3SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


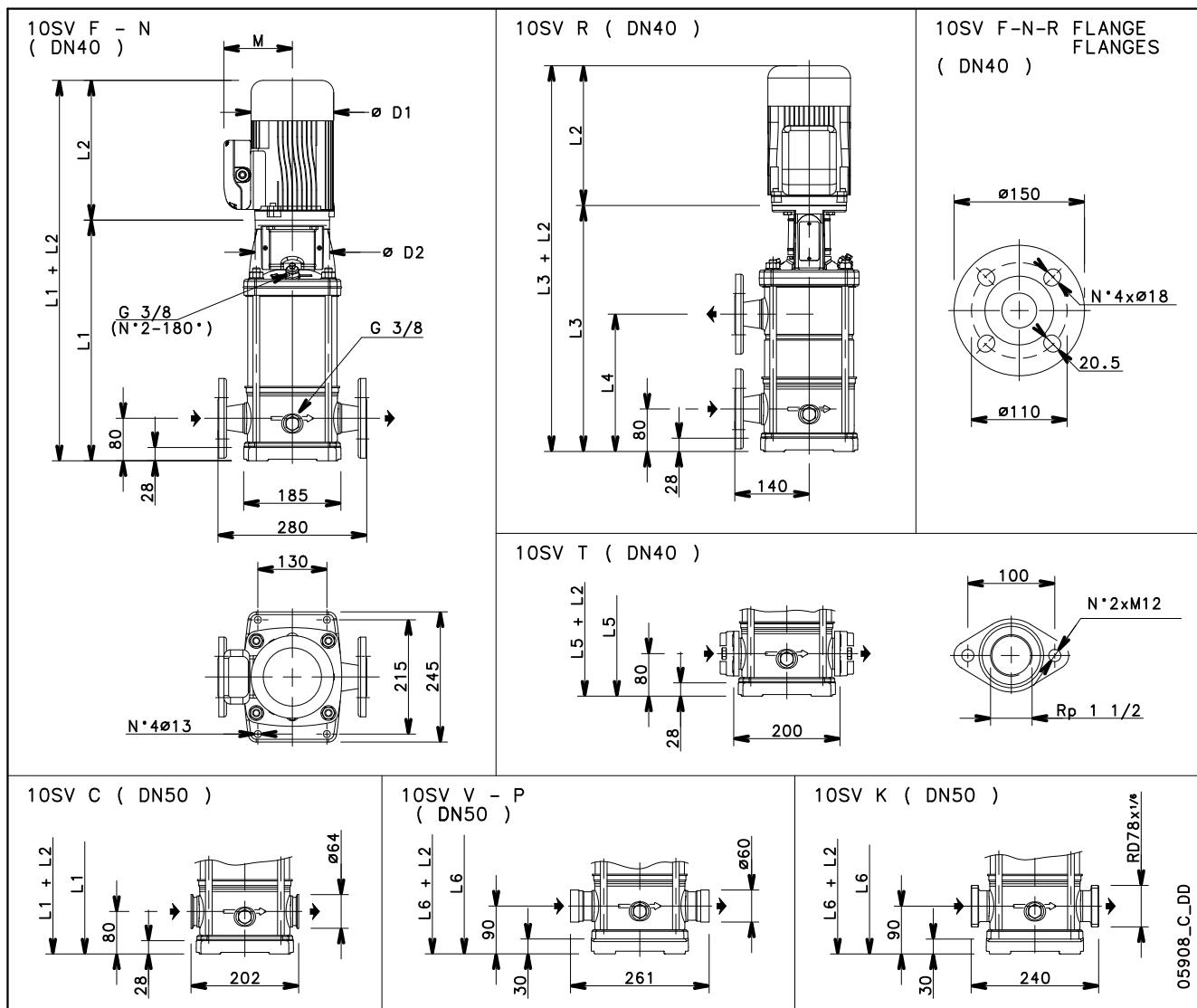
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{sec}$ .

**5SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


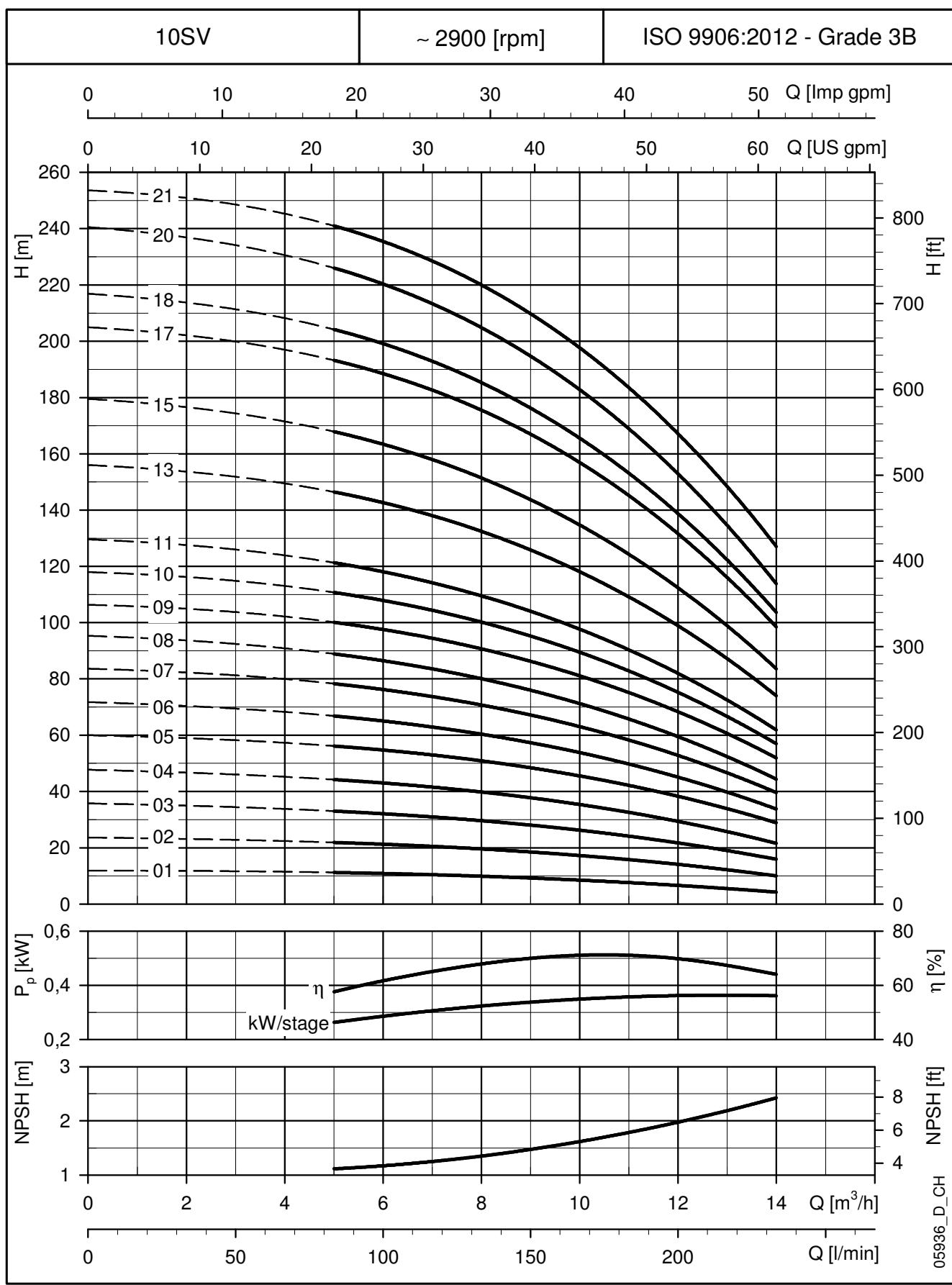
PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg		
	kW	SIZE	L1	1 ~	3 ~	L2	L3	L4	L5	L6	1 ~	3 ~	M	D1	D2	PUMP	ELECTRIC PUMP
5SV02..	0,37	71	268	209	209	-	-	-	243	243	111	111	120	120	105	8,4	13,2
5SV03..	0,55	71	293	231	231	-	-	-	268	268	121	121	140	140	105	8,9	15,7
5SV04..	0,55	71	318	231	231	-	-	-	293	293	121	121	140	140	105	9,4	16,1
5SV05../D	0,75	80	353	226	263	-	-	-	328	328	121	129	140	155	120	10,5	20,1
5SV06../D	1,1	80	378	263	263	-	-	-	353	353	137	129	155	155	120	11	22,4
5SV07../D	1,1	80	403	263	263	403	242	242	378	378	137	129	155	155	120	11,5	22,9
5SV08../D	1,1	80	428	263	263	428	267	267	403	403	137	129	155	155	120	12,1	23,5
5SV09../D	1,5	90	463	263	263	463	292	292	438	438	137	129	155	155	140	12,7	26
5SV10../D	1,5	90	488	263	263	488	317	463	463	137	129	155	155	140	13,1	26,5	
5SV11../D	1,5	90	513	263	263	513	342	488	488	137	129	155	155	140	13,6	27	
5SV12../D	2,2	90	538	298	298	538	367	513	513	151	151	134	174	174	140	14,1	32,3
5SV13../D	2,2	90	563	298	298	563	392	538	538	151	134	174	174	140	14,6	32,8	
5SV14../D	2,2	90	588	298	298	588	417	563	563	151	134	174	174	140	15	33,2	
5SV15../D	2,2	90	613	298	298	613	442	588	588	151	134	174	174	140	15,5	33,7	
5SV16../D	2,2	90	638	298	298	638	467	613	613	151	134	174	174	140	16	34,2	
5SV18../D	3	100	698	-	298	698	517	673	673	-	134	-	174	160	18	39	
5SV21../D	3	100	773	-	298	773	592	748	748	-	134	-	174	160	19,4	40,4	
5SV23../D	4	112	823	-	319	823	642	-	798	-	154	-	197	160	20,4	47	
5SV25../D	4	112	873	-	319	873	692	-	848	-	154	-	197	160	21,3	48	
5SV28../D	4	112	948	-	319	948	767	-	923	-	154	-	197	160	23	49,4	
5SV30../D	5,5	132	1018	-	375	1018	817	-	993	-	168	-	214	300	28,1	65,7	
5SV33../D	5,5	132	1093	-	375	1093	892	-	1068	-	168	-	214	300	29,5	67,1	

**5SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


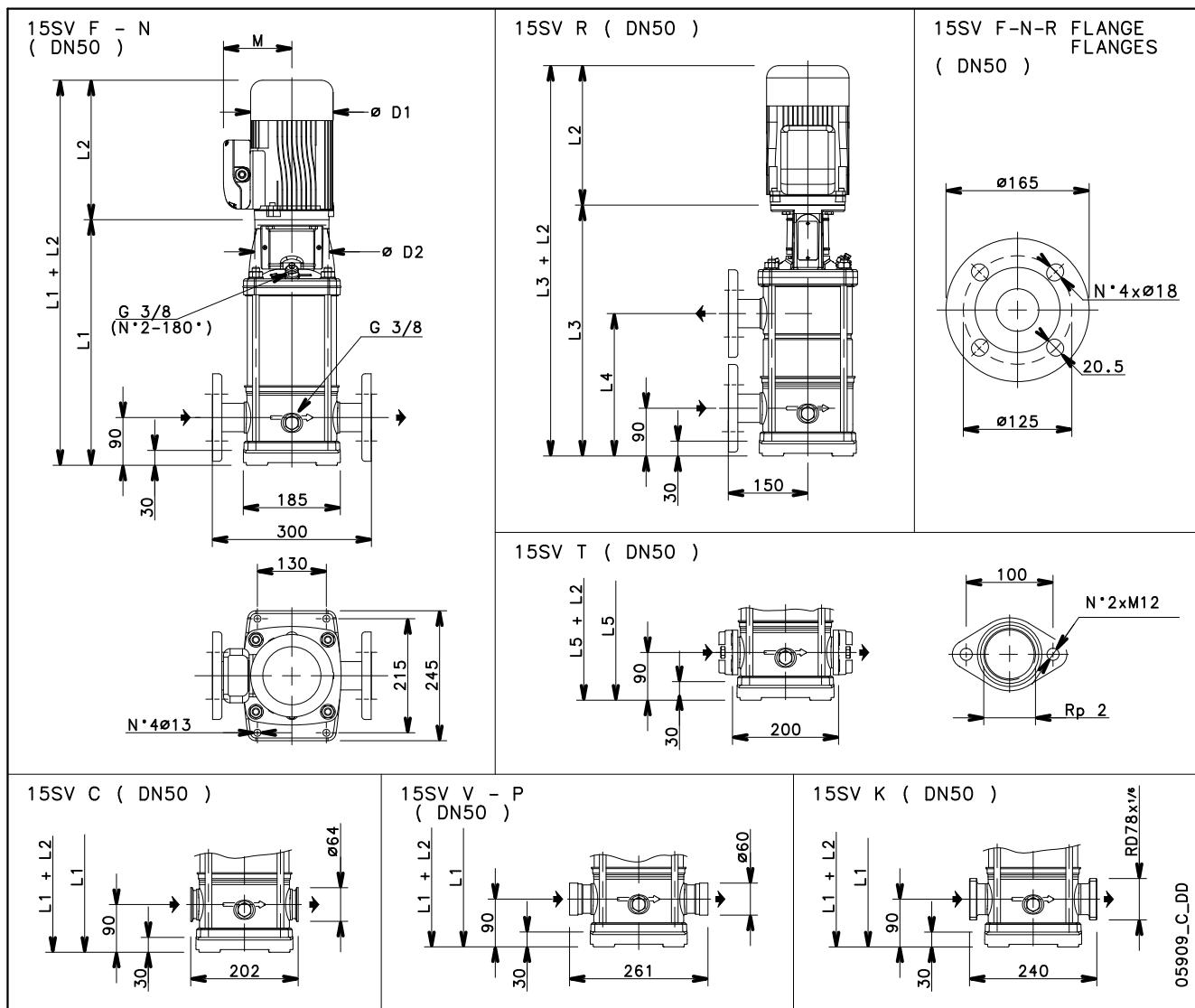
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**10SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		L1	L2		L3	L4	DIMENSIONS (mm)				WEIGHT kg		ELECTRIC PUMP		
	kW	SIZE		1 ~	3 ~			M	L1 ~	3 ~	1 ~	3 ~	D2	PUMP		
10SV01./D	0,75	80	357	226	263	-	-	357	367	121	129	140	155	120	14,2	24
10SV02./D	0,75	80	357	226	263	-	-	357	367	121	129	140	155	120	15,1	24,9
10SV03./D	1,1	80	389	263	263	-	-	389	399	137	129	155	155	120	16,1	27,6
10SV04./D	1,5	90	431	263	263	-	-	431	441	137	129	155	155	140	17,6	31
10SV05./D	2,2	90	463	298	298	463	259	463	473	151	134	174	174	140	18,5	36,7
10SV06./D	2,2	90	495	298	298	495	291	495	505	151	134	174	174	140	19,7	37,9
10SV07./D	3	100	537	-	298	537	323	537	547	-	134	-	174	160	21,5	42,5
10SV08./D	3	100	569	-	298	569	355	569	579	-	134	-	174	160	22,4	43,4
10SV09./D	4	112	601	-	319	601	387	601	611	-	154	-	197	160	23,3	49,7
10SV10./D	4	112	633	-	319	633	419	633	643	-	154	-	197	160	24,3	50,7
10SV11./D	4	112	665	-	319	665	451	665	675	-	154	-	197	160	25,2	52
10SV13./D	5,5	132	796	-	375	796	515	796	806	-	168	-	214	300	33,1	71
10SV15./D	5,5	132	860	-	375	860	579	-	870	-	168	-	214	300	35	73
10SV17./D	7,5	132	924	-	367	924	643	-	934	-	191	-	256	300	36,9	93
10SV18./D	7,5	132	956	-	367	956	675	-	966	-	191	-	256	300	37,8	94
10SV20./D	7,5	132	1020	-	367	1020	739	-	1030	-	191	-	256	300	39,6	96
10SV21./D	11	160	1082	-	428	1082	771	-	1092	-	191	-	256	350	42,2	113

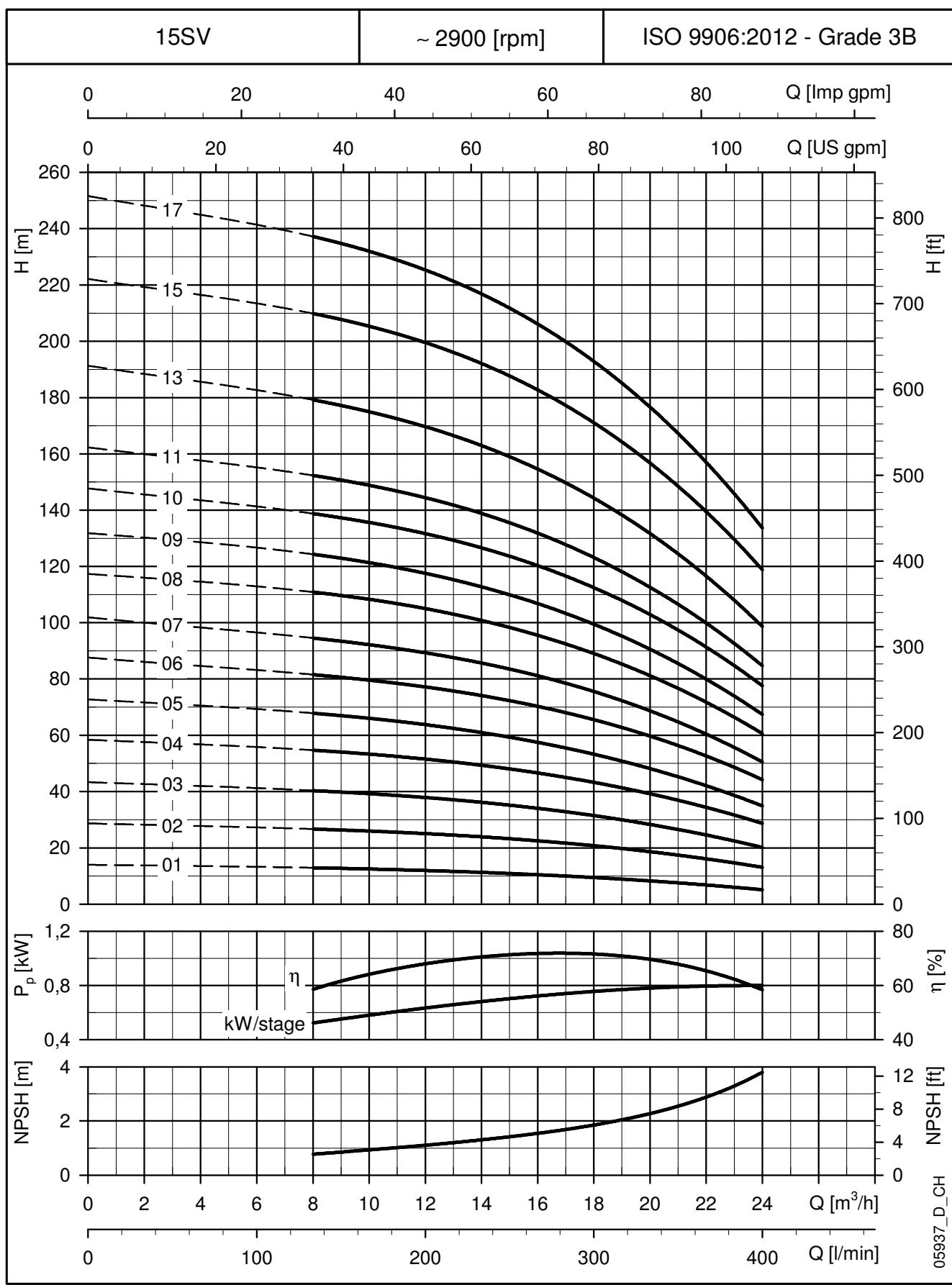
**10SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{sec}$ .

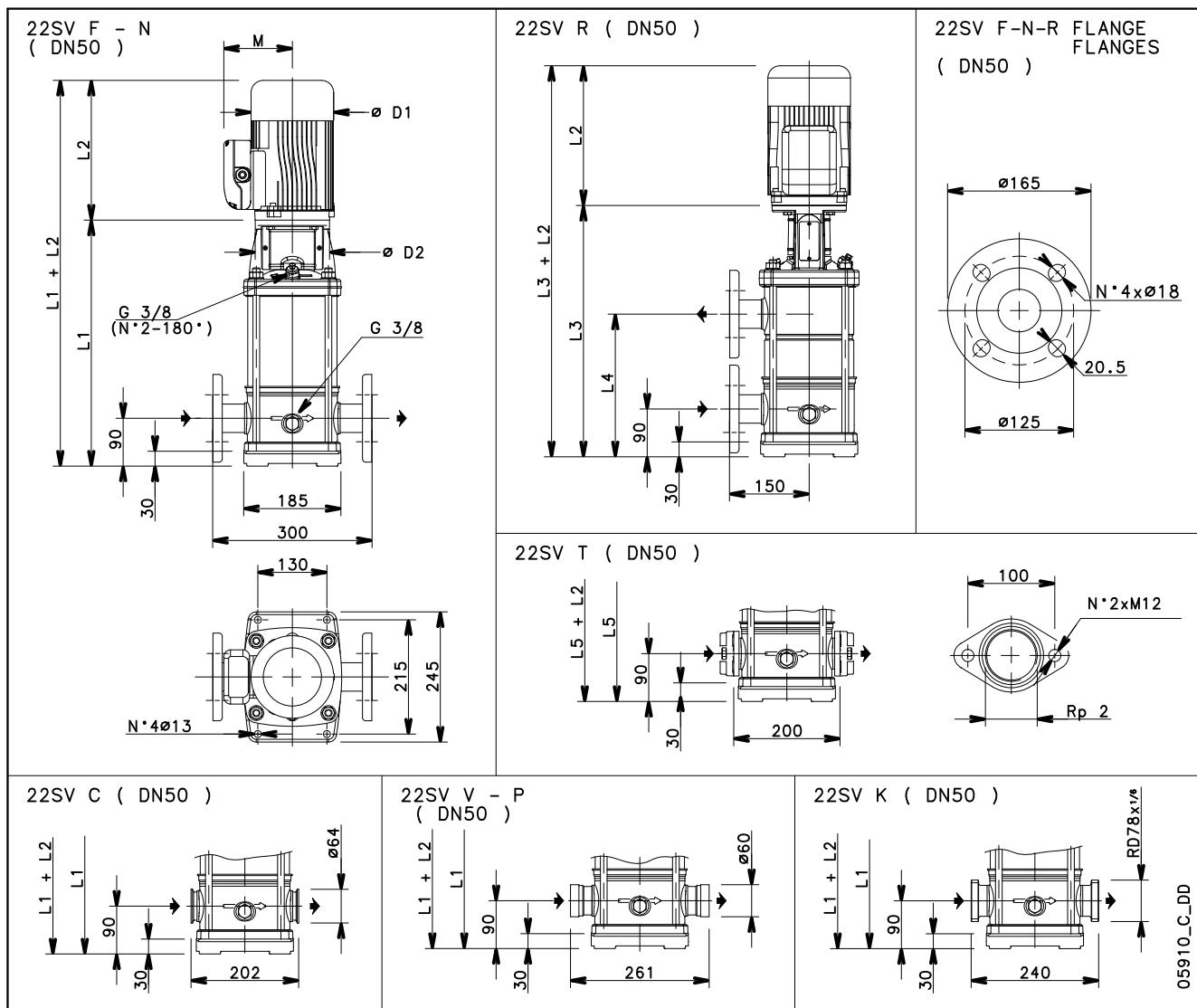
**15SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg
	kW	SIZE	L1	L2		L3	L4	L5	M		D1		D2	PUMP	ELECTRIC PUMP
				L1 ~	3 ~				1 ~	3 ~	1 ~	3 ~			
15SV01./D	1,1	80	399	263	263	-	-	399	137	129	155	155	120	15	26,8
15SV02./D	2,2	90	409	298	298	-	-	409	151	134	174	174	140	16,8	34,7
15SV03./D	3	100	467	-	298	-	-	467	-	134	-	174	160	19	40
15SV04./D	4	112	515	-	319	515	301	515	-	154	-	197	160	20,3	46,8
15SV05./D	4	112	563	-	319	563	349	563	-	154	-	197	160	21,5	47,9
15SV06./D	5,5	132	678	-	375	678	397	678	-	168	-	214	300	28,9	67
15SV07./D	5,5	132	726	-	375	726	445	726	-	168	-	214	300	30,2	68
15SV08./D	7,5	132	774	-	367	774	493	774	-	191	-	256	300	31,5	88
15SV09./D	7,5	132	822	-	367	822	541	822	-	191	-	256	300	32,8	90
15SV10./D	11	160	900	-	428	900	589	900	-	191	-	256	350	37	108
15SV11./D	11	160	948	-	428	948	637	-	-	191	-	256	350	38,3	109
15SV13./D	11	160	1044	-	428	1044	733	-	-	191	-	256	350	41	112
15SV15./D	15	160	1140	-	494	1140	829	-	-	240	-	313	350	43,7	146
15SV17./D	15	160	1236	-	494	1236	925	-	-	240	-	313	350	46,7	149

15sv-2p50-en\_d\_td

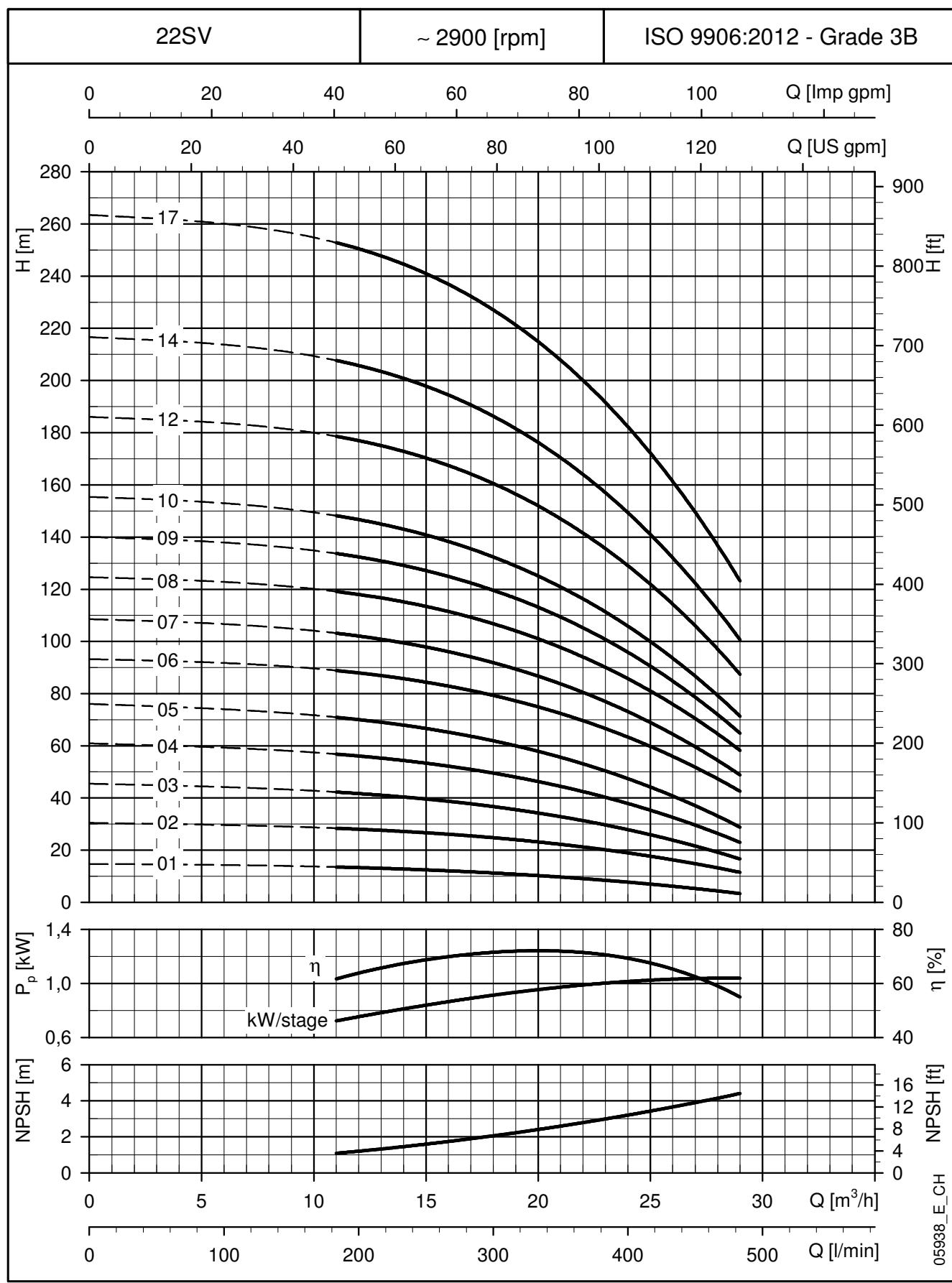
**15SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0$  Kg/dm<sup>3</sup> and kinematic viscosity  $v = 1$  mm<sup>2</sup>/sec.

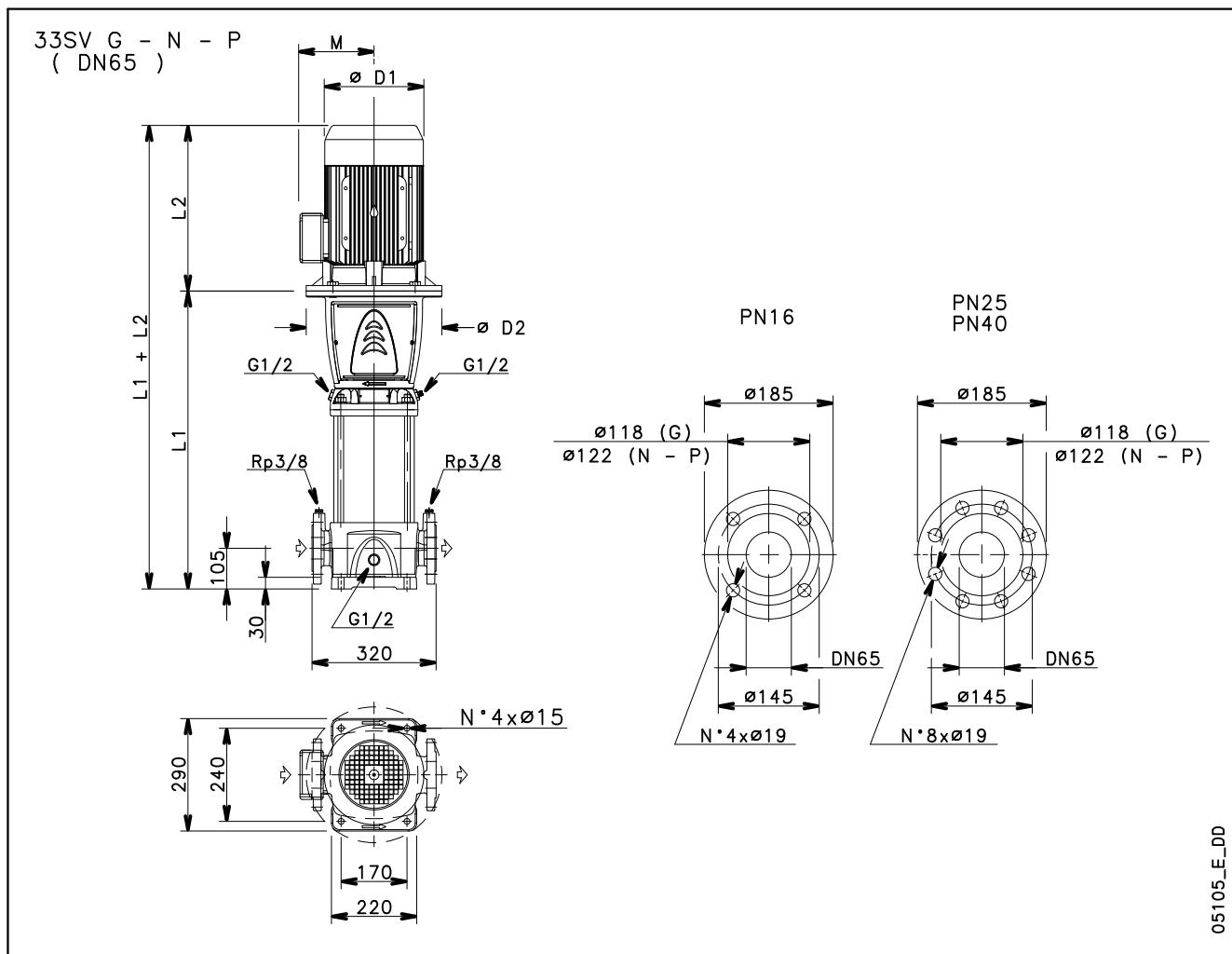
**22SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg	
	kW	SIZE	L1	L2		L3	L4	L5	M		D1		D2	PUMP	ELECTRIC PUMP	
22SV01./D	1,1	80	399	263	263	-	-	399	137	129	155	155	120	15,5	26,9	
22SV02./D	2,2	90	409	298	298	-	-	409	151	134	174	174	140	17,2	35,4	
22SV03./D	3	100	467	-	298	-	-	467	-	134	-	174	160	19,4	40,4	
22SV04./D	4	112	515	-	319	515	301	515	-	154	-	197	160	20,7	47,1	
22SV05./D	5,5	132	630	-	375	630	349	630	-	168	-	214	300	26,7	65	
22SV06./D	7,5	132	678	-	367	678	397	678	-	191	-	256	300	28	84	
22SV07./D	7,5	132	726	-	367	726	445	726	-	191	-	256	300	29,3	86	
22SV08./D	11	160	804	-	428	804	493	804	-	191	-	256	350	33,1	104	
22SV09./D	11	160	852	-	428	852	541	852	-	191	-	256	350	34,4	105	
22SV10./D	11	160	900	-	428	900	589	900	-	191	-	256	350	35,8	107	
22SV12./D	15	160	996	-	494	996	685	-	-	240	-	313	350	38,4	141	
22SV14./D	15	160	1092	-	494	1092	781	-	-	240	-	313	350	41,1	144	
22SV17./D	18,5	160	1236	-	494	1236	925	-	-	240	-	313	350	45,1	156	

22sv-2p50-en\_d\_td

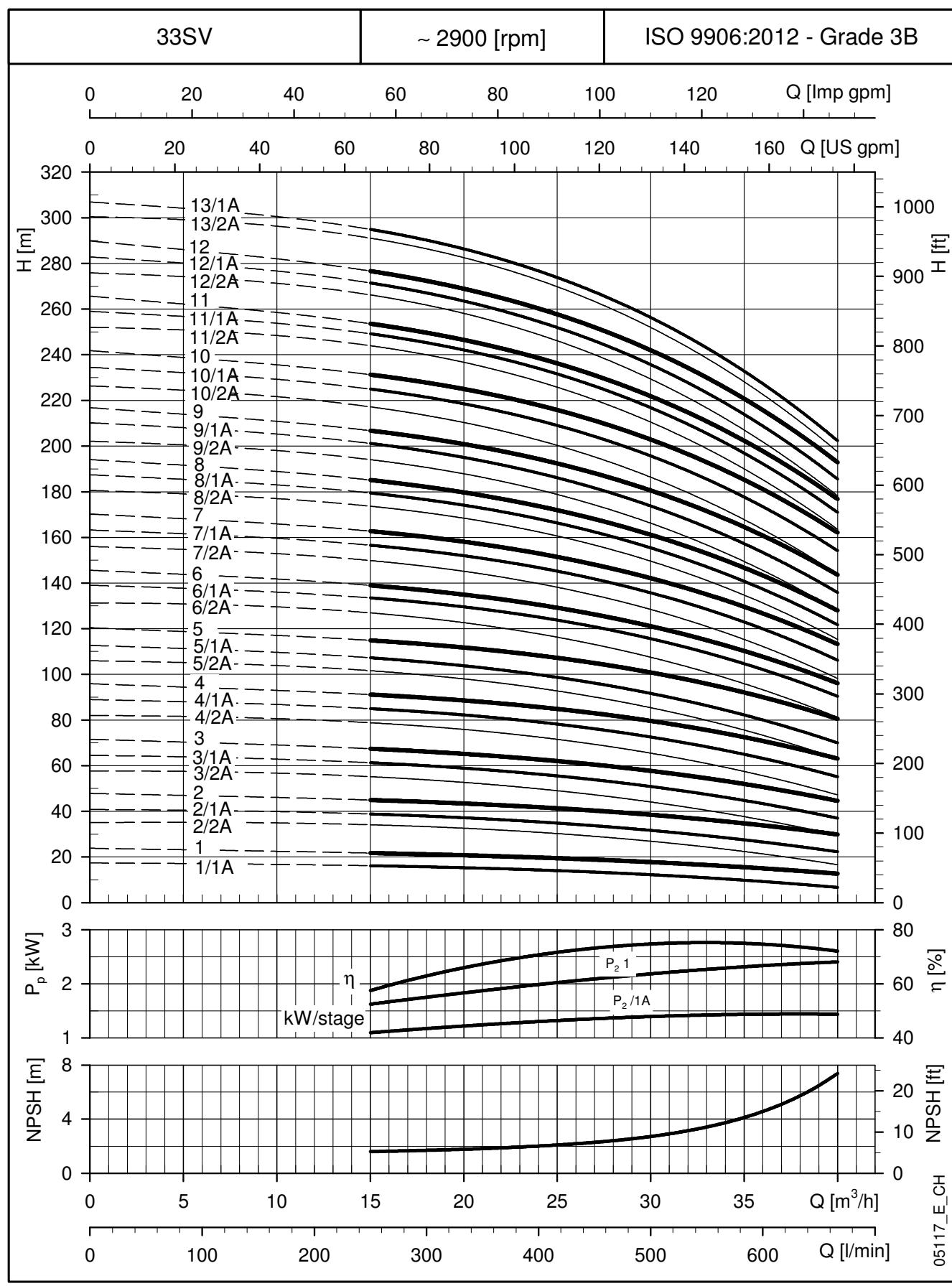
**22SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**33SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg		PUMP	ELECTRIC PUMP
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP		
33SV1/1A..../D	2,2	90	489	298	174	164	134	16	52	73		
33SV1..../D	3	100	489	298	174	164	134	16	52	73		
33SV2/2A..../D	4	112	564	319	197	164	154	16	56	82,5		
33SV2/1A..../D	4	112	564	319	197	164	154	16	56	82,5		
33SV2..../D	5,5	132	584	375	214	300	168	16	61	98,5		
33SV3/2A..../D	5,5	132	659	375	214	300	168	16	65	103		
33SV3/1A..../D	7,5	132	659	367	256	300	191	16	65	121		
33SV3..../D	7,5	132	659	367	256	300	191	16	65	121		
33SV4/2A..../D	7,5	132	734	367	256	300	191	16	69	125		
33SV4/1A..../D	11	160	769	428	256	350	191	16	73	143		
33SV4..../D	11	160	769	428	256	350	191	16	73	143		
33SV5/2A..../D	11	160	844	428	256	350	191	16	77	147		
33SV5/1A..../D	11	160	844	428	256	350	191	16	77	147		
33SV5..../D	15	160	844	494	313	350	240	16	77	179		
33SV6/2A..../D	15	160	919	494	313	350	240	16	81	183		
33SV6/1A..../D	15	160	919	494	313	350	240	25	81	183		
33SV6..../D	15	160	919	494	313	350	240	25	81	183		
33SV7/2A..../D	15	160	994	494	313	350	240	25	84	186		
33SV7/1A..../D	18,5	160	994	494	313	350	240	25	84	195		

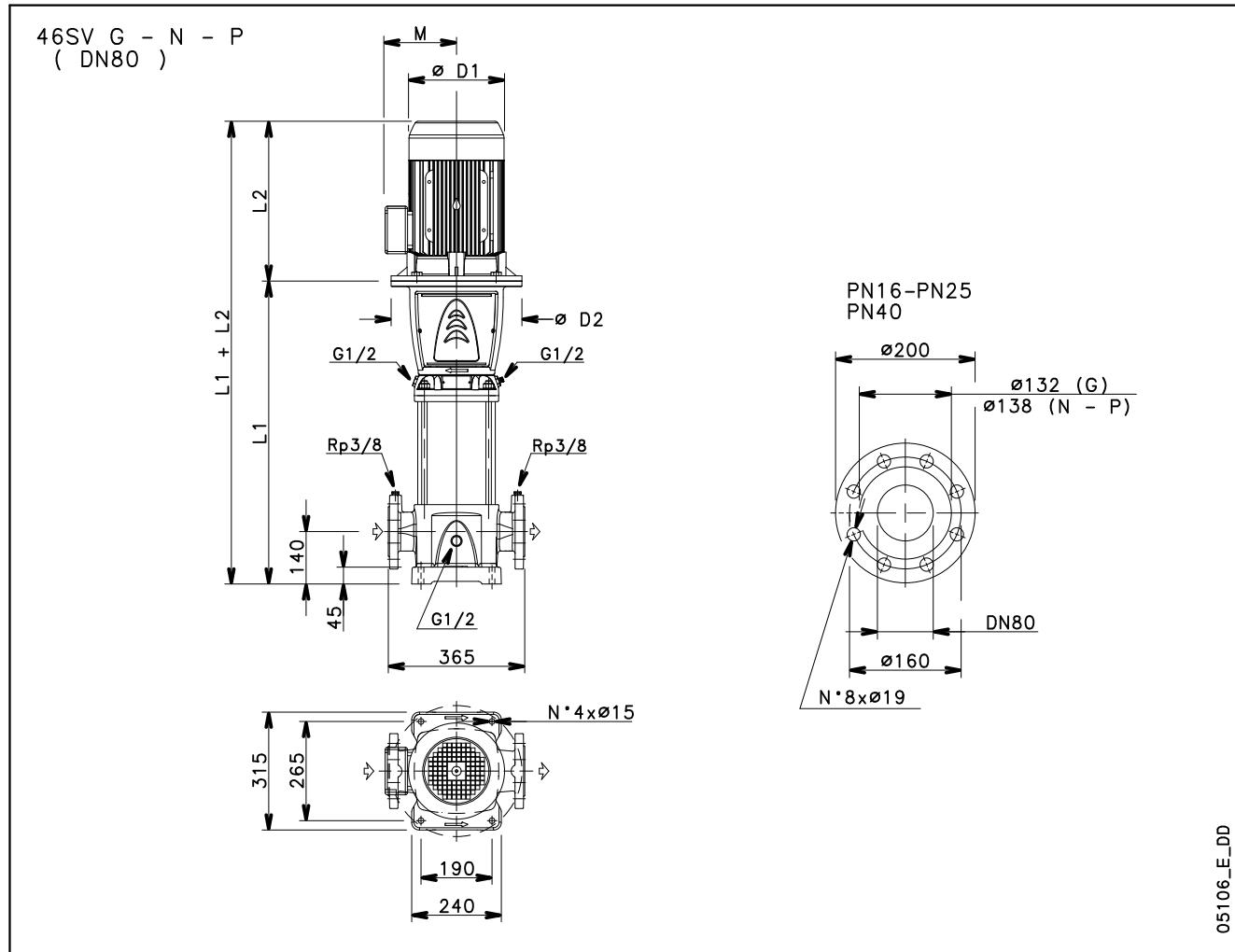
33sv-2p50-en\_td

**33SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{sec}$ .

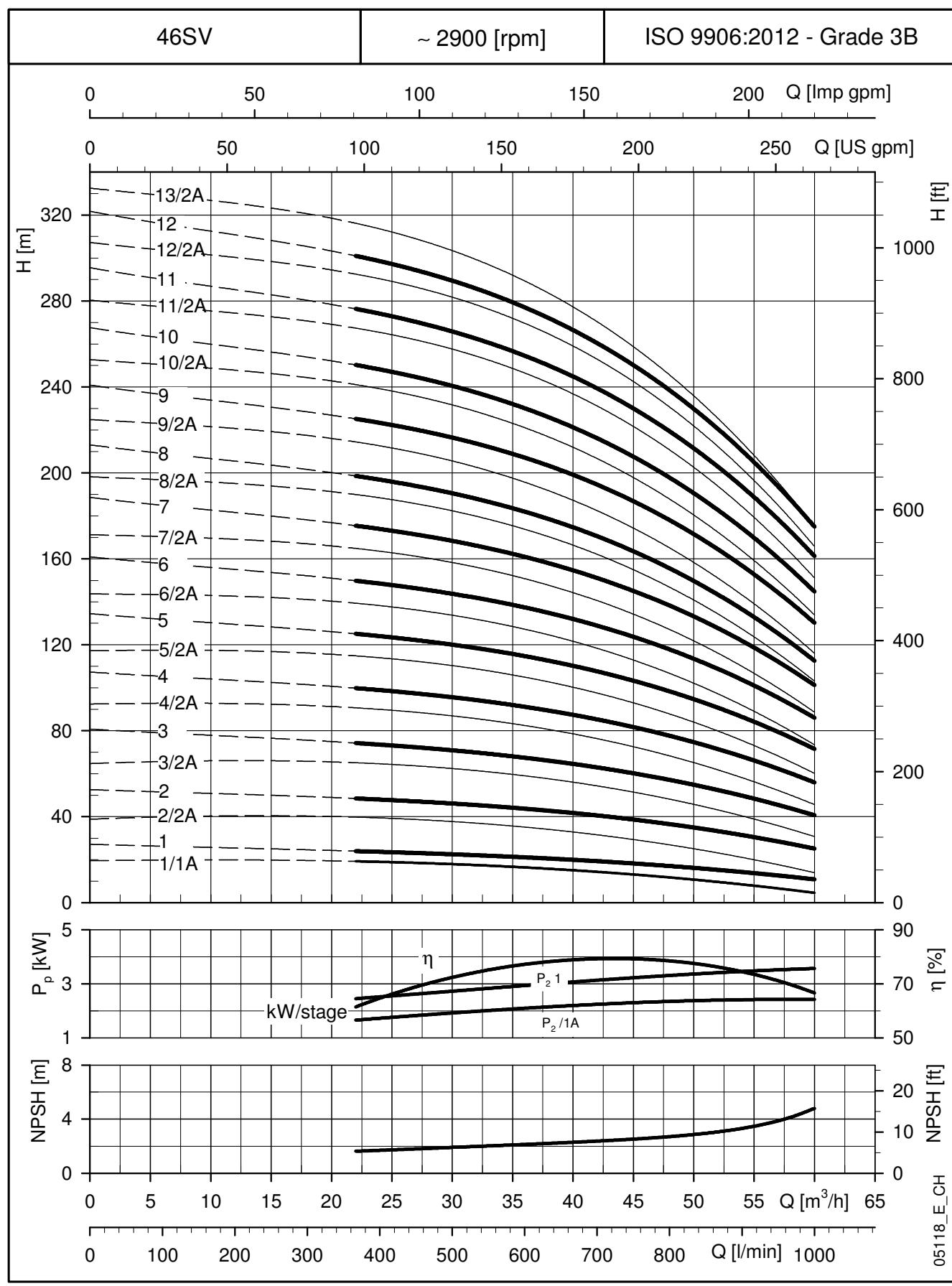
## 46SV SERIES

### DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



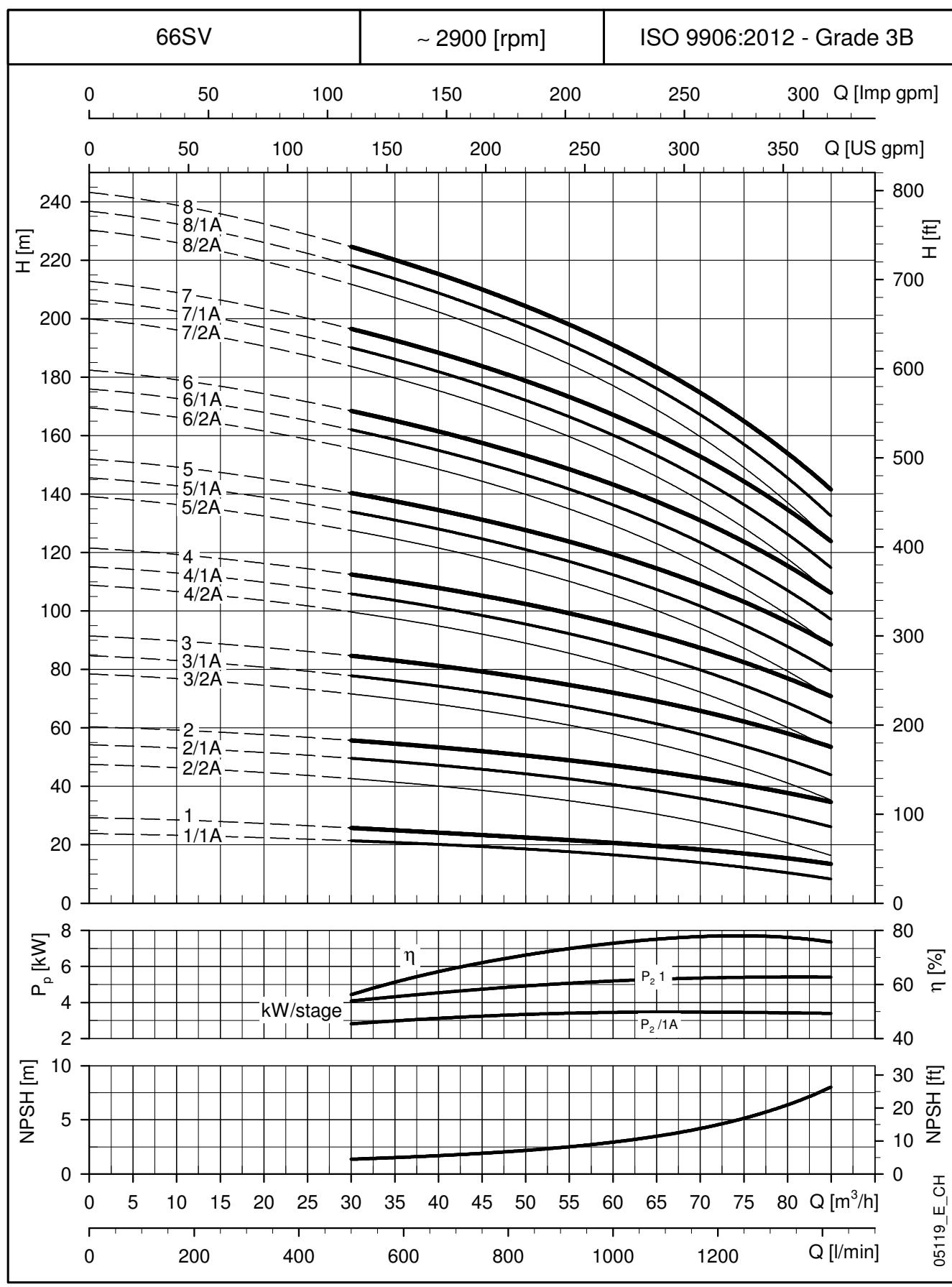
PUMP TYPE	MOTOR		DIMENSIONS (mm)							WEIGHT kg		PUMP ELECTRIC	PUMP PUMP	PUMP ELECTRIC
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	PUMP	PUMP	PUMP		
46SV1/1A..D	3	100	529	298	174	164	134	16	58	79				
46SV1..D	4	112	529	319	197	164	154	16	58	84,5				
46SV2/2A..D	5,5	132	624	375	214	300	168	16	66	104				
46SV2..D	7,5	132	624	367	256	300	191	16	66	122				
46SV3/2A..D	11	160	734	428	256	350	191	16	74	144				
46SV3..D	11	160	734	428	256	350	191	16	74	144				
46SV4/2A..D	15	160	809	494	313	350	240	16	78	180				
46SV4..D	15	160	809	494	313	350	240	16	78	180				
46SV5/2A..D	18,5	160	884	494	313	350	240	16	82	193				
46SV5..D	18,5	160	884	494	313	350	240	16	82	193				
46SV6/2A..D	22	180	959	494	313	350	240	25	87	208				
46SV6..D	22	180	959	494	313	350	240	25	87	208				
46SV7/2A..D	30	200	1034	671	408	400	285	25	97	305				
46SV7..D	30	200	1034	671	408	400	285	25	97	305				
46SV8/2A..D	30	200	1109	671	408	400	285	25	101	309				
46SV8..D	30	200	1109	671	408	400	285	25	101	309				
46SV9/2A..D	30	200	1184	671	408	400	285	25	105	313				
46SV9..D	37	200	1184	671	408	400	285	25	105	329				
46SV10/2A..D	37	200	1259	671	408	400	285	40	114	338				

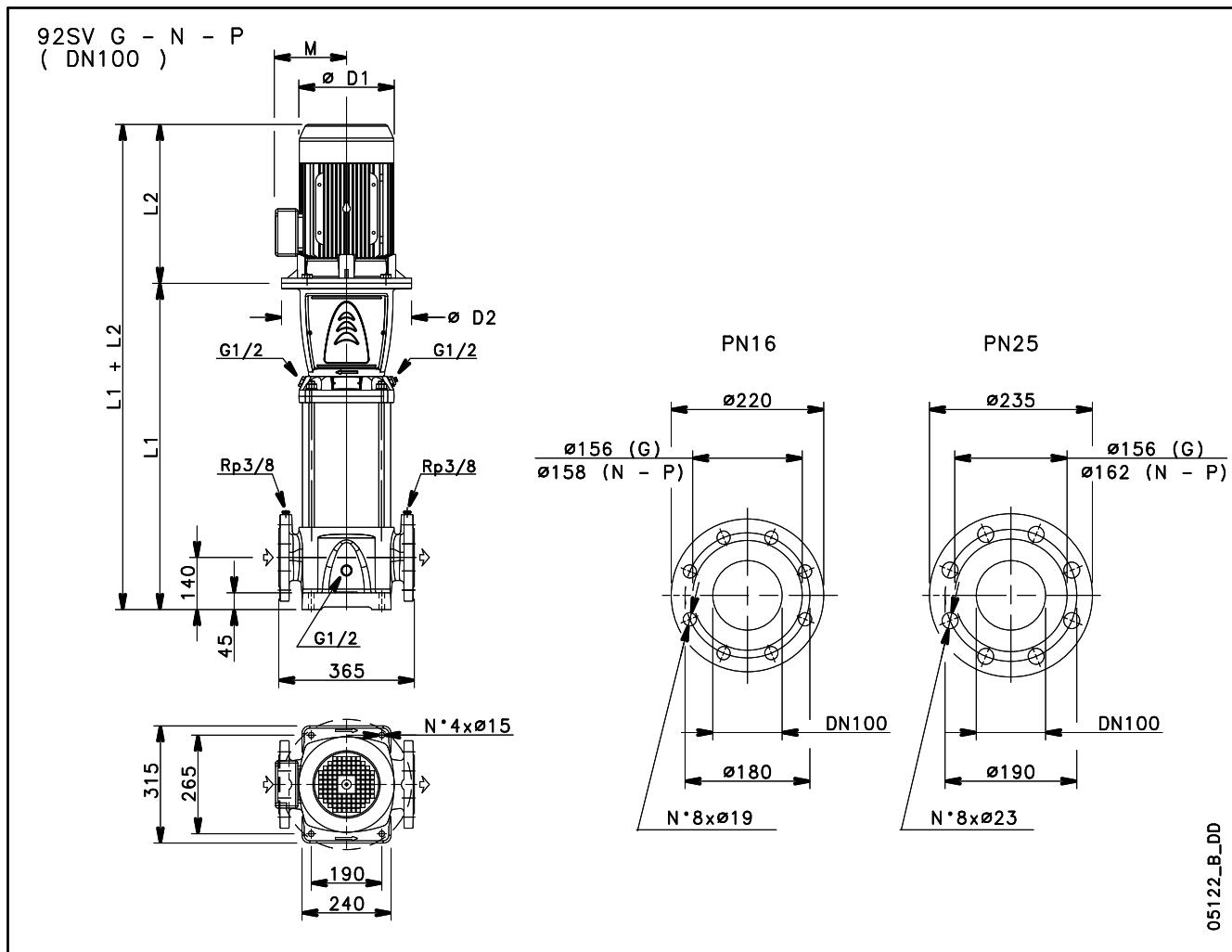
46sv-2p50-en\_e\_td

**46SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

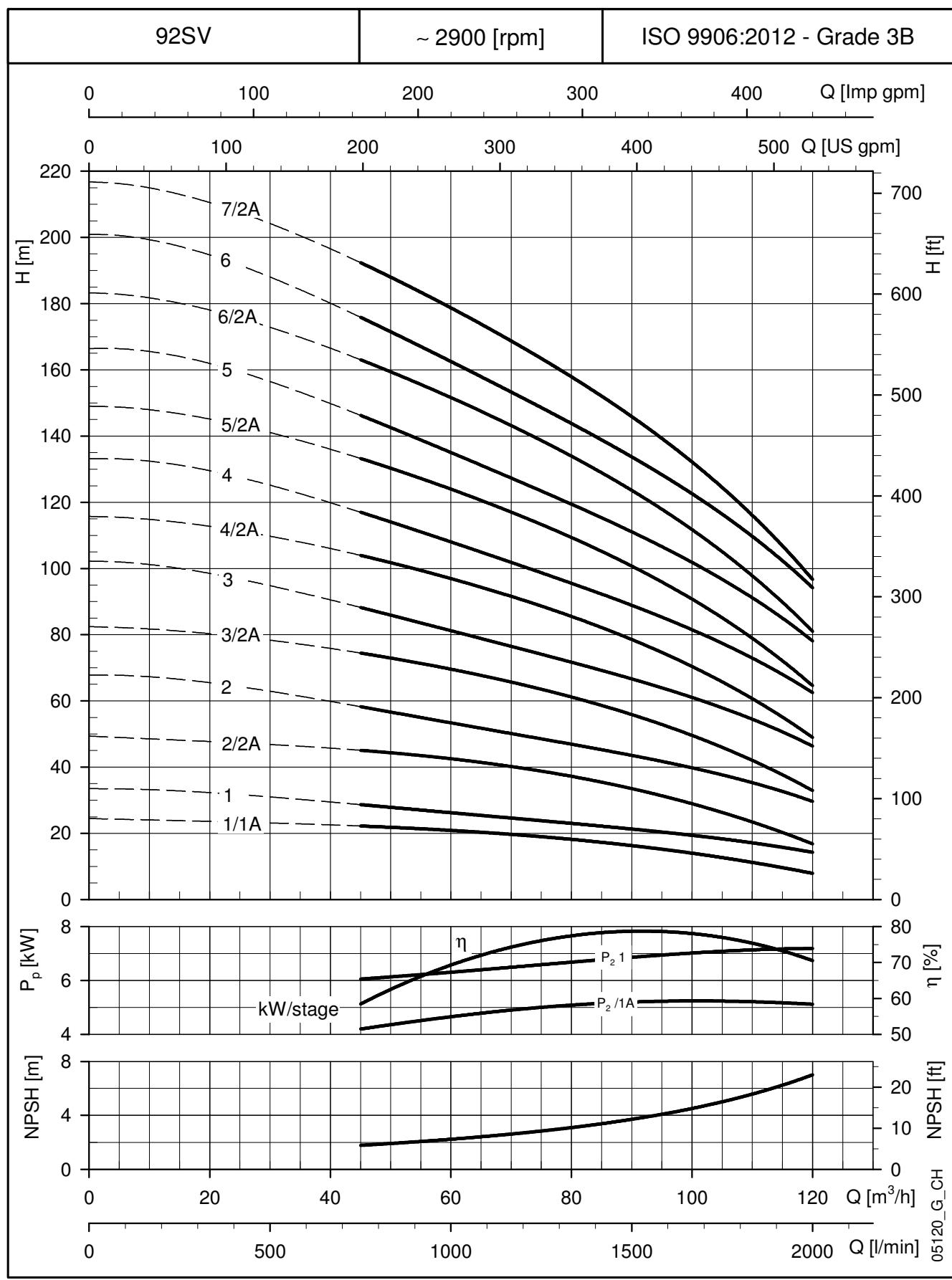


**66SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


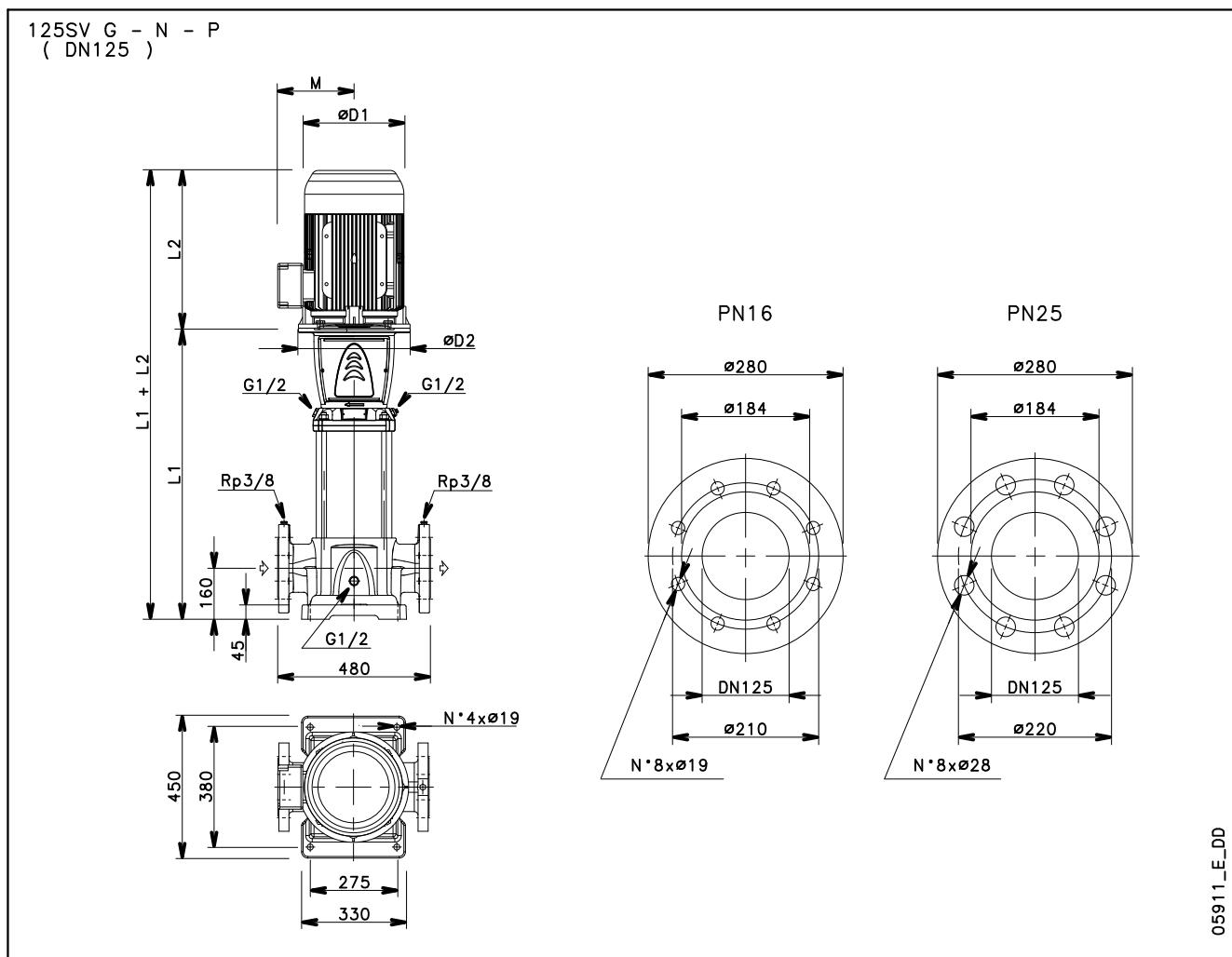
**92SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
92SV1/1A..D	5,5	132	574	375	214	300	168	16	71	109
92SV1..D	7,5	132	574	367	256	300	191	16	71	127
92SV2/2A..D	11	160	699	428	256	350	191	16	80	150
92SV2..D	15	160	699	494	313	350	240	16	80	182
92SV3/2A..D	18,5	160	789	494	313	350	240	16	86	197
92SV3..D	22	180	789	494	313	350	240	16	87	208
92SV4/2A..D	30	200	879	671	408	400	285	16	99	307
92SV4..D	30	200	879	671	408	400	285	16	99	307
92SV5/2A..D	37	200	969	671	408	400	285	25	107	331
92SV5..D	37	200	969	671	408	400	285	25	107	331
92SV6/2A..D	45	225	1059	701	460	450	309	25	116	408
92SV6..D	45	225	1059	701	460	450	309	25	116	408
92SV7/2A..D	45	225	1149	701	460	450	309	25	121	413

92sv-2p50-en\_c\_td

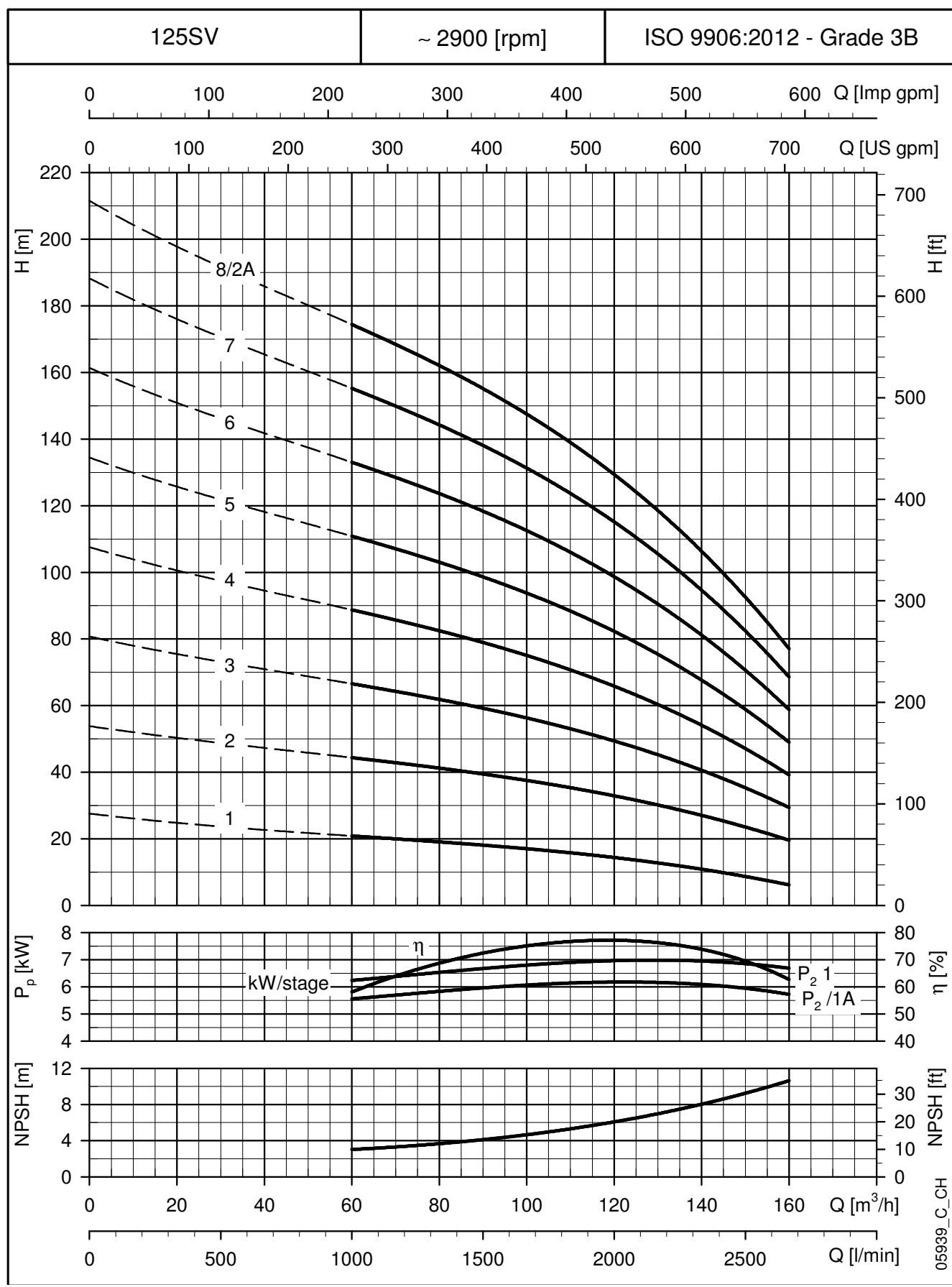
**92SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{sec}$ .

**125SV SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg		ELECTRIC PUMP
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP		
125SV1./D	7,5	132	693	367	256	300	191	16	116	172	
125SV2./D	15	160	878	494	313	350	240	16	131	233	
125SV3./D	22	180	1028	494	313	350	240	16	143	265	
125SV4./D	30	200	1178	671	408	400	285	16	161	369	
125SV5./D	37	200	1328	671	408	400	285	16	172	396	
125SV6./D	45	225	1478	701	460	450	309	16	187	479	
125SV7./D	55	250	1658	767	502	550	362	25	216	658	
125SV8/2A./D	55	250	1808	767	502	550	362	25	229	671	

125sv-2p50-en\_d\_td

**125SV SERIES**
**OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**


These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{sec}$ .



# **e-SVH: e-SVwithHYDROVAR**

## e-SVH SERIES

### e-SV WITH HYDROVAR

#### Background and context

For all pumping needs in commercial or residential building and in industry applications, the demand for intelligent pumping systems is constantly growing. Controlled systems offer many advantages: reduced operating costs for the lifetime of the pump, lower environmental impact, longer lifetime of piping systems and networks.

For this reason, Lowara has developed the e-SVH: an intelligent pumping system which assures high level performance with energy consumption tailored to the system's demand.

#### Benefits of e-SVH with HYDROVAR

**Saving:** e-SVH transforms the e-SV pumps into variable speed intelligent pumping systems. Thanks to the HYDROVAR, the speed of each pump varies so as to maintain a constant flow, a constant pressure, or a differential pressure. In doing so, at any point in time, the pump only receives the energy required. This in turns allows for considerable savings, especially for systems that have varying loads throughout the day.

**Easy installation and space-saving:** e-SVH saves time and space during installation. The Hydrovar is delivered already mounted on the motor (for models up to 22kW). The hydrovar is kept cool by the motor fan and does not require a control panel. In order to function, only fuses on the supply line are needed (Check your local electrical installation regulations).

**Standard motors:** e-SVH models are fitted with three-phase standard TEFC motors with insulation class 155 (F) and IE3 efficiency level from 0,75 to 22 kW.

#### Identification code:

e-SVH models are identified by the letter "**H**" and the last two characters.

Examples:

**3SVH16F015T /2**

**3SVH16F015T /3**

**3SVH16F015T /4C**

**H** = with integrated HYDROVAR

**/2** = HYDROVAR HVL**2**.015 1~ 208-240 V (50/60 Hz)

**/3** = HYDROVAR HVL**3**.015 3~ 208-240 V (50/60 Hz)

**/4** = HYDROVAR HVL**4**.015 3~ 380-460 V (50/60 Hz)

Other options:

**C** = Premium Card.

#### Key Features of the HYDROVAR

- **No need for additional pressure sensors:**

The e-SVH is fitted with a pressure transmitter or differential pressure transmitters, depending on the application. The pressure sensor(s) are pre-wired. For eSV with round flanges (G and N versions) the sensors can be installed on the pump flanges.

- **No need for special pumps or motors.**

- **e-SVH is already pre-wired.**

- **No need for IN LINE filters.**

HYDROVAR already includes the THDi filter embedded as standard.

- **No need for bypass or safety systems:**

The e-SVH will immediately switch off when demand drops to zero or when it exceeds maximum pump capacity; thus making installation of additional safety devices unnecessary.

- **Anti-condensation device:**

The HYDROVAR is fitted with anti-condensation devices which switch on when the pump is in standby in order to prevent condensation forming in the unit.



## e-SVH SERIES

### e-SV WITH HYDROVAR

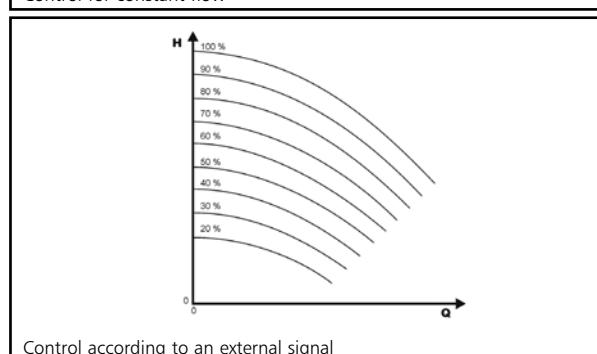
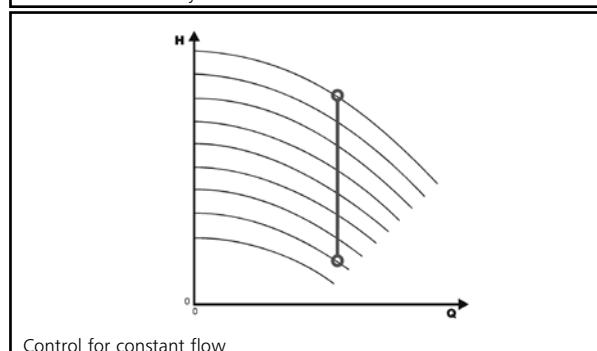
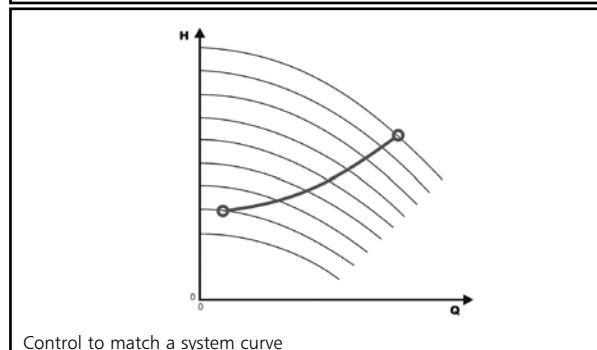
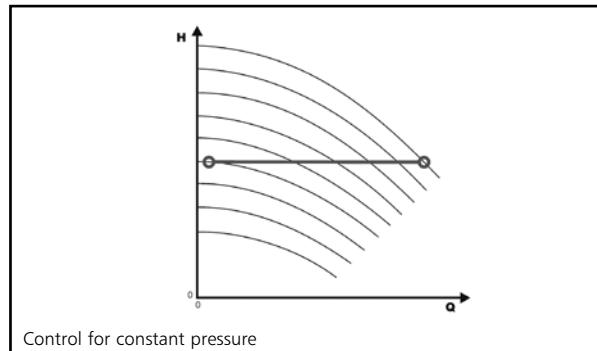
The basic function of the HYDROVAR device is to control the pump to meet the system demands.

#### HYDROVAR performs these functions by:

- 1) Measuring the system pressure or flow via a transmitter mounted on the pump's delivery side.
- 2) Calculating the motor speed to maintain the correct flow or pressure.
- 3) Sending out a signal to the pump to start the motor, increase speed, decrease speed or stop.
- 4) In the case of multiple pump installations, HYDROVAR will automatically provide for the cyclic changeover of the pumps' starting sequence.

In addition to these basic functions, HYDROVAR can perform controls only manageable by the most advanced computerized control systems. Some examples are:

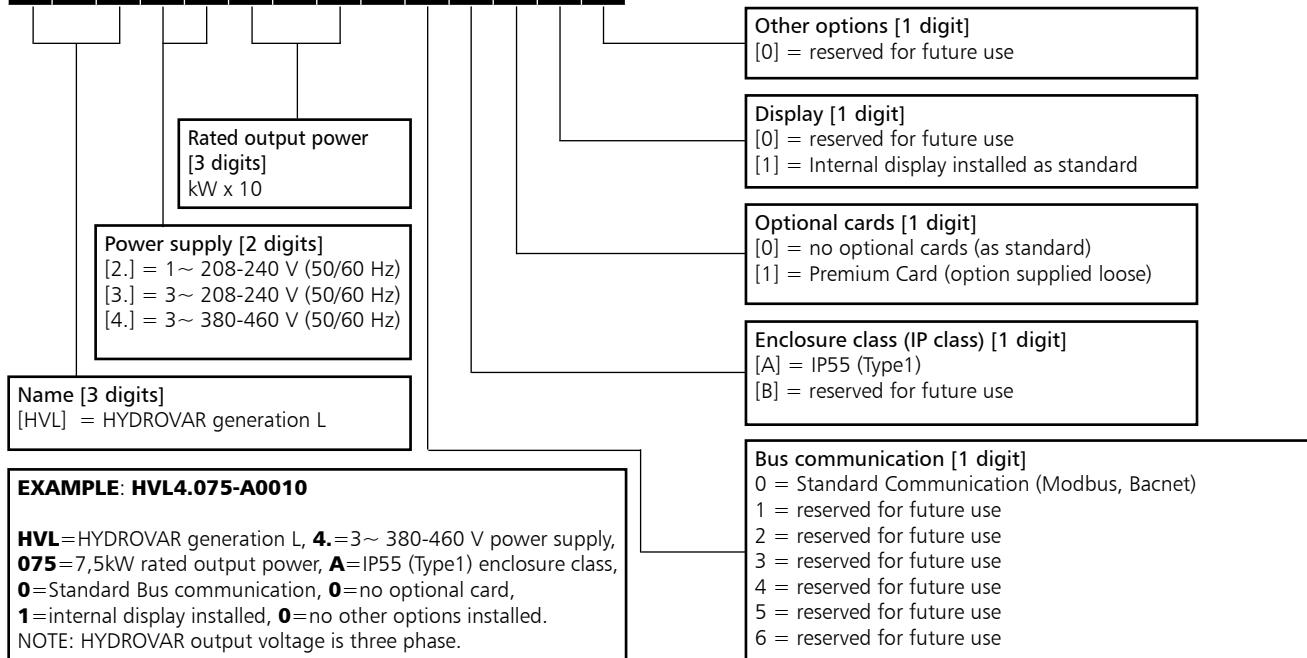
- Stop the pump(s) at zero demand.
- Stop the pump(s) in case of water failure on the suction side (protection against dry running).
- Stop the pump if the required delivery exceeds the pump's capacity (protection against cavitation caused by excessive demand), or automatically switch on the next pump in a multiple series.
- Protect the pump and motor from over-voltage, under-voltage, overload, and earth fault.
- Vary the pump speed: acceleration and deceleration time.
- Compensate for increased flow resistance at high flow rates.
- Conduct automatic tests at set intervals.
- Monitor the converter and motor operating hours.
- Display the energy consumption (kWh).
- Display all functions on an LCD in different languages (Italian, English, French, German, Spanish, Portuguese, Dutch, etc...).
- Send a signal to a remote control system which is proportional to the pressure and frequency.
- Communicate with external control system via Modbus (RS 485 interface) and Bacnet as standard.





## HYDROVAR HVL IDENTIFICATION CODE

H | V | L | 4 | . | 0 | 7 | 5 | - | A | 0 | 0 | 1 | 0



## DIMENSIONS AND WEIGHTS



TYPE	MODELS			DIMENSIONS (mm)				WEIGHT
	/2	/3	/4	L	B	H	X	
Kg								
SIZE A	HVL2.015 ÷ 2.022	HVL3.015 ÷ 3.022	HVL4.015 ÷ 4.040	216	205	170	243	5,6
SIZE B	HVL2.030 ÷ 2.040	HVL3.030 ÷ 3.055	HVL4.055 ÷ 4.110	276	265	185	305	10,5
SIZE C	-	HVL3.075 ÷ 3.110	HVL4.150 ÷ 4.220	366	337	200	407	15,6

HVL\_dim-en\_b\_td

## HYDROVAR HVL EMC COMPATIBILITY

### EMC requirements

HYDROVAR fulfills the product standard EN61800-3:2004 + A1:2012, which defines categories (C1 to C4) for device application areas.

Depending on the motor cable length, a classification of HYDROVAR by category (based on EN61800-3) is reported in the following tables:

HVL	HYDROVAR classification by categories based on EN61800-3
2.015 ÷ 2.040	C1 (*)
3.015 ÷ 3.110	C2 (*)
4.015 ÷ 4.220	C2 (*)

(\*) 0,75 motor cable length; contact Xylem for further information

En-Rev\_A

## CARD

### Premium Card HYDROVAR (optional)

For the e-SVH series, the Premium Card comes fitted as option on the standalone HYDROVAR.

This allows to control up to five fix speed pumps via an external panel.

The Premium Card will allow additional features listed below:

- 2 additional Analog Inputs
- 2 Analog Outputs
- 1 additional digital input
- 5 relays.



## OPTIONAL COMPONENTS

### Sensors

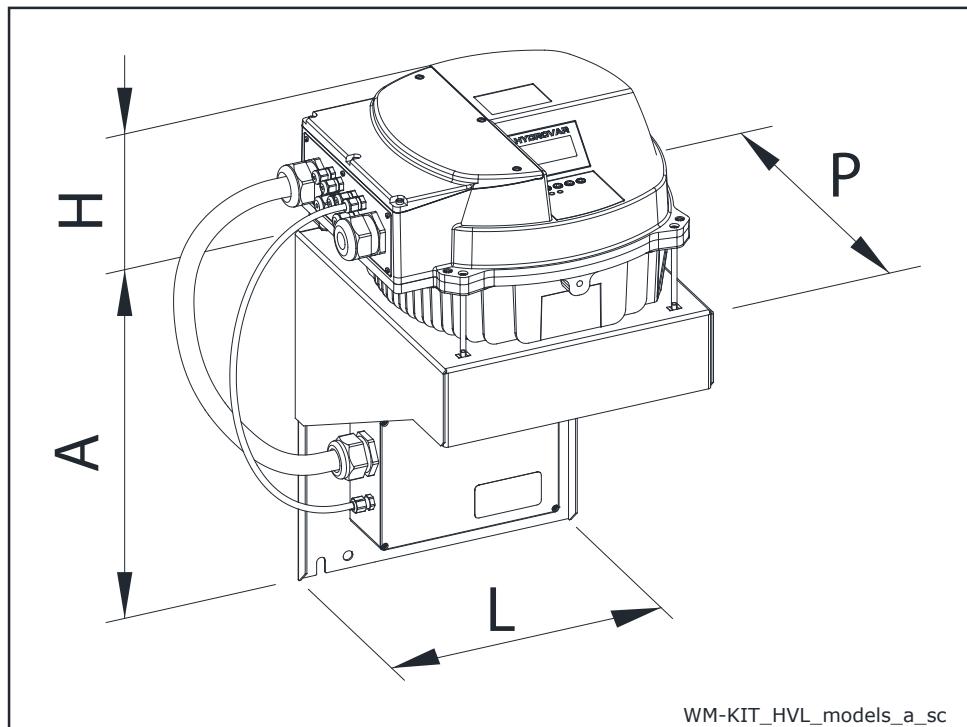
The following sensors are available for HYDROVAR:

- a. Pressure-transducer
- b. Differential pressure-transducer
- c. Temperature-sensor
- d. Flow indicator (orifice plate, inductive flow meter)
- e. Level-sensor.

## **HYDROVAR HVL (WALL MOUNTING KIT)**

### **DIMENSIONS AND WEIGHTS**

As an option a HYDROVAR wall mounting kit is also available. This is used where mounting on the pump unit is impossible or where you would like the controls in another location. These are available for the new generation HYDROVAR HVL 2.015-4.220 (22 kW). The speed of the cooling fan modulates with the HYDROVAR usage which optimizes energy consumption and also reduces noise.



WM KIT TIPE	kW	WM KIT POWER SUPPLY	HVL SIZE	DIMENSIONS (mm)				WEIGHT (kg)	
				A	H	L	P	HVL	WM KIT
WM KIT HVL 2.015	1,5	1~ 230V	A	220	170	202	232	5,6	2,6
WM KIT HVL 2.022	2,2			220	170	202	232	5,6	2,6
WM KIT HVL 2.030	3		B	240	175	258	290	10,5	8,2
WM KIT HVL 2.040	4			320	175	288	305	10,5	5,4
WM KIT HVL 3.015	1,5	3~ 230V	A	220	170	202	232	5,6	2,6
WM KIT HVL 3.022	2,2			220	170	202	232	5,6	2,6
WM KIT HVL 3.030	3		B	240	175	258	290	10,5	8,2
WM KIT HVL 3.040	4			240	175	258	290	10,5	8,2
WM KIT HVL 3.055	5,5		C	240	175	258	290	10,5	8,2
WM KIT HVL 3.075	7,5			400	200	325	365	15,6	11,6
WM KIT HVL 3.110	11			400	200	325	365	15,6	11,6
WM KIT HVL 4.015	1,5	3~ 400V	A	240	170	258	290	5,6	8,2
WM KIT HVL 4.022	2,2			240	170	258	290	5,6	8,2
WM KIT HVL 4.030	3			240	170	258	290	5,6	8,2
WM KIT HVL 4.040	4			240	170	258	290	5,6	8,2
WM KIT HVL 4.055	5,5		B	240	175	258	290	10,5	8,2
WM KIT HVL 4.075	7,5			240	175	258	290	10,5	8,2
WM KIT HVL 4.110	11			320	175	288	305	10,5	5,4
WM KIT HVL 4.150	15		C	400	200	325	365	15,6	11,6
WM KIT HVL 4.185	18,5			400	200	325	365	15,6	11,6
WM KIT HVL 4.220	22			400	200	325	365	15,6	11,6

WM-KIT\_HVL\_models-EN\_b\_td

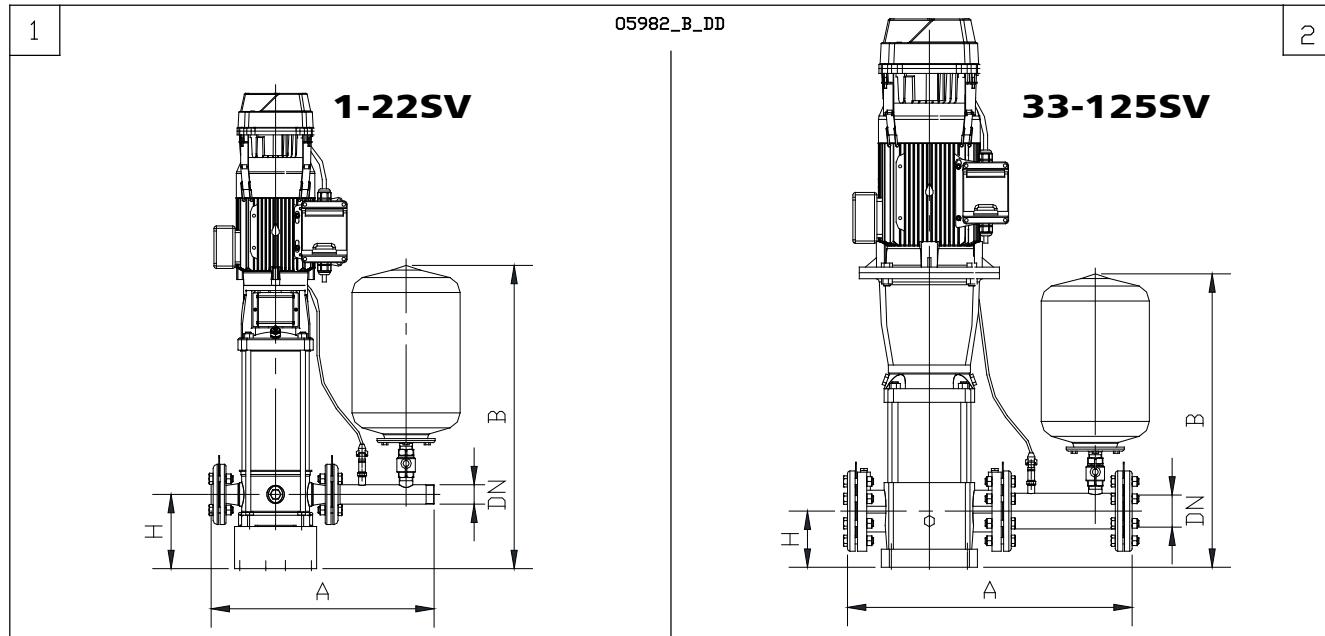
## G/SVH KIT

### TABLE OF SIZES AND COMPONENTS

e-SVH series electric pump with hydraulic kit and G/SVH accessories, to realise a single-pump booster set which is quick and easy to install. The hydraulic kit can be combined with the following e-SVH electric pumps:

- F versions (in-line ports, round flanges)
- R versions (overlapping ports, round flanges)
- N versions (in-line ports round flanges)
- G versions (in-line ports round flanges)

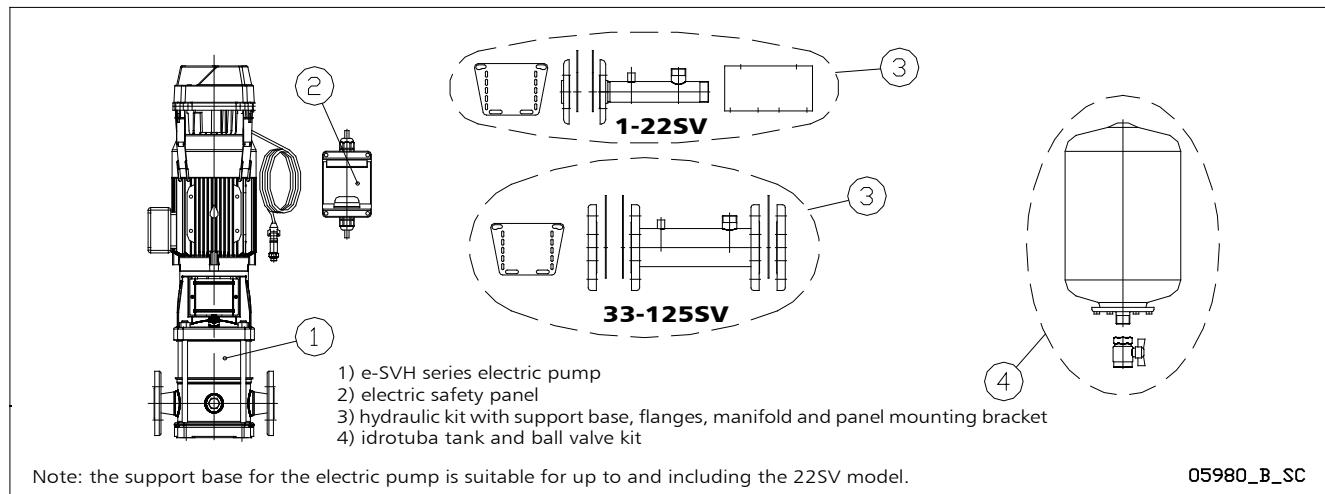
Assembly instructions inside the kit pack.



TYPE	PUMP	DRW. N°	DIMENSIONS (mm)				
			DN	PN	H	A	B
G/SVH DN25 PN25	1SV - 3SV	1	25	25	180	524	744
G/SVH DN32 PN25	5SV	1	32	25	180	521	748
G/SVH DN40 PN25	10SV	1	40	25	185	557	756
G/SVH DN50 PN25	15SV - 22SV	1	50	25	195	637	772
G/SVH DN65 PN16	33SV	2	65	16	105	662	690
G/SVH DN65 PN25	33SV	2	65	25	105	674	690
G/SVH DN80 PN16	46SV	2	80	16	140	711	732
G/SVH DN80 PN25	46SV	2	80	25	140	723	732
G/SVH DN100 PN16	66SV - 92SV	2	100	16	140	744	744
G/SVH DN100 PN25	66SV - 92SV	2	100	25	140	744	744
G/SVH DN125 PN16	125SV	2	125	16	160	777	777
G/SVH DN125 PN25	125SV	2	125	25	160	777	777

Same dimensions for STANDARD, A304 and A316 versions.

g-sv-2p50-en\_b\_td



Note: the support base for the electric pump is suitable for up to and including the 22SV model.

05980\_B\_SC

**e-SVH SERIES**
**LIST OF MODELS AT 50 Hz, 2 POLES**

PUMP TYPE	kW	VERSION		
		/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
1SVH15	0,75	A	A	A
1SVH22	1,1	A	A	A
1SVH30	1,5	A	A	A
1SVH37	2,2	A	A	A
3SVH08	0,75	A	A	A
3SVH12	1,1	A	A	A
3SVH16	1,5	A	A	A
3SVH21	2,2	A	A	A
3SVH25	2,2	A	A	A
3SVH29	3	B	B	A
3SVH33	3	B	B	A
5SVH05	0,75	A	A	A
5SVH08	1,1	A	A	A
5SVH11	1,5	A	A	A
5SVH14	2,2	A	A	A
5SVH16	2,2	A	A	A
5SVH21	3	B	B	A
5SVH28	4	B	B	A
5SVH33	5,5	-	B	B
10SVH04	1,5	A	A	A
10SVH06	2,2	A	A	A
10SVH08	3	B	B	A
10SVH11	4	B	B	A
10SVH15	5,5	-	B	B
10SVH20	7,5	-	C	B
10SVH21	11	-	C	B
15SVH02	2,2	A	A	A
15SVH03	3	B	B	A
15SVH05	4	B	B	A
15SVH07	5,5	-	B	B
15SVH09	7,5	-	C	B
15SVH13	11	-	C	B
15SVH17	15	-	-	C
22SVH01	1,1	A	A	A
22SVH03	3	B	B	A
22SVH04	4	B	B	A
22SVH05	5,5	-	B	B
22SVH07	7,5	-	C	B
22SVH10	11	-	C	B
22SVH14	15	-	-	C
22SVH17	18,5	-	-	C

PUMP TYPE	kW	VERSION		
		/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
33SVH1	3	B	B	A
33SVH2	5,5	-	B	B
33SVH3	7,5	-	C	B
33SVH4	11	-	C	B
33SVH5	15	-	-	C
33SVH6	15	-	-	C
33SVH7	18,5	-	-	C
46SVH1	4	B	B	A
46SVH2	7,5	-	C	B
46SVH3	11	-	C	B
46SVH4	15	-	-	C
46SVH6	22	-	-	C
66SVH1	5,5	-	B	B
66SVH2	11	-	C	B
66SVH3	18,5	-	-	C
66SVH4	22	-	-	C
92SVH1	7,5	-	C	B
92SVH2	15	-	-	C
92SVH3	22	-	-	C
125SVH1	7,5	-	C	B
125SVH2	15	-	-	C
125SVH3	22	-	-	C

**LEGEND**

SVH-HVL\_models-2p50-en\_c\_sc

**A, B, C** : are the mechanical size of HYDROVAR,  
refer to "HYDROVAR DIMENSIONS AND  
WEIGHTS" table in previous pages.

**e-SVH SERIES**
**ELECTRICAL DATA TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	kW	MEI ≥ (1)	INPUT CURRENT (2) (A)		
			/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
1SVH15	0,75	0,7	4,0	2,4	1,4
1SVH22	1,1	0,7	5,8	3,5	2,1
1SVH30	1,5	0,7	8,0	4,8	2,8
1SVH37	2,2	0,7	11,7	7,1	4,1
3SVH08	0,75	0,7	4,0	2,4	1,4
3SVH12	1,1	0,7	5,8	3,5	2,1
3SVH16	1,5	0,7	8,0	4,8	2,8
3SVH21	2,2	0,7	11,7	7,1	4,1
3SVH25	2,2	0,7	11,7	7,1	4,1
3SVH29	3	0,7	15,9	9,6	5,6
3SVH33	3	0,7	15,9	9,6	5,6
5SVH05	0,75	0,7	4,0	2,4	1,4
5SVH08	1,1	0,7	5,8	3,5	2,1
5SVH11	1,5	0,7	8,0	4,8	2,8
5SVH14	2,2	0,7	11,7	7,1	4,1
5SVH16	2,2	0,7	11,7	7,1	4,1
5SVH21	3	0,7	15,9	9,6	5,6
5SVH28	4	0,7	21,2	12,6	7,3
5SVH33	5,5	0,7	-	17,3	10,1
10SVH04	1,5	0,7	8,0	4,8	2,8
10SVH06	2,2	0,7	11,7	7,1	4,1
10SVH08	3	0,7	15,9	9,6	5,6
10SVH11	4	0,7	21,2	12,6	7,3
10SVH15	5,5	0,7	-	17,3	10,1
10SVH20	7,5	0,7	-	23,1	13,7
10SVH21	11	0,7	-	34,0	19,4
15SVH02	2,2	0,7	11,7	7,1	4,1
15SVH03	3	0,7	15,9	9,6	5,6
15SVH05	4	0,7	21,2	12,6	7,3
15SVH07	5,5	0,7	-	17,3	10,1
15SVH09	7,5	0,7	-	23,1	13,7
15SVH13	11	0,7	-	34,0	19,4
15SVH17	15	0,7	-	-	26,1
22SVH01	1,1	0,7	5,8	3,5	2,1
22SVH03	3	0,7	15,9	9,6	5,6
22SVH04	4	0,7	21,2	12,6	7,3
22SVH05	5,5	0,7	-	17,3	10,1
22SVH07	7,5	0,7	-	23,1	13,7
22SVH10	11	0,7	-	34,0	19,4
22SVH14	15	0,7	-	-	26,1
22SVH17	18,5	0,7	-	-	32,1

1, 3, 5, 10, 15, 22SV Value referred to versions F, T, R, N, V, C, K. P version excluded.

33, 46SV Value referred to the G and N versions with PN ≤ 25 bar (2500 kPa). G and N versions with PN > 25 bar (2500 kPa) and P version excluded.

66, 92, 125SV Value referred to the G, N versions. P version excluded.

PUMP TYPE	kW	MEI ≥ (1)	INPUT CURRENT (2) (A)		
			/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
33SVH1	3	0,7	15,9	9,6	5,6
33SVH2	5,5	0,7	-	17,3	10,1
33SVH3	7,5	0,7	-	23,1	13,7
33SVH4	11	0,7	-	34,0	19,4
33SVH5	15	0,7	-	-	26,1
33SVH6	15	0,7	-	-	26,1
33SVH7	18,5	0,7	-	-	32,1
46SVH1	4	0,7	21,2	12,6	7,3
46SVH2	7,5	0,7	-	23,1	13,7
46SVH3	11	0,7	-	34,0	19,4
46SVH4	15	0,7	-	-	26,1
46SVH6	22	0,7	-	-	38,1
66SVH1	5,5	0,7	-	17,3	10,1
66SVH2	11	0,7	-	34,0	19,4
66SVH3	18,5	0,7	-	-	32,1
66SVH4	22	0,7	-	-	38,1
92SVH1	7,5	0,6	-	23,1	13,7
92SVH2	15	0,6	-	-	26,1
92SVH3	22	0,6	-	-	38,1
125SVH1	7,5	-	-	23,1	13,7
125SVH2	15	-	-	-	26,1
125SVH3	22	-	-	-	38,1

SVH-HVL-2p50-en\_b\_te

<b>Q = DELIVERY</b>	<b>Pp = POWER</b>
<b>H = HEAD</b>	<b>np = EFFICIENCY</b>
(1) Values referred to operation at 2900 min⁻¹ (50 Hz).	
(2) Nominal values referred to operation at 2900 min⁻¹ (50 Hz).	

**1, 3, 5, 10, 15, 22SVH SERIES**
**HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	RATED POWER		Q = DELIVERY													
			V/min 0	12	20	25	30	35	40	45	50	60	73	100	120	141
	kW	HP	m³/h 0	0,7	1,2	1,5	1,8	2,1	2,4	2,7	3,0	3,6	4,4	6,0	7,2	8,5
H = TOTAL HEAD IN METRES OF COLUMN OF WATER																
1SVH15	0,75	1	90,9	90,5	85,6	79,3	70,1	58,1	43,1							
1SVH22	1,1	1,5	134,6	134,1	127,4	118,1	104,4	86,1	63,5							
1SVH30	1,5	2	181,7	181,3	172,6	160,1	141,2	115,7	83,9							
1SVH37	2,2	3	225,9	224,9	216,1	201,9	179,3	148,1	108,7							
3SVH08	0,75	1	60,0		59,1	58,2	57,0	55,4	53,4	51,0	48,1	40,7	27,5			
3SVH12	1,1	1,5	89,6		87,8	86,4	84,5	82,1	79,1	75,5	71,1	59,9	40,1			
3SVH16	1,5	2	119,9		117,8	116,1	113,6	110,5	106,5	101,6	95,8	80,9	54,2			
3SVH21	2,2	3	159,3		156,9	154,6	151,4	147,3	142,1	135,7	128,0	108,5	73,6			
3SVH25	2,2	3	188,5		186,1	183,3	179,3	174,1	167,6	159,7	150,3	126,6	84,8			
3SVH29	3	4	219,3		216,0	212,8	208,3	202,6	195,3	186,4	175,7	148,6	100,2			
3SVH33	3	4	248,5		245,3	241,5	236,2	229,3	220,7	210,2	197,7	166,3	111,2			
5SVH05	0,75	1	38,0						36,4	36,0	35,5	34,5	32,9	28,2	23,5	17,1
5SVH08	1,1	1,5	60,1						57,6	57,0	56,2	54,6	51,8	44,1	36,2	25,8
5SVH11	1,5	2	82,8						79,3	78,4	77,5	75,2	71,4	60,7	49,9	35,6
5SVH14	2,2	3	105,7						102,0	100,9	99,6	96,6	91,7	77,8	64,0	46,3
5SVH16	2,2	3	120,5						115,9	114,6	113,1	109,6	103,9	87,8	72,1	51,8
5SVH21	3	4	157,9						152,0	150,3	148,3	143,6	136,1	114,9	94,2	67,6
5SVH28	4	5,5	211,5						204,2	201,9	199,4	193,3	183,4	155,5	128,0	92,7
5SVH33	5,5	7,5	249,2						241,0	238,4	235,5	228,4	216,9	184,2	151,9	110,3

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).

1-5svh-2p50-en\_c\_th

PUMP TYPE	RATED POWER		Q = DELIVERY													
			V/min 0	83,34	100	133	170	183,34	233	270	330	350	400	430	460	483,33
	kW	HP	m³/h 0	5,0	6,0	8,0	10,2	11,0	14,0	16,2	19,8	21,0	24,0	25,8	27,6	29,0
H = TOTAL HEAD IN METRES OF COLUMN OF WATER																
10SVH04	1,5	2	47,7	44,2	43,0	39,9	34,8	32,6	21,7							
10SVH06	2,2	3	71,8	66,8	65,0	60,4	53,1	49,8	33,9							
10SVH08	3	4	95,3	88,9	86,5	80,1	70,2	65,7	44,5							
10SVH11	4	5,5	129,6	121,3	118,1	109,6	96,3	90,3	62,1							
10SVH15	5,5	7,5	179,5	167,9	163,4	151,6	132,8	124,3	83,9							
10SVH20	7,5	10	240,6	226,0	220,3	205,0	180,2	168,9	114,3							
10SVH21	11	15	253,6	241,0	235,5	220,2	195,0	183,5	127,5							
15SVH02	2,2	3	28,7			26,7	25,9	25,5	23,9	22,4	18,9	17,4	13,1			
15SVH03	3	4	43,3			40,4	39,1	38,6	36,2	33,8	28,7	26,5	20,1			
15SVH05	4	5,5	72,7			67,8	65,8	65,0	61,0	57,1	48,7	45,2	34,9			
15SVH07	5,5	7,5	101,9			94,5	91,9	90,8	85,7	80,6	69,4	64,7	50,5			
15SVH09	7,5	10	131,9			124,4	121,0	119,6	112,8	106,1	91,5	85,5	67,4			
15SVH13	11	15	191,3			179,2	174,5	172,5	163,1	153,7	133,1	124,5	98,6			
15SVH17	15	20	251,6			237,3	231,4	228,9	216,9	205,0	178,4	167,3	133,6			
22SVH01	1,1	1,5	14,7					13,5	12,7	12,0	10,4	9,7	7,7	6,3	4,7	3,4
22SVH03	3	4	45,4					42,2	40,4	38,5	34,5	32,8	27,8	24,2	20,2	16,6
22SVH04	4	5,5	60,9					56,8	54,4	51,9	46,6	44,4	37,9	33,1	27,7	23,0
22SVH05	5,5	7,5	76,0					70,9	67,9	64,9	58,3	55,6	47,4	41,4	34,7	28,8
22SVH07	7,5	10	108,5					103,1	99,4	95,7	87,2	83,7	73,1	65,3	56,5	48,8
22SVH10	11	15	155,4					148,2	143,1	137,8	125,9	120,9	105,8	94,8	82,3	71,3
22SVH14	15	20	216,6					207,7	200,9	193,7	177,4	170,4	149,4	133,9	116,1	100,6
22SVH17	18,5	25	263,5					252,8	244,7	236,0	216,2	207,8	182,3	163,6	142,0	123,2

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).

10-22svh-2p50-en\_c\_th

**33, 46, 66, 92, 125SVH SERIES**
**HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES**

PUMP TYPE	RATED POWER		Q = DELIVERY										
			l/min 0	250	300	367	417	500	583	667	750	900	1000
	kW	HP	m³/h 0	15	18	22	25	30	35	40	45	54	60
H = TOTAL HEAD METRES COLUMN OF WATER													
33SVH1	3	4	23,8	21,7	21,2	20	20	17,8	15,5	12,7			
33SVH2	5,5	7,5	47,8	45	44,1	43	41	39	35	29,9			
33SVH3	7,5	10	71,5	67,4	66,0	64	62	58	52,0	44,6			
33SVH4	11	15	95,9	91,1	90	87	85	80	73	63,1			
33SVH5	15	20	120,4	114,9	113	110	107	101	92	80,5			
33SVH6	15	20	145,6	139	137	133	129	121	110	96,1			
33SVH7	18,5	25	170,3	162,8	160	156	152	142	130	113,3			
46SVH1	4	5,5	27,2			24	23,5	22,5	21,4	19,9	18,2	14,3	10,8
46SVH2	7,5	10	52,6			48,5	47,7	46,1	44,2	41,7	38,7	31,4	25,1
46SVH3	11	15	80,8			74,3	73	71	68	65	60	50	40,7
46SVH4	15	20	107,3			99,8	98	96	92	87	82	68	55,9
46SVH6	22	30	161			149,9	148	144	139	132	124	104	86

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).

33-46svh-2p50-en\_b\_th

PUMP TYPE	RATED POWER		Q = DELIVERY												
			l/min 0	500	600	700	750	900	1000	1200	1300	1417	1600	1800	2000
	kW	HP	m³/h 0	30	36	42	45	54	60	72	78	85	96	108	120
H = TOTAL HEAD METRES COLUMN OF WATER															
66SVH1	5,5	7,5	29,2	25,8	24,8	23,8	23,3	21,8	20,7	17,9	16,1	13,5			
66SVH2	11	15	60,4	55,7	54,4	52,8	52	49,3	47,1	42	38,9	34,7			
66SVH3	18,5	25	91,4	84,7	83	81	79	75	72	64	60	53,5			
66SVH4	22	30	121,6	112,5	110	107	105	100	96	86	79	70,8			
92SVH1	7,5	10	33,5				28,7	27,2	26,2	24,3	23,3	22,2	20,2	17,6	14,3
92SVH2	15	20	67,8				58,2	55	53	49,5	47,6	45,2	41,4	36,3	29,6
92SVH3	22	30	102,2				88,2	84	81	76	73	69	63	56	46,3

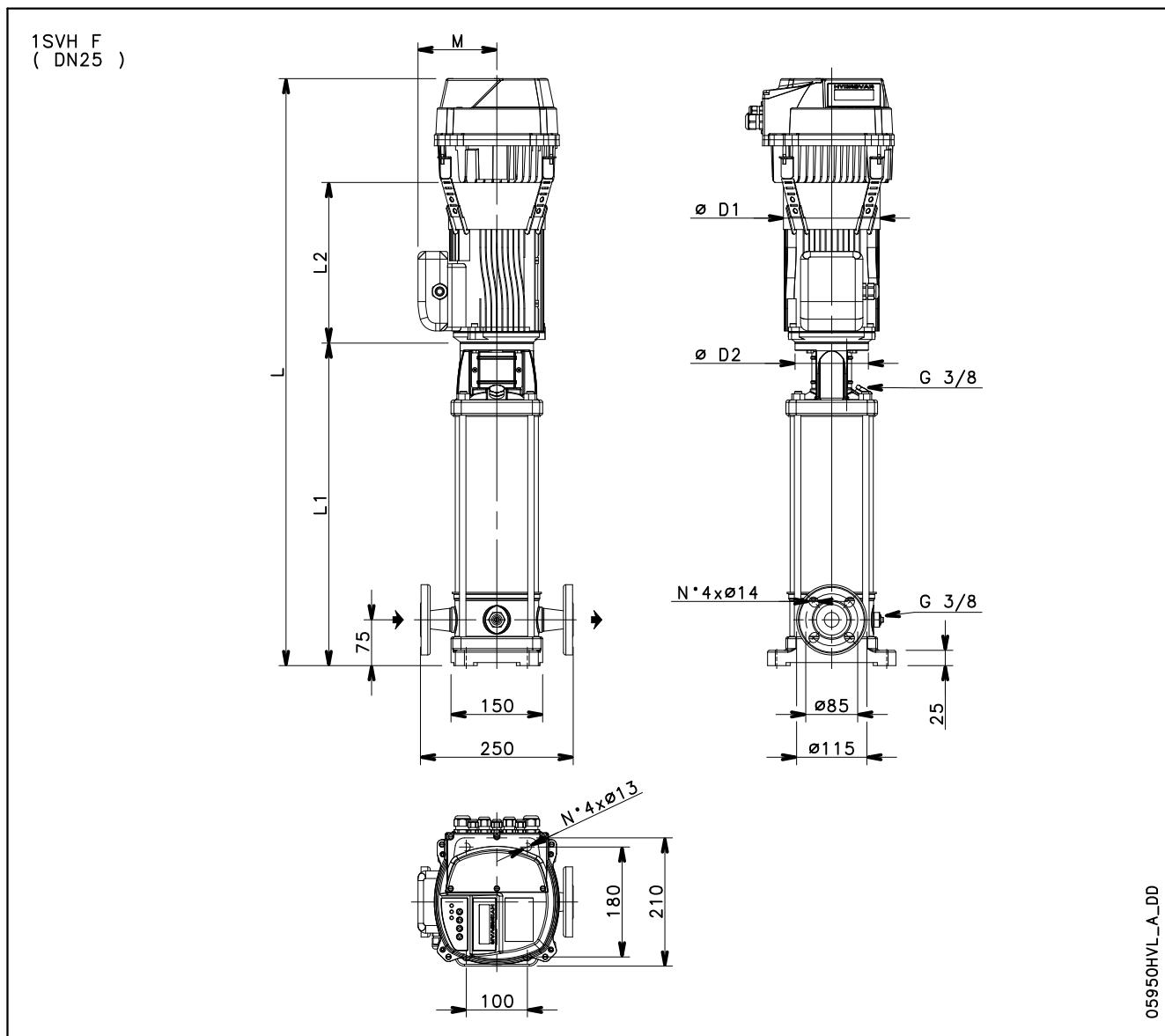
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).

66-92svh-2p50-en\_b\_th

PUMP TYPE	RATED POWER		Q = DELIVERY														
			l/min 0	500	600	750	900	1000	1200	1416	1700	1900	2000	2150	2300	2666	
	kW	HP	m³/h 0	30	36	45	54	60	72	84,96	102	114	120	129	138	160	
H = TOTAL HEAD METRES COLUMN OF WATER																	
125SVH1	7,5	10	27,6						20,8	19,8	18,6	16,8	15,3	14,4	12,9	11,3	6,2
125SVH2	15	20	53,8						44,4	43	40	37,1	34,4	32,9	30,4	27,7	19,6
125SVH3	22	30	80,7						66,5	64	61	56	52	49	46	42	29,4

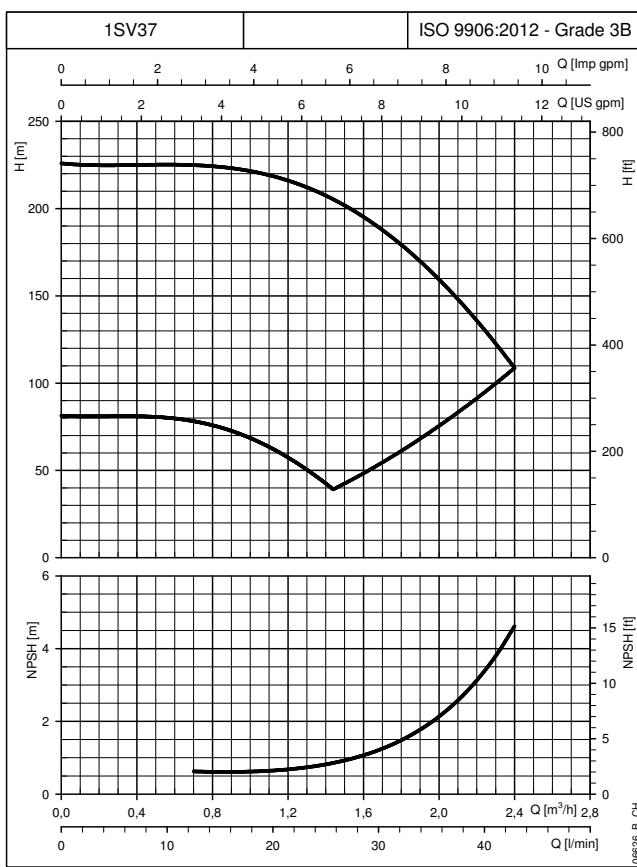
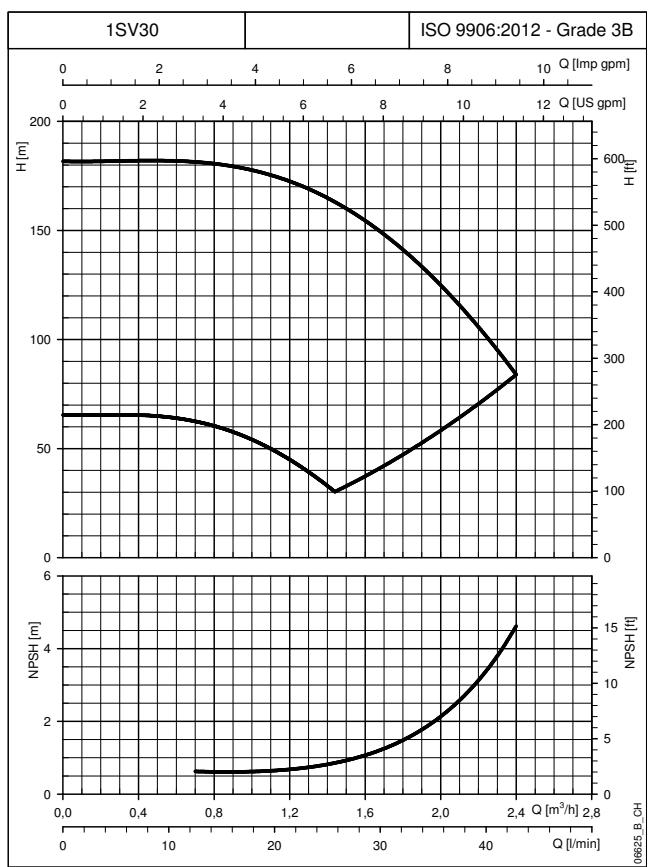
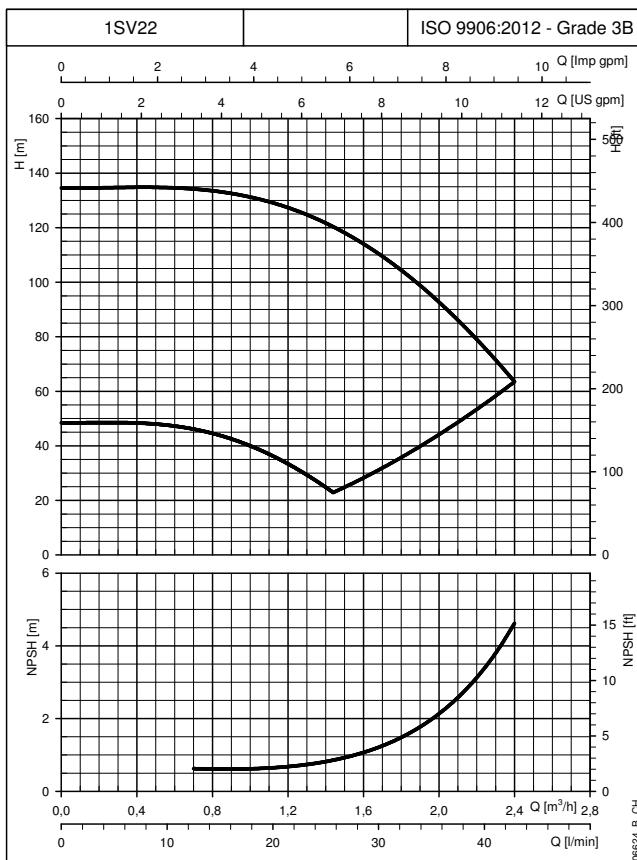
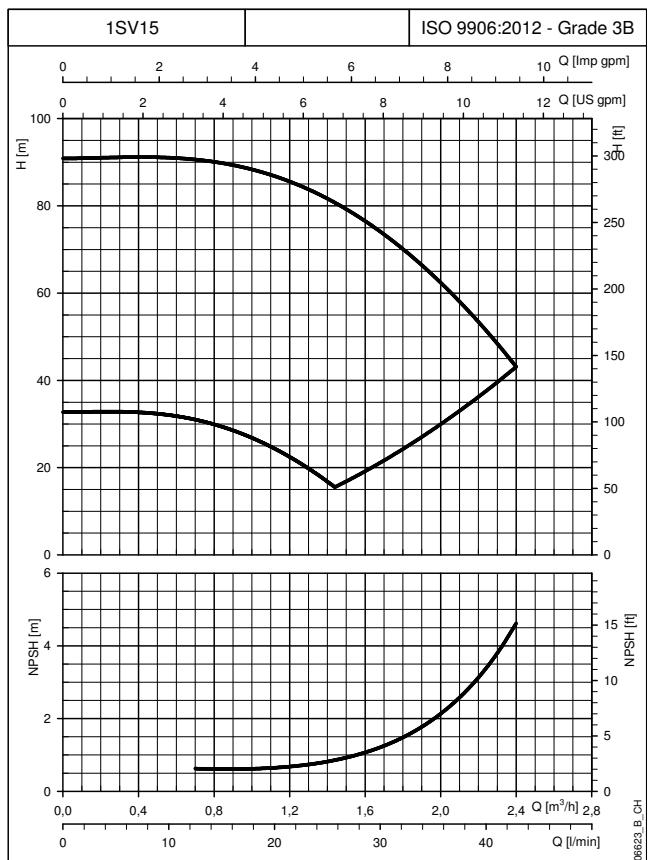
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A).

125svh-2p50-en\_a\_th

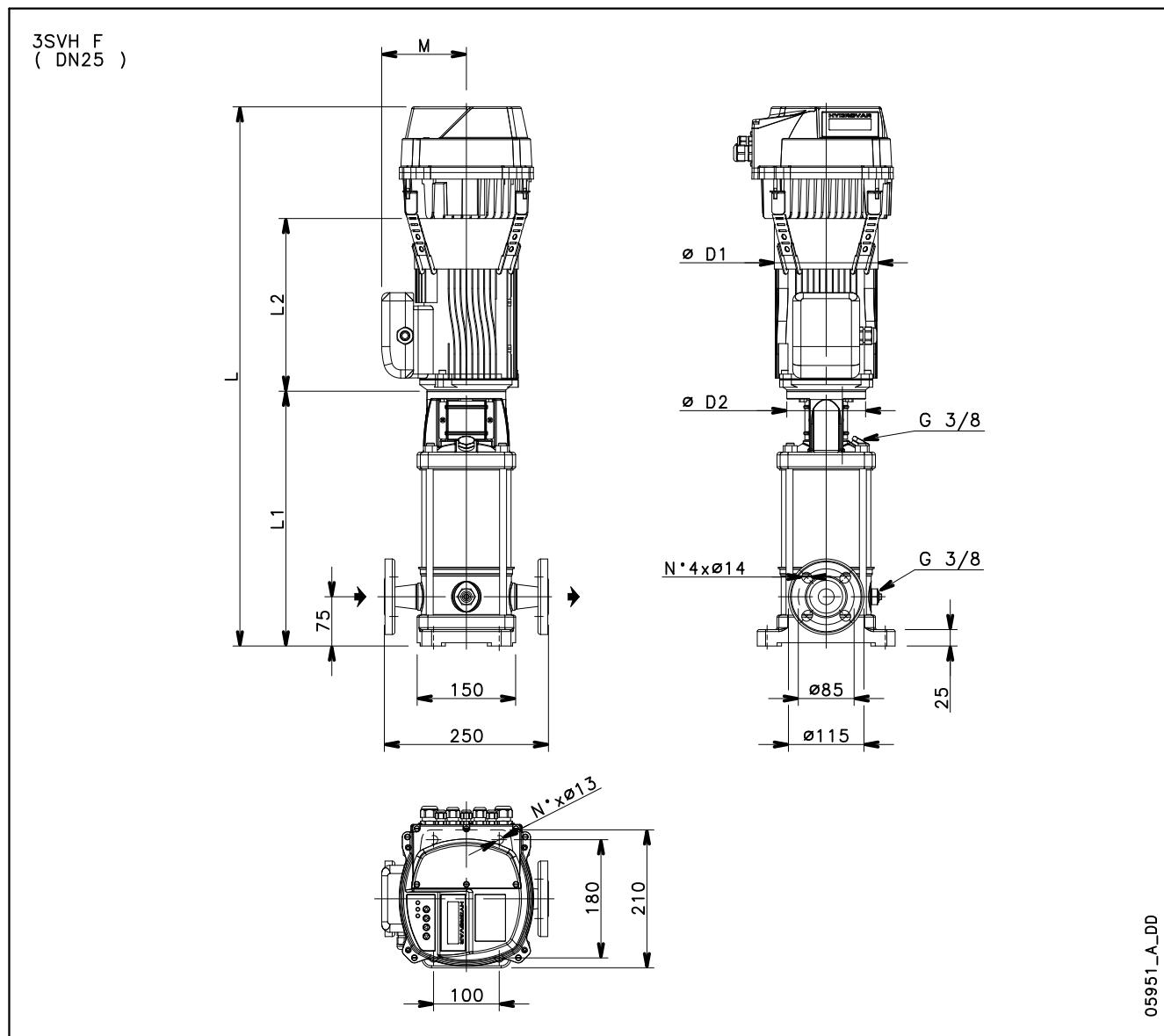
**1SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2	/3	/4	/2	/3	/4
1SVH15	0,75	80	528	263	129	155	120	961	961	961	29,1	29,1	29,1
1SVH22	1,1	80	668	263	129	155	120	1101	1101	1101	34,2	34,2	34,2
1SVH30	1,5	90	838	263	129	155	140	1271	1271	1271	39,6	39,6	39,6
1SVH37	2,2	90	978	298	134	174	140	1446	1446	1446	45,4	45,4	45,4

1svh-HVL-2p50-en\_a\_td

**1SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ .

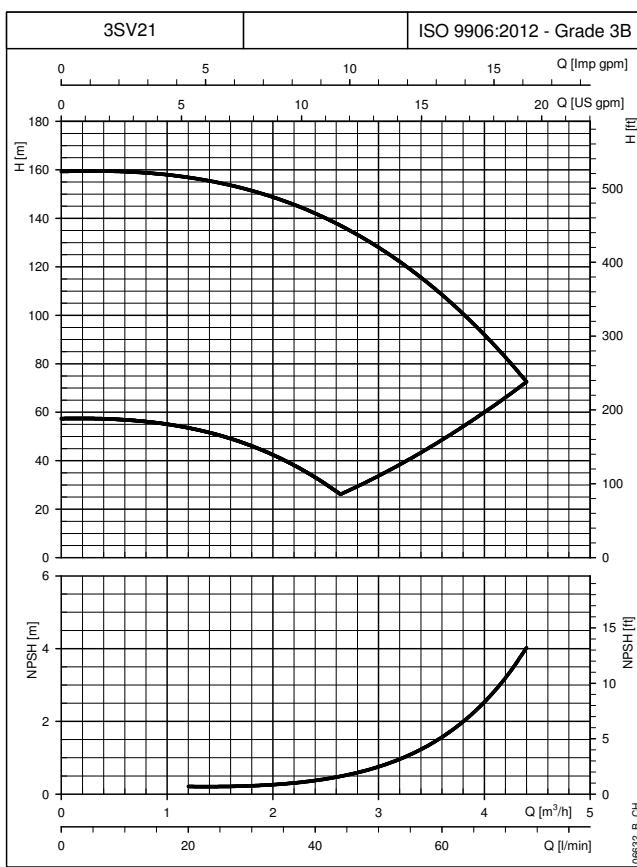
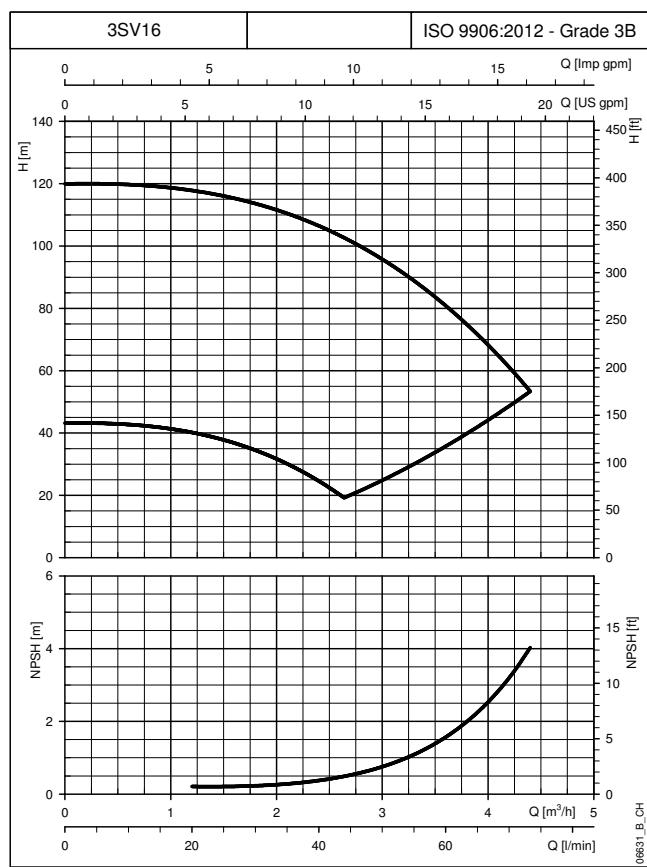
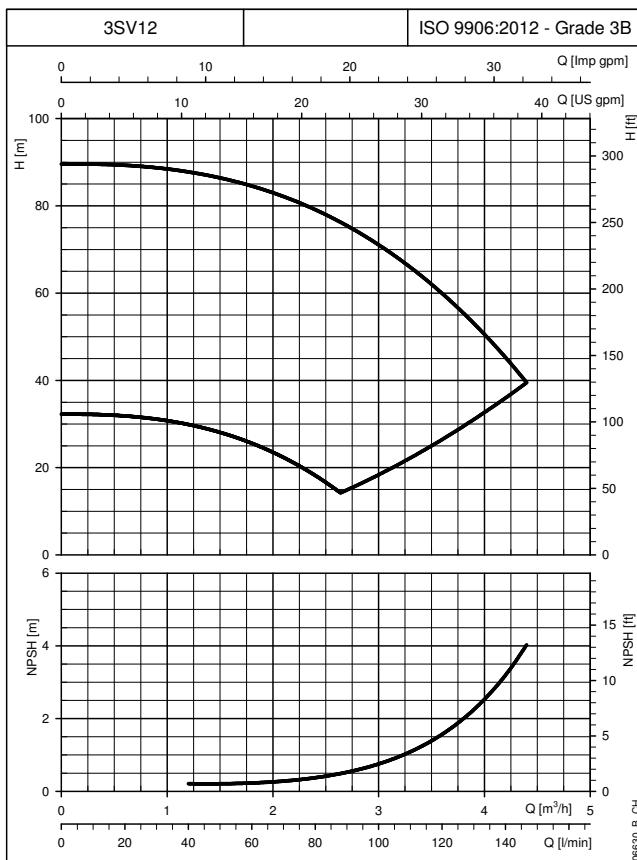
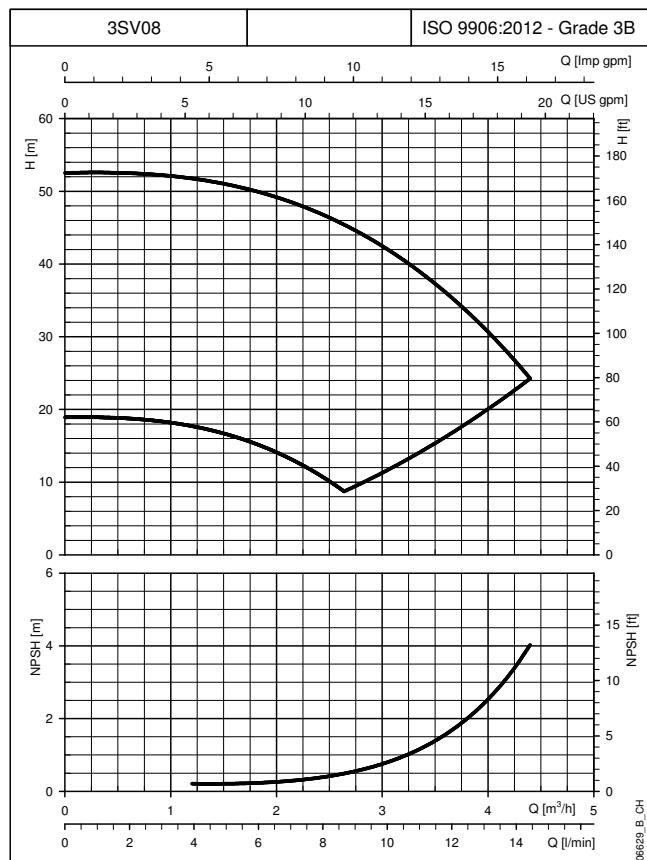
**3SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2	/3	/4	/2	/3	/4
3SVH08	0,75	80	388	263	129	155	120	821	821	821	26,5	26,5	26,5
3SVH12	1,1	80	468	263	129	155	120	901	901	901	30,3	30,3	30,3
3SVH16	1,5	90	558	263	129	155	140	991	991	991	33,8	33,8	33,8
3SVH21	2,2	90	658	298	134	174	140	1126	1126	1126	40,8	40,8	40,8
3SVH25	2,2	90	738	298	134	174	140	1206	1206	1206	42,4	42,4	42,4
3SVH29	3	100	828	298	134	174	160	1311	1311	1296	53,9	53,9	49,0
3SVH33	3	100	908	298	134	174	160	1391	1391	1376	55,5	55,5	50,6

3svh-HVL-2p50-en\_a\_td

## 3SVH SERIES

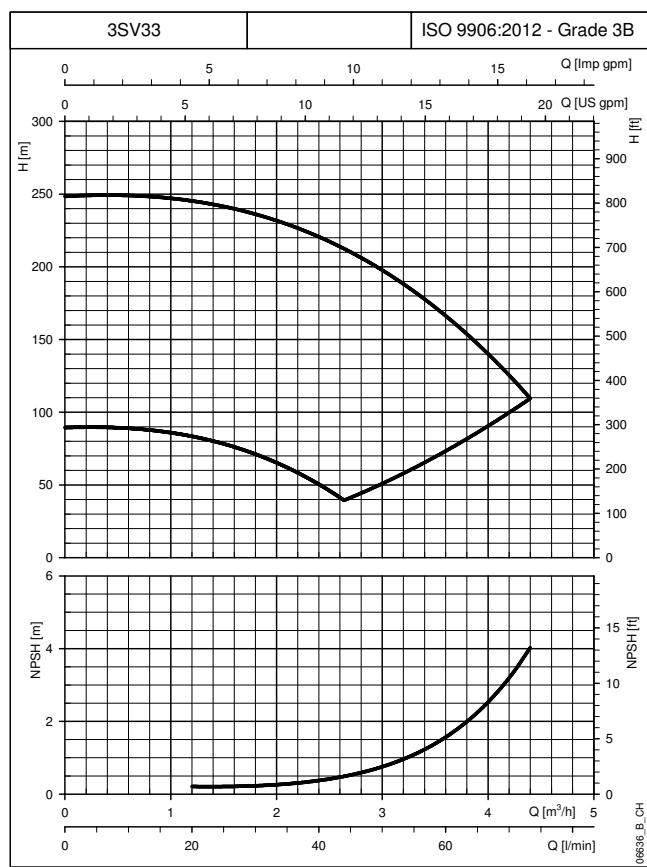
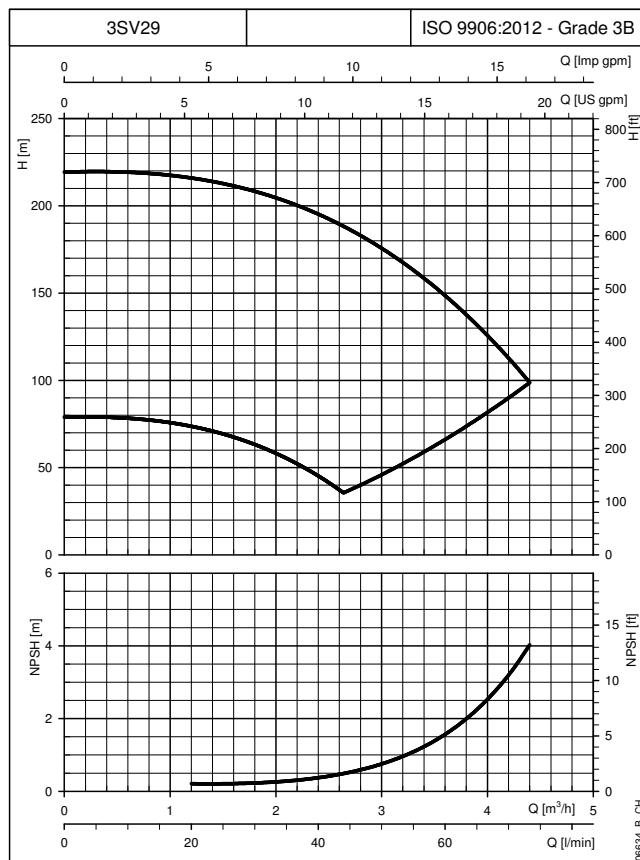
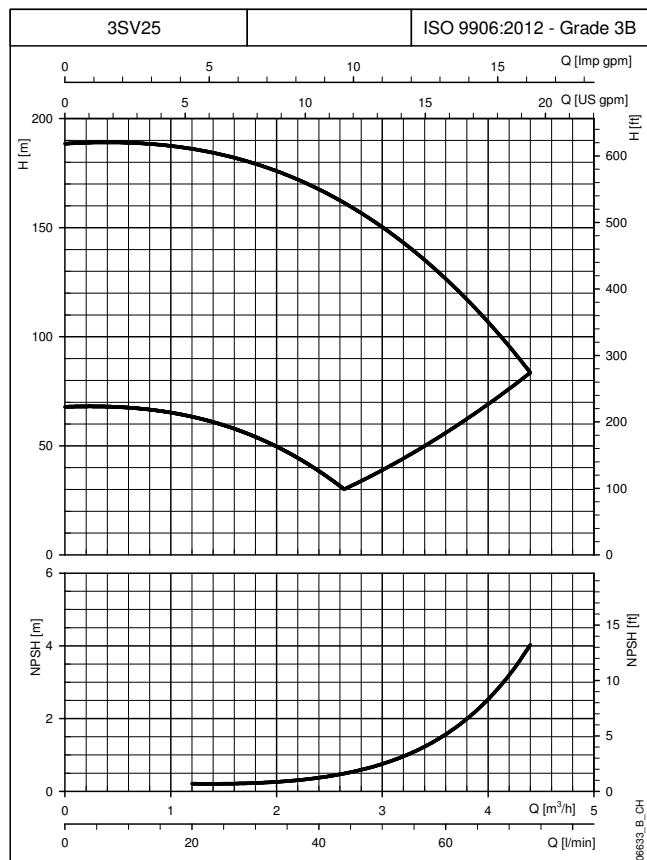
### OPERATING CHARACTERISTICS AT 30..50 Hz



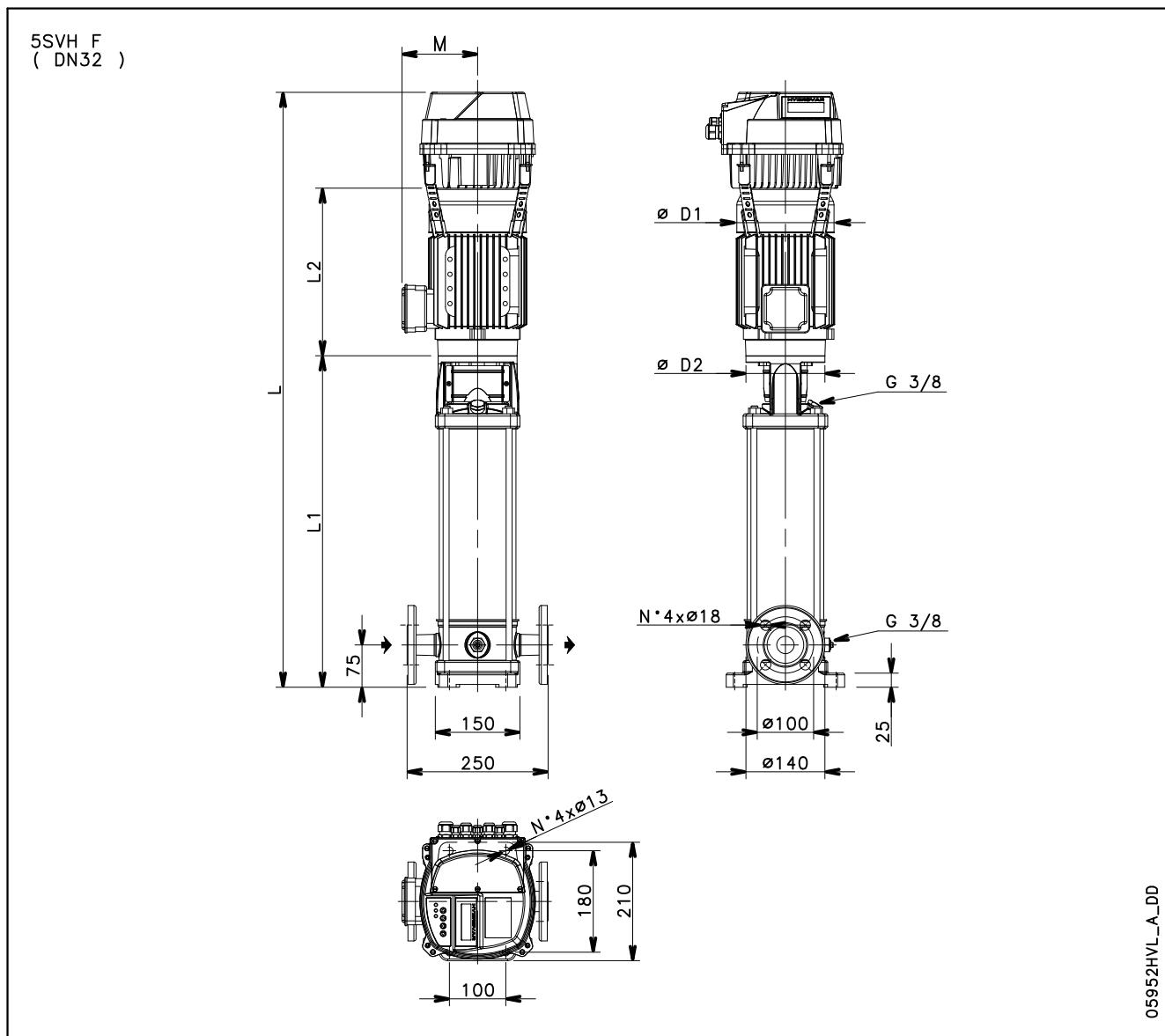
The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

## 3SVH SERIES

### OPERATING CHARACTERISTICS AT 30..50 Hz

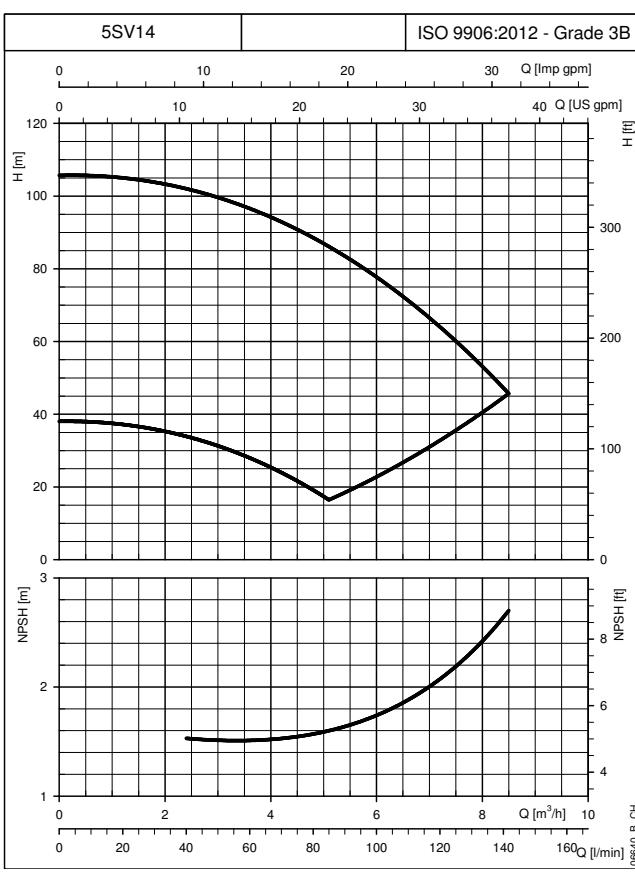
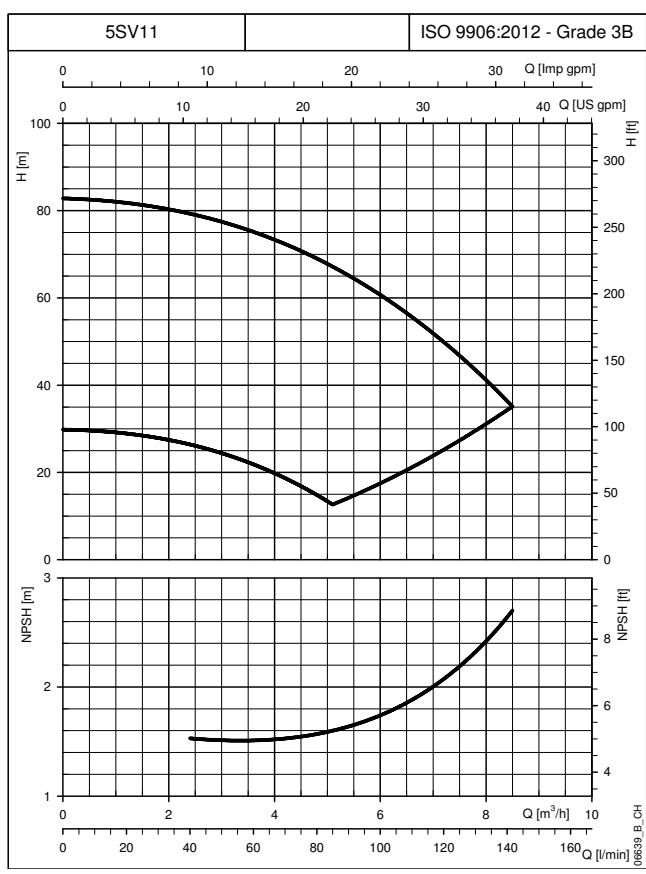
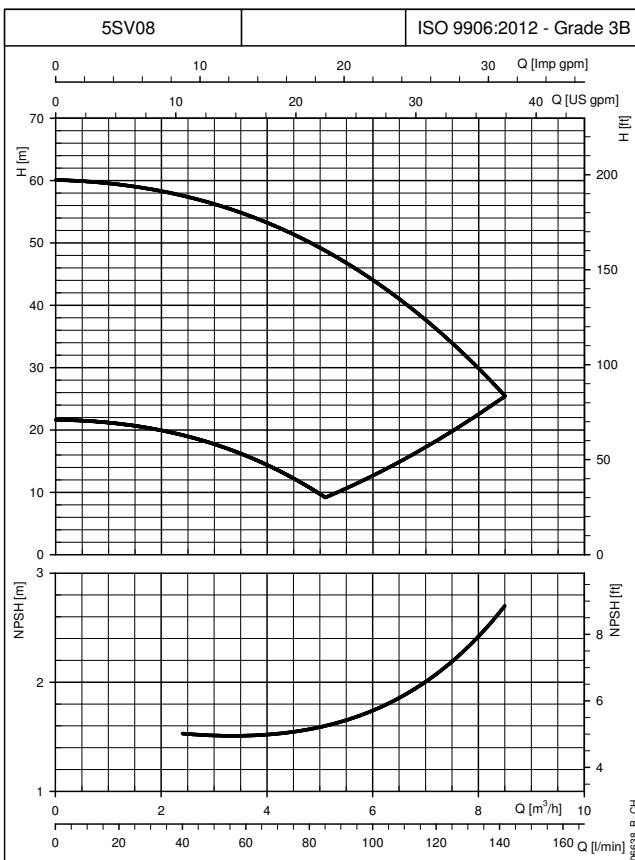
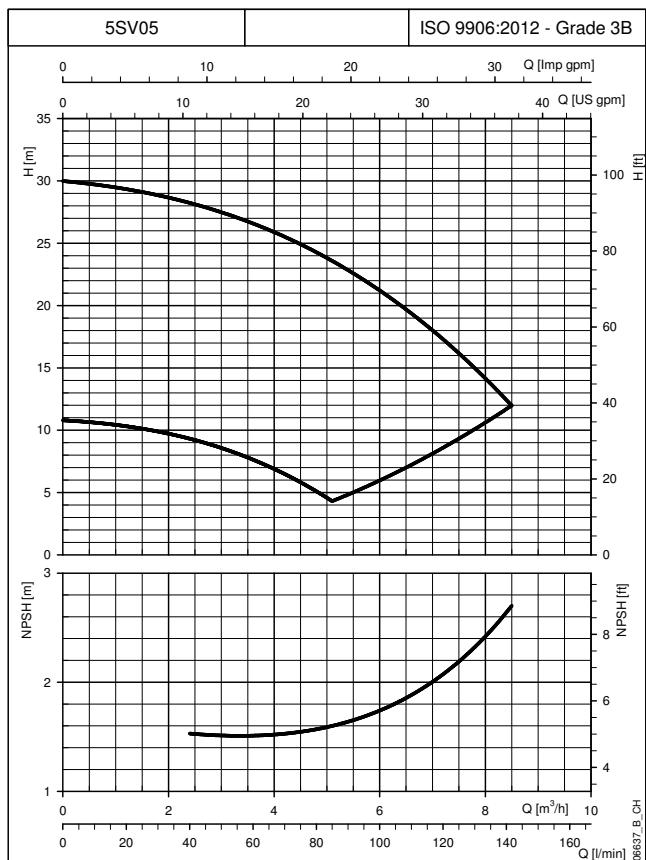


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ .

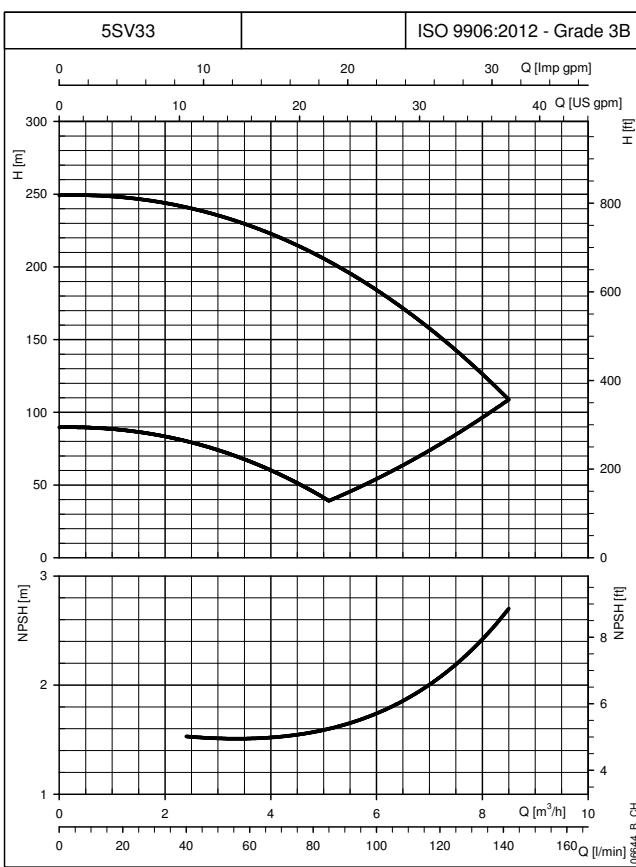
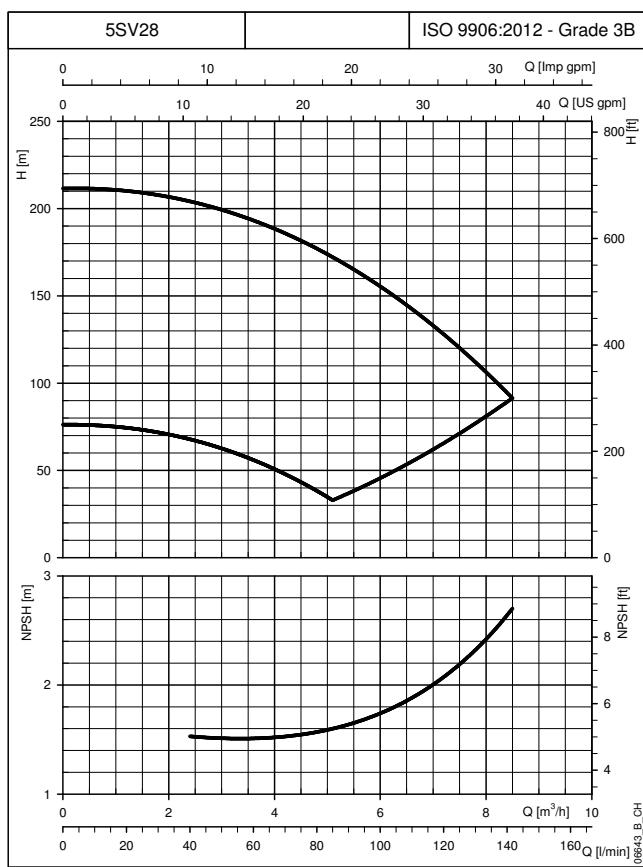
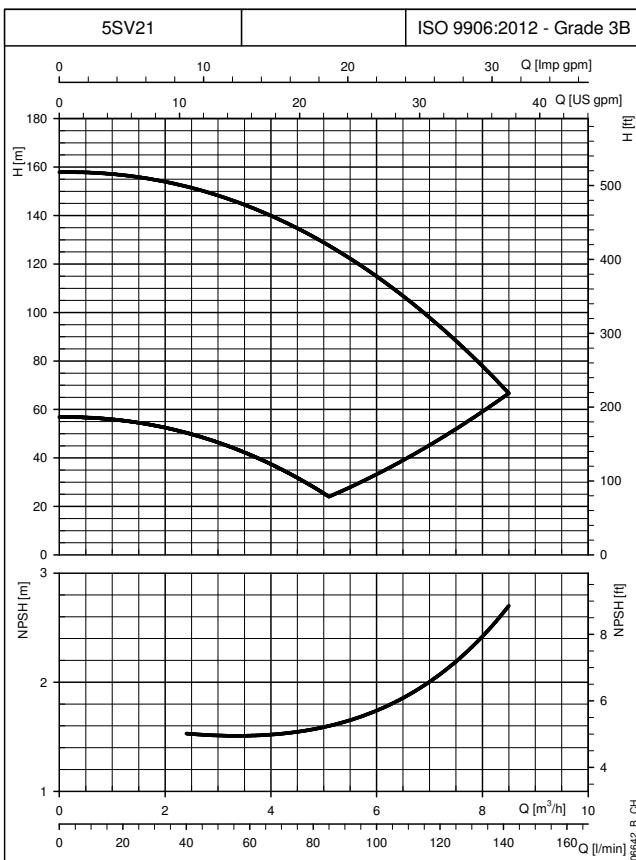
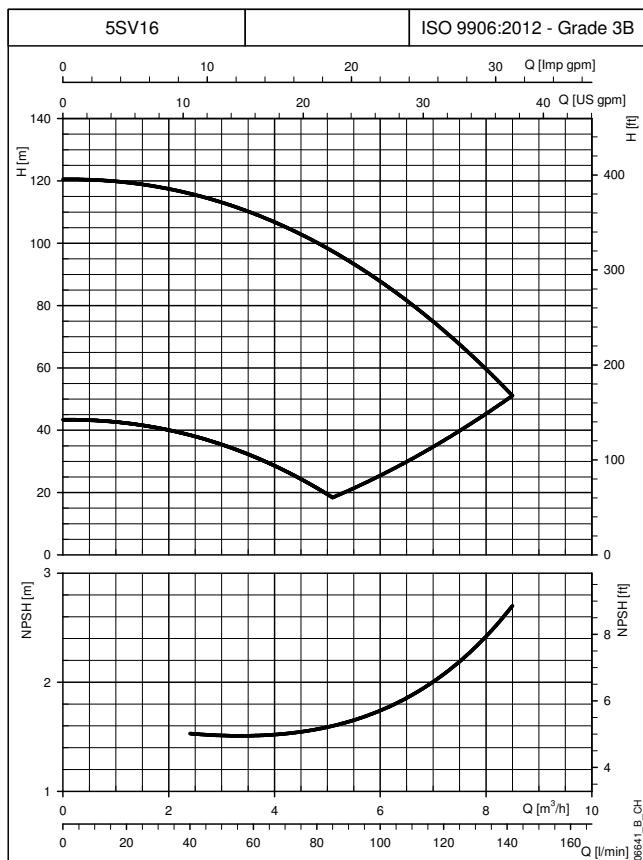
**5SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2	/3	/4	/2	/3	/4
5SVH05	0,75	80	353	263	129	155	120	786	786	786	25,7	25,7	25,7
5SVH08	1,1	80	428	263	129	155	120	861	861	861	29,1	29,1	29,1
5SVH11	1,5	90	513	263	129	155	140	946	946	946	32,6	32,6	32,6
5SVH14	2,2	90	588	298	134	174	140	1056	1056	1056	38,8	38,8	38,8
5SVH16	2,2	90	638	298	134	174	140	1106	1106	1106	39,8	39,8	39,8
5SVH21	3	100	773	298	134	174	160	1256	1256	1241	50,9	50,9	46,0
5SVH28	4	112	948	319	154	197	160	1452	1452	1437	59,9	59,9	55,0
5SVH33	5,5	132	1093	375	168	214	300	-	1653	1653	-	77,6	77,6

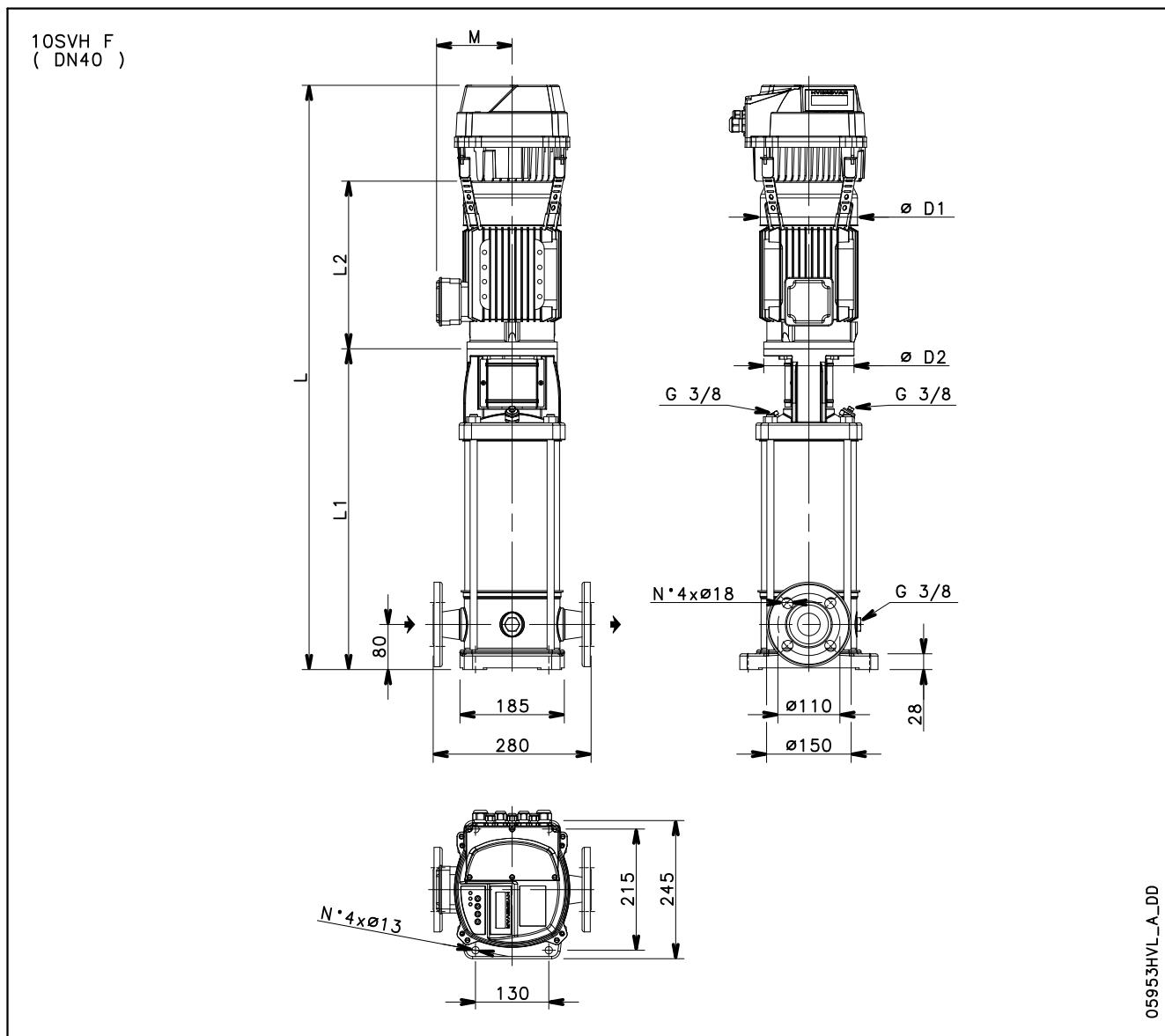
3svh-HVL-2p50-en\_a\_td

**5SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ .

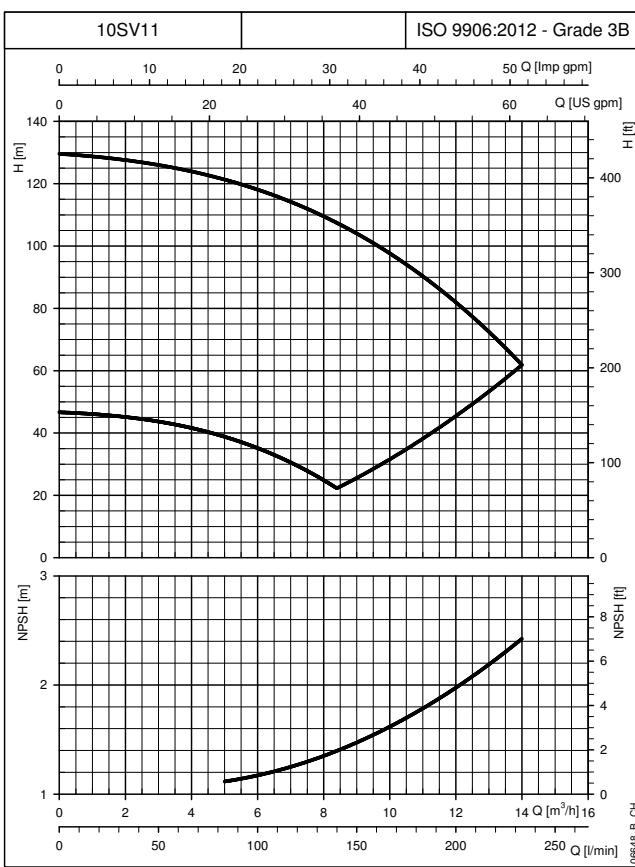
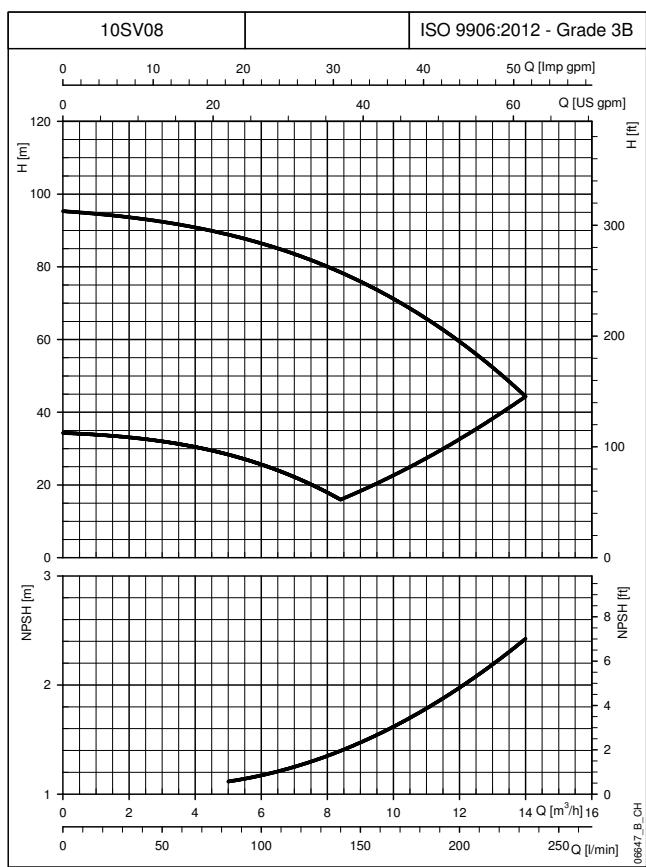
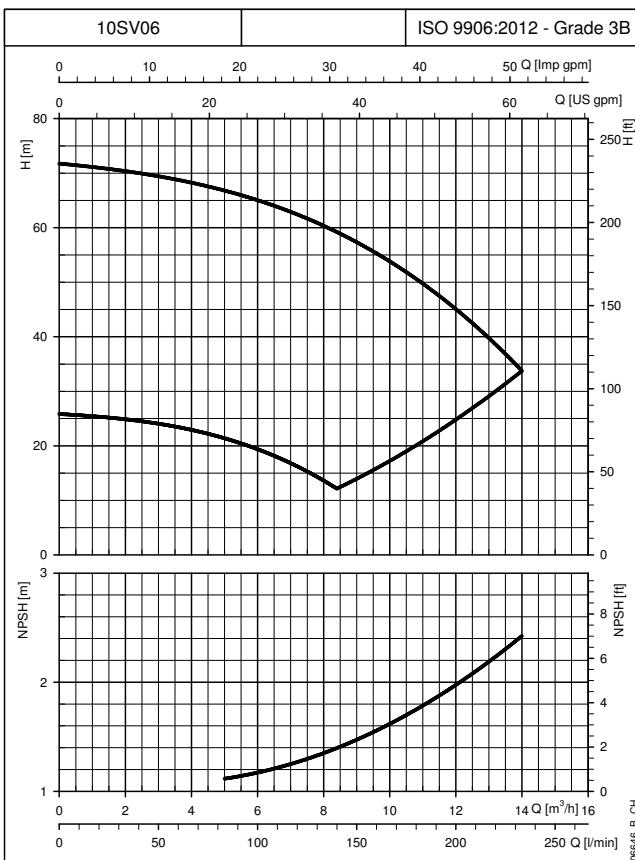
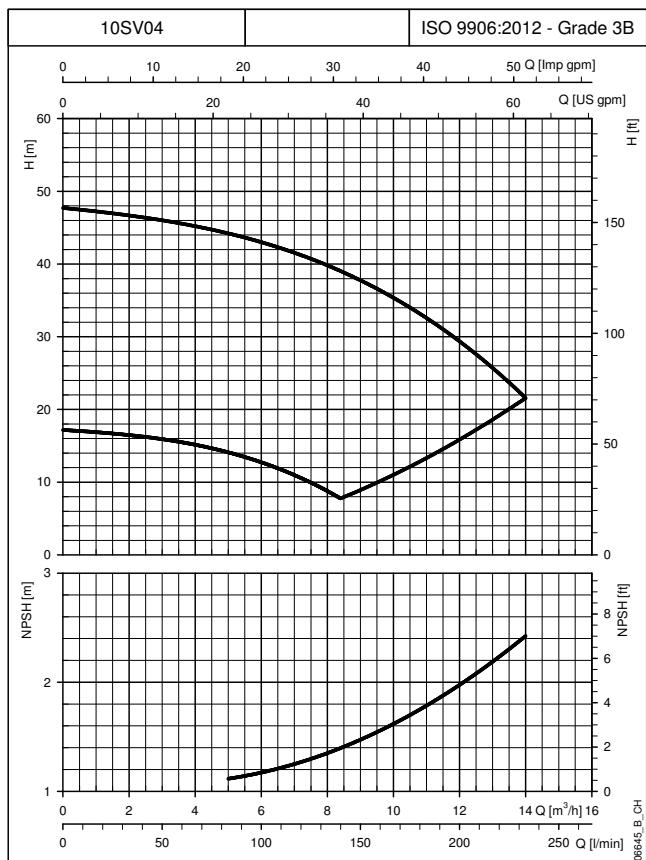
**5SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
 These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

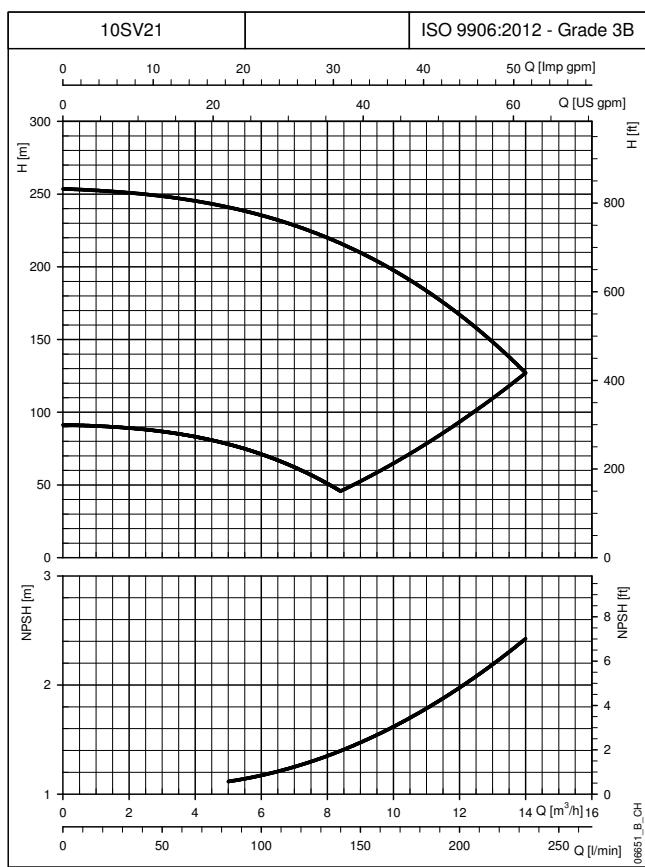
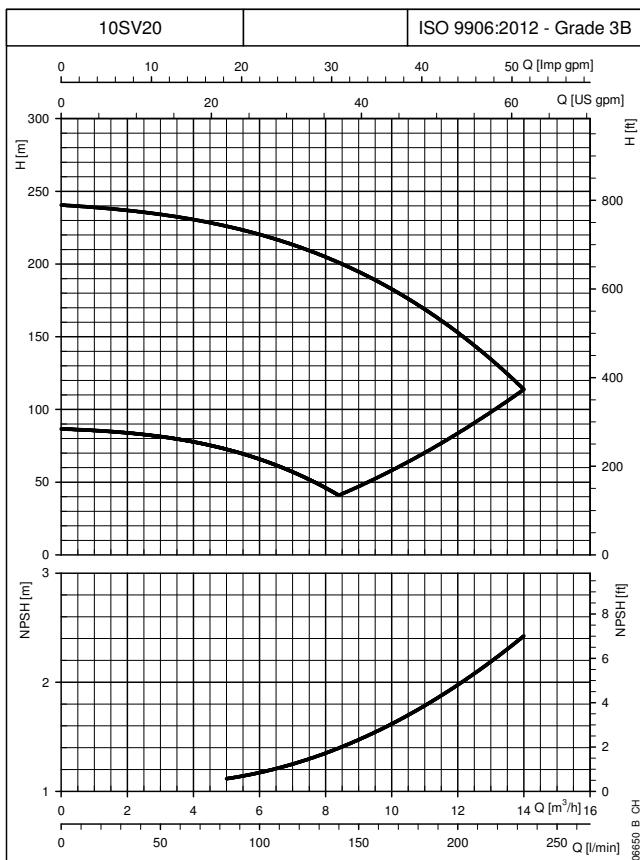
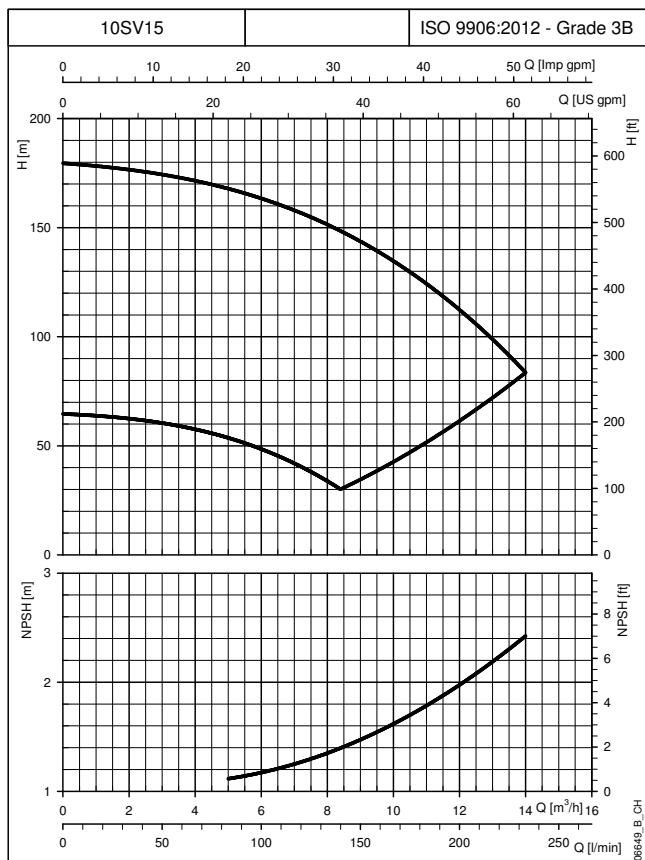
**10SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2	/3	/4	/2	/3	/4
10SVH04	1,5	90	431	263	129	155	140	864	864	864	36,6	36,6	36,6
10SVH06	2,2	90	495	298	134	174	140	963	963	963	43,5	43,5	43,5
10SVH08	3	100	569	298	134	174	160	1052	1052	1037	53,9	53,9	49,0
10SVH11	4	112	665	319	154	197	160	1169	1169	1154	62,5	62,5	57,6
10SVH15	5,5	132	860	375	168	214	300	-	1420	1420	-	83,5	83,5
10SVH20	7,5	132	1020	367	191	256	300	-	1587	1572	-	111,6	106,5
10SVH21	11	160	1082	428	191	256	350	-	1710	1695	-	128,6	123,5

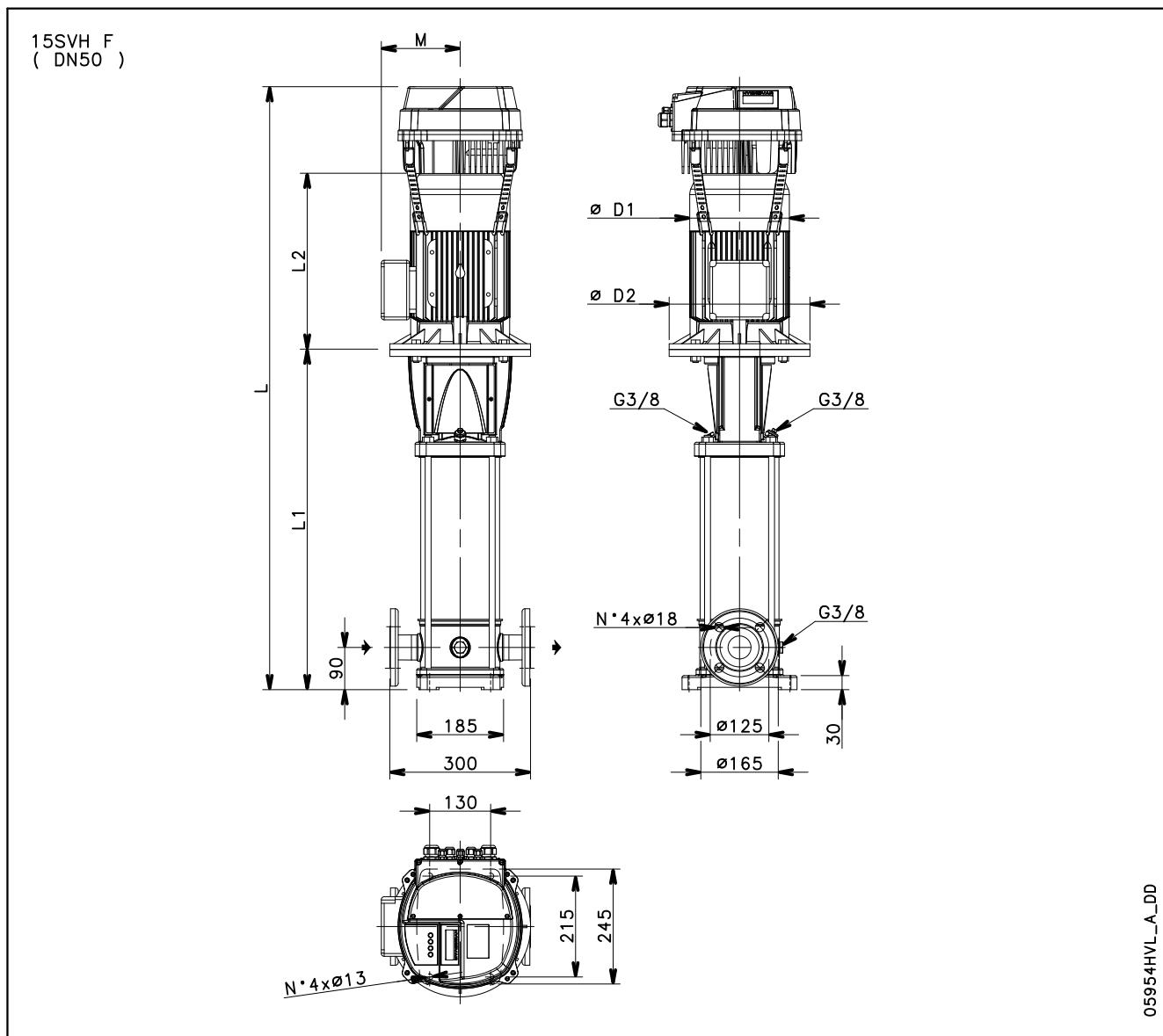
10svh-HVL-2p50-en\_a\_td

**10SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

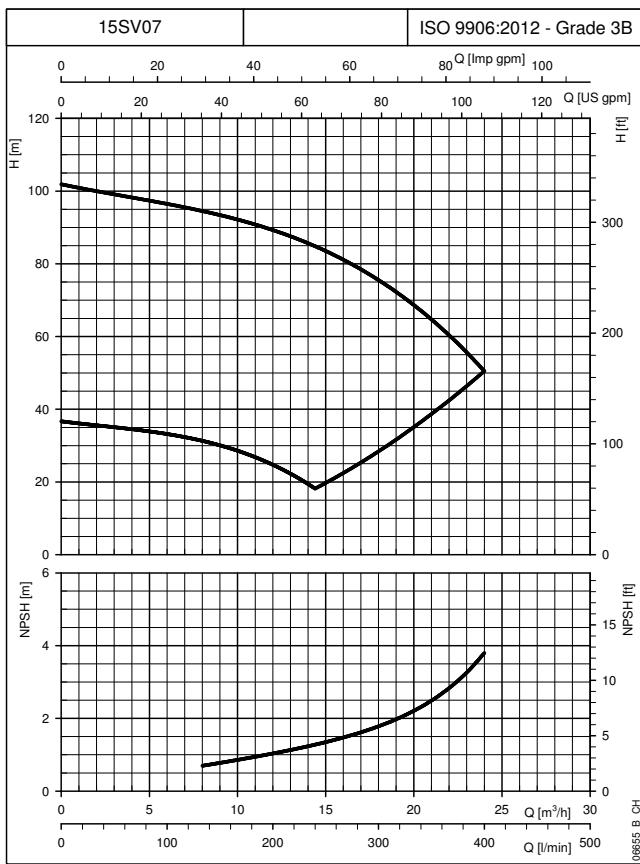
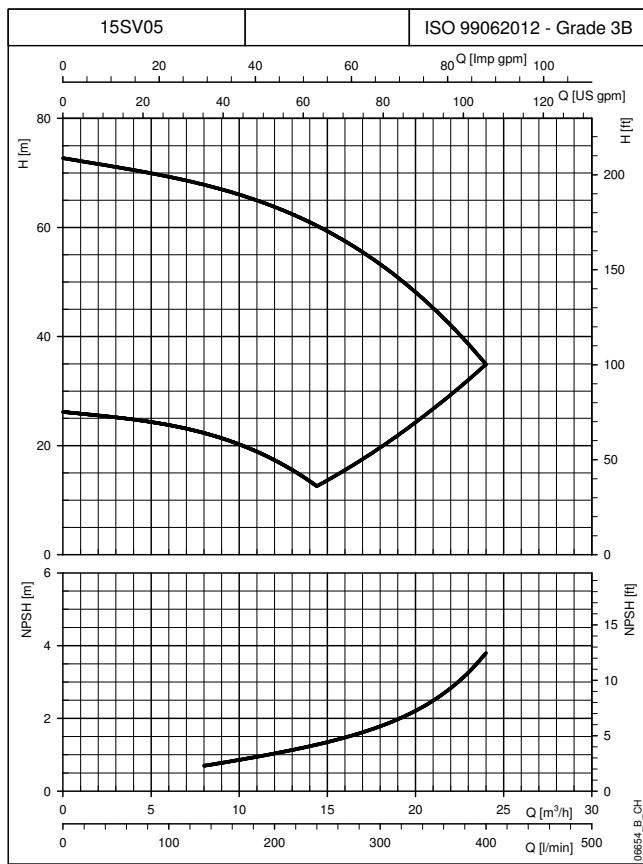
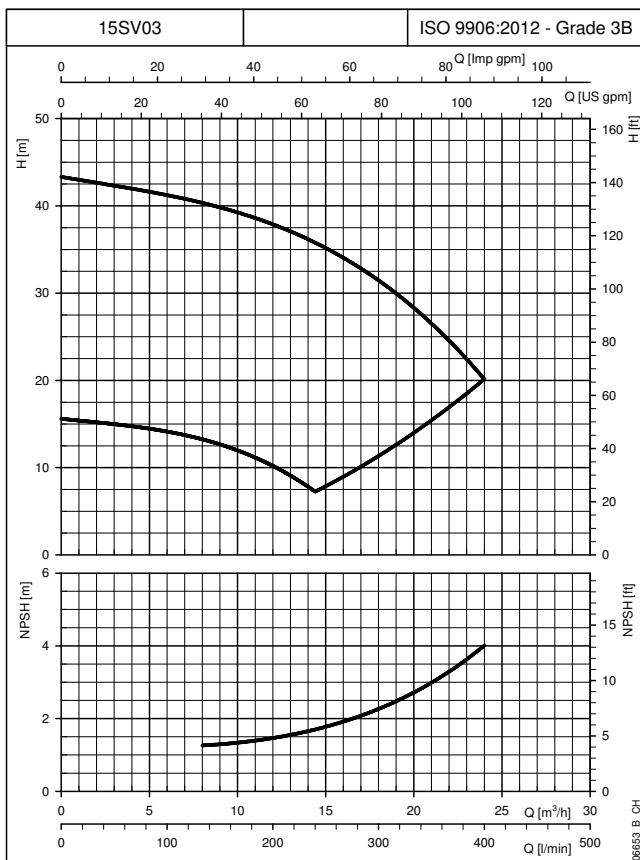
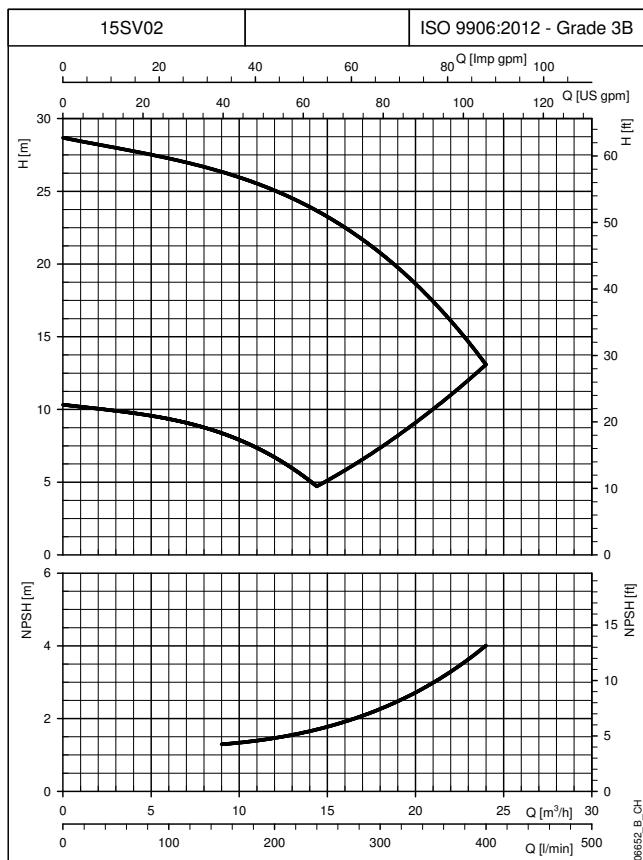
**10SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ .

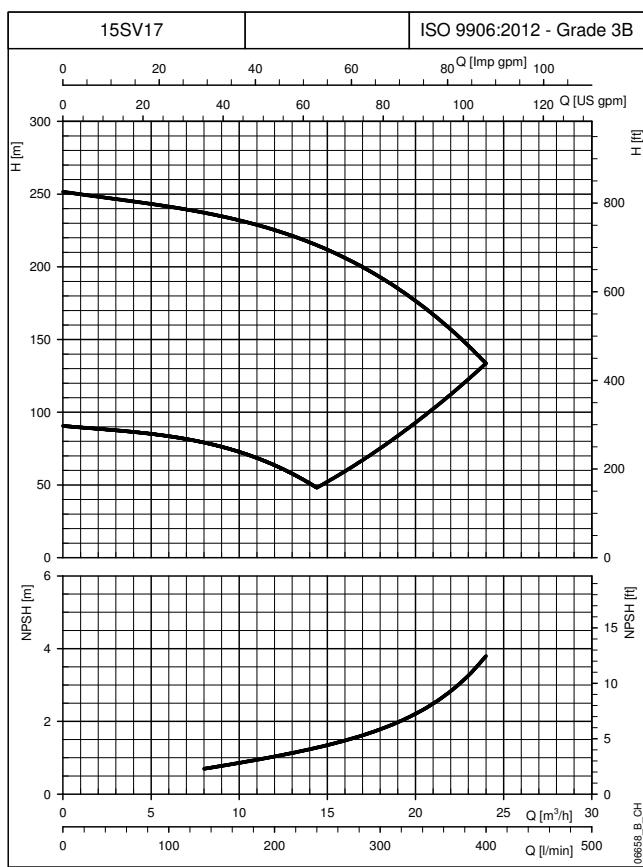
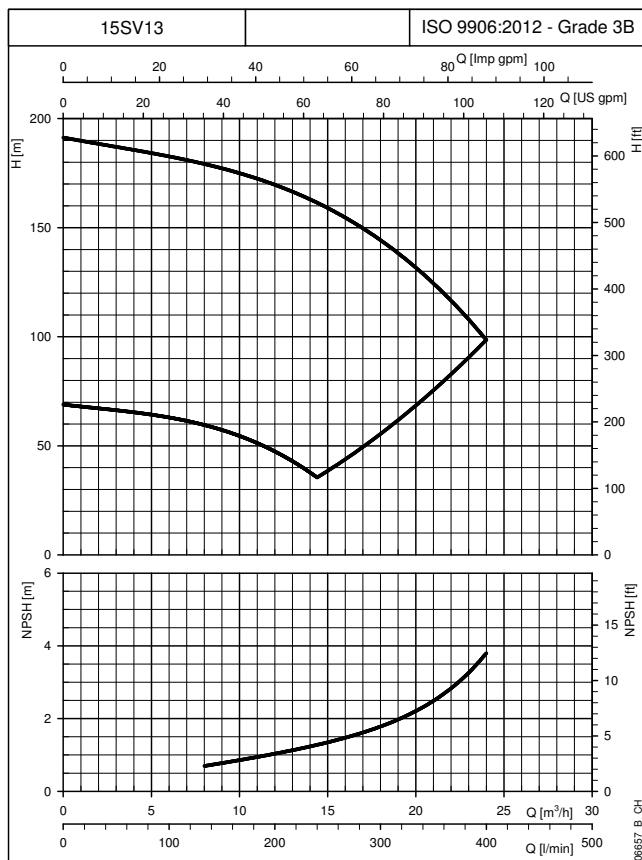
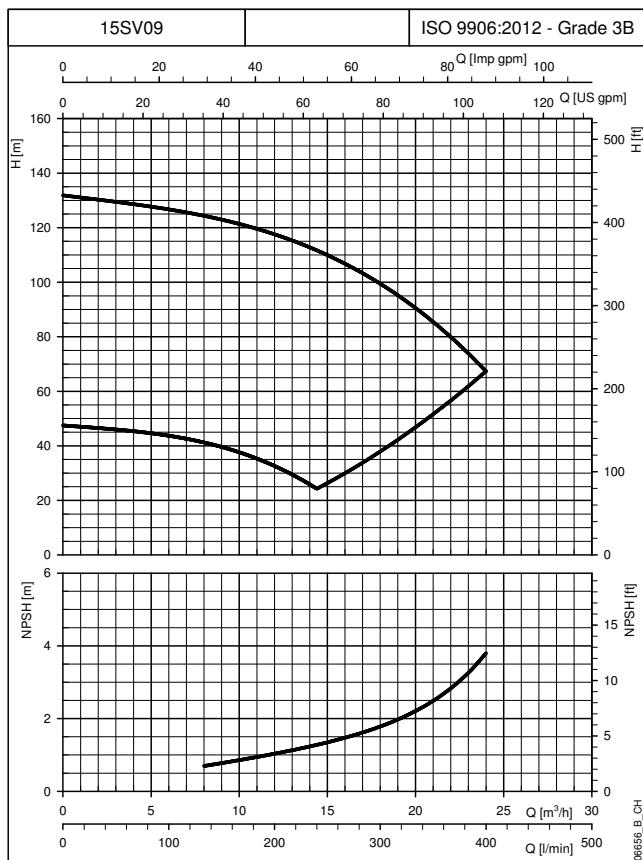
**15SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2	/3	/4	/2	/3	/4
15SVH02	2,2	90	409	298	134	174	140	877	877	877	40,3	40,3	40,3
15SVH03	3	100	467	298	134	174	160	950	950	935	50,5	50,5	45,6
15SVH05	4	112	563	319	154	197	160	1067	1067	1052	58,4	58,4	53,5
15SVH07	5,5	132	726	375	168	214	300	-	1286	1286	-	78,5	78,5
15SVH09	7,5	132	822	367	191	256	300	-	1389	1374	-	105,6	100,5
15SVH13	11	160	1044	428	191	256	350	-	1672	1657	-	127,6	122,5
15SVH17	15	160	1236	494	240	313	350	-	-	1930	-	-	164,6

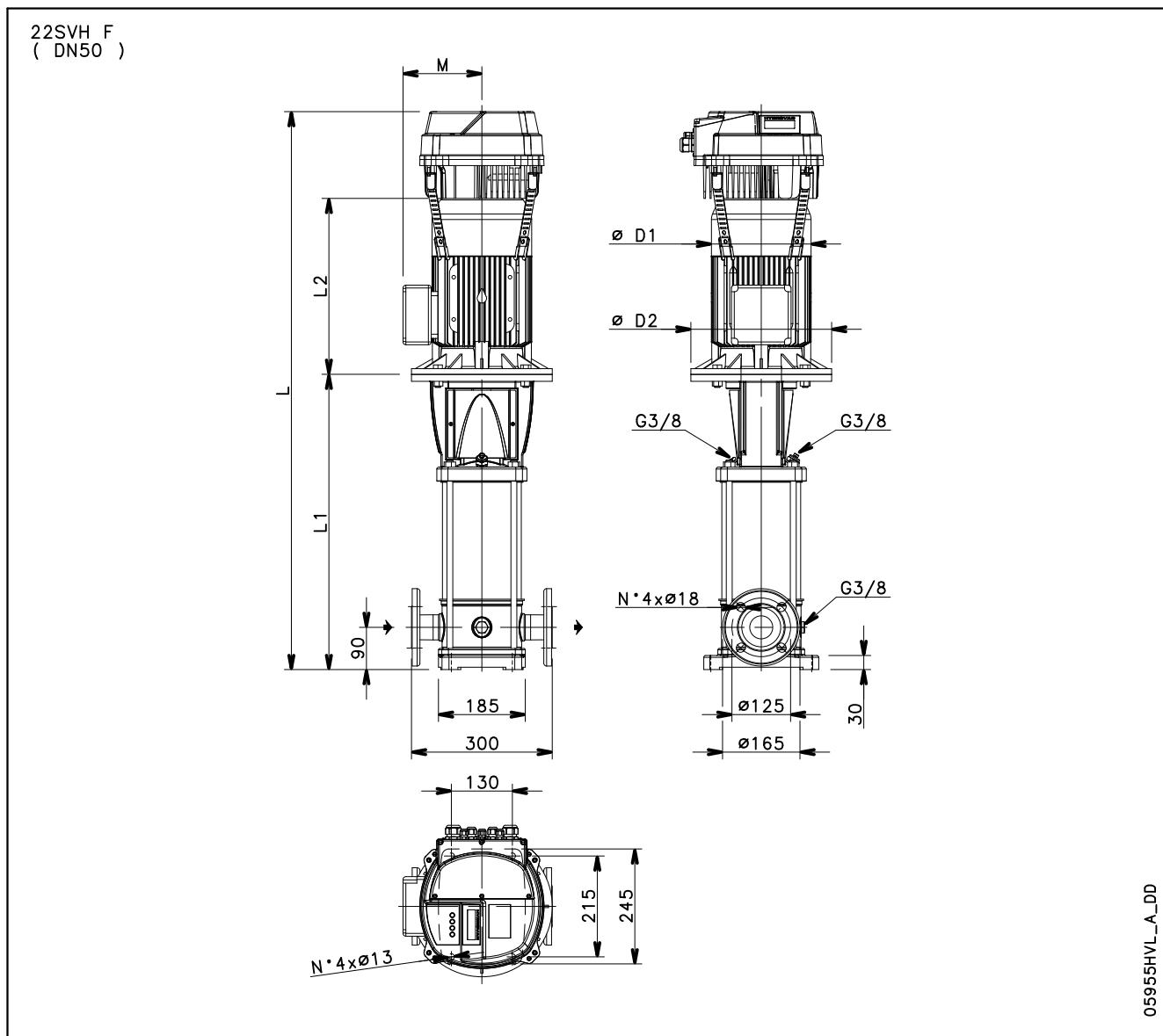
15svh-HVL-2p50-en\_a\_td

**15SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

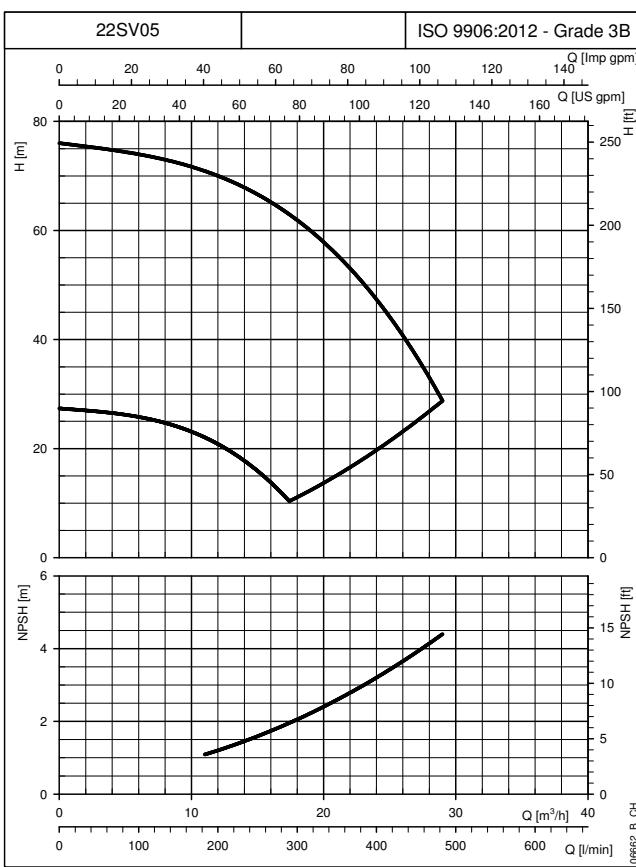
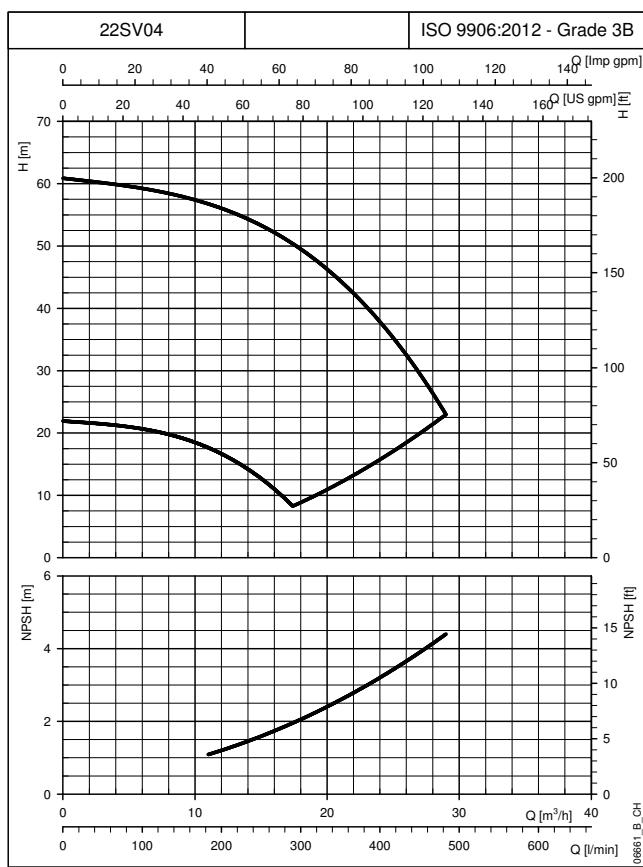
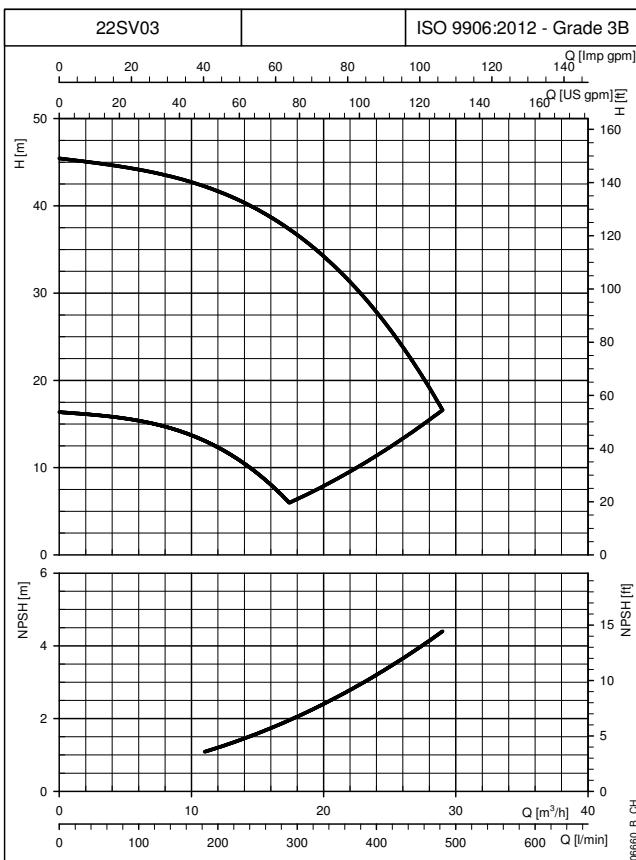
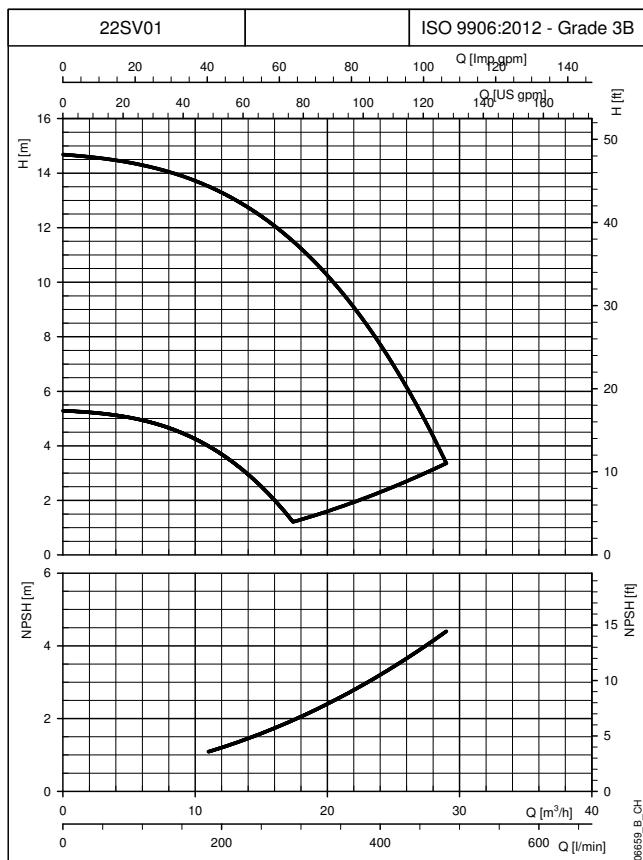
**15SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

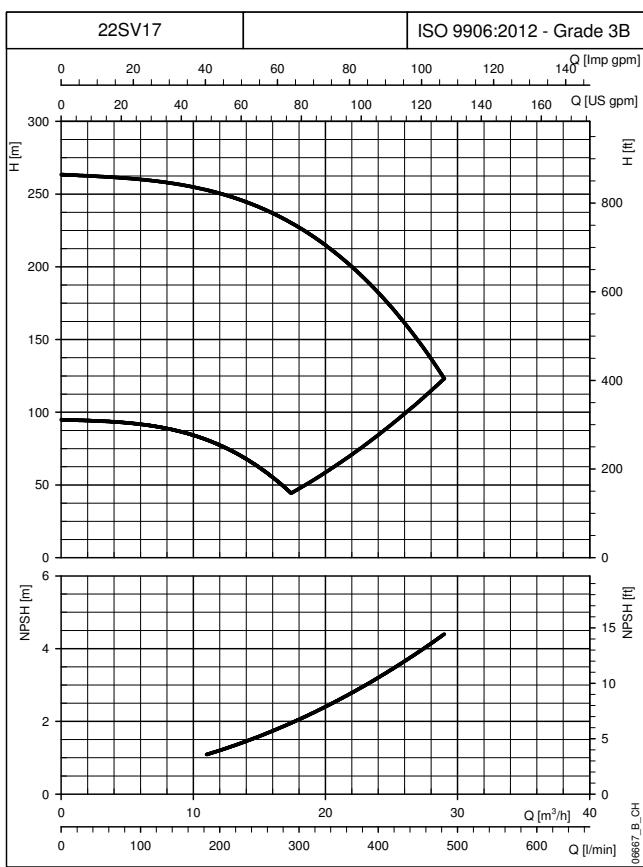
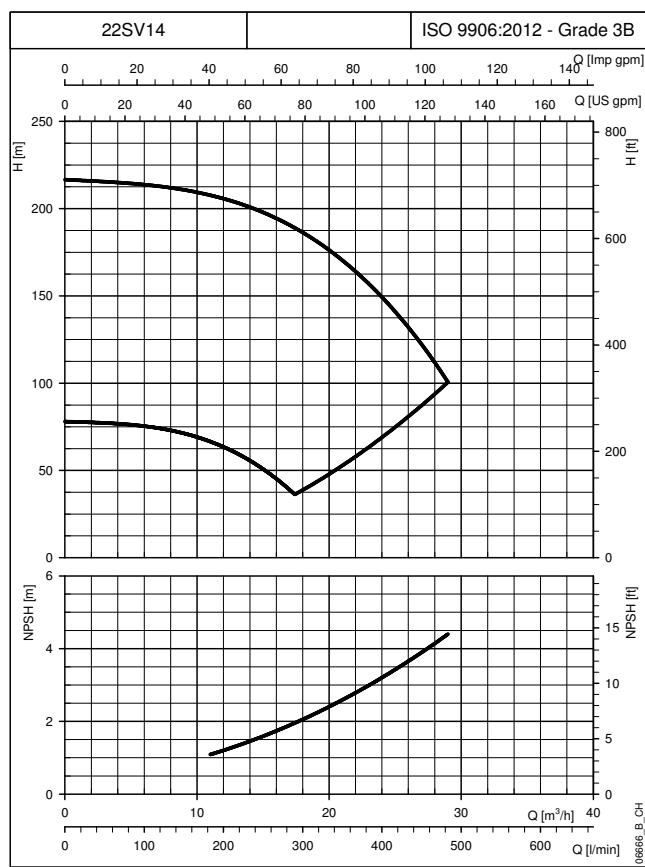
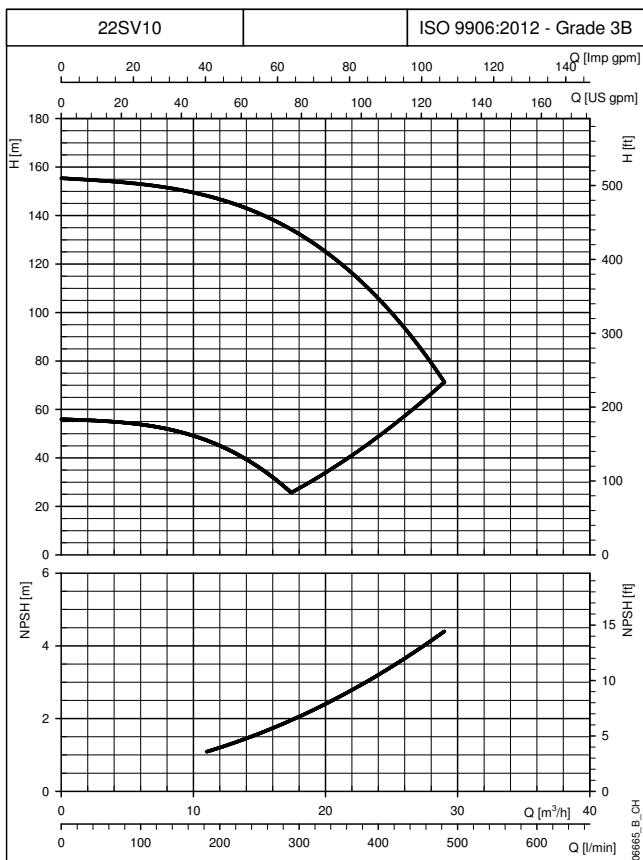
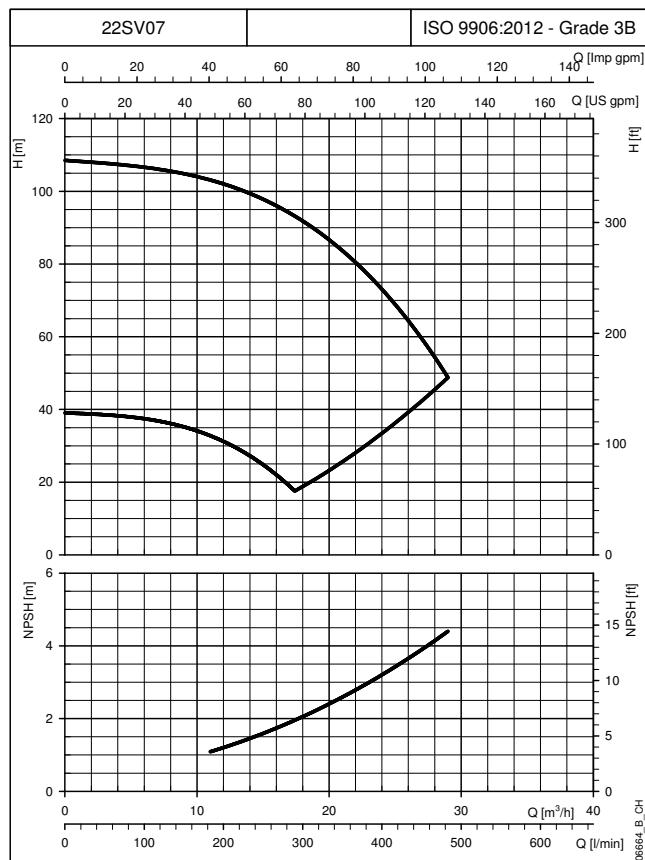
**22SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)					L			WEIGHT (kg)		
	kW	SIZE	L1	L2	M	D1	D2	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
22SVH01	1,1	80	399	263	129	155	120	832	832	832	32,5	32,5	32,5
22SVH03	3	100	467	298	134	174	160	950	950	935	50,9	50,9	46,0
22SVH04	4	112	515	319	154	197	160	1019	1019	1004	57,6	57,6	52,7
22SVH05	5,5	132	630	375	168	214	300	-	1190	1190	-	75,5	75,5
22SVH07	7,5	132	726	367	191	256	300	-	1293	1278	-	101,6	96,5
22SVH10	11	160	900	428	191	256	350	-	1528	1513	-	122,6	117,5
22SVH14	15	160	1092	494	240	313	350	-	-	1786	-	-	159,6
22SVH17	18,5	160	1236	494	240	313	350	-	-	1930	-	-	171,6

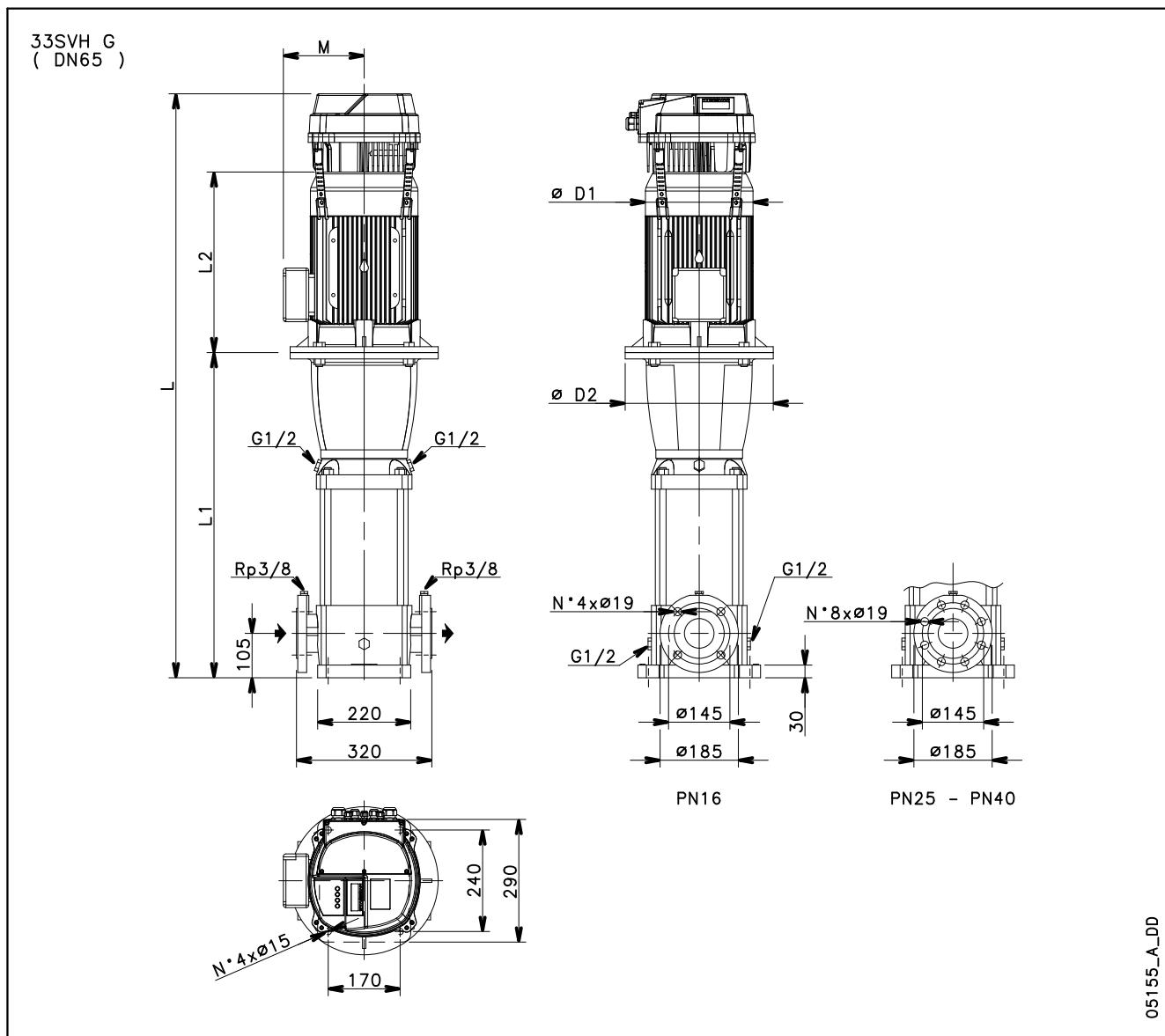
22svh-HVL-2p50-en\_a\_td

**22SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

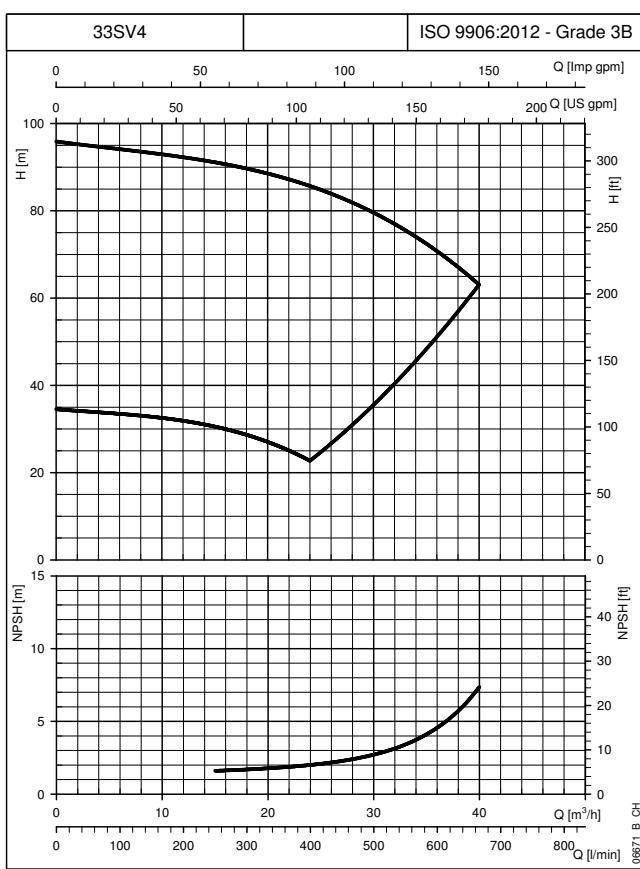
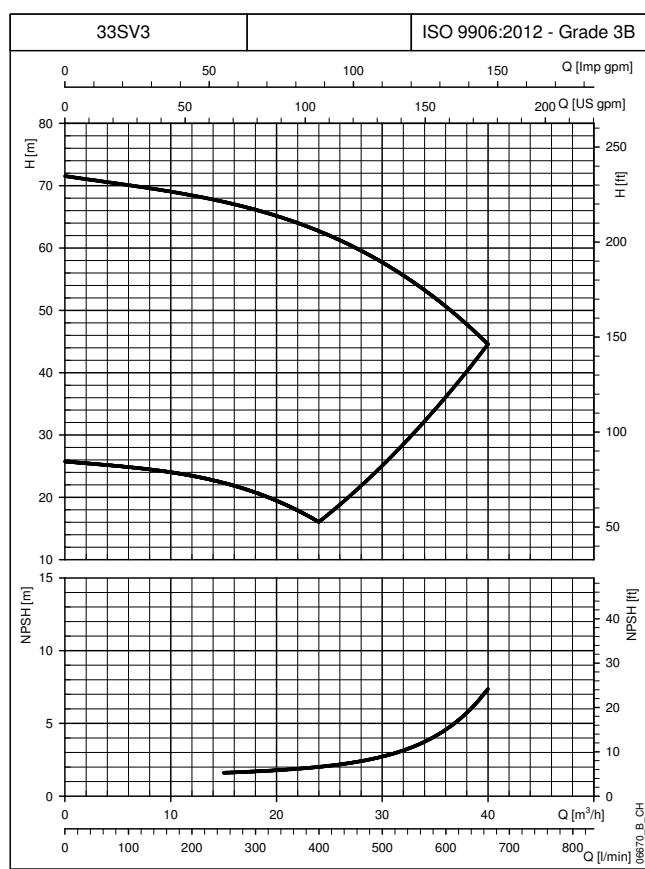
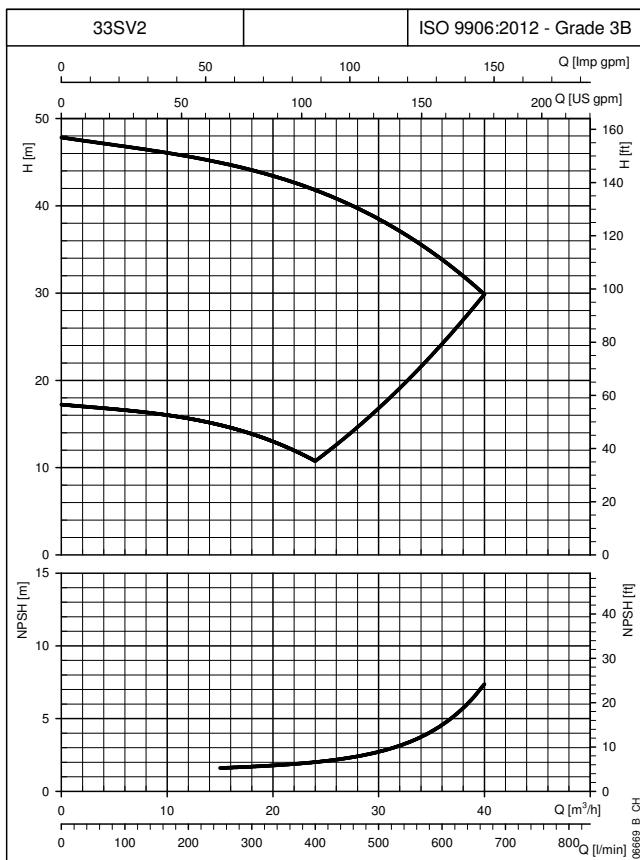
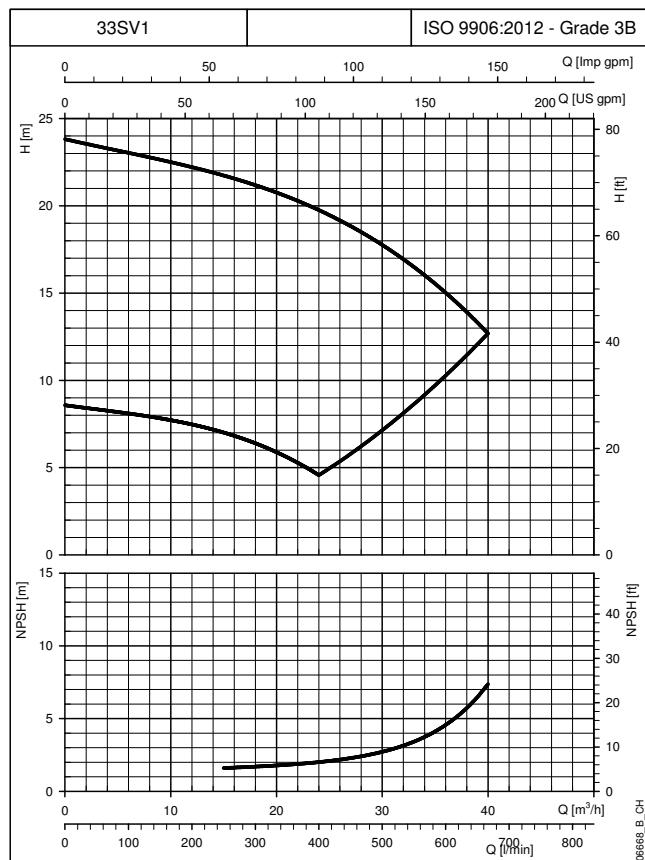
**22SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

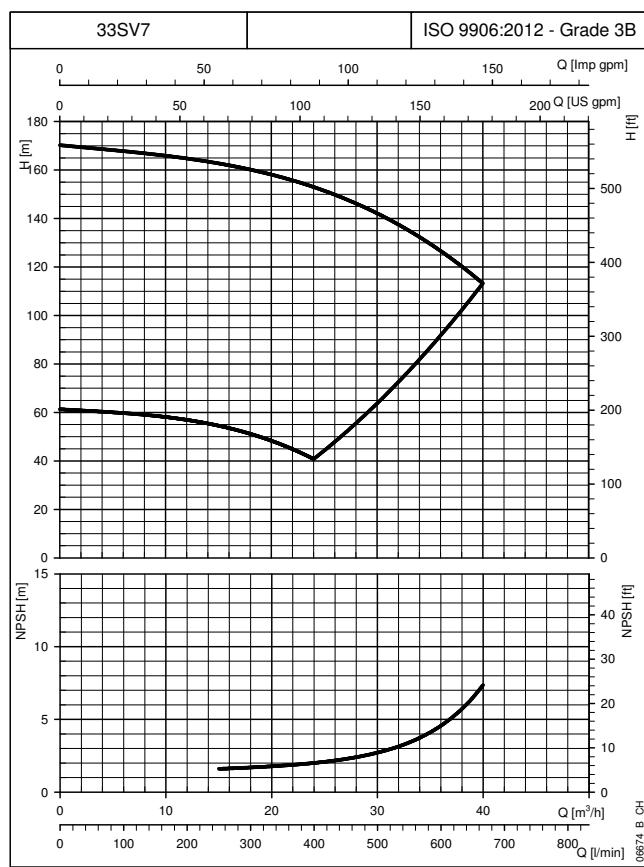
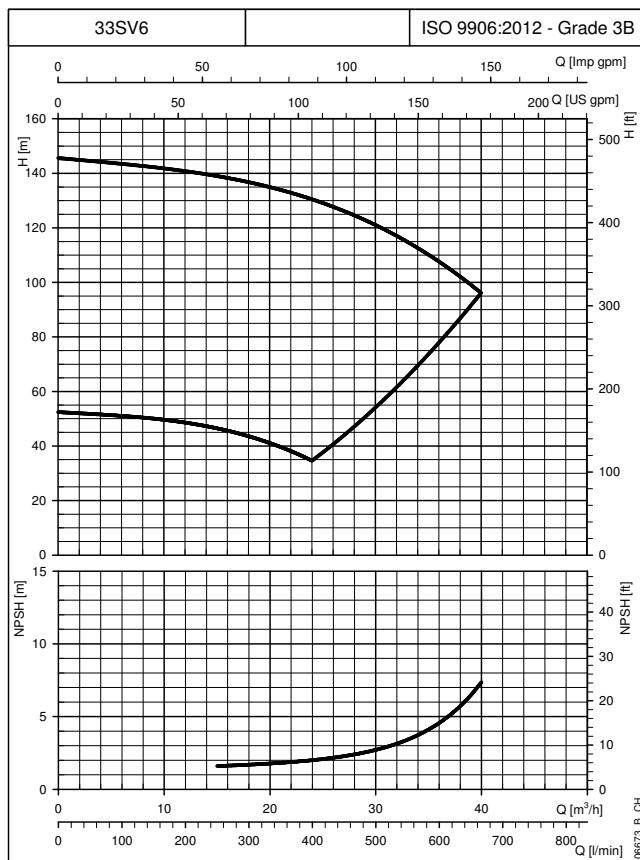
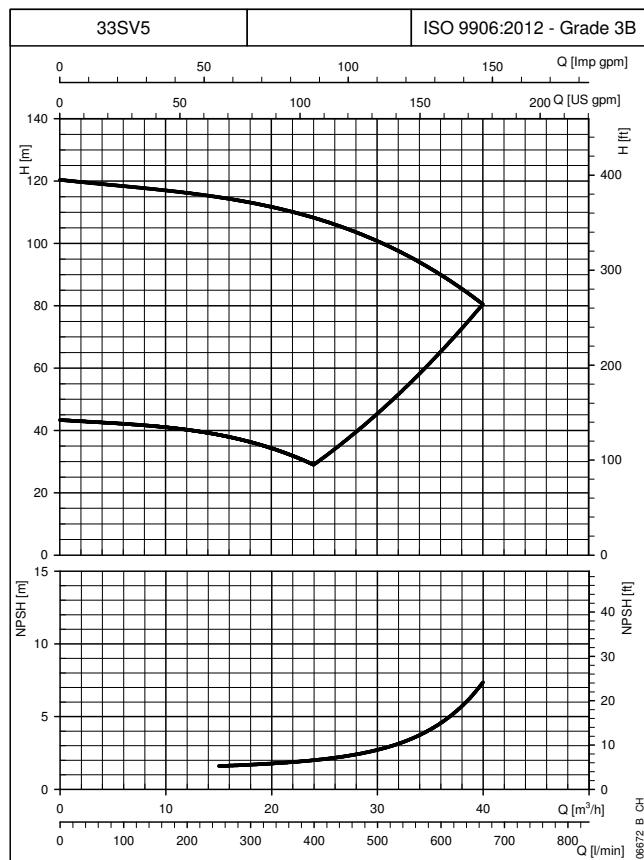
**33SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						L			WEIGHT (kg)		
	kW	SIZE	L1	L2	D1	D2	M	PN	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
33SVH1	3	100	489	298	174	164	134	16	972	972	957	83,5	83,5	78,6
33SVH2	5,5	132	584	375	214	300	168	16	-	1144	1144	-	109,0	109,0
33SVH3	7,5	132	659	367	256	300	191	16	-	1226	1211	-	136,6	131,5
33SVH4	11	160	769	428	256	350	191	16	-	1397	1382	-	158,6	153,5
33SVH5	15	160	844	494	313	350	240	16	-	-	1538	-	-	194,6
33SVH6	15	160	919	494	313	350	240	25	-	-	1613	-	-	198,6
33SVH7	18,5	160	994	494	313	350	240	25	-	-	1688	-	-	210,6

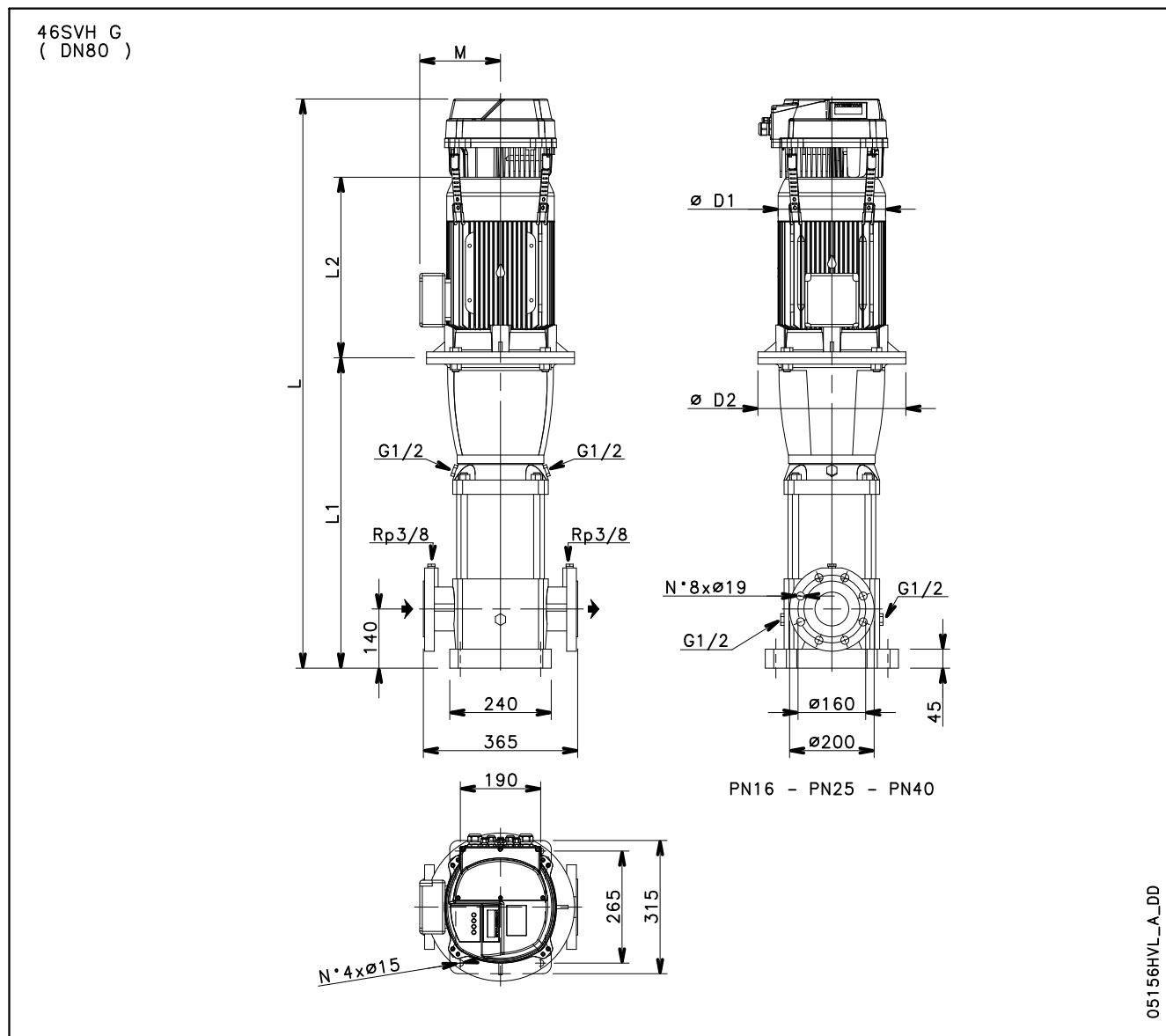
33svh-HVL-2p50-en\_a\_td

**33SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

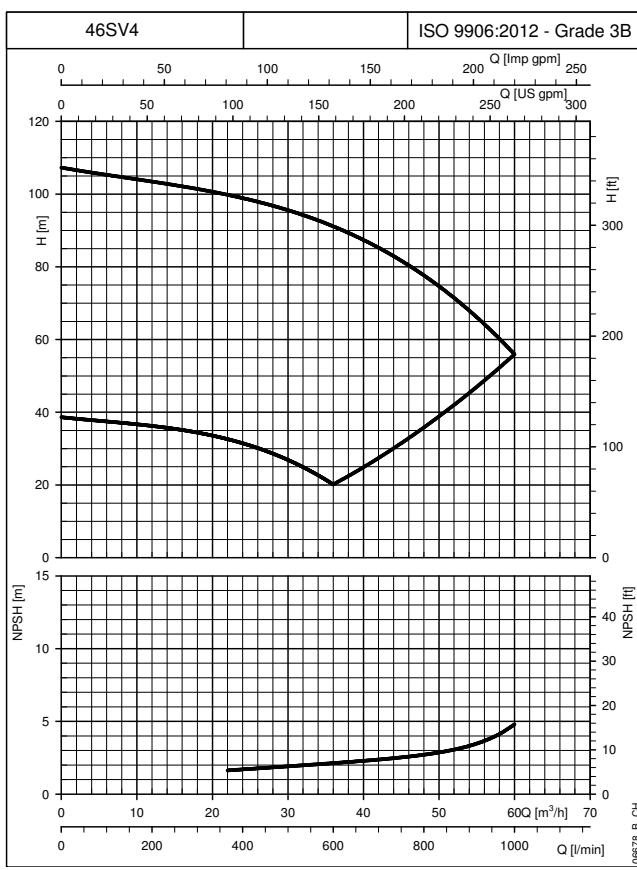
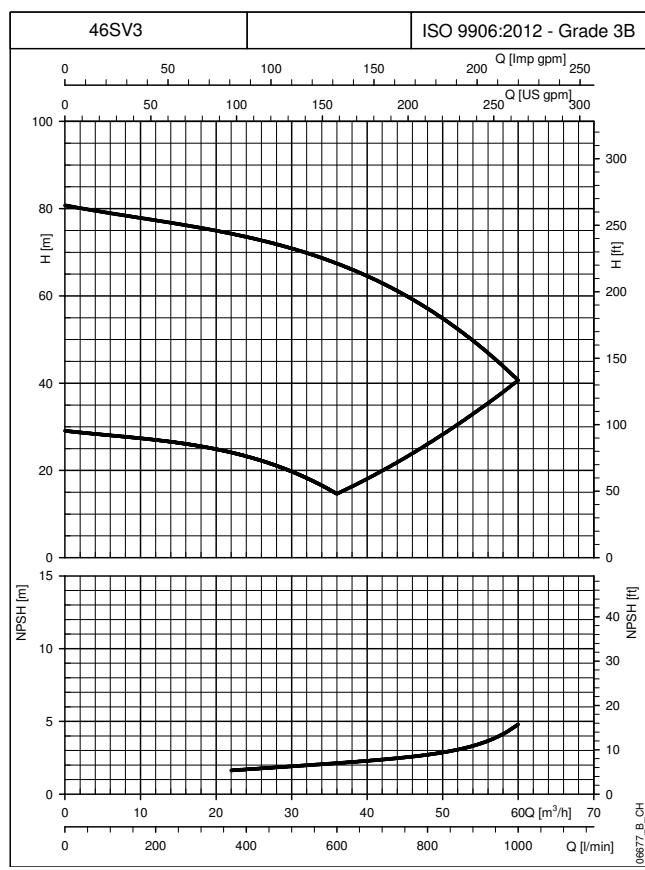
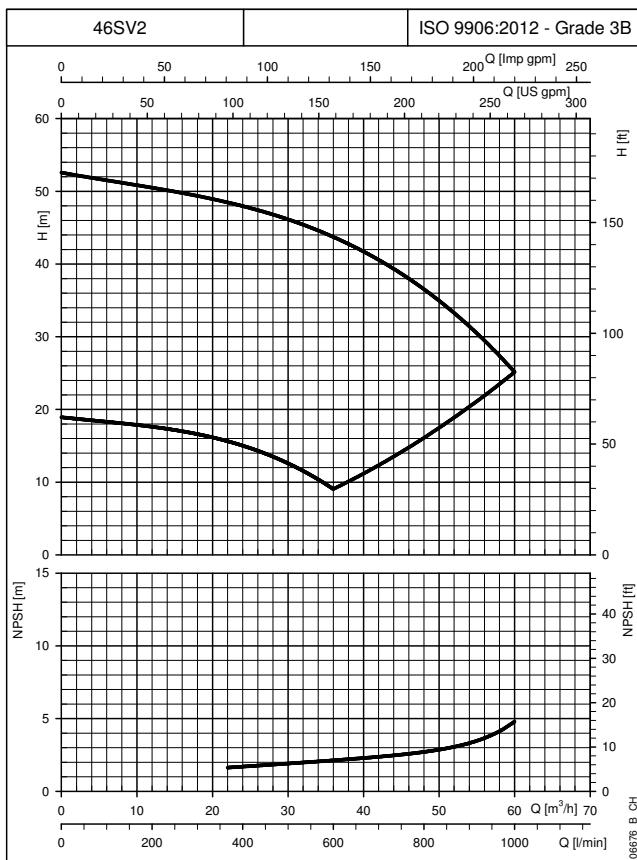
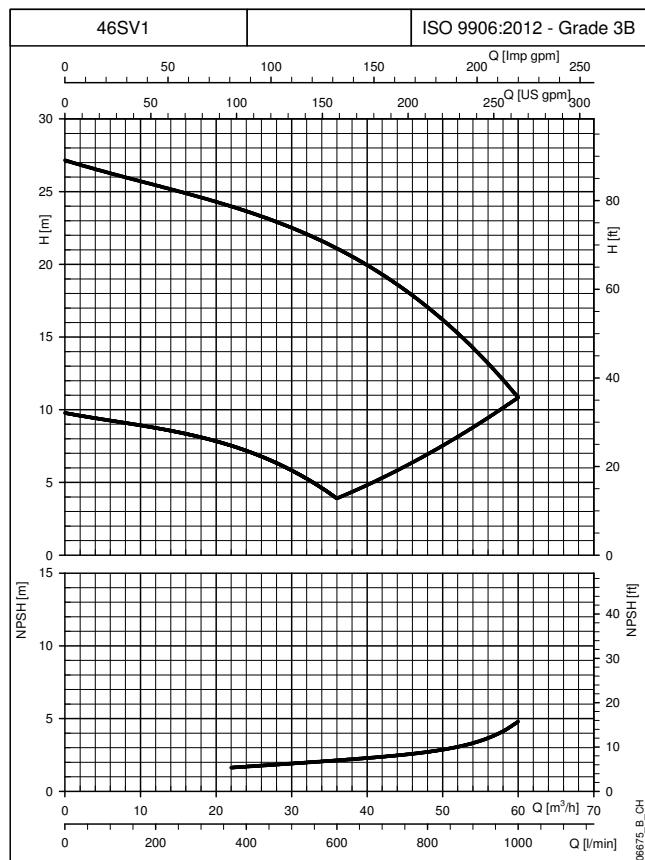
**33SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

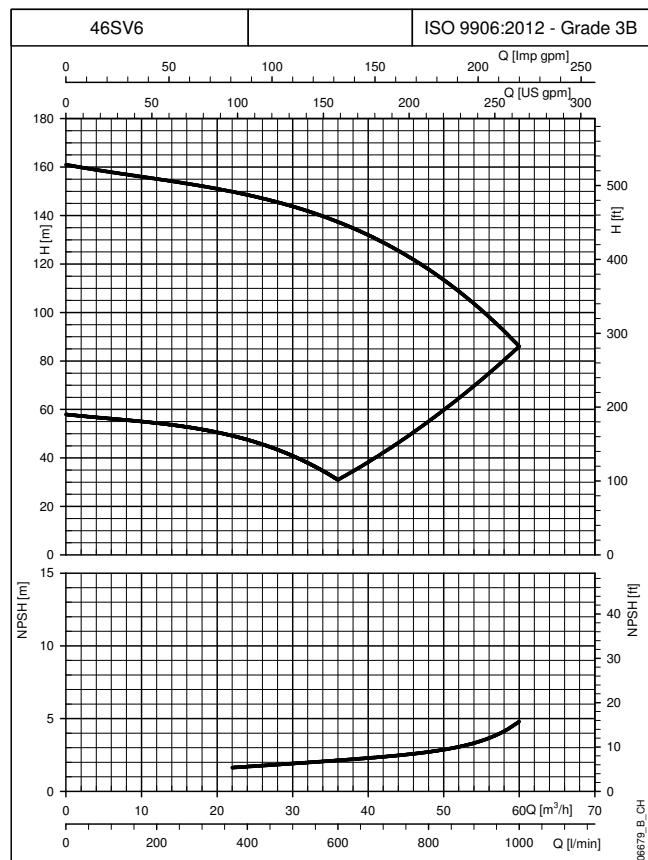
**46SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						L			WEIGHT (kg)		
	kW	SIZE	L1	L2	D1	D2	M	PN	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V	/2 1~ 230V	/3 3~ 230V	/4 3~ 400V
46SVH1	4	112	529	319	197	164	154	16	1033	1033	1018	95,0	95,0	90,1
46SVH2	7,5	132	624	367	256	300	191	16	-	1191	1176	-	137,6	132,5
46SVH3	11	160	734	428	256	350	191	16	-	1362	1347	-	159,6	154,5
46SVH4	15	160	809	494	313	350	240	16	-	-	1503	-	-	195,6
46SVH6	22	180	959	494	313	350	240	25	-	-	1653	-	-	223,6

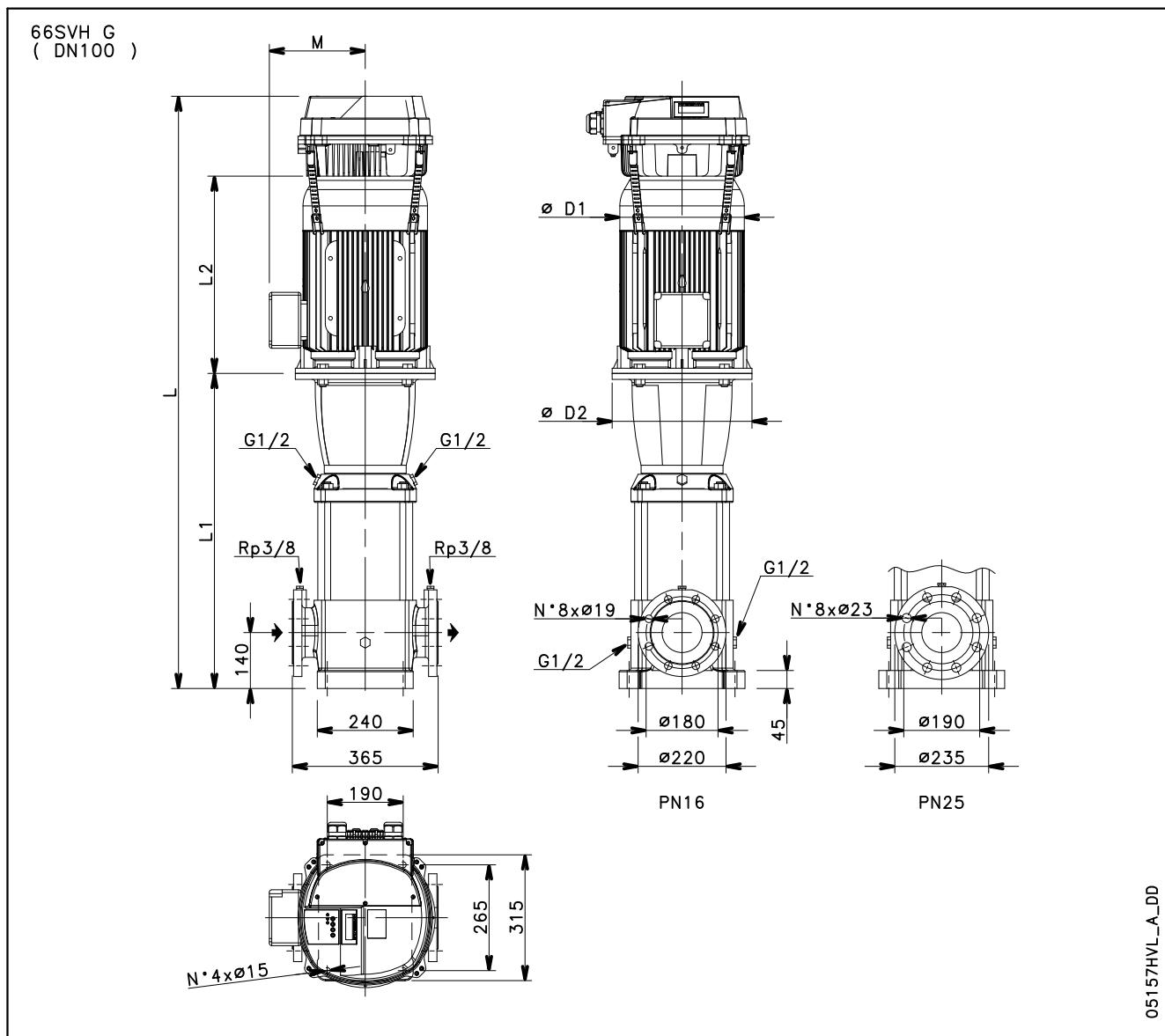
46svh-HVL-2p50-en\_a\_td

**46SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
 These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

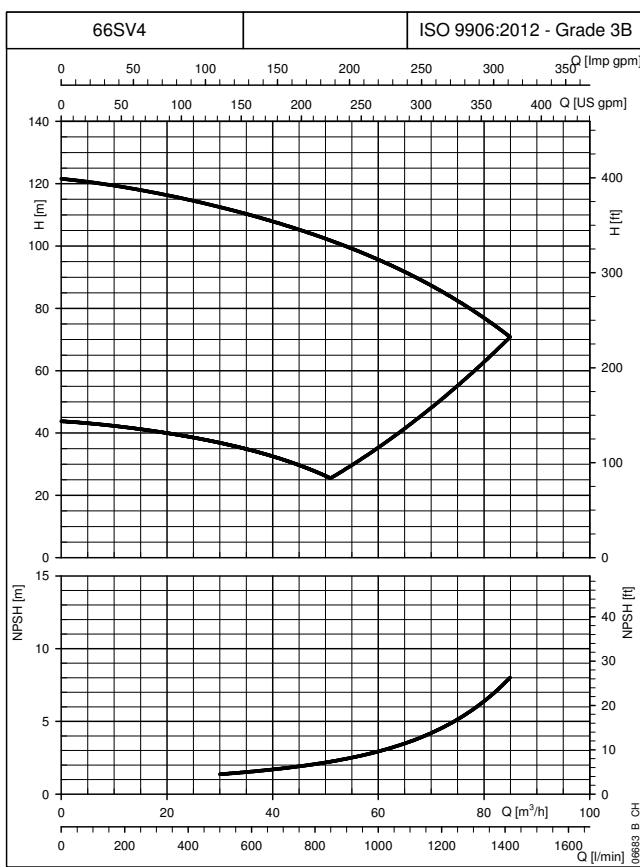
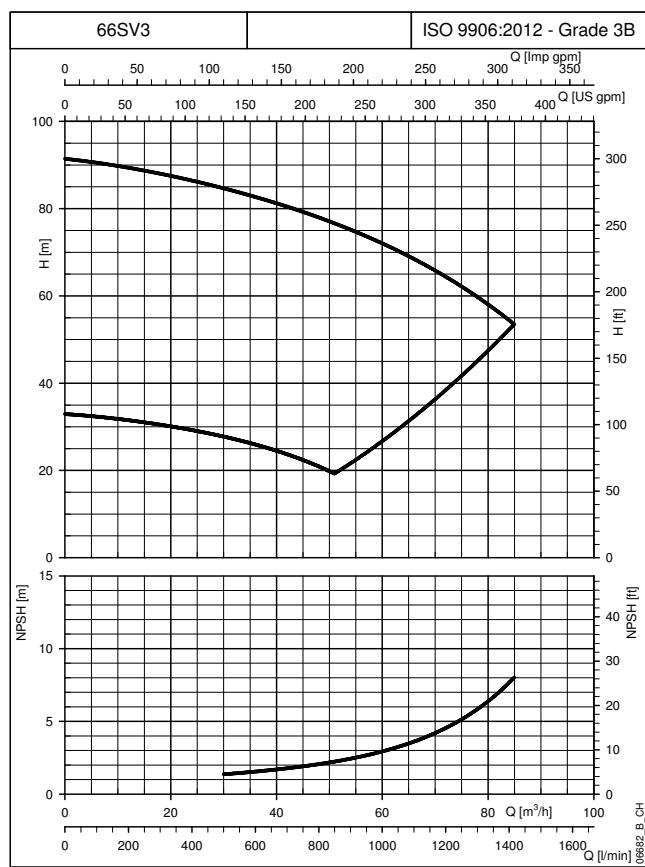
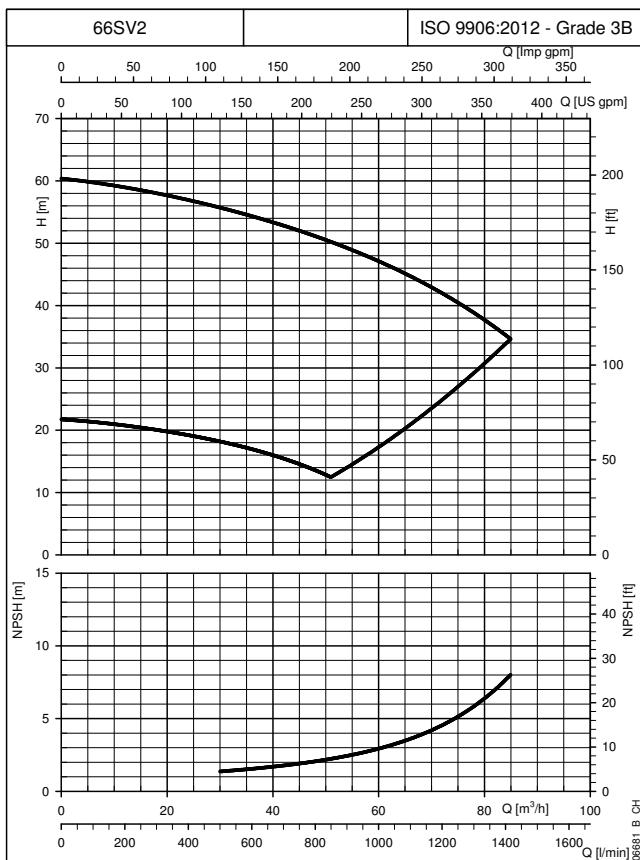
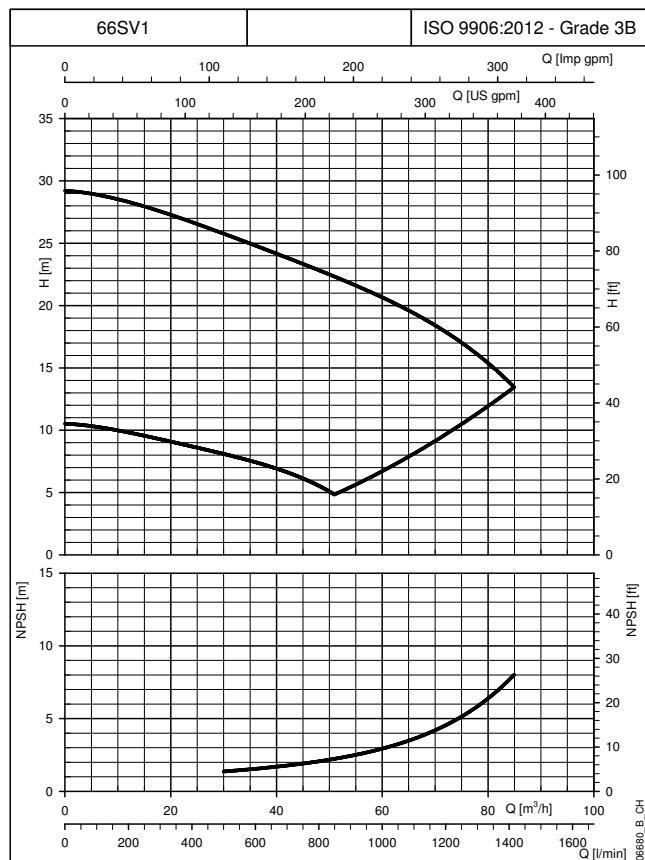
**46SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ .

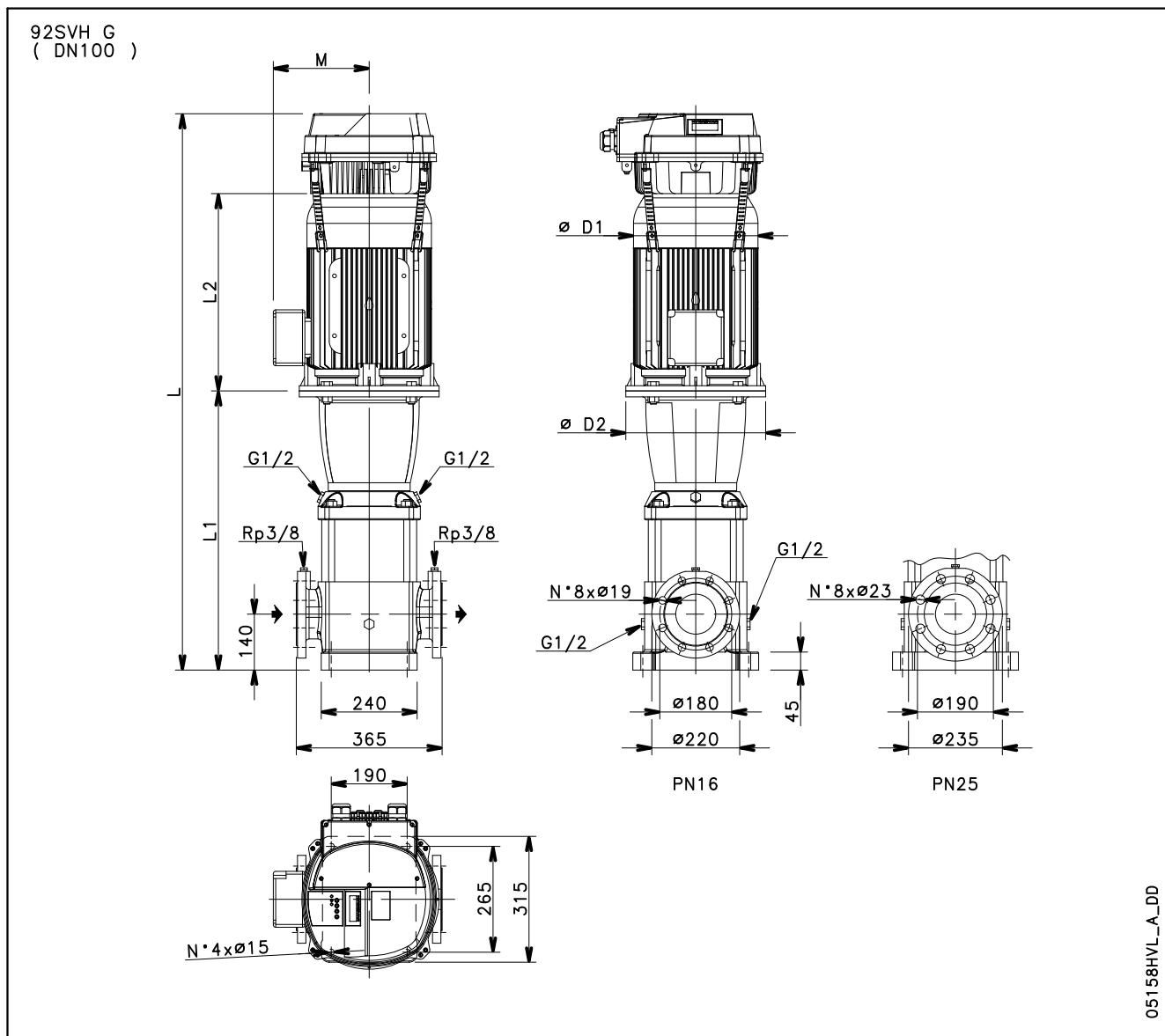
**66SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						L			WEIGHT (kg)		
	kW	SIZE	L1	L2	D1	D2	M	PN	/2	/3	/4	/2	/3	/4
66SVH1	5,5	132	574	375	214	300	168	16	-	1134	1134	-	120,5	120,5
66SVH2	11	160	699	428	256	350	191	16	-	1327	1312	-	166,6	161,5
66SVH3	18,5	160	789	494	313	350	240	16	-	-	1483	-	-	212,6
66SVH4	22	180	879	494	313	350	240	16	-	-	1573	-	-	229,6

66svh-HVL-2p50-en\_a\_td

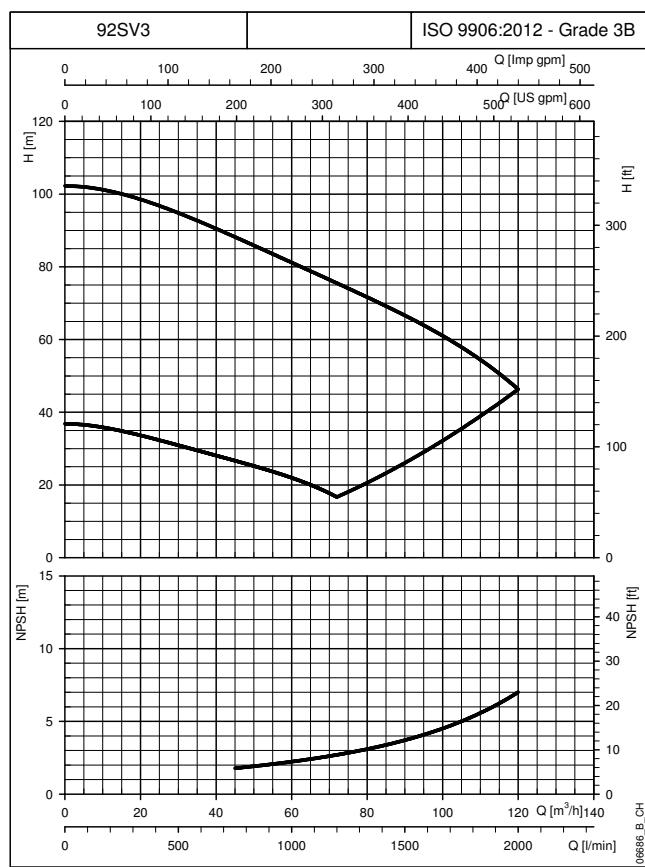
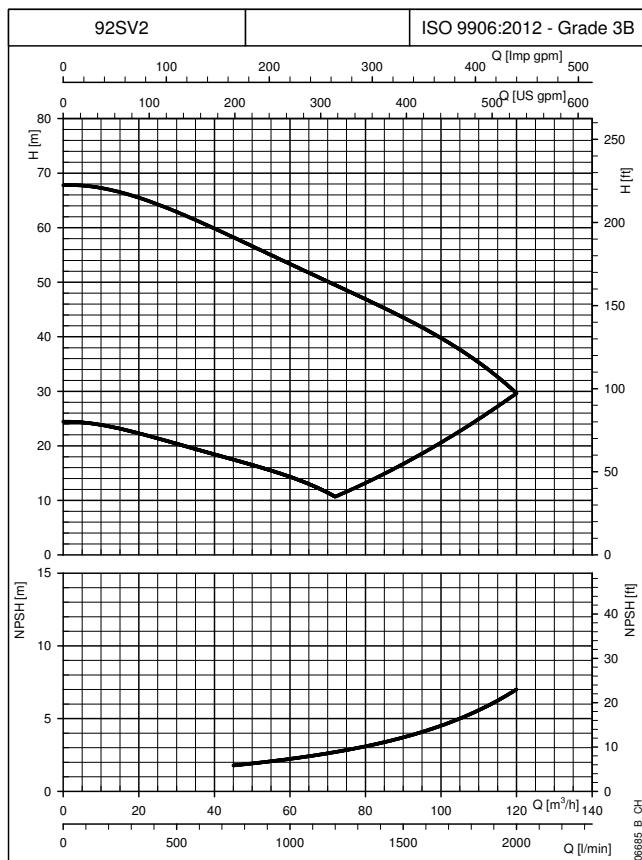
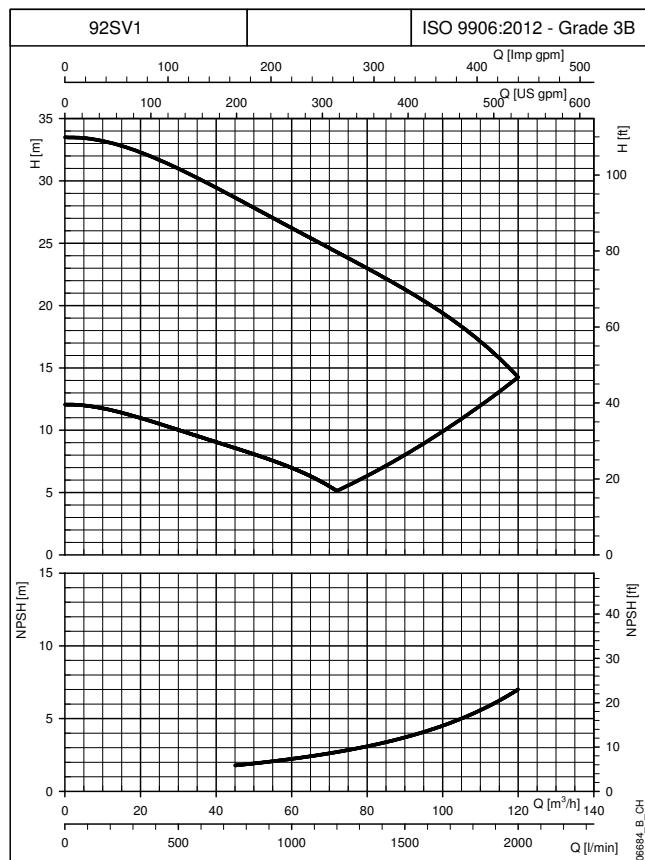
**66SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

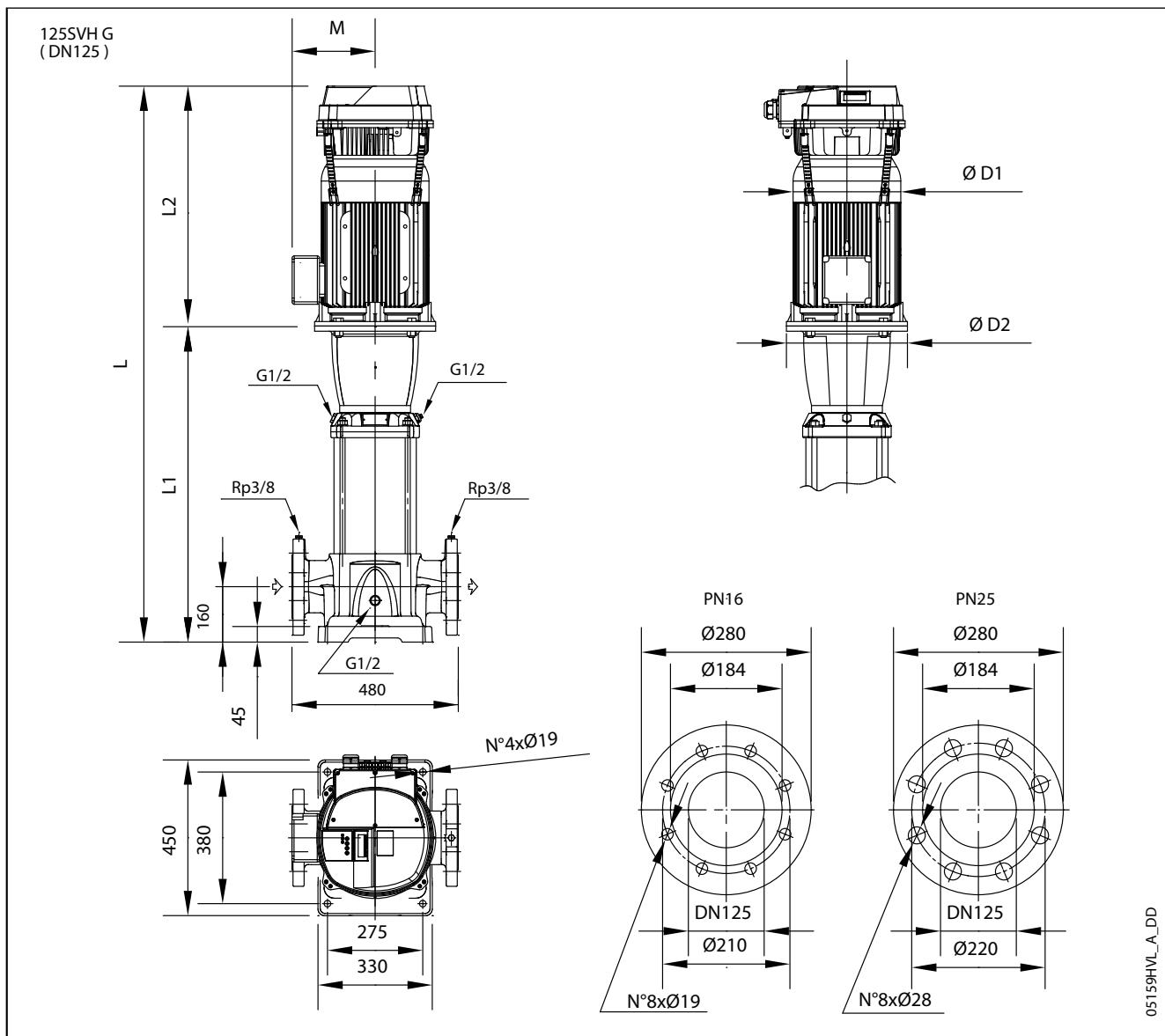
**92SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						L			WEIGHT (kg)		
	kW	SIZE	L1	L2	D1	D2	M	PN	/2	/3	/4	/2	/3	/4
92SVH1	7,5	132	574	367	256	300	191	16	-	1141	1126	-	142,6	137,5
92SVH2	15	160	699	494	313	350	240	16	-	-	1393	-	-	197,6
92SVH3	22	180	789	494	313	350	240	16	-	-	1483	-	-	223,6

92svh-HVL-2p50-en\_td

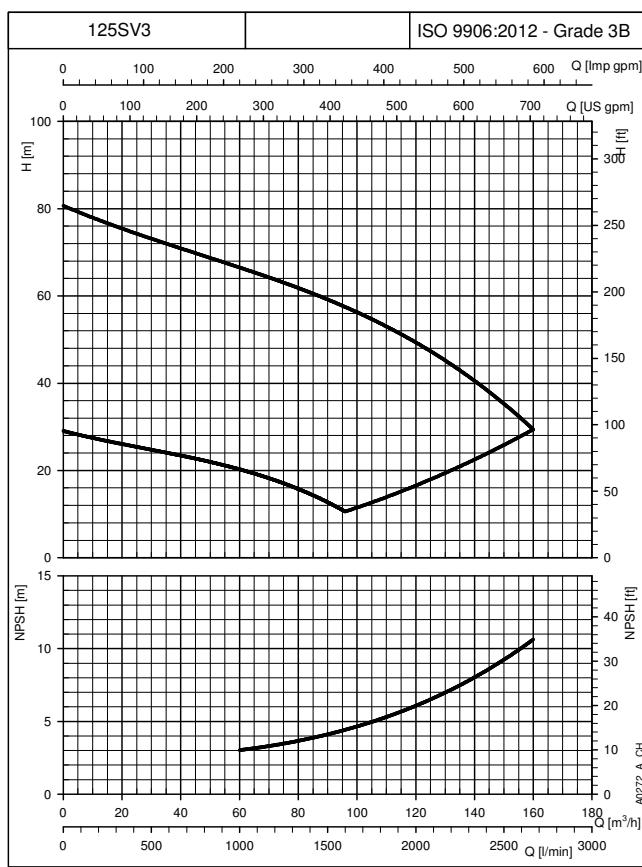
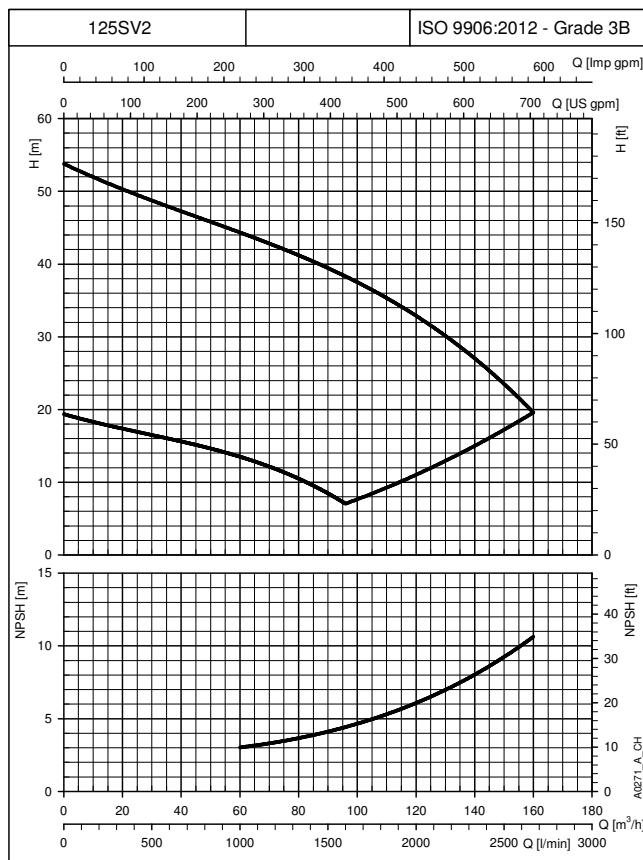
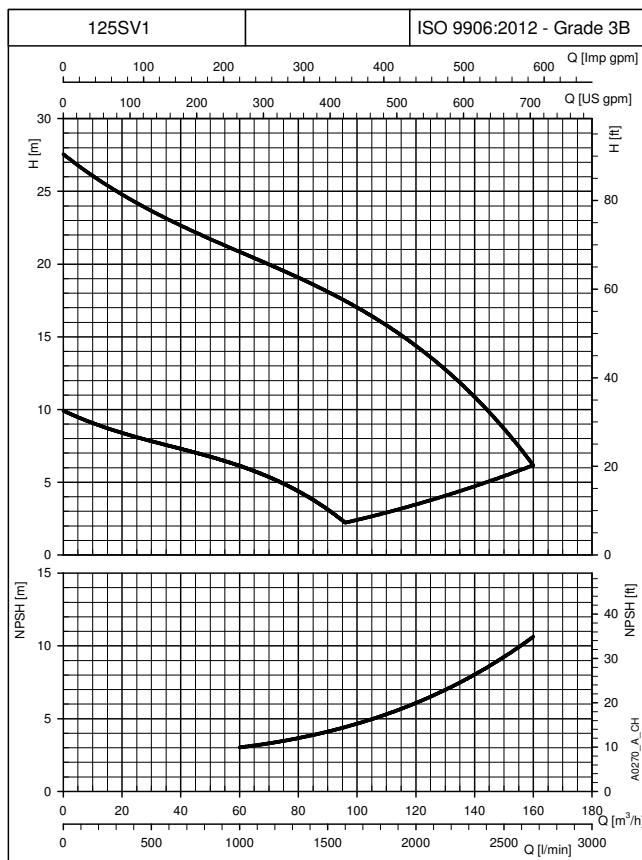
**92SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .

**125SVH SERIES**
**DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**


PUMP TYPE	MOTOR		DIMENSIONS (mm)						L		WEIGHT (kg)			
	kW	SIZE	L1	L2	D1	D2	M	PN	/2	/3	/4	/2	/3	/4
125sVH1	7,5	132	693	367	256	300	191	16	-	1260	1245	-	187,6	183
125sVH2	15	160	787	494	313	350	240	16	-	-	1481	-	-	249
125sVH3	22	180	1028	494	313	350	240	16	-	-	1722	-	-	281

125svh-HVL-2p50-en\_a\_td

**125SVH SERIES**
**OPERATING CHARACTERISTICS AT 30..50 Hz**


The curves show the performance with one pump running to the minimum and maximum speed.  
These performances are valid for liquids with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{s}$ .



**e-SVE:  
VERSION WITH DRIVE  
AND PERMANENT  
MAGNET MOTOR  
(e-SM DRIVE)**

## e-SVE SERIES (e-SV SMART)

### Background and context

In every sector, from construction and industry to agriculture and building services the need for intelligent, compact and high-efficiency pumping systems is constantly growing.

That's why Lowara has developed the e-SV Smart series: an integrated intelligent pumping system with electronically driven, permanent magnet motor (IE5 efficiency level). The integrated control system, combined with the high performance, power and efficiency from the motor and hydraulics, guarantees impressively low operating costs. You also benefit from flexibility, precision and its ultra-compact size.

### Savings

The electronics and permanent magnet motor are highly efficient and minimize power losses while transferring maximum energy to the hydraulic parts of the pump. The refined control system with integrated microprocessor adjusts the motor speed, matching the required operating point of the pump or system requirements.

This reduces demand on electricity according to the required working conditions.

This creates economies, especially in systems where pump demand varies over time.

### Flexibility

The compact size, low loss and increased control make the e-SV Smart series a good choice in applications and systems where fixed speed pumps are commonly used. The e-SV Smart series is easy to integrate in control and regulation loops thanks to the wide availability of compatible communication protocols, including analog and digital inputs.

The pump is supplied with a pressure sensor.

### Ease of use and commissioning

e-SV Smart has an intuitive interface that guides the user through the installation, and a practical area to assist with connections.

The control system is integrated and no additional external electrical panel is required

### Application sectors

- Water supply systems in residential buildings
- Air conditioning
- Water treatment plants
- Industrial installations

### Identification code

The electrical voltage supply of e-SVE models is identified by the last characters.

Example: 22SV**E**02F015P0**M/2**

**M/2** = 1x208-240 V

**T/4** = 3x380-460 V

**T/5** = 3x208-240/380-460 V



### e-SM system

- Single-phase power supply:  
208-240 V +/- 10%, 50/60 Hz
- Three-phase power supply:
  - from 0,37 kW to 1,5 kW:  
208-240 / 380-460 V +/- 10%, 50/60 Hz
  - 2,2 kW: 380-460 V +/- 10%, 50/60 Hz
- Power up to 2,2kW
- Protection class IP 55
- Can be linked up to 3 e-SV Smart pumps

### Pump

- Flow rate: up to 30 m<sup>3</sup>/h
- Head: up to 235 m
- Temperature of pumped liquid: up to +120°C
- Maximum operating pressure 25 bar (PN 25)
- The hydraulic performances meet the tolerances specified in ISO 9906:2012.
- Environment temperature: -20° C to +50° C with no performance derating

### Motor

- IE5 efficiency level (IEC TS 60034-30-2:2016)
- Synchronous electric motor with permanent magnets, closed structure, air-cooled (TEFC)
- Insulation class 155 (F)
- Overload protection and locked rotor with automatic reset incorporated

### Regulations (EU) 2019/1781 e 2021/341

#### Annex I – point 4

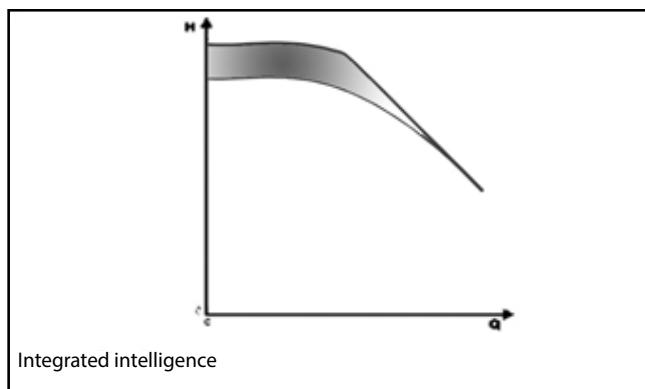
#### (Product information)

The requirements shall not apply to these variable speed drives, as they are integrated to permanent magnet motors, that aren't covered by the same regulations.

## e-SVE SERIES (e-SV SMART)

e-SV Smart series is equipped with an intelligent control that optimizes hydraulic performance while minimizing waste.

**Integrated intelligence:** The electronic control of the motor enables a 20% increase in performance compared to an equivalent fixed speed pump (area highlighted in figure "Integrated intelligence").

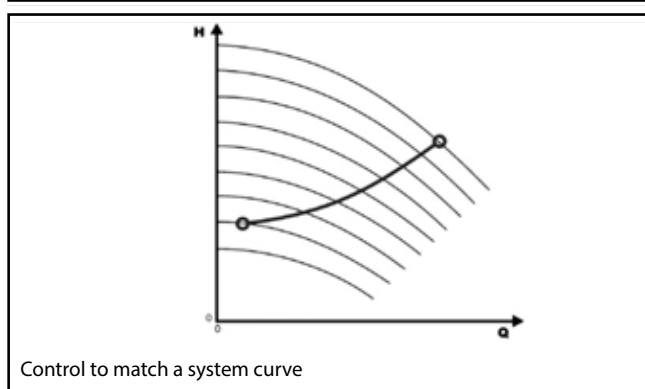
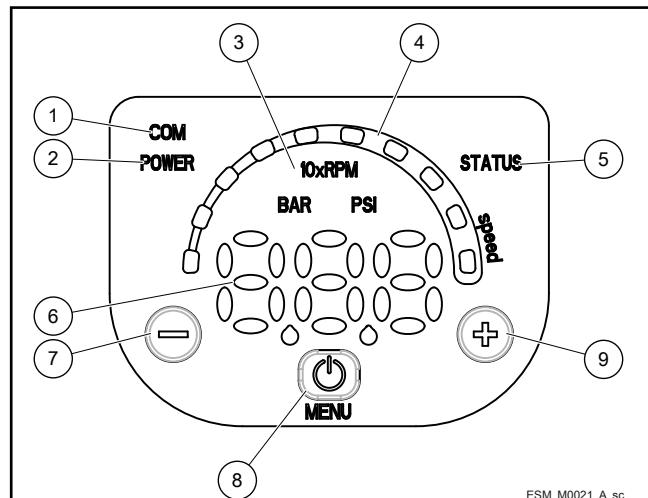
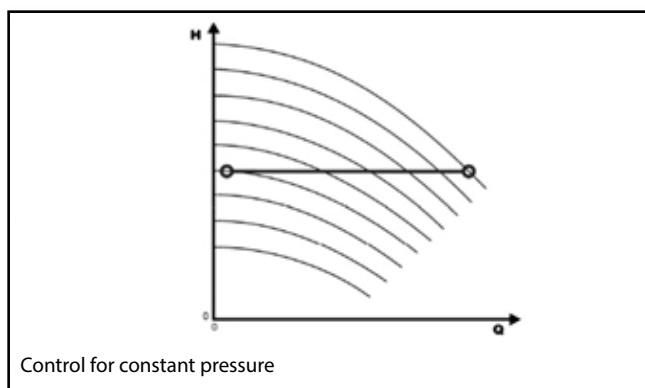


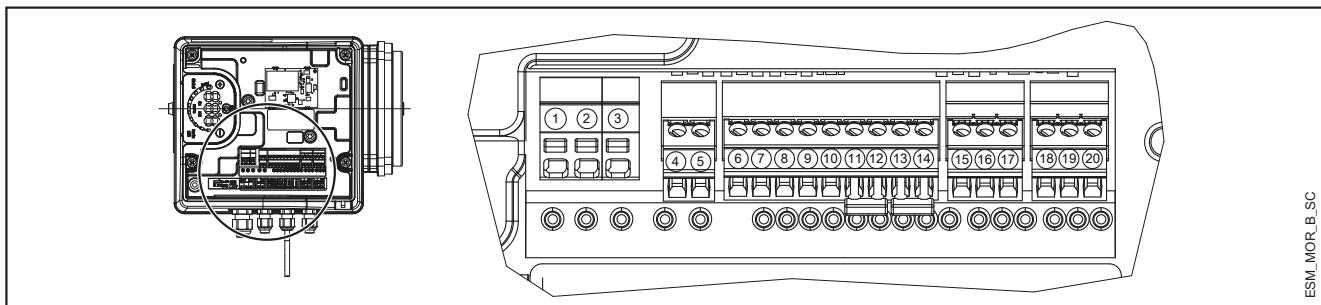
**Intuitive and simple interface:** You can control the unit from just three buttons, with an easy to read display for parameters and alarms, designed for complete control of system operation.

- ① Communication LED
- ② Power on LED
- ③ Unit of measure LED
- ④ Speed LED bar
- ⑤ Status LED
- ⑥ Numeric display
- ⑦ Decrease key
- ⑧ On/off and menu key
- ⑨ Increase key

**Adjustment:** This is possible both at constant pressure and according to the characteristic curve of the system, based on the customer's preferences.

Another option is according to an external signal or at a preset speed.

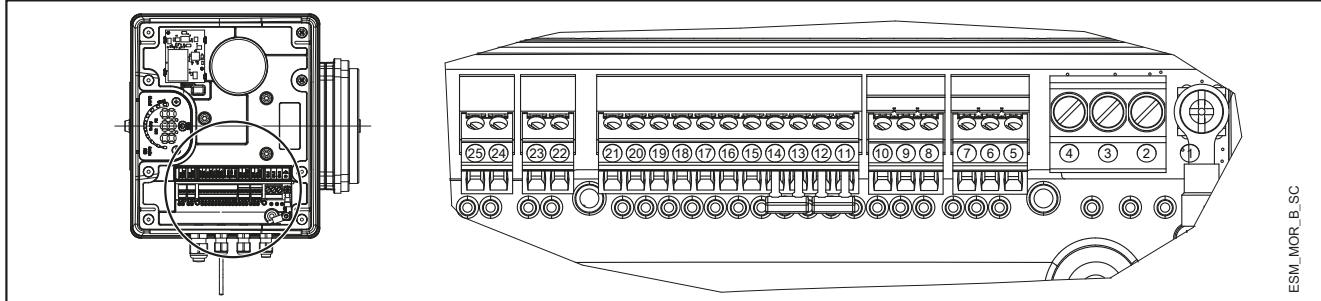


**e-SVE SERIES**
**SINGLE PHASE TERMINAL BLOCK**


ESM\_MOR\_B\_SC

REF.	ITEM	DESCRIPTION
4	Fault Signal	COM - error status relay
5		NO - error status relay
6	Auxiliary Voltage Supply	Auxiliary voltage supply +15 VDC
7	Analog input 0-10V	Actuator mode 0-10 V input
8		GND for 0-10 V input
9	External Pressure sensor [also Differential]	Power supply external sensor +15 VDC
10		External sensor 4-20 mA input
11	External Start/Stop	External ON/OFF input reference
12		External ON/OFF input
13	External Lack of Water	Low water input
14		Low water reference
15		RS485 port 1: RS485-1N B (-)
16	Communication bus	RS485 port 1: RS485-1P A (+)
17		Electronic GND
18		RS485 port 2: RS485 port 2: RS485-2N B (-) active only with optional module
19	Communication bus	RS485 port 2: RS485 port 2: RS485-2P A (+) active only with optional module
20		Electronic GND

MorsM-en\_a\_sc

**THREE-PHASE TERMINAL BLOCK**


ESM\_MOR\_B\_SC

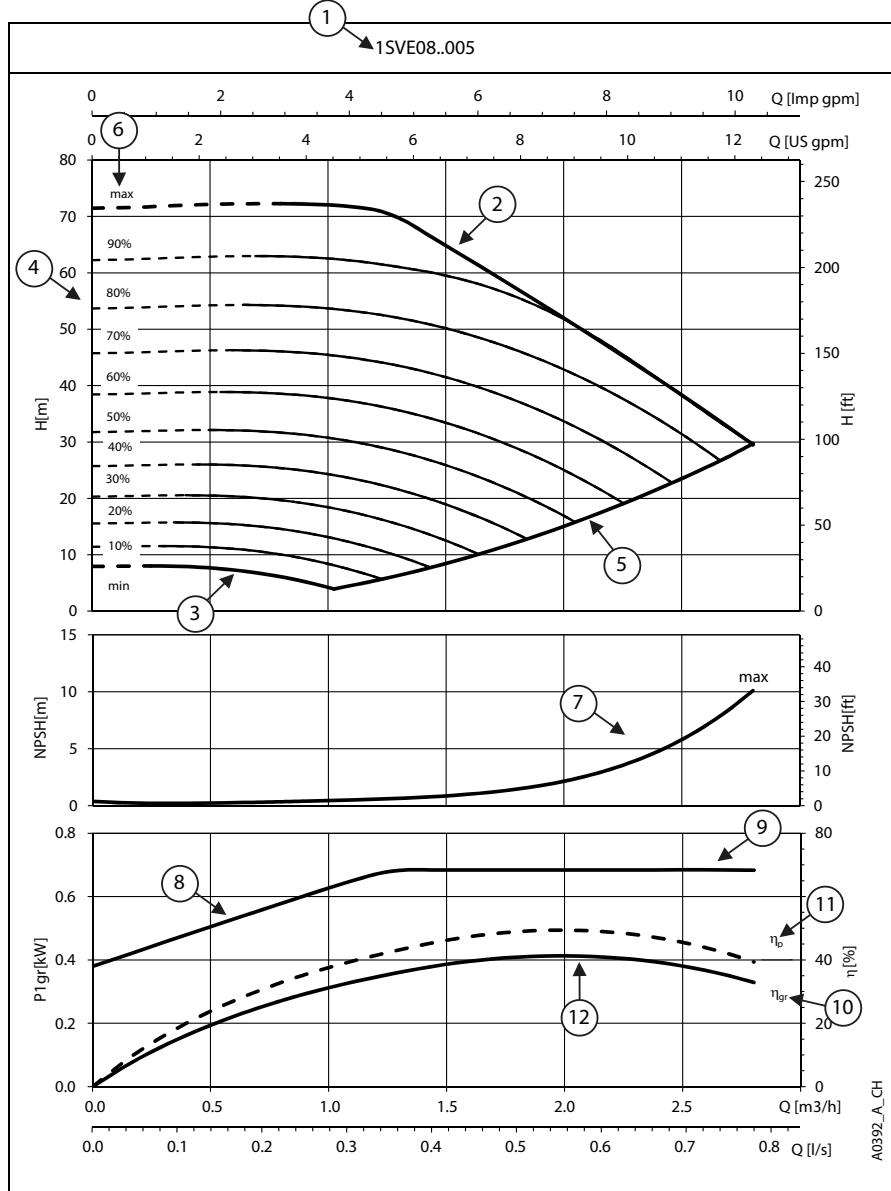
REF.	ITEM	DESCRIPTION
5		Electronic GND
6	Communication bus	RS485 port 1: RS485-1P A (+)
7		RS485 port 1: RS485-1N B (-)
8		Electronic GND
9	Communication bus	RS485 port 2: RS485 port 2: RS485-2P A (+) active only with optional module
10		RS485 port 2: RS485 port 2: RS485-2N B (-) active only with optional module
11	External Lack of Water	Low water reference
12		Low water input
13	External Start/Stop	External ON/OFF input reference
14		External ON/OFF input
15	External Pressure sensor	External sensor 4-20 mA input
16		Power supply external sensor +15 VDC
17	External Pressure sensor [also Differential]	External sensor 4-20 mA input
18		Power supply external sensor +15 VDC
19	Analog input 0-10V	GND for 0-10 V input
20		Actuator mode 0-10 V input
21	Auxiliary Voltage Supply	Auxiliary voltage supply +15 VDC
22		Normally open contact
23	Motor running signal	Common contact
24	Fault Signal	NO - error status relay
25		COM - error status relay

MorsT-en\_a\_sc

## e-SVE SERIES

### HOW TO READ SMART PUMP SERIES CURVES

To exploit to the maximum potential of Smart Pumps it's important to properly read working curves:



① **Pump model**

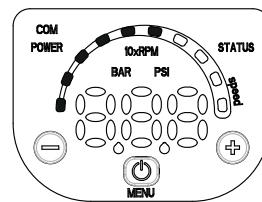
② **Maximum speed curve:** equal to 3600 rpm

③ **Minimum speed curve:** it refers to the minimum rpm level the motor can work at, it's calculated depending on the model of pump maximizing for each one the working area and allowing the highest system flexibility.

④ The **area with dotted lines** is where the pump can only operate intermittently for short periods of time.

⑤ Each **intermediate curve** between max and min speed shows the percentage of load the pump+motor+drive system is working at; it's easy to read also from the LED speed bar on the HMI keypad: at 90% there will be 9 led, at 80% there will be 8 and so on.

Example: at 60% there will be 6 lit led's



⑥ The **part load percentage** is calculated depending on maximum speed (max, 100%) and minimum speed (min, equal to 0%, which is the minimum part load step, below it the drive stays powered up but cannot work).

⑦ **NPSH:** is the net positive suction head of pump+motor+drive system working at maximum speed.

⑧ **P<sub>1</sub><sub>gr</sub>** is the power absorption in kW of pump+motor+drive system working at maximum speed.

⑨ **Load control:** the Smart Pump controls and limits power consumption at high flow/low head, in this way the motor stays protected from overload and ensure a longer life of pump+motor+drive system.

⑩  **$\eta_{gr}$**  is the efficiency of pump+motor+drive system working at maximum speed.

⑪  **$\eta_p$**  is the efficiency of the hydraulic part, working at maximum speed.

⑫ **Working point:** it's important to make sure the pump is working at the best working point, the one at highest efficiency.

It's easy to find it: it's the highest point of the hp pump efficiency curve; once you found it, you can learn also flow values from x-axis called Q and head values from y-axis called H which allow the system to work at the best working point.

## e-SVE SERIES - SINGLE PHASE VERSION HYDRAULIC PERFORMANCES TABLE

PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	6,7 0,4	13,3 0,8	20,0 1,2	26,7 1,6	33,3 2,0	40,0 2,4	46,7 2,8	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
1SVE05..003P0M	0,37	ESM90R/103 SVE	0,49	2,24	44,7	45,0	45,2	44,6	41,5	35,0	28,1	20,8
1SVE08..005P0M	0,55	ESM90R/105 SVE	0,68	3,07	71,5	72,0	72,3	71,2	62,3	52,0	41,2	29,6
1SVE11..007P0M	0,75	ESM90R/107 SVE	0,91	4,04	98,3	99,1	99,3	97,7	85,1	70,9	56,0	40,0
1SVE15..011P0M	1,1	ESM90R/111 SVE	1,33	5,85	134,1	135,1	135,5	133,8	123,6	103,9	83,3	61,4
1SVE20..015P0M	1,5	ESM90R/115 SVE	1,78	7,79	178,9	180,1	180,6	178,5	168,0	141,6	114,0	84,7
PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	13,3 0,8	26,7 1,6	40,0 2,4	53,3 3,2	66,7 4,0	80,0 4,8	86,7 5,2	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
3SVE03..003P0M	0,37	ESM90R/103 SVE	0,49	2,24	33,4	33,7	33,6	30,7	24,9	19,5	14,0	10,9
3SVE05..005P0M	0,55	ESM90R/105 SVE	0,69	3,08	55,7	56,2	55,8	46,3	37,1	28,4	19,5	14,4
3SVE07..007P0M	0,75	ESM90R/107 SVE	0,92	4,06	77,9	78,7	77,2	63,4	50,7	38,6	26,0	18,7
3SVE09..011P0M	1,1	ESM90R/111 SVE	1,33	5,85	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2
3SVE11..015P0M	1,5	ESM90R/115 SVE	1,78	7,80	122,5	123,3	122,5	117,9	98,4	78,0	57,2	46,3
PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	23,3 1,4	46,7 2,8	70,0 4,2	93,3 5,6	116,7 7,0	140,0 8,4	166,7 10,0	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
5SVE02..003P0M	0,37	ESM90R/103 SVE	0,49	2,24	22,4	22,2	21,8	20,0	16,5	13,3	10,2	6,5
5SVE03..005P0M	0,55	ESM90R/105 SVE	0,68	3,07	33,5	33,3	32,7	29,8	24,5	19,8	15,2	9,5
5SVE04..007P0M	0,75	ESM90R/107 SVE	0,91	4,05	44,7	44,4	43,5	40,5	33,4	27,1	20,8	13,3
5SVE06..011P0M	1,1	ESM90R/111 SVE	1,33	5,86	67,1	66,6	65,3	59,5	49,0	39,6	30,4	19,1
5SVE08..015P0M	1,5	ESM90R/115 SVE	1,78	7,81	88,8	89,3	87,6	82,6	68,3	55,3	42,6	27,9
PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	40,0 2,4	80,0 4,8	120,0 7,2	160,0 9,6	200,0 12,0	240,0 14,4	283,3 17,0	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
10SVE01..005P0M	0,55	ESM90R/105 SVE	0,68	3,07	17,3	17,3	16,9	16,2	13,6	10,4	7,1	3,3
10SVE02..007P0M	0,75	ESM90R/107 SVE	0,92	4,09	24,2	23,9	23,1	21,7	19,3	14,6	9,7	3,6
10SVE02..011P0M	1,1	ESM90R/111 SVE	1,33	5,85	34,8	34,5	33,7	32,3	27,7	22,4	17,1	11,0
10SVE03..015P0M	1,5	ESM90R/115 SVE	1,78	7,81	52,7	52,2	51,0	46,1	38,1	30,8	23,5	15,1
PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	70,0 4,2	140,0 8,4	210,0 12,6	280,0 16,8	350,0 21,0	420,0 25,2	483,3 29,0	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
15SVE01..007P0M	0,75	ESM90R/107 SVE	0,92	4,10	14,2	13,9	13,3	12,3	9,8	6,4	2,8	
15SVE01..011P0M	1,1	ESM90R/111 SVE	1,33	5,85	20,5	20,1	19,4	18,4	14,8	10,9	7,0	3,2
15SVE02..015P0M	1,5	ESM90R/115 SVE	1,76	7,71	29,6	29,1	28,3	26,8	22,2	16,4	10,1	3,8
PUMP TYPE SVE Single-phase	MOTOR  P <sub>N</sub> kW	MOTOR  TYPE 1x230 V	e-SM SET  * P <sub>1</sub> kW	e-SM SET  * I 208-240 V A	Q = DELIVERY							
				l/min 0 m <sup>3</sup> /h 0	70,0 4,2	140,0 8,4	210,0 12,6	280,0 16,8	350,0 21,0	420,0 25,2	500,0 30,0	
H = TOTAL HEAD IN METRES OF COLUMN OF WATER												
22SVE01..007P0M	0,75	ESM90R/107 SVE	0,89	3,95	14,4	14,4	14,1	12,5	9,5	6,3	2,9	
22SVE01..011P0M	1,1	ESM90R/111 SVE	1,34	5,87	20,7	20,8	20,5	18,7	15,1	11,5	7,8	3,2
22SVE02..015P0M	1,5	ESM90R/115 SVE	1,72	7,56	31,4	31,0	30,3	26,7	21,7	16,7	11,0	2,8

\* Maximum value in specified range: P<sub>1</sub> = input power; I = input current.

1-22sve-esm-2p50-en\_a\_th



**e-SVE SERIES**
**ELECTRICAL DATA TABLE**

In the range 3000-3600 rpm the nominal motor power is guaranteed. Above 3600 rpm it isn't possible work and the motor is automatically limited; below 3000 rpm it works partially load.

**SINGLE PHASE VERSION**

P <sub>N</sub> kW	MOTOR TYPE	IEC SIZE* 90R	Construction Design V18/B14	SPEED (RPM)** min <sup>-1</sup>	INPUT CURRENT I (A) 208-240 V	DATA RELATED TO THE VOLTAGE OF 230V						IES
						I <sub>n</sub> A	cosφ	T <sub>n</sub> Nm	η %			
0,37	ESM90R/103 SVE	90R	V18/B14	3000	2,28-1,99	2,08	0,95	1,18	81,3	79,1	74,3	2
				3600	2,30-2,02	2,10		0,98	80,6	77,5	72,0	
0,55	ESM90R/105 SVE	90R	V18/B14	3000	3,27-2,85	2,96	0,97	1,75	83,3	82,2	78,8	2
				3600	3,27-2,85	2,96		1,46	83,3	81,5	77,5	
0,75	ESM90R/107 SVE	90R	V18/B14	3000	4,43-3,84	4,00	0,98	2,39	83,3	83,3	81,5	2
				3600	4,38-3,79	3,94		1,99	84,5	83,5	80,6	
1,10	ESM90R/111 SVE	90R	V18/B14	3000	6,26-5,35	5,64	0,99	3,50	85,7	85,1	82,7	2
				3600	6,20-5,32	5,63		2,92	85,9	84,6	81,4	
1,50	ESM90R/115 SVE	90R	V18/B14	3000	8,57-7,32	7,69	0,99	4,77	85,6	85,7	84,7	2
				3600	8,42-7,25	7,62		3,98	86,3	85,9	84,0	

\* R = Reduced size of motor casing as compared to shaft extension and flange.

eSV\_Smart-motm\_en\_a\_te

\*\* The indicated rotational speed are representing the upper and lower limits of the rated power operational speed range.

**THREE PHASE VERSION**

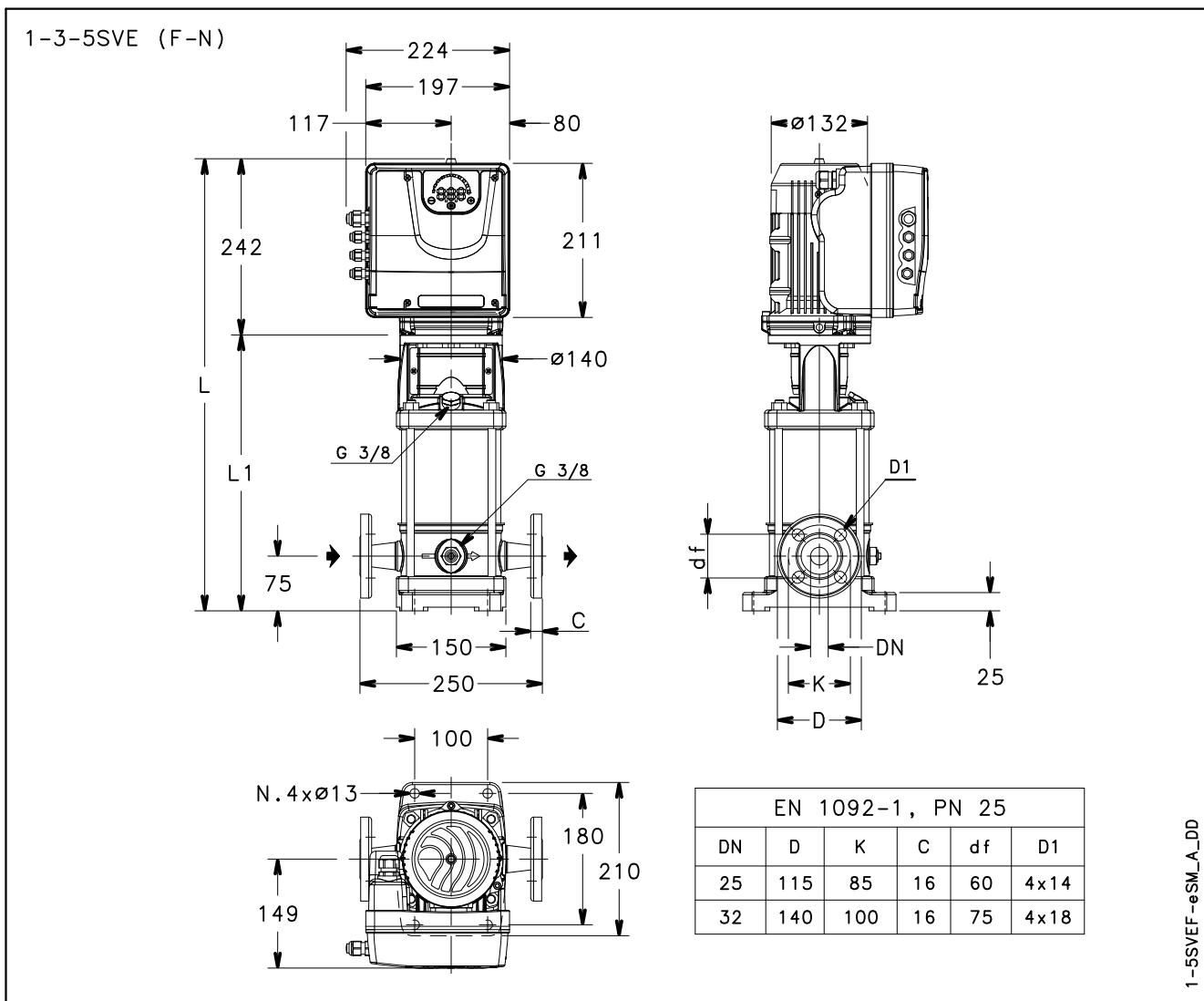
P <sub>N</sub> kW	MOTOR TYPE	IEC SIZE* 90R	Construction Design V18/B14	SPEED (RPM)** min <sup>-1</sup>	INPUT CURRENT I (A) 208-240/380-460 V	DATA RELATED TO THE VOLTAGE OF 400V						IES
						I <sub>n</sub> A	cosφ	T <sub>n</sub> Nm	η %			
0,37	ESM90R/303 SVE	90R	V18/B14	3000	2,01-1,85/1,41-1,28	1,42	0,48	1,18	78,6	75,6	70,1	2
				3600	2,13-1,83/1,43-1,33	1,36		0,98	83,1	80,7	76,1	
0,55	ESM90R/305 SVE	90R	V18/B14	3000	2,81-2,57/1,89-1,69	1,88	0,52	1,75	81,1	79,3	75,5	2
				3600	2,90-2,52/1,90-1,73	1,80		1,46	85,4	83,8	80,6	
0,75	ESM90R/307 SVE	90R	V18/B14	3000	3,70-3,37/2,44-2,17	2,41	0,55	2,39	81,9	81,2	78,6	2
				3600	3,74-3,28/2,43-2,20	2,31		1,99	86,1	85,5	83,1	
1,10	ESM90R/311 SVE	90R	V18/B14	3000	5,12-4,73/3,41-3,01	3,35	0,57	3,50	82,8	81,3	77,7	2
				3600	5,15-4,69/3,45-3,06	3,32		2,92	83,5	81,6	77,6	
1,50	ESM90R/315 SVE	90R	V18/B14	3000	6,73-6,17/4,49-3,95	4,39	0,59	4,77	83,1	82,8	80,6	2
				3600	6,69-6,08/4,48-3,97	4,32		3,98	84,6	83,6	80,8	
2,20	ESM90R/322 SVE	90R	V18/B14	3000	- /6,03-5,32	5,81	0,62	7,00	87,6	87,4	85,9	2
				3600	- /5,93-5,24	5,74		5,84	88,9	88,2	86,3	

\* R = Reduced size of motor casing as compared to shaft extension and flange.

eSV\_Smart-mott\_en\_a\_te

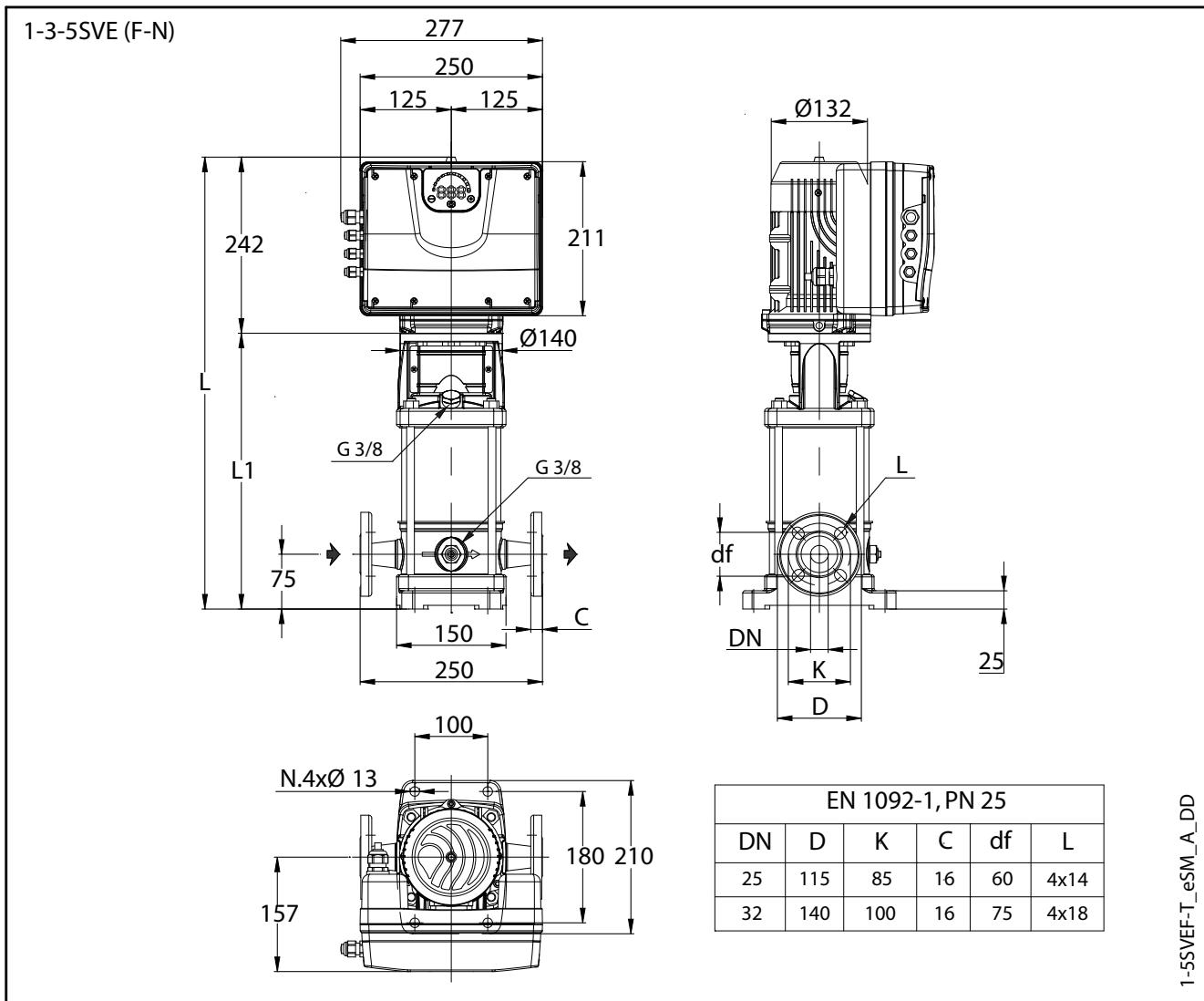
\*\* The indicated rotational speed are representing the upper and lower limits of the rated power operational speed range.

Note. **IES** refers to the efficiency class for frequency converter + motor systems (known as power transmission systems-PDS) with power between 0.12 kW and 1000 kW and between 100 V and 1000 V, according to the standard **EN 50598-2:2014**.

**1, 3, 5SVE..F SERIES - SINGLE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


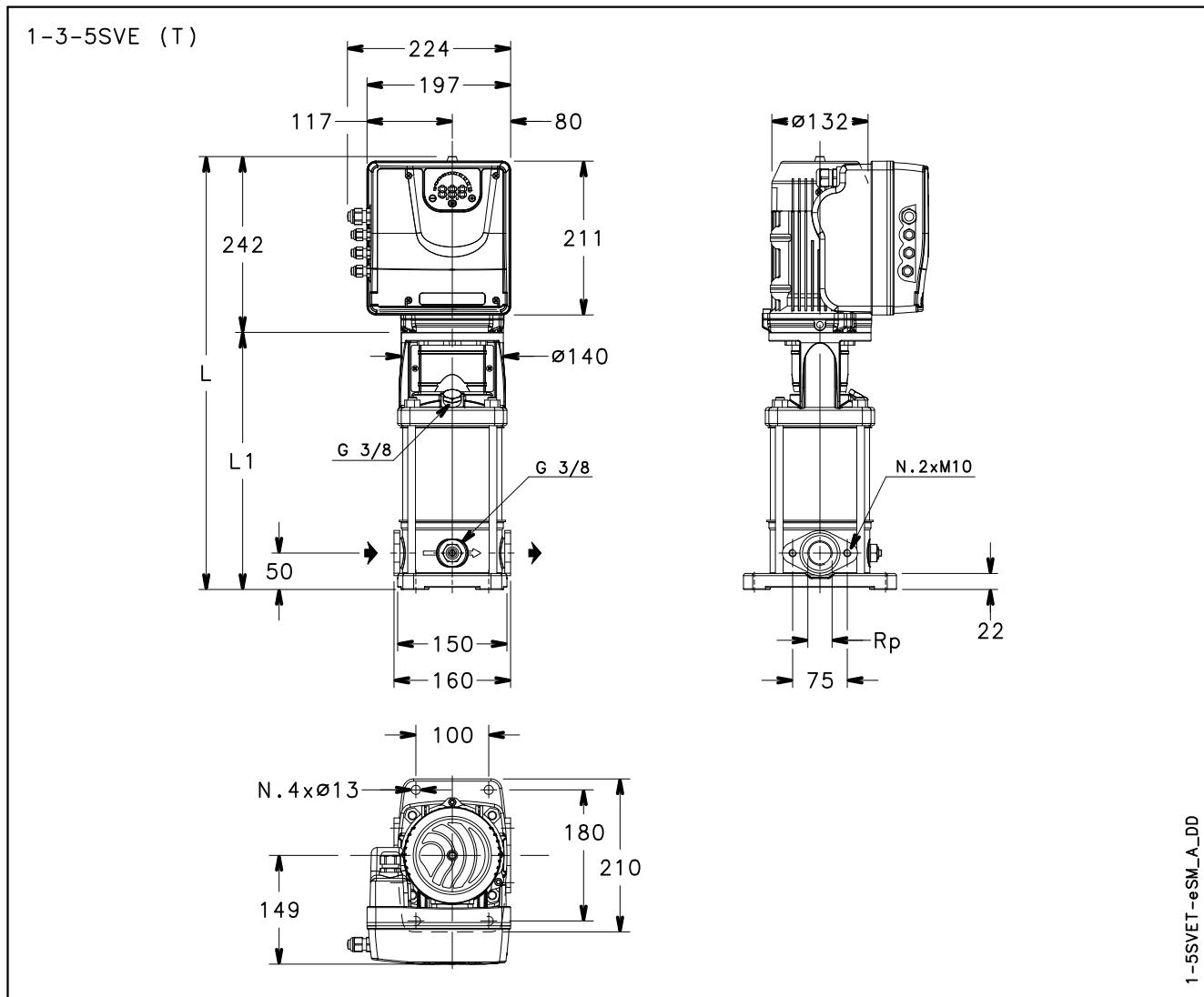
PUMP TYPE <b>SVE F (SINGLE-PHASE)</b>	MOTOR		DIMENSIONS (mm)			WEIGHT (kg)	
	kW	SIZE	L	L1	DN	PUMP	ELECTRIC PUMP
1SVE05F003P0M	0,37	90	580	338	25	10,1	17,6
1SVE08F005P0M	0,55	90	640	398	25	11,2	18,7
1SVE11F007P0M	0,75	90	700	458	25	12,4	19,9
1SVE15F011P0M	1,1	90	780	538	25	14,2	23,2
1SVE20F015P0M	1,5	90	880	638	25	16,2	25,2
3SVE03F003P0M	0,37	90	540	298	25	9,1	16,6
3SVE05F005P0M	0,55	90	580	338	25	9,9	17,4
3SVE07F007P0M	0,75	90	620	378	25	11,2	18,7
3SVE09F011P0M	1,1	90	660	418	25	12	21
3SVE11F015P0M	1,5	90	700	458	25	12,8	21,8
5SVE02F003P0M	0,37	90	530	288	32	9,1	16,6
5SVE03F005P0M	0,55	90	555	313	32	9,6	17,1
5SVE04F007P0M	0,75	90	580	338	32	10,1	17,6
5SVE06F011P0M	1,1	90	630	388	32	11,3	20,3
5SVE08F015P0M	1,5	90	680	438	32	12,4	21,4

1-5svef-esm-2p50-en\_a\_td

**1, 3, 5SVE..F SERIES - THREE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


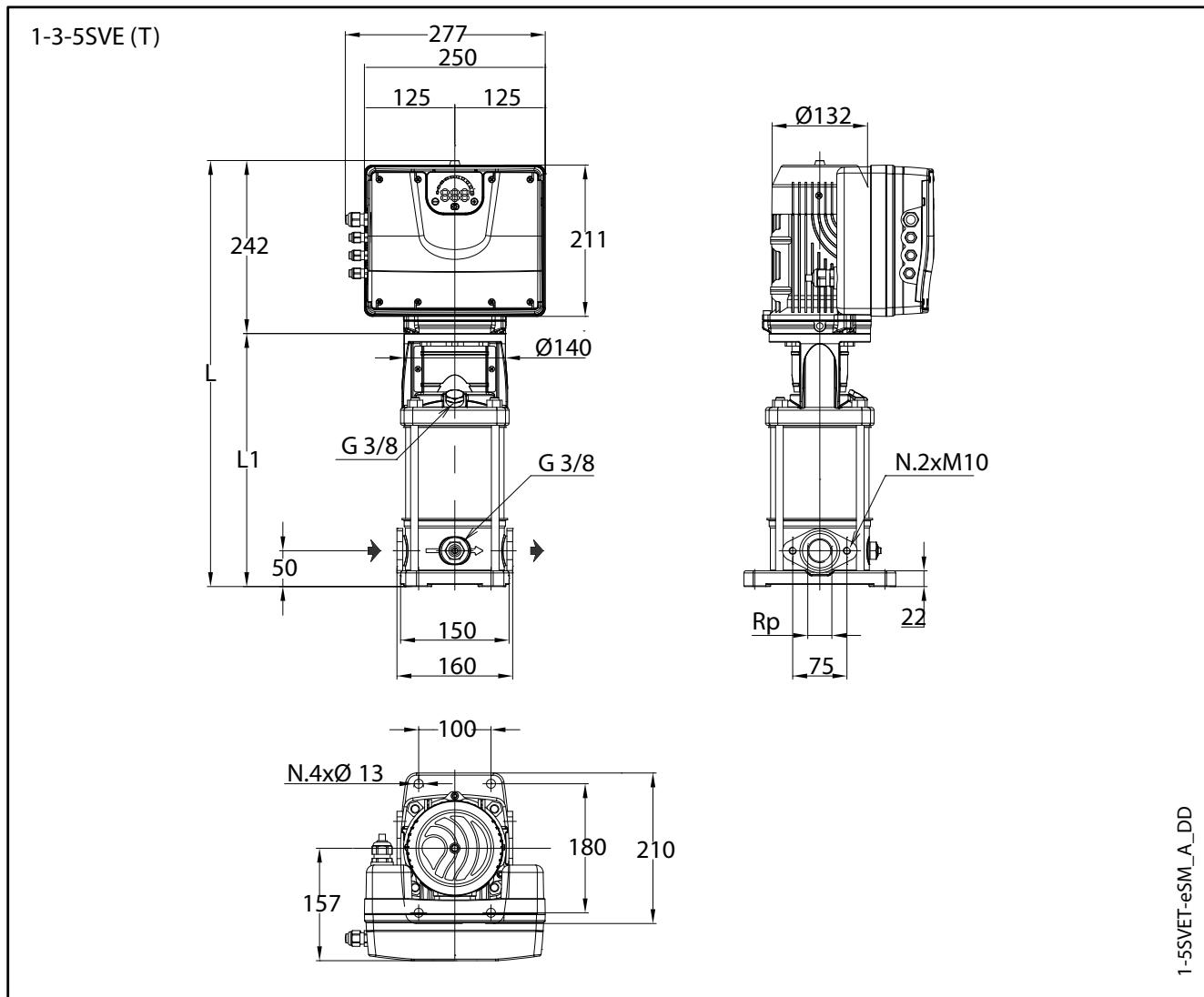
PUMP TYPE <b>SVE F</b> (THREE-PHASE)	MOTOR		DIMENSIONS (mm)			WEIGHT (kg)	
	kW	SIZE	L	L1	DN	PUMP	ELECTRIC PUMP
1SVE05F003POT	0,37	90	580	338	25	10,1	23,2
1SVE08F005POT	0,55	90	640	398	25	11,2	24,3
1SVE11F007POT	0,75	90	700	458	25	12,4	25,5
1SVE15F011POT	1,1	90	780	538	25	14,2	28,7
1SVE20F015POT	1,5	90	880	638	25	16,2	30,7
1SVE26F022POT	2,2	90	1000	758	25	18,6	34,6
3SVE03F003POT	0,37	90	540	298	25	9,1	22,2
3SVE05F005POT	0,55	90	580	338	25	9,9	23
3SVE07F007POT	0,75	90	620	378	25	11,2	24,3
3SVE09F011POT	1,1	90	660	418	25	12	26,5
3SVE11F015POT	1,5	90	700	458	25	12,8	27,3
3SVE17F022POT	2,2	90	820	578	25	15,2	31,2
5SVE02F003POT	0,37	90	530	288	32	9,1	22,2
5SVE03F005POT	0,55	90	555	313	32	9,6	22,7
5SVE04F007POT	0,75	90	580	338	32	10,1	23,2
5SVE06F011POT	1,1	90	630	388	32	11,3	25,8
5SVE08F015POT	1,5	90	680	438	32	12,4	26,9
5SVE12F022POT	2,2	90	780	538	32	12,4	28,4

1-5svef-esm-2p50T-en\_a\_td

**1, 3, 5SVE..T SERIES - SINGLE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


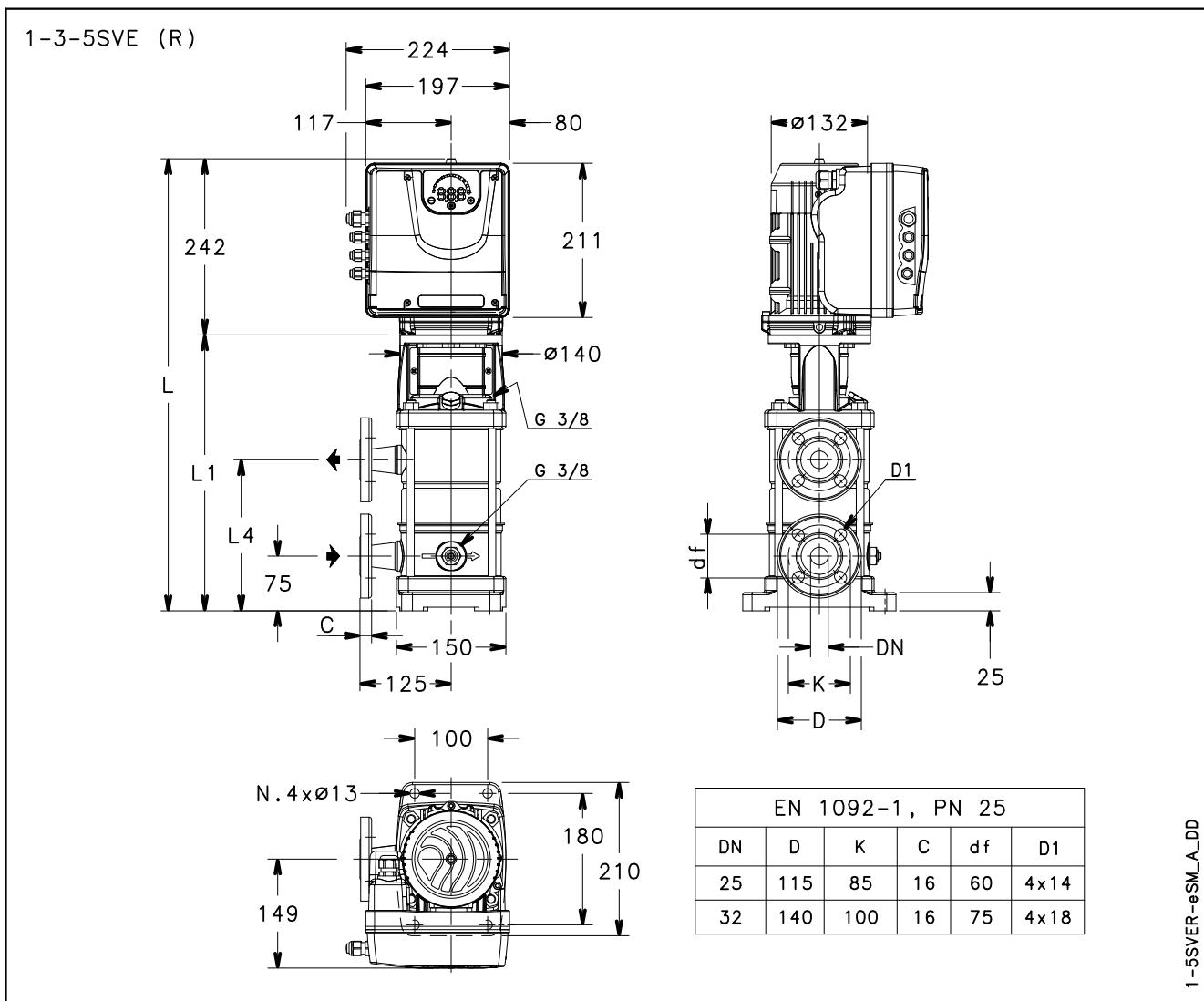
PUMP TYPE <b>SVE T</b> (SINGLE-PHASE)	MOTOR		DIMENSIONS (mm)			WEIGHT (kg)	
	kW	SIZE	L	L1	Rp	PUMP	ELECTRIC PUMP
1SVE05T003P0M	0,37	90	555	313	1	9,6	17,1
1SVE08T005P0M	0,55	90	615	373	1	10,7	18,2
1SVE11T007P0M	0,75	90	675	433	1	11,9	19,4
1SVE15T011P0M	1,1	90	755	513	1	13,7	22,7
3SVE03T003P0M	0,37	90	515	273	1	8,6	16,1
3SVE05T005P0M	0,55	90	555	313	1	9,4	16,9
3SVE07T007P0M	0,75	90	595	353	1	10,7	18,2
3SVE09T011P0M	1,1	90	635	393	1	11,5	20,5
3SVE11T015P0M	1,5	90	675	433	1	12,3	21,3
5SVE02T003P0M	0,37	90	505	263	1 1/4	8,2	15,7
5SVE03T005P0M	0,55	90	530	288	1 1/4	8,7	16,2
5SVE04T007P0M	0,75	90	555	313	1 1/4	9,2	16,7
5SVE06T011P0M	1,1	90	605	363	1 1/4	10,4	19,4
5SVE08T015P0M	1,5	90	655	413	1 1/4	11,5	20,5

1-5sveT-esm-2p50-en\_a\_td

**1, 3, 5SVE..T SERIES - THREE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


PUMP TYPE <b>SVE T</b> (THREE-PHASE)	MOTOR		DIMENSIONS (mm)			WEIGHT (kg)	
	kW	SIZE	L	L1	Rp	PUMP	ELECTRIC PUMP
1SVE05T003POT	0,37	90	555	313	1	9,6	22,7
1SVE08T005POT	0,55	90	615	373	1	10,7	23,8
1SVE11T007POT	0,75	90	675	433	1	11,9	25
1SVE15T011POT	1,1	90	755	513	1	14,1	28,6
3SVE03T003POT	0,37	90	515	273	1	8,6	21,7
3SVE05T005POT	0,55	90	555	313	1	9,4	22,5
3SVE07T007POT	0,75	90	595	353	1	10,7	23,8
3SVE09T011POT	1,1	90	635	393	1	11,5	26
3SVE11T015POT	1,5	90	675	433	1	12,3	26,8
5SVE02T003POT	0,37	90	505	263	1 1/4	8,2	21,3
5SVE03T005POT	0,55	90	530	288	1 1/4	8,7	21,8
5SVE04T007POT	0,75	90	555	313	1 1/4	9,2	22,3
5SVE06T011POT	1,1	90	605	363	1 1/4	10,4	24,9
5SVE08T015POT	1,5	90	655	413	1 1/4	11,5	26
5SVE12T022POT	2,2	90	755	513	1 1/4	13,7	29,7

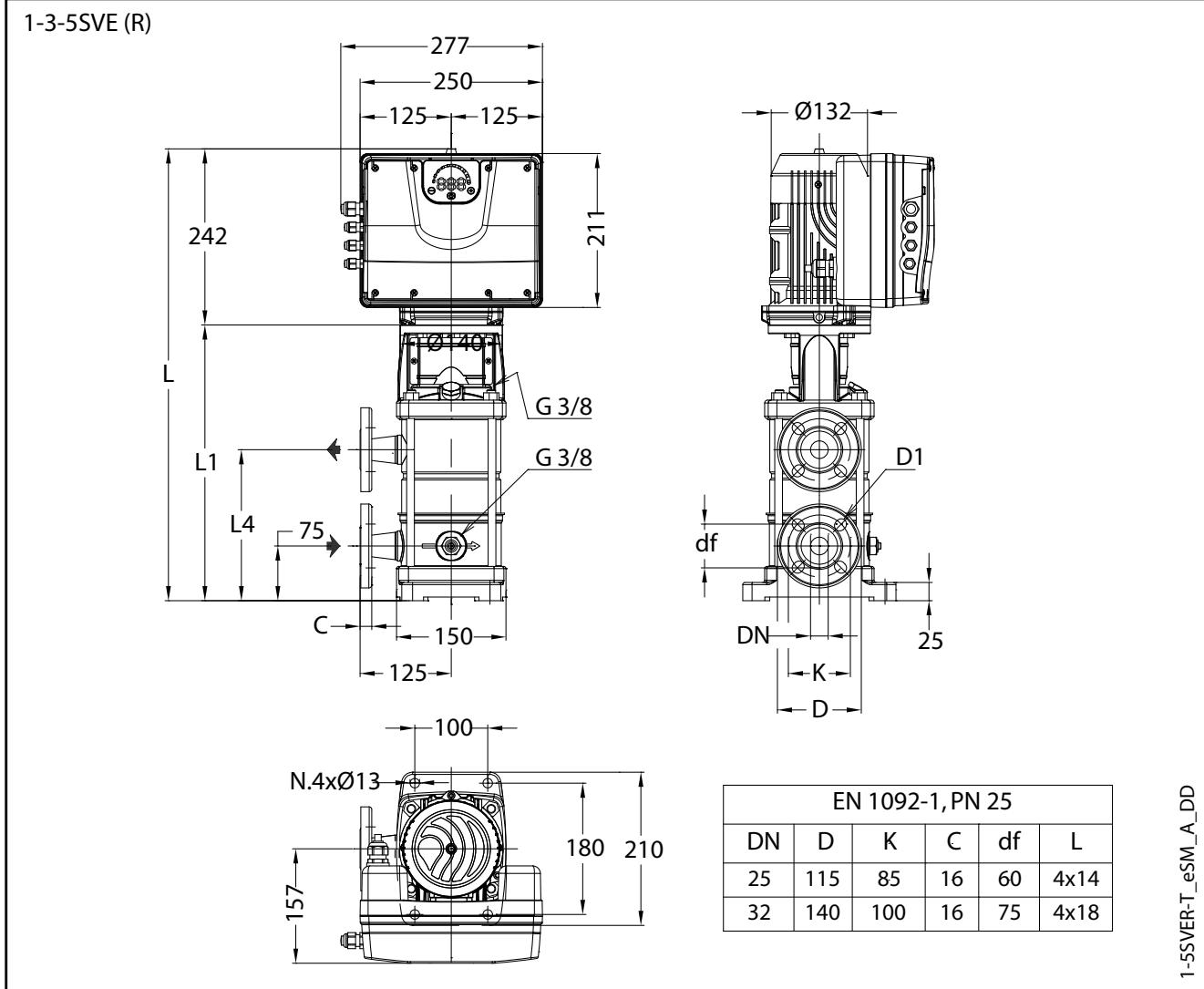
1-5sveT-esM-2p50T-en\_a\_td

**1, 3, 5SVE..R SERIES - SINGLE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


PUMP TYPE <b>SVE R</b> (SINGLE-PHASE)	MOTOR		DIMENSIONS (mm)				WEIGHT (kg)	
	kW	SIZE	L	L1	L4	DN	PUMP	ELECTRIC PUMP
1SVE08R005P0M	0,55	90	640	398	227	25	11,6	19,1
1SVE11R007P0M	0,75	90	700	458	287	25	12,8	20,3
1SVE15R011P0M	1,1	90	780	538	367	25	14,6	23,6
1SVE20R015P0M	1,5	90	880	638	467	25	16,6	25,7
3SVE07R007P0M	0,75	90	620	378	207	25	11,6	19,1
3SVE09R011P0M	1,1	90	660	418	247	25	12,4	21,4
3SVE11R015P0M	1,5	90	700	458	287	25	13,2	22,2
5SVE08R015P0M	1,5	90	680	438	267	32	13	22

1-5sveR-esm-2p50-en\_a\_td

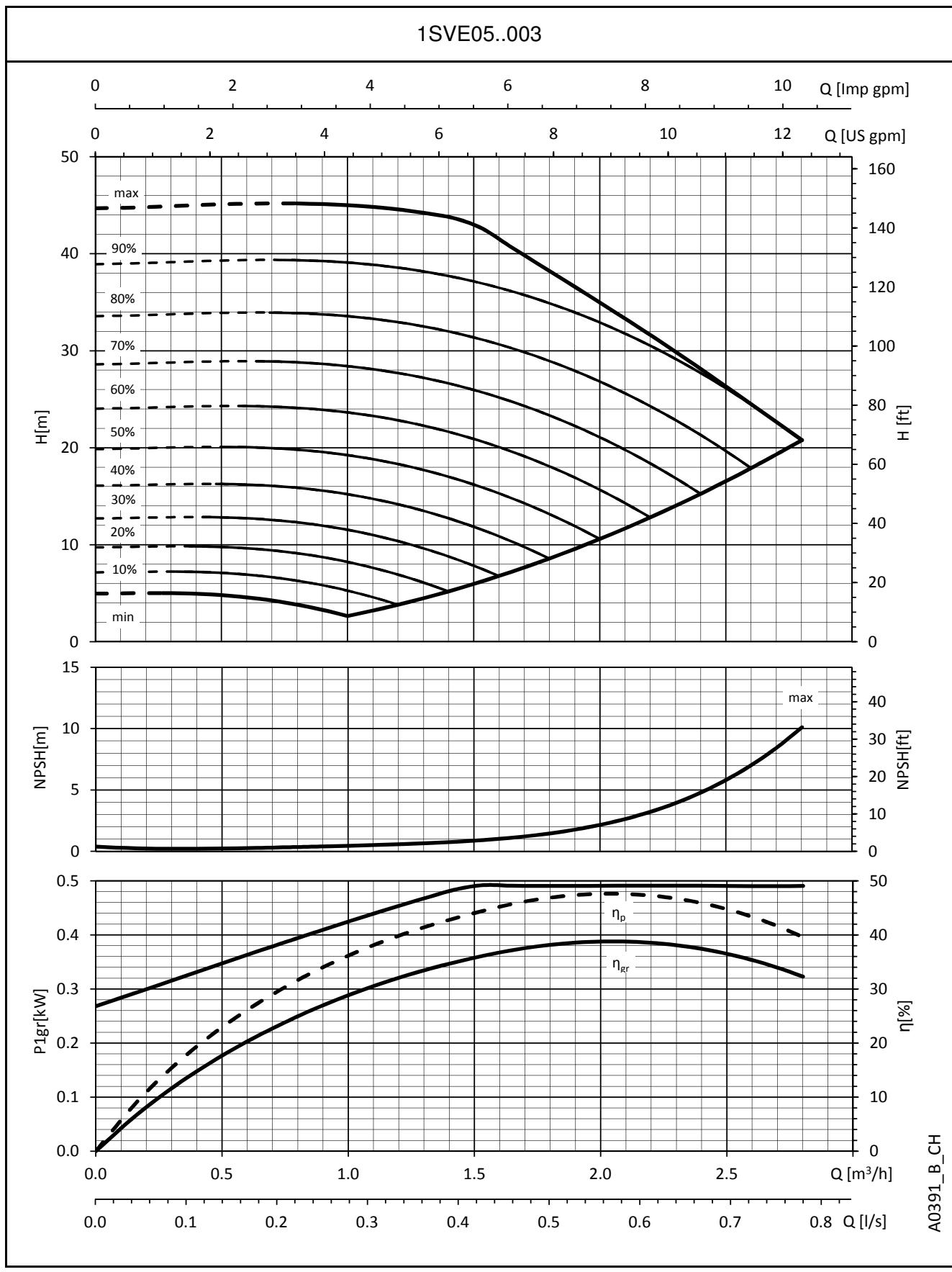
## **1, 3, 5SVE..R SERIES - THREE PHASE VERSION DIMENSIONS AND WEIGHTS**



PUMP TYPE <b>SVE R</b> (THREE-PHASE)	MOTOR		L	DIMENSIONS (mm)			PUMP	WEIGHT (kg) ELECTRIC PUMP
	kW	SIZE		L1	L4	DN		
1SVE08R005POT	0,55	90	640	398	227	25	11,6	24,7
1SVE11R007POT	0,75	90	700	458	287	25	12,8	25,9
1SVE15R011POT	1,1	90	780	538	367	25	14,6	29,1
1SVE20R015POT	1,5	90	880	638	467	25	16,6	31,1
1SVE26R022POT	2,20	90	1000	758	467	25	20,2	36,2
3SVE07R007POT	0,75	90	620	378	207	25	11,6	24,7
3SVE09R011POT	1,1	90	660	418	247	25	12,4	26,9
3SVE11R015POT	1,5	90	700	458	287	25	13,2	27,7
3SVE17R022POT	2,2	90	820	578	287	25	15,6	31,6
5SVE08R015POT	1,5	90	680	438	267	32	13	27,5
5SVE12R022POT	2,2	90	780	538	267	32	17,4	33,4

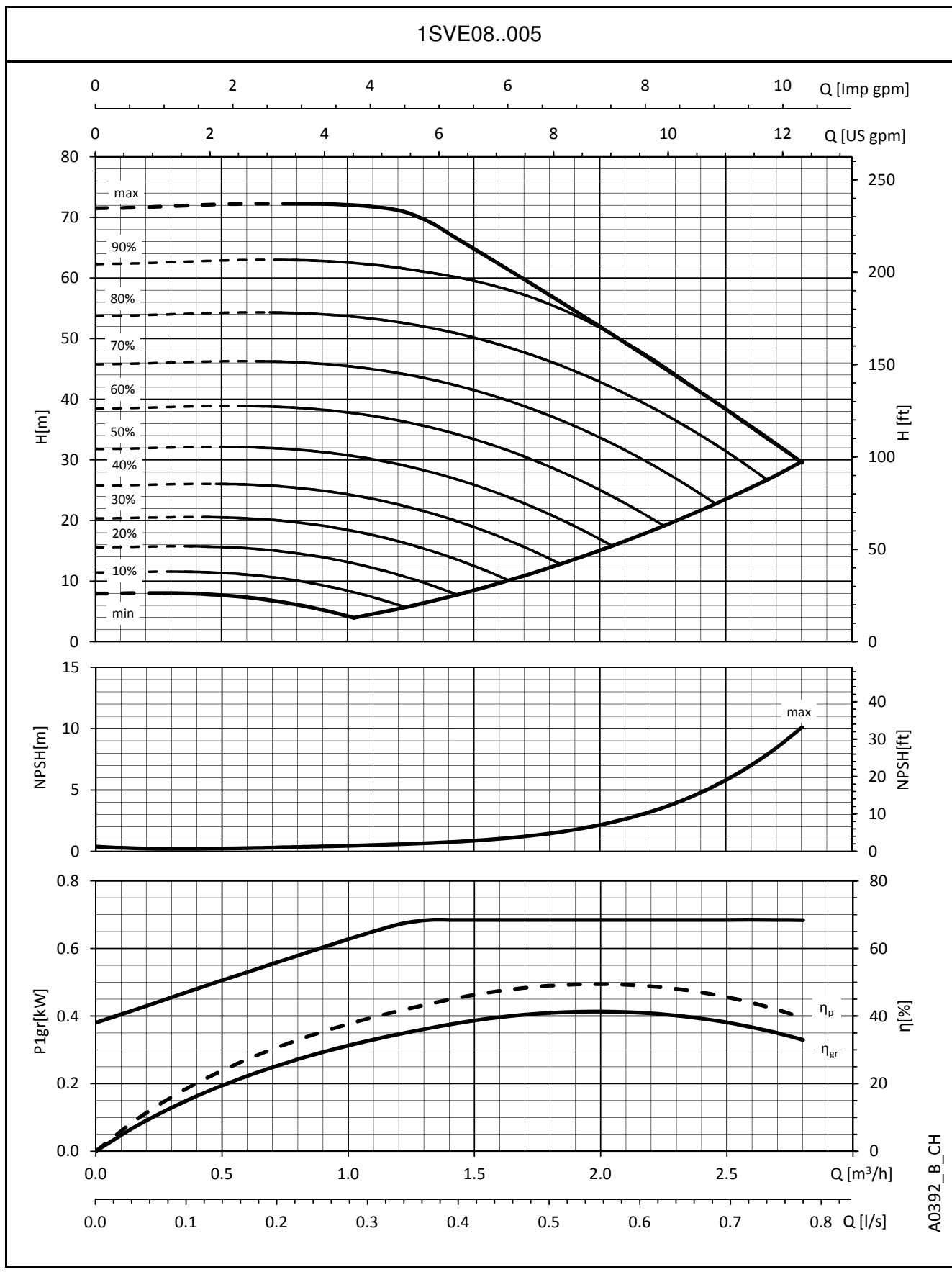
1-5sveR-esm-2p50T-en\_a\_td

## 1SVE SERIES OPERATING CHARACTERISTICS



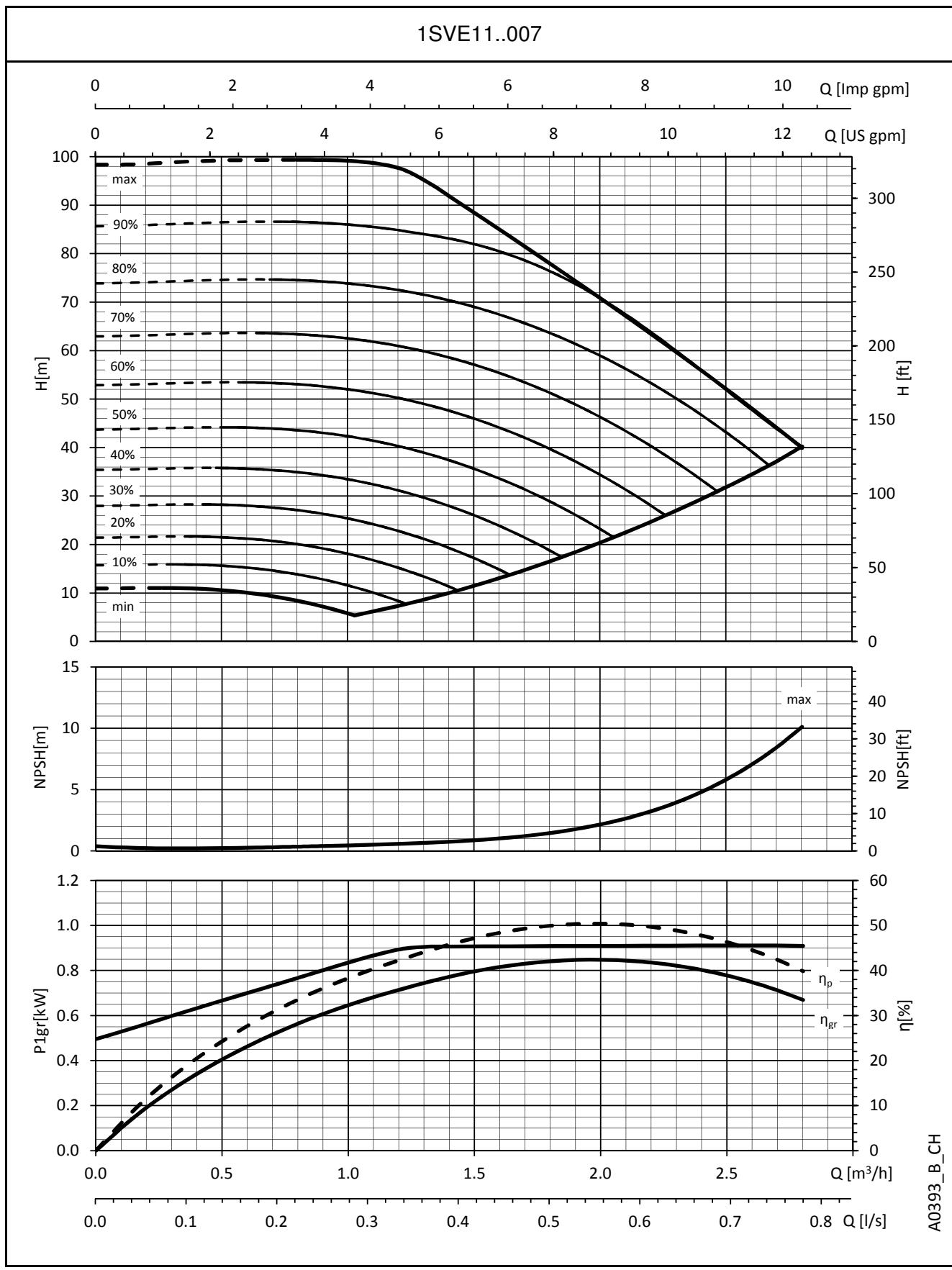
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **1SVE SERIES OPERATING CHARACTERISTICS**

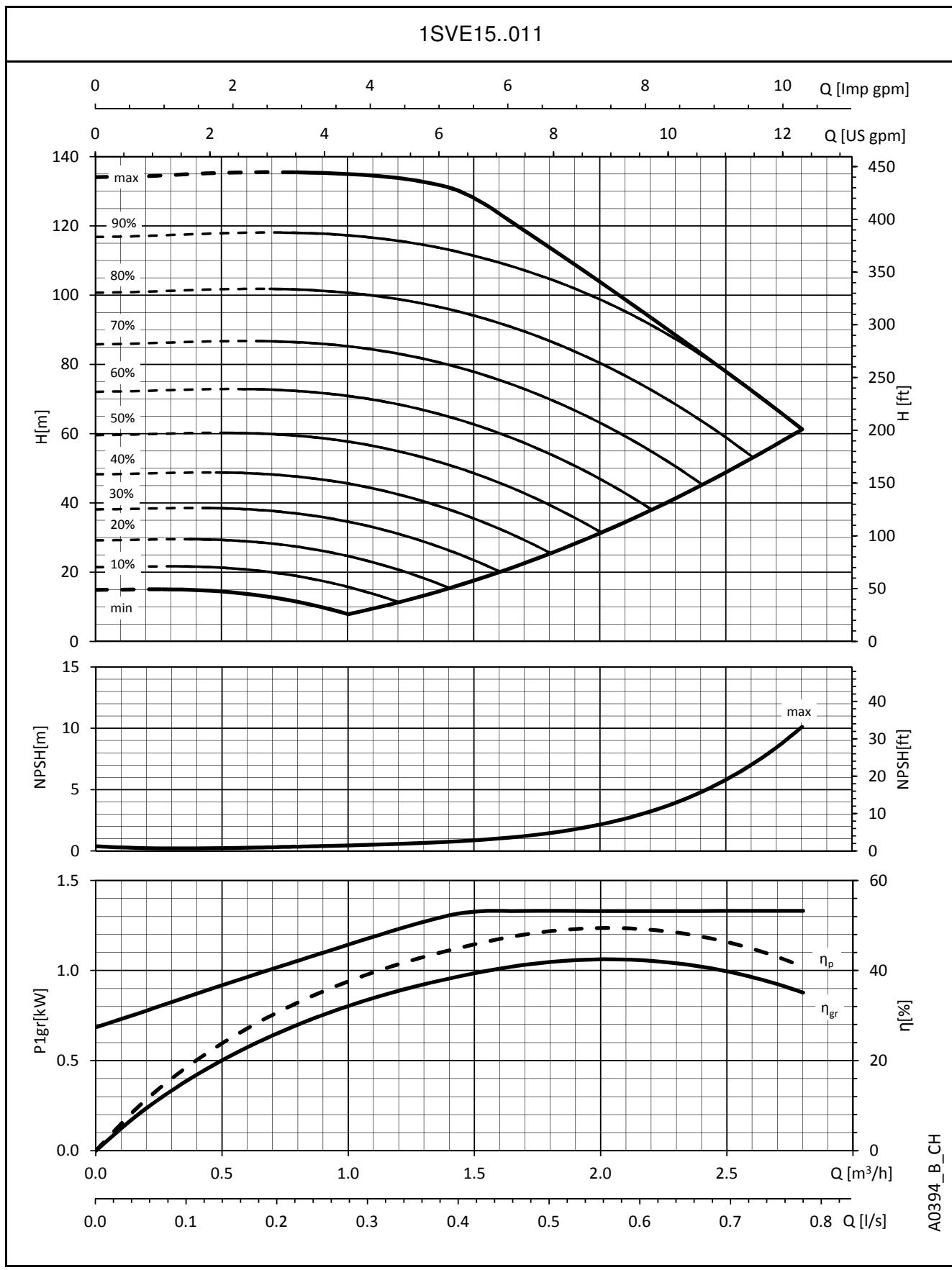


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 1SVE SERIES OPERATING CHARACTERISTICS

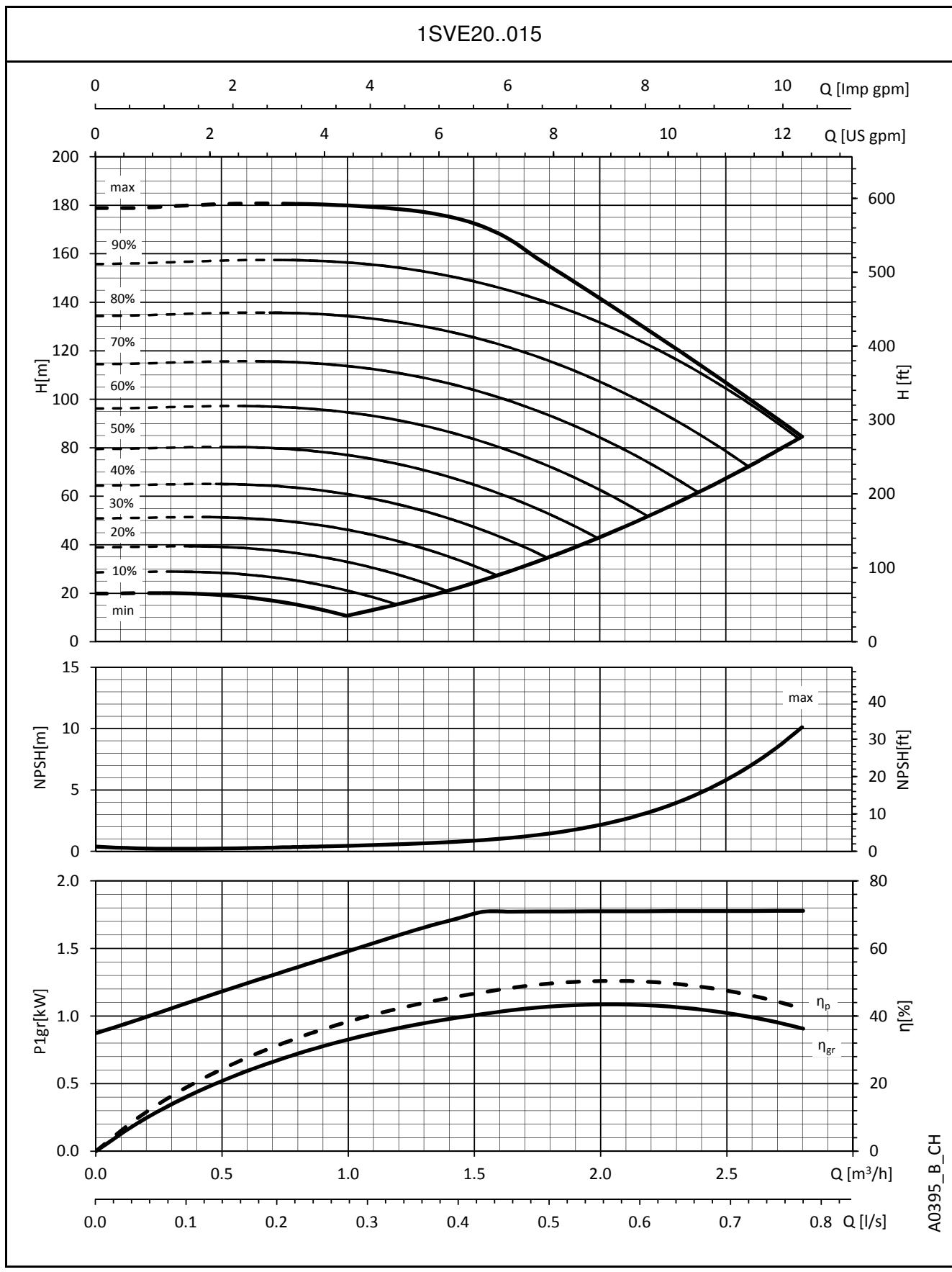


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**1SVE SERIES  
OPERATING CHARACTERISTICS**


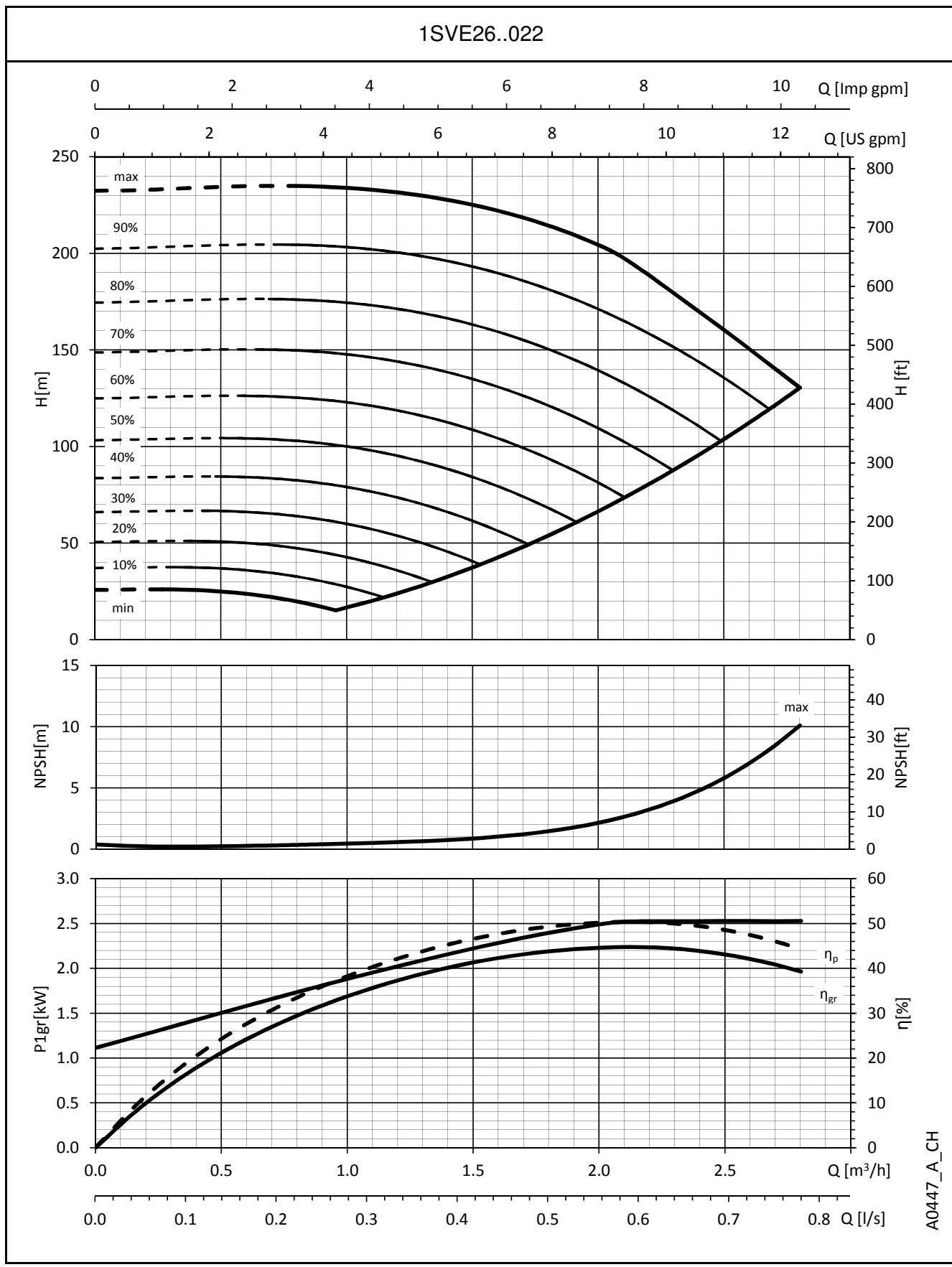
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 1SVE SERIES OPERATING CHARACTERISTICS

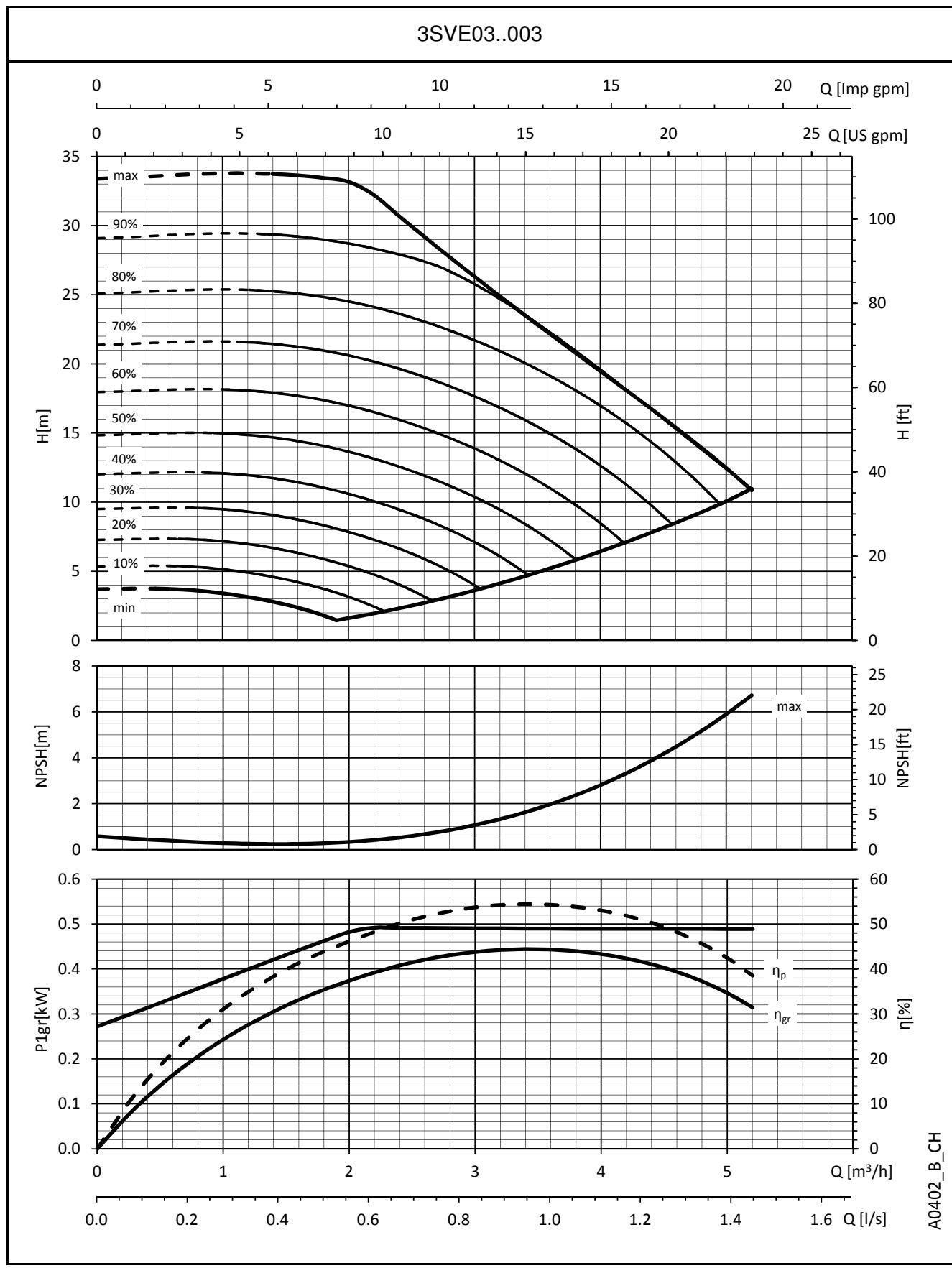


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 1SVE SERIES OPERATING CHARACTERISTICS

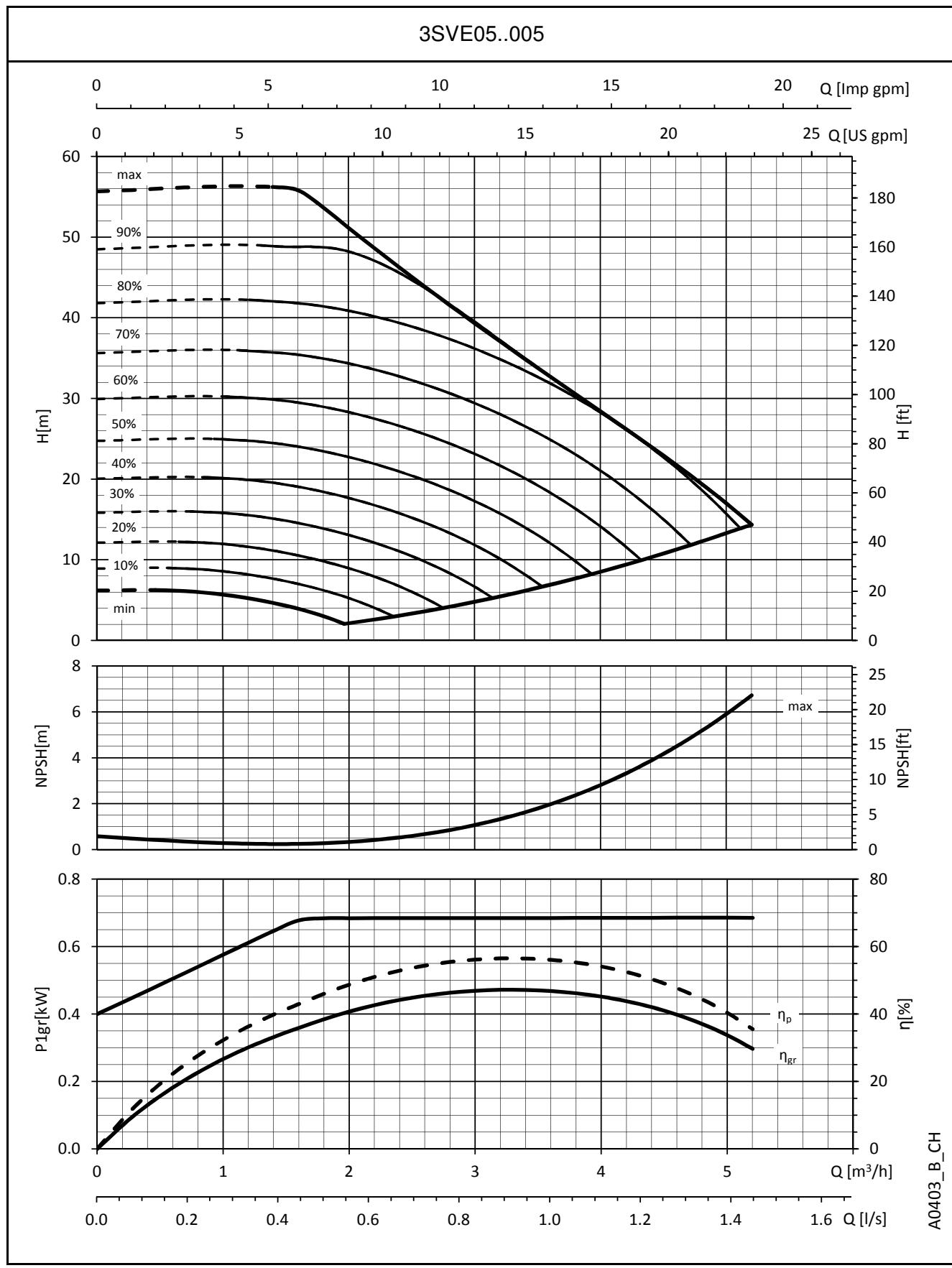


## **3SVE SERIES OPERATING CHARACTERISTICS**



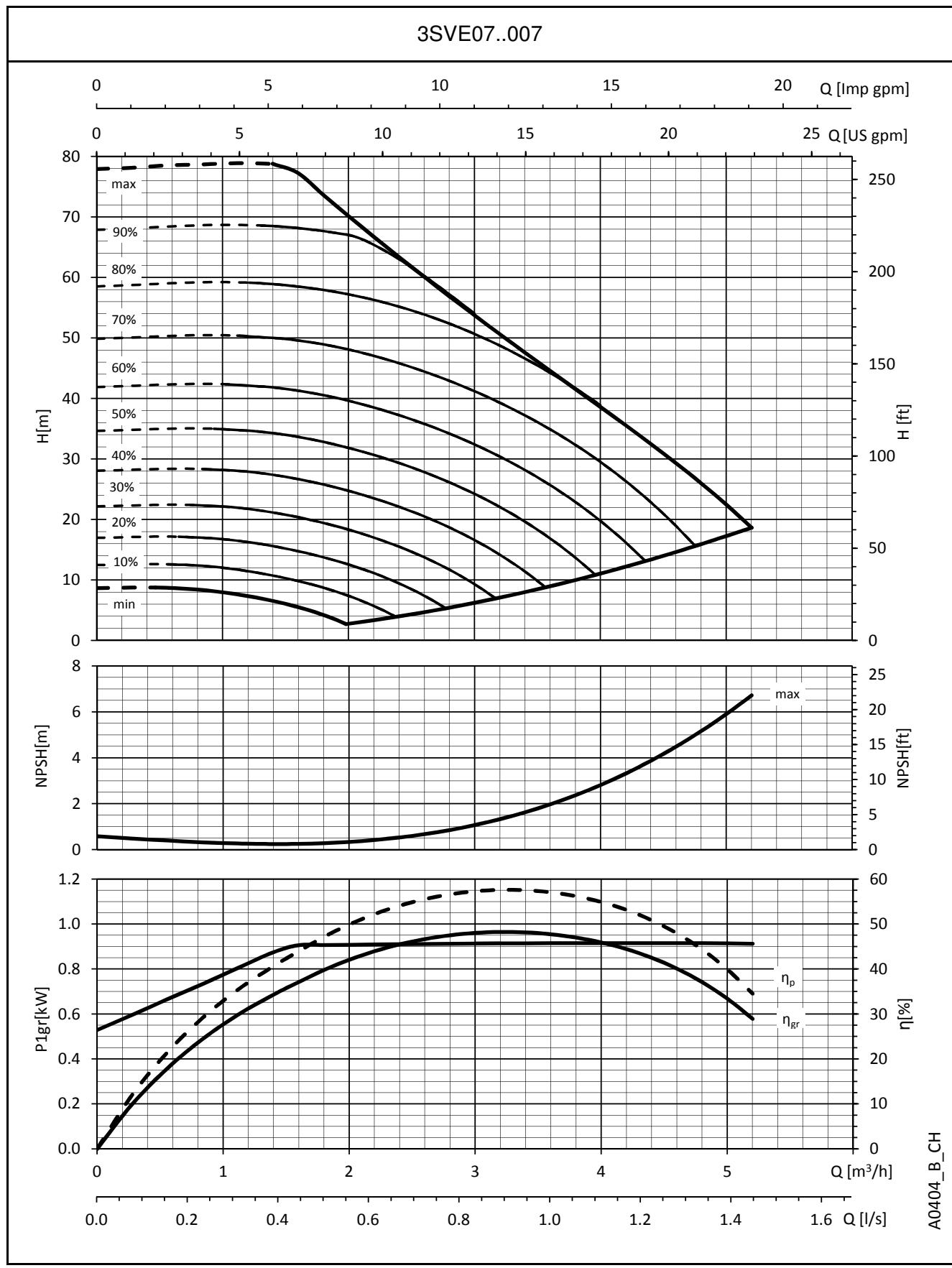
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **3SVE SERIES OPERATING CHARACTERISTICS**



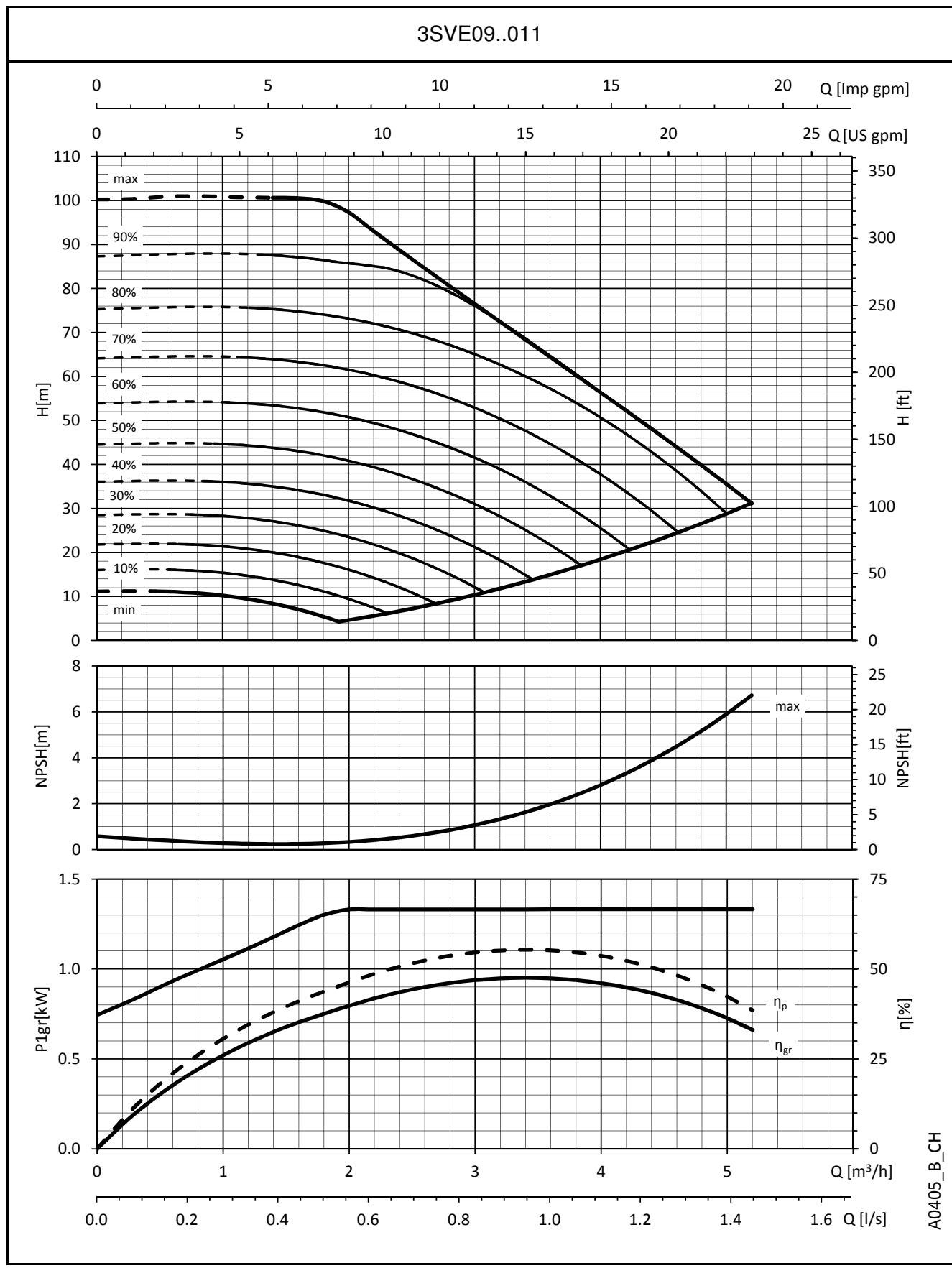
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **3SVE SERIES OPERATING CHARACTERISTICS**



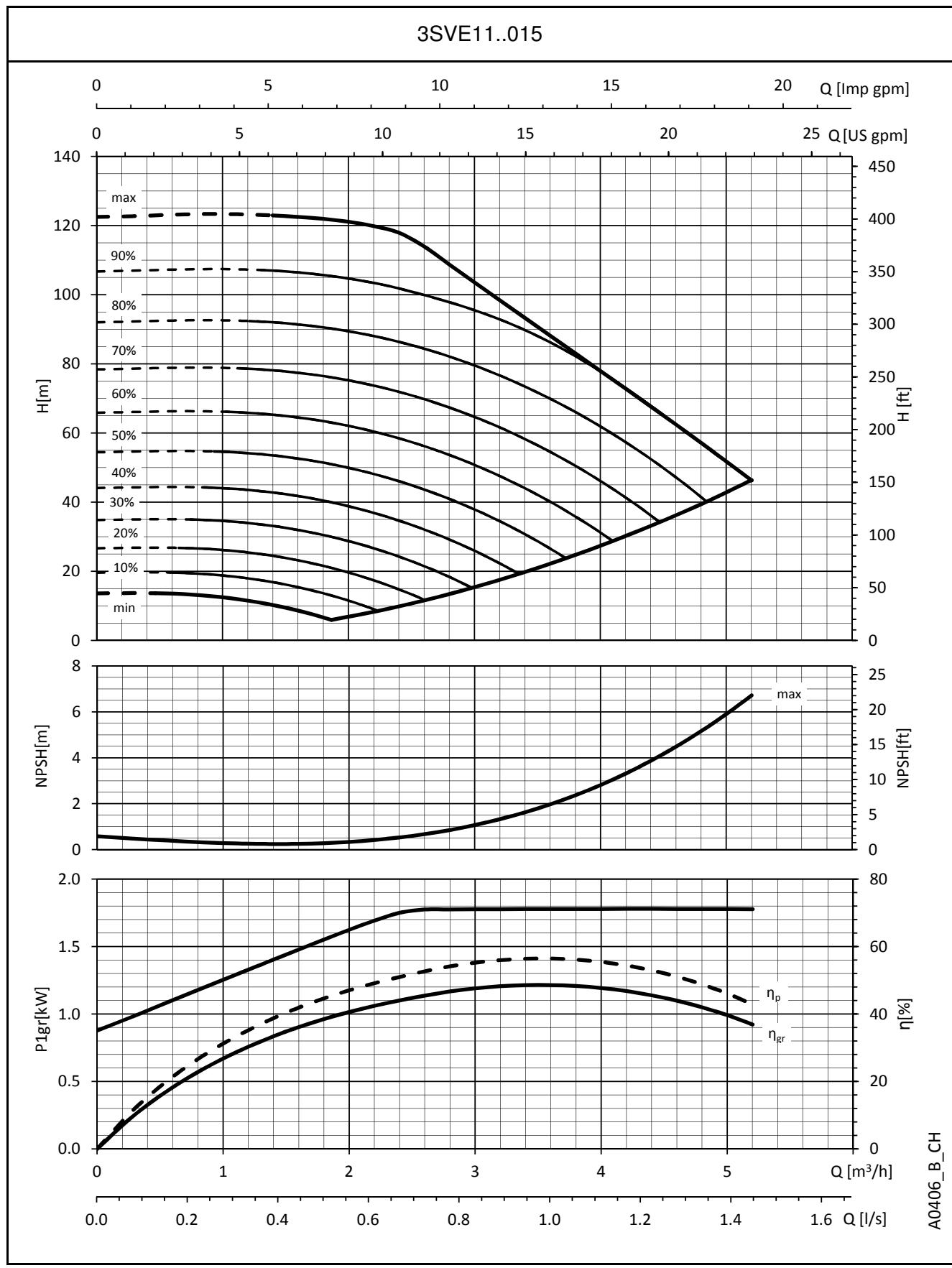
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **3SVE SERIES OPERATING CHARACTERISTICS**



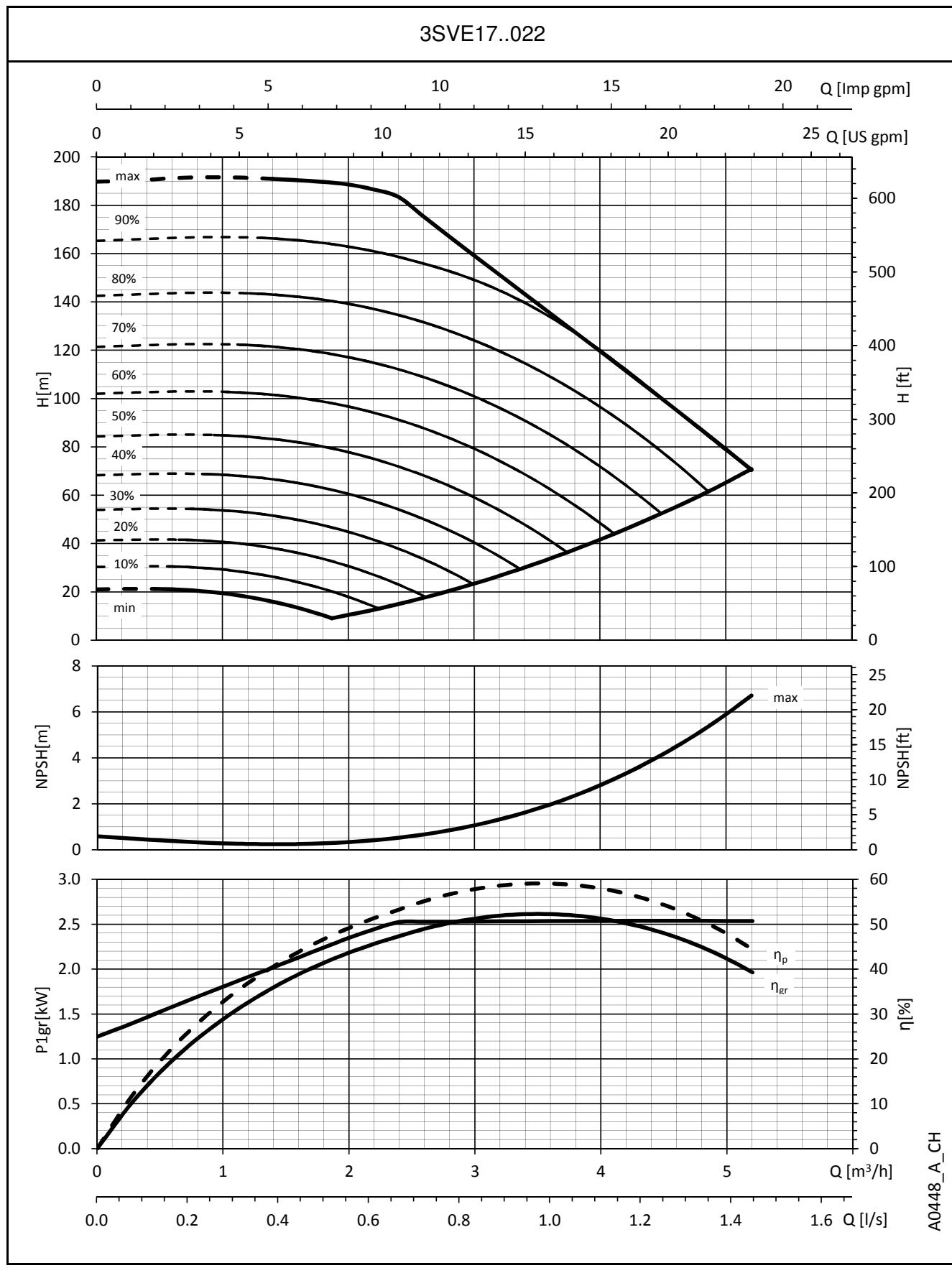
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **3SVE SERIES OPERATING CHARACTERISTICS**



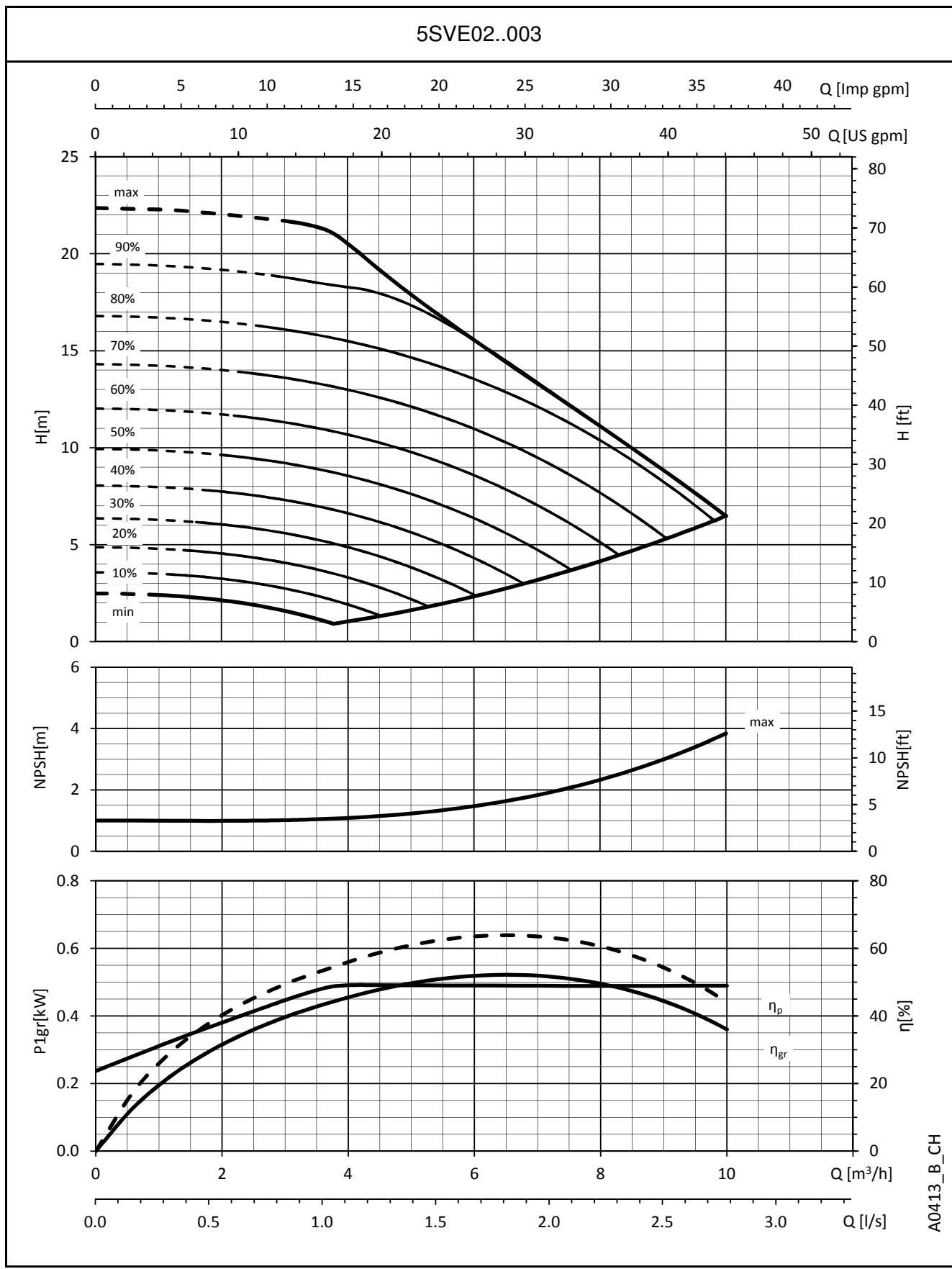
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **3SVE SERIES OPERATING CHARACTERISTICS**



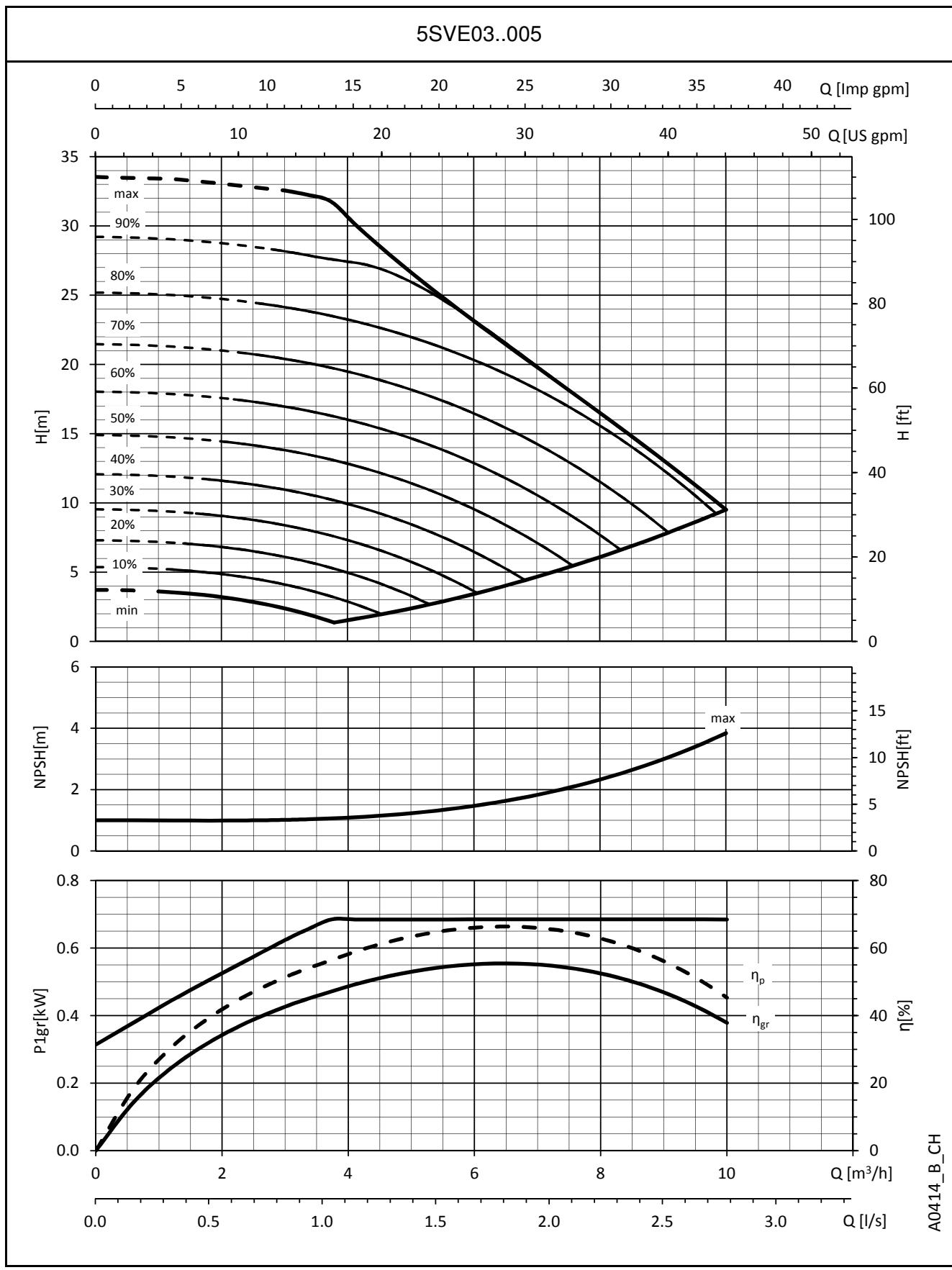
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 5SVE SERIES OPERATING CHARACTERISTICS



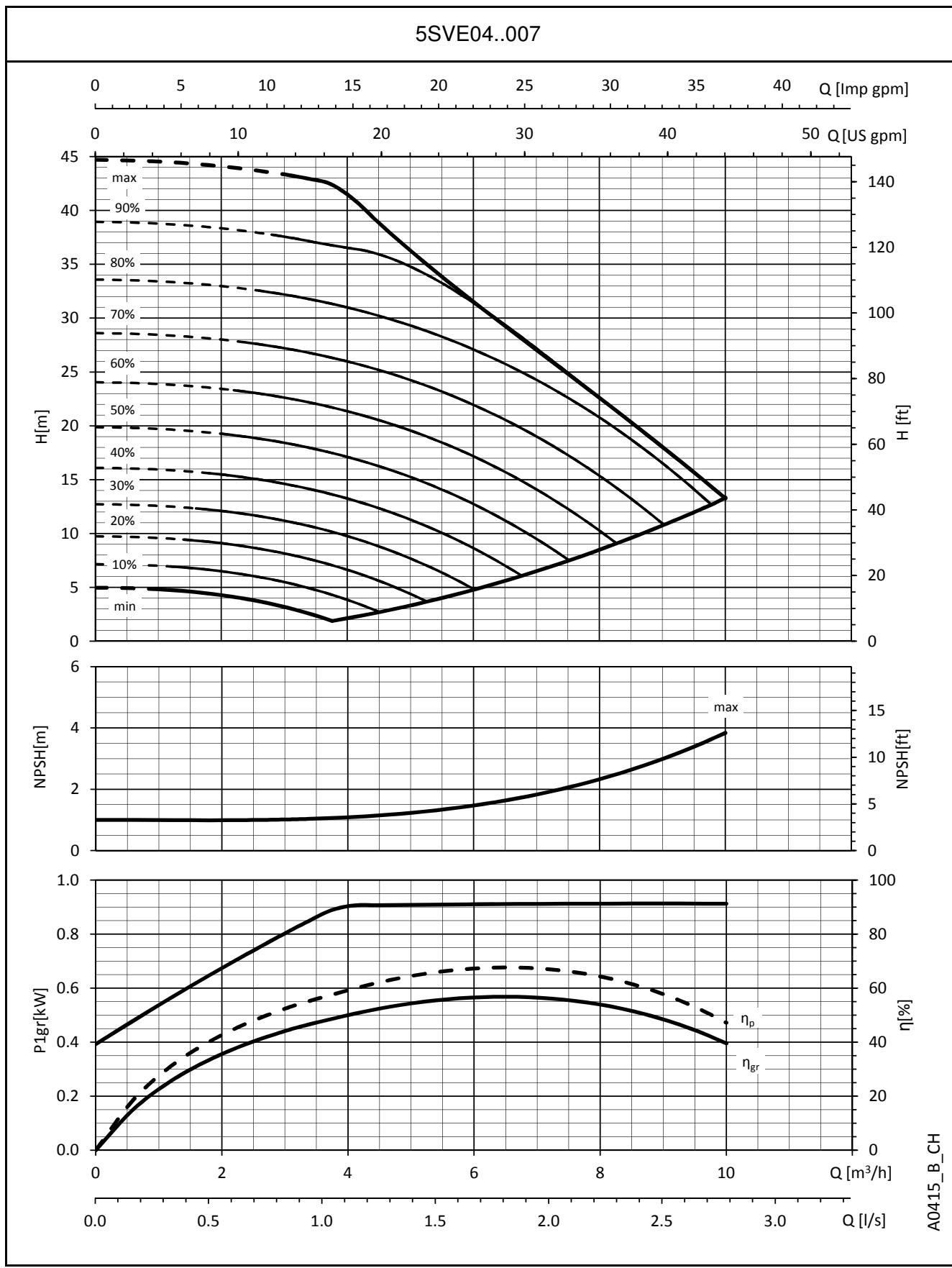
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **5SVE SERIES OPERATING CHARACTERISTICS**



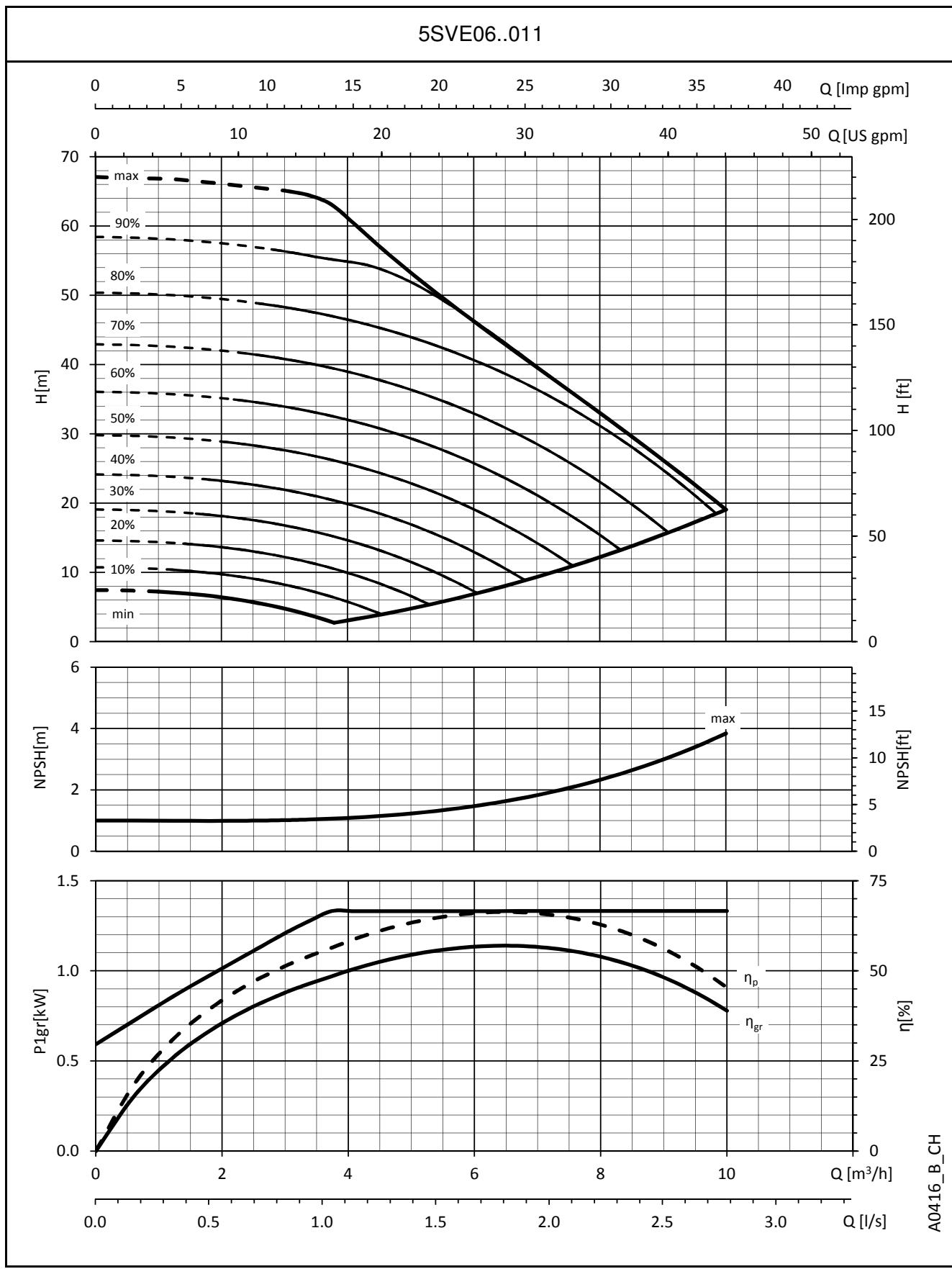
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **5SVE SERIES OPERATING CHARACTERISTICS**



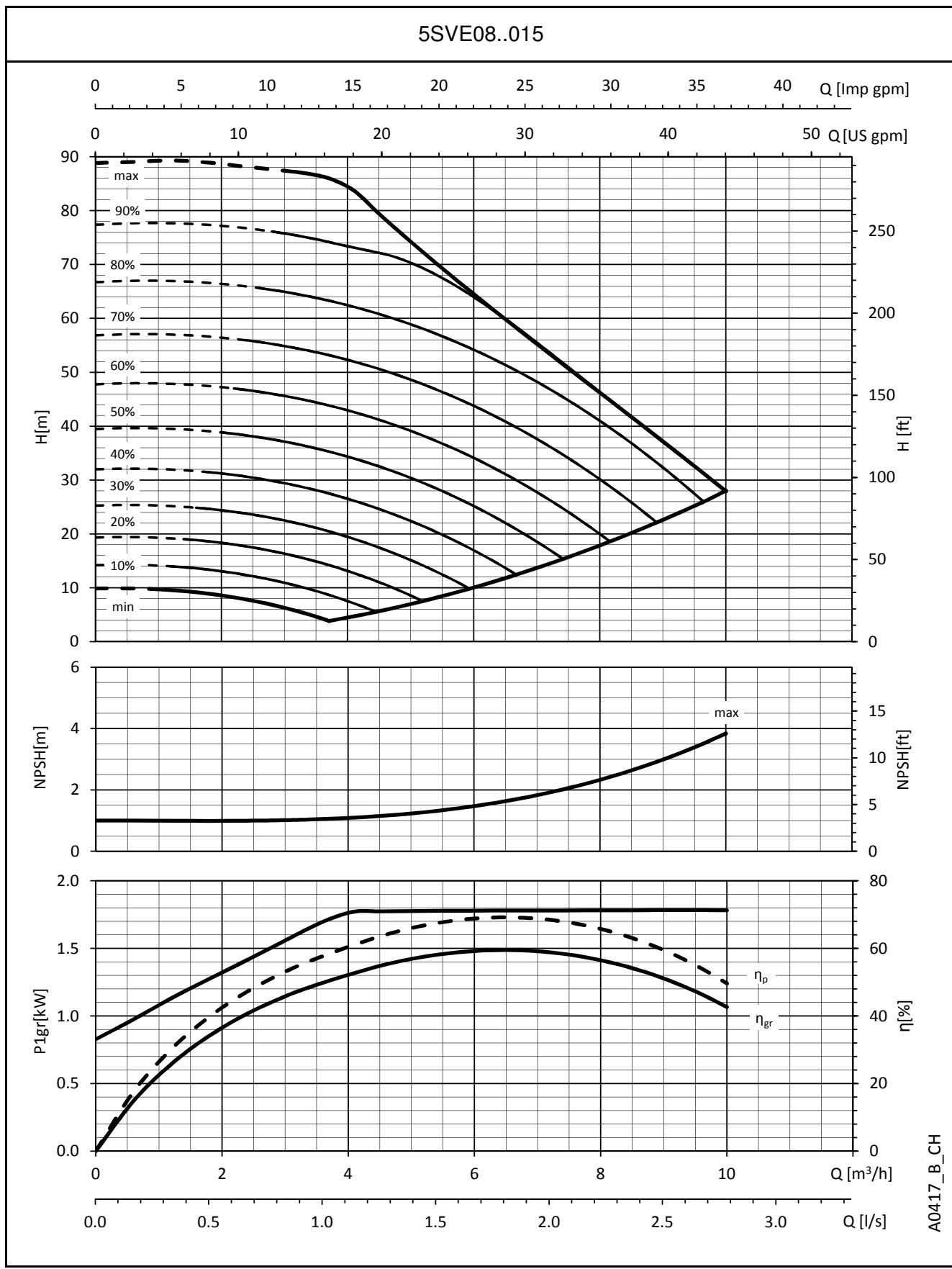
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **5SVE SERIES OPERATING CHARACTERISTICS**



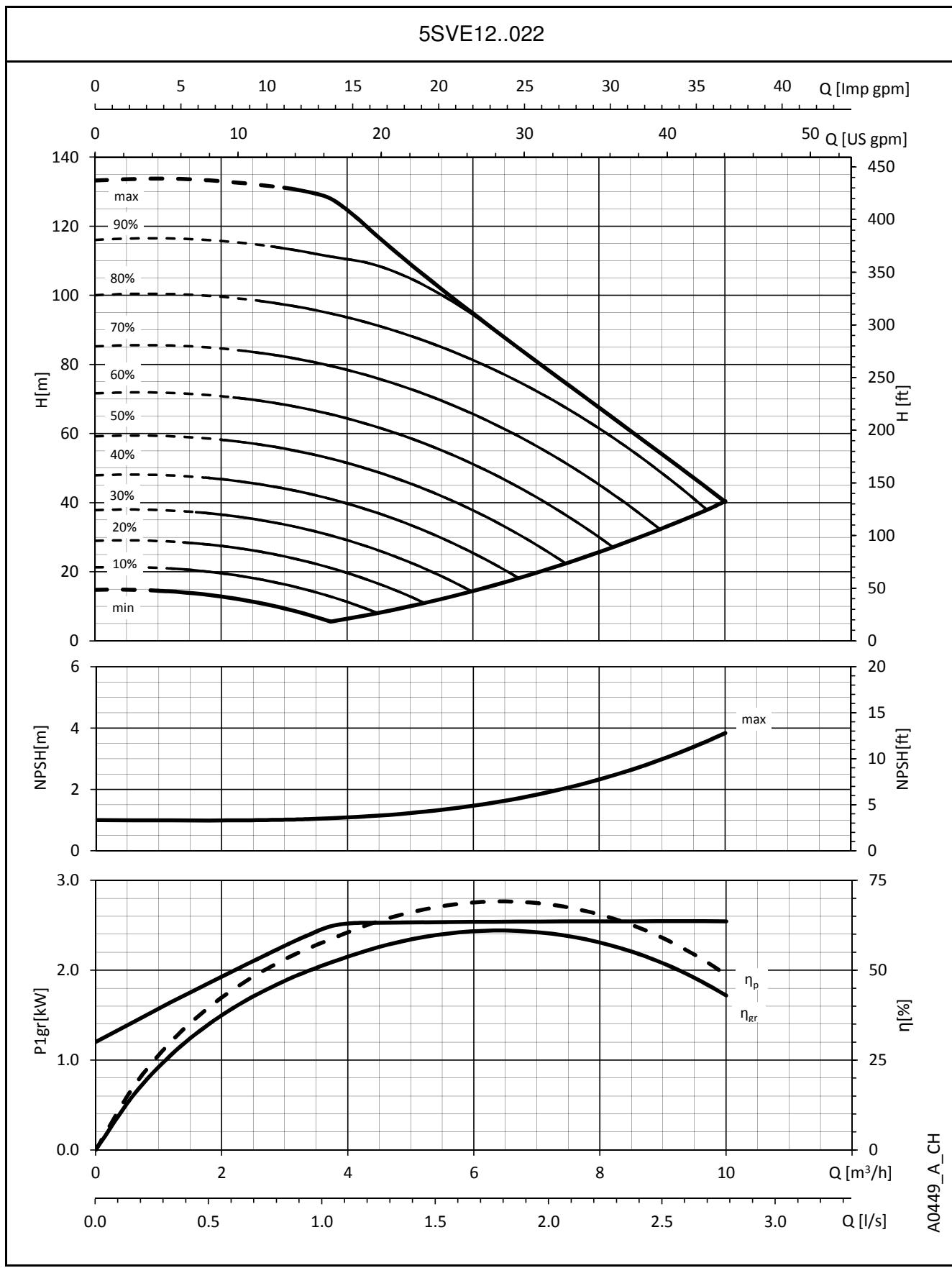
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **5SVE SERIES OPERATING CHARACTERISTICS**

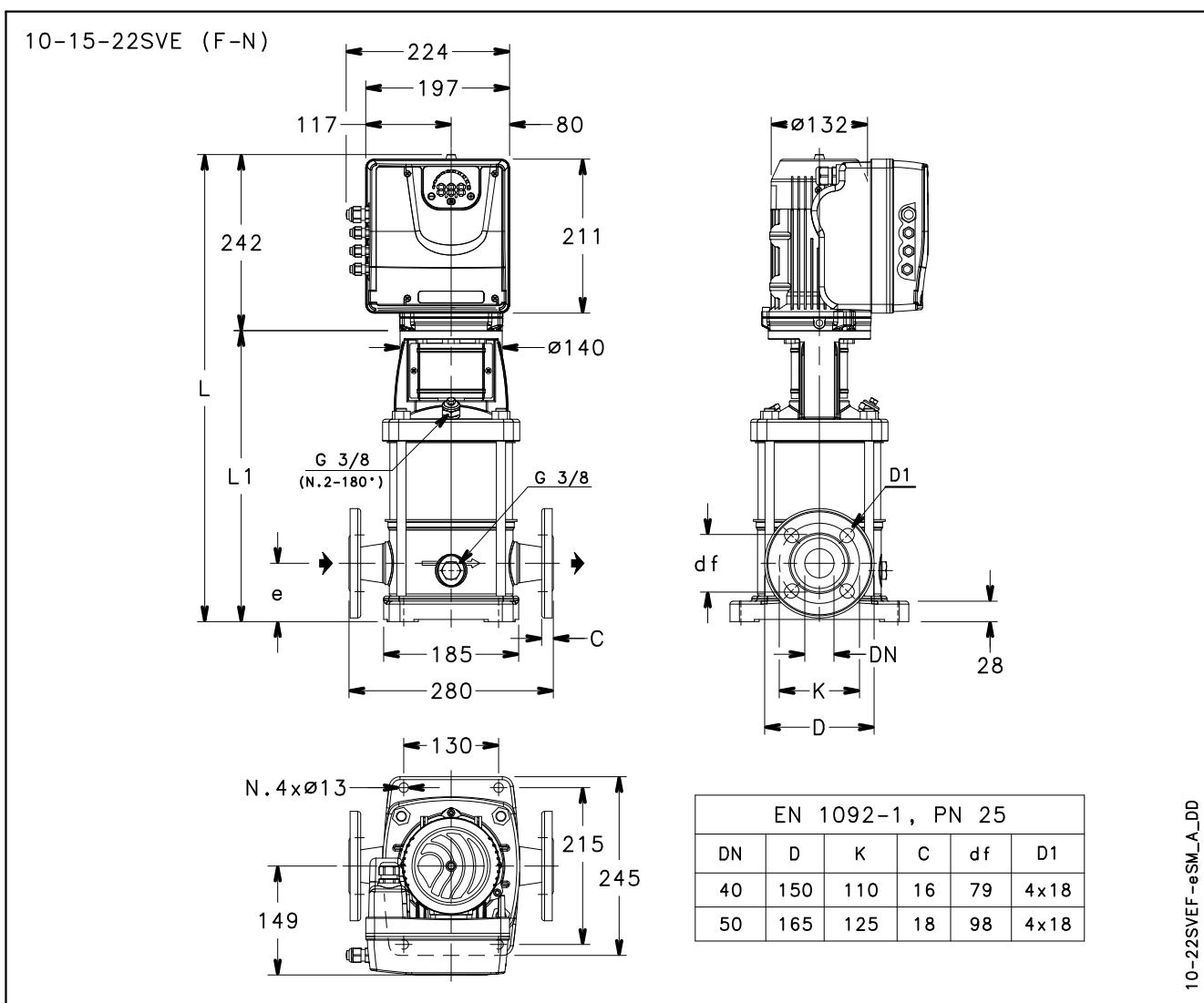


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **5SVE SERIES OPERATING CHARACTERISTICS**

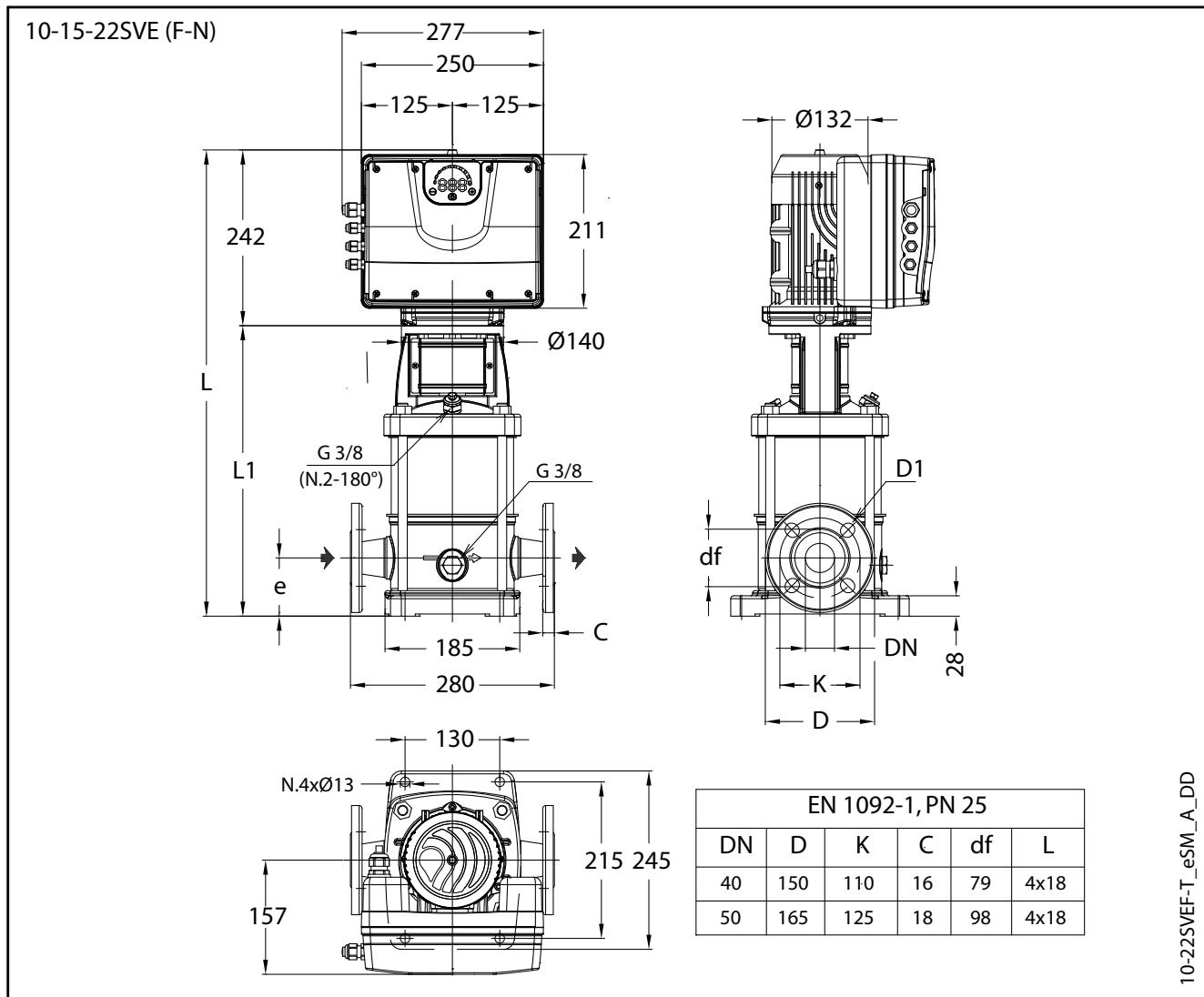


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**10, 15, 22SVE..F SERIES - SINGLE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


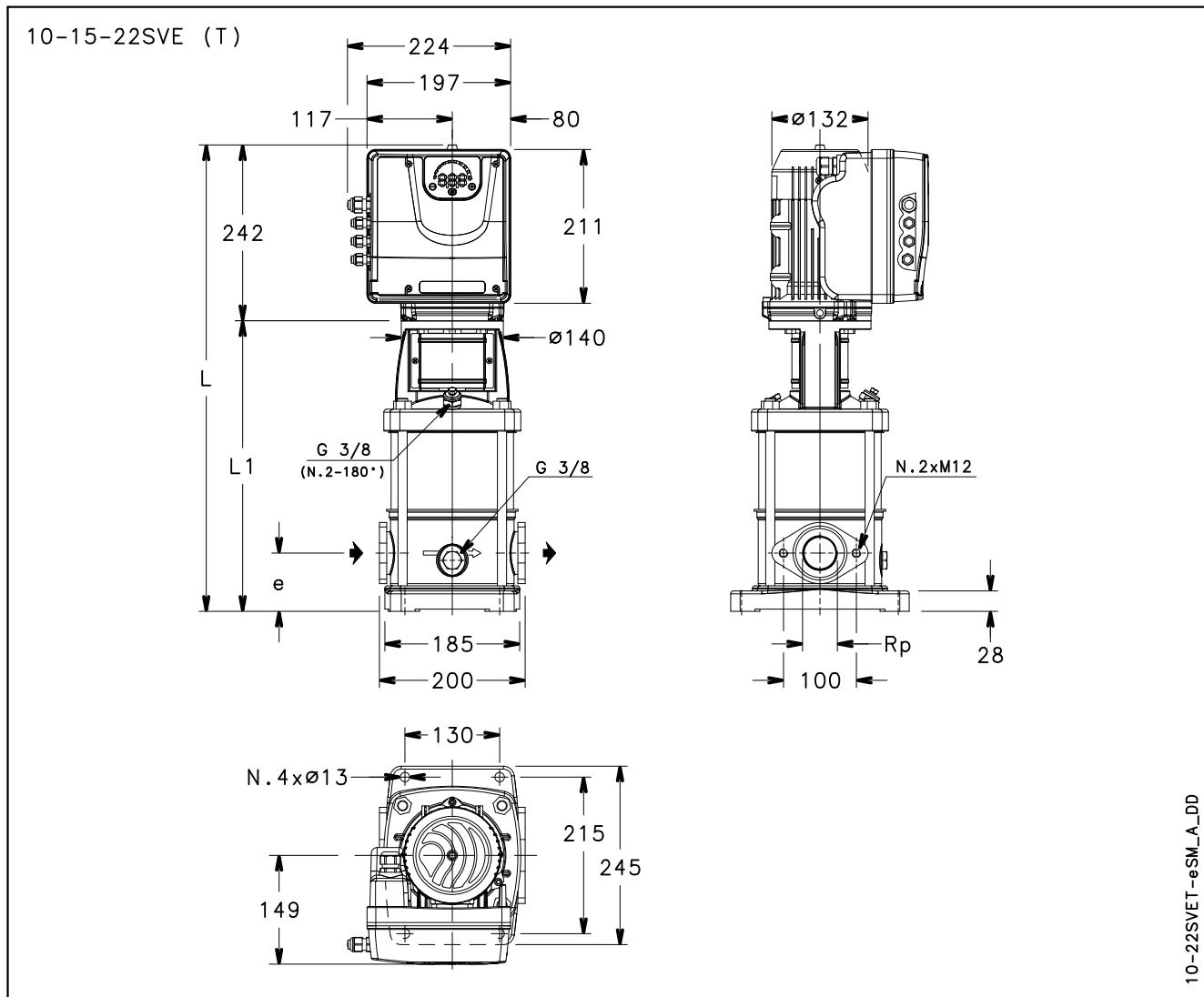
PUMP TYPE <b>SVE F</b> (SINGLE-PHASE)	MOTOR		L	DIMENSIONS (mm)			PUMP	WEIGHT (kg) ELECTRIC PUMP
	kW	SIZE		L1	e	DN		
10SVE01F005P0M	0,55	90	609	367	80	40	14,6	22,1
10SVE02F007P0M	0,75	90	609	367	80	40	15,5	23,0
10SVE02F011P0M	1,1	90	609	367	80	40	15,5	24,4
10SVE03F015P0M	1,5	90	641	399	80	40	16,5	25,4
15SVE01F007P0M	0,75	90	661	419	90	50	15,4	22,9
15SVE01F011P0M	1,1	90	661	419	90	50	15,4	24,3
15SVE02F015P0M	1,5	90	661	419	90	50	16,8	25,7
22SVE01F007P0M	0,75	90	661	419	90	50	15,4	22,9
22SVE01F011P0M	1,1	90	661	419	90	50	15,4	24,3
22SVE02F015P0M	1,5	90	661	419	90	50	16,8	25,7

10-22svef-esm-2p50-en\_a\_td

**10, 15, 22SVE..F SERIES - THREE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


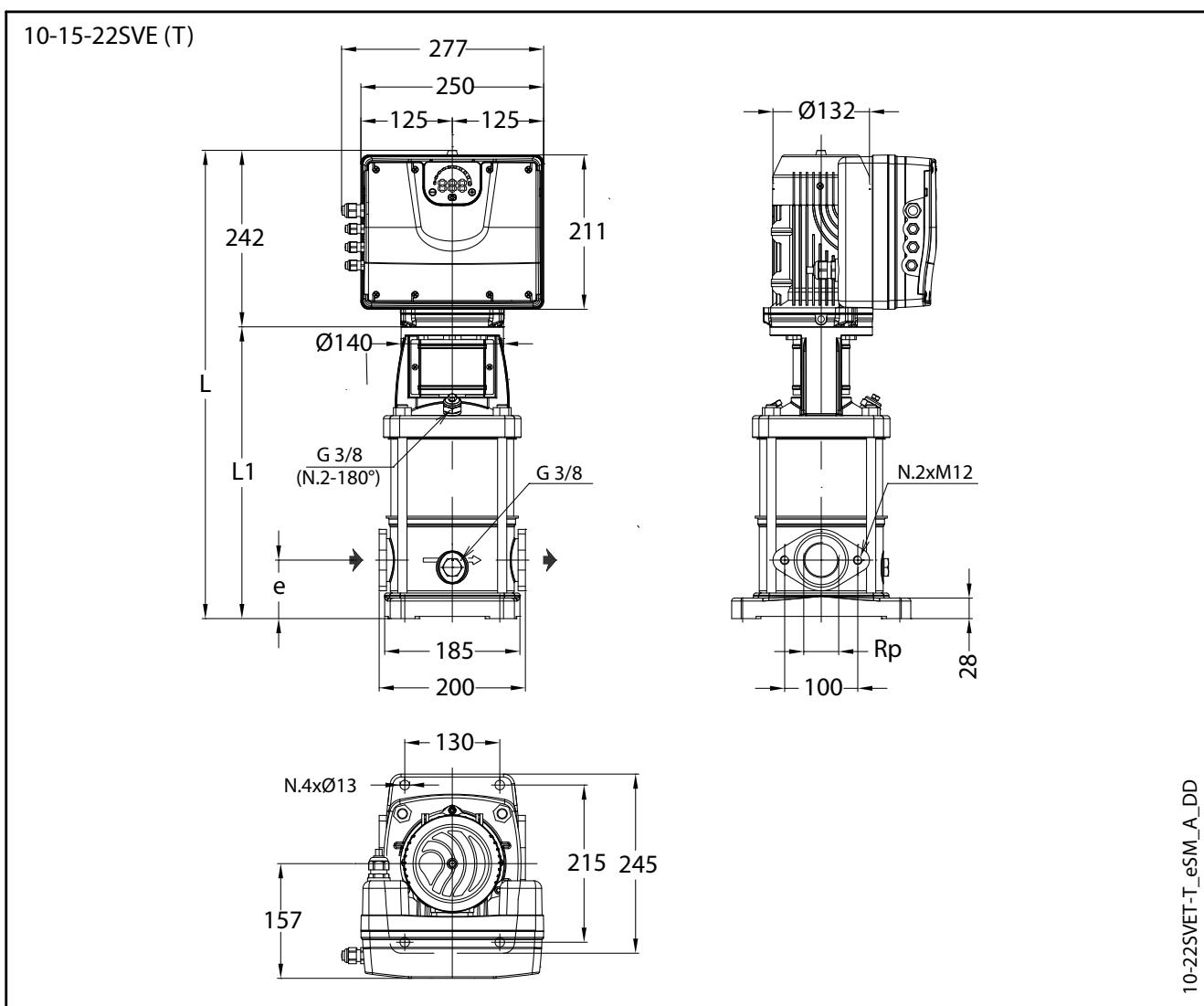
PUMP TYPE <b>SVE F</b> (THREE-PHASE)	MOTOR		L	DIMENSIONS (mm)			PUMP	WEIGHT (kg) ELECTRIC PUMP
	kW	SIZE		L1	e	DN		
10SVE01F005POT	0,55	90	609	367	80	40	14,6	27,7
10SVE02F007POT	0,75	90	609	367	80	40	15,5	28,6
10SVE02F011POT	1,1	90	609	367	80	40	15,5	30
10SVE03F015POT	1,5	90	641	399	80	40	16,5	31,0
10SVE04F022POT	2,2	90	673	431	80	40	17,5	33,5
15SVE01F007POT	0,75	90	661	419	90	50	15,4	28,5
15SVE01F011POT	1,1	90	661	419	90	50	15,4	29,9
15SVE02F015POT	1,5	90	661	419	90	50	16,8	31,3
15SVE02F022POT	2,2	90	661	419	90	50	18,2	34,2
22SVE01F007POT	0,75	90	661	419	90	50	15,4	28,5
22SVE01F011POT	1,1	90	661	419	90	50	15,4	29,9
22SVE02F015POT	1,5	90	661	419	90	50	16,8	31,3
22SVE02F022POT	2,2	90	661	419	90	50	16,8	32,8

10-22svef-esm-2p50T-en\_a\_td

**10, 15, 22SVE..T SERIES - SINGLE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


PUMP TYPE <b>SVE T</b> (SINGLE-PHASE)	MOTOR		L	DIMENSIONS (mm)			PUMP	WEIGHT (kg) ELECTRIC PUMP
	kW	SIZE		L1	e	Rp		
10SVE01T005POM	0,55	90	609	367	80	1 1/2	14,1	21,6
10SVE02T007POM	0,75	90	609	367	80	1 1/2	15	22,5
10SVE02T011POM	1,1	90	609	367	80	1 1/2	15	23,9
10SVE03T015POM	1,5	90	641	399	80	1 1/2	16	24,9
15SVE01T007POM	0,75	90	651	409	90	2	14,1	21,6
15SVE01T011POM	1,1	90	651	409	90	2	14,1	23
15SVE02T015POM	1,5	90	651	409	90	2	15,5	24,4
22SVE01T007POM	0,75	90	651	409	90	2	14,1	21,6
22SVE01T011POM	1,1	90	651	409	90	2	14,1	23
22SVE02T015POM	1,5	90	651	409	90	2	15,5	24,4

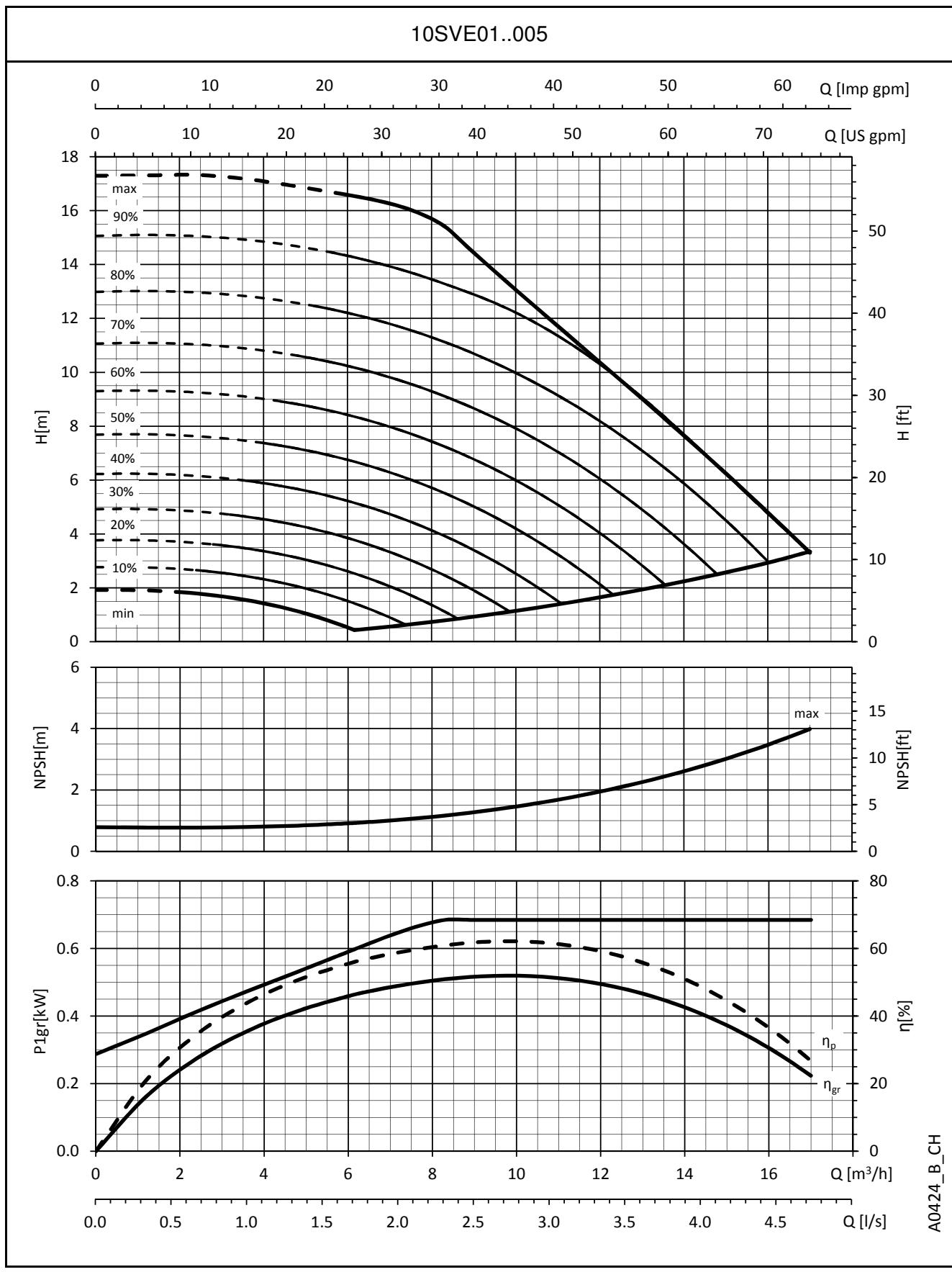
10-22sveT-esm-2p50-en\_a\_td

**10, 15, 22SVE..T SERIES - THREE PHASE VERSION  
DIMENSIONS AND WEIGHTS**


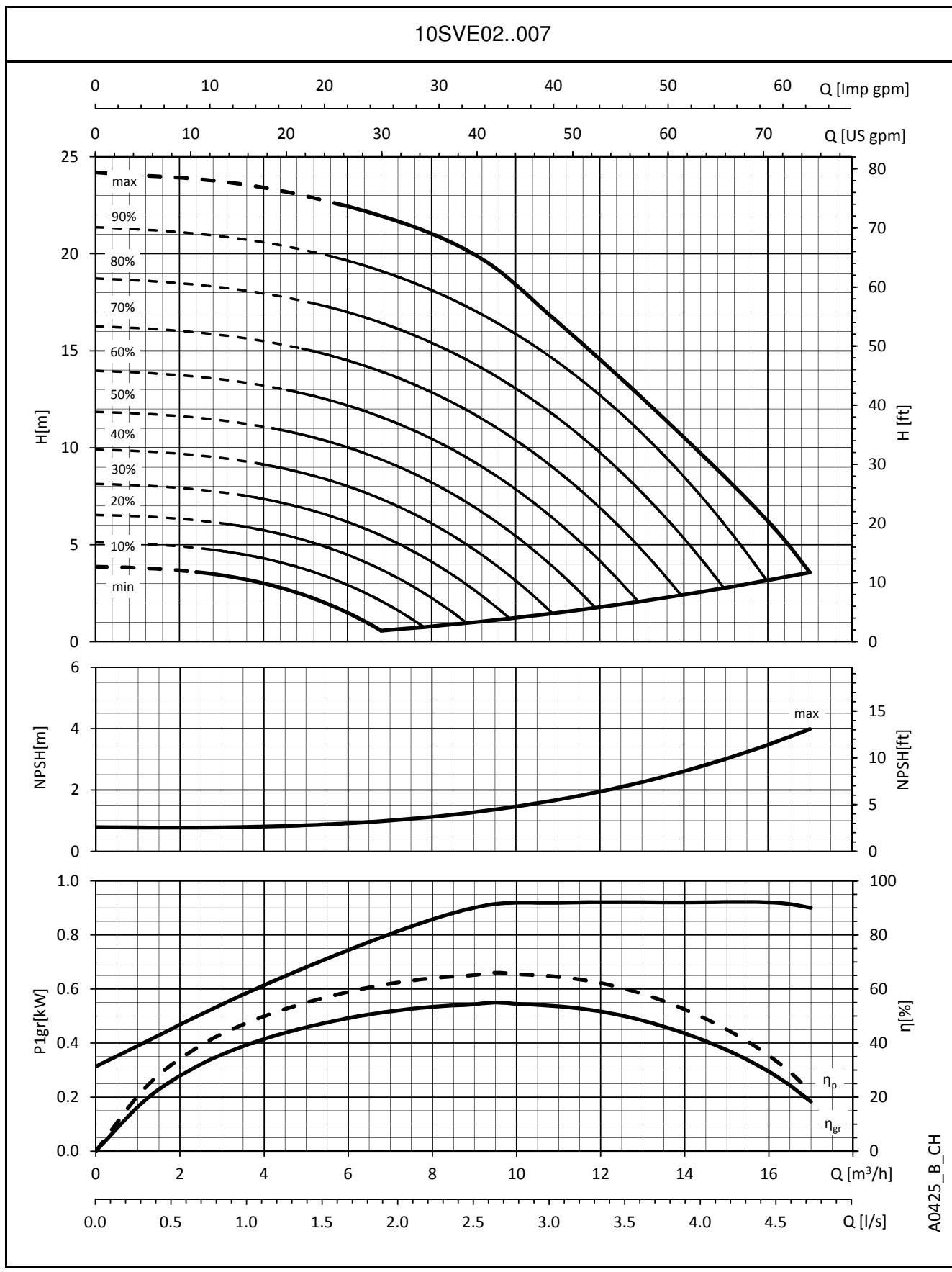
PUMP TYPE <b>SVE T</b> (THREE-PHASE)	MOTOR		L	DIMENSIONS (mm)			Rp	WEIGHT (kg)	
	kW	SIZE		L1	e	Rp		PUMP	ELECTRIC PUMP
10SVE01T005POT	0,55	90	609	367	80	1 1/2	14,1	27,1	
10SVE02T007POT	0,75	90	609	367	80	1 1/2	15	28	
10SVE02T011POT	1,1	90	609	367	80	1 1/2	15	29,4	
10SVE03T015POT	1,5	90	641	399	80	1 1/2	16	30,4	
10SVE04T022POT	2,2	90	673	431	80	1 1/2	17	32	
15SVE01T007POT	0,75	90	651	409	90	2	14,1	27,1	
15SVE01T011POT	1,1	90	651	409	90	2	14,1	28,5	
15SVE02T015POT	1,5	90	651	409	90	2	15,5	29,9	
15SVE02T022POT	2,2	90	651	409	90	2	15,5	31,5	
22SVE01T007POT	0,75	90	651	409	90	2	14,1	27,1	
22SVE01T011POT	1,1	90	651	409	90	2	14,1	28,5	
22SVE02T015POT	1,5	90	651	409	90	2	15,5	29,9	
22SVE02T022POT	2,2	90	651	409	90	2	15,5	31,5	

10-22sveT-esm-2p50-en\_a\_td

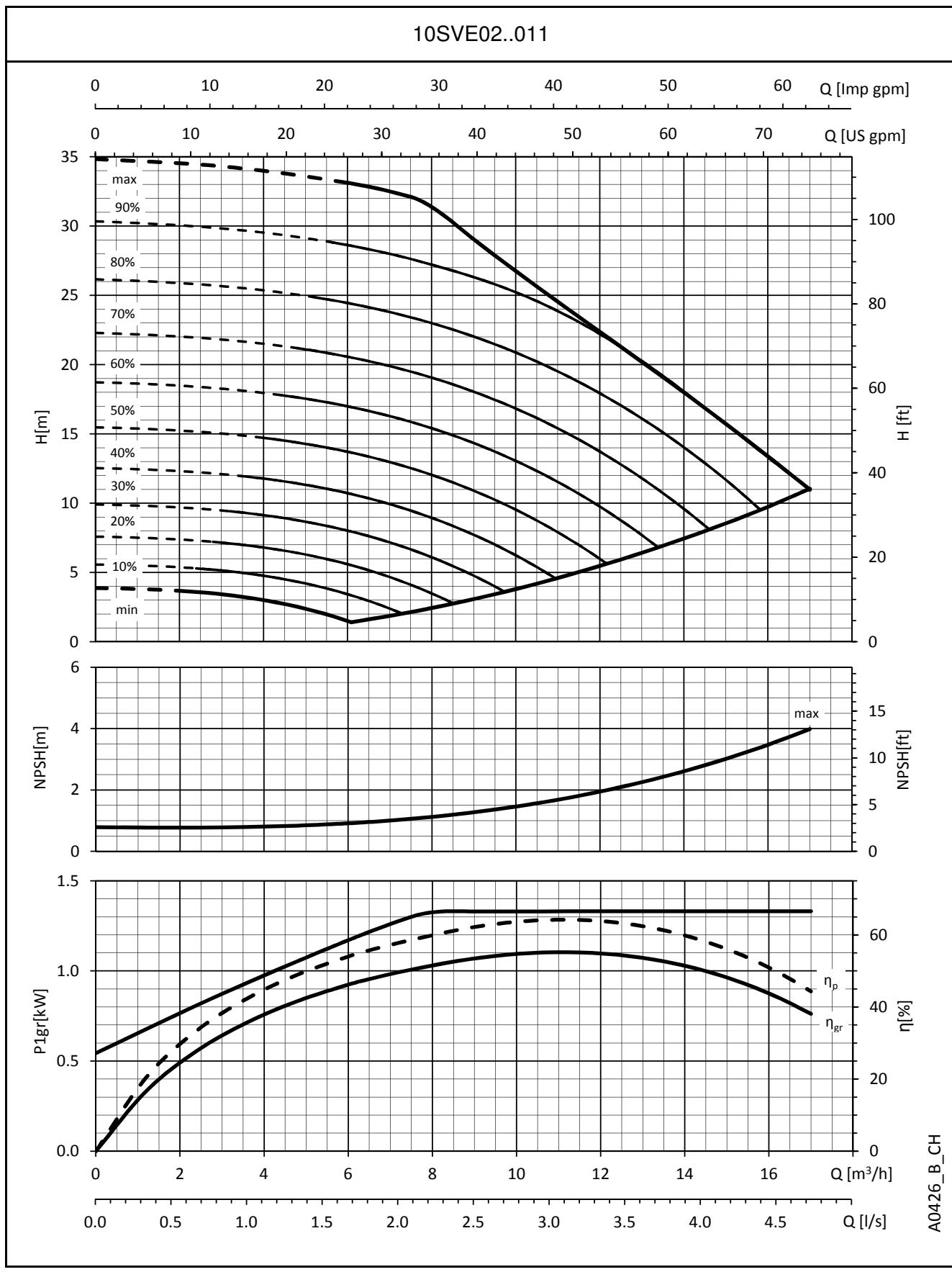
## 10SVE SERIES OPERATING CHARACTERISTICS



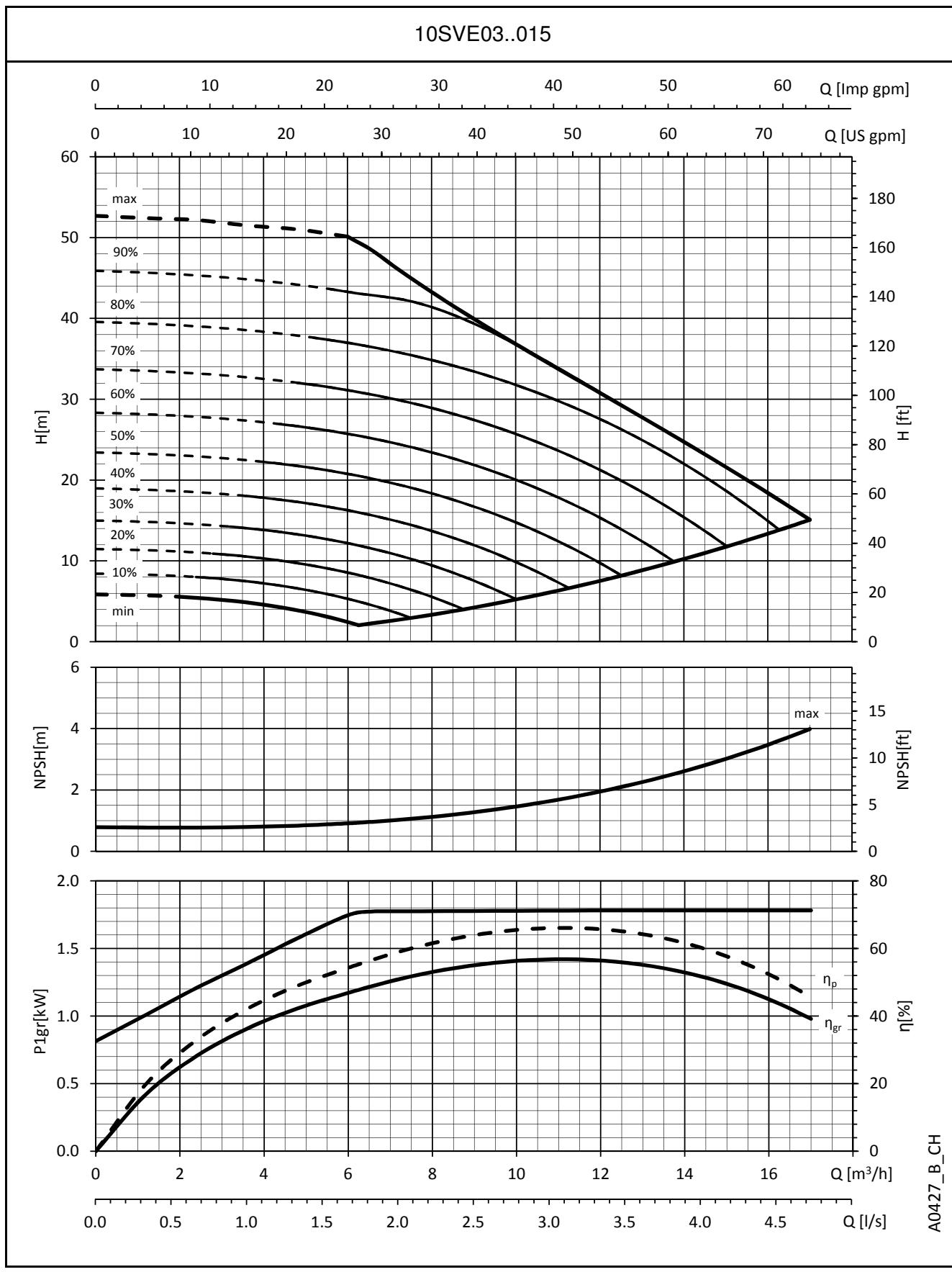
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**10SVE SERIES  
OPERATING CHARACTERISTICS**


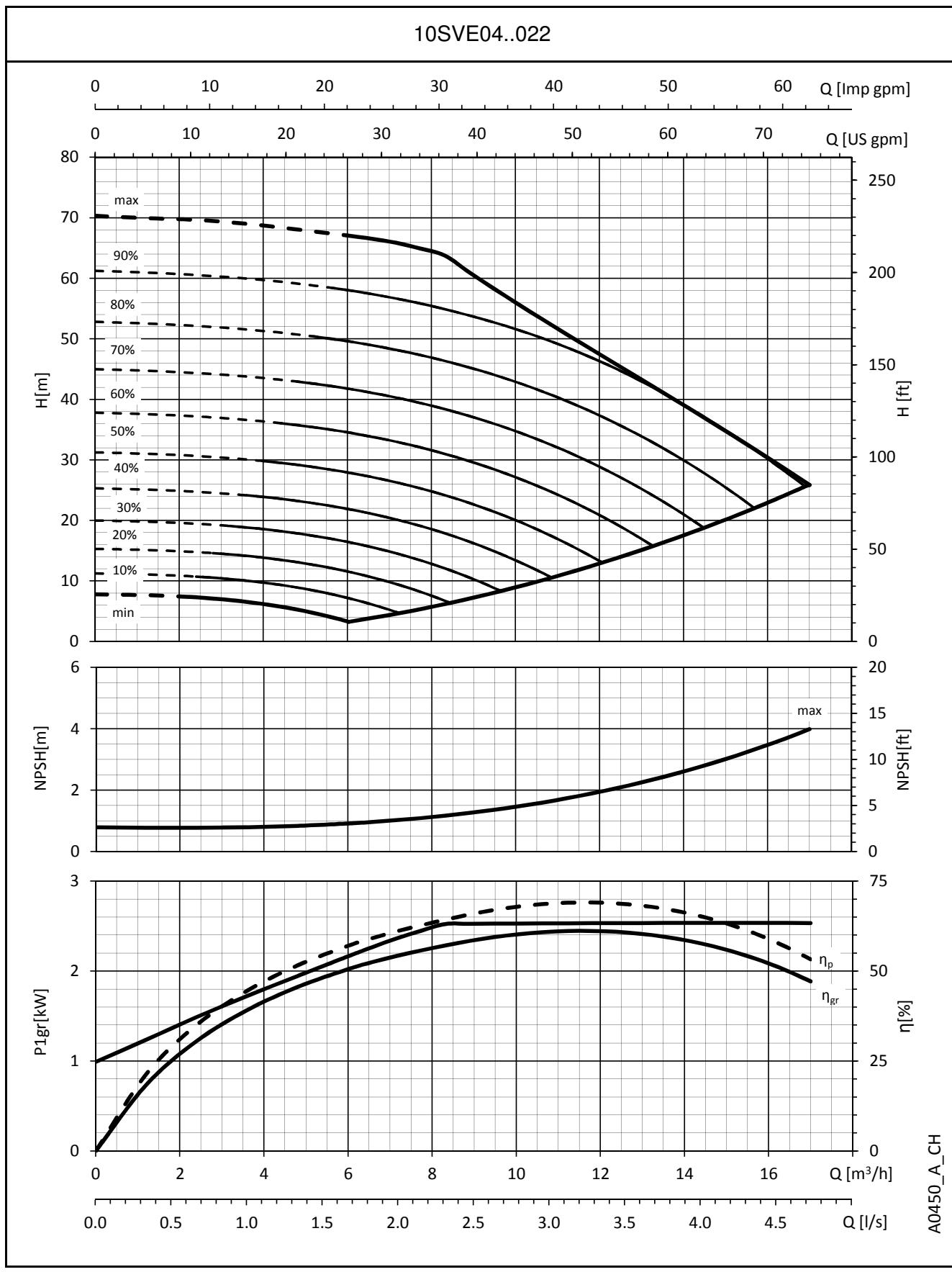
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**10SVE SERIES  
OPERATING CHARACTERISTICS**


The performances are valid for liquid with density  $\rho = 1.0$  Kg/dm<sup>3</sup> and kinematic viscosity  $v = 1$  mm<sup>2</sup>/sec.

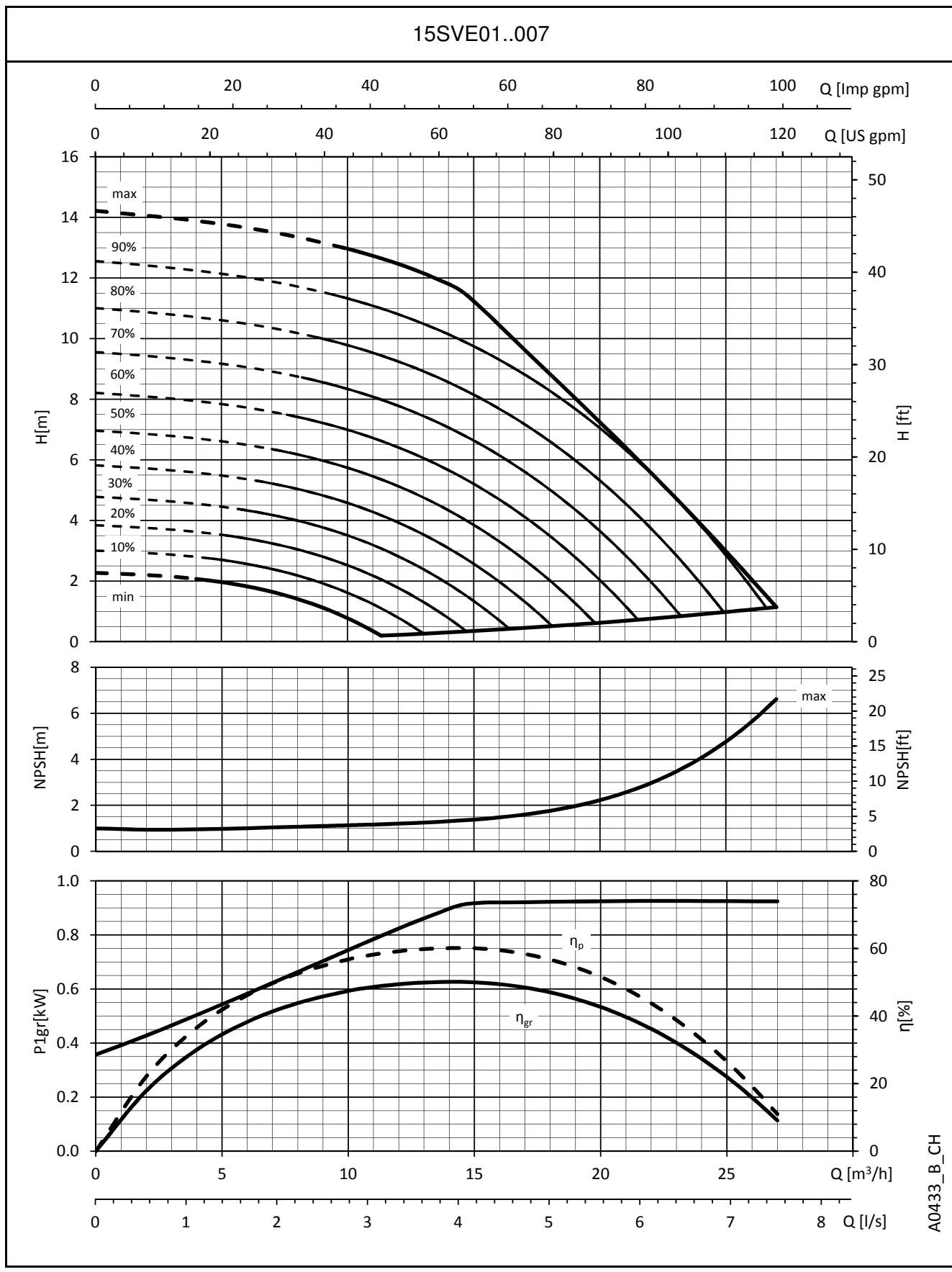
**10SVE SERIES  
OPERATING CHARACTERISTICS**


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**10SVE SERIES  
OPERATING CHARACTERISTICS**


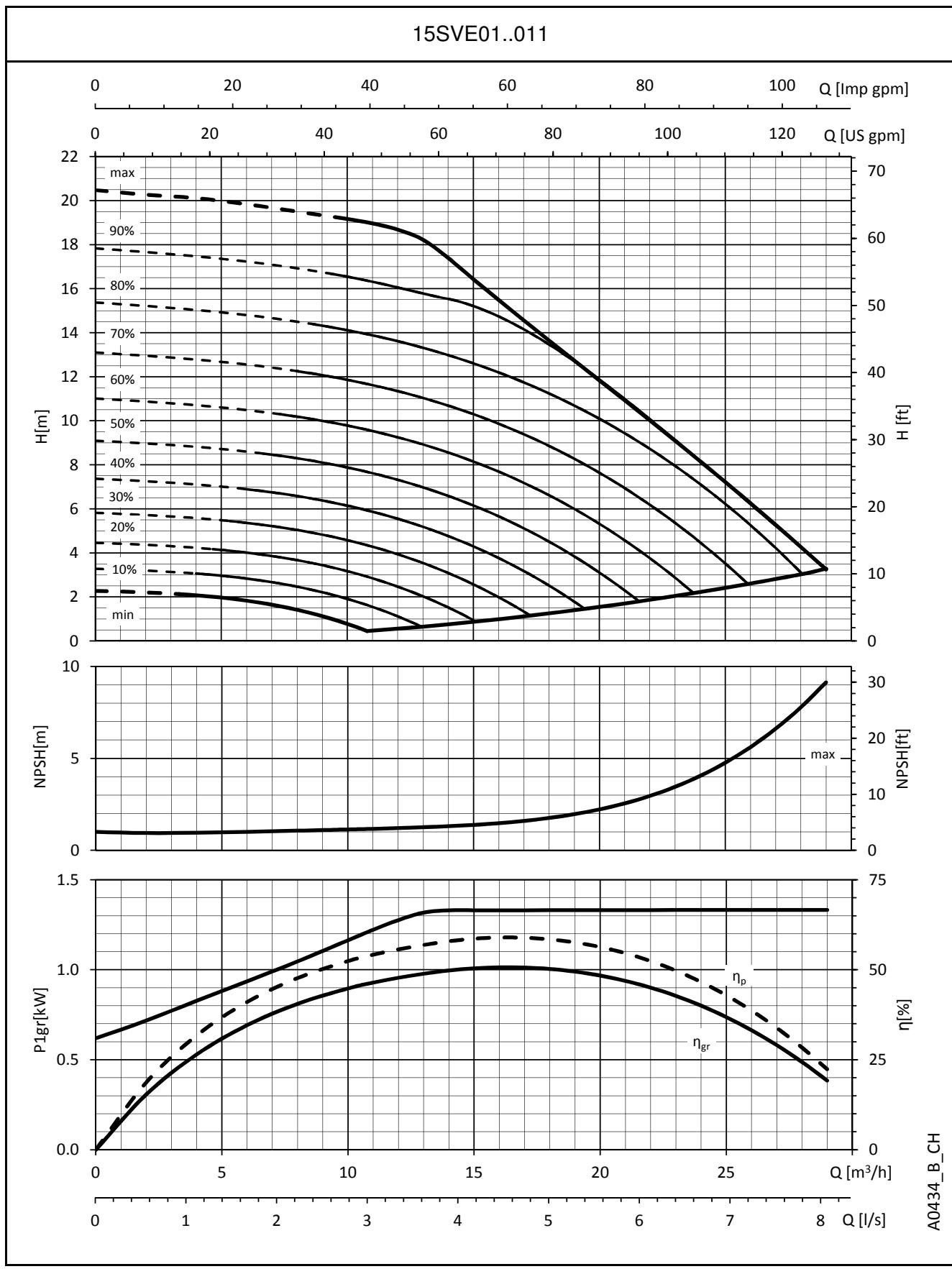
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 15SVE SERIES OPERATING CHARACTERISTICS

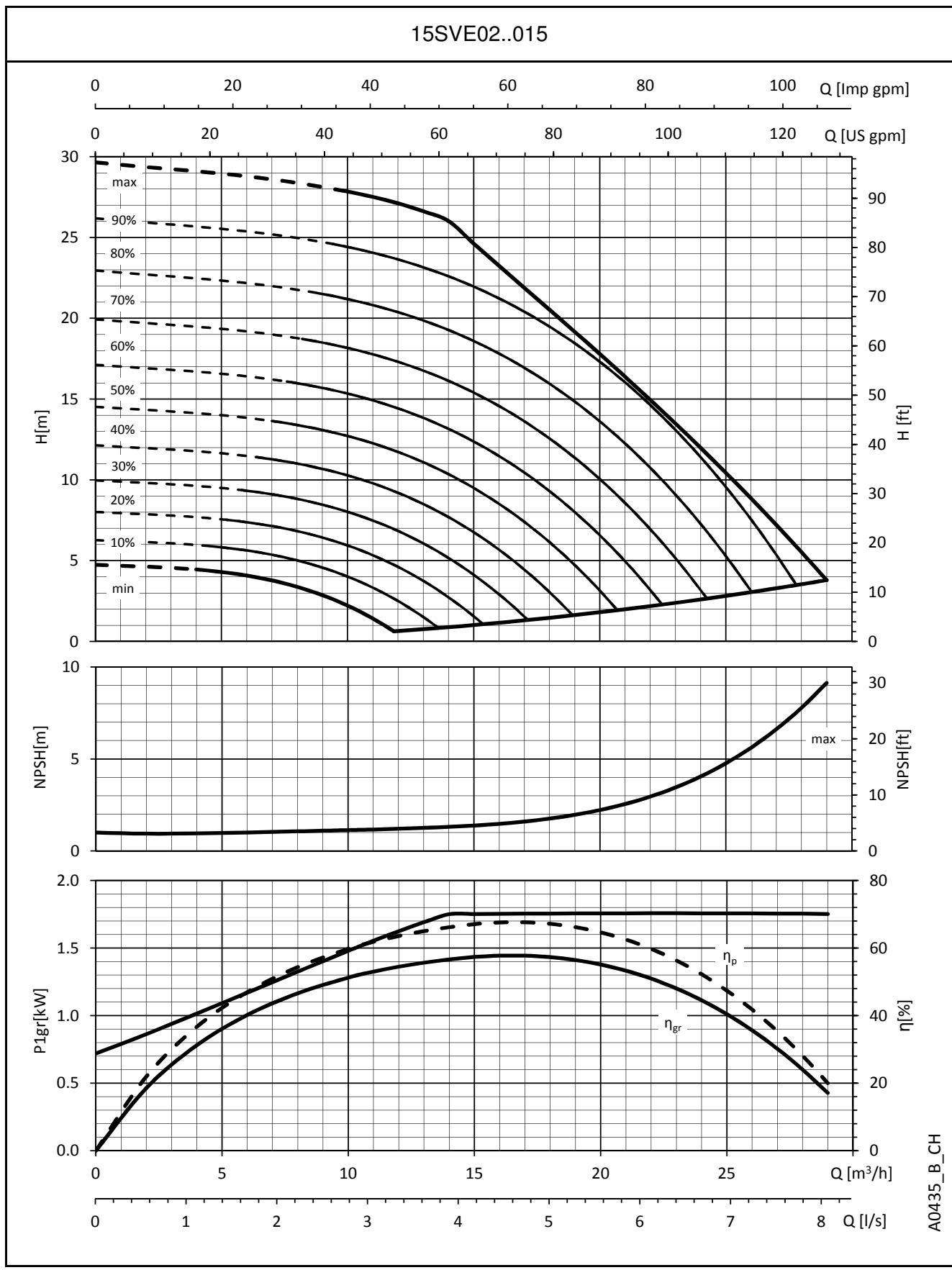


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **15SVE SERIES OPERATING CHARACTERISTICS**

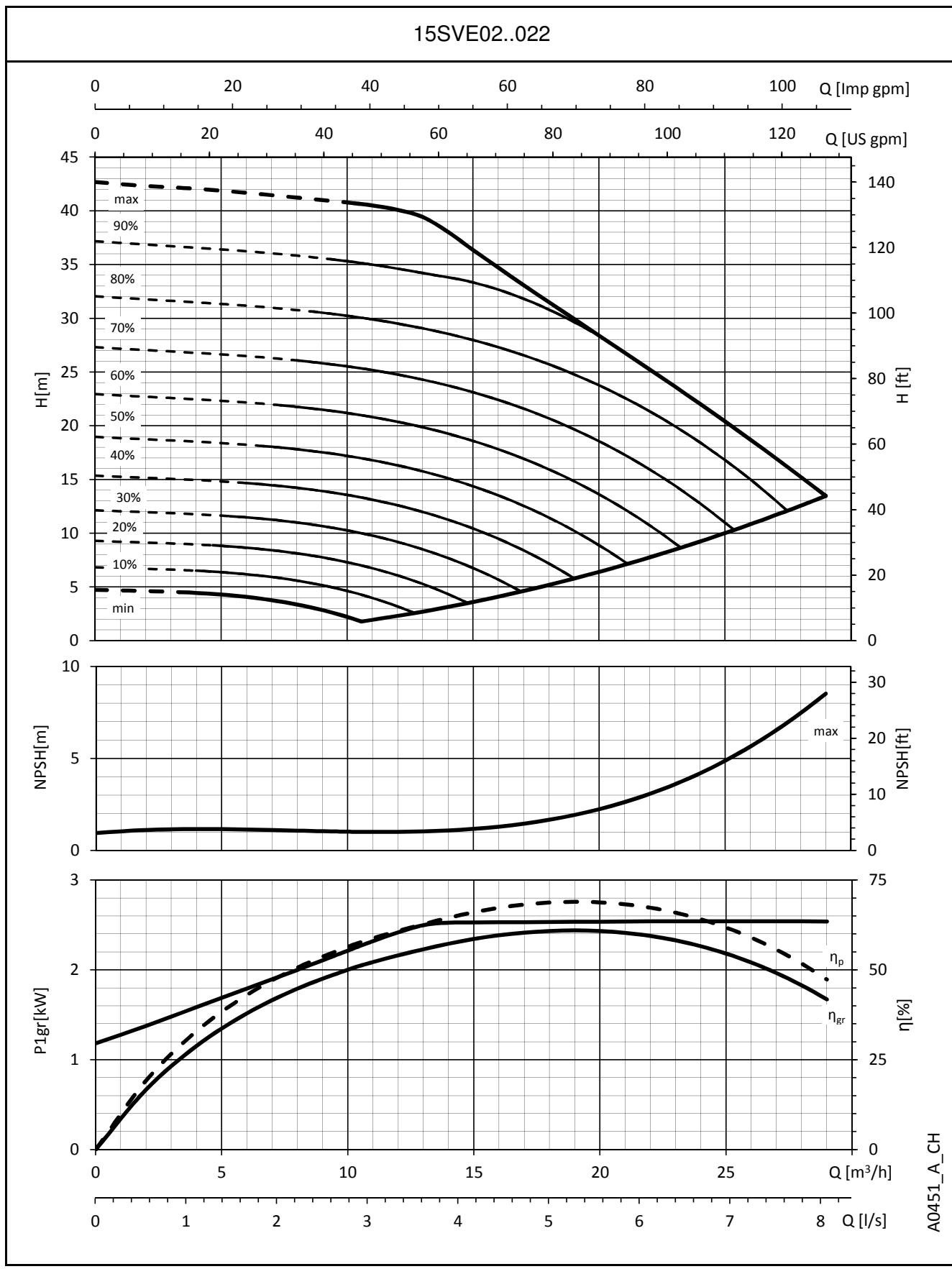


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

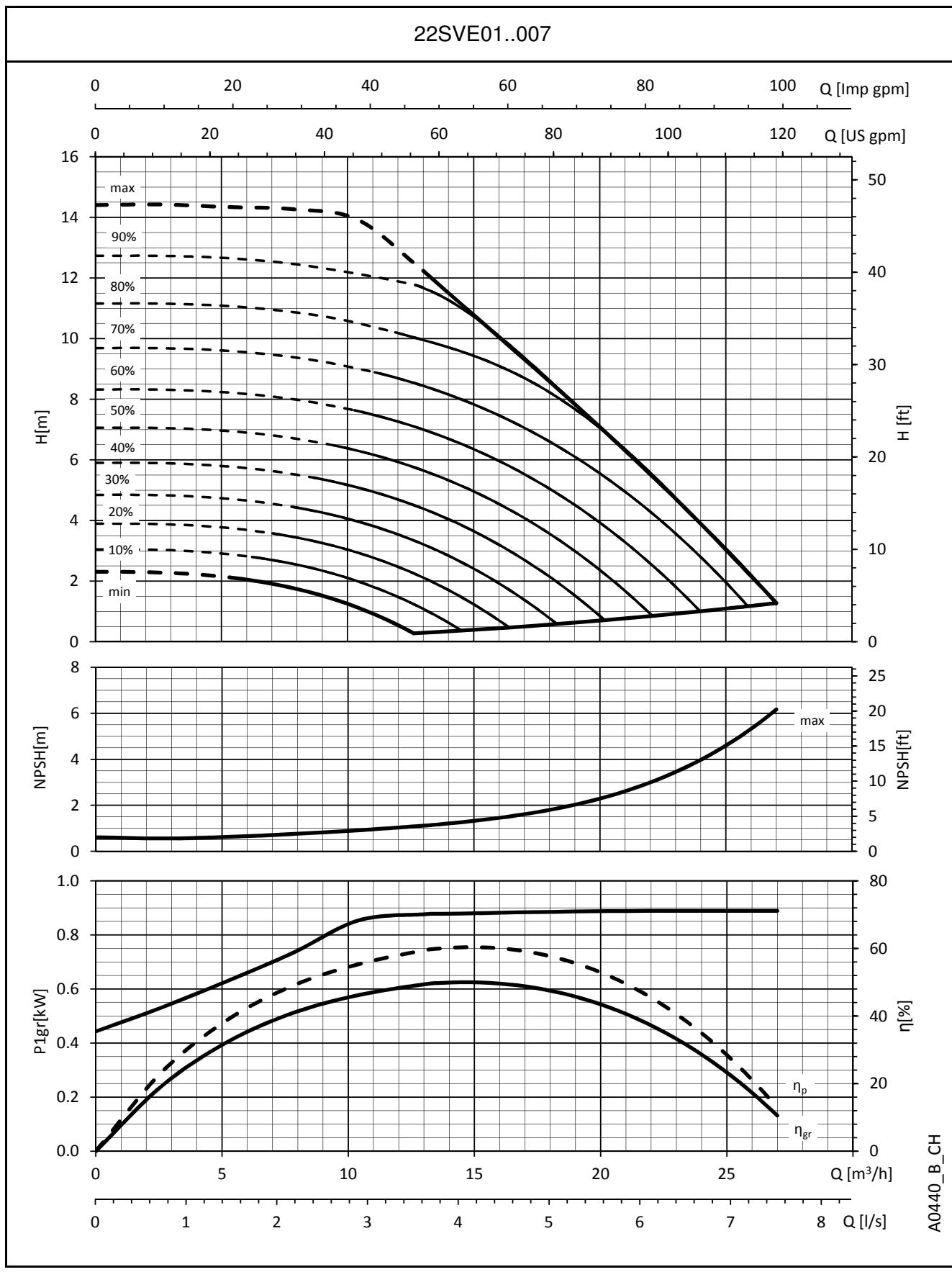
**15SVE SERIES  
OPERATING CHARACTERISTICS**


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## 15SVE SERIES OPERATING CHARACTERISTICS

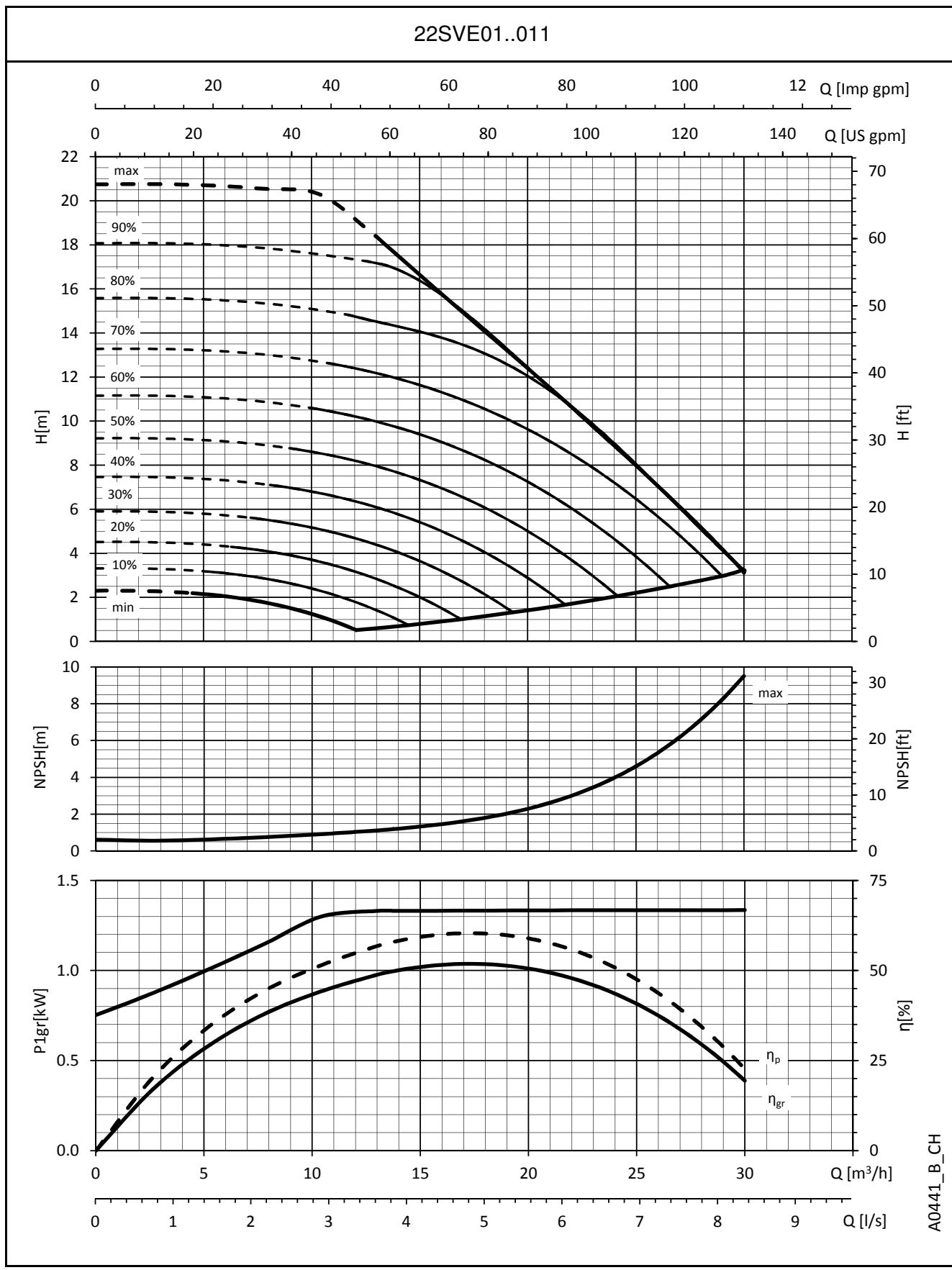


The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

**22SVE SERIES  
OPERATING CHARACTERISTICS**


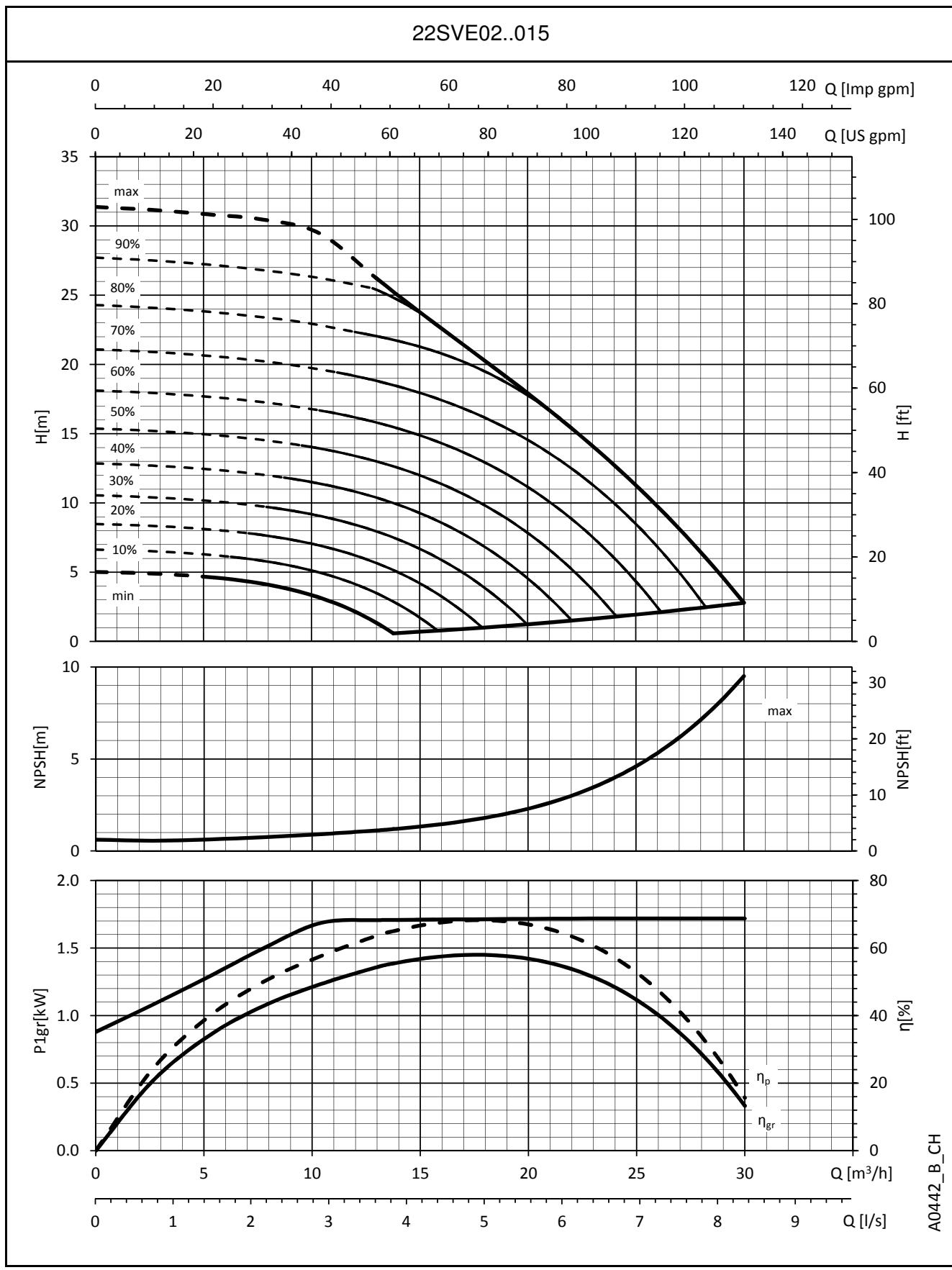
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **22SVE SERIES OPERATING CHARACTERISTICS**



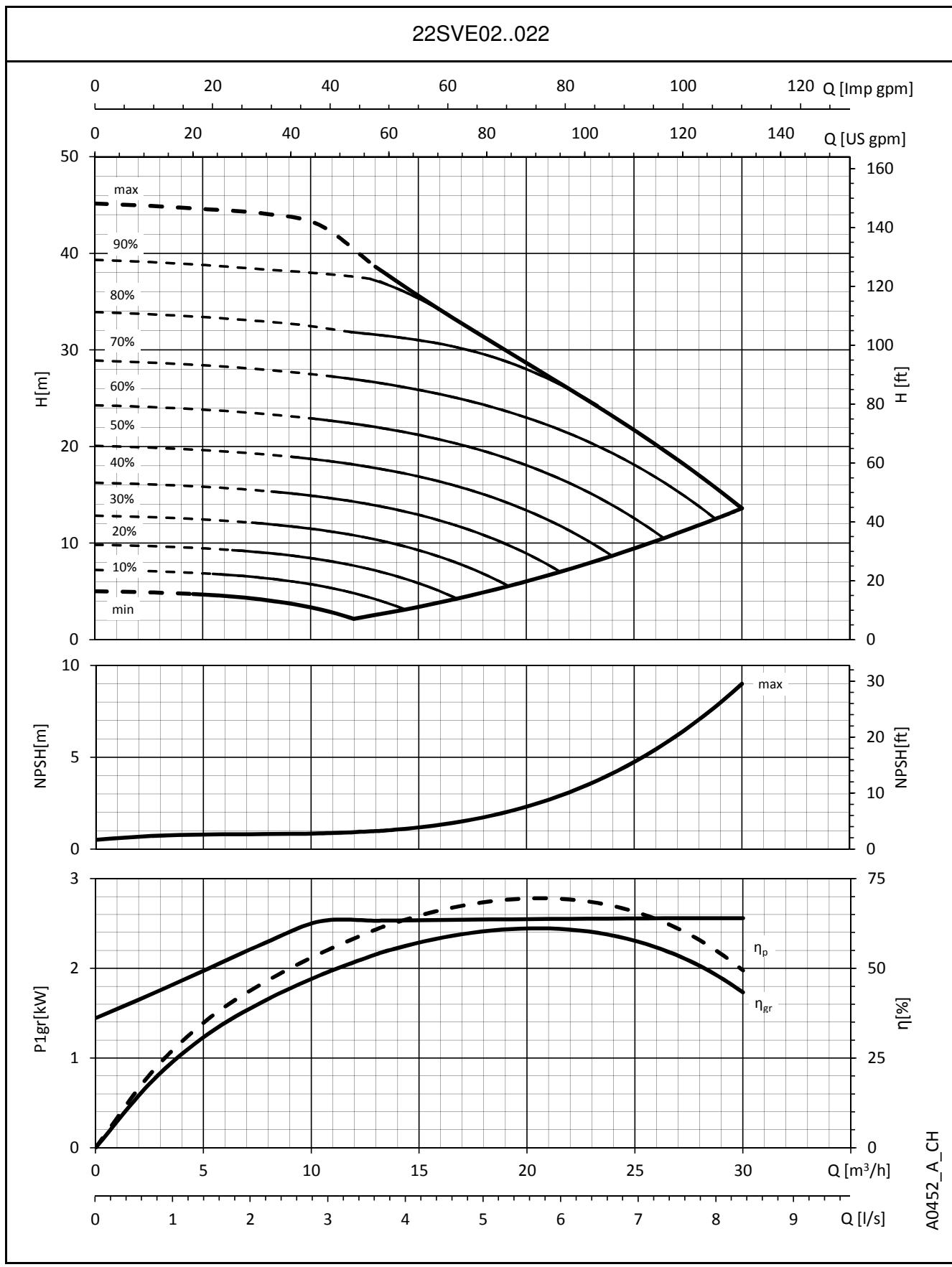
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **22SVE SERIES OPERATING CHARACTERISTICS**



The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .

## **22SVE SERIES OPERATING CHARACTERISTICS**



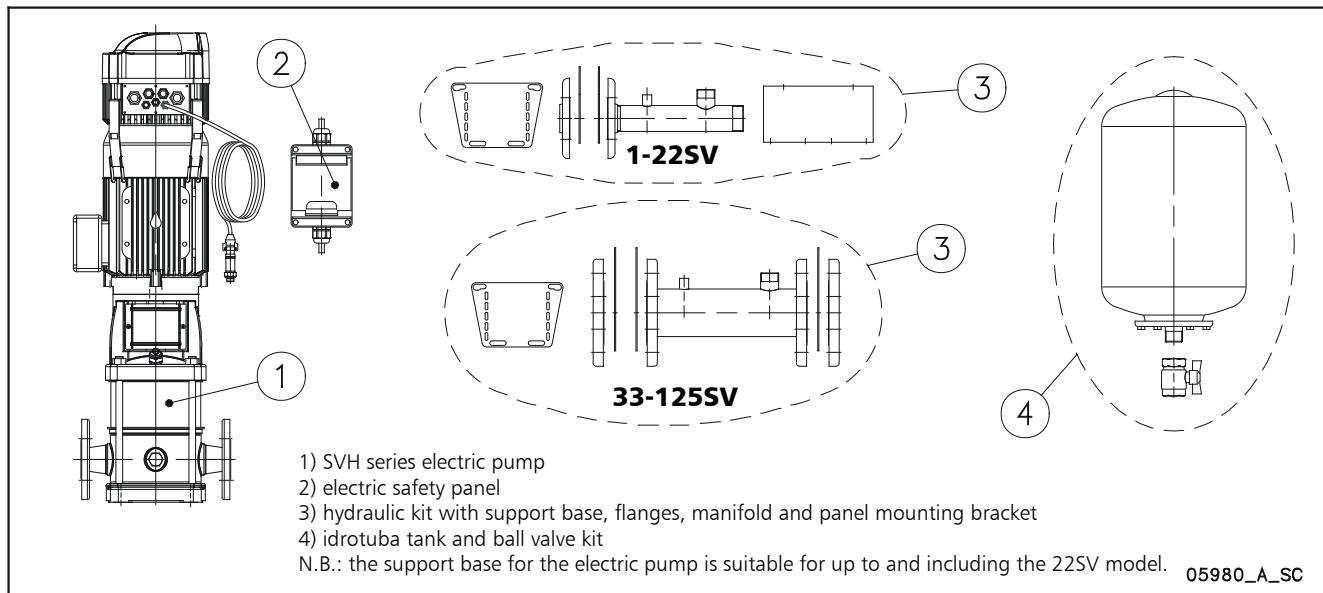
The performances are valid for liquid with density  $\rho = 1.0 \text{ Kg/dm}^3$  and kinematic viscosity  $v = 1 \text{ mm}^2/\text{sec}$ .



# ACCESSORIES

## G/SVH KIT

### TABLE OF COMPONENTS



(1) PUMP TYPE	kW	VOLTAGE	(2) ELECTRIC PANEL	(3) HYDRAULIC STD - A304 KIT	(3) HYDRAULIC A316 KIT	(4) MEMBRANE TANK STD KIT	(4) MEMBRANE TANK A304 KIT
1SVH15..007	0,75	1x230 V	1086060000	109422113	109422125	109391560	109391561
		3x400 V	1086061500	109422113	109422125	109391560	-
1SVH22..011	1,1	1x230 V	1086060000	109422113	109422125	109391570	-
		3x400 V	1086061500	109422113	109422125	109391570	-
1SVH30..015	1,5	1x230 V	1086060000	109422113	109422125	109395050	-
		3x400 V	1086061500	109422113	109422125	109395050	-
1SVH37..022	2,2	1x230 V	1086060100	109422113	109422125	109395050	-
		3x400 V	1086061600	109422113	109422125	109395050	-
3SVH08..007	0,75	1x230 V	1086060000	109422113	109422125	109391560	109391561
		3x400 V	1086061500	109422113	109422125	109391560	109391561
3SVH12..011	1,1	1x230 V	1086060000	109422113	109422125	109391560	109391561
		3x400 V	1086061500	109422113	109422125	109391560	109391561
3SVH16..015	1,5	1x230 V	1086060000	109422113	109422125	109391570	-
		3x400 V	1086061500	109422113	109422125	109391570	-
3SVH21..022	2,2	1x230 V	1086060100	109422113	109422125	109391570	-
		3x400 V	1086061600	109422113	109422125	109391570	-
3SVH25..022	2,2	1x230 V	1086060100	109422113	109422125	109395050	-
		3x400 V	1086061600	109422113	109422125	109395050	-
3SVH29..030	3	1x230 V	1086060200	109422113	109422125	109395050	-
		3x400 V	1086061700	109422113	109422125	109395050	-
5SVH05..007	0,75	1x230 V	1086060000	109422114	109422126	109391560	109391561
		3x400 V	1086061500	109422114	109422126	109391560	109391561
5SVH08..011	1,1	1x230 V	1086060000	109422114	109422126	109391560	109391561
		3x400 V	1086061500	109422114	109422126	109391560	109391561
5SVH11..015	1,5	1x230 V	1086060000	109422114	109422126	109391560	109391561
		3x400 V	1086061500	109422114	109422126	109391560	109391561
5SVH14..022	2,2	1x230 V	1086060100	109422114	109422126	109391570	-
		3x400 V	1086061600	109422114	109422126	109391570	-
5SVH16..022	2,2	1x230 V	1086060100	109422114	109422126	109391570	-
		3x400 V	1086061600	109422114	109422126	109391570	-
5SVH21..030	3	1x230 V	1086060200	109422114	109422126	109391570	-
		3x400 V	1086061700	109422114	109422126	109391570	-
5SVH28..040	4	1x230 V	1086060300	109422114	109422126	109395050	-
		3x400 V	1086061800	109422114	109422126	109395050	-
5SVH33..055	5,5	3x400 V	1086061900	109422114	109422126	109395050	-

**G/SVH KIT****TABLE OF COMPONENTS**

(1) PUMP TYPE	kW	VOLTAGE	(2) ELECTRIC PANEL	(3) HYDRAULIC STD- A304 KIT	(3) HYDRAULIC A316 KIT	(4) MEMBRANE TANK STD KIT	(4) MEMBRANE TANK A304 KIT
10SVH04..015	1,5	1x230 V 3x400 V	1086060000 1086061500	109422115 109422115	109422127 109422127	109391560 109391560	109391561 109391561
10SVH06..022	2,2	1x230 V 3x400 V	1086060100 1086061600	109422115 109422115	109422127 109422127	109391560 109391560	109391561 109391561
10SVH08..030	3	1x230 V 3x400 V	1086060200 1086061700	109422115 109422115	109422127 109422127	109391560 109391560	109391561 109391561
10SVH11..040	4	1x230 V 3x400 V	1086060300 1086061800	109422115 109422115	109422127 109422127	109391570 109391570	- -
10SVH15..055	5,5	3x400 V	1086061900	109422115	109422127	109395050	-
10SVH20..075	7,5	3x400 V	108212500	109422115	109422127	109395050	-
10SVH21..110	11	3x400 V	108212600	109422115	109422127	109395050	-
15SVH02..022	2,2	1x230 V 3x400 V	1086060100 1086061600	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
15SVH03..030	3	1x230 V 3x400 V	1086060200 1086061700	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
15SVH05..040	4	1x230 V 3x400 V	1086060300 1086061800	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
15SVH07..055	5,5	3x400 V	1086061900	109422116	109422128	109391570	-
15SVH09..075	7,5	3x400 V	1086062000	109422116	109422128	109391570	-
15SVH13..110	11	3x400 V	1086062100	109422116	109422128	109395050	-
15SVH17..150	15	3x400 V	1086062200	109422116	109422128	109395050	-
22SVH01..011	1,1	1x230 V 3x400 V	1086060000 1086061500	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
22SVH03..030	3	1x230 V 3x400 V	1086060200 1086061700	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
22SVH04..040	4	1x230 V 3x400 V	1086060300 1086061800	109422116 109422116	109422128 109422128	109391560 109391560	109391561 109391561
22SVH05..055	5,5	3x400 V	1086061900	109422116	109422128	109391560	109391561
22SVH07..075	7,5	3x400 V	1086062000	109422116	109422128	109391570	-
22SVH10..110	11	3x400 V	1086062100	109422116	109422128	109391570	-
22SVH14..150	15	3x400 V	1086062200	109422116	109422128	109395050	-
33SVH1/1A..022	2,2	1x230 V 3x400 V	1086060100 1086061600	109422117 109422117	109422129 109422129	109391560 109391560	109391561 109391561
33SVH1..030	3	1x230 V 3x400 V	1086060200 1086061700	109422117 109422117	109422129 109422129	109391560 109391560	109391561 109391561
33SVH2..055	5,5	3x400 V	1086061900	109422117	109422129	109391560	109391561
33SVH3..075	7,5	3x400 V	1086062000	109422117	109422129	109391560	109391561
33SVH4..110	11	3x400 V	1086062100	109422117	109422129	109391570	-
33SVH5..150	15	3x400 V	1086062200	109422117	109422129	109391570	-
33SVH6..150	15	3x400 V	1086062200	109422118	109422130	109391570	-
33SVH7..185	18,5	3x400 V	1086062300	109422118	109422130	109395050	-
46SVH1..040	4	1x230 V 3x400 V	1086060300 1086061800	109422119 109422119	109422131 109422131	109391560 109391560	109391561 109391561
46SVH2..075	7,5	3x400 V	1086062000	109422119	109422131	109391560	109391561
46SVH3..110	11	3x400 V	1086062100	109422119	109422131	109391560	109391561
46SVH4..150	15	3x400 V	1086062200	109422119	109422131	109391570	-
46SVH6..220	22	3x400 V	1086062400	109422120	109422132	109391570	-
66SVH1..055	5,5	3x400 V	1086061900	109422121	109422133	109391560	109391561
66SVH2..110	11	3x400 V	1086062100	109422121	109422133	109391560	109391561
66SVH3..185	18,5	3x400 V	1086062300	109422121	109422133	109391570	-
66SVH4..220	22	3x400 V	1086062400	109422121	109422133	109391570	-
92SVH1..075	7,5	3x400 V	1086062000	109422121	109422133	109391560	109391561
92SVH2..150	15	3x400 V	1086062200	109422121	109422133	109391560	109391561
92SVH3..220	22	3x400 V	1086062400	109422121	109422133	109391570	-
125SVH1..075	7,5	3x400 V	1086062000	109422123	109422135	109391560	109391561
125SVH2..150	15	3x400 V	1086062200	109422123	109422135	109391560	109391561
125SVH3..220	22	3x400 V	1086062400	109422123	109422135	109391560	109391561

## PROTECTION SENSOR AGAINST DRY RUNNING



Sensor for detecting the presence of water based on the optoelectronic principle, therefore non-invasive and with no moving parts. The sensor features an electronic contact (on/off) which stops the pump if there is no water in the seal area.

The sensor opens the electric contact if there is no water after they factory-set delay (10 seconds) elapses. The sensor is supplied as a kit complete with 2 metres of cable, an EPDM O-ring gasket and a stainless steel adapter.

### General operating features

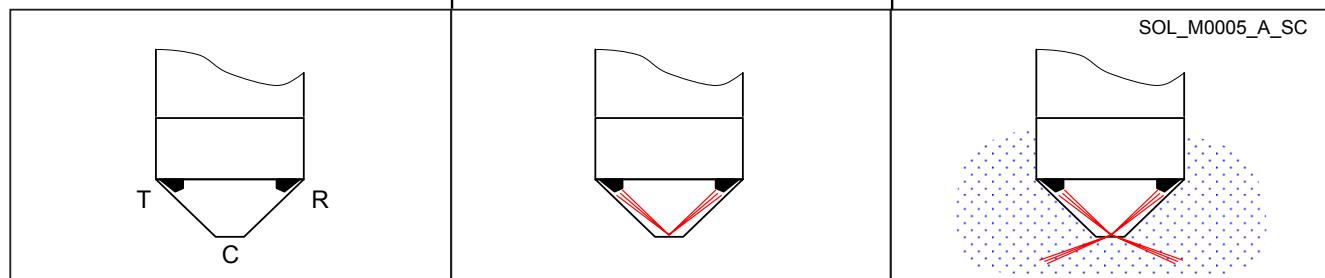
- SENSOR KIT DRP-GP: 21÷27 Vca:** In the boosters sets the sensor is assembled on the suction manifold with a specific hydraulic fitting.  
21÷27 Vca version, universal solid state output for external relay at 24 Vac (21÷27 Vac, 50 mA).
- KIT SENSOR DRP-HV: 15÷25 Vcc:** The sensor can also be fitted directly on the filling cap of the e-SV pumps series.  
15÷25 Vcc version, NPN output at 25 V (10 mA) for HYDROVAR inverter and e-SM drive.
- Operation is independent of the hardness and conductivity of the water. The sensor cannot detect frozen liquids.

### Operating principle

Operation is based on the change in the refractive index on the surfaces. The optic sensor comprises a glass cap (C) containing a transmitter (T) and an infrared receiver (R).

If there is no liquid, all the infrared light emitted by the transmitter is internally reflected by the surface of the glass cap of the receiver. The electronic contact will be open.

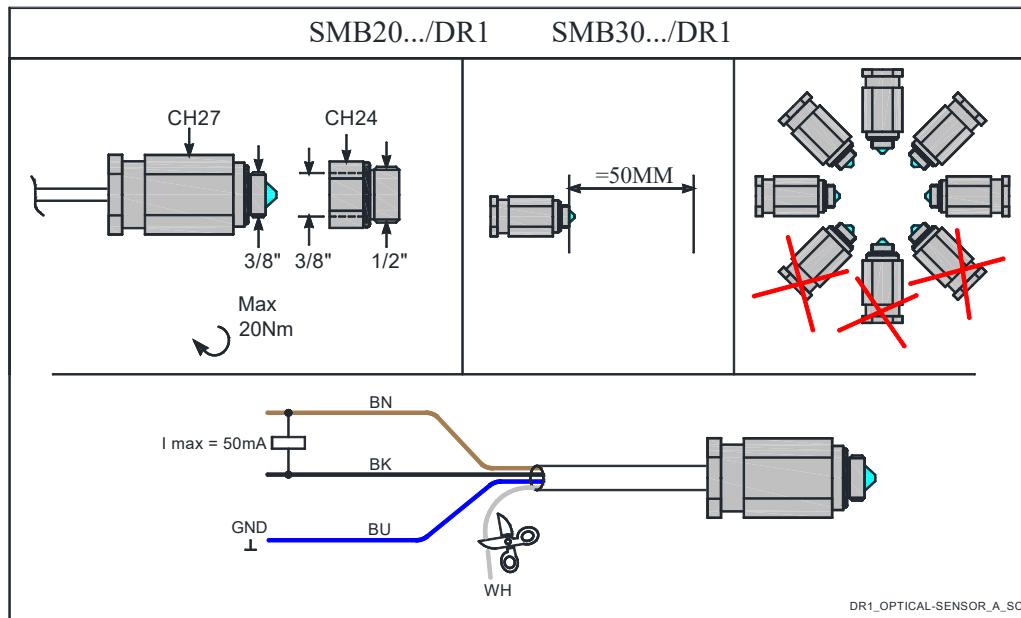
If liquid is present, the refractive index of the surface changes. Most of the infrared light emitted by the transmitter is dispersed in the liquid. The receiver receives less light and the electronic contact is closed.



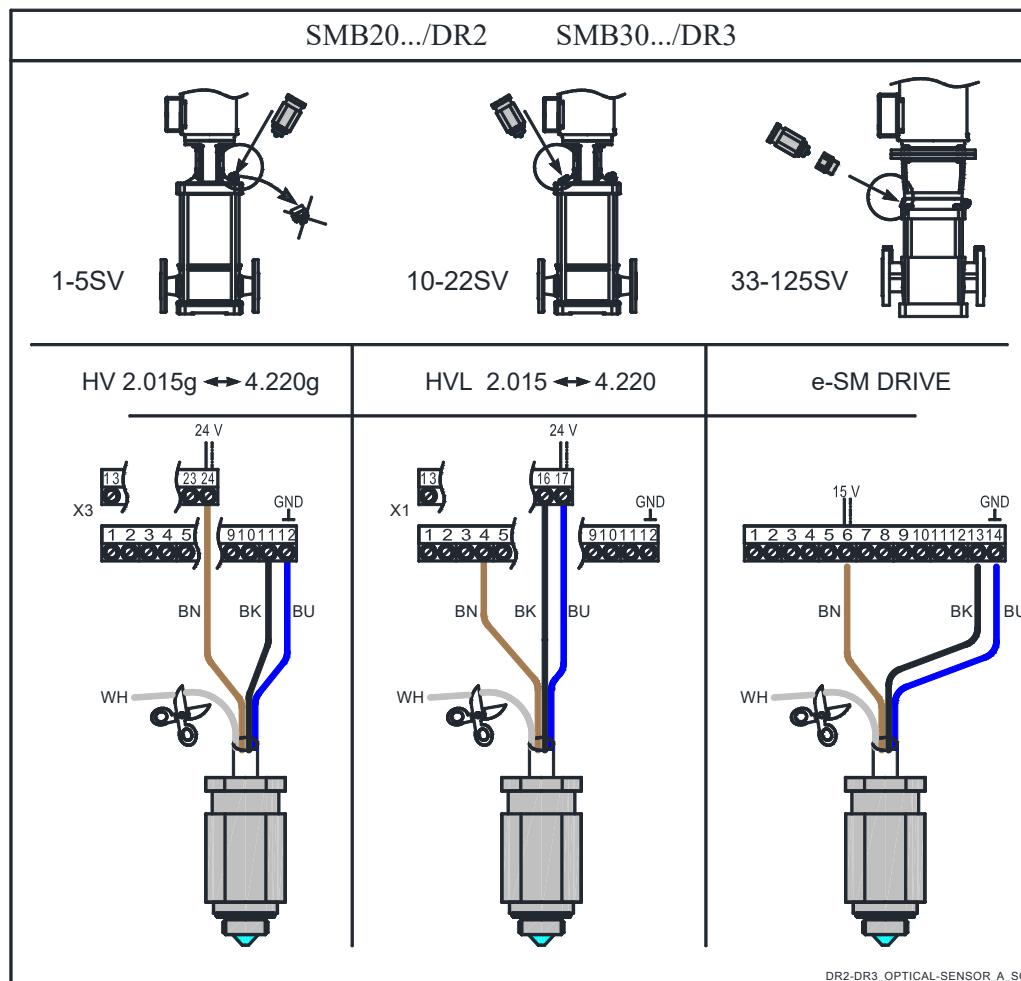
### SPECIFICATIONS

- Materials:
  - Body in AISI 316L stainless steel
  - Glass optic cap
  - EPDM gasket
- Liquids: clean water, demi water. Operation is not affected by the hardness and conductivity of the liquid. To check the suitability of other liquids, contact the Lowara technical assistance service providing the characteristics of the liquid.
- Temperature of liquid: -20°C÷+120°C (cannot be used to detect frozen liquids).
- Ambient temperature: -5°C ÷ +50°C
- Maximum pressure (PN): 25 bar
- Connector: 3/8 " (3/8" x 1/2" adaptor plug included in the Kit)
- Dimensions: 27x 60 mm
- IP55 protection
- Electrical characteristics:
  - Input voltage SENSOR KIT DRP-GP: 21÷27 Vac  
SENSOR KIT DRP-HV: 15÷25 Vdc
  - Output SENSOR KIT DRP-GP: universal solid state 21÷27 Vac (50 mA) for 24 Vac external relay  
SENSOR KIT DRP-HV: NPN 25 V (10 mA) for HYDROVAR inverter
  - Alarm delay: 10 seconds (factory setting)
  - FROR cable 4 x 0,34 mm<sup>2</sup> (PVC-CEI 20-22) 2 metres long.

## WIRING DIAGRAM

**SENSOR KIT DRP-GP** (code 109394610)

**SENSOR KIT DRP-HV** (code 109394600)

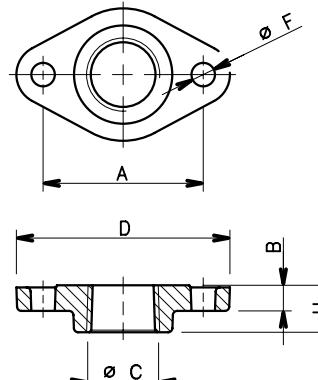
The sensor can be directly mounted on the filling plug of the e-SV pumps.  
For the 33, 46, 66, 92, 125SV series, the 3/8" x 1/2" adaptor ring included in the Kit must also be mounted.



## DIMENSIONS OF OVAL COUNTERFLANGES (SV T)

PUMP TYPE	DN	$\phi$ C	DIMENSIONS (mm)				HOLES		TIGHTENING TORQUE (Nm)	PN
			A	B	D	H	$\phi$ F	N°		
1-3SVT	25	Rp 1	75	12	100	22	11	2	40	16
5SVT	32	Rp 1 ¼	75	12	100	22	11	2	40	16
10SVT	40	Rp 1 ½	100	15	132	25	14	2	60	16
15-22SVT	50	Rp 2	100	15	132	25	14	2	60	16

1-22sv-ctf-ovali-en\_b\_td



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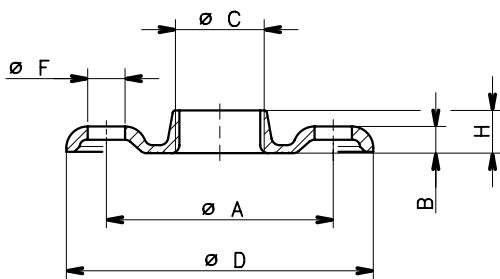
**Standard supply (included with the pump)**

- AISI 304L stainless steel (T versions).

## DIMENSIONS OF ROUND THREADED COUNTERFLANGES (SV F, N, R, G) ACCORDING TO EN 1092-1

PUMP TYPE	DN	$\phi$ C	DIMENSIONS (mm)				HOLES		TIGHTENING TORQUE (Nm)	PN
			$\phi$ A	B	$\phi$ D	H	$\phi$ F	N°		
1-3SV	25	Rp 1	85	10	115	16	14	4	50	25
5SV	32	Rp 1 ¼	100	13	140	16	18	4	100	25
10SV	40	Rp 1 ½	110	14	150	19	18	4	100	25
15-22SV	50	Rp 2	125	16	165	24	18	4	100	25
33SV	65	Rp 2 ½	145	16	185	23	18	4	100	16
46SV	80	Rp 3	160	17	200	27	18	8	100	16
66SV-92SV	100	Rp 4	180	18	220	31	18	8	100	16

1-92sv-ctf-tonde-f-en\_b\_td



04430\_B\_DD

**Round counterflanges Kit available on request:**

Kit containing 2 counterflanges with bolts and gaskets.

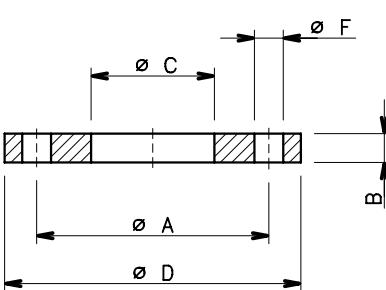
- threaded, galvanized steel (F, R, G versions).

- threaded, AISI 316L stainless steel (N versions).

## DIMENSIONS OF WELD-ON ROUND COUNTERFLANGES (SV G, N) ACCORDING TO EN 1092-1

PUMP TYPE	DN	$\phi$ C	DIMENSIONS (mm)				HOLES		TIGHTENING TORQUE (Nm)	PN
			$\phi$ A	B	$\phi$ D	$\phi$ F	N°			
33SV	65	77,5	145	20	185	18	4	100	16	
46SV	80	90,5	160	20	200	18	8	100	16	
66SV-92SV	100	116	180	22	220	18	8	100	16	
125SV	125	141,5	210	22	250	18	8	100	16	
33SV	65	77,5	145	22	185	18	8	200	25-40	
46SV	80	90,5	160	24	200	18	8	200	25-40	
66SV-92SV	100	116	190	26	235	22	8	200	25-40	
125SV	125	141,5	220	28	270	26	8	200	25-40	

33-125sv-ctf-tonde-s-en\_b\_td



04431\_A\_DD

**Round counterflanges Kit available on request:**

Kit containing 2 counterflanges with bolts and gaskets.

- weld-on counterflanges, galvanized steel (G versions).

- weld-on counterflanges, AISI 316L stainless steel (N versions).

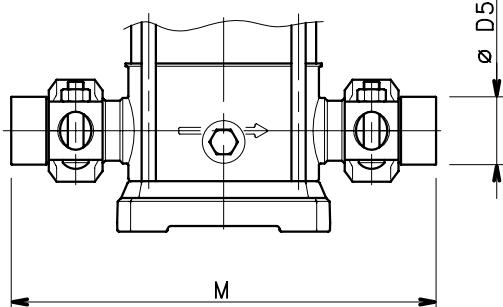
## DIMENSIONS OF VICTAULIC® COUPLINGS (SV V)

**Victaulic® couplings kit available on request:**

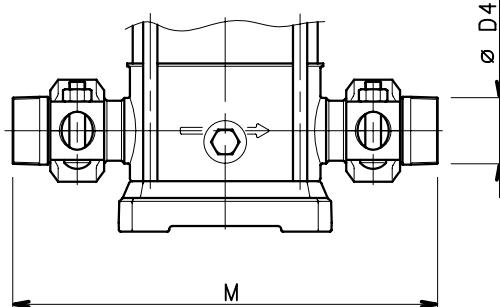
Galvanized steel Victaulic® coupling with AISI 316L stainless steel weld-on or threaded sleeve, plus EPDM or FPM gasket.

Kits are available for the single version (1 coupling) or double version (2 couplings).

WELD-ON SLEEVES



THREADED SLEEVES



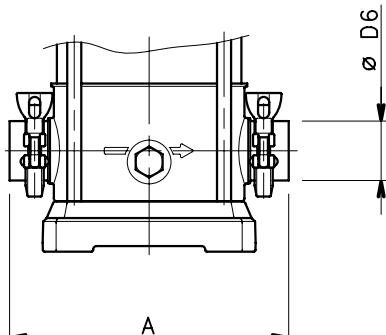
P. NUMBER	DESCRIPTION	PUMP TYPE	DIMENSIONS (mm)			
			DN	Ø D	M	H
109390880	KIT SINGLE VICTAULIC THREADED R 1"1/4 EPDM	1-3-5SV V	DN32	R 1"1/4	320	75
109390980	KIT SINGLE VICTAULIC THREADED R 1"1/4 FPM	1-3-5SV V	DN32	R 1"1/4	320	75
109390890	KIT SINGLE VICTAULIC THREADED R 2" EPDM	10-15-22SV V	DN50	R 2"	378	90
109390990	KIT SINGLE VICTAULIC THREADED R 2" FPM	10-15-22SV V	DN50	R 2"	378	90
109390860	KIT SINGLE VICTAULIC DN32 WELD-ON EPDM	1-3-5SV V	DN32	42,2	320	75
109390960	KIT SINGLE VICTAULIC DN32 WELD-ON FPM	1-3-5SV V	DN32	42,2	320	75
109390870	KIT SINGLE VICTAULIC DN50 WELD-ON EPDM	10-15-22SV V	DN50	60,3	378	90
109390970	KIT SINGLE VICTAULIC DN50 WELD-ON FPM	10-15-22SV V	DN50	60,3	378	90
109398400	KIT DOUBLE VICTAULIC THREADED R 1"1/4 EPDM	1-3-5SV V	DN32	R 1"1/4	320	75
109398401	KIT DOUBLE VICTAULIC THREADED R 1"1/4 FPM	1-3-5SV V	DN32	R 1"1/4	320	75
109398410	KIT DOUBLE VICTAULIC THREADED R 2" EPDM	10-15-22SV V	DN50	R 2"	378	90
109398411	KIT DOUBLE VICTAULIC THREADED R 2" FPM	10-15-22SV V	DN50	R 2"	378	90
109398420	KIT DOUBLE VICTAULIC DN32 WELD-ON EPDM	1-3-5SV V	DN32	42,2	320	75
109398421	KIT DOUBLE VICTAULIC DN32 WELD-ON FPM	1-3-5SV V	DN32	42,2	320	75
109398430	KIT DOUBLE VICTAULIC DN50 WELD-ON EPDM	10-15-22SV V	DN50	60,3	378	90
109398431	KIT DOUBLE VICTAULIC DN50 WELD-ON FPM	10-15-22SV V	DN50	60,3	378	90

1-22sv-giunti-vict-en\_b\_td

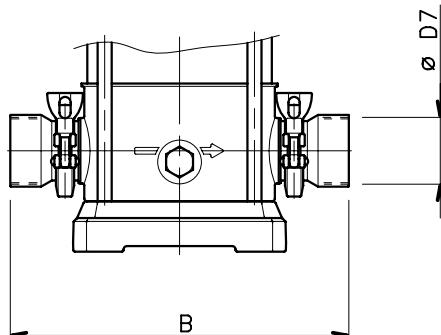
04427\_B\_DD

## DIMENSIONS OF CLAMP COUPLINGS (SV C)

WELD-ON SLEEVES



THREADED SLEEVES



PUMP TYPE	DIMENSIONS (mm)			
	A	B	Ø D6	Ø D7
1-3-5SV C	208	245	35	Rp 1 1/4
10-15-22SV C	248	301	53	Rp 2

1-22sv-giunti-clamp-en\_a\_td

04426\_B\_DD

**Clamp couplings kit available on request:**

Kit containing 2 Clamp couplings with AISI 316L stainless steel weld-on or threaded sleeve, plus EPDM or FPM gasket. Coupling shape and dimensions according to DIN 32676.

## SPECIAL VERSIONS NOT DESCRIBED IN THIS CATALOGUE

More and more customers require specific solutions for satisfying particular application requirements.

To meet their needs, Lowara offers a series of variants for personalising the e-SV pumps.

**For more information, please see e-SV Special Versions catalogue.**

### • **High Pressure (50/60 Hz)**

Water treatment industry - washing and cleaning

- Versatile range
- Long lasting performances
- Easy installation and maintenance

### • **Low NPSH (50/60 Hz)**

Solving cavitation issues in installation

- Consistent operation
- Long lasting performances
- Easy installation

### • **High Temperature (50/60 Hz)**

Electric pumps for high temperature applications

- **H** versions for temperature values up to 150°C
- **B** "BOILER" versions for temperature values up to 180°C

### • **4-POLE Version (50/60 Hz)**

Silencious operation

- Low level of noise
- Wide range of performances
- Increased performance with HYDROVAR (50 Hz)

### • **Reduced overall dimensions (50/60 Hz)**

Space saving in installation

- Compact design
- Versatile design
- High level performances

### • **Horizontal Installation (50/60 Hz)**

Installation in reduced vertical space

- Reduced vertical space
- Easy installation

### • **Accessories**

Wide range of accessories for installation

Furthermore:

### • **Passivated and electro-polished version**

All e-SV pump components are passivated and electro-polished in order to reduce the risk of corrosion and to comply with specific hygiene requirements.

### • **Version with stainless steel base**

The e-SV pump can be supplied with a stainless steel base for applications in aggressive conditions.

### • **Version with pump body in stainless steel**

1.4408 (AISI 316 cast) for series 1, 3, 5, 10, 15, 22SV.

## CUSTOMIZED VERSION

**For further customization please contact the sales network.**

# **REPORTS AND DECLARATIONS**

## REPORTS AND DECLARATIONS

### i) Test reports

- a) **Factory Test Report** (Lowara identity code: 1A)  
(not available for all pump types; contact Customer Service in advance)
  - Test report compiled at the end of the assembly line, including flow-head performance test (ISO 9906:2012 – Grade 3B) and tightness test.
- b) **Audit Test Report** (Lowara identity code: 1B)
  - Test report for electric pumps compiled in the test room, comprising flow-head-pump input-pump efficiency performance test (ISO 9906:2012 – Grade 3B)
- c) **NPSH Test Report** (Lowara identity code: 1B / CTF-NP)  
(unavailable for submerged or submergible pumps)
  - Test report for electric pumps compiled in the test room, comprising flow-NPSH performance test (ISO 9906:2012 – Grade 3B)
- d) **Noise Test Report** (Lowara identity code: 1B / CTF-RM)  
(unavailable for submerged pumps)
  - Report indicating sound pressure and power measurements (EN ISO 20361, EN ISO 11203, EN ISO 4871) using the
    - intensimetric (EN ISO 9614-1, EN ISO 9614-2), or
    - phonometric method.
- e) **Vibration Test Report**  
(unavailable for submerged or submergible pumps)
  - Report indicating vibration measurements (ISO 10816-1)

### ii) Declaration of product conformity with the technical requirements indicated in the order

- a) **EN 10204:2004 - type 2.1** (Lowara identity code: CTF-21)
  - does not include test results on supplied or similar products.
- b) **EN 10204:2004 - type 2.2** (Lowara identity code: CTF-22)
  - includes test results (materials certificates) on similar products.

### iii) Issue of a further EC Declaration of Conformity,

- in addition to the one accompanying the product, it comprises references to European law and the main technical standards (e.g.: MD 2006/42/EC, EMCD 2004/108/EC, ErP 2009/125/EC).

*N.B.: if the request is made after receipt of the product, communicate the code (name) and serial number (date + progressive number).*

### iv) Manufacturer's declaration of conformity

- relative to one of more types of products without indicating specific codes and serial numbers.

### v) Other certificates and/or documentation on request

- subject to availability or feasibility.

### vi) Duplication of certificates and/or documentation on request

- subject to availability or feasibility.

# TECHNICAL APPENDIX

## NPSH

The minimum operating values that can be reached at the pump suction end are limited by the onset of cavitation.

Cavitation is the formation of vapour-filled cavities within liquids where the pressure is locally reduced to a critical value, or where the local pressure is equal to, or just below the vapour pressure of the liquid.

The vapour-filled cavities flow with the current and when they reach a higher pressure area the vapour contained in the cavities condenses. The cavities collide, generating pressure waves that are transmitted to the walls. These, being subjected to stress cycles, gradually become deformed and yield due to fatigue. This phenomenon, characterized by a metallic noise produced by the hammering on the pipe walls, is called incipient cavitation.

The damage caused by cavitation may be magnified by electrochemical corrosion and a local rise in temperature due to the plastic deformation of the walls. The materials that offer the highest resistance to heat and corrosion are alloy steels, especially austenitic steel. The conditions that trigger cavitation may be assessed by calculating the total net suction head, referred to in technical literature with the acronym NPSH (Net Positive Suction Head).

The NPSH represents the total energy (expressed in m.) of the liquid measured at suction under conditions of incipient cavitation, excluding the vapour pressure (expressed in m.) that the liquid has at the pump inlet.

To find the static height  $h_z$  at which to install the machine under safe conditions, the following formula must be verified:

$$hp + h_z \geq (NPSH_r + 0.5) + hf + hp_v \quad ①$$

where:

**hp** is the absolute pressure applied to the free liquid surface in the suction tank, expressed in m. of liquid;  $hp$  is the quotient between the barometric pressure and the specific weight of the liquid.

**hz** is the suction lift between the pump axis and the free liquid surface in the suction tank, expressed in m.;  $h_z$  is negative when the liquid level is lower than the pump axis.

**hf** is the flow resistance in the suction line and its accessories, such as: fittings, foot valve, gate valve, elbows, etc.

**hpv** is the vapour pressure of the liquid at the operating temperature, expressed in m. of liquid.  $hp_v$  is the quotient between the  $P_v$  vapour pressure and the liquid's specific weight.

**0,5** is the safety factor.

The maximum possible suction head for installation depends on the value of the atmospheric pressure (i.e. the elevation above sea level at which the pump is installed) and the temperature of the liquid.

To help the user, with reference to water temperature ( $4^\circ C$ ) and to the elevation above sea level, the following tables show the drop in hydraulic pressure head in relation to the elevation above sea level, and the suction loss in relation to temperature.

<b>Water temperature (<math>^\circ C</math>)</b>	20	40	60	80	90	110	120
<b>Suction loss (m)</b>	0,2	0,7	2,0	5,0	7,4	15,4	21,5

<b>Elevation above sea level (m)</b>	500	1000	1500	2000	2500	3000
<b>Suction loss (m)</b>	0,55	1,1	1,65	2,2	2,75	3,3

Friction loss is shown in the tables of this catalogue. To reduce it to a minimum, especially in cases of high suction head (over 4-5 m.) or within the operating limits with high flow rates, we recommend using a suction line having a larger diameter than that of the pump's suction port. It is always a good idea to position the pump as close as possible to the liquid to be pumped.

Make the following calculation:

Liquid: water at  $\sim 15^\circ C$   $\gamma = 1 \text{ kg/dm}^3$

Flow rate required:  $25 \text{ m}^3/\text{h}$

Head for required delivery: 70 m.

Suction lift: 3,5 m.

The selection is an 33SV3G075T pump whose NPSH required value is, at  $25 \text{ m}^3/\text{h}$ , of 2 m.

For water at  $15^\circ C$

$hp = Pa / \gamma = 10,33 \text{ m}$ ,  $hp_v = Pv / \gamma = 0,174 \text{ m}$  (0,01701 bar)

The Hf flow resistance in the suction line with foot valves is  $\sim 1,2 \text{ m}$ .

By substituting the parameters in formula ① with the numeric values above, we have:

$$10,33 + (-3,5) \geq (2 + 0,5) + 1,2 + 0,17$$

from which we have:  $6,8 > 3,9$

The relation is therefore verified.

**VAPOUR PRESSURE**
**VAPOUR PRESSURE ps AND ρ DENSITY OF WATER TABLE**

t °C	T K	ps bar	ρ kg/dm³
0	273,15	0,00611	0,9998
1	274,15	0,00657	0,9999
2	275,15	0,00706	0,9999
3	276,15	0,00758	0,9999
4	277,15	0,00813	1,0000
5	278,15	0,00872	1,0000
6	279,15	0,00935	1,0000
7	280,15	0,01001	0,9999
8	281,15	0,01072	0,9999
9	282,15	0,01147	0,9998
10	283,15	0,01227	0,9997
11	284,15	0,01312	0,9997
12	285,15	0,01401	0,9996
13	286,15	0,01497	0,9994
14	287,15	0,01597	0,9993
15	288,15	0,01704	0,9992
16	289,15	0,01817	0,9990
17	290,15	0,01936	0,9988
18	291,15	0,02062	0,9987
19	292,15	0,02196	0,9985
20	293,15	0,02337	0,9983
21	294,15	0,024850	0,9981
22	295,15	0,02642	0,9978
23	296,15	0,02808	0,9976
24	297,15	0,02982	0,9974
25	298,15	0,03166	0,9971
26	299,15	0,03360	0,9968
27	300,15	0,03564	0,9966
28	301,15	0,03778	0,9963
29	302,15	0,04004	0,9960
30	303,15	0,04241	0,9957
31	304,15	0,04491	0,9954
32	305,15	0,04753	0,9951
33	306,15	0,05029	0,9947
34	307,15	0,05318	0,9944
35	308,15	0,05622	0,9940
36	309,15	0,05940	0,9937
37	310,15	0,06274	0,9933
38	311,15	0,06624	0,9930
39	312,15	0,06991	0,9927
40	313,15	0,07375	0,9923
41	314,15	0,07777	0,9919
42	315,15	0,08198	0,9915
43	316,15	0,09639	0,9911
44	317,15	0,09100	0,9907
45	318,15	0,09582	0,9902
46	319,15	0,10086	0,9898
47	320,15	0,10612	0,9894
48	321,15	0,11162	0,9889
49	322,15	0,11736	0,9884
50	323,15	0,12335	0,9880
51	324,15	0,12961	0,9876
52	325,15	0,13613	0,9871
53	326,15	0,14293	0,9862
54	327,15	0,15002	0,9862

t °C	T K	ps bar	ρ kg/dm³
55	328,15	0,15741	0,9857
56	329,15	0,16511	0,9852
57	330,15	0,17313	0,9846
58	331,15	0,18147	0,9842
59	332,15	0,19016	0,9837
60	333,15	0,1992	0,9832
61	334,15	0,2086	0,9826
62	335,15	0,2184	0,9821
63	336,15	0,2286	0,9816
64	337,15	0,2391	0,9811
65	338,15	0,2501	0,9805
66	339,15	0,2615	0,9799
67	340,15	0,2733	0,9793
68	341,15	0,2856	0,9788
69	342,15	0,2984	0,9782
70	343,15	0,3116	0,9777
71	344,15	0,3253	0,9770
72	345,15	0,3396	0,9765
73	346,15	0,3543	0,9760
74	347,15	0,3696	0,9753
75	348,15	0,3855	0,9748
76	349,15	0,4019	0,9741
77	350,15	0,4189	0,9735
78	351,15	0,4365	0,9729
79	352,15	0,4547	0,9723
80	353,15	0,4736	0,9716
81	354,15	0,4931	0,9710
82	355,15	0,5133	0,9704
83	356,15	0,5342	0,9697
84	357,15	0,5557	0,9691
85	358,15	0,5780	0,9684
86	359,15	0,6011	0,9678
87	360,15	0,6249	0,9671
88	361,15	0,6495	0,9665
89	362,15	0,6749	0,9658
90	363,15	0,7011	0,9652
91	364,15	0,7281	0,9644
92	365,15	0,7561	0,9638
93	366,15	0,7849	0,9630
94	367,15	0,8146	0,9624
95	368,15	0,8453	0,9616
96	369,15	0,8769	0,9610
97	370,15	0,9094	0,9602
98	371,15	0,9430	0,9596
99	372,15	0,9776	0,9586
100	373,15	1,0133	0,9581
102	375,15	1,0878	0,9567
104	377,15	1,1668	0,9552
106	379,15	1,2504	0,9537
108	381,15	1,3390	0,9522
110	383,15	1,4327	0,9507
112	385,15	1,5316	0,9491
114	387,15	1,6362	0,9476
116	389,15	1,7465	0,9460
118	391,15	1,8628	0,9445

t °C	T K	ps bar	ρ kg/dm³
120	393,15	1,9854	0,9429
122	395,15	2,1145	0,9412
124	397,15	2,2504	0,9396
126	399,15	2,3933	0,9379
128	401,15	2,5435	0,9362
130	403,15	2,7013	0,9346
132	405,15	2,867	0,9328
134	407,15	3,041	0,9311
136	409,15	3,223	0,9294
138	411,15	3,414	0,9276
140	413,15	3,614	0,9258
145	418,15	4,155	0,9214
155	428,15	5,433	0,9121
160	433,15	6,181	0,9073
165	438,15	7,008	0,9024
170	433,15	7,920	0,8973
175	448,15	8,924	0,8921
180	453,15	10,027	0,8869
185	458,15	11,233	0,8815
190	463,15	12,551	0,8760
195	468,15	13,987	0,8704
200	473,15	15,550	0,8647
205	478,15	17,243	0,8588
210	483,15	19,077	0,8528
215	488,15	21,060	0,8467
220	493,15	23,198	0,8403
225	498,15	25,501	0,8339
230	503,15	27,976	0,8273
235	508,15	30,632	0,8205
240	513,15	33,478	0,8136
245	518,15	36,523	0,8065
250	523,15	39,776	0,7992
255	528,15	43,246	0,7916
260	533,15	46,943	0,7839
265	538,15	50,877	0,7759
270	543,15	55,058	0,7678
275	548,15	59,496	0,7593
280	553,15	64,202	0,7505
285	558,15	69,186	0,7415
290	563,15	74,461	0,7321
295	568,15	80,037	0,7223
300	573,15	85,927	0,7122
305	578,15	92,144	0,7017
310	583,15	98,70	0,6906
315	588,15	105,61	0,6791
320	593,15	112,89	0,6669
325	598,15	120,56	0,6541
330	603,15	128,63	0,6404
340	613,15	146,05	0,6102
350	623,15	165,35	0,5743
360	633,15	186,75	0,5275
370	643,15	210,54	0,4518
374,15	647,30	221,20	0,3154

G-at\_npsh\_b\_sc

**TABLE OF FLOW RESISTANCE IN 100 m OF STRAIGHT  
CAST IRON PIPELINE (HAZEN-WILLIAMS FORMULA C=100)**

FLOW RATE m³/h	l/min		NOMINAL DIAMETER in mm and inches																					
			15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	175 7"	200 8"	250 10"	300 12"	350 14"	400 16"					
0,6	10	v hr	0,94 16	0,53 3,94	0,34 1,33	0,21 0,40	0,13 0,13																	
0,9	15		1,42 33,9	0,80 8,35	0,51 2,82	0,31 0,85	0,20 0,29																	
1,2	20		1,89 57,7	1,06 14,21	0,68 4,79	0,41 1,44	0,27 0,49	0,17 0,16																
1,5	25		2,36 87,2	1,33 21,5	0,85 7,24	0,52 2,18	0,33 0,73	0,21 0,25																
1,8	30		2,83 122	1,59 30,1	1,02 10,1	0,62 3,05	0,40 1,03	0,25 0,35																
2,1	35		3,30 162	1,86 40,0	1,19 13,5	0,73 4,06	0,46 1,37	0,30 0,46																
2,4	40		2,12 51,2	1,36 17,3	0,83 5,19	0,53 1,75	0,34 0,59	0,20 0,16																
3	50		2,65 77,4	1,70 26,1	1,04 7,85	0,66 2,65	0,42 0,89	0,25 0,25																
3,6	60		3,18 108	2,04 36,6	1,24 11,0	0,80 3,71	0,51 1,25	0,30 0,35																
4,2	70		3,72 144	2,38 48,7	1,45 14,6	0,93 4,93	0,59 1,66	0,35 0,46																
4,8	80		4,25 185	2,72 62,3	1,66 18,7	1,06 6,32	0,68 2,13	0,40 0,59																
5,4	90		3,06 77,5	1,87 23,3	1,19 7,85	0,76 2,65	0,45 0,74	0,30 0,27																
6	100		3,40 94,1	2,07 28,3	1,33 9,54	0,85 3,22	0,50 0,90	0,33 0,33																
7,5	125		4,25 142	2,59 42,8	1,66 14,4	1,06 4,86	0,63 1,36	0,41 0,49																
9	150				3,11 59,9	1,99 20,2	1,27 6,82	0,75 1,90	0,50 0,69	0,32 0,23														
10,5	175				3,63 79,7	2,32 26,9	1,49 9,07	0,88 2,53	0,58 0,92	0,37 0,31														
12	200				4,15 102	2,65 34,4	1,70 11,6	1,01 3,23	0,66 1,18	0,42 0,40														
15	250				5,18 154	3,32 52,0	2,12 17,5	1,26 4,89	0,83 1,78	0,53 0,60	0,34 0,20													
18	300					3,98 72,8	2,55 24,6	1,51 6,85	1,00 2,49	0,64 0,84	0,41 0,28													
24	400					5,31 124	3,40 41,8	2,01 11,66	1,33 4,24	0,85 1,43	0,54 0,48	0,38 0,20												
30	500					6,63 187	4,25 63,2	2,51 17,6	1,66 6,41	1,06 2,16	0,68 0,73	0,47 0,30												
36	600						5,10 88,6	3,02 24,7	1,99 8,98	1,27 3,03	0,82 1,02	0,57 0,42	0,42 0,20											
42	700						5,94 118	3,52 32,8	2,32 11,9	1,49 4,03	0,95 1,36	0,66 0,56	0,49 0,26											
48	800						6,79 151	4,02 42,0	2,65 15,3	1,70 5,16	1,09 1,74	0,75 0,72	0,55 0,34											
54	900						7,64 188	4,52 52,3	2,99 19,0	1,91 6,41	1,22 2,16	0,85 0,89	0,62 0,42											
60	1000							5,03 63,5	3,32 23,1	2,12 7,79	1,36 2,63	0,94 1,08	0,69 0,51	0,53 0,27										
75	1250							6,28 96,0	4,15 34,9	2,65 11,8	1,70 3,97	1,18 1,63	0,87 0,77	0,66 0,40										
90	1500							7,54 134	4,98 48,9	3,18 16,5	2,04 5,57	1,42 2,29	1,04 1,08	0,80 0,56										
105	1750							8,79 179	5,81 65,1	3,72 21,9	2,38 7,40	1,65 3,05	1,21 1,44	0,93 0,75										
120	2000								6,63 83,3	4,25 28,1	2,72 9,48	1,89 3,90	1,39 1,84	1,06 0,96	0,68 0,32									
150	2500								8,29 126	5,31 42,5	3,40 14,3	2,36 5,89	1,73 2,78	1,33 1,45	0,85 0,49									
180	3000								6,37 59,5	4,08 20,1	2,83 8,26	2,08 3,90	1,59 2,03	1,02 0,69	0,71 0,28									
210	3500									7,43 79,1	4,76 26,7	3,30 11,0	2,43 5,18	1,86 2,71	1,19 0,91	0,83 0,38								
240	4000									8,49 101	5,44 34,2	3,77 14,1	2,77 6,64	2,12 3,46	1,36 1,17	0,94 0,48								
300	5000										6,79 51,6	4,72 21,2	3,47 10,0	2,65 5,23	1,70 1,77	1,18 0,73								
360	6000										8,15 72,3	5,66 29,8	4,16 14,1	3,18 7,33	2,04 2,47	1,42 1,02	1,42 1,33							
420	7000											6,61 39,6	4,85 18,7	3,72 9,75	2,38 3,29	1,65 1,35	1,21 0,64							
480	8000											7,55 50,7	5,55 23,9	4,25 12,49	2,72 4,21	1,89 1,73	1,39 0,82							
540	9000											8,49 63,0	6,24 29,8	4,78 15,5	3,06 5,24	2,12 2,16	1,56 1,02	1,19 0,53						
600	10000											6,93 36,2	5,31 18,9	3,40 6,36	2,38 2,62	1,73 1,24	1,21 0,65							

hr = flow resistance for 100 m of straight pipeline (m)

G-at-pct-en\_b\_th

V = water speed (m/s)

## FLOW RESISTANCE

### TABLE OF FLOW RESISTANCE IN BENDS, VALVES AND GATES

The flow resistance is calculated using the equivalent pipeline length method according to the table below:

ACCESSORY TYPE	DN											
	25	32	40	50	65	80	100	125	150	200	250	300
	Equivalent pipeline length (m)											
45° bend	0,2	0,2	0,4	0,4	0,6	0,6	0,9	1,1	1,5	1,9	2,4	2,8
90° bend	0,4	0,6	0,9	1,1	1,3	1,5	2,1	2,6	3,0	3,9	4,7	5,8
90° smooth bend	0,4	0,4	0,4	0,6	0,9	1,1	1,3	1,7	1,9	2,8	3,4	3,9
Union tee or cross	1,1	1,3	1,7	2,1	2,6	3,2	4,3	5,3	6,4	7,5	10,7	12,8
Gate valve	-	-	-	0,2	0,2	0,2	0,4	0,4	0,6	0,9	1,1	1,3
Foot check valve	1,1	1,5	1,9	2,4	3,0	3,4	4,7	5,9	7,4	9,6	11,8	13,9
Non return valve	1,1	1,5	1,9	2,4	3,0	3,4	4,7	5,9	7,4	9,6	11,8	13,9

G-a-pcv-en\_b\_th

The table is valid for the Hazen Williams coefficient C=100 (cast iron pipework);

for steel pipework, multiply the values by 1,41;

for stainless steel, copper and coated cast iron pipework, multiply the values by 1,85;

When the **equivalent pipeline length** has been determined, the flow resistance is obtained from the table of flow resistance.

The values given are guideline values which are bound to vary slightly according to the model, especially for gate valves and non-return valves, for which it is a good idea to check the values supplied by manufacturers.

## VOLUMETRIC CAPACITY

Litres per minute l/min	Cubic metres per hour m <sup>3</sup> /h	Cubic feet per hour ft <sup>3</sup> /h	Cubic feet per minute ft <sup>3</sup> /min	Imperial gallon per minute Imp. gal/min	U.S. gallon per minute US gal/min
<b>1,0000</b>	0,0600	2,1189	0,0353	0,2200	0,2642
16,6667	<b>1,0000</b>	35,3147	0,5886	3,6662	4,4029
0,4719	0,0283	<b>1,0000</b>	0,0167	0,1038	0,1247
28,3168	1,6990	60,0000	<b>1,0000</b>	6,2288	7,4805
4,5461	0,2728	9,6326	0,1605	<b>1,0000</b>	1,2009
3,7854	0,2271	8,0208	0,1337	0,8327	<b>1,0000</b>

## PRESSURE AND HEAD

Newton per square metre N/m <sup>2</sup>	kilo Pascal kPa	bar	Pound force per square inch psi	Metre of water m H <sub>2</sub> O	Millimetre of mercury mm Hg
<b>1,0000</b>	0,0010	$1 \times 10^{-5}$	$1,45 \times 10^{-4}$	$1,02 \times 10^{-4}$	0,0075
1 000,0000	<b>1,0000</b>	0,0100	0,1450	0,1020	7,5006
$1 \times 10^5$	100,0000	<b>1,0000</b>	14,5038	10,1972	750,0638
6 894,7570	6,8948	0,0689	<b>1,0000</b>	0,7031	51,7151
9 806,6500	9,8067	0,0981	1,4223	<b>1,0000</b>	73,5561
133,3220	0,1333	0,0013	0,0193	0,0136	<b>1,0000</b>

## LENGTH

Millimetre mm	Centimetre cm	Metre m	Inch in	Foot ft	Yard yd
<b>1,0000</b>	0,1000	0,0010	0,0394	0,0033	0,0011
10,0000	<b>1,0000</b>	0,0100	0,3937	0,0328	0,0109
1 000,0000	100,0000	<b>1,0000</b>	39,3701	3,2808	1,0936
25,4000	2,5400	0,0254	<b>1,0000</b>	0,0833	0,0278
304,8000	30,4800	0,3048	12,0000	<b>1,0000</b>	0,3333
914,4000	91,4400	0,9144	36,0000	3,0000	<b>1,0000</b>

## VOLUME

Cubic metre m <sup>3</sup>	Litre L	Millilitre ml	Imperial gallon imp. gal.	U.S. gallon US gal.	Cubic foot ft <sup>3</sup>
<b>1,0000</b>	1 000,0000	$1 \times 10^6$	219,9694	264,1720	35,3147
0,0010	<b>1,0000</b>	1 000,0000	0,2200	0,2642	0,0353
$1 \times 10^{-6}$	0,0010	<b>1,0000</b>	$2,2 \times 10^{-4}$	$2,642 \times 10^{-4}$	$3,53 \times 10^{-5}$
0,0045	4,5461	4 546,0870	<b>1,0000</b>	1,2009	0,1605
0,0038	3,7854	3 785,4120	0,8327	<b>1,0000</b>	0,1337
0,0283	28,3168	28 316,8466	6,2288	7,4805	<b>1,0000</b>

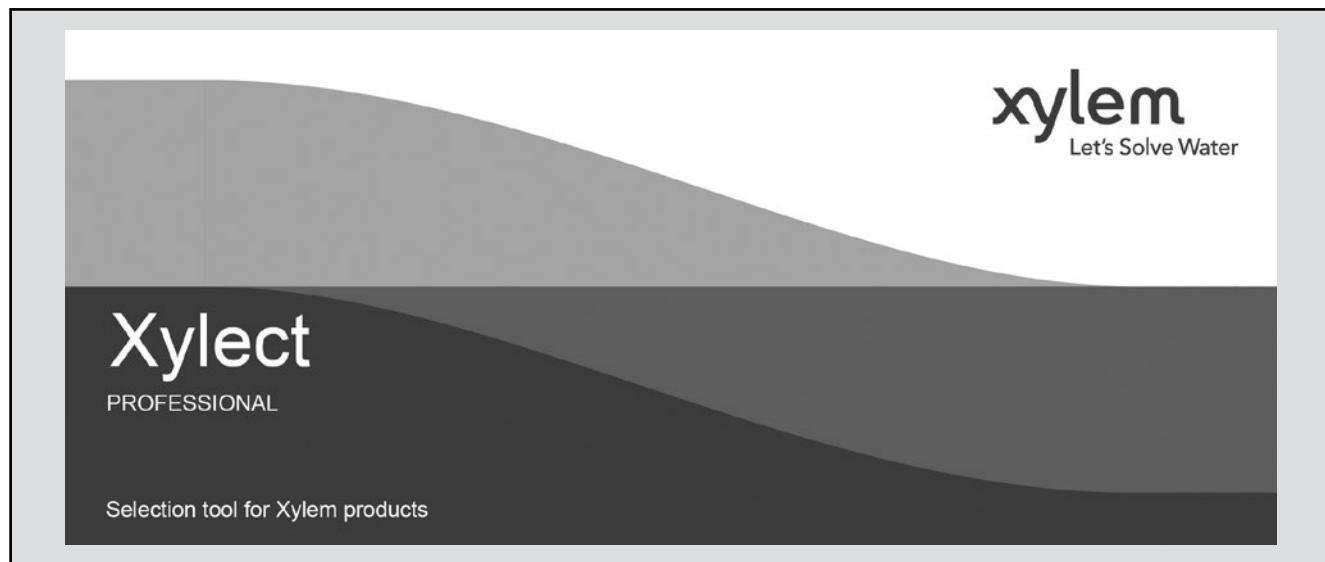
## TEMPERATURE

Water	Kelvin K	Celsius °C	Fahrenheit °F	
icing	273,1500	0,0000	32,0000	$^{\circ}\text{F} = ^{\circ}\text{C} \times \frac{9}{5} + 32$
boiling	373,1500	100,0000	212,0000	$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times \frac{5}{9}$

G-at\_pp-en\_b\_sc

## FURTHER PRODUCT SELECTION AND DOCUMENTATION

### Xylect



Xylect is pump solution selection software with an extensive online database of product information across the entire Lowara range of pumps and related products, with multiple search options and helpful project management facilities. The system holds up-to-date product information on thousands of products and accessories.

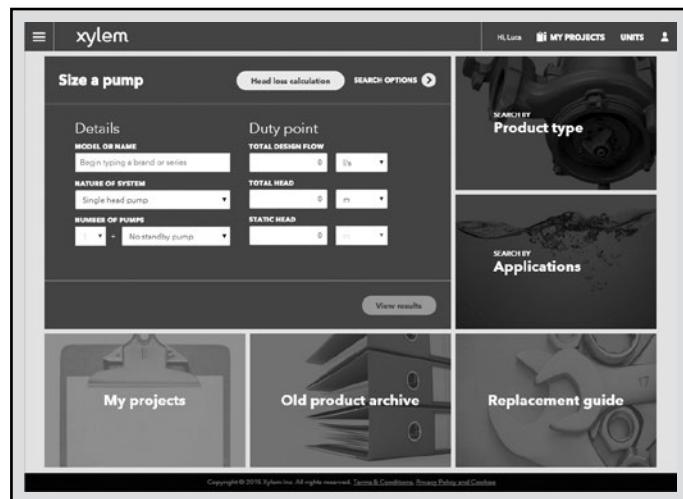
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect gives a detailed output:

- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



*The search by application guides users not familiar with the product range to the right choice.*

## FURTHER PRODUCT SELECTION AND DOCUMENTATION

### Xylect



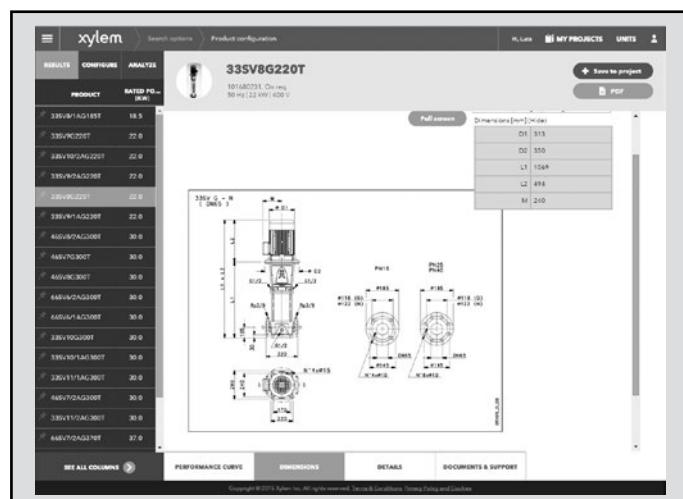
The detailed output makes it easy to select the optimal pump from the given alternatives.

The best way to work with Xylect is to create a personal account. This makes it possible to:

- Set own standard units
- Create and save projects
- Share projects with other Xylect users

Every registered user has a proper space, where all projects are saved.

For more information about Xylect please contact our sales network or visit [www.xylect.com](http://www.xylect.com).



Dimensional drawings appear on the screen and can be downloaded in dxf format.



# Xylem |'ziləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

**For more information on how Xylem can help you, go to [www.xylem.com/uk](http://www.xylem.com/uk)**



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