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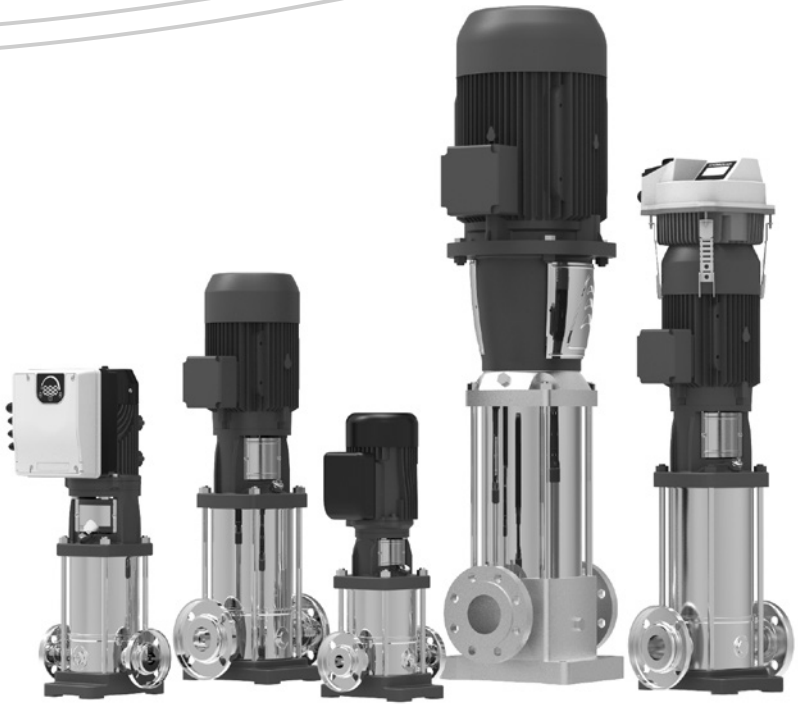
Let's Solve Water

60 Hz



e-SV Series

VERTICAL MULTISTAGE ELECTRIC PUMPS

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

ErP 2009/125/EC

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Cod. 191012081 Rev. E Ed.08/2021

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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	**MEI** ≥ 0,4
Circulators**	(EC) N. 641/2009, (EU) N. 622/2012 e (EU) 2019/1781	1 August 2015	**EEI** < 0,23
Electric motors	(EU) 2019/1781 e 2021/341	1 July 2021	**IE2**: three-phase motors with a rated output ≥ 0,12 and < 0,749 kW **IE3**: three-phase motors with a rated output ≥ 0,75 and < 1000 kW
Variable speed drives (VSD)***	(EU) 2019/1781 e 2021/341	1 July 2021	**IE2**

* 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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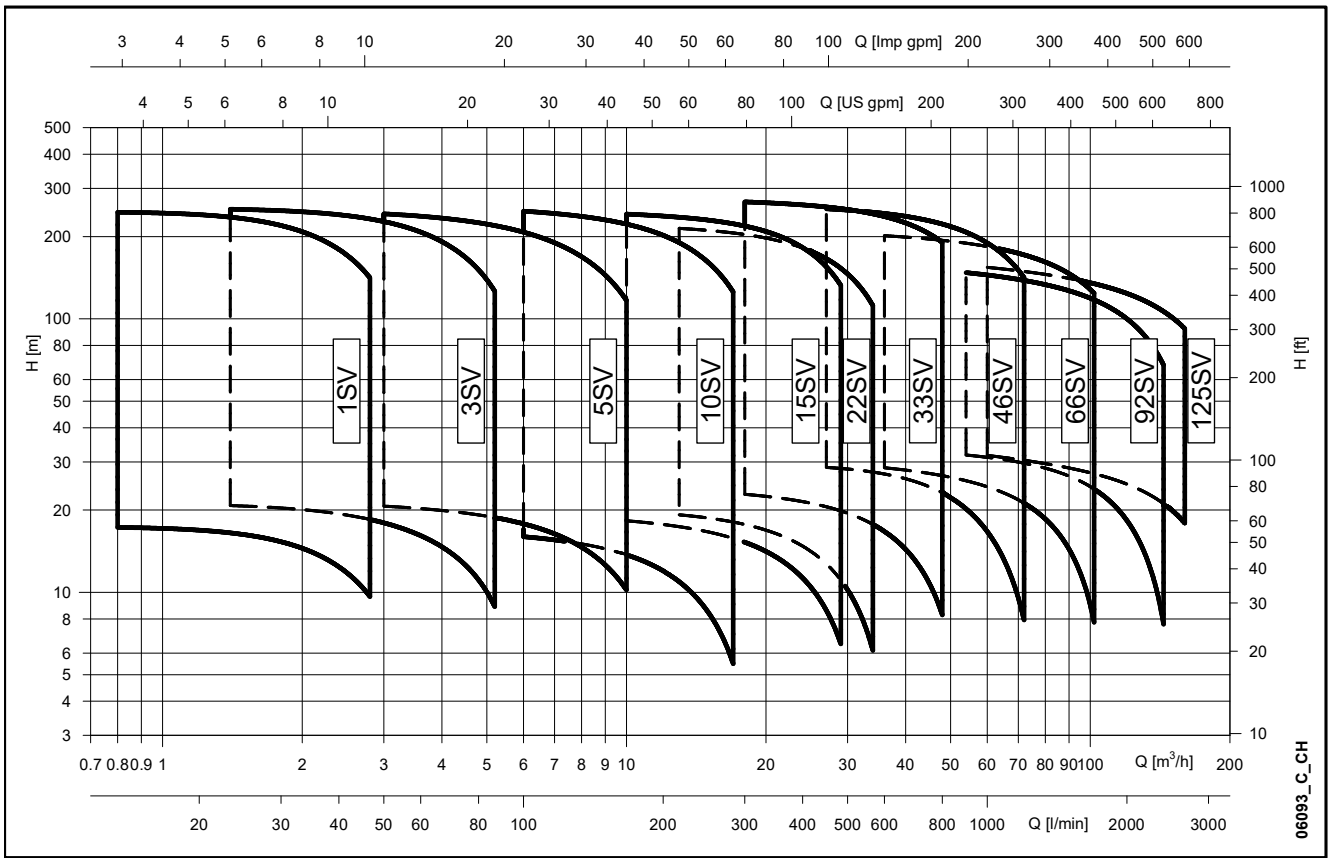
e-SV SERIES
HYDRAULIC PERFORMANCE RANGE AT 60 Hz



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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^3/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**

❑ **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^3/h**.
- Head: up to **280 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.
- **Standard supplied IE2/IE3 motors are compliant with IEC 60034-30**.
- IP 55 protection.
- Class 155 (F) insulation.
- Performances according to EN 60034-1.
- Standard voltage:
  - Single-phase version: 220-230 V, 60 Hz.
  - Three-phase version: 220 V Δ, 380 V Y, 60 Hz up to 55 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 (≤ 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 (≥ 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 F, T, R, N versions are certified for drinking water use (WRAS and ACS certified)**.
- 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 G, N versions are certified for drinking water use (WRAS and ACS certified)**.
- 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 110.

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e-SV SERIES
GENERAL CHARACTERISTICS, 2 POLES

	1SV	3SV	5SV	10SV	15SV	22SV	33SV	46SV	66SV	92SV	125SV
Max efficiency flow (m^3/h)	2	3,6	7	12,4	21,8	24,5	40	50	87	108	144
Flow range (m^3/h)	0,8÷2,8	1,4÷5,2	3÷10	6÷17	10÷29	13÷34	18÷48	27÷72	36÷102	54÷144	60÷160
Maximum head (m)	250	250	250	260	260	220	280	280	220	170	180
Motor power (kW)	0,37÷3	0,37÷4	0,55÷5,5	0,75÷11	1,5÷18,5	2,2÷18,5	3÷37	5.5÷45	7,5÷45	11÷45	15÷55
Max η (%) of pump	50	60	70	71	72	73	77	79	78	80	78
Standard temperature (°C)	-30 +120										

1-125sv_2p60_b_tg

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

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

• = Available.

1-22sv_2p50-en_c_tc

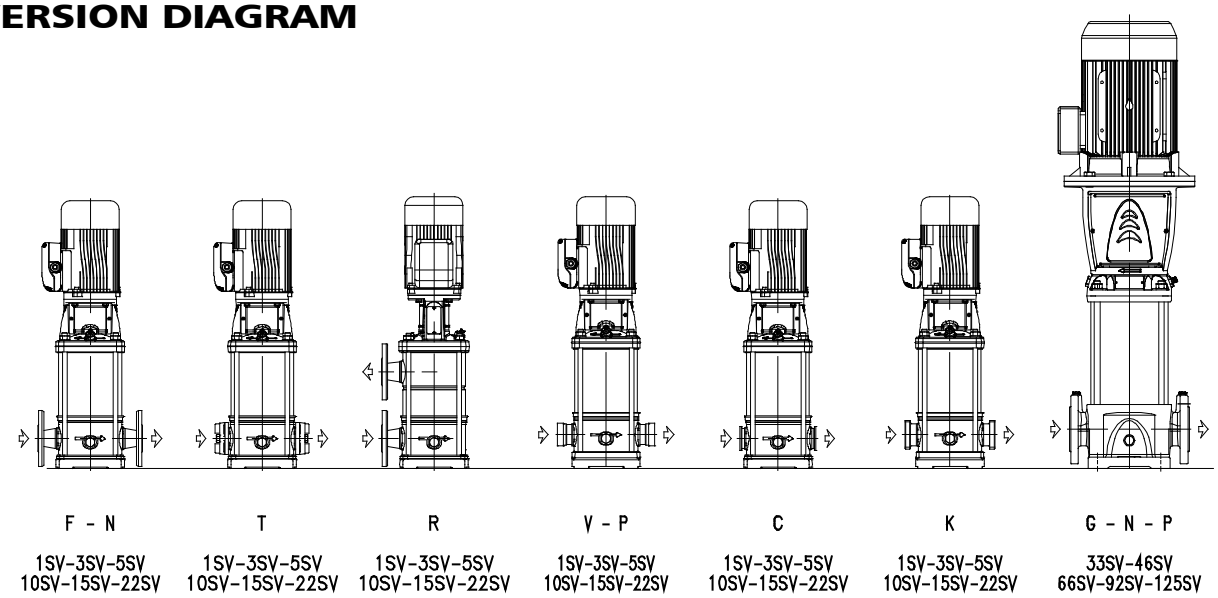
33, 46, 66, 92, 125SV VERSIONS

TYPE		2 POLES SV 33SV	46SV	66SV	92SV	125SV
G	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.	•	•	•	•	•
N	ALL AISI 316 STAINLESS STEEL, IN-LINE ROUND FLANGES, PN16, PN25 OR PN40 DEPENDING ON NUMBER OF STAGES AND MODEL.	•	•	•	•	•
P	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.

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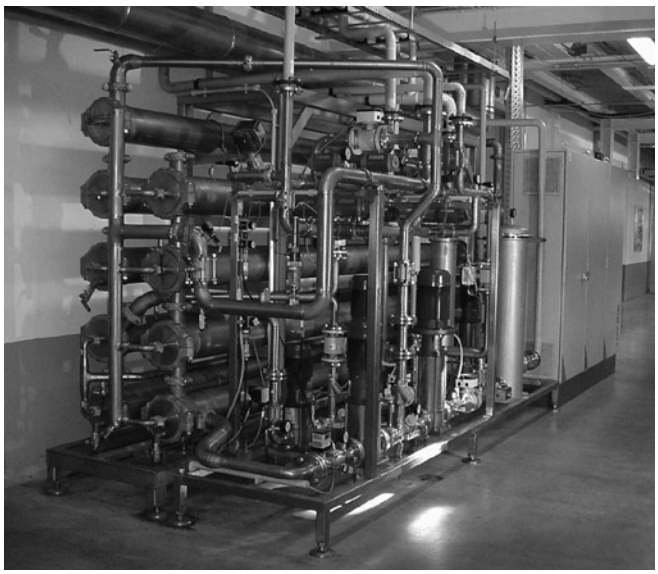
e-SV SERIES
TYPICAL APPLICATIONS

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

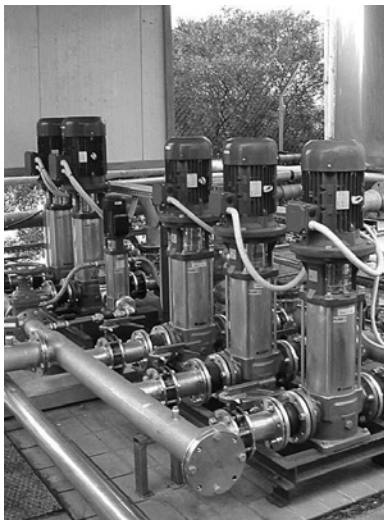
- Production plant where specific sanitary standards are required.

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.



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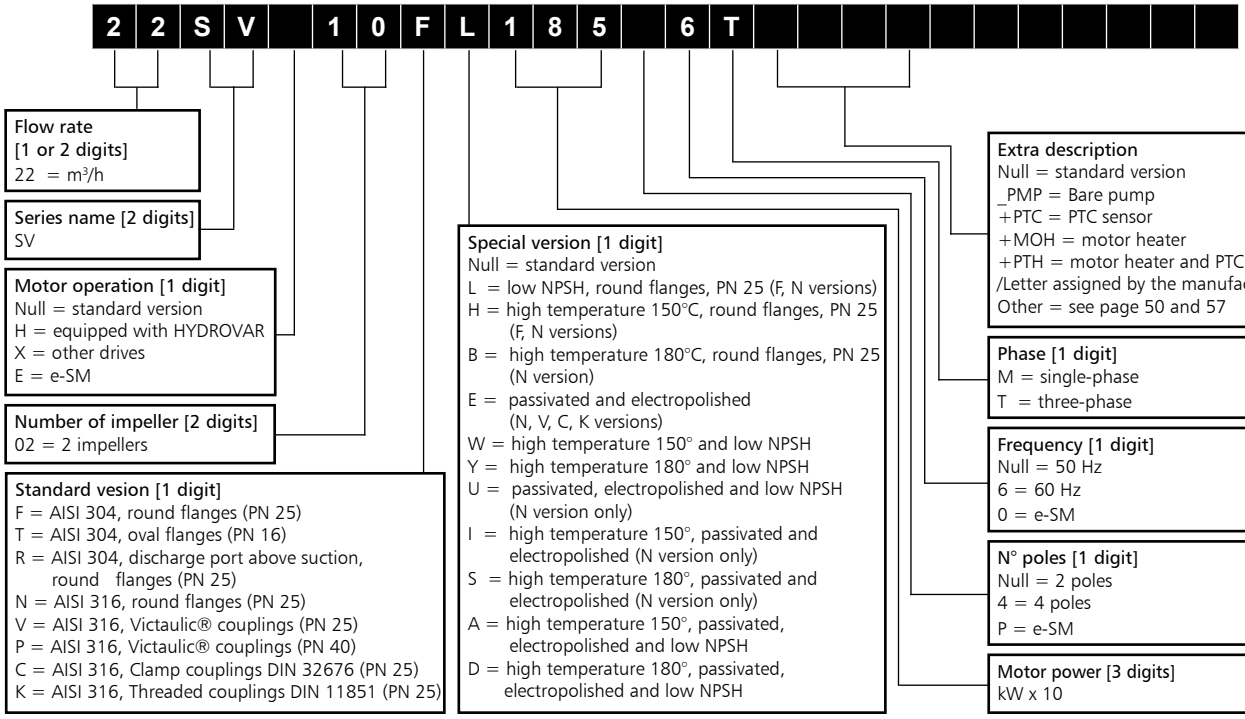
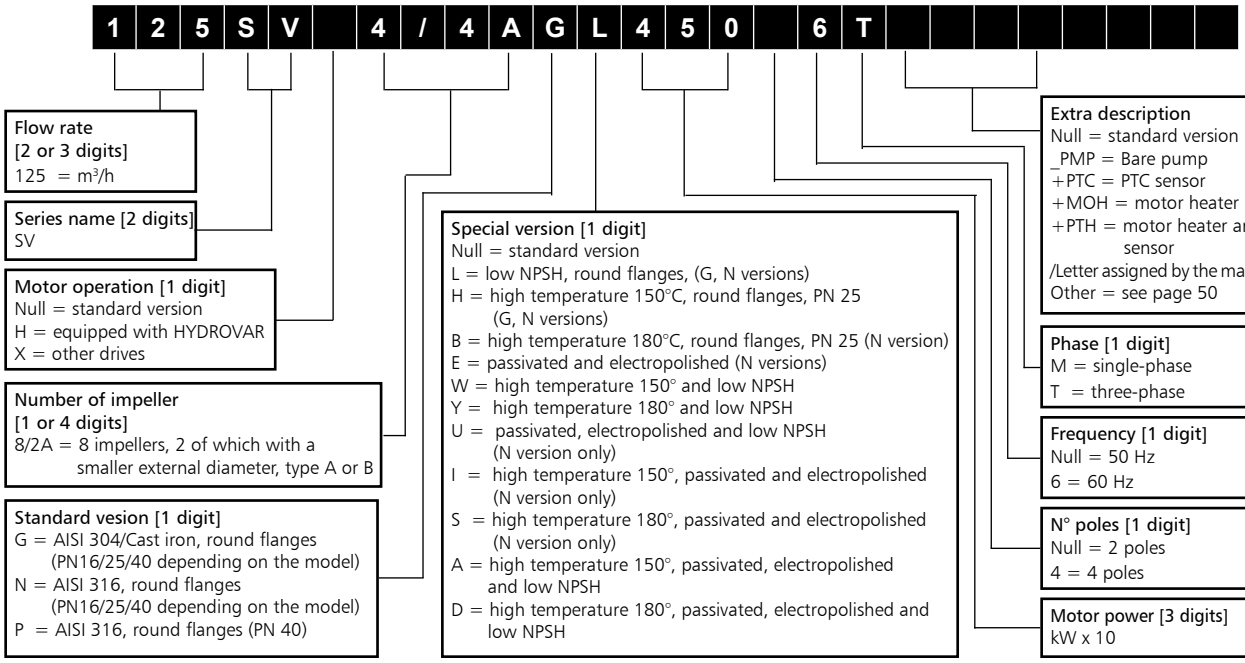
IDENTIFICATION CODE

1, 3, 5, 10, 15, 22SV SERIES



33, 46, 66, 92, 125SV SERIES



EXAMPLE: 22SV10F1856T
e-SV series electric pump, flow rate 22 m3/h, Number of impellers 10,
F version (AISI 304) round flanges, rated motor power 18,5 kW, 60 Hz frequency, three-phase.

EXAMPLE: 125SV4/4AG4506T
e-SV series electric pump, flow rate 125 m³/h, number of impellers 4, 4 of which with a smaller external diameter (type A), G version (AISI 304/Cast iron) round flanges, rated motor power 45 kW, 60 Hz frequency, three-phase.

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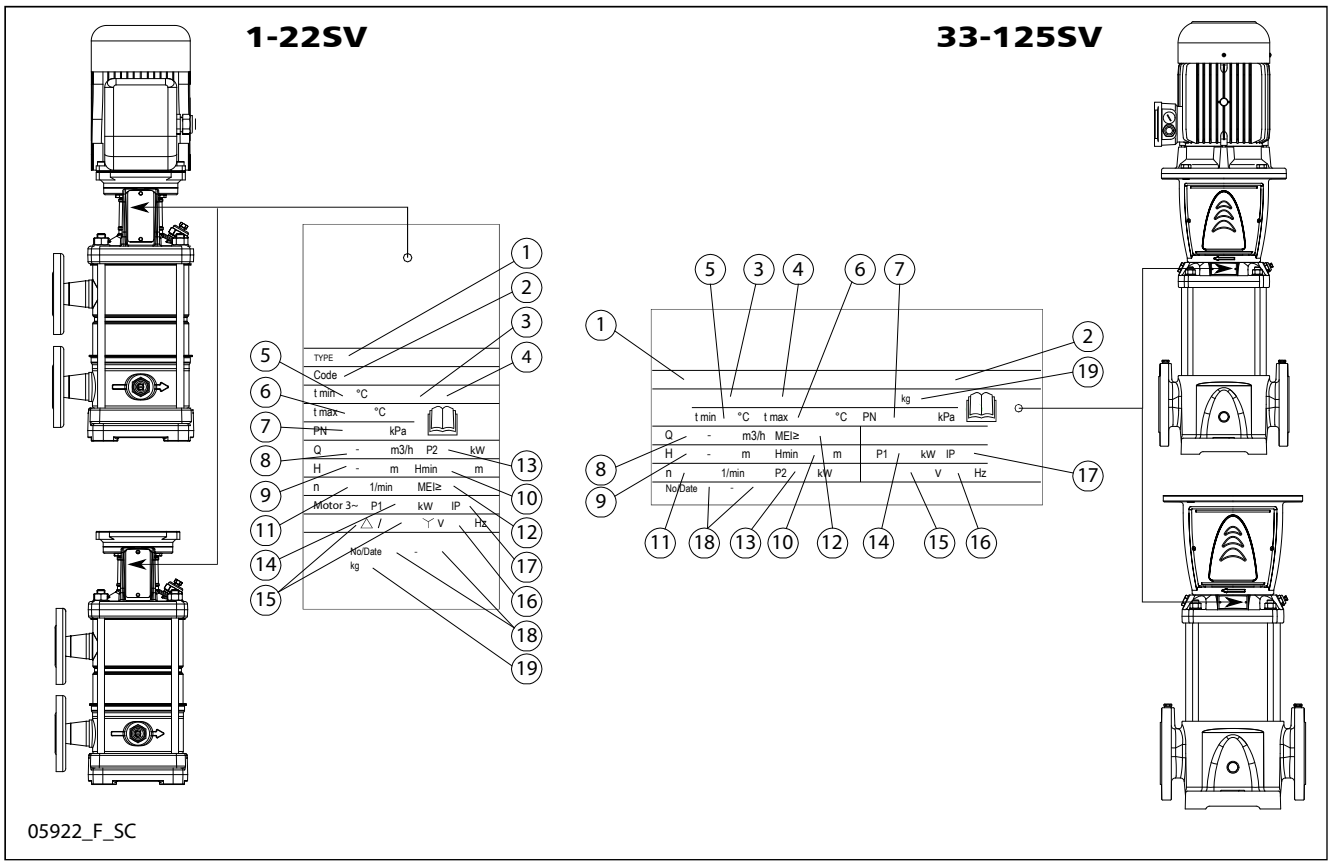
e-SV SERIES
RATING PLATE

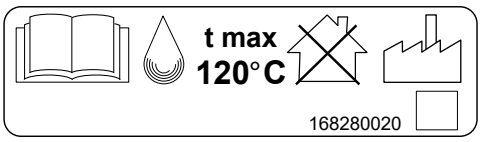


LEGEND

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



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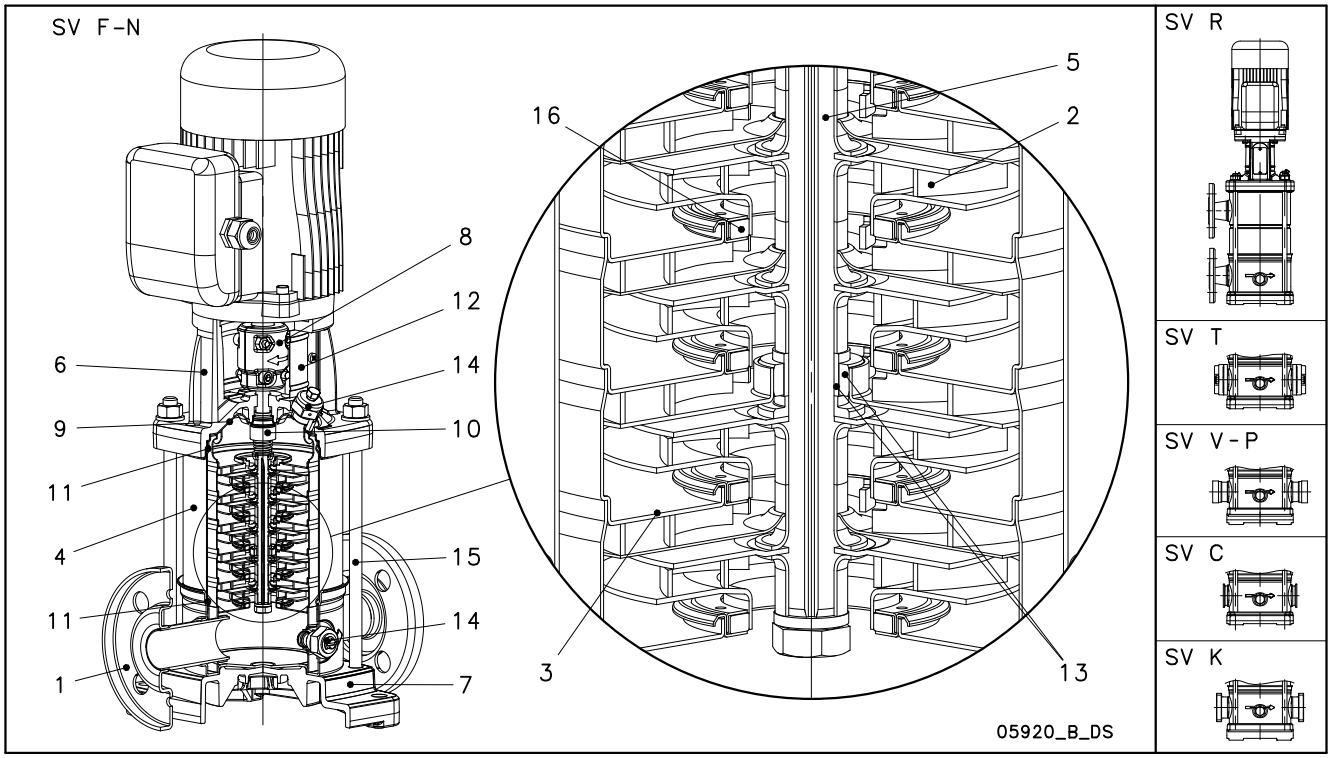
1, 3, 5SV SERIES - 10, 15, 22SV SERIES ≤ 4 kW
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



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-AlSi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (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-AlSi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (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

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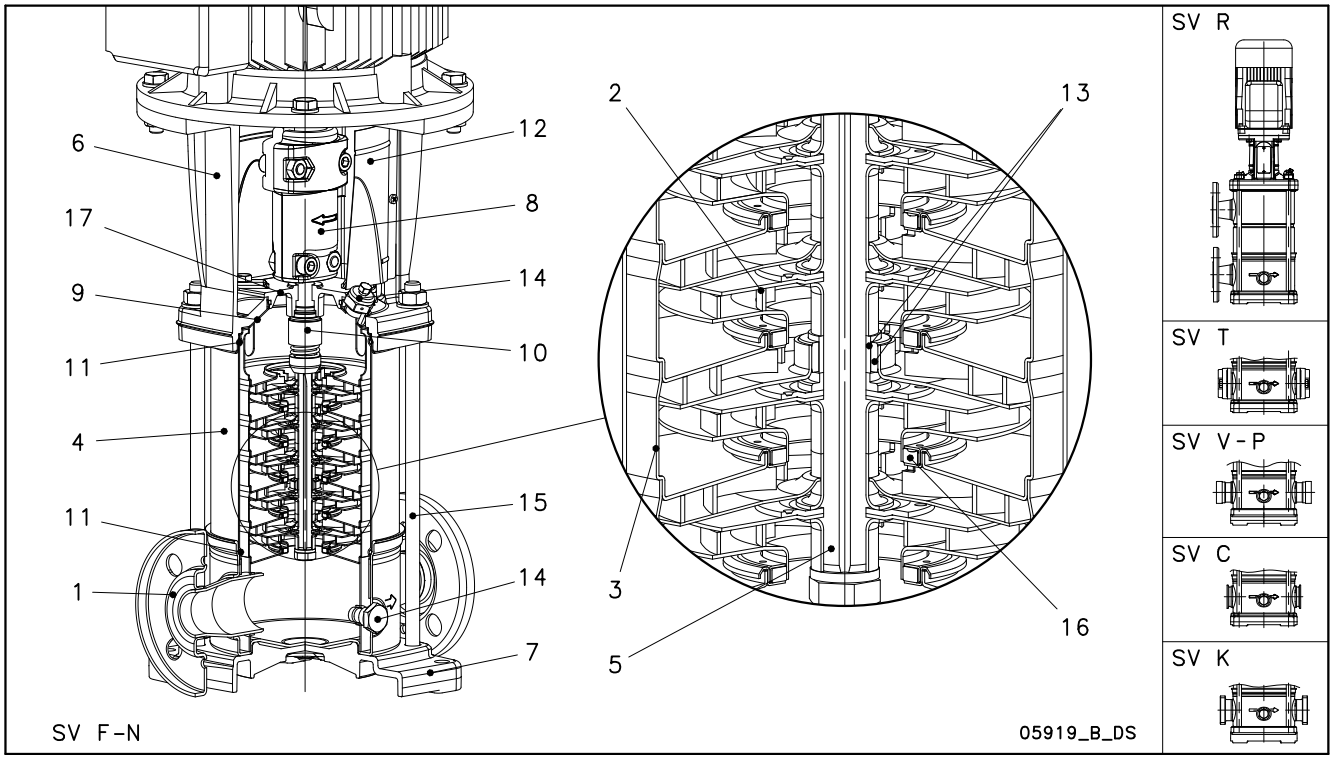
10, 15, 22SV SERIES ≥ 5,5 kW
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



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-AlSi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (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

10-22sv-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	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-AlSi11Cu2 (Fe) (AC46100)	-
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (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-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		
17	Seal gland	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	AISI 316

10-22sv-nvck-en_a_tm

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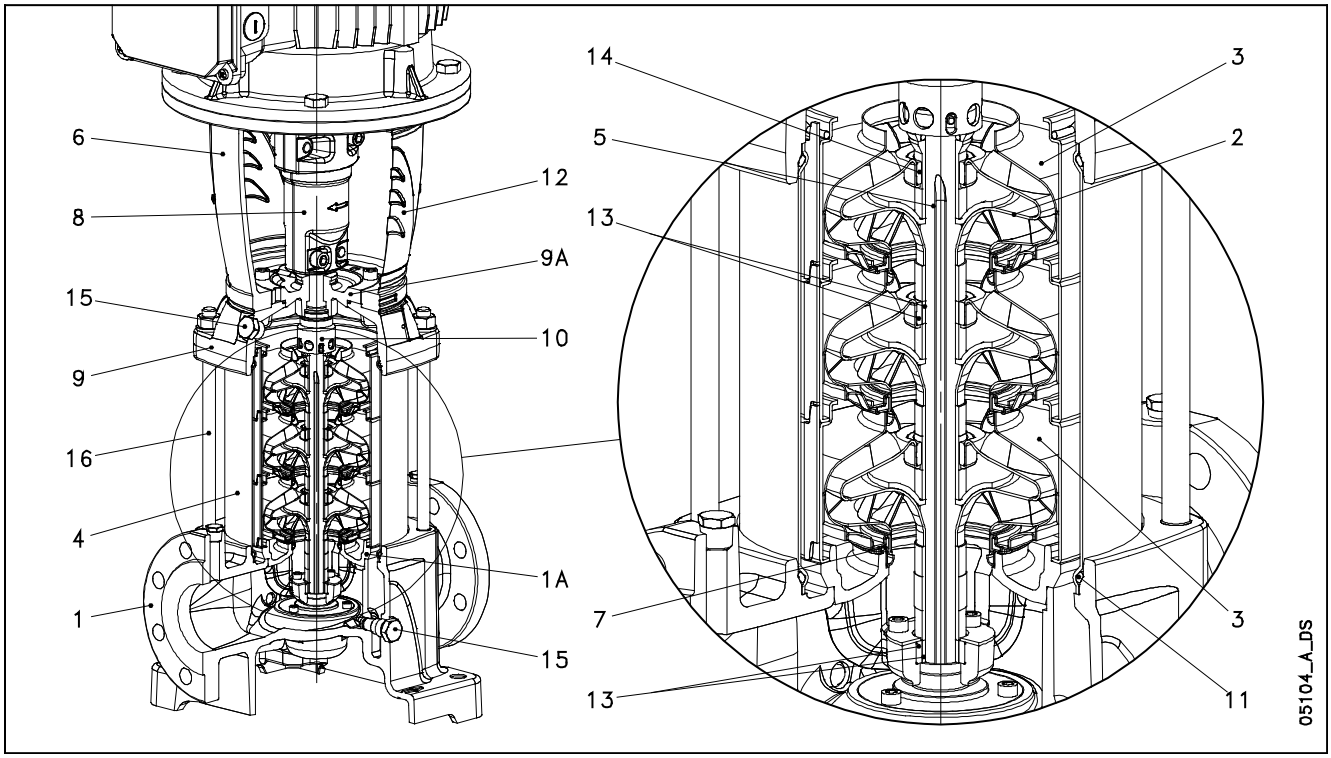
33, 46, 66, 92SV SERIES ELECTRIC
PUMP CROSS SECTION AND MAIN COMPONENTS



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

33-92sv-n-en_a_tm

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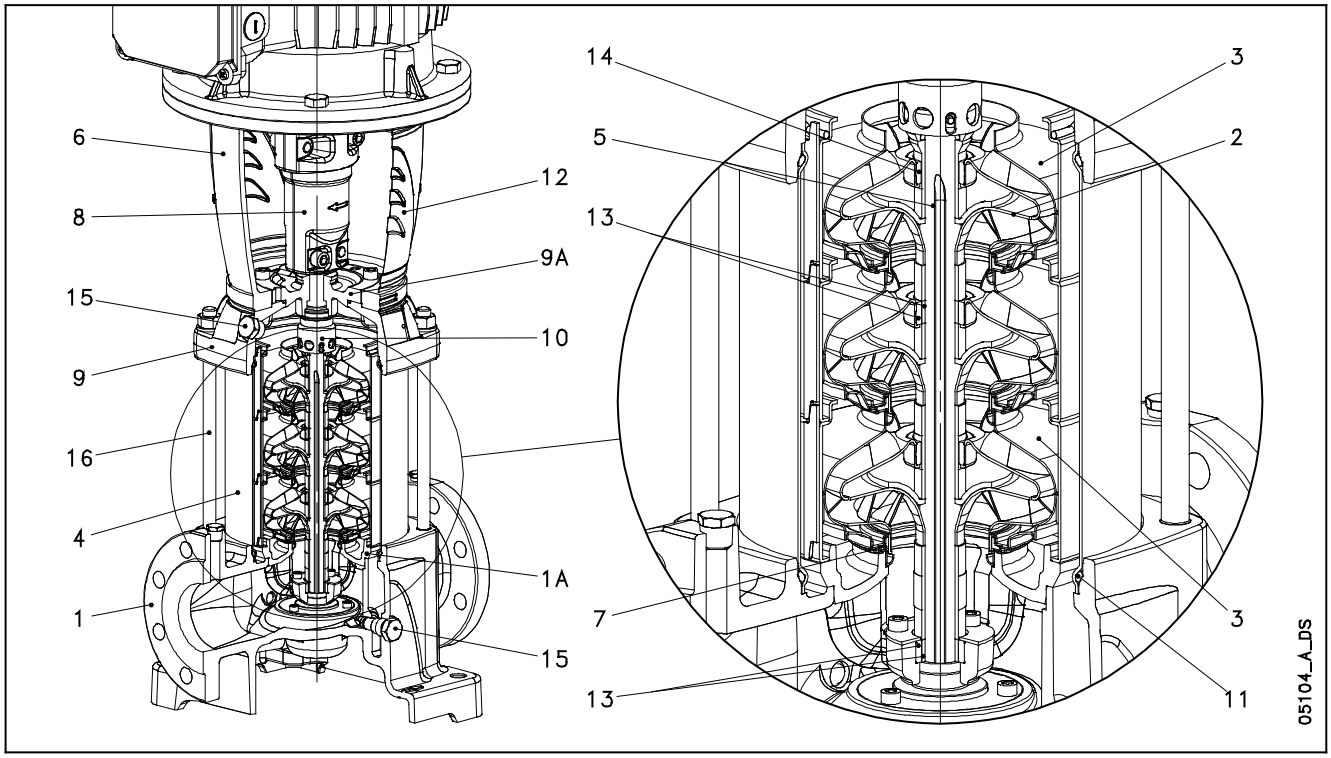
125SV SERIES
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



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	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 10277-3-36SMnPb14 (1.0765)	-
17	Adapter ring	Stainless steel	EN 10213-GX5CrNi19-10 (1.4308)	AISI 304

125sv-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)
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-X2CrNiMoN22-5-3 (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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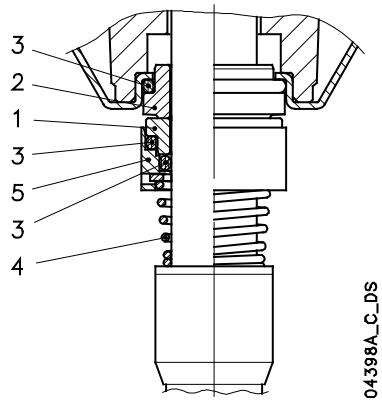
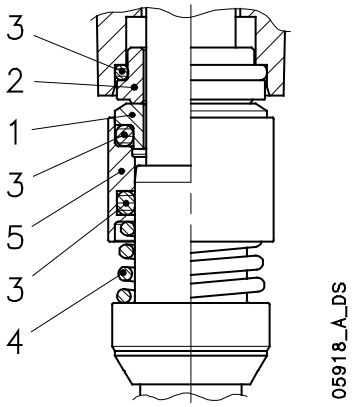
e-SV SERIES
MECHANICAL SEALS, ACCORDING TO EN 12756

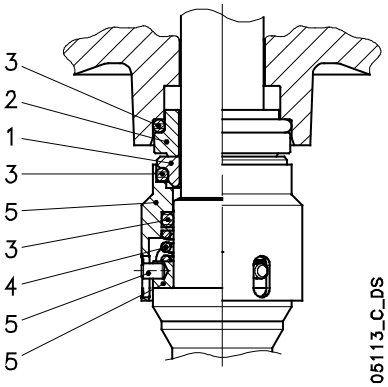
1, 3, 5SV (all models)
10, 15, 22SV ≤ 4 kW



10, 15, 22SV ≥ 5,5 kW



33, 46, 66, 92, 125SV



LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
Q_1 : Silicon Carbide	**E** : EPDM	**G** : AISI 316
B : Resin impregnated carbon	**V** : FKM (FPM)	
C : Special resin impregnated carbon	**T** : PTFE	

sv_ten-mec-en_b_tm

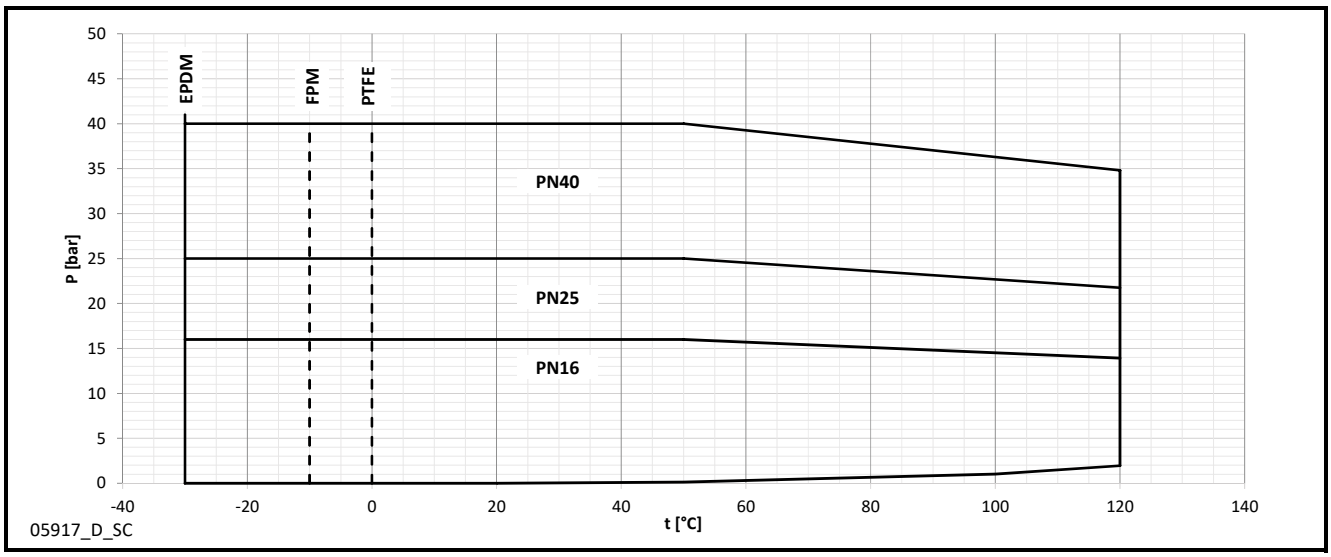
TYPE OF SEAL

TYPE	POSITION 1 ROTATING PART	2 STATIONARY PART	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	TEMPERATURE (°C)
STANDARD MECHANICAL SEAL						
Q_1 B E G G	Q_1	B	E	G	G	-30 +120
OTHER TYPES OF AVAILABLE MECHANICAL SEAL						
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-30 +120
Q_1 B V G G	Q_1	B	V	G	G	-10 +120
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 +120
*Q_1 C T G G	Q_1	C	T	G	G	0 +120
*Q_1 Q_1 T G G	Q_1	Q_1	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



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COMPATIBILITY CHART FOR MATERIALS IN CONTACT WITH MOST COMMONLY USED LIQUIDS

LIQUID	CONCENTRATION (%)	TEMPERAT. MIN/MAX (°C)	SPECIF. WEIGHT (Kg/dm^3)	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_1BEGG	E
Alkaline degreaser	5	80		•	•	•	•	Q_1Q_1VGG	V
Aluminium sulfate	30	-5 +50	2,71		•		•	Q_1Q_1EGG	E
Ammonia in water	25	-20 +50	0,99	•	•		•	Q_1BEGG	E
Ammonium sulfate	10	-10 +60	1,77		•		•	Q_1Q_1EGG	E
Benzoic acid	70	0 +70	1,31	•	•		•	Q_1BVGG	V
Boric acid	saturated	-10 +90	1,43	•	•		•	Q_1Q_1VGG	V
Butyl alcohol	100	-5 +80	0,81	•	•	•	•	Q_1BVGG	V
Caustic soda	25	0 +70	2,13	•	•	•	•	Q_1Q_1EGG	E
Chloroform	100	-10 +30	1,48	•	•	•	•	Q_1BVGG	V
Citric acid	5	-10 +70	1,54	•	•		•	Q_1BEGG	E
Cleaning products	10	-5 +100		•	•	•	•	Q_1Q_1VGG	V
Copper sulfate	20	0 +30	2,28		•		•	Q_1Q_1VGG	V
Cutting fluid	100	-5 +110	0,90	•	•	•	•	Q_1BVGG	V
Deionised, demineralised water	100	-25 +110	1	•	•	•	•	Q_1BEGG	E
Denatured alcohol	100	-5 +70	0,81	•	•	•	•	Q_1BEGG	E
Diathermic oil	100	-5 +110	0,90	•	•	•	•	Q_1BVGG	V
Emulsion oil and water	any	-5 +90		•	•	•	•	Q_1BVGG	V
Ethyl alcohol	100	-5 +40	0,81	•	•	•	•	Q_1BEGG	E
Ethylene glycol	30	-30 +120			•		•	Q_1BEGG	E
Formaldehyde	100	0 +30	1,13	•	•	•	•	Q_1Q_1TGG	T
Formic acid	5	-15 +25	1,22	•	•		•	Q_1BEGG	E
Glycerine	100	+20 +90	1,26	•	•	•	•	Q_1BEGG	E
Hydraulic oil	100	-5 +110		•	•	•	•	Q_1BVGG	V
Hydrochloric acid	2	-5 +25	1,20		•		•	Q_1Q_1VGG	V
Hydroxide sodium	25	0 +70		•	•	•	•	Q_1Q_1EGG	E
Iron sulfate	10	-5 +30	2,09		•		•	Q_1BEGG	E
Methyl alcohol	100	-5 +40	0,79	•	•	•	•	Q_1BEGG	E
Mineral oil	100	-5 +110	0,94	•	•	•	•	Q_1BVGG	V
Nitric acid	50	-5 +30	1,48	•	•		•	Q_1Q_1VGG	V
Perchloroethylene	100	-10 +30	1,60	•	•	•	•	Q_1BVGG	V
Phosphates-polyphosphates	10	-5 +90			•		•	Q_1Q_1VGG	V
Phosphoric acid	10	-5 +30	1,33		•		•	Q_1BEGG	E
Propyl alcohol (Propanol)	100	-5 +80	0,80	•	•	•	•	Q_1BEGG	E
Propylene glycol	30	-30 +120		•	•	•	•	Q_1BEGG	E
Sodium bicarbonate (Baking soda)	saturated				•		•	Q_1BEGG	E
Sodium hypochlorite	1	-10 +25			•		•	Q_1Q_1VGG	V
Sodium nitrate	saturated	-10 +80	2,25	•	•	•	•	Q_1BEGG	E
Sodium sulfate	15	-10 +40	2,60	•	•	•	•	Q_1Q_1EGG	E
Sulphuric acid	2	-10 +25	1,84		•		•	Q_1BVGG	V
Tannic acid	20	0 +50			•		•	Q_1BEGG	E
Tartaric acid	50	-10 +25	1,76	•	•		•	Q_1Q_1VGG	V
Trichloroethylene	100	-10 +40	1,46	•	•	•	•	Q_1BVGG	V
Uric acid	80	-10 +80	1,89	•	•		•	Q_1BEGG	E
Vegetable oil	100	-5 +110	0,95	•	•	•	•	Q_1BEGG	E
Water	100	-5 +120		•	•	•	•	Q_1BEGG	E
Water condensate	100	-5 +100	1	•	•	•	•	Q_1BEGG	E
Water detergents, mineral oils mixture	10	-5 +80		•	•	•	•	Q_1Q_1VGG	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:
  220-230 V 60 Hz
  Built-in automatic reset overload protection up to 2,2 kW. Maximum ambient temperature: 40 °C.
- **Three-phase** version:
  220 V Δ, 380 V Y, 60 Hz up to 55 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 60 Hz, 2 POLES

P_N kW	MOTOR TYPE	IEC SIZE*	Construction Design	INPUT CURRENT In (A) 220-230 V	CAPACITOR µF	CAPACITOR V	DATA FOR 220 V 60 Hz VOLTAGE min^{-1}	Is / In	η %	cosφ	Tn Nm	Ts/Tn	Tm/Tn	OPERATING CONDITIONS ** Altitude asl m	T. amb min/max °C	ATEX
0,4	SM71RB14/1046	71R	V18/B14	2,86-2,94	14	450	3385	3,8	67,5	0,94	1,13	0,73	2,04	≤1000	-15/40	No
0,55	SM71B14/1056	71		3,68-3,62	16	450	3400	4,28	70,2	0,97	1,54	0,66	2,11			
0,75	SM80RB14/1076	80R		4,98-4,88	20	450	3380	3,9	69,8	0,98	2,12	0,64	1,91			
1,1	SM80B14/1116	80		6,94-6,89	30	450	3435	4,54	74,2	0,97	3,06	0,62	2,03			
1,5	SM90RB14/1156	90R		9,28-9,35	40	450	3455	4,91	76,3	0,96	4,14	0,49	2,19			
2,2	PLM90B14/1226	90		12,3-11,7	60	450	3455	4,99	83,4	0,98	6,08	0,54	2,06			

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

1-22sv-motm-2p60_en_e_te

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

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e-SV SERIES
THREE-PHASE MOTORS AT 60 Hz, 2 POLES (up to 22 kW)

P_N kW	Manufacturer: Xylem Service Italia Srl, Reg. No. 07520560967, Montecchio Maggiore Vicenza - Italia. Model	IEC SIZE*	Construction Design	N. of Poles	f_N Hz	Data for 380 V / 60 Hz Voltage: cosφ	Is / I_N	TN Nm	Ts/T_N	Tm/Tn
0,37	SM71RB14/304	71R	V18/B14	2	60	0,79	5,06	1,16	3,42	3,44
0,55	SM71B14/305	71				0,71	7,26	1,52	4,39	4,48
0,75	SM80B14/307 PE	80				0,79	8,25	2,05	3,80	4,02
1,1	SM80B14/311 PE	80				0,80	9,11	3,01	4,15	4,29
1,5	SM90RB14/315 PE	90R				0,82	9,79	4,10	4,36	4,37
2,2	PLM90B14/322 E3	90				0,82	9,80	6,01	3,80	4,01
3	PLM100RB14/330 E3	100R				0,82	9,35	8,21	4,26	4,10
4	PLM112RB14S6/340 E3	112R				0,87	10,0	10,9	2,43	4,53
5,5	PLM132RB5/355 E3	132R	V1/B5			0,88	12,0	15,0	4,70	5,55
7,5	PLM132B5/375 E3	132				0,87	11,0	20,2	3,31	4,98
11	PLM160RB5/3110 E3	160R				0,89	9,00	29,6	2,43	4,26
15	PLM160B5/3150 E3	160				0,89	9,81	40,3	2,79	4,41
18,5	PLM160B5/3185 E3	160				0,89	10,1	49,7	2,78	4,59
22	PLM180RB5/3220 E3	180R				0,87	11,3	59,1	3,27	5,18

P_N kW	Voltage U_N V: Δ 220 V	Δ 230 V	Y 380 V	Y 400 V	Δ 380 V	Δ 400 V	Y 660 V	Y 690 V	n_N min^{-1}	Operating conditions **: Altitude above sea Level (m)	T. amb min/max °C	ATEX
	I_N (A)											
0,37	1,75	1,75	1,01	1,01	-	-	-	-	3290 ÷ 3335	1000 VI	-15 / 40	No
0,55	2,54	2,25	1,47	1,3	-	-	-	-	3465 ÷ 3475			
0,75	3,03	3,01	1,75	1,74	1,75	1,74	1,01	1,00	3490 ÷ 3500		-15 / 50	
1,1	4,24	4,24	2,45	2,45	2,44	2,43	1,41	1,40	3490 ÷ 3505			
1,5	5,58	5,53	3,22	3,19	3,23	3,22	1,86	1,86	3485 ÷ 3505			
2,2	7,97	7,93	4,60	4,58	4,59	2,65	4,57	2,64	3490 ÷ 3505			
3	10,9	10,8	6,30	6,23	6,32	6,29	3,65	3,63	3485 ÷ 3500			
4	13,4	13,2	7,76	7,62	7,78	7,63	4,49	4,41	3510 ÷ 3520			
5,5	18,2	18,0	10,5	10,4	10,5	10,5	6,08	6,06	3505 ÷ 3515			
7,5	25,0	24,7	14,5	14,2	14,4	14,1	8,34	8,15	3535 ÷ 3540			
11	35,3	34,3	20,4	19,8	20,4	19,6	11,8	11,3	3545 ÷ 3555			
15	47,6	46,4	27,5	26,8	27,8	27,1	16,1	15,6	3550 ÷ 3560			
18,5	58,7	57,5	33,9	33,2	34,0	33,2	19,6	19,2	3550 ÷ 3555			
22	71,1	70,2	41,1	40,5	40,8	39,8	23,5	23,0	3555 ÷ 3560			

P_N kW	Efficiency η_N %: Δ 220 V Y 380 V 4/4	3/4	2/4	Δ 230 V Y 400 V 4/4	3/4	2/4	Δ 380 V Y 660 V 4/4	3/4	2/4	Δ 400 V Y 690 V 4/4	3/4	2/4	IE
0,37	72,0	70,8	64,0	72,0	70,8	64,0	-	-	-	-	-	-	2
0,55	74,0	72,8	66,4	74,0	72,8	66,4	-	-	-	-	-	-	
0,75	83,4	82,4	79,0	83,4	82,4	79,0	83,4	82,4	79,0	83,4	82,4	79,0	3
1,1	85,6	85,0	82,1	85,6	85,0	82,1	85,6	85,0	82,1	85,6	85,0	82,1	
1,5	87,2	87,0	84,6	87,2	87,0	84,6	87,2	87,0	84,6	87,2	87,0	84,6	
2,2	87,7	87,2	84,7	87,7	87,2	84,7	87,7	87,2	84,7	87,7	87,2	84,7	
3	89,1	88,8	86,9	89,1	88,8	86,9	89,1	88,8	86,9	89,1	88,8	86,9	
4	91,0	91,0	89,6	91,0	91,0	89,6	91,0	91,0	89,6	91,0	91,0	89,6	
5,5	91,0	90,5	88,6	91,0	90,5	88,6	91,0	90,5	88,6	91,0	90,5	88,6	
7,5	90,8	90,2	88,1	90,8	90,2	88,1	90,8	90,2	88,1	90,8	90,2	88,1	
11	92,5	92,2	90,6	92,5	92,2	90,6	92,5	92,2	90,6	92,5	92,2	90,6	
15	93,4	93,1	91,7	93,4	93,1	91,7	93,4	93,1	91,7	93,4	93,1	91,7	
18,5	93,5	93,2	91,9	93,5	93,2	91,9	93,5	93,2	91,9	93,5	93,2	91,9	
22	93,4	92,7	90,8	93,4	92,7	90,8	93,4	92,7	90,8	93,4	92,7	90,8	

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

sv-ie3-mott22-2p60-en_c_te

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

LOWARA
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e-SV SERIES
THREE-PHASE MOTORS AT 60 Hz, 2 POLES (from 30 to 55 kW)

P_N kW	Manufacturer / Model	IEC SIZE	Construction Design	N. of Poles	f_N Hz	Data for 380 V / 60 Hz Voltage: cosφ	Is / I_N	T_N Nm	Ts/T_N	Tm/Tn
	OMEGA MOTOR SANAYİ A.Ş. Dudullu Organize Sanayi Bölgesi 2. Cadde No: 10 34775 Ümraniye İSTANBUL/TURKEY Reg. No. 913733									
30	3MAS 200LA2 V1 30KW E3	200	V1	2	60	0,90	7,60	80,4	2,40	2,90
37	3MAS 200LB2 V1 37KW E3	200				0,90	7,70	99,2	2,50	2,90
45	3MAS 225M2 V1 45KW E3	225				0,91	8,20	120,3	2,40	3,10
55	3MGS 250M2 V1 55KW E3	250				0,90	7,90	147,0	2,40	3,00

P_N kW	Voltage U_N V: Δ 220 V	Y 380 V	Δ 380 V	Y 660 V	n_N min^{-1}	Operating conditions **: Altitude above sea Level (m)	T. amb min/max °C	ATEX
	I_N (A)							
30	94,6	54,8	54,8	31,6	3565	1000 VI	-20 / 50	No
37	115,9	67,1	67,2	38,7	3565			
45	138,3	80,1	80,3	46,2	3575			
55	171,3	99,2	99,2	57,1	3575			

P_N kW	Efficiency η_N % — Δ 220 V Y 380 V: 4/4	3/4	2/4	Δ 380 V Y 660 V: 4/4	3/4	2/4	IE
30	92,4	92,6	91,7	92,4	92,5	91,7	3
37	93,0	93,4	92,8	93,0	93,4	92,9	
45	93,6	93,9	93,0	93,6	93,9	92,9	
55	93,6	93,8	93,3	93,6	93,7	93,3	

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

sv-IE3-mott55-2p60-en_c_te

MOTOR NOISE 2 POLES 60 Hz

POWER kW	MOTOR TYPE IEC SIZE*	NOISE LpA 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	71
11	160R	71
15	160	71
18,5	160	73
22	180R	70
30	200	76
37	200	76
45	225	79
55	250	79

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

1-125sv_mott_2p60-en_d_tr

The table show the mean sound pressure (Lp) measured as per Curve A (Standard ISO 1680).
Noise values were measured with the 60 Hz motor running idle with a tolerance of 3 dB (A).

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AVAILABLE VOLTAGES
MOTORS FOR e-SV SERIES (up to 22 kW)

	SINGLE-PHASE							
	50 Hz			60 Hz				
P_N kW	1 x 220-240	1 x 100	1 x 110-120	1 x 220-230	1 x 100	1x 110-115	1 x 120-127	1 x 200-210
0,37	s	o	o	s	-	o	-	-
0,55	s	o	o	s	o	o	o	o
0,75	s	o	o	s	o	o	o	o
1,1	s	-	o	s	-	o	-	o
1,5	s	-	-	s	-	o	-	o
2,2	s	-	-	s	-	-	-	-

	THREE-PHASE																	
	50 Hz							60 Hz								50/60 Hz	
P_N kW	3 x 220-230-240/380-400-415	3 x 380-400-415/660-690	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	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
0,37	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,55	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,75	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
1,1	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
1,5	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
2,2	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
3	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
4	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
5,5	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
7,5	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
11	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
15	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
18,5	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
22	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o

s = Standard voltage o = voltage upon request - = Not available

sv-volt-lowa-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.

LOWARA
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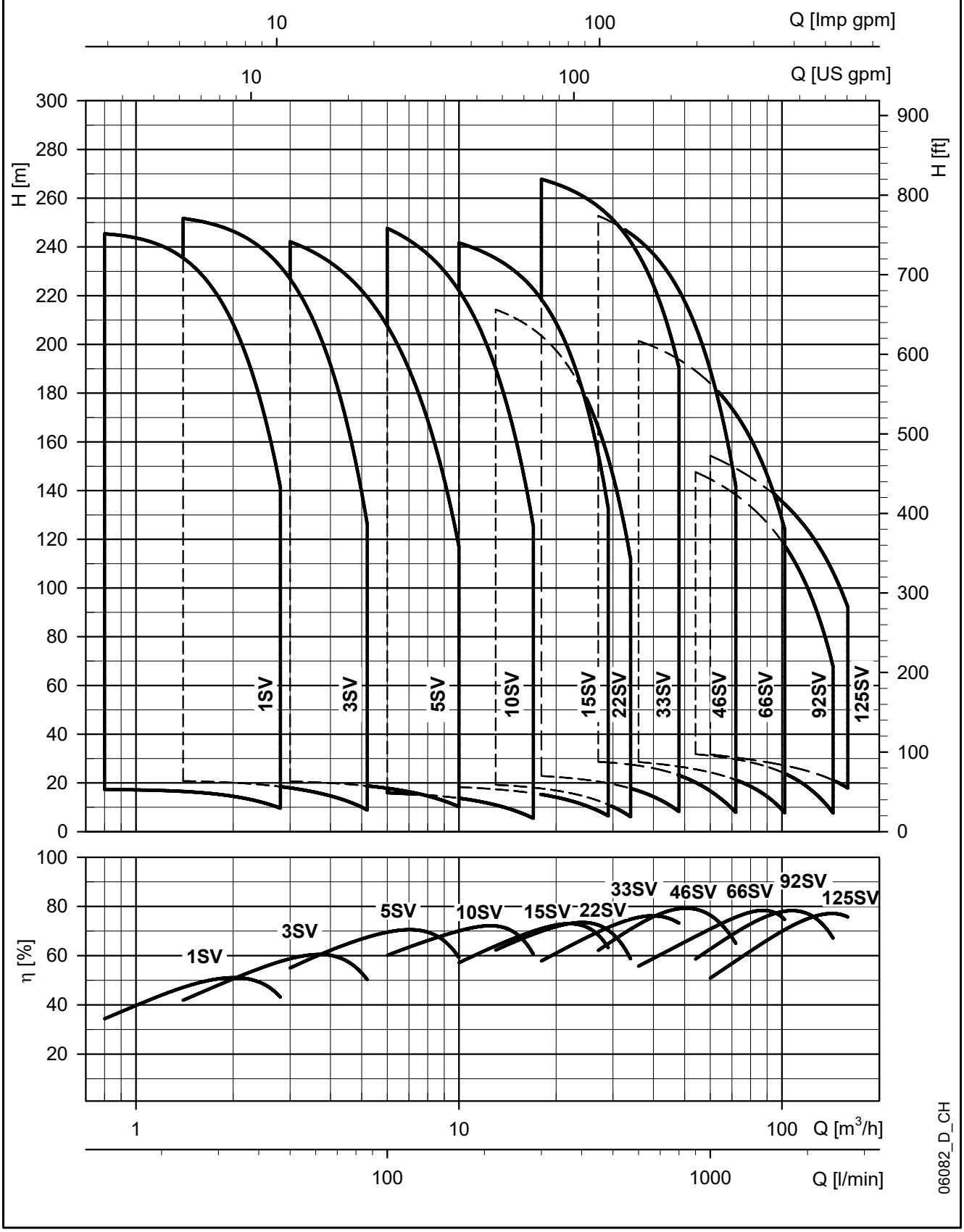
e-SV SERIES
HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES

e-SV™	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



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1, 3, 5SV SERIES
HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY													
			l/min 0	13,34	20	23,4	30	35	46,6	50	60	70	86,6	100	120	166,67
			m^3/h 0	0,8	1,2	1,4	1,8	2,1	2,8	3,0	3,6	4,2	5,2	6,0	7,2	10,0
	kW	HP	H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
1SV02	0,37	0,5	17,4	17,3	16,9	16,5	15,3	14,0	9,7							
1SV03	0,37	0,5	25,7	25,4	24,7	24,0	22,2	20,2	13,5							
1SV04	0,37	0,5	33,9	33,1	32,0	31,1	28,5	25,7	16,8							
1SV05	0,55	0,75	43,6	43,4	42,4	41,5	38,6	35,4	24,6							
1SV06	0,55	0,75	52,1	51,7	50,4	49,2	45,6	41,7	28,6							
1SV07	0,75	1	61,0	60,8	59,4	58,1	54,1	49,6	34,5							
1SV08	0,75	1	69,4	69,1	67,5	65,9	61,2	56,0	38,7							
1SV09	0,75	1	77,9	77,3	75,4	73,6	68,2	62,3	42,7							
1SV10	1,1	1,5	87,6	87,5	85,7	83,8	78,1	71,8	50,3							
1SV11	1,1	1,5	96,2	96,0	93,9	91,8	85,5	78,5	54,7							
1SV12	1,1	1,5	104,7	104,4	102,0	99,7	92,7	85,0	59,0							
1SV13	1,1	1,5	113,2	112,7	110,0	107,5	99,8	91,4	63,0							
1SV15	1,5	2	131,2	131,2	128,6	125,8	117,4	108,0	75,7							
1SV17	1,5	2	148,3	148,1	145,0	141,8	132,1	121,4	84,5							
1SV18	2,2	3	158,4	158,7	155,6	152,5	142,5	131,4	93,0							
1SV20	2,2	3	175,7	175,8	172,4	168,8	157,7	145,2	102,4							
1SV22	2,2	3	192,9	193,0	189,1	185,0	172,6	158,8	111,6							
1SV24	2,2	3	210,1	210,0	205,5	201,1	187,4	172,3	120,5							
1SV26	2,2	3	227,3	226,8	221,9	217,1	202,1	185,6	129,2							
1SV28	3	4	245,4	245,4	240,5	235,4	219,6	202,0	141,8							
3SV02	0,37	0,5	21,3			20,8	20,4	19,9	18,5	18,0	16,1	13,9	8,9			
3SV03	0,55	0,75	32,6			32,3	31,8	31,3	29,3	28,6	26,0	22,7	15,4			
3SV04	0,75	1	43,4			43,1	42,5	41,8	39,3	38,3	34,8	30,5	20,8			
3SV05	1,1	1,5	54,7			54,6	53,9	53,1	50,0	48,8	44,6	39,2	27,1			
3SV06	1,1	1,5	65,4			65,2	64,3	63,2	59,4	58,0	52,8	46,3	31,8			
3SV07	1,1	1,5	76,1			75,6	74,5	73,2	68,6	66,9	60,8	53,1	36,1			
3SV08	1,5	2	87,2			86,6	85,5	84,2	79,5	77,7	70,9	62,2	43,1			
3SV09	1,5	2	97,8			97,0	95,7	94,2	88,8	86,7	79,1	69,3	47,8			
3SV10	2,2	3	109,5			108,9	107,6	106,0	100,3	98,0	89,7	78,9	55,0			
3SV11	2,2	3	120,3			119,5	118,1	116,3	109,9	107,4	98,2	86,3	60,0			
3SV12	2,2	3	131,0			130,1	128,4	126,4	119,4	116,6	106,6	93,5	64,8			
3SV13	2,2	3	141,8			140,6	138,7	136,6	128,8	125,8	114,8	100,7	69,6			
3SV14	2,2	3	152,5			151,0	148,9	146,5	138,1	134,8	123,0	107,7	74,2			
3SV15	3	4	164,4			163,7	161,8	159,4	150,9	147,4	134,9	118,5	82,0			
3SV17	3	4	185,9			184,8	182,5	179,8	169,9	166,0	151,6	132,9	91,4			
3SV19	3	4	207,3			205,8	203,1	200,0	188,7	184,3	168,1	147,1	100,7			
3SV21	4	5,5	230,9			230,4	227,7	224,6	212,7	207,9	190,5	167,6	116,7			
3SV23	4	5,5	252,5			251,7	248,7	245,1	232,1	226,9	207,7	182,6	126,5			
5SV02	0,55	0,75	21,9							20,7	20,3	19,8	18,8	17,8	16,1	10,2
5SV03	0,75	1	32,7							30,9	30,3	29,5	28,1	26,6	24,0	15,2
5SV04	1,1	1,5	43,9							41,7	40,9	40,0	38,1	36,2	32,7	21,0
5SV05	1,5	2	55,0							52,3	51,4	50,2	47,9	45,5	41,2	26,8
5SV06	1,5	2	65,9							62,4	61,2	59,7	56,8	54,0	48,8	31,3
5SV07	2,2	3	76,5							74,0	72,7	71,0	67,6	64,2	57,8	37,0
5SV08	2,2	3	87,2							84,2	82,6	80,7	76,7	72,8	65,5	41,6
5SV09	2,2	3	97,8							94,3	92,5	90,3	85,7	81,2	72,9	46,0
5SV10	3	4	109,2							105,8	103,9	101,5	96,7	91,8	82,7	53,0
5SV11	3	4	119,9							116,0	113,9	111,3	105,9	100,4	90,4	57,7
5SV12	3	4	130,6							126,1	123,8	120,9	114,9	108,9	98,0	62,2
5SV13	4	5,5	142,5							138,2	135,6	132,4	125,7	119,1	107,0	68,1
5SV14	4	5,5	153,4							148,5	145,7	142,2	135,0	127,9	114,8	72,9
5SV15	4	5,5	164,2							158,8	155,8	152,0	144,3	136,6	122,5	77,6
5SV16	4	5,5	174,9							169,0	165,8	161,8	153,4	145,2	130,2	82,2
5SV17	5,5	7,5	186,4							180,5	177,2	173,0	164,3	155,7	139,9	89,0
5SV19	5,5	7,5	208,0							201,2	197,4	192,7	182,9	173,2	155,4	98,5
5SV21	5,5	7,5	229,6							221,7	217,4	212,2	201,3	190,4	170,8	107,9
5SV23	5,5	7,5	251,0							242,2	237,4	231,5	219,5	207,6	185,9	116,9

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

1-5sv-2p60_b_th

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10, 15, 22SV SERIES
HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY													
			l/min 0	100	120	140	166,7	190	216,67	283,3	320	350	483,3	500	530	566
			m^3/h 0	6,0	7,2	8,4	10,0	11,4	13,0	17,0	19,2	21,0	29,0	30,0	31,8	34,0
	kW	HP	H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
10SV01	0,75	1	17,0	16,0	15,5	14,8	13,7	12,6	10,9	5,5						
10SV02	1,5	2	34,2	31,9	31,0	30,0	28,2	26,3	23,7	14,5						
10SV03	2,2	3	51,8	48,3	47,0	45,4	42,9	40,1	36,3	23,3						
10SV04	3	4	69,2	64,7	63,0	61,0	57,7	54,1	49,1	31,6						
10SV05	4	5,5	87,3	82,2	80,2	77,9	73,9	69,5	63,3	41,2						
10SV06	4	5,5	104,5	98,1	95,7	92,8	87,9	82,6	75,1	48,6						
10SV07	5,5	7,5	122,1	114,5	111,7	108,4	102,7	96,5	87,8	56,9						
10SV08	5,5	7,5	139,2	130,3	127,1	123,1	116,6	109,4	99,4	64,1						
10SV09	7,5	10	157,4	148,5	145,2	141,2	134,3	126,6	115,8	76,6						
10SV10	7,5	10	174,7	164,6	160,9	156,3	148,6	140,1	128,0	84,5						
10SV11	7,5	10	192,0	180,6	176,5	171,4	162,9	153,5	140,1	92,2						
10SV13	11	15	226,7	215,3	210,3	204,0	193,5	181,9	165,9	110,0						
10SV15	11	15	261,2	247,6	241,7	234,4	222,1	208,7	190,1	125,5						
15SV01	1,5	2	19,9				18,3	17,9	17,4	15,8	14,6	13,5	6,5			
15SV02	3	4	41,9				39,2	38,7	38,0	35,4	33,6	31,7	19,3			
15SV03	4	5,5	63,0				59,1	58,3	57,2	53,4	50,6	47,9	29,3			
15SV04	5,5	7,5	83,9				78,7	77,6	76,2	71,2	67,4	63,8	39,1			
15SV05	7,5	10	105,4				99,4	98,1	96,3	90,3	85,7	81,2	50,6			
15SV06	11	15	126,7				119,8	118,3	116,2	109,1	103,7	98,3	61,7			
15SV07	11	15	147,6				139,4	137,6	135,1	126,7	120,3	114,0	71,2			
15SV08	15	20	171,9				161,2	159,5	157,1	148,7	142,2	135,6	88,7			
15SV09	15	20	193,2				181,0	179,0	176,3	166,8	159,5	152,1	99,1			
15SV10	15	20	214,4				200,8	198,5	195,4	184,8	176,6	168,3	109,4			
15SV11	18,5	25	236,4				221,8	219,4	216,1	204,6	195,7	186,7	122,3			
15SV12	18,5	25	257,8				241,7	239,0	235,3	222,8	213,0	203,1	132,7			
22SV01	2,2	3	20,4						19,2	18,1	17,2	16,4	11,1	10,2	8,5	6,2
22SV02	4	5,5	44,5						41,6	39,9	38,7	37,5	29,5	28,1	25,2	21,3
22SV03	5,5	7,5	66,7						62,1	59,5	57,6	55,8	43,7	41,6	37,3	31,4
22SV04	7,5	10	89,0						85,0	81,6	79,1	76,7	60,1	57,2	51,5	43,6
22SV05	11	15	111,5						106,7	102,6	99,5	96,5	75,9	72,3	65,2	55,4
22SV06	11	15	133,5						127,5	122,4	118,6	114,9	90,1	85,8	77,2	65,4
22SV07	15	20	156,4						150,1	144,4	140,1	135,9	107,3	102,3	92,4	78,7
22SV08	15	20	178,6						171,0	164,4	159,5	154,7	121,9	116,2	104,8	89,1
22SV09	18,5	25	201,3						193,2	186,0	180,5	175,2	138,5	132,1	119,4	101,8
22SV10	18,5	25	223,5						214,3	206,2	200,1	194,1	153,2	146,1	131,9	112,3

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

10-22sv-2p60_d_th

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33, 46SV SERIES
HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = CAPACITY										
			l/min 0	300	350	400	450	550	700	800	900	1000	1200
			m^3/h 0	18	21	24	27	33	42	48	54	60	72
	kW	HP	H = TOTAL HEAD IN METRES OF COLUMN OF WATER										
33SV1/1A	3	4	24,5	22,8	22,2	21,5	20,6	18,2	13	8,3			
33SV1	5,5	7,5	34,5	33,1	32,7	32,2	31,6	30,1	26,6	23,2			
33SV2/2A	5,5	7,5	49,6	47,7	46,7	45,3	43,6	39	28,9	20			
33SV2/1A	7,5	10	59,6	56,5	55,5	54,3	52,8	48,9	40,2	32,2			
33SV2	11	15	69,4	66,8	66	65	64	61	54	47,3			
33SV3/2A	11	15	86	81,8	80	78	76	70	57	44,7			
33SV3/1A	11	15	94,7	90,4	89	87	85	80	68	56,9			
33SV3	15	20	104,2	100,2	99	98	96	91	81	71,1			
33SV4/2A	15	20	119,8	114,8	113	110	107	99	82	65			
33SV4/1A	15	20	128,9	123,7	122	120	117	110	94	79			
33SV4	18,5	25	138,3	132,9	131	129	127	121	107	93,8			
33SV5/2A	18,5	25	155,8	149,4	147	145	141	132	112	94,1			
33SV5/1A	22	30	163,9	157,5	155	153	150	142	123	105,3			
33SV5	22	30	173	166,2	164	162	159	151	134	117,3			
33SV6/2A	22	30	189	181,7	179	176	172	162	139	116			
33SV6/1A	30	40	199,2	191,9	190	187	183	174	152	130,4			
33SV6	30	40	208,5	200,9	199	196	192	183	163	142,8			
33SV7/2A	30	40	224,6	216,5	214	210	206	194	168	141,8			
33SV7/1A	30	40	233,9	225,4	223	219	215	204	179	154,2			
33SV7	30	40	243,3	234,3	232	228	225	214	190	166,6			
33SV8/2A	37	50	259,3	250	247	243	238	225	195	165,6			
33SV8/1A	37	50	268,7	258,9	256	252	247	235	206	178			
33SV8	37	50	278,1	267,8	265	261	257	245	217	190,4			
46SV1/1A	5,5	7,5	29,1				28,6	27,7	25,4	23,1	20,2	16,7	7,9
46SV1	7,5	10	39,9				36	34,2	31,6	29,6	27,1	24,2	16,4
46SV2/2A	11	15	56,7				58,8	58	54	50	45,2	39,1	24
46SV2/1A	11	15	67,8				64,8	63	59	55	50	44,3	29
46SV2	15	20	78,2				72,1	70	67	64	60	54,7	40,8
46SV3/2A	18,5	25	95,5				94,6	93	87	82	75	66	44,2
46SV3/1A	18,5	25	106,1				101	99	93	88	82	74	52,1
46SV3	18,5	25	117,2				108,1	106	100	95	89	82	61,5
46SV4/2A	22	30	134,1				130,3	127	120	113	103	92	62,7
46SV4/1A	30	40	144,2				137,3	134	127	120	111	101	73
46SV4	30	40	155,7				143,9	140	133	126	118	108	80
46SV5/2A	30	40	171,6				166,7	163	154	146	134	121	86
46SV5/1A	30	40	183,1				173,3	169	160	152	141	127	93
46SV5	30	40	194,6				179,9	176	166	158	147	134	100
46SV6/2A	37	50	210,5				202,7	198	188	177	164	147	105,9
46SV6/1A	37	50	222				209,3	205	194	183	170	154	112,9
46SV6	37	50	233,6				215,9	211	200	190	177	161	120,1
46SV7/2A	45	60	250,3				239,5	234	222	210	194	176	127,6
46SV7/1A	45	60	261,8				246,2	241	228	216	201	183	134,6
46SV7	45	60	273,4				252,8	247	234	222	208	190	141,7

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

33-46sv-2p60-en_b_th

LOWARA
a xylem brand

66, 92 SERIES
HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = CAPACITY										
			l/min 0	600	800	900	1200	1400	1600	1700	2000	2200	2400
			m^3/h 0	36	48	54	72	84	96	102	120	132	144
	kW	HP	H = TOTAL HEAD IN METRES OF COLUMN OF WATER										
66SV1/1A	7,5	10	31,4	28,6	26,7	25,6	21,2	17,0	11	7,8			
66SV1	11	15	43,8	40	37,9	36,8	33,1	29,9	25,9	23,4			
66SV2/2A	15	20	64,5	60,1	58	56	49,4	42	32,8	27			
66SV2/1A	18,5	25	74,9	69,7	67	65	58	51	42,3	37,1			
66SV2	18,5	25	85,4	79,5	76	74	66	60	52	47,7			
66SV3/2A	22	30	106,6	99,5	96	93	82	72	59	52,2			
66SV3/1A	30	40	117,4	110,3	106	103	92	82	70	63,7			
66SV3	30	40	127,8	120,3	115	112	101	92	80	74			
66SV4/2A	37	50	149,1	139,9	135	131	117	103	87	77,5			
66SV4/1A	37	50	159,2	150	144	141	126	113	97	88,1			
66SV4	37	50	169,3	160,2	154	150	136	123	108	98,6			
66SV5/2A	45	60	191,9	180,9	174	170	152	135	115	103,2			
66SV5/1A	45	60	202	191,2	184	180	162	146	125	113,6			
66SV5	45	60	212,2	201,4	194	189	172	156	136	124,1			
92SV1/1A	11	15	36,4			31,8	29,7	27,8	25,3	23,9	18,3	13,5	7,6
92SV1	15	20	49,5			41,7	37,7	35,3	33	31,9	28,1	24,7	19,9
92SV2/2A	18,5	25	69,9			64	60	57	52	50	39,6	31,1	21,1
92SV2/1A	22	30	83,6			74,2	69	65	60	58	49	41,5	32,1
92SV2	30	40	97,9			84,7	78	73	69	66	59	52	43,8
92SV3/2A	37	50	117,4			106,3	100	94	88	84	71	60	46,1
92SV3/1A	37	50	131,5			117,5	109	103	96	92	80	69	56,5
92SV3	45	60	144,9			127,8	118	111	104	101	90	81	68,4
92SV4/2A	45	60	163			147,6	138	131	122	117	100	86	67,8

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

66-92sv-2p60-en_b_th

125SV SERIES
HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY													
			l/min 0	600	700	800	900	1000	1200	1500	1700	1900	2000	2200	2400	2666
			m^3/h 0	36,0	42,0	48,0	54,0	60,0	72,0	90,0	102,0	114,0	120,0	132,0	144,0	160,0
	kW	HP	H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
125SV1	15	20	40,1					31,7	30,4	28,5	27,2	25,7	24,9	23,1	21,1	17,9
125SV2/2A	22	30	73,0					61,7	59,6	56,3	53,8	51,1	49,6	46,3	42,6	36,9
125SV3/3B	30	40	101,9					85,3	82,2	77,1	73,3	69,0	66,6	61,5	55,5	46,3
125SV3	37	50	117,5					100,2	97,0	92,0	88,4	84,4	82,2	77,5	72,3	64,2
125SV4/4A	45	60	146,1					123,5	119,3	112,6	107,6	102,1	99,1	92,6	85,2	73,7
125SV5/5A	55	75	182,6					154,3	149,1	140,7	134,5	127,7	123,9	115,7	106,5	92,1

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

125sv-2p60_b_th

LOWARA
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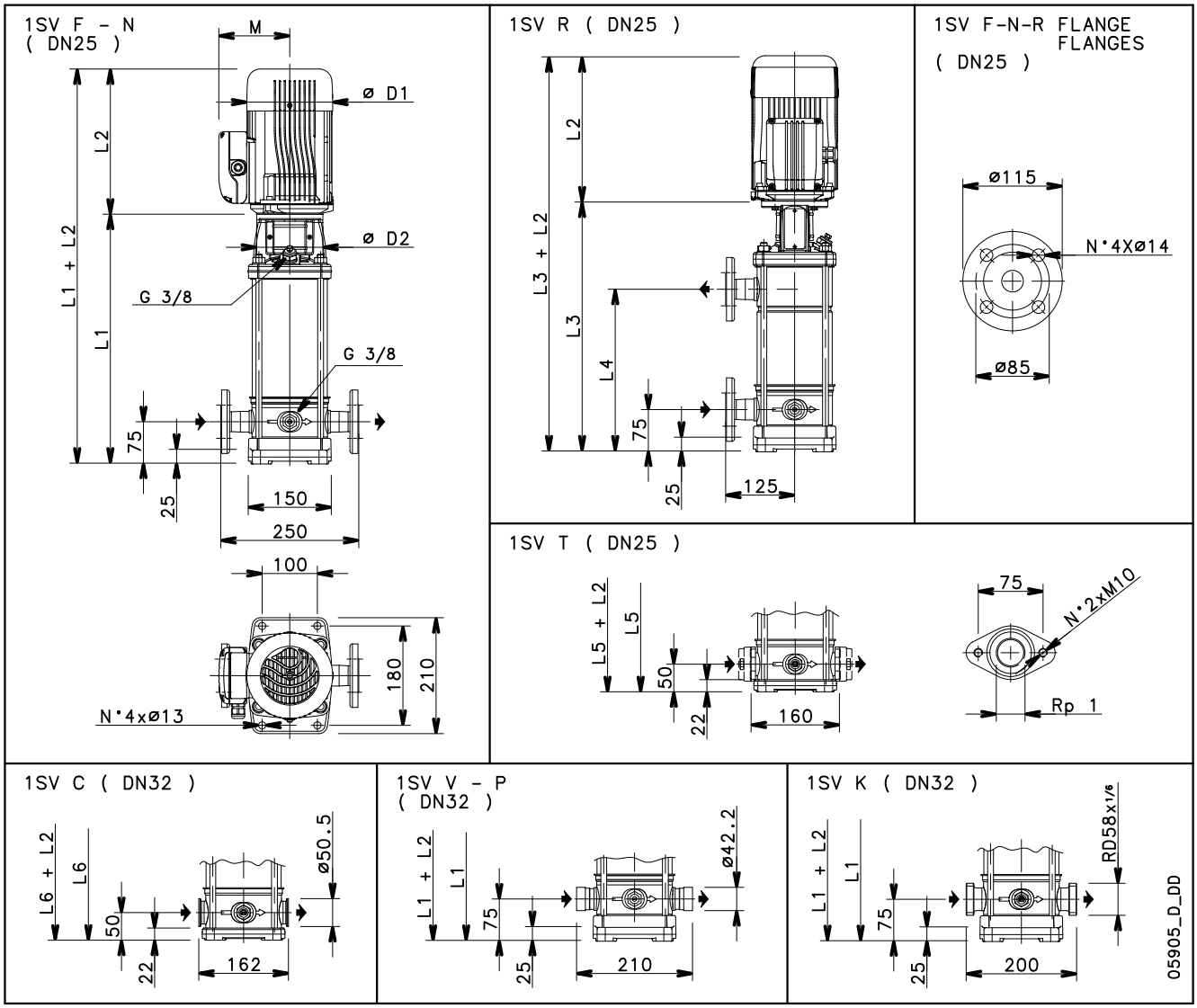
1SV SERIES, 2 TO 28 STAGES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)													WEIGHT kg	
				L2						M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	L6	1 ~	3 ~	1 ~	3 ~	D2		PUMP	PUMP
1SV02..	0,37	71	278	209	209	-	-	253	253	111	111	120	120	105		8,3	13,2
1SV03..	0,37	71	278	209	209	-	-	253	253	111	111	120	120	105		8,6	13,4
1SV04..	0,37	71	298	209	209	-	-	273	273	111	111	120	120	105		9	13,8
1SV05..	0,55	71	318	231	231	-	-	293	293	121	121	140	140	105		9,4	16,1
1SV06..	0,55	71	338	231	231	-	-	313	313	121	121	140	140	105		9,8	16,5
1SV07../D	0,75	80	368	226	263	368	207	343	343	121	129	140	155	120		10,6	20,2
1SV08../D	0,75	80	388	226	263	388	227	363	363	121	129	140	155	120		11	20,6
1SV09../D	0,75	80	408	226	263	408	247	383	383	121	129	140	155	120		11,4	21
1SV10../D	1,1	80	428	263	263	428	267	403	403	137	129	155	155	120		11,8	23,2
1SV11../D	1,1	80	448	263	263	448	287	423	423	137	129	155	155	120		12,2	23,6
1SV12../D	1,1	80	468	263	263	468	307	443	443	137	129	155	155	120		12,6	24
1SV13../D	1,1	80	488	263	263	488	327	463	463	137	129	155	155	120		13	24,4
1SV15../D	1,5	90	538	263	263	538	367	513	513	137	129	155	155	140		14,1	27
1SV17../D	1,5	90	578	263	263	578	407	553	553	137	129	155	155	140		14,9	28
1SV18../D	2,2	90	598	298	298	598	427	573	573	151	134	174	174	140		15,3	33,5
1SV20../D	2,2	90	638	298	298	638	467	-	613	151	134	174	174	140		16,1	34,3
1SV22../D	2,2	90	678	298	298	678	507	-	653	151	134	174	174	140		16,9	35
1SV24../D	2,2	90	718	298	298	718	547	-	693	151	134	174	174	140		17,7	35,8
1SV26../D	2,2	90	758	298	298	758	587	-	733	151	134	174	174	140		18,5	36,6
1SV28../D	3	100	808	-	298	808	627	-	783	-	134	-	174	140		19,7	40,7

1sv-2p60_d_td

LOWARA
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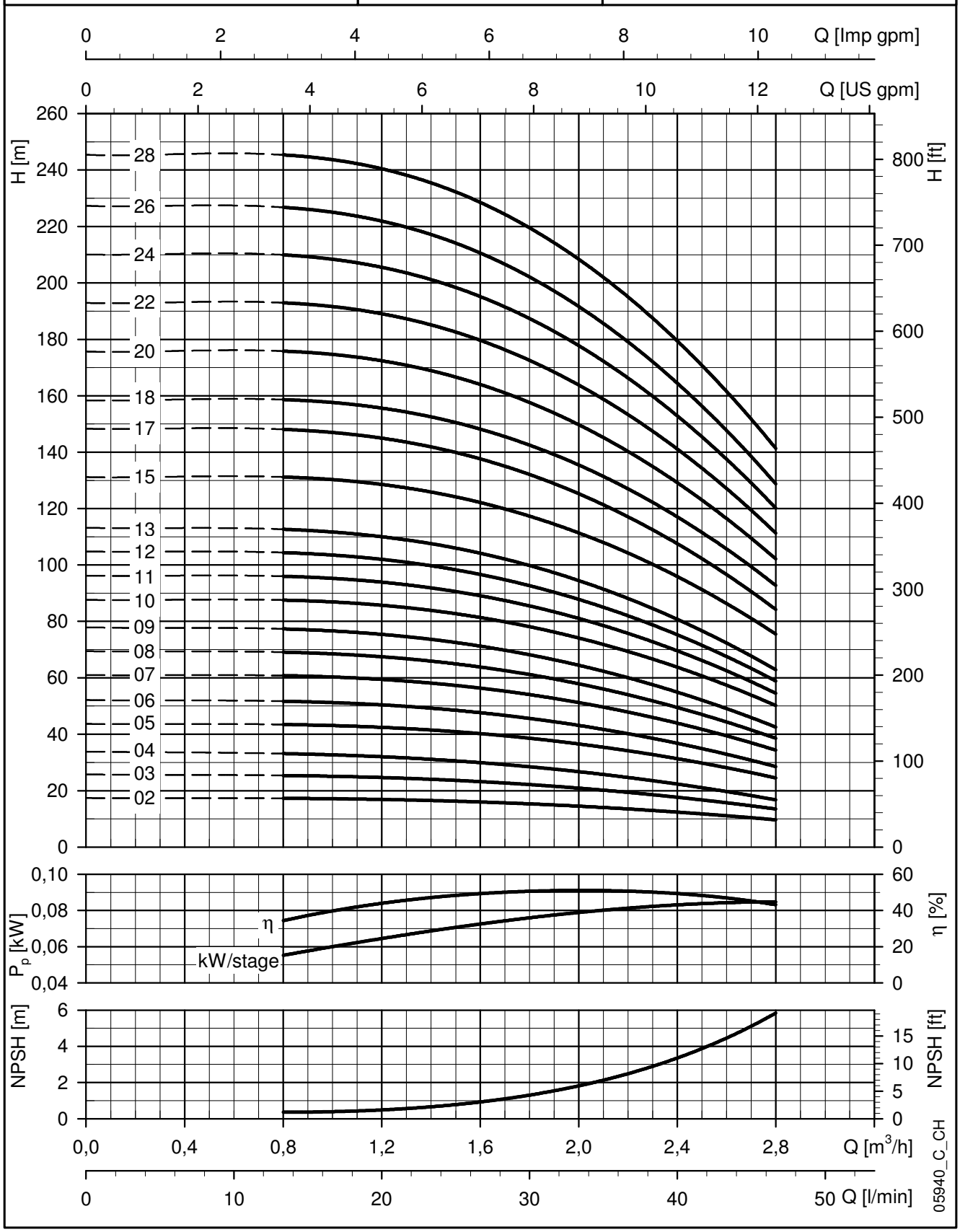
1SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

1SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
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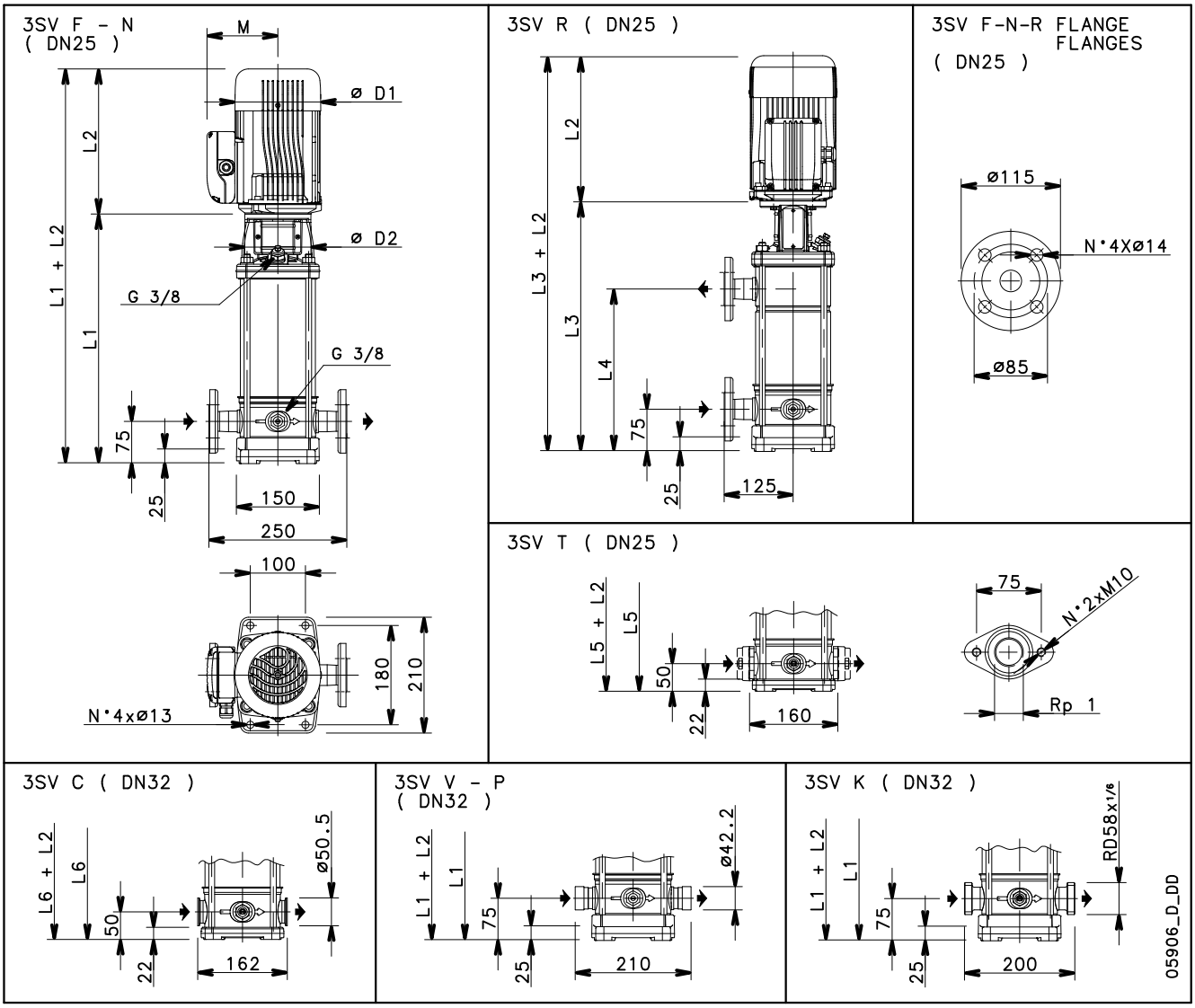
3SV SERIES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES

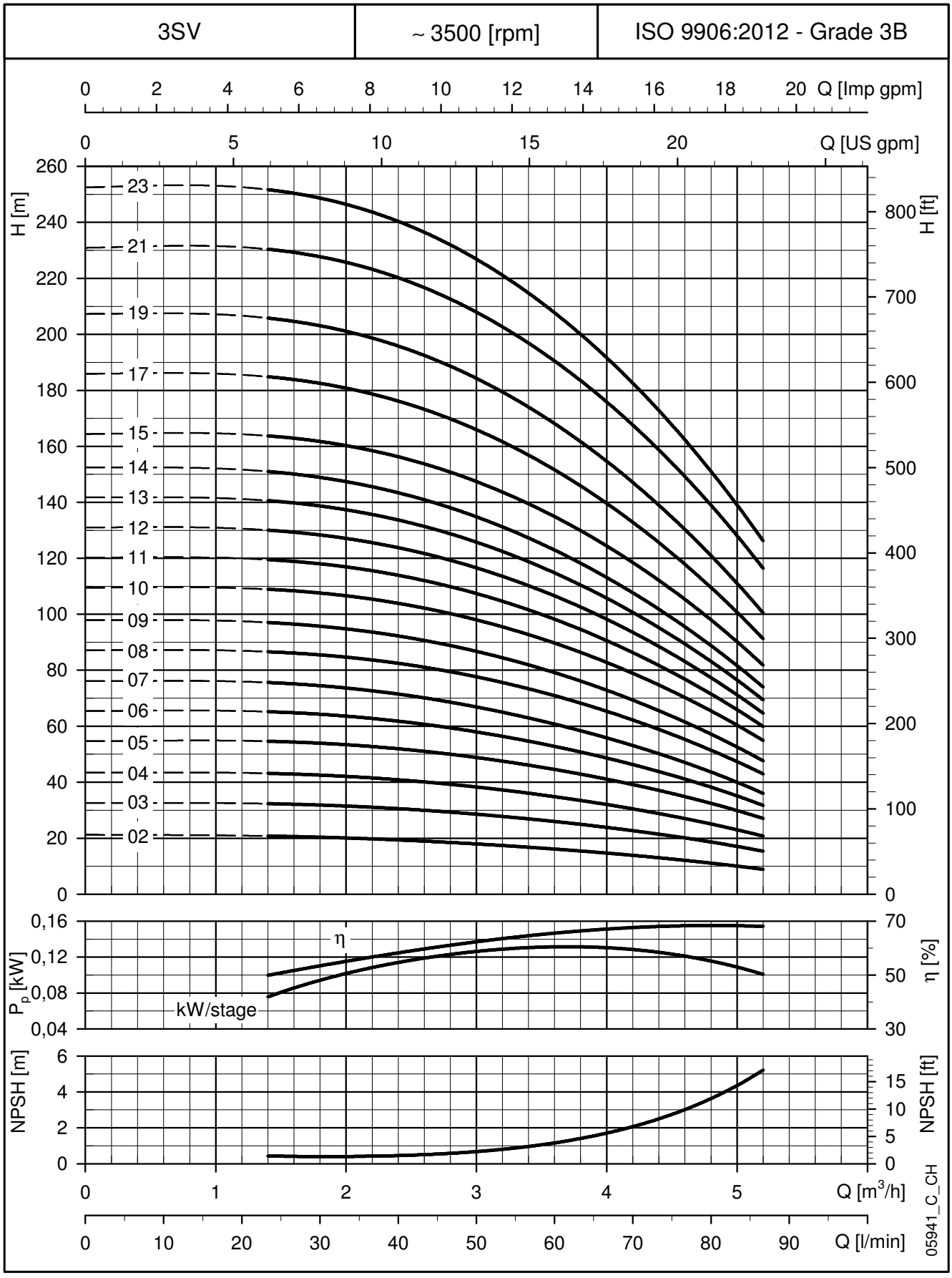


PUMP TYPE	MOTOR		DIMENSIONS (mm)													WEIGHT kg	
				L2						M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	L6	1 ~	3 ~	1 ~	3 ~	D2	PUMP	PUMP
3SV02..	0,37	71	278	209	209	-	-	253	253	111	111	120	120	105	8,1	12,8
3SV03..	0,55	71	278	231	231	-	-	253	253	121	121	140	140	105	8,5	15,2
3SV04../D	0,75	80	308	226	263	-	-	283	283	121	129	140	155	120	9,3	18,9
3SV05../D	1,1	80	328	263	263	-	-	303	303	137	129	155	155	120	9,7	21,1
3SV06../D	1,1	80	348	263	263	-	-	323	323	137	129	155	155	120	10,1	21,5
3SV07../D	1,1	80	368	263	263	368	207	343	343	137	129	155	155	120	10,5	21,9
3SV08../D	1,5	90	398	263	263	398	227	373	373	137	129	155	155	140	11,2	24,5
3SV09../D	1,5	90	418	263	263	418	247	393	393	137	129	155	155	140	11,6	25
3SV10../D	2,2	90	438	298	298	438	267	413	413	151	134	174	174	140	12	30,2
3SV11../D	2,2	90	458	298	298	458	287	433	433	151	134	174	174	140	12,4	30,6
3SV12../D	2,2	90	478	298	298	478	307	453	453	151	134	174	174	140	12,8	30,9
3SV13../D	2,2	90	498	298	298	498	327	473	473	151	134	174	174	140	13,2	31,3
3SV14../D	2,2	90	518	298	298	518	347	493	493	151	134	174	174	140	13,6	31,7
3SV15../D	3	100	548	-	298	548	367	-	523	-	134	-	174	160	14,4	35,4
3SV17../D	3	100	588	-	298	588	407	-	563	-	134	-	174	160	15,2	36,2
3SV19../D	3	100	628	-	298	628	447	-	603	-	134	-	174	160	16	37
3SV21../D	4	112	668	-	319	668	487	-	643	-	154	-	197	160	16,8	43,2
3SV23../D	4	112	708	-	319	708	527	-	683	-	154	-	197	160	17,6	44

3sv-2p60_d_td

3SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

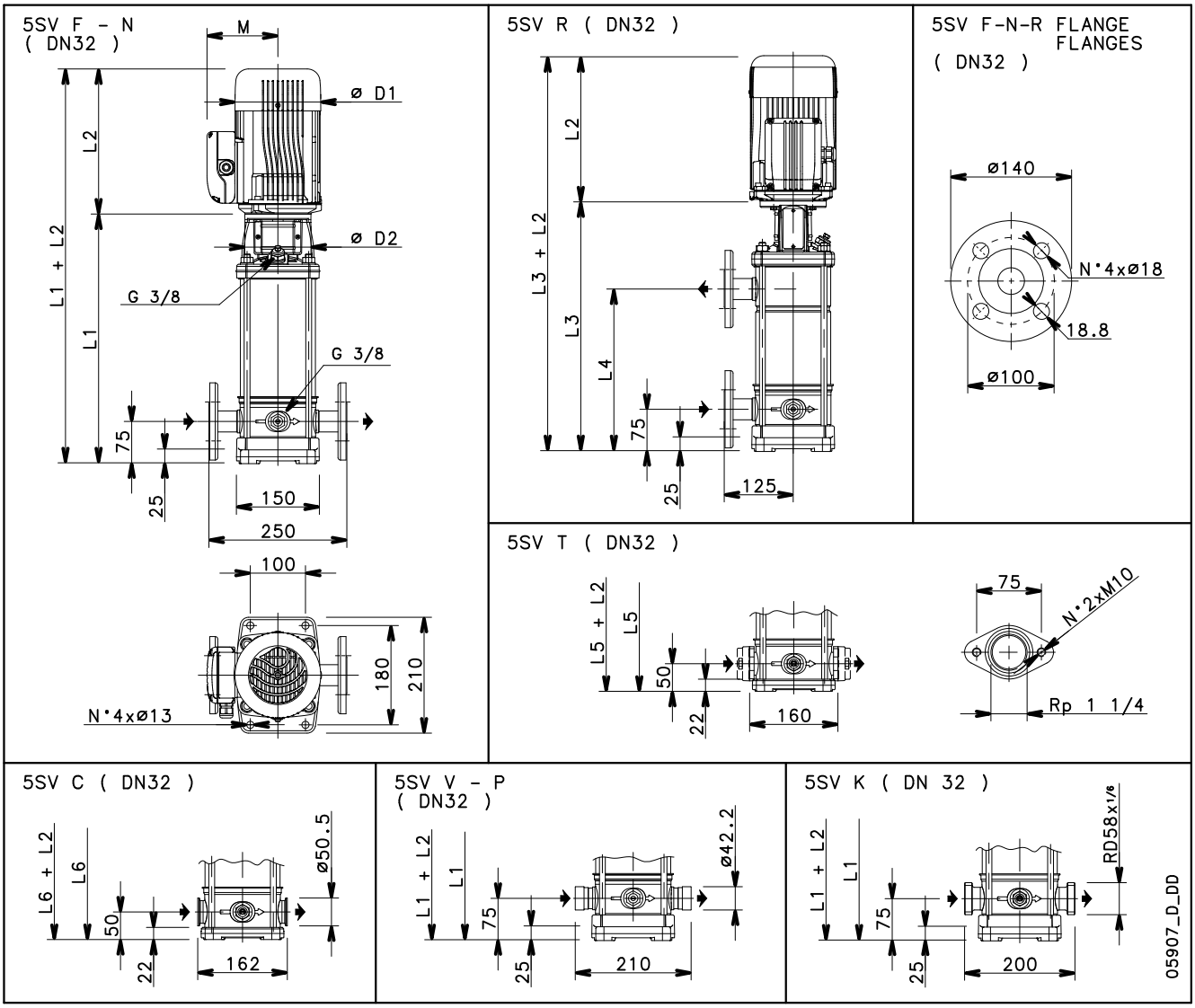
3SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

5SV SERIES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)													WEIGHT kg	
				L2						M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	L6	1 ~	3 ~	1 ~	3 ~	D2		PUMP	PUMP
5SV02..	0,55	71	268	231	231	-	-	243	243	121	121	140	140	105		8,5	15,2
5SV03../D	0,75	80	303	226	263	-	-	278	278	121	129	140	155	120		9,4	19
5SV04../D	1,1	80	328	263	263	-	-	303	303	137	129	155	155	120		9,8	21,2
5SV05../D	1,5	90	363	263	263	-	-	338	338	137	129	155	155	140		10,6	24
5SV06../D	1,5	90	388	263	263	-	-	363	363	137	129	155	155	140		11,1	24,5
5SV07../D	2,2	90	413	298	298	413	242	388	388	151	134	174	174	140		11,6	29,8
5SV08../D	2,2	90	438	298	298	438	267	413	413	151	134	174	174	140		12,1	30,2
5SV09../D	2,2	90	463	298	298	463	292	438	438	151	134	174	174	140		12,5	30,7
5SV10../D	3	100	498	-	298	498	317	473	473	-	134	-	174	160		13,5	34,4
5SV11../D	3	100	523	-	298	523	342	498	498	-	134	-	174	160		13,9	34,9
5SV12../D	3	100	548	-	298	548	367	523	523	-	134	-	174	160		14,4	35,4
5SV13../D	4	112	573	-	319	573	392	548	548	-	154	-	197	160		14,9	41,2
5SV14../D	4	112	598	-	319	598	417	573	573	-	154	-	197	160		15,3	41,7
5SV15../D	4	112	623	-	319	623	442	-	598	-	154	-	197	160		15,8	42,2
5SV16../D	4	112	648	-	319	648	467	-	623	-	154	-	197	160		16,3	42,6
5SV17../D	5,5	132	693	-	375	693	492	-	668	-	168	-	214	300		20,7	58,2
5SV19../D	5,5	132	743	-	375	743	542	-	718	-	168	-	214	300		21,6	59,2
5SV21../D	5,5	132	793	-	375	793	592	-	768	-	168	-	214	300		22,6	60,1
5SV23../D	5,5	132	843	-	375	843	642	-	818	-	168	-	214	300		23,5	61,1

5sv-2p60_d_td

LOWARA
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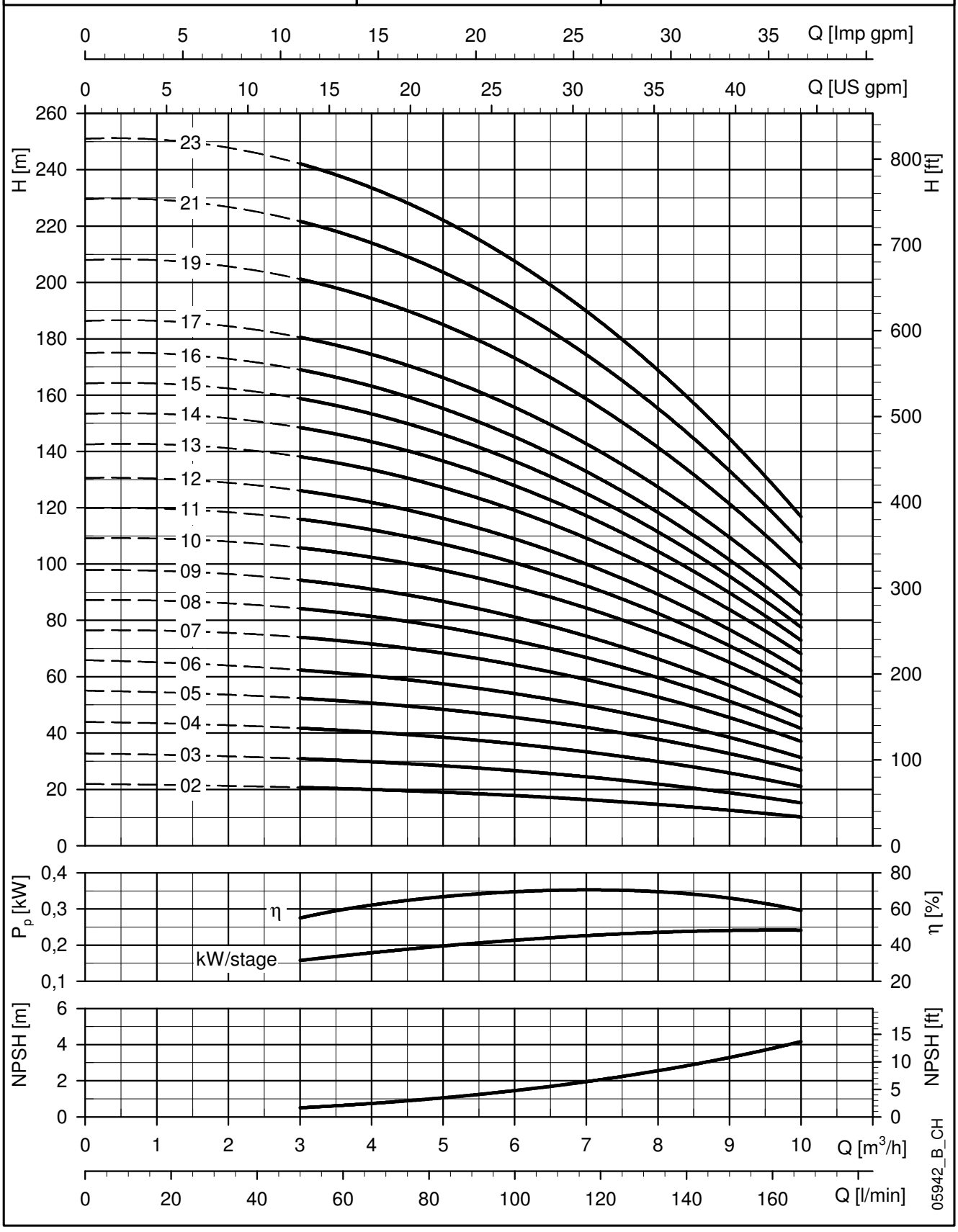
5SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

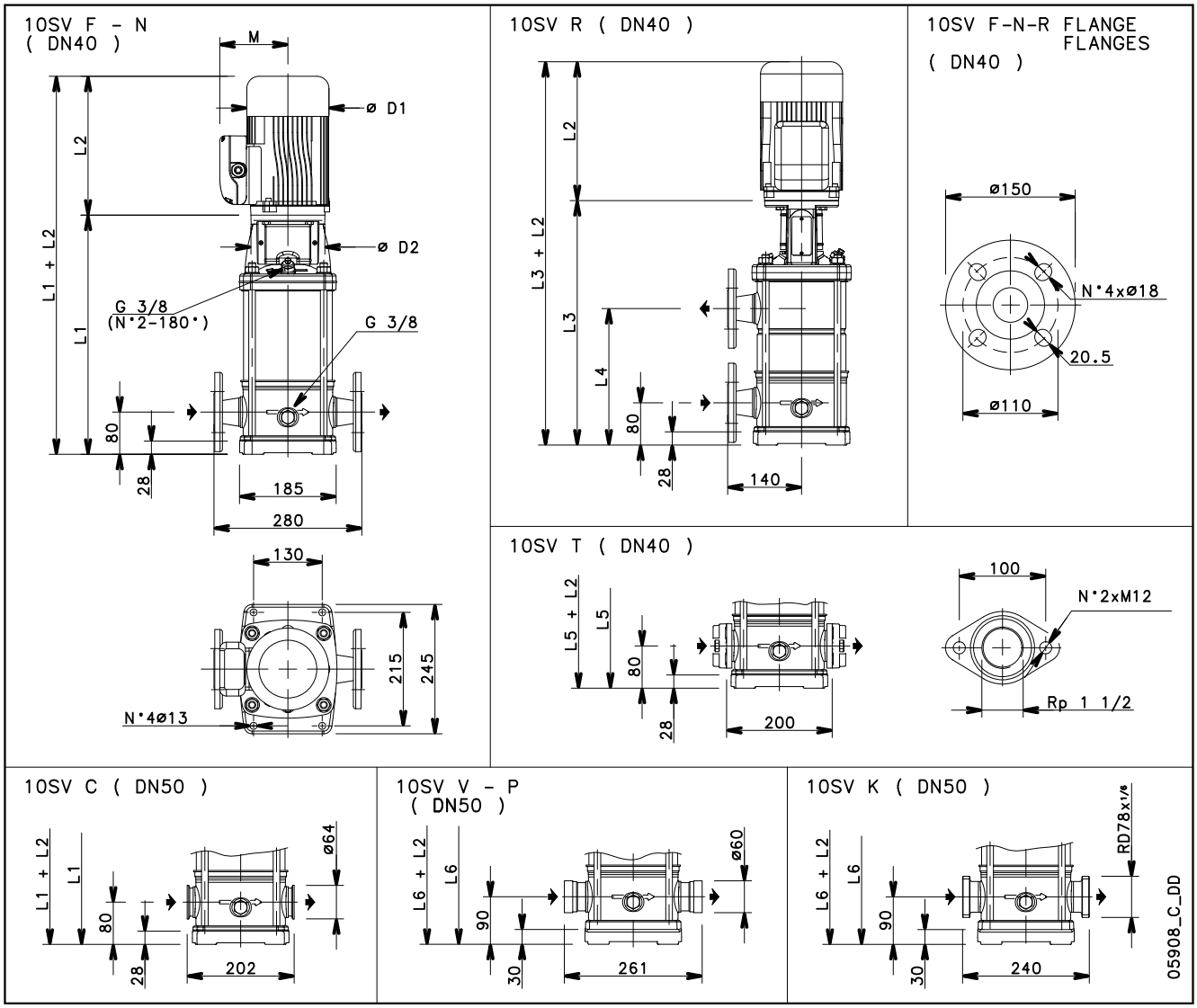
5SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

10SV SERIES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES



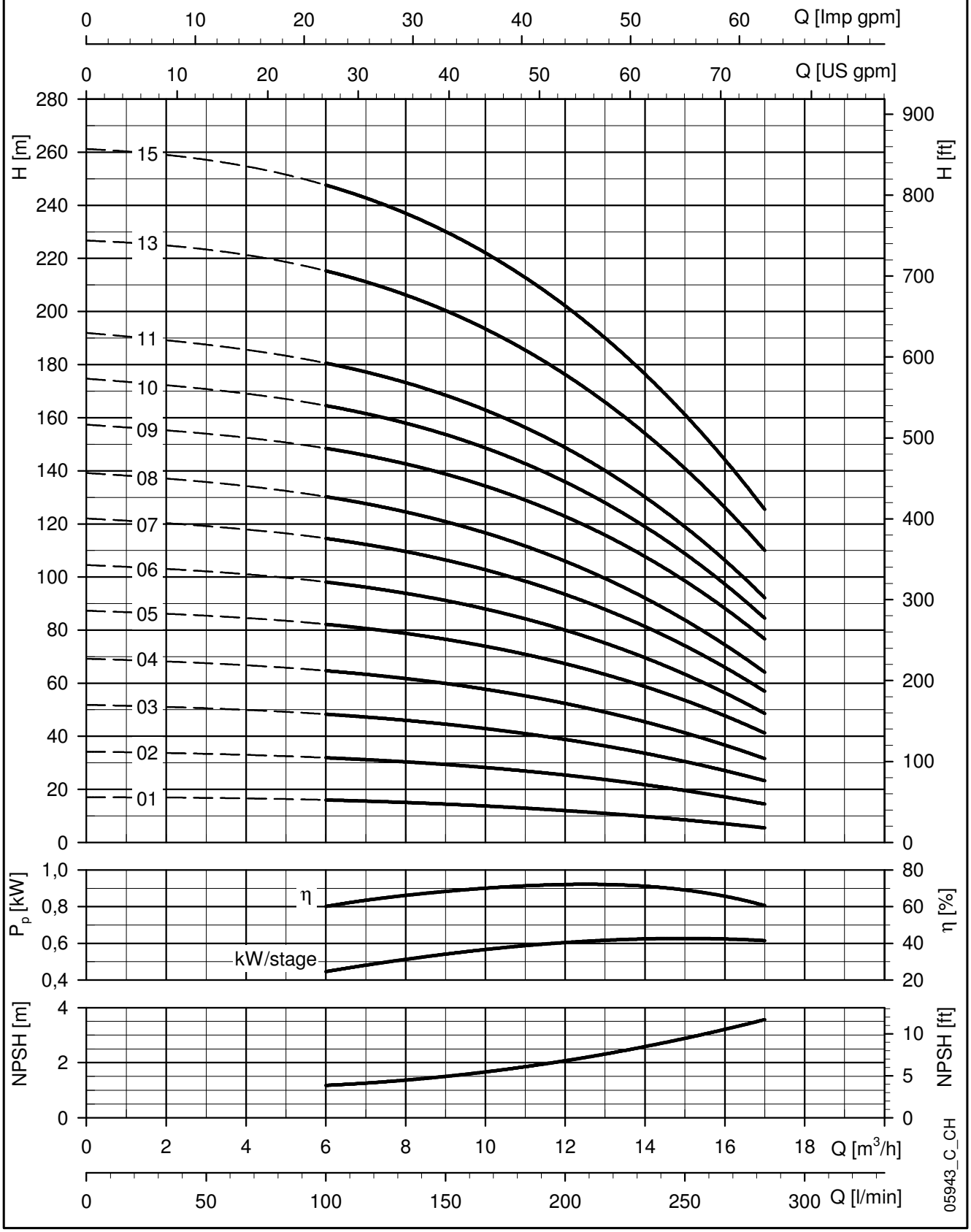
PUMP TYPE	MOTOR		DIMENSIONS (mm)													WEIGHT kg	
				L2						M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	L6	1 ~	3 ~	1 ~	3 ~	D2		PUMP	PUMP
10SV01../D	0,75	80	357	226	263	-	-	357	367	121	129	140	155	120		14,3	24
10SV02../D	1,5	90	367	263	263	-	-	367	377	137	129	155	155	140		15,6	29
10SV03../D	2,2	90	399	298	298	-	-	399	409	151	134	174	174	140		16,6	34,7
10SV04../D	3	100	441	-	298	-	-	441	451	-	134	-	174	160		18,4	39,4
10SV05../D	4	112	473	-	319	473	259	473	483	-	154	-	197	160		19,3	45,7
10SV06../D	4	112	505	-	319	505	291	505	515	-	154	-	197	160		20,3	46,6
10SV07../D	5,5	132	604	-	375	604	323	604	614	-	168	-	214	300		26	63,5
10SV08../D	5,5	132	636	-	375	636	355	636	646	-	168	-	214	300		26,9	64,5
10SV09../D	7,5	132	668	-	367	668	387	668	678	-	191	-	256	300		27,9	83,6
10SV10../D	7,5	132	700	-	367	700	419	-	710	-	191	-	256	300		28,8	84,5
10SV11../D	7,5	132	732	-	367	732	451	-	742	-	191	-	256	300		29,7	85,5
10SV13../D	11	160	826	-	428	826	515	-	836	-	191	-	256	350		34,4	105
10SV15../D	11	160	890	-	428	890	579	-	900	-	191	-	256	350		36,3	107

10sv-2p60_d_td

LOWARA
a xylem brand

10SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

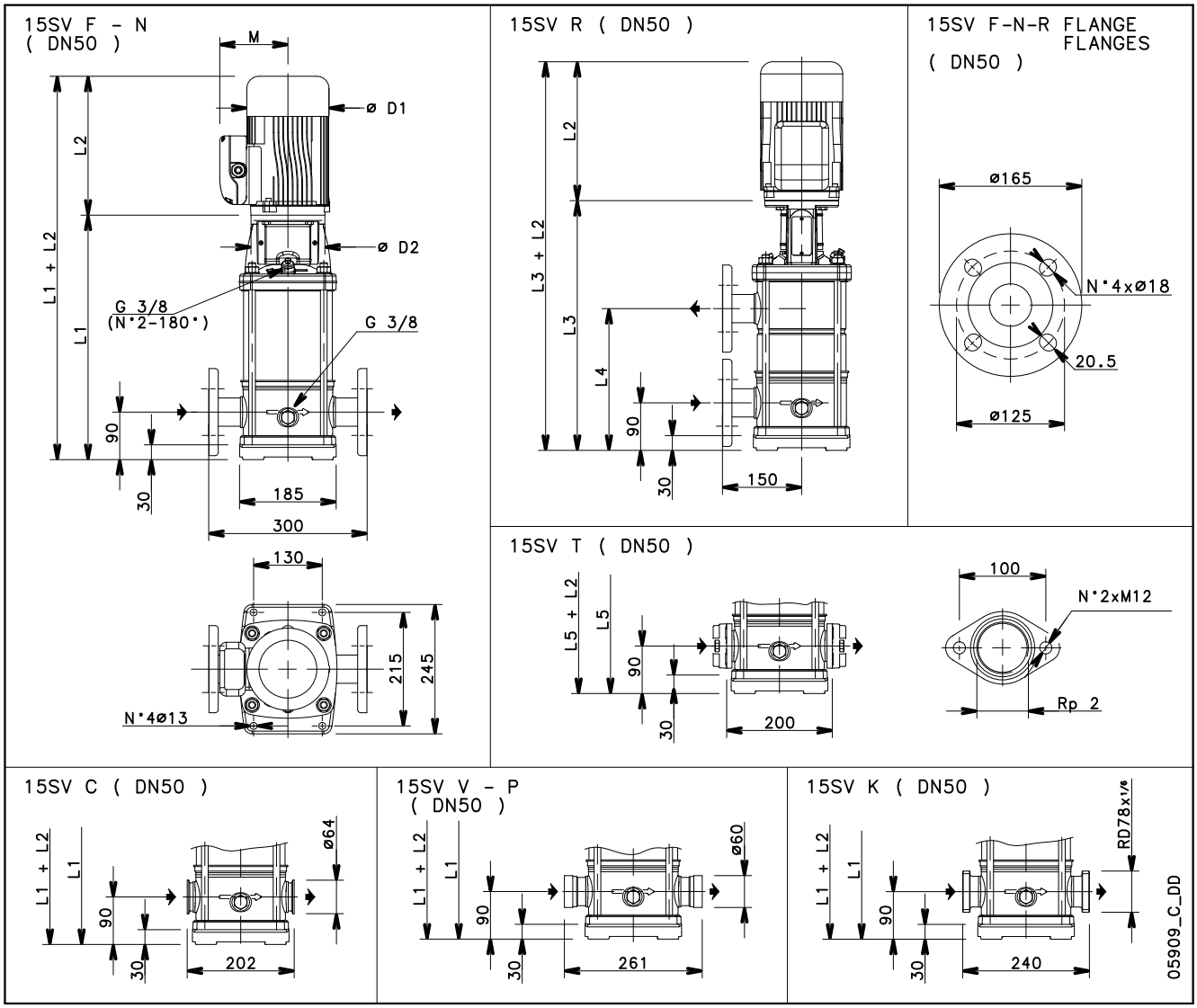
10SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

15SV SERIES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES



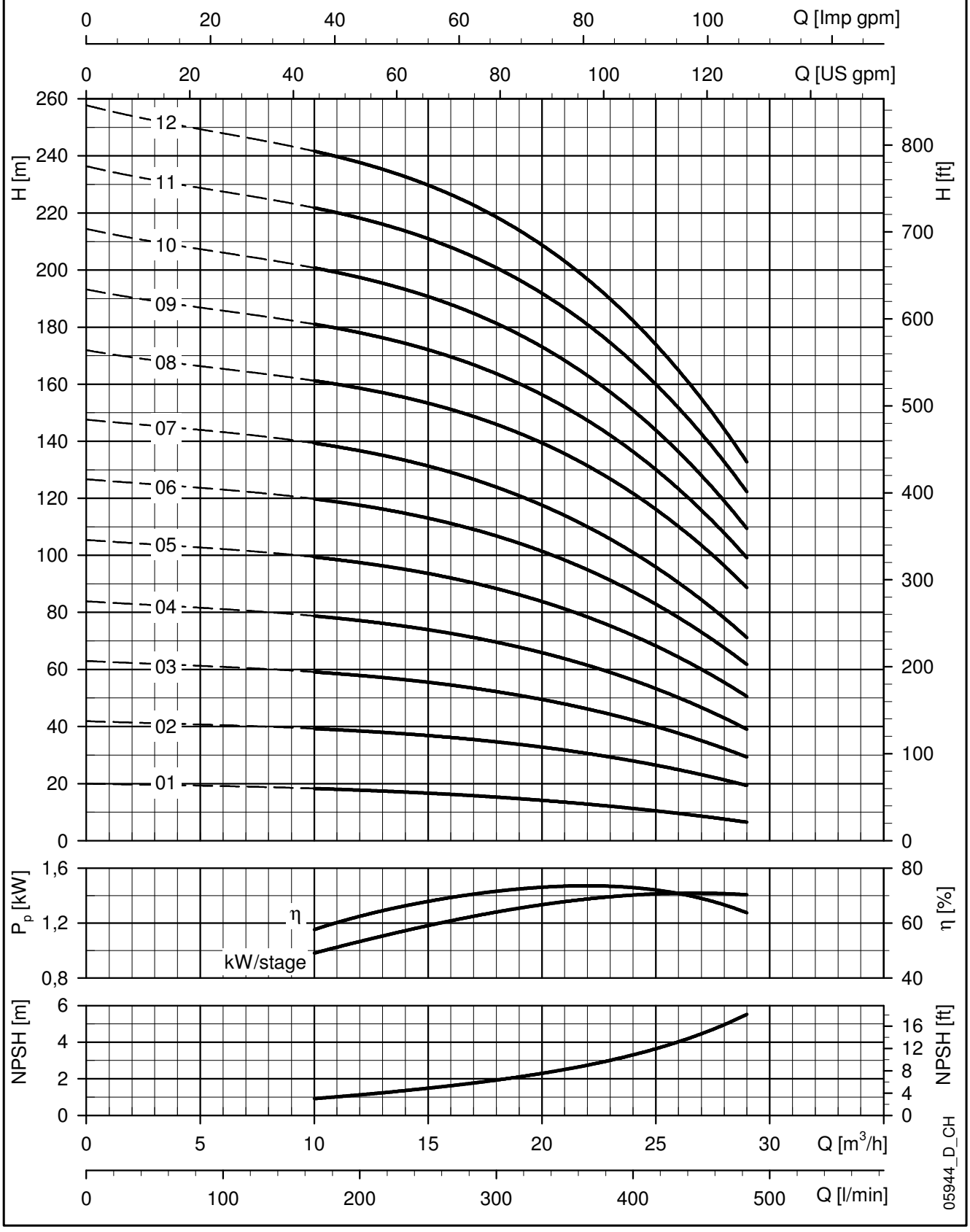
PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg	
				L2					M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	1 ~	3 ~	1 ~	3 ~	D2		PUMP	PUMP
15SV01../D	1,5	90	409	263	263	-	-	409	137	129	155	155	140		15,4	29
15SV02../D	3	100	419	-	298	-	-	419	-	134	-	174	160		17,7	38,7
15SV03../D	4	112	467	-	319	-	-	467	-	154	-	197	160		19	45,4
15SV04../D	5,5	132	582	-	375	582	301	582	-	168	-	214	300		25,2	62,7
15SV05../D	7,5	132	630	-	367	630	349	630	-	191	-	256	300		26,5	82,3
15SV06../D	11	160	708	-	428	708	397	708	-	191	-	256	350		30,6	101
15SV07../D	11	160	756	-	428	756	445	756	-	191	-	256	350		32	103
15SV08../D	15	160	804	-	494	804	493	-	-	240	-	313	350		33,3	136
15SV09../D	15	160	852	-	494	852	541	-	-	240	-	313	350		34,6	137
15SV10../D	15	160	900	-	494	900	589	-	-	240	-	313	350		36	138
15SV11../D	18,5	160	948	-	494	948	637	-	-	240	-	313	350		37,3	148
15SV12../D	18,5	160	996	-	494	996	685	-	-	240	-	313	350		38,6	150

15sv-2p60_d_td

LOWARA
a xylem brand

15SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

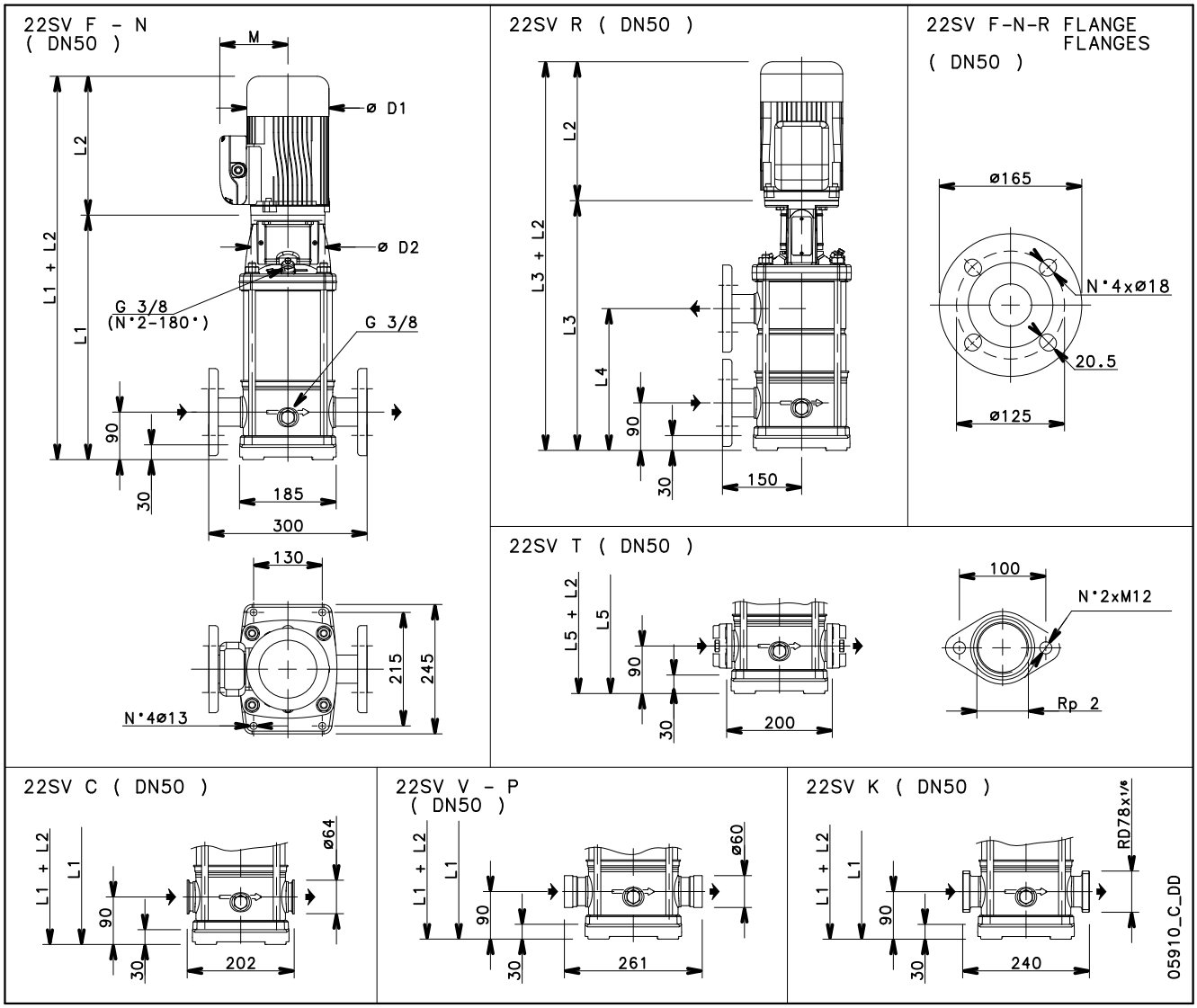
15SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

22SV SERIES
DIMENSIONS AND WEIGHTS AT 60Hz, 2 POLES

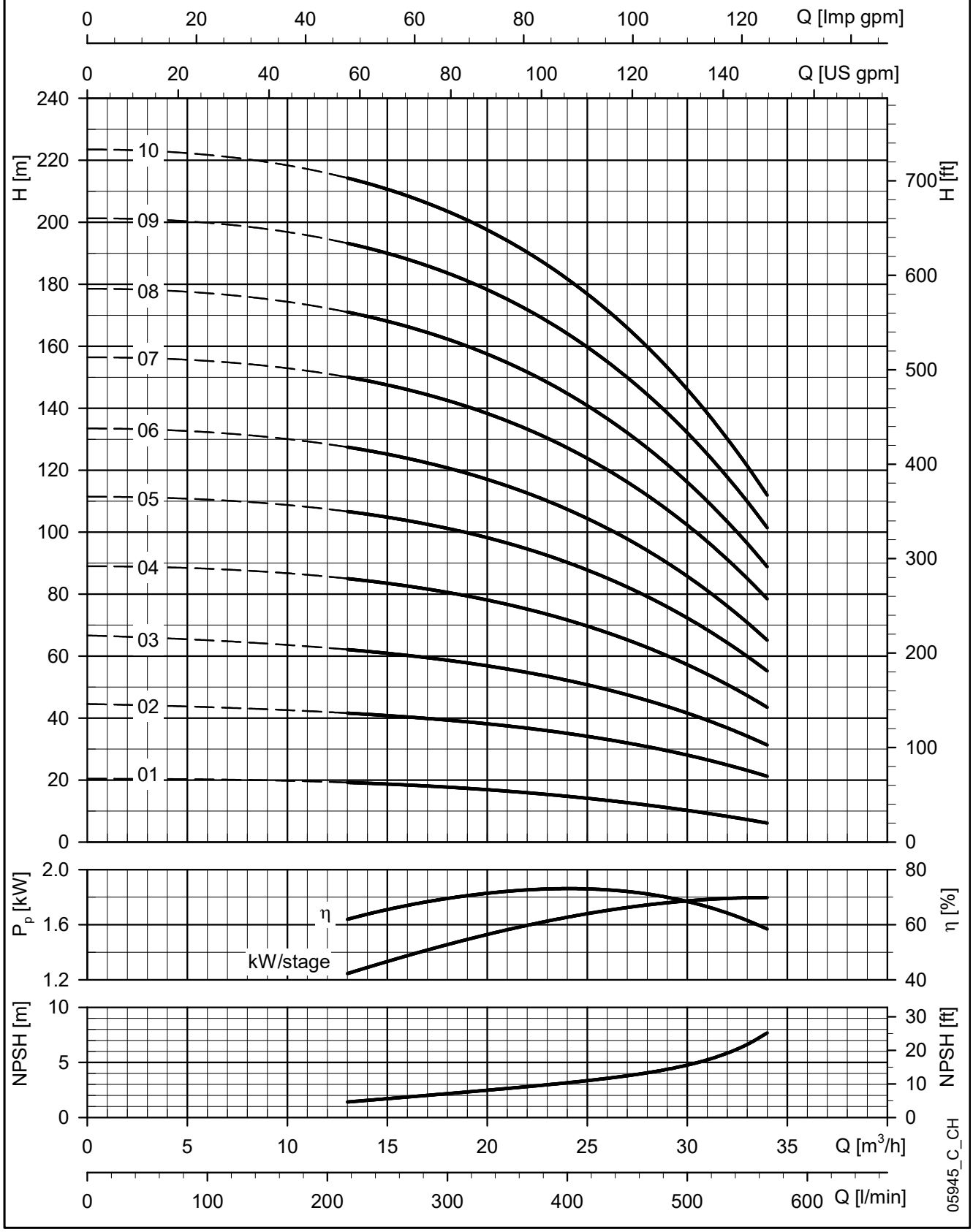


PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT kg	
				L2					M		D1					ELECTRIC
	kW	SIZE	L1	1 ~	3 ~	L3	L4	L5	1 ~	3 ~	1 ~	3 ~	D2		PUMP	PUMP
22SV01../D	2,2	90	409	298	298	-	-	409	151	134	174	174	140		15,9	34,1
22SV02../D	4	112	419	-	319	-	-	419	-	154	-	197	160		18,1	44,5
22SV03../D	5,5	132	534	-	375	-	-	534	-	168	-	214	300		24,3	61,8
22SV04../D	7,5	132	582	-	367	582	301	582	-	191	-	256	300		25,6	81,4
22SV05../D	11	160	660	-	428	660	349	660	-	191	-	256	350		29,8	100
22SV06../D	11	160	708	-	428	708	397	708	-	191	-	256	350		31,1	102
22SV07../D	15	160	756	-	494	756	445	756	-	240	-	313	350		32,4	135
22SV08../D	15	160	804	-	494	804	493	-	-	240	-	313	350		33,8	136
22SV09../D	18,5	160	852	-	494	852	541	-	-	240	-	313	350		35,1	146
22SV10../D	18,5	160	900	-	494	900	589	-	-	240	-	313	350		36,4	148

22sv-2p60_d_td

22SV SERIES
OPERATING CHARACTERISTICS AT 60Hz, 2 POLES

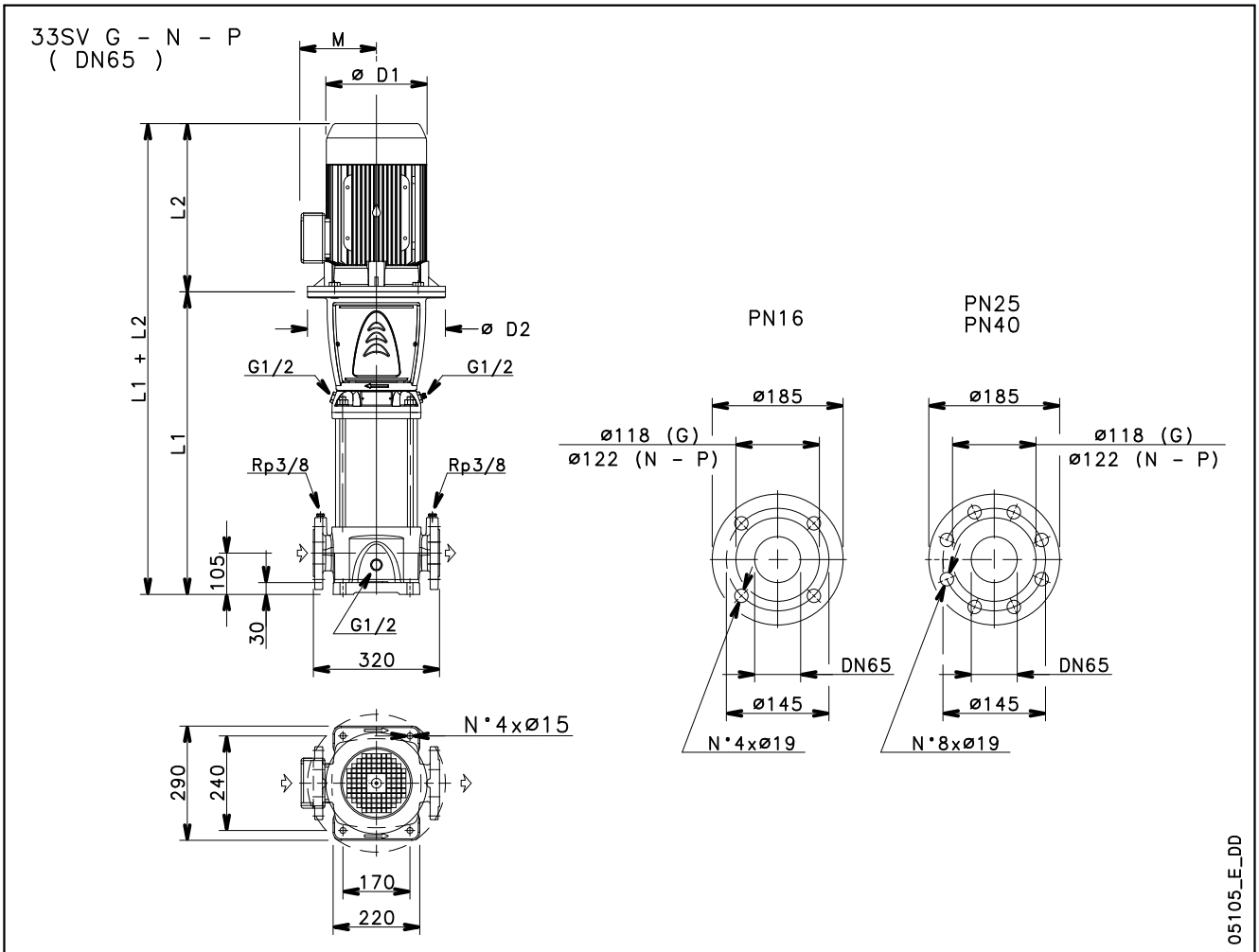
22SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

33SV SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



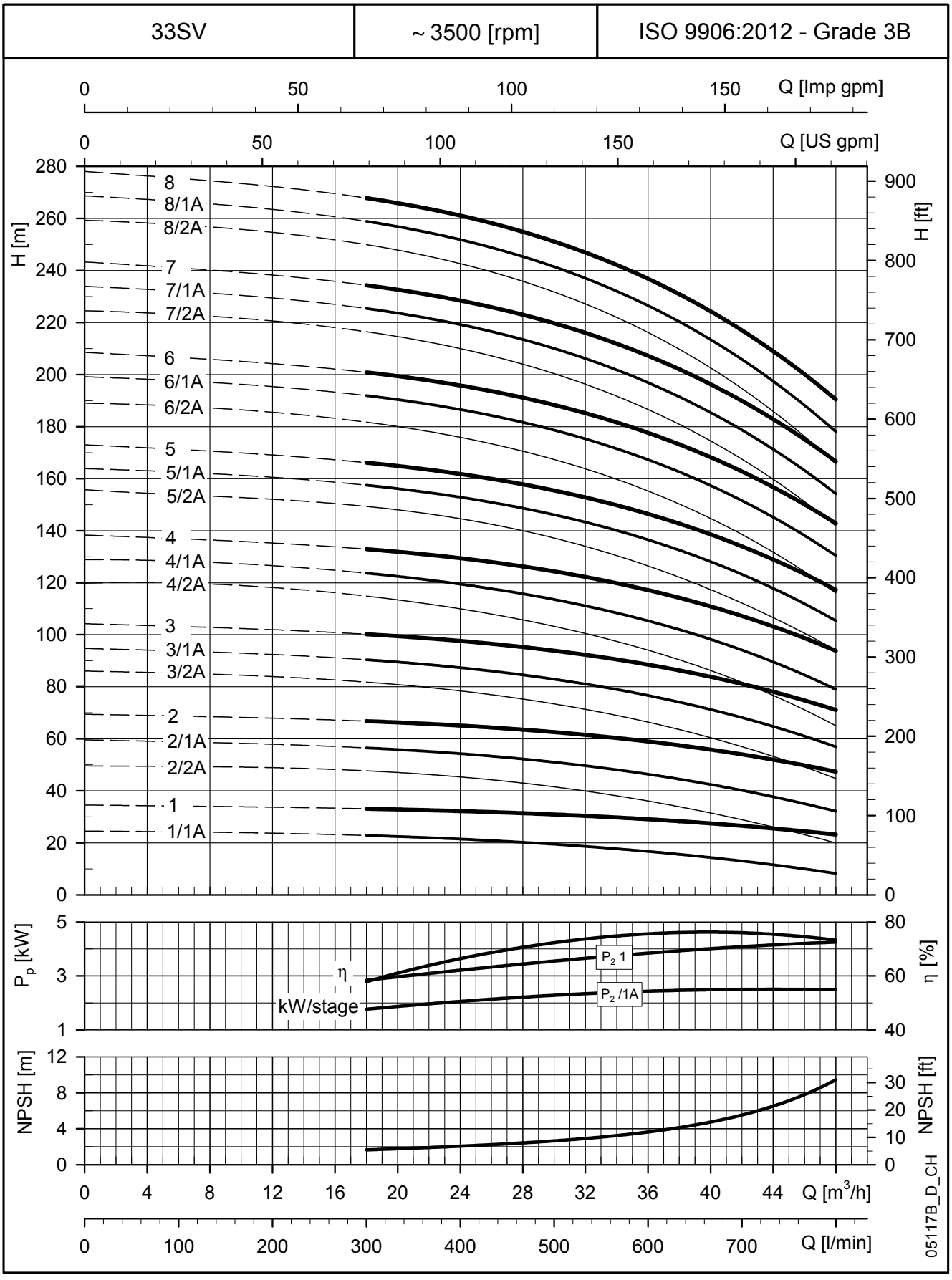
PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
33SV1/1A../D	3	100	489	298	174	160	134	16	52	73
33SV1../D	5,5	132	509	375	214	300	168	16	57	95
33SV2/2A../D	5,5	132	584	375	214	300	168	16	61	99
33SV2/1A../D	7,5	132	584	367	256	300	191	16	61	117
33SV2../D	11	160	619	428	256	350	191	16	65	136
33SV3/2A../D	11	160	694	428	256	350	191	16	69	140
33SV3/1A../D	11	160	694	428	256	350	191	16	69	140
33SV3../D	15	160	694	494	313	350	240	16	69	171
33SV4/2A../D	15	160	769	494	313	350	240	16	73	175
33SV4/1A../D	15	160	769	494	313	350	240	25	73	175
33SV4../D	18,5	160	769	494	313	350	240	25	73	184
33SV5/2A../D	18,5	160	844	494	313	350	240	25	76,7	188
33SV5/1A../D	22	180	844	494	313	350	240	25	77,7	200
33SV5../D	22	180	844	494	313	350	240	25	77,7	200
33SV6/2A../D	22	180	919	494	313	350	240	25	81,6	204
33SV6/1A../D	30	200	919	671	408	400	285	25	88,5	297
33SV6../D	30	200	919	671	408	400	285	25	88,5	297
33SV7/2A../D	30	200	994	671	408	400	285	25	92,3	300
33SV7/1A../D	30	200	994	671	408	400	285	25	92,3	300
33SV7../D	30	200	994	671	408	400	285	25	92,3	300
33SV8/2A../D	37	200	1069	671	408	400	285	40	100,7	325
33SV8/1A../D	37	200	1069	671	408	400	285	40	100,7	325
33SV8../D	37	200	1069	671	408	400	285	40	100,7	325

33sv-2p60_e_td

LOWARA
a xylem brand

33SV SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

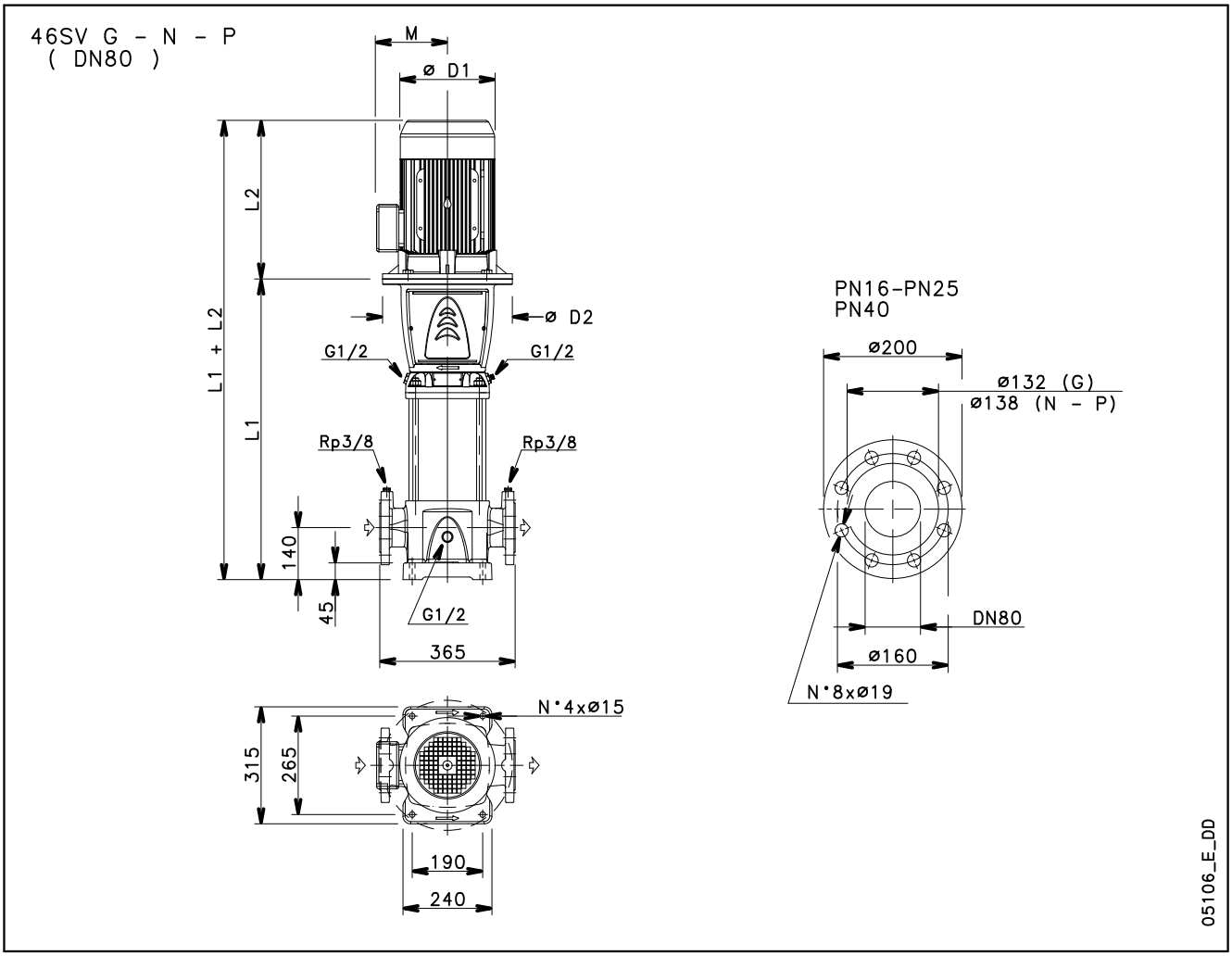
33SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

46SV SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES

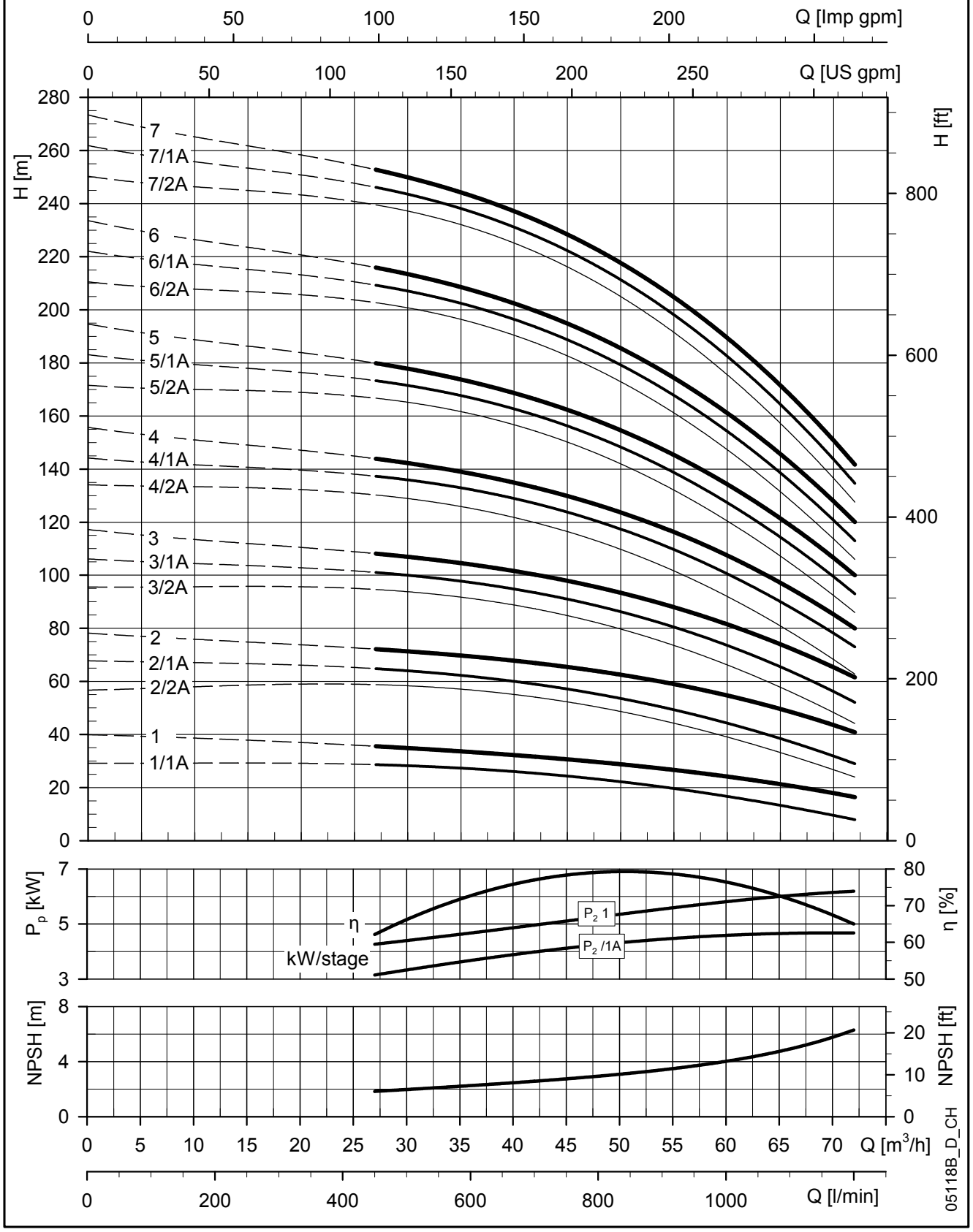


PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
46SV1/1A../D	5,5	132	549	375	214	300	168	16	63	101
46SV1../D	7,5	132	549	367	256	300	191	16	63	119
46SV2/2A../D	11	160	659	428	256	350	191	16	70	141
46SV2/1A../D	11	160	659	428	256	350	191	16	70	141
46SV2../D	15	160	659	494	313	350	240	16	70	172
46SV3/2A../D	18,5	160	734	494	313	350	240	16	74	185
46SV3/1A../D	18,5	160	734	494	313	350	240	16	74	185
46SV3../D	18,5	160	734	494	313	350	240	16	74	185
46SV4/2A../D	22	180	809	494	313	350	240	16	79	201
46SV4/1A../D	30	200	809	671	408	400	285	16	86	294
46SV4../D	30	200	809	671	408	400	285	16	86	294
46SV5/2A../D	30	200	884	671	408	400	285	25	89,9	298
46SV5/1A../D	30	200	884	671	408	400	285	25	89,9	298
46SV5../D	30	200	884	671	408	400	285	25	89,9	298
46SV6/2A../D	37	200	959	671	408	400	285	25	93,7	318
46SV6/1A../D	37	200	959	671	408	400	285	25	93,7	318
46SV6../D	37	200	959	671	408	400	285	25	93,7	318
46SV7/2A../D	45	225	1034	701	460	450	309	40	104,9	397
46SV7/1A../D	45	225	1034	701	460	450	309	40	104,9	397
46SV7../D	45	225	1034	701	460	450	309	40	104,9	397

LOWARA
a xylem brand

46SV SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

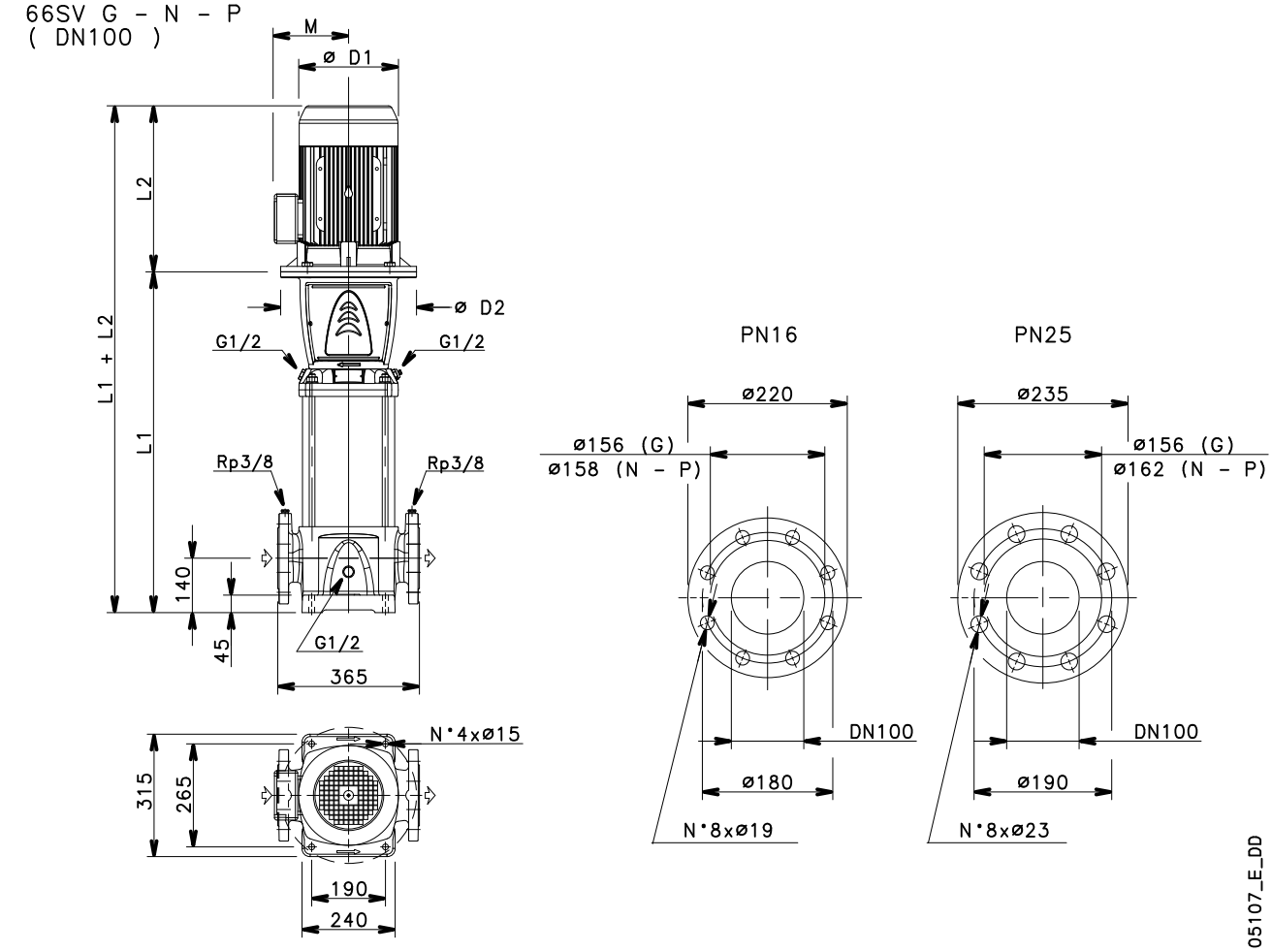
46SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

66SV SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



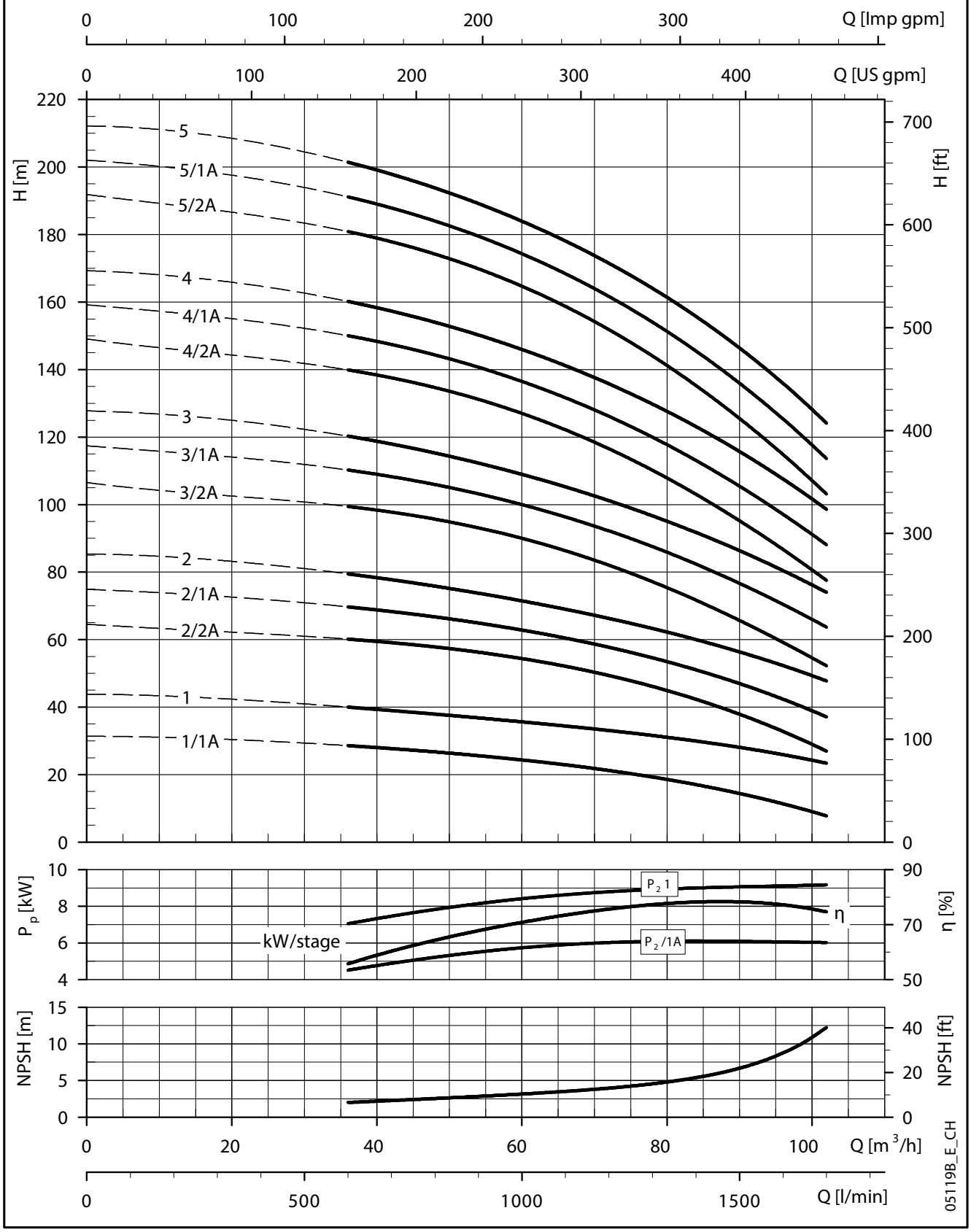
PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
66SV1/1A../D	7,5	132	574	367	256	300	191	16	72	128
66SV1../D	11	160	609	428	256	350	191	16	76	147
66SV2/2A../D	15	160	699	494	313	350	240	16	81	183
66SV2/1A../D	18,5	160	699	494	313	350	240	16	81	192
66SV2../D	18,5	160	699	494	313	350	240	16	81	192
66SV3/2A../D	22	180	789	494	313	350	240	16	87	209
66SV3/1A../D	30	200	789	671	408	400	285	16	94	302
66SV3../D	30	200	789	671	408	400	285	16	94	302
66SV4/2A../D	37	200	879	671	408	400	285	16	100	324
66SV4/1A../D	37	200	879	671	408	400	285	25	102	326
66SV4../D	37	200	879	671	408	400	285	25	102	326
66SV5/2A../D	45	225	969	701	460	450	309	25	111	403
66SV5/1A../D	45	225	969	701	460	450	309	25	111	403
66SV5../D	45	225	969	701	460	450	309	25	111	403

66sv-2p60_c_td

LOWARA
a xylem brand

66SV SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

66SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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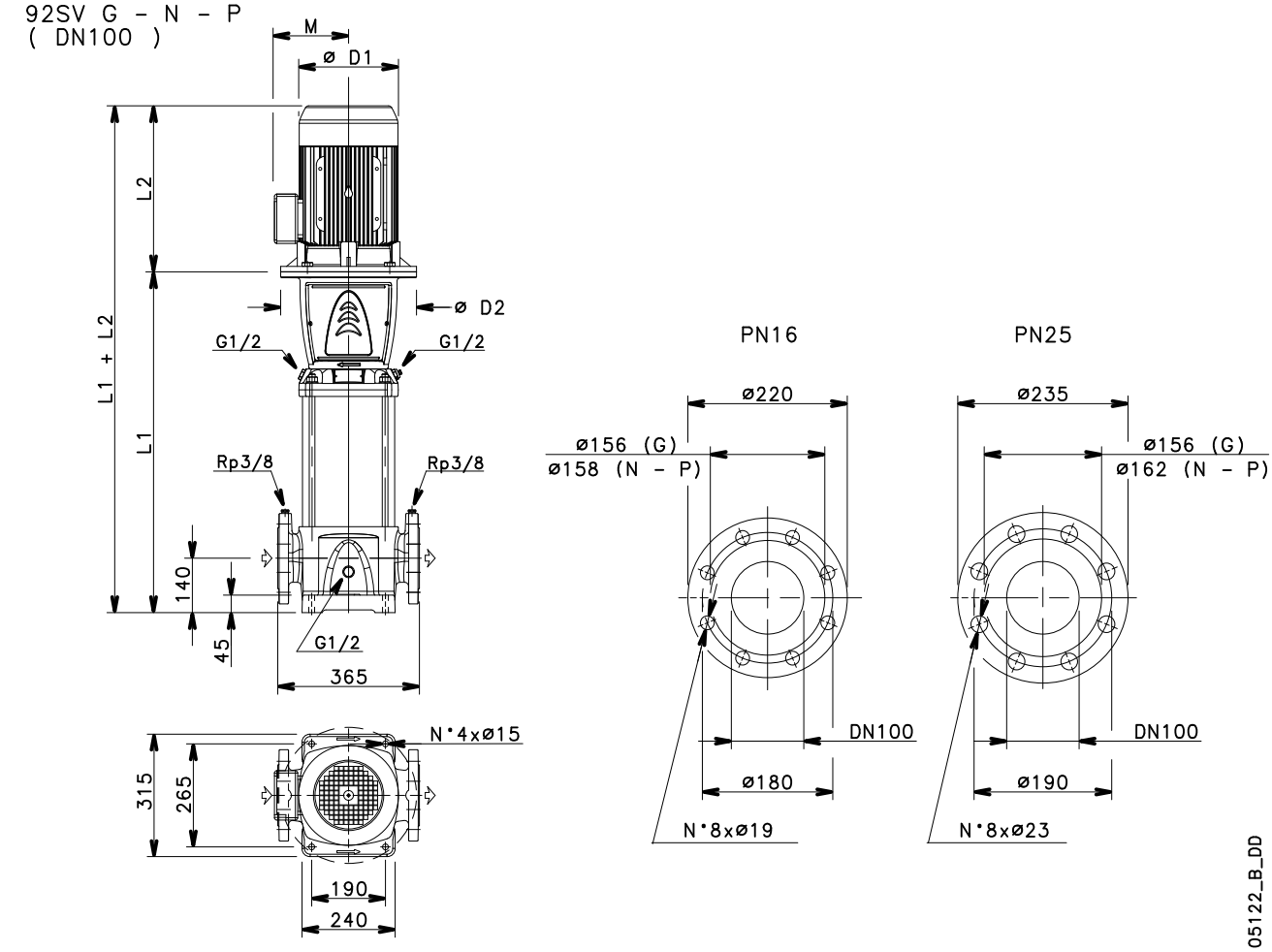
92SV SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



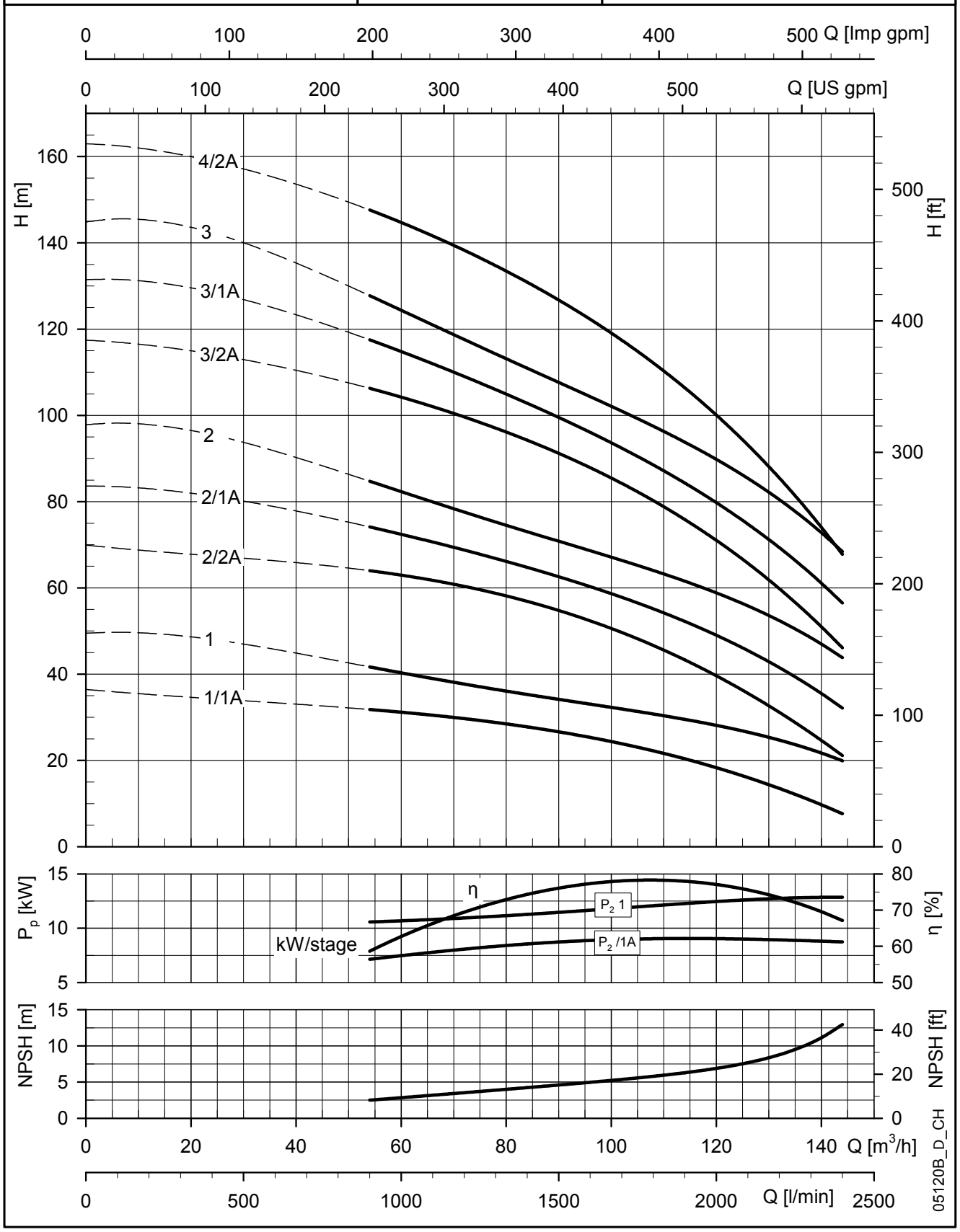
PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
92SV1/1A../D	11	160	609	428	256	350	191	16	75	146
92SV1../D	15	160	609	494	313	350	240	16	75	177
92SV2/2A../D	18,5	160	699	494	313	350	240	16	80	191
92SV2/1A../D	22	180	699	494	313	350	240	16	82	204
92SV2../D	30	200	699	671	408	400	285	16	89	297
92SV3/2A../D	37	200	789	671	408	400	285	16	94	318
92SV3/1A../D	37	200	789	671	408	400	285	16	94	318
92SV3../D	45	225	789	701	460	450	309	16	97	389
92SV4/2A../D	45	225	879	701	460	450	309	16	103	395

92sv-2p60_c_td

LOWARA
a xylem brand

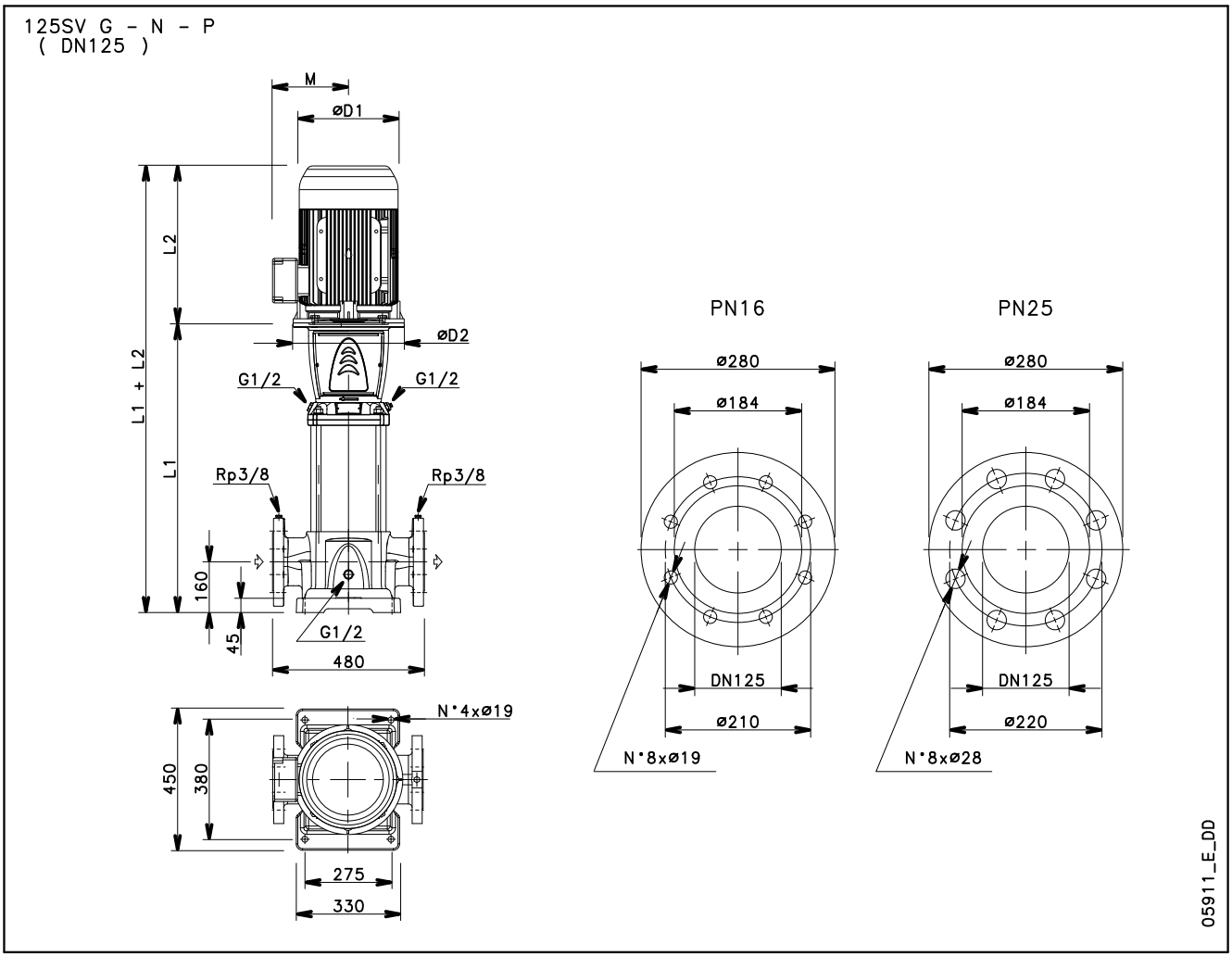
92SV SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

92SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

125SV SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)						WEIGHT kg	
	kW	SIZE	L1	L2	D1	D2	M	PN	PUMP	ELECTRIC PUMP
125SV1../D	15	160	728	494	313	350	240	16	120	222
125SV2/2A../D	22	180	878	494	313	350	240	16	132	253
125SV3/3B../D	30	200	1028	671	408	400	285	16	149	357
125SV3../D	37	200	1028	671	408	400	285	16	150	374
125SV4/4A../D	45	225	1178	701	460	450	309	16	164	456
125SV5/5A../D	55	250	1358	767	502	550	362	25	189	631

125sv-2p60_d_td

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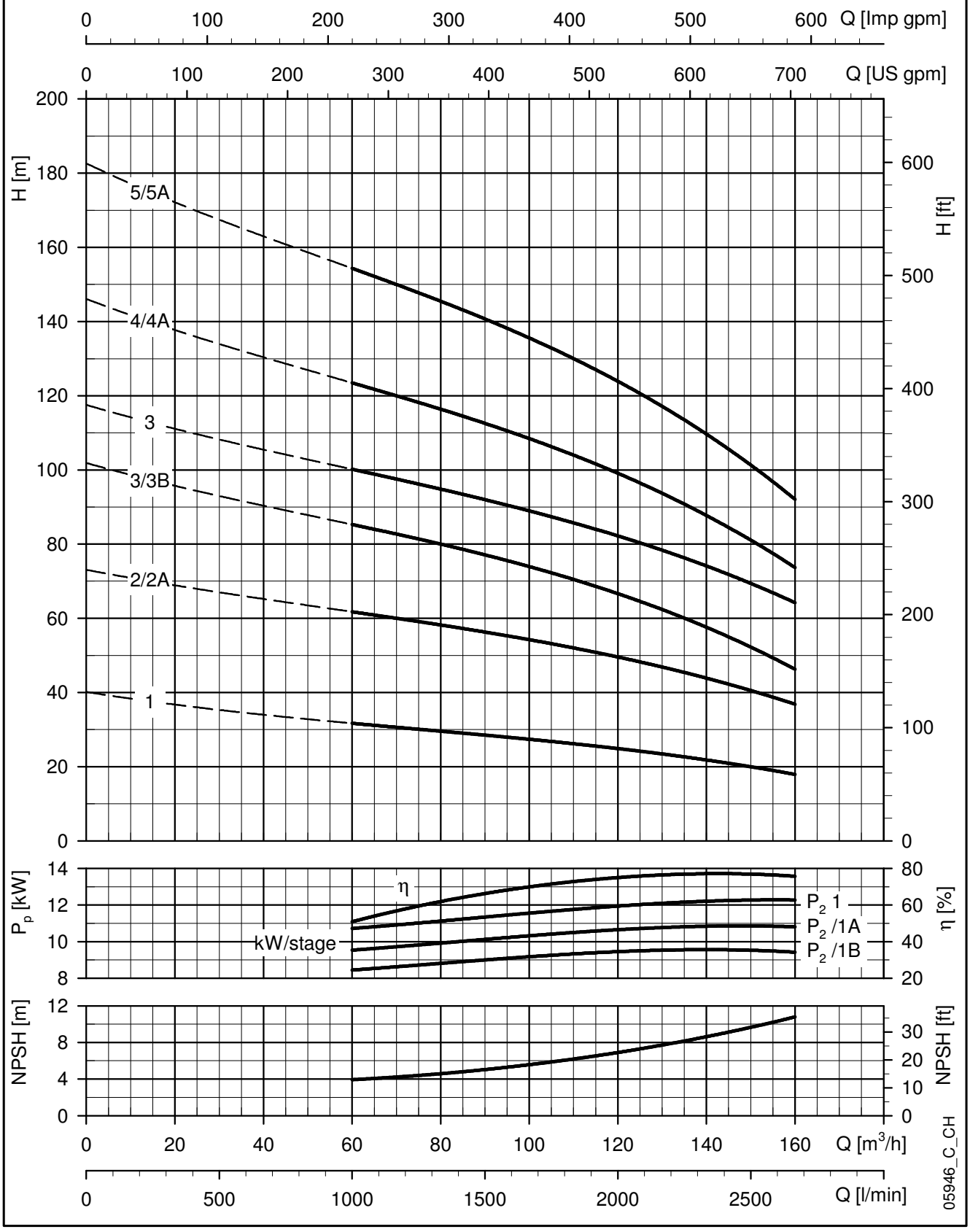
125SV SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

125SV	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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e-SVH:
e-SV with HYDROVAR

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:
3SV**H**16F015T **/2**
3SV**H**16F015T **/3**
3SV**H**16F015T **/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 sensors(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

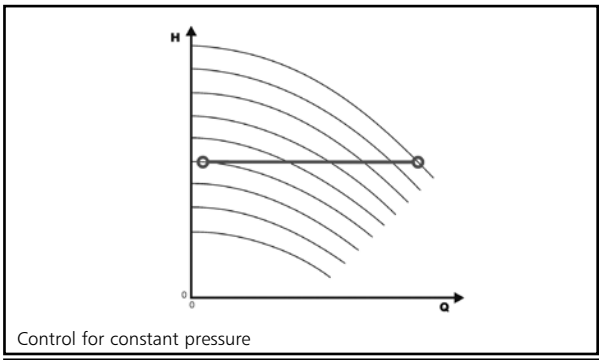
The basic function of the HYDROVAR device is to control the pump to meet the system demands.

HYDROVAR performs these functions by:

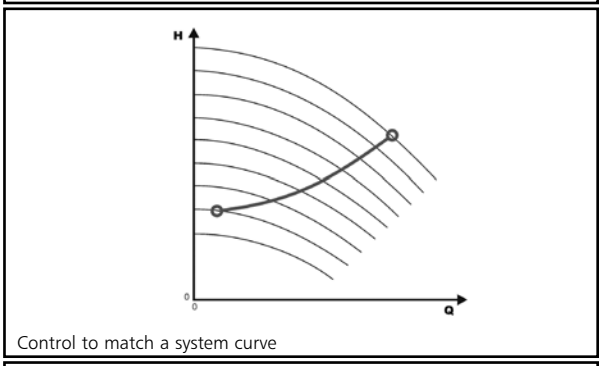
1) Measuring the system pressure or flow via a transmitter mounted on the pump's delivery side.
2) Calculating the motor speed to maintain the correct flow or pressure.
3) Sending out a signal to the pump to start the motor, increase speed, decrease speed or stop.
4) In the case of multiple pump installations, 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:

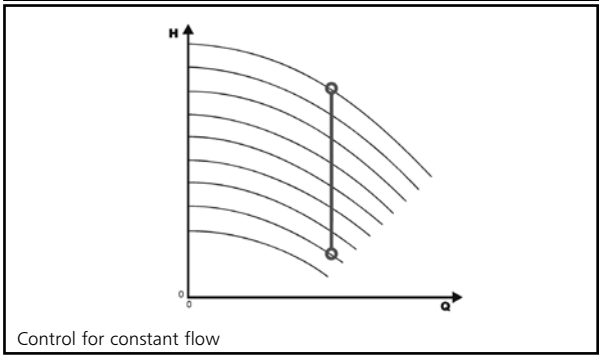
- Stop the pump(s) at zero demand.
- Stop the pump(s) in case of water failure on the suction side (protection against dry running).
- Stop the pump if the required delivery exceeds the pump's capacity (protection against cavitation caused by excessive demand), or automatically switch on the next pump 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.



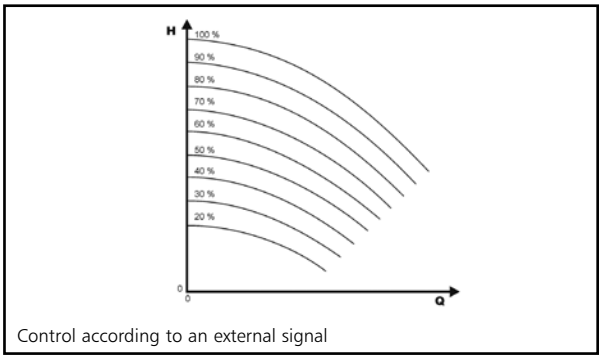
Control for constant pressure



Control to match a system curve



Control for constant flow



Control according to an external signal

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e-SVH SERIES
HYDROVAR (ErP 2009/125/EC)

From 1 July 2021 in accordance with the new **Regulations (EU) 2019/1781** and **2021/341** the **variance speed drives** with **three-phase input/output current**, rated voltage between **100 V** and **1000 V**, rated for operating with motors included in the same regulation (**0,12- 1000 kW**), must have efficiency level **IE2**.
The tables below also contain the mandatory information pursuant to Annex I, section 4, of the Regulations.

PN	Phase	UNin	Pa	Power losses (PL) with 10 KHz frequency % Pa (% rated speed; % rated torque)									
kW		V	kVA	stand-by	0;25	0;50	0;100	50;25	50;50	50;100	90;50	90;100	IE
1,5	~1	208-240	not included in regulation										
2,2													
3													
4													
1,5	~3	208-240	2,45	0,4%	1,3%	1,6%	1,9%	1,4%	1,7%	2,5%	2,0%	3,1%	2
2,2			3,46	0,3%	1,3%	1,6%	2,4%	1,4%	1,8%	2,7%	2,0%	3,3%	
3			5,15	0,2%	1,1%	1,4%	2,2%	1,3%	1,7%	2,6%	1,9%	3,2%	
4			6,00	0,2%	1,1%	1,3%	2,1%	1,3%	1,6%	2,5%	1,9%	3,1%	
5,5			7,90	0,1%	0,9%	1,1%	1,8%	1,0%	1,4%	2,4%	1,7%	3,2%	
7,5			10,1	0,1%	0,7%	0,9%	1,5%	0,8%	1,1%	2,1%	1,4%	3,1%	
11			15,1	0,1%	0,7%	0,9%	1,7%	0,8%	1,2%	2,3%	1,4%	3,0%	
1,5		380-460	2,56	0,4%	1,2%	1,5%	1,8%	1,3%	1,6%	2,1%	1,6%	2,3%	
2,2			3,67	0,3%	1,2%	1,3%	1,7%	1,3%	1,5%	2,1%	1,6%	2,3%	
3			5,00	0,2%	1,1%	1,1%	1,5%	1,2%	1,4%	2,1%	1,5%	2,2%	
4			6,20	0,2%	1,0%	0,9%	1,4%	1,1%	1,4%	2,0%	1,4%	2,2%	
5,5			8,30	0,2%	0,8%	0,8%	1,3%	0,9%	1,2%	1,9%	1,3%	2,2%	
7,5			10,7	0,1%	0,7%	0,6%	1,2%	0,7%	1,0%	1,8%	1,2%	2,3%	
11			15,9	0,1%	0,6%	0,6%	1,2%	0,7%	1,0%	1,8%	1,2%	2,2%	
15			21,5	0,1%	0,5%	0,6%	1,2%	0,6%	0,9%	1,6%	1,1%	2,0%	
18,5			25,6	0,1%	0,5%	0,6%	1,2%	0,6%	0,8%	1,6%	1,0%	1,9%	
22			29,4	0,0%	0,5%	0,7%	1,3%	0,6%	0,9%	1,6%	1,0%	2,1%	

hvl-pl-en_a_te

P_N	~	U_{Nin}	Manufacturer: Xylem Service Italia Srl Reg. No. 07520560967 Montecchio Maggiore (VI) - Italia	f_{Nin}	I_{Nin}	U_{nout}	f_{Nout}	I_{Nin}	Operating conditions*		
									Altitude	T.amb	ATEX
kW		V	Model	Hz	max A	V	Hz	max A	asl m	min/max °C	
1,5	1	208-240	HVL 2.015-..	50/60	11,6	0-100% U_{Nin}	15-70	7,5	≤1000	-15/40	No
2,2			HVL 2.022-..		1			15,1			
3			HVL 2.030-..		22,3			14,3			
4			HVL 2.040-..		27,6			16,7			
1,5	3	208-240	HVL 3.015-..		7			7,5			
2,2			HVL 3.022-..		9,1			10			
3			HVL 3.030-..		13,3			14,3			
4			HVL 3.040-..		16,5			16,7			
5,5			HVL 3.055-..		23,5			24,2			
7,5			HVL 3.075-..		29,6			31			
11			HVL 3.110-..		3			43,9			
1,5		380-460	HVL 4.015-..		3,9			4,1			
2,2			HVL 4.022-..		5,3			5,7			
3			HVL 4.030-..		7,2			7,3			
4			HVL 4.040-..		10,1			10			
5,5			HVL 4.055-..		12,8			13,5			
7,5			HVL 4.075-..		16,9			17			
11			HVL 4.110-..		24,2			24			
15			HVL 4.150-..		33,3			32			
18,5			HVL 4.185-..		38,1			38			
22			HVL 4.220-..		44,7			44			

*up to 2000 meters or maximum 55°C reducing the supplied power

hvl-en_a_te

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HYDROVAR HVL
IDENTIFICATION CODE

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

Name [3 digits]
[HVL] = HYDROVAR generation L

Power supply [2 digits]
[2.] = 1~ 208-240 V (50/60 Hz)
[3.] = 3~ 208-240 V (50/60 Hz)
[4.] = 3~ 380-460 V (50/60 Hz)

Rated output power
[3 digits]
kW x 10

EXAMPLE: **HVL4.075-A0010**

HVL=HYDROVAR generation L, **4.**=3~ 380-460 V power supply, **075**=7,5kW rated output power, **A**=IP55 (Type1) enclosure class, **0**=Standard Bus communication, **0**=no optional card, **1**=internal display installed, **0**=no other options installed.
NOTE: HYDROVAR output voltage is three phase.

Bus communication [1 digit]
0 = Standard Communication (Modbus, Bacnet)
1 = reserved for future use
2 = reserved for future use
3 = reserved for future use
4 = reserved for future use
5 = reserved for future use
6 = reserved for future use

Enclosure class (IP class) [1 digit]
[A] = IP55 (Type1)
[B] = reserved for future use

Optional cards [1 digit]
[0] = no optional cards (as standard)
[1] = Premium Card (option supplied loose)

Display [1 digit]
[0] = reserved for future use
[1] = Internal display installed as standard

Other options [1 digit]
[0] = reserved for future use

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

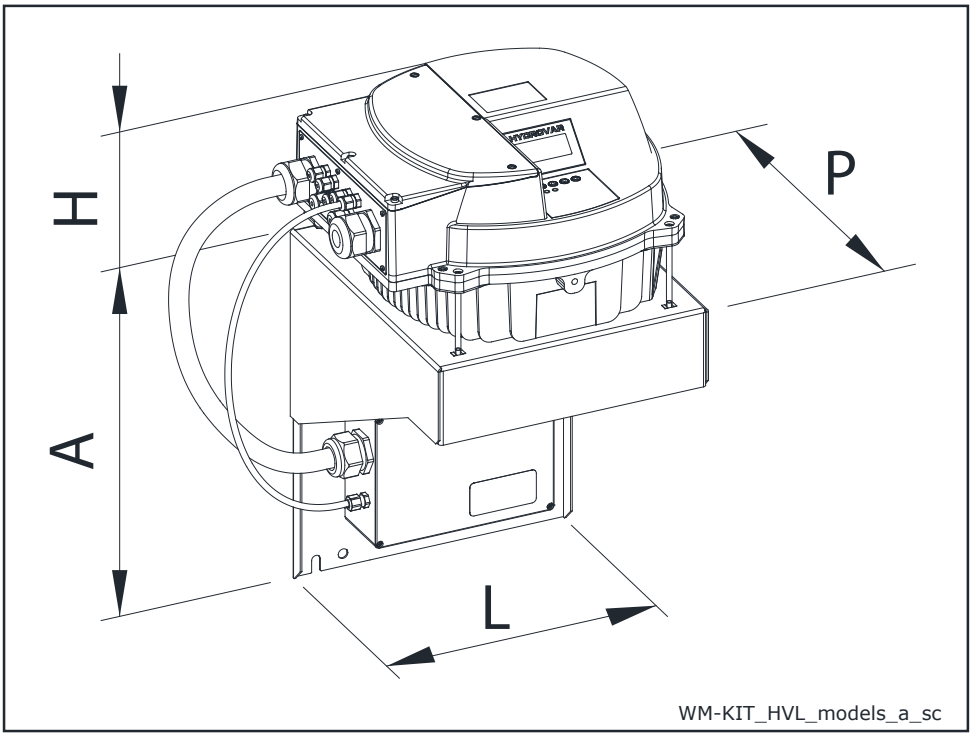
Sensors

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_HVL_models_a_sc

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			240	175	258	290	10,5	8,2
WM KIT HVL 3.075	7,5		C	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

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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^3/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

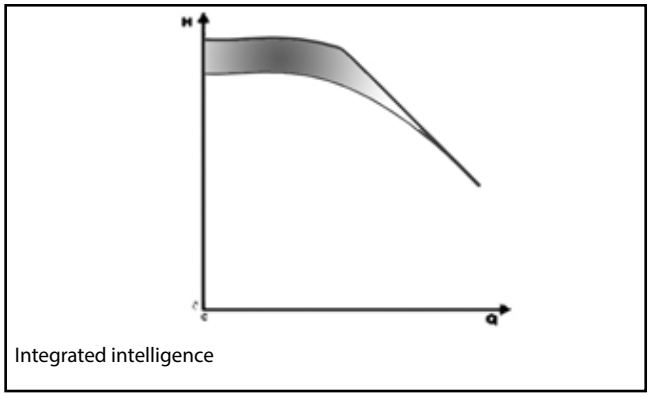
(Product information)

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)

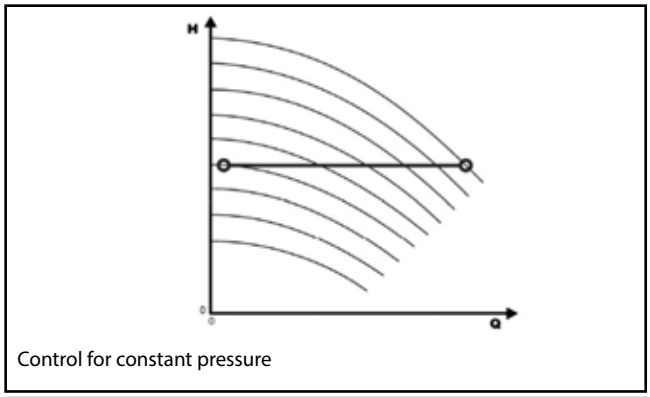
e-SV Smart series is equipped with an intelligent control that optimizes hydraulic performance while minimizing waste.

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").

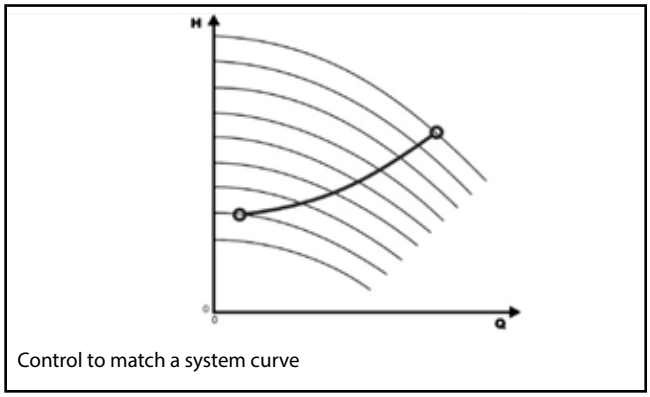


Integrated intelligence

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.



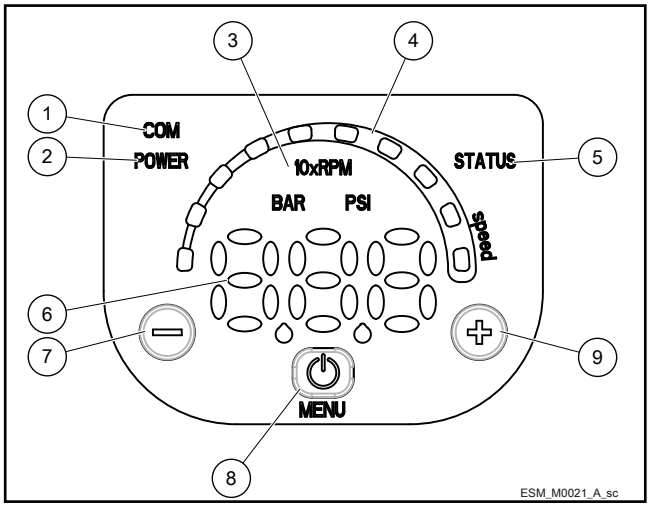
Control for constant pressure



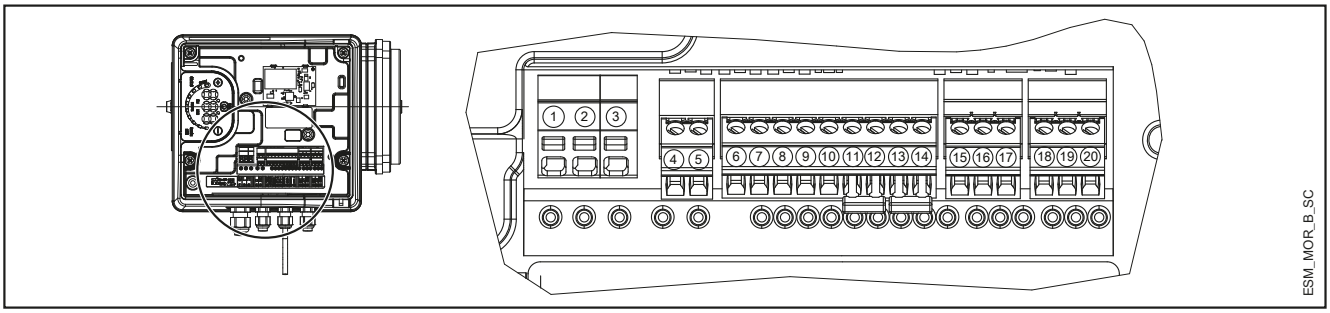
Control to match a system curve

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



e-SVE SERIES
SINGLE PHASE TERMINAL BLOCK



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	Communication bus	RS485 port 1: RS485-1N B (-)
16		RS485 port 1: RS485-1P A (+)
17		Electronic GND
18	Communication bus	RS485 port 2: RS485 port 2: RS485-2N B (-) active only with optional module
19		RS485 port 2: RS485 port 2: RS485-2P A (+) active only with optional module
20		Electronic GND

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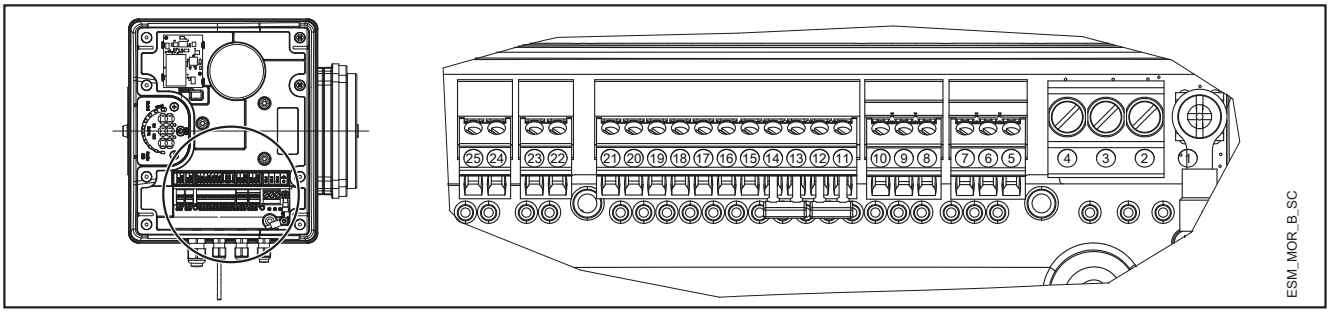
THREE-PHASE TERMINAL BLOCK



REF.	ITEM	DESCRIPTION
5	Communication bus	Electronic GND
6		RS485 port 1: RS485-1P A (+)
7		RS485 port 1: RS485-1N B (-)
8	Communication bus	Electronic GND
9		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	Motor running signal	Normally open contact
23		Common contact
24	Fault Signal	NO - error status relay
25		COM - error status relay

MorsT-en_a_sc

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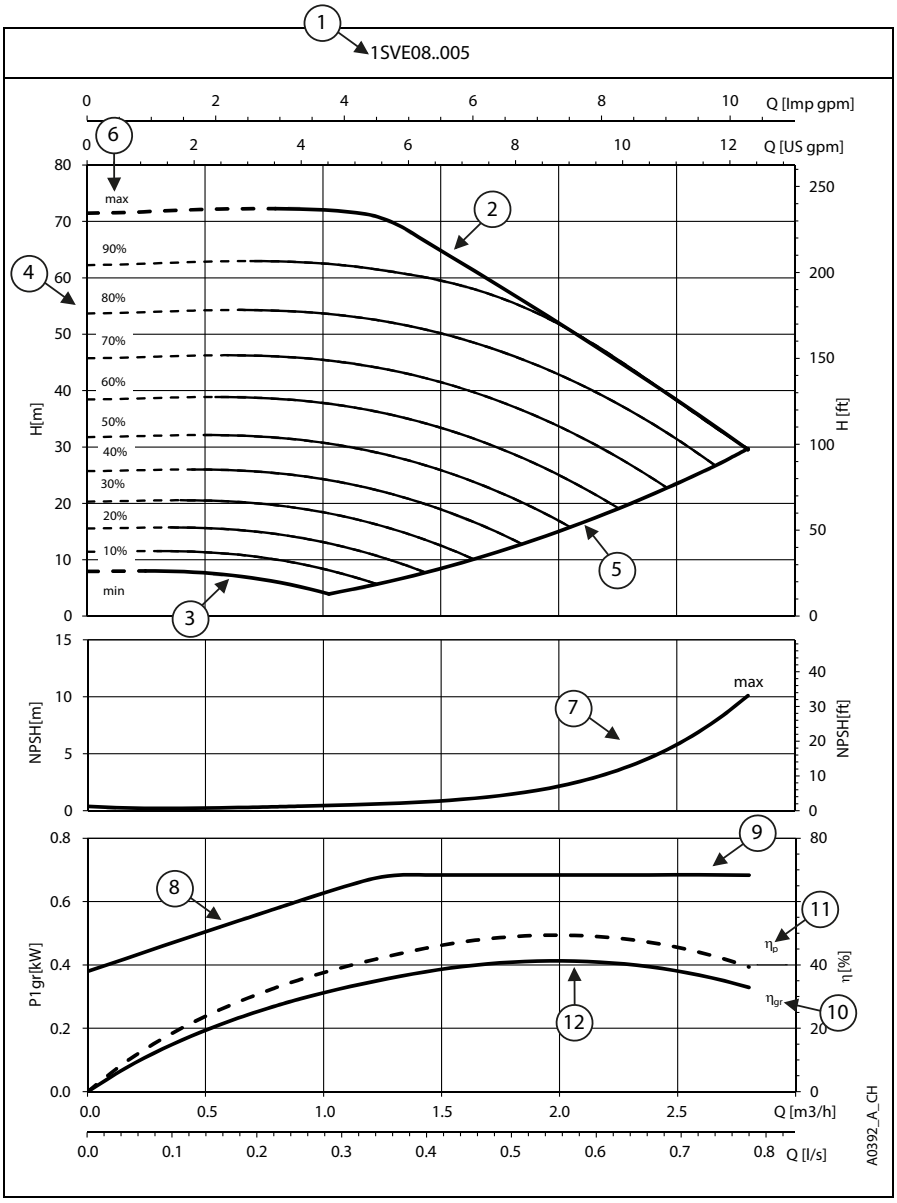
e-SVE SERIES
HOW TO READ SMART PUMP SERIES CURVES

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



① **Pump model**

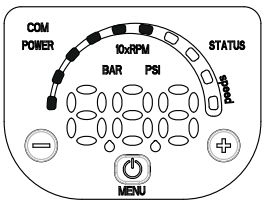
② **Maximum speed curve**: equal to 3600 rpm

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 **$P1_{gr}$** 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 **η_{gr}** is the efficiency of pump+motor+drive system working at maximum speed.

⑪ **η_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.

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e-SVE SERIES - SINGLE PHASE VERSION
HYDRAULIC PERFORMANCES TABLE

PUMP	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	6,7	13,3	20,0	26,7	33,3	40,0	46,7
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	0,4	0,8	1,2	1,6	2,0	2,4	2,8
Single-phase	kW	1x230 V	kW	A	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	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	13,3	26,7	40,0	53,3	66,7	80,0	86,7
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	0,8	1,6	2,4	3,2	4,0	4,8	5,2
Single-phase	kW	1x230 V	kW	A	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..015POM	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	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	23,3	46,7	70,0	93,3	116,7	140,0	166,7
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	1,4	2,8	4,2	5,6	7,0	8,4	10,0
Single-phase	kW	1x230 V	kW	A	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	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	40,0	80,0	120,0	160,0	200,0	240,0	283,3
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	2,4	4,8	7,2	9,6	12,0	14,4	17,0
Single-phase	kW	1x230 V	kW	A	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	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	70,0	140,0	210,0	280,0	350,0	420,0	483,3
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	4,2	8,4	12,6	16,8	21,0	25,2	29,0
Single-phase	kW	1x230 V	kW	A	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	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	70,0	140,0	210,0	280,0	350,0	420,0	500,0
SVE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	4,2	8,4	12,6	16,8	21,0	25,2	30,0
Single-phase	kW	1x230 V	kW	A	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: P1 = input power; I = input current.

1-22sve-esm-2p50-en_a_th

LOWARA
a xylem brand

e-SVE SERIES - THREE PHASE VERSION
HYDRAULIC PERFORMANCES TABLE

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	6,7	13,3	20,0	26,7	33,3	40,0	46,7
						m3/h 0	0,4	0,8	1,2	1,6	2,0	2,4	2,8
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
1SVE05..03T..	0,37	ESM90R/303 SVE	0,49	2,14	1,45	44,7	45,0	45,2	44,6	41,5	34,9	28,0	20,8
1SVE08..05T..	0,55	ESM90R/305 SVE	0,69	2,81	1,90	71,5	72,0	72,3	71,2	62,4	52,1	41,2	29,7
1SVE11..07T..	0,75	ESM90R/307 SVE	0,91	3,55	2,40	98,3	99,1	99,3	97,7	85,0	70,9	56,0	40,1
1SVE15..11T..	1,1	ESM90R/311 SVE	1,37	4,94	3,45	134,1	135,1	135,5	133,8	123,6	104,0	83,3	61,4
1SVE20..15T..	1,5	ESM90R/315 SVE	1,82	6,34	4,41	178,9	180,1	180,6	178,4	168,1	141,7	114,0	84,7
1SVE26..22T04	2,2	ESM90R/322 SVE	2,53	-	5,85	232,5	234,0	235,0	231,6	222,2	204,4	170,0	130,7

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	13,3	26,7	40,0	53,3	66,7	80,0	86,7
						m3/h 0	0,8	1,6	2,4	3,2	4,0	4,8	5,2
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
3SVE03..03T..	0,37	ESM90R/303 SVE	0,49	2,14	1,47	33,4	33,8	33,6	30,7	24,9	19,5	14,0	10,9
3SVE05..05T..	0,55	ESM90R/305 SVE	0,70	2,81	1,92	55,7	56,2	55,8	46,3	37,1	28,4	19,4	14,4
3SVE07..07T..	0,75	ESM90R/307 SVE	0,93	3,55	2,43	77,9	78,7	77,2	63,3	50,6	38,6	26,0	18,7
3SVE09..11T..	1,1	ESM90R/311 SVE	1,37	4,96	3,45	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2
3SVE11..15T..	1,5	ESM90R/315 SVE	1,82	6,35	4,42	122,5	123,3	122,5	117,9	98,4	77,9	57,2	46,4
3SVE17..22T04	2,2	ESM90R/322 SVE	2,54	-	5,87	189,8	191,6	190,4	183,4	151,3	119,6	87,4	70,6

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	23,3	46,7	70,0	93,3	116,7	140,0	166,7
						m3/h 0	1,4	2,8	4,2	5,6	7,0	8,4	10,0
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
5SVE02..03T..	0,37	ESM90R/303 SVE	0,50	2,13	1,48	22,4	22,2	21,8	20,0	16,5	13,3	10,2	6,5
5SVE03..05T..	0,55	ESM90R/305 SVE	0,69	2,80	1,92	33,5	33,3	32,7	29,8	24,5	19,8	15,2	9,5
5SVE04..07T..	0,75	ESM90R/307 SVE	0,92	3,55	2,42	44,7	44,4	43,5	40,5	33,4	27,0	20,8	13,3
5SVE06..11T..	1,1	ESM90R/311 SVE	1,38	4,96	3,46	67,1	66,6	65,3	59,5	49,0	39,6	30,3	19,1
5SVE08..15T..	1,5	ESM90R/315 SVE	1,83	6,38	4,43	88,8	89,2	87,6	82,7	68,4	55,3	42,7	28,0
5SVE12..22T04	2,2	ESM90R/322 SVE	2,55	-	5,88	133,2	133,7	131,6	121,6	100,4	81,0	62,2	40,3

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	40,0	80,0	120,0	160,0	200,0	240,0	283,3
						m3/h 0	2,4	4,8	7,2	9,6	12,0	14,4	17,0
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
10SVE01..05T..	0,55	ESM90R/305 SVE	0,69	2,81	1,90	17,3	17,3	16,9	16,2	13,6	10,4	7,1	3,3
10SVE02..07T..	0,75	ESM90R/307 SVE	0,94	3,52	2,46	24,2	23,9	23,1	21,7	19,3	14,6	9,7	3,6
10SVE02..11T..	1,1	ESM90R/311 SVE	1,37	4,94	3,45	34,8	34,5	33,7	32,3	27,7	22,4	17,1	11,0
10SVE03..15T..	1,5	ESM90R/315 SVE	1,83	6,38	4,43	52,7	52,2	51,0	46,1	38,1	30,8	23,5	15,1
10SVE04..22T04	2,2	ESM90R/322 SVE	2,54	-	5,86	70,3	69,7	68,1	65,8	57,8	47,5	37,4	25,9

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	70,0	140,0	210,0	280,0	350,0	420,0	483,3
						m3/h 0	4,2	8,4	12,6	16,8	21,0	25,2	29,0
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
15SVE01..07T..	0,75	ESM90R/307 SVE	0,92	4,10	2,48	14,2	13,9	13,3	12,3	9,8	6,4	2,8	0,0
15SVE01..11T..	1,1	ESM90R/311 SVE	1,33	5,85	3,45	20,5	20,1	19,4	18,4	14,8	10,9	7,0	3,2
15SVE02..15T..	1,5	ESM90R/315 SVE	1,76	7,71	4,34	29,6	29,1	28,3	26,8	22,2	16,4	10,1	3,8
15SVE02..22T04	2,2	ESM90R/322 SVE	2,54	-	5,87	42,7	42,0	41,1	39,7	33,4	26,8	20,1	13,5

PUMP TYPE SVE Three-phase	MOTOR PN kW	MOTOR TYPE	e-SM SET * P1 kW	e-SM SET * I 208-240 V A	e-SM SET * I 380-460 V A	Q = DELIVERY l/min 0	70,0	140,0	210,0	280,0	350,0	420,0	500,0
						m3/h 0	4,2	8,4	12,6	16,8	21,0	25,2	30,0
						H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
22SVE01..07T..	0,75	ESM90R/307 SVE	0,91	3,31	2,38	14,4	14,4	14,1	12,5	9,5	6,3	2,9	0,0
22SVE01..11T..	1,1	ESM90R/311 SVE	1,38	5,00	3,47	20,7	20,8	20,5	18,7	15,1	11,5	7,8	3,2
22SVE02..15T..	1,5	ESM90R/315 SVE	1,76	6,18	4,31	31,4	31,0	30,3	26,7	21,7	16,7	11,0	2,8
22SVE02..22T04	2,2	ESM90R/322 SVE	2,56	-	5,91	45,2	44,7	44,0	39,3	33,0	27,3	21,4	13,6

* Maximum value in specified range: P1 = input power; I = input current.

1-22sve-esm-2p50T-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_N	MOTOR TYPE	IEC SIZE*	Construction Design	SPEED	INPUT CURRENT	DATA RELATED TO THE VOLTAGE OF 230V						
				(RPM)**	I (A)	In	cosφ	Tn	η %			IES
kW				min^{-1}	208-240 V	A		Nm	4/4	3/4	2/4	
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		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		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		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		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_N	MOTOR TYPE	IEC SIZE*	Construction Design	SPEED	INPUT CURRENT	DATA RELATED TO THE VOLTAGE OF 400V						
				(RPM)**	I (A)	In	cosφ	Tn	η %			IES
kW				min^{-1}	208-240/380-460 V	A		Nm	4/4	3/4	2/4	
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		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		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		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		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		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	

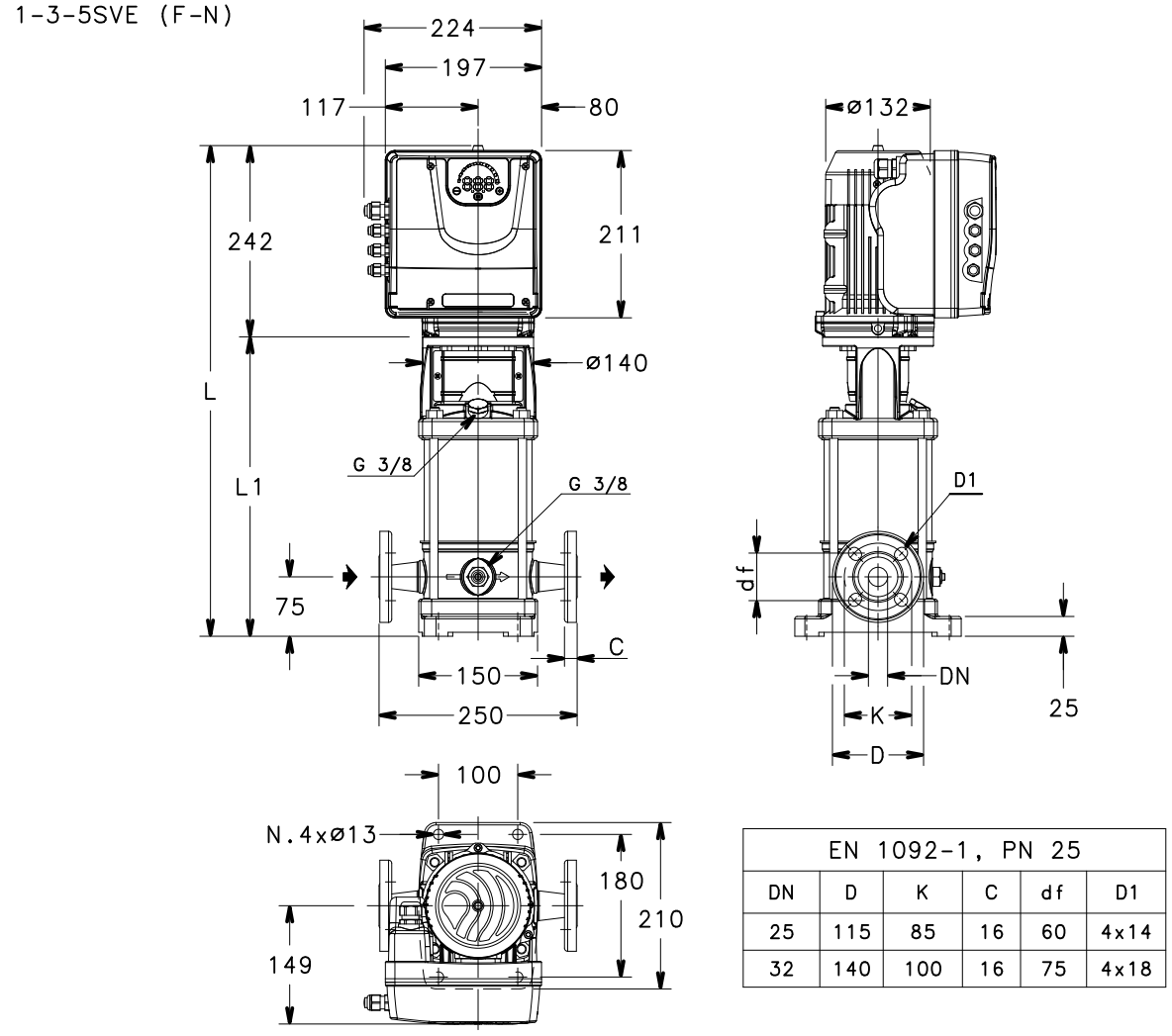
* R = Reduced size of motor casing as compared to shaft extension and flange.

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

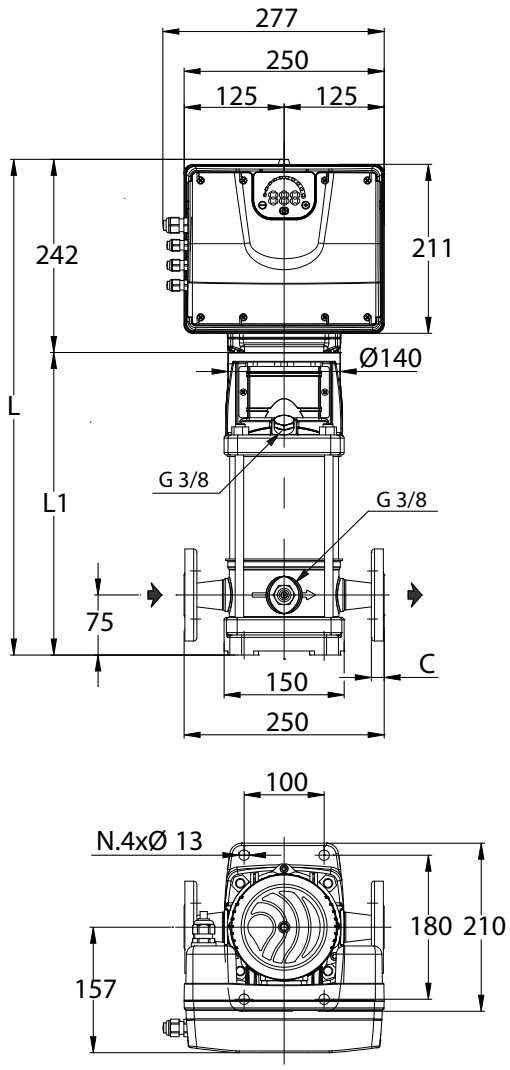


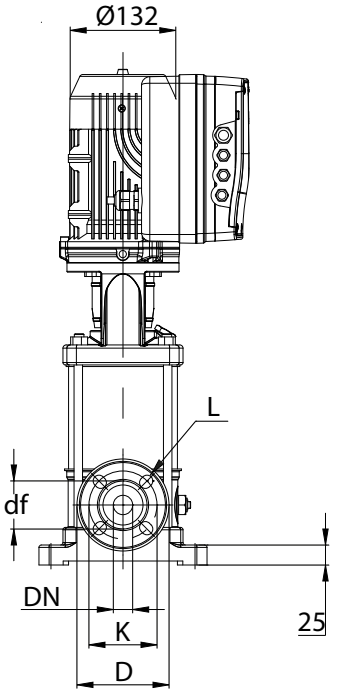
EN 1092-1, PN 25					
DN	D	K	C	df	D1
25	115	85	16	60	4x14
32	140	100	16	75	4x18

PUMP TYPE SVE F (SINGLE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	DIMENSIONS (mm) DN	WEIGHT (kg) PUMP	WEIGHT (kg) 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
3SVE11F015POM	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, 3, 5SVE..F SERIES - THREE PHASE VERSION
DIMENSIONS AND WEIGHTS

1-3-5SVE (F-N)





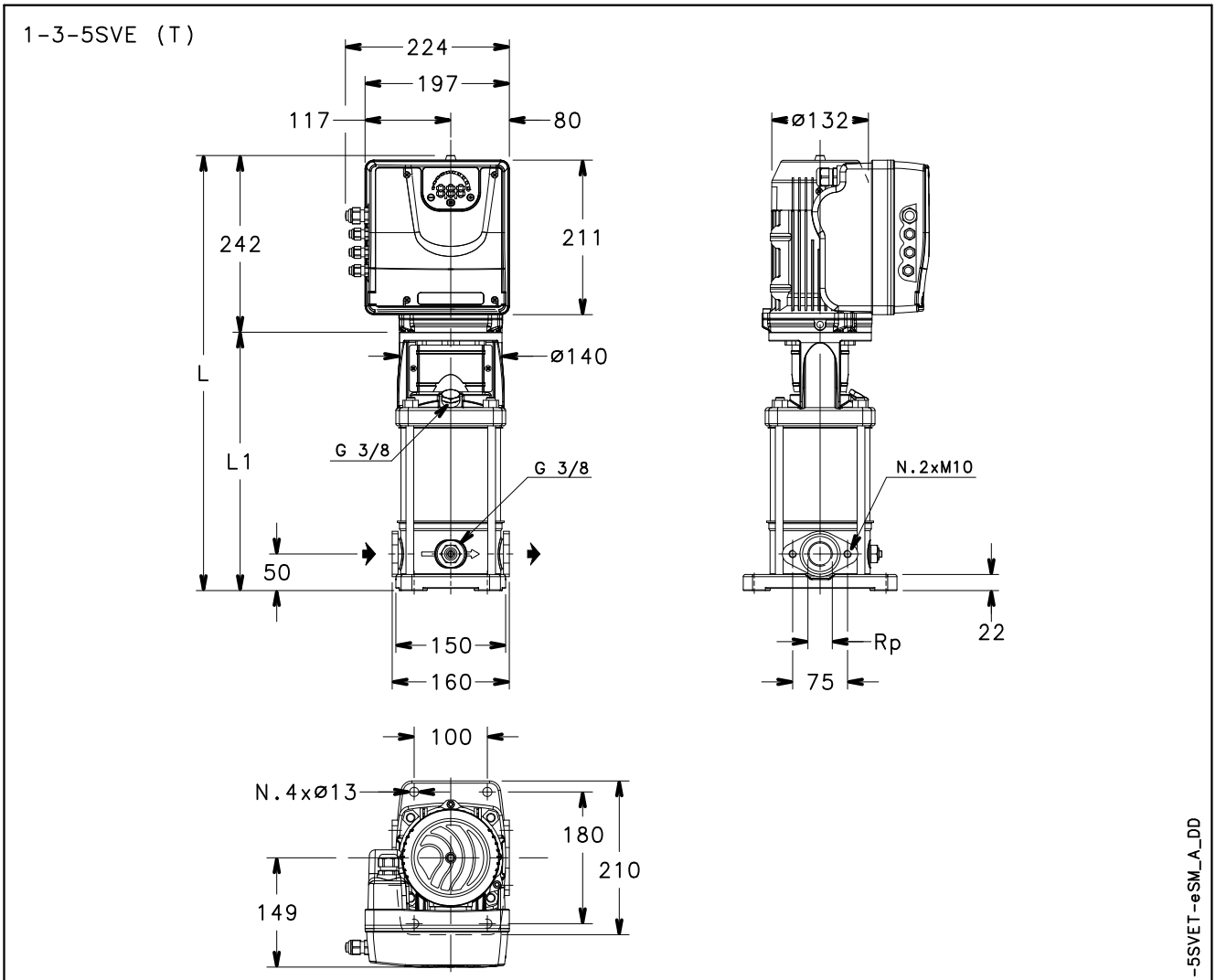
EN 1092-1, PN 25					
DN	D	K	C	df	L
25	115	85	16	60	4x14
32	140	100	16	75	4x18

1-5SVEF-T_eSM_A_DD

PUMP TYPE SVE F (THREE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	DIMENSIONS (mm) DN	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVE05F003P0T	0,37	90	580	338	25	10,1	23,2
1SVE08F005P0T	0,55	90	640	398	25	11,2	24,3
1SVE11F007P0T	0,75	90	700	458	25	12,4	25,5
1SVE15F011P0T	1,1	90	780	538	25	14,2	28,7
1SVE20F015P0T	1,5	90	880	638	25	16,2	30,7
1SVE26F022P0T	2,2	90	1000	758	25	18,6	34,6
3SVE03F003P0T	0,37	90	540	298	25	9,1	22,2
3SVE05F005P0T	0,55	90	580	338	25	9,9	23
3SVE07F007P0T	0,75	90	620	378	25	11,2	24,3
3SVE09F011P0T	1,1	90	660	418	25	12	26,5
3SVE11F015P0T	1,5	90	700	458	25	12,8	27,3
3SVE17F022P0T	2,2	90	820	578	25	15,2	31,2
5SVE02F003P0T	0,37	90	530	288	32	9,1	22,2
5SVE03F005P0T	0,55	90	555	313	32	9,6	22,7
5SVE04F007P0T	0,75	90	580	338	32	10,1	23,2
5SVE06F011P0T	1,1	90	630	388	32	11,3	25,8
5SVE08F015P0T	1,5	90	680	438	32	12,4	26,9
5SVE12F022P0T	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

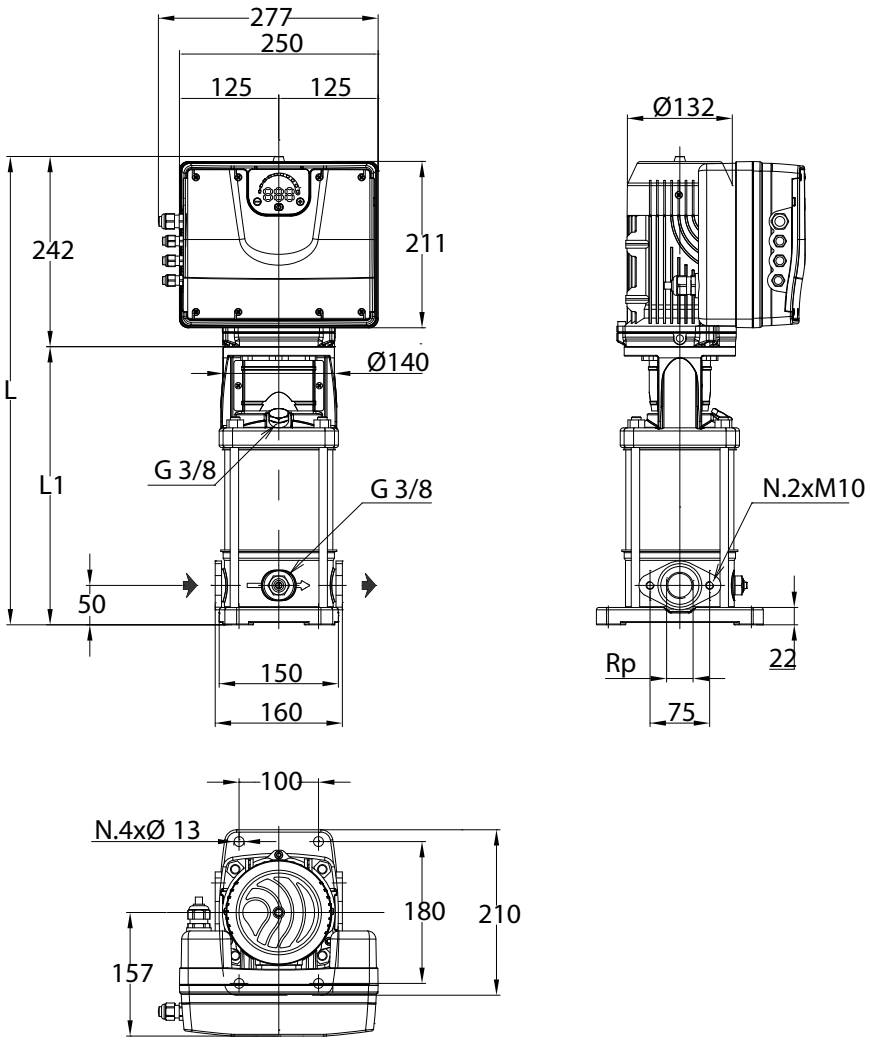


PUMP TYPE SVE T (SINGLE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	DIMENSIONS (mm) Rp	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVE05T003P0M	0,37	90	555	313	1	9,6	17,1
1SVE08T005P0M	0,55	90	615	373	1	10,7	18,2
1SVE11T007P0M	0,75	90	675	433	1	11,9	19,4
1SVE15T011P0M	1,1	90	755	513	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

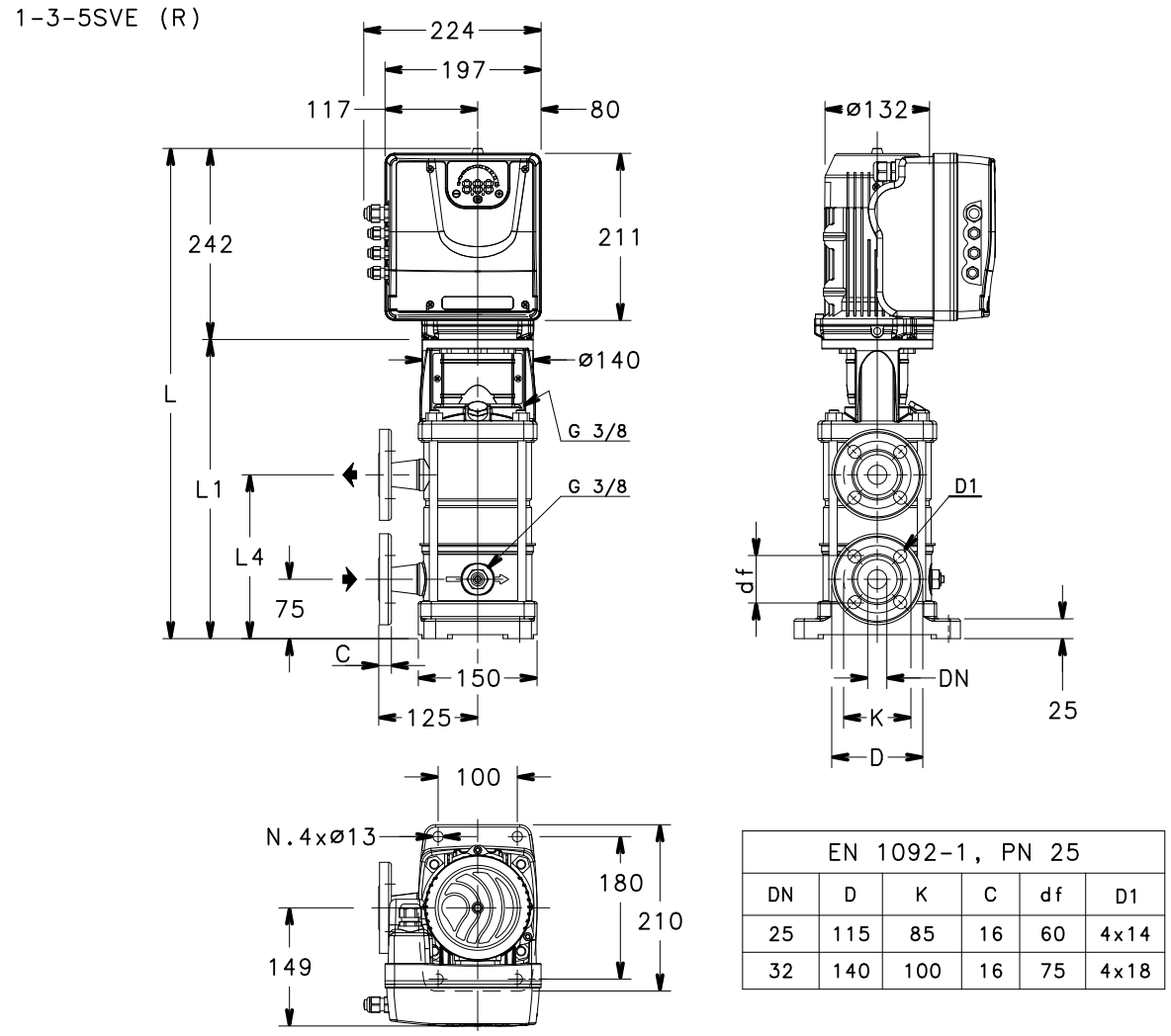
1-3-5SVE (T)



PUMP TYPE SVE T (THREE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	DIMENSIONS (mm) Rp	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVE05T003P0T	0,37	90	555	313	1	9,6	22,7
1SVE08T005P0T	0,55	90	615	373	1	10,7	23,8
1SVE11T007P0T	0,75	90	675	433	1	11,9	25
1SVE15T011P0T	1,1	90	755	513	1	14,1	28,6
3SVE03T003P0T	0,37	90	515	273	1	8,6	21,7
3SVE05T005P0T	0,55	90	555	313	1	9,4	22,5
3SVE07T007P0T	0,75	90	595	353	1	10,7	23,8
3SVE09T011P0T	1,1	90	635	393	1	11,5	26
3SVE11T015P0T	1,5	90	675	433	1	12,3	26,8
5SVE02T003P0T	0,37	90	505	263	1 1/4	8,2	21,3
5SVE03T005P0T	0,55	90	530	288	1 1/4	8,7	21,8
5SVE04T007P0T	0,75	90	555	313	1 1/4	9,2	22,3
5SVE06T011P0T	1,1	90	605	363	1 1/4	10,4	24,9
5SVE08T015P0T	1,5	90	655	413	1 1/4	11,5	26
5SVE12T022P0T	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



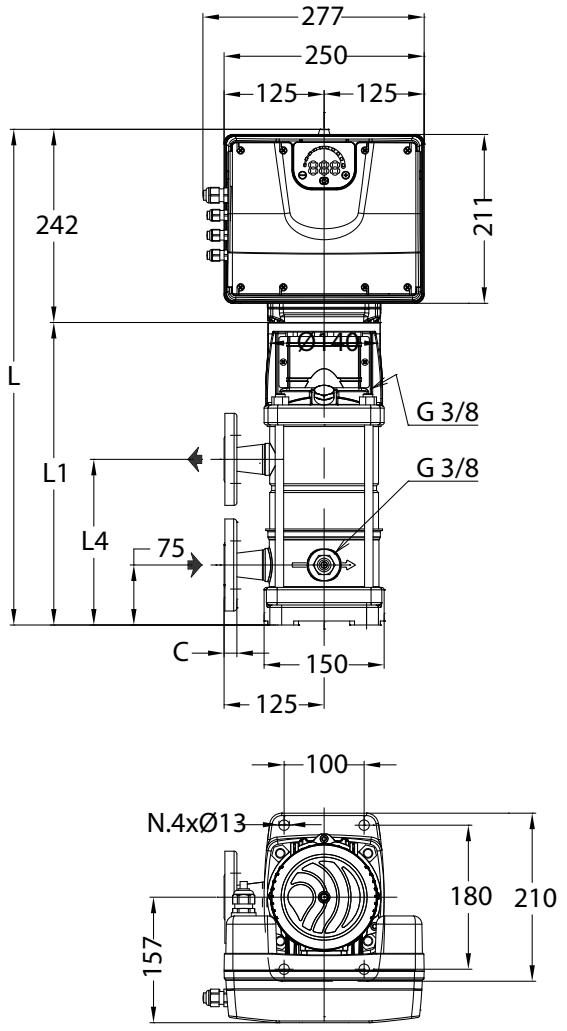
EN 1092-1, PN 25					
DN	D	K	C	df	D1
25	115	85	16	60	4x14
32	140	100	16	75	4x18

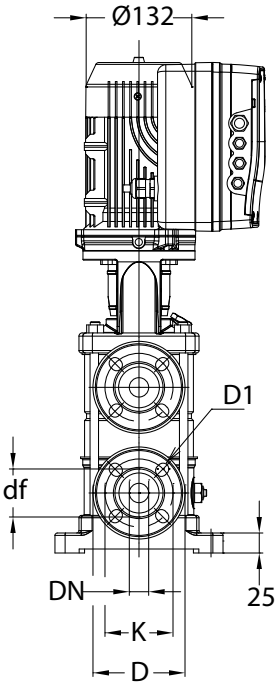
PUMP TYPE SVE R (SINGLE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	L4	DN	WEIGHT (kg) PUMP	ELECTRIC PUMP
1SVE08R005P0M	0,55	90	640	398	227	25	11,6	19,1
1SVE11R007P0M	0,75	90	700	458	287	25	12,8	20,3
1SVE15R011P0M	1,1	90	780	538	367	25	14,6	23,6
1SVE20R015P0M	1,5	90	880	638	467	25	16,6	25,7
3SVE07R007P0M	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

1-3-5SVE (R)





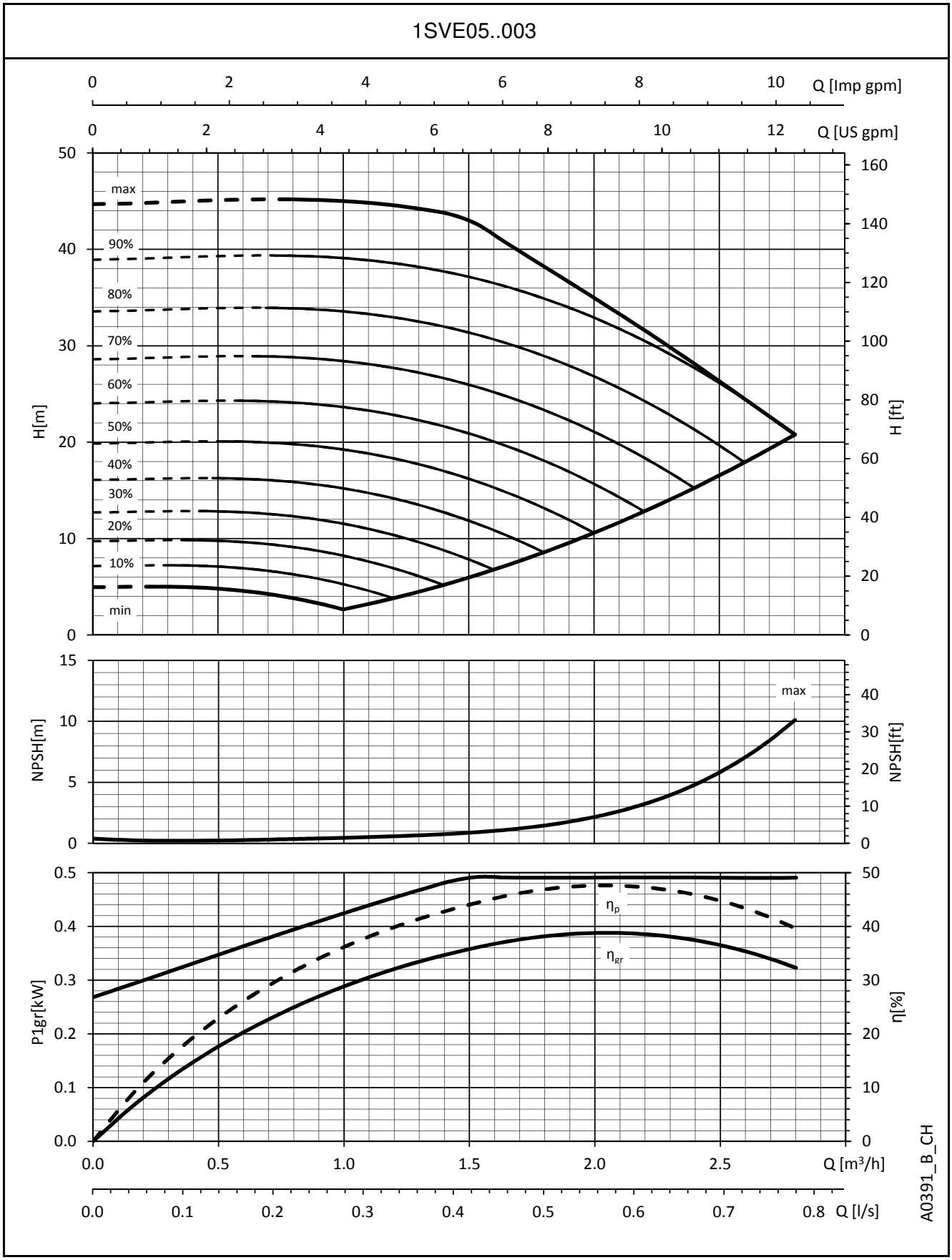
EN 1092-1, PN 25					
DN	D	K	C	df	L
25	115	85	16	60	4x14
32	140	100	16	75	4x18

1-5SVER-T_eSM_A_DD

PUMP TYPE SVE R (THREE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	L4	DN	WEIGHT (kg) PUMP	ELECTRIC PUMP
1SVE08R005P0T	0,55	90	640	398	227	25	11,6	24,7
1SVE11R007P0T	0,75	90	700	458	287	25	12,8	25,9
1SVE15R011P0T	1,1	90	780	538	367	25	14,6	29,1
1SVE20R015P0T	1,5	90	880	638	467	25	16,6	31,1
1SVE26R022P0T	2,20	90	1000	758	467	25	20,2	36,2
3SVE07R007P0T	0,75	90	620	378	207	25	11,6	24,7
3SVE09R011P0T	1,1	90	660	418	247	25	12,4	26,9
3SVE11R015P0T	1,5	90	700	458	287	25	13,2	27,7
3SVE17R022P0T	2,2	90	820	578	287	25	15,6	31,6
5SVE08R015P0T	1,5	90	680	438	267	32	13	27,5
5SVE12R022P0T	2,2	90	780	538	267	32	17,4	33,4

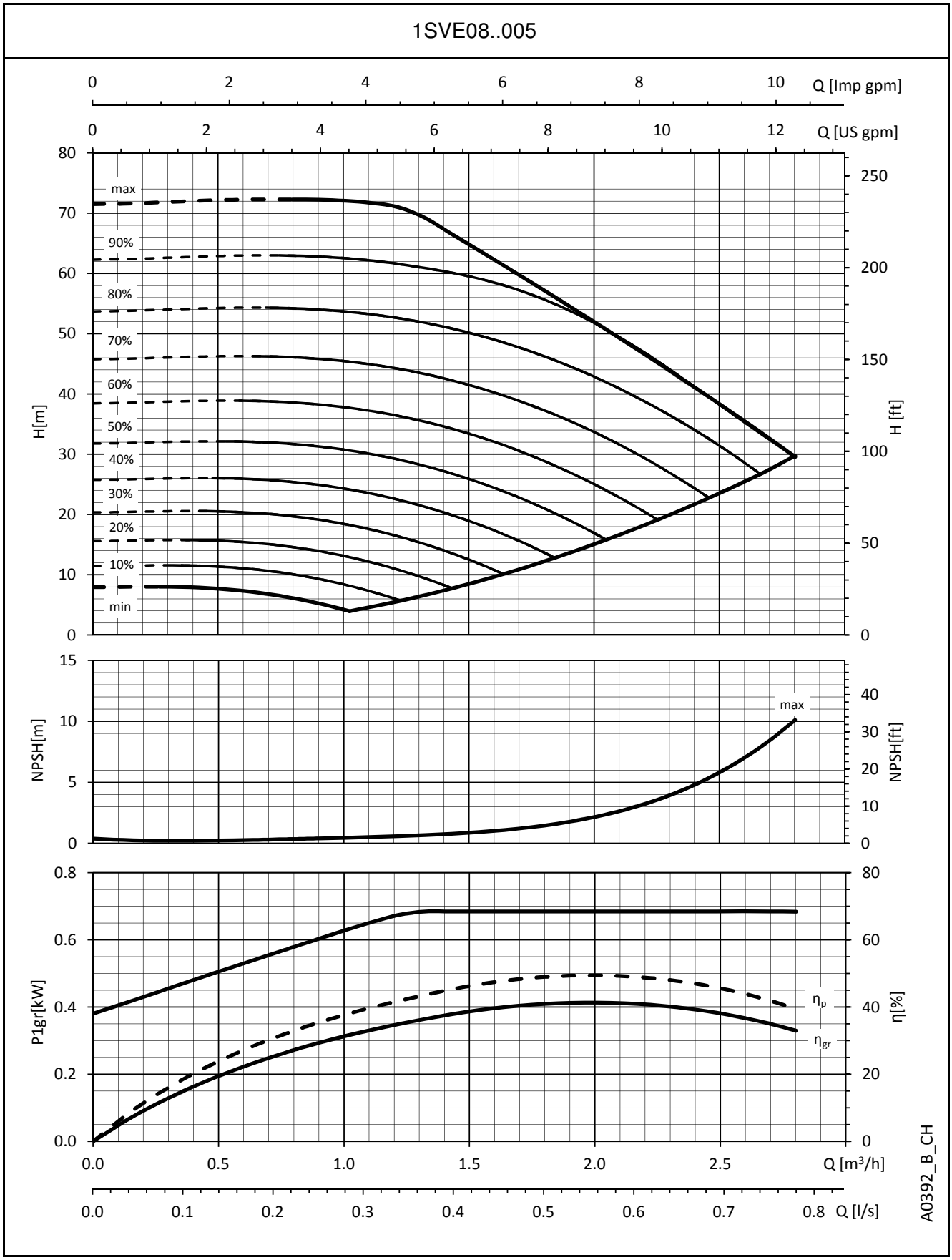
1-5sveR-esm-2p50T-en_a_td

1SVE SERIES
OPERATING CHARACTERISTICS



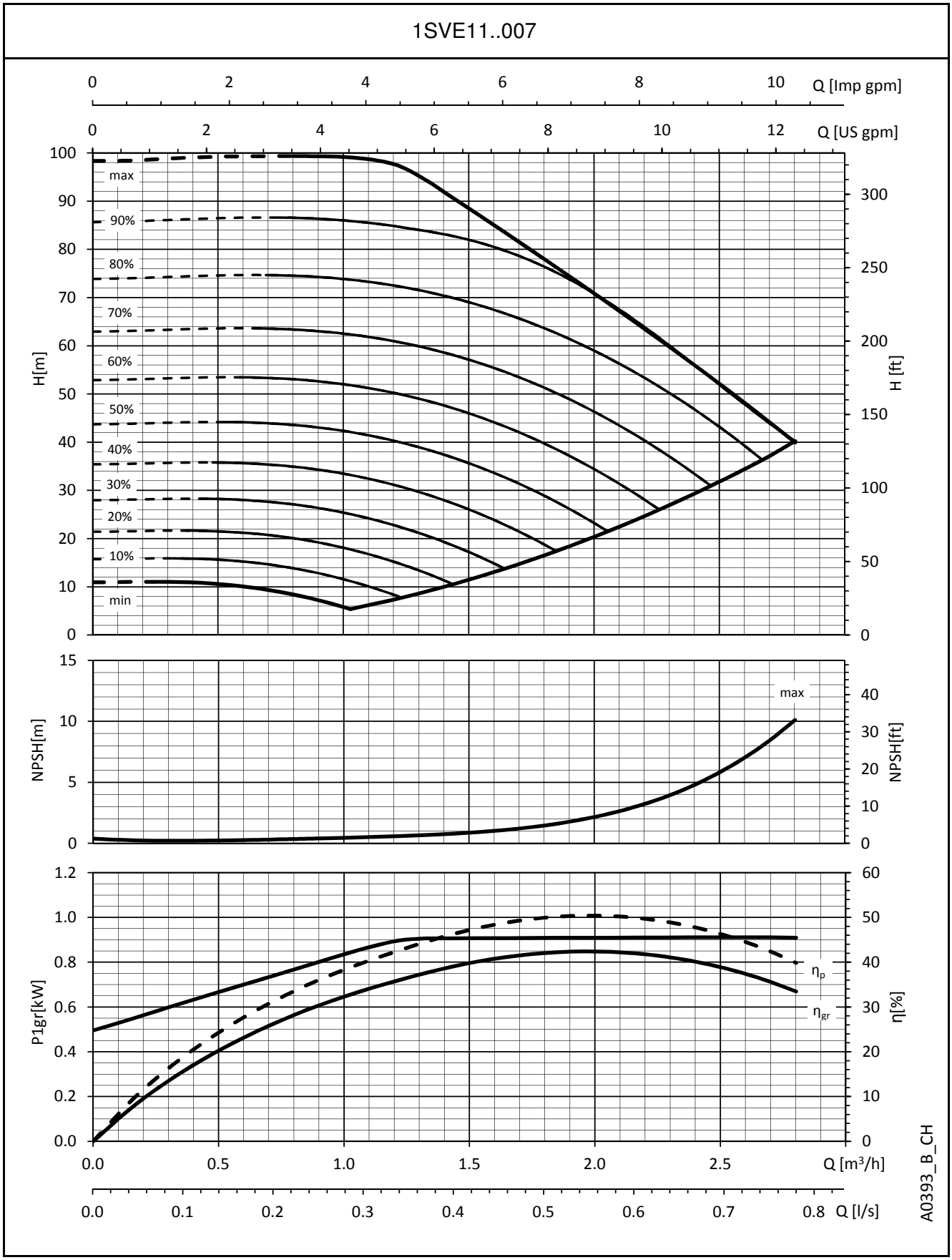
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

1SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

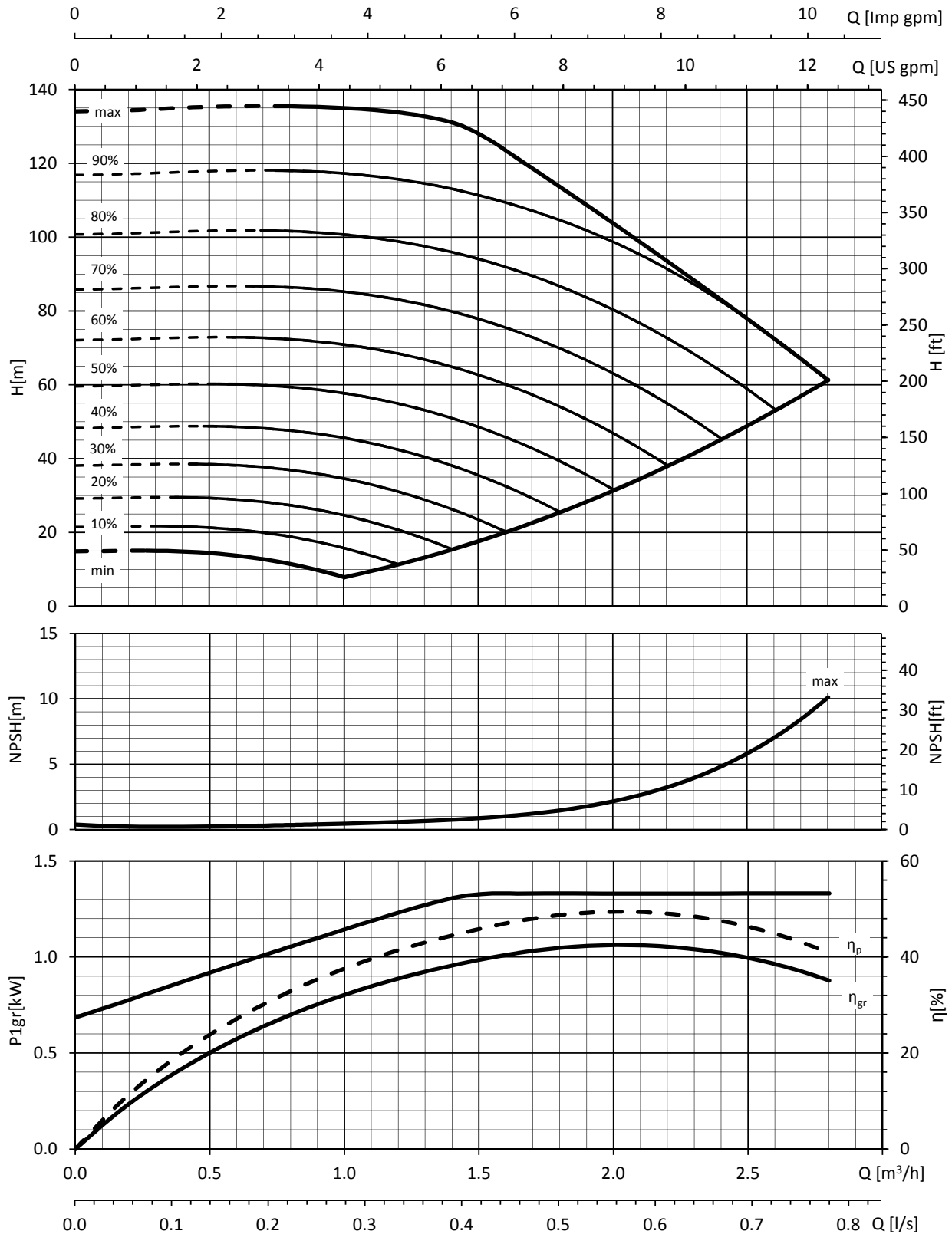
1SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

1SVE SERIES
OPERATING CHARACTERISTICS

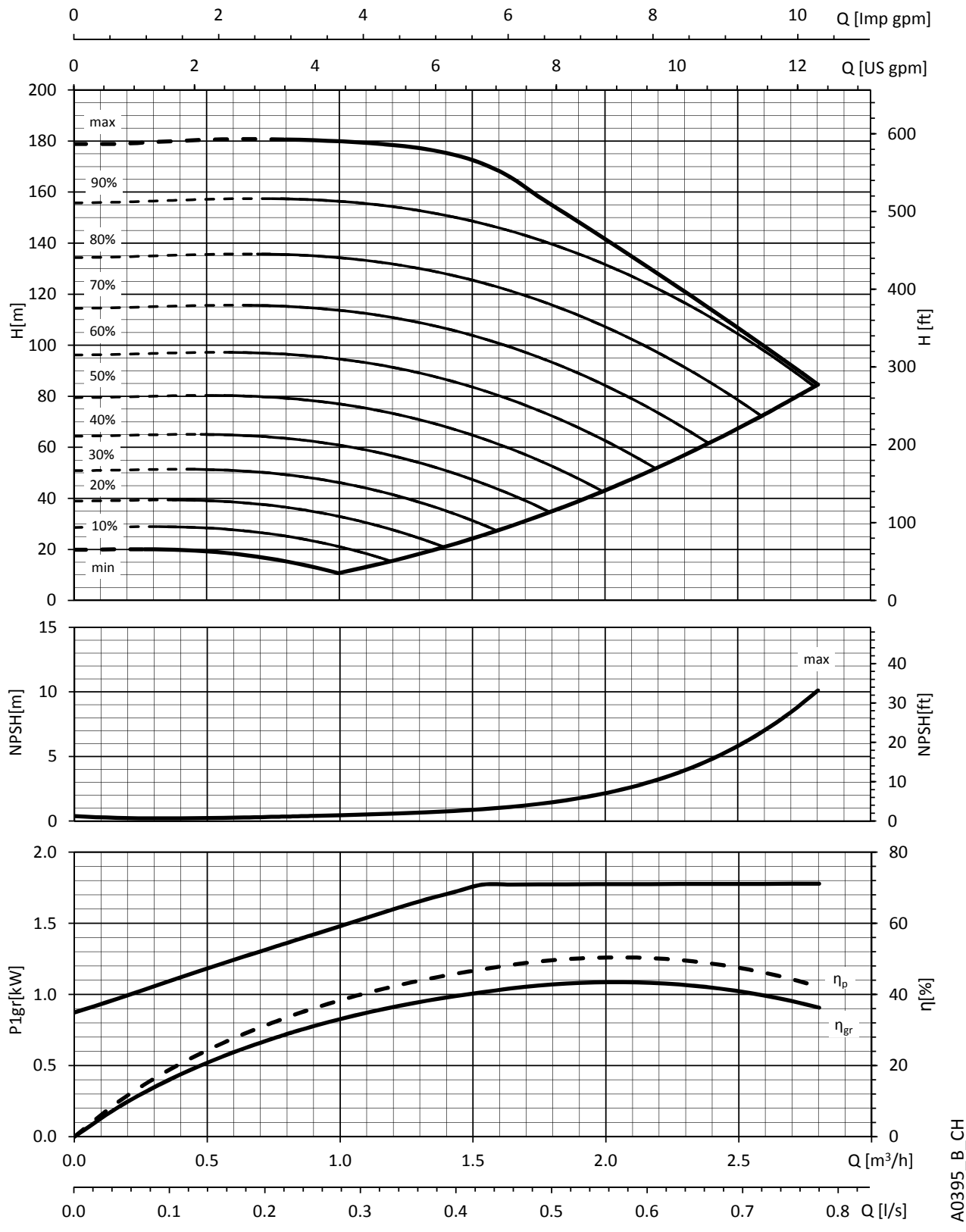
1SVE15..011



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

1SVE SERIES
OPERATING CHARACTERISTICS

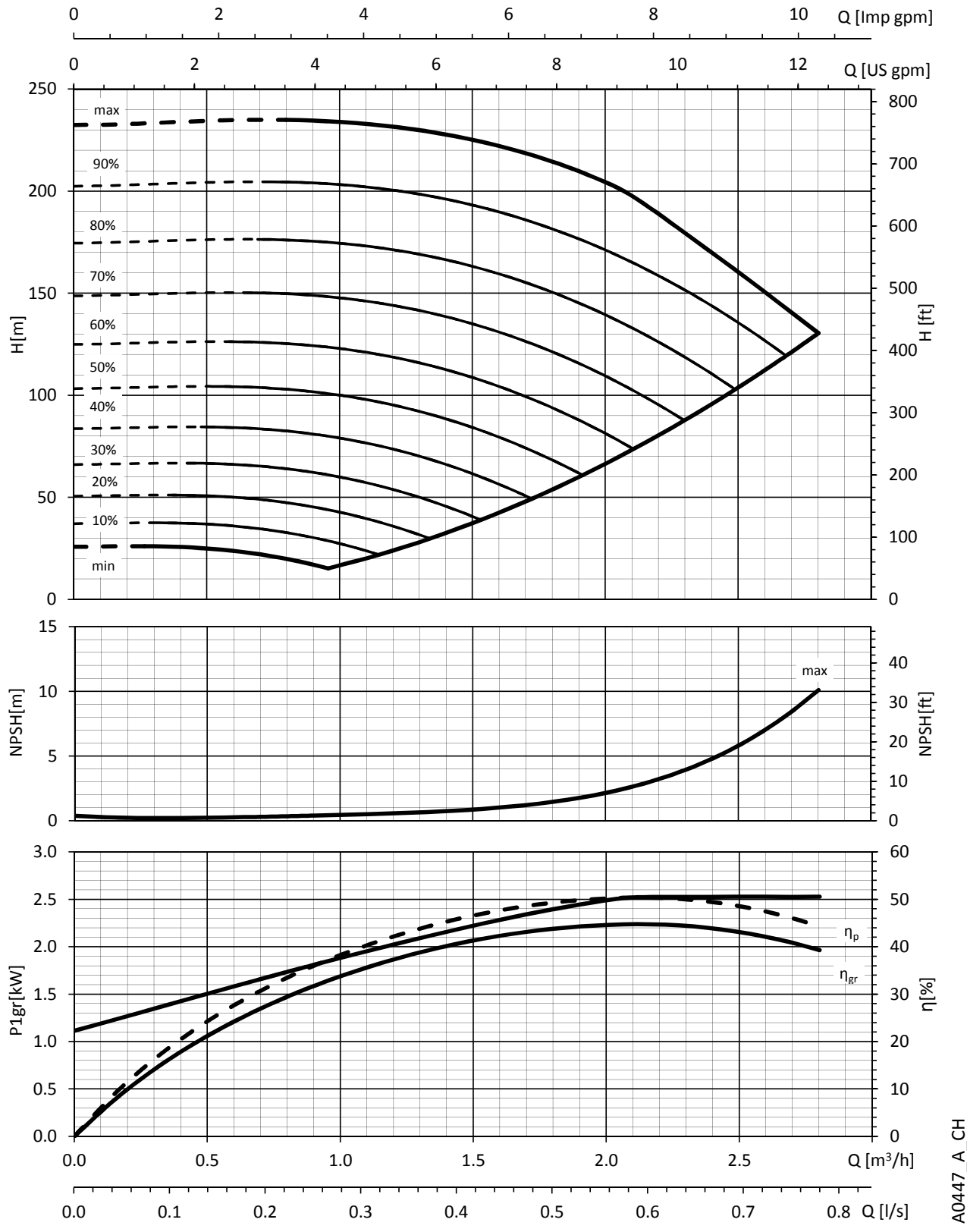
1SVE20..015



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

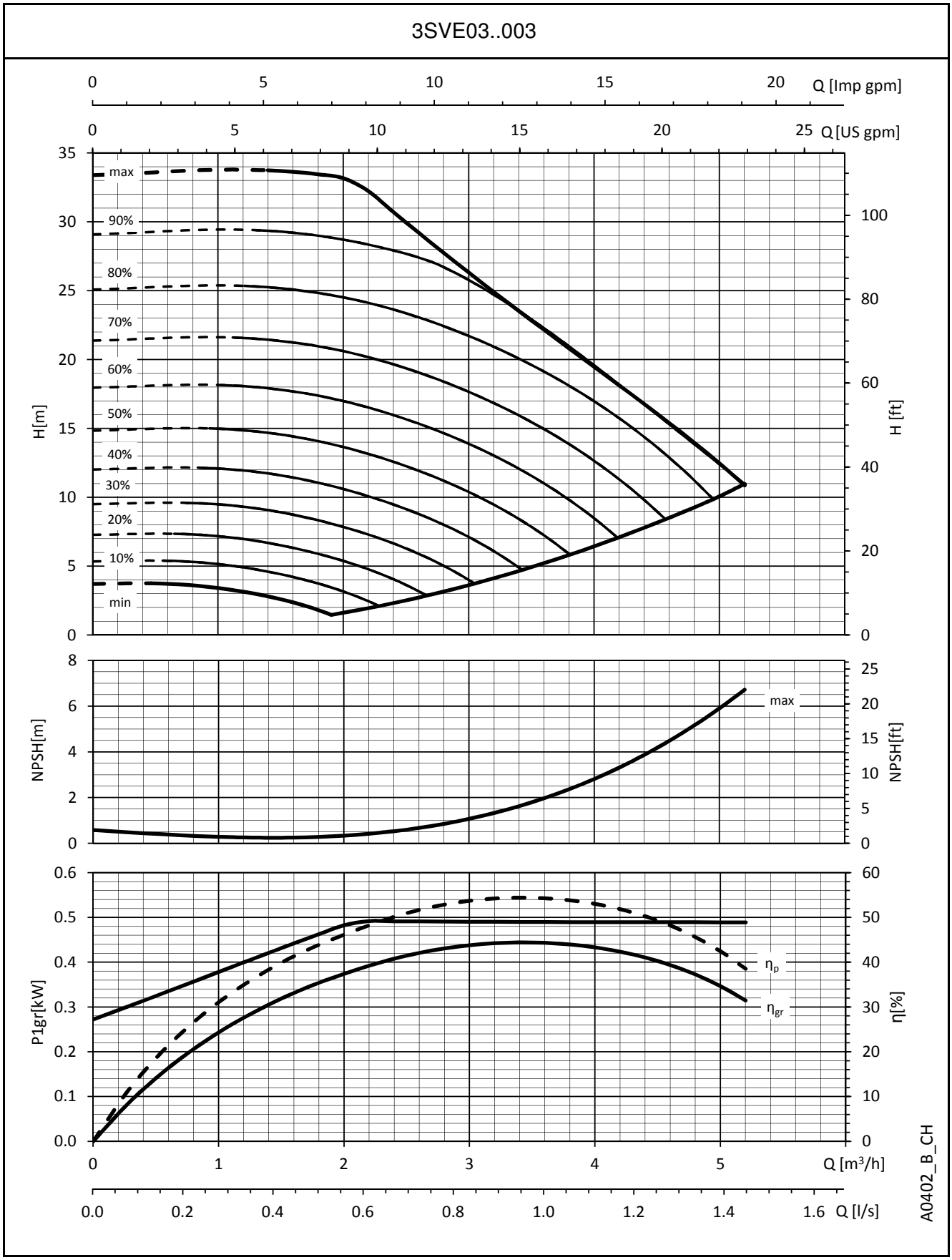
1SVE SERIES
OPERATING CHARACTERISTICS

1SVE26..022



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

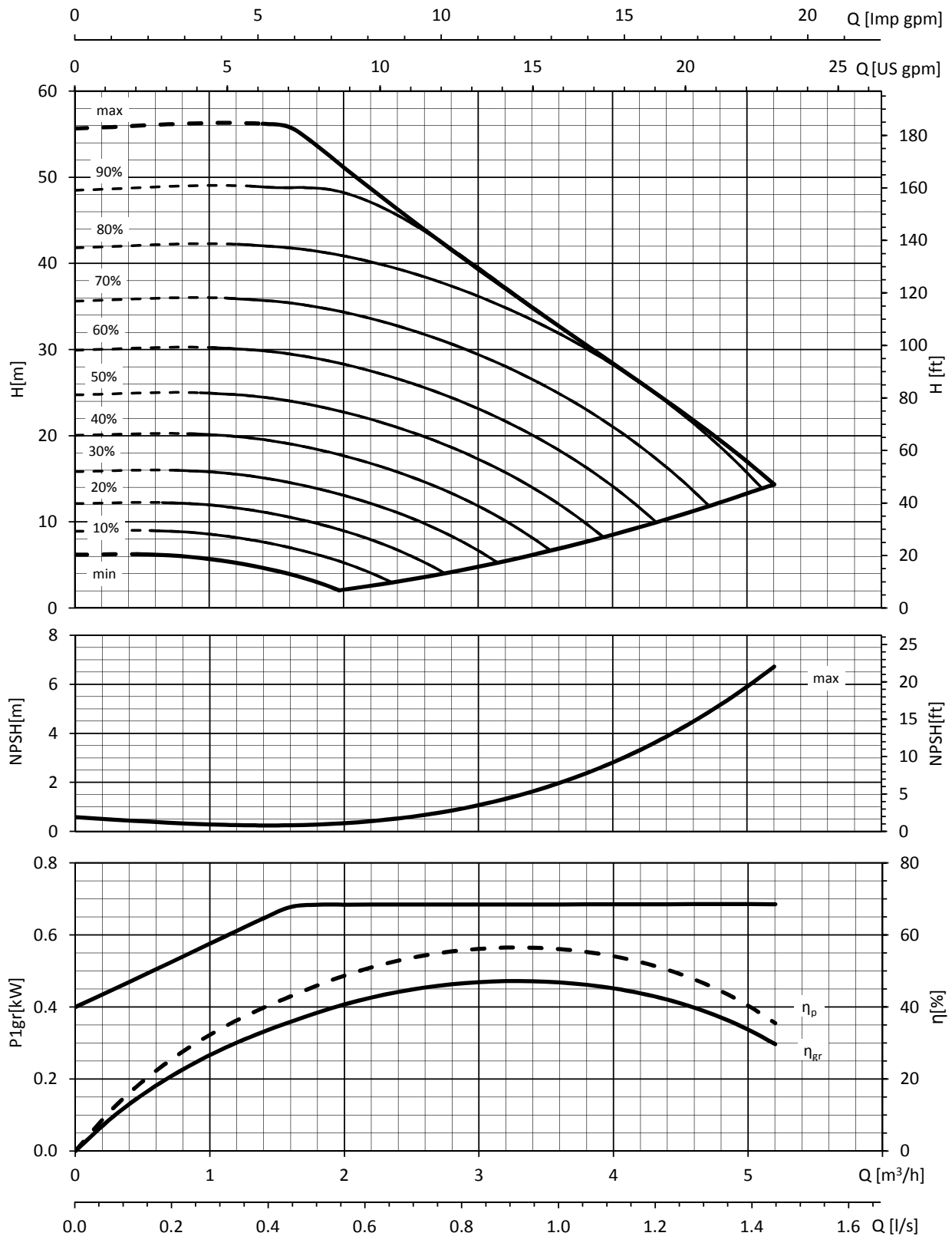
3SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVE SERIES
OPERATING CHARACTERISTICS

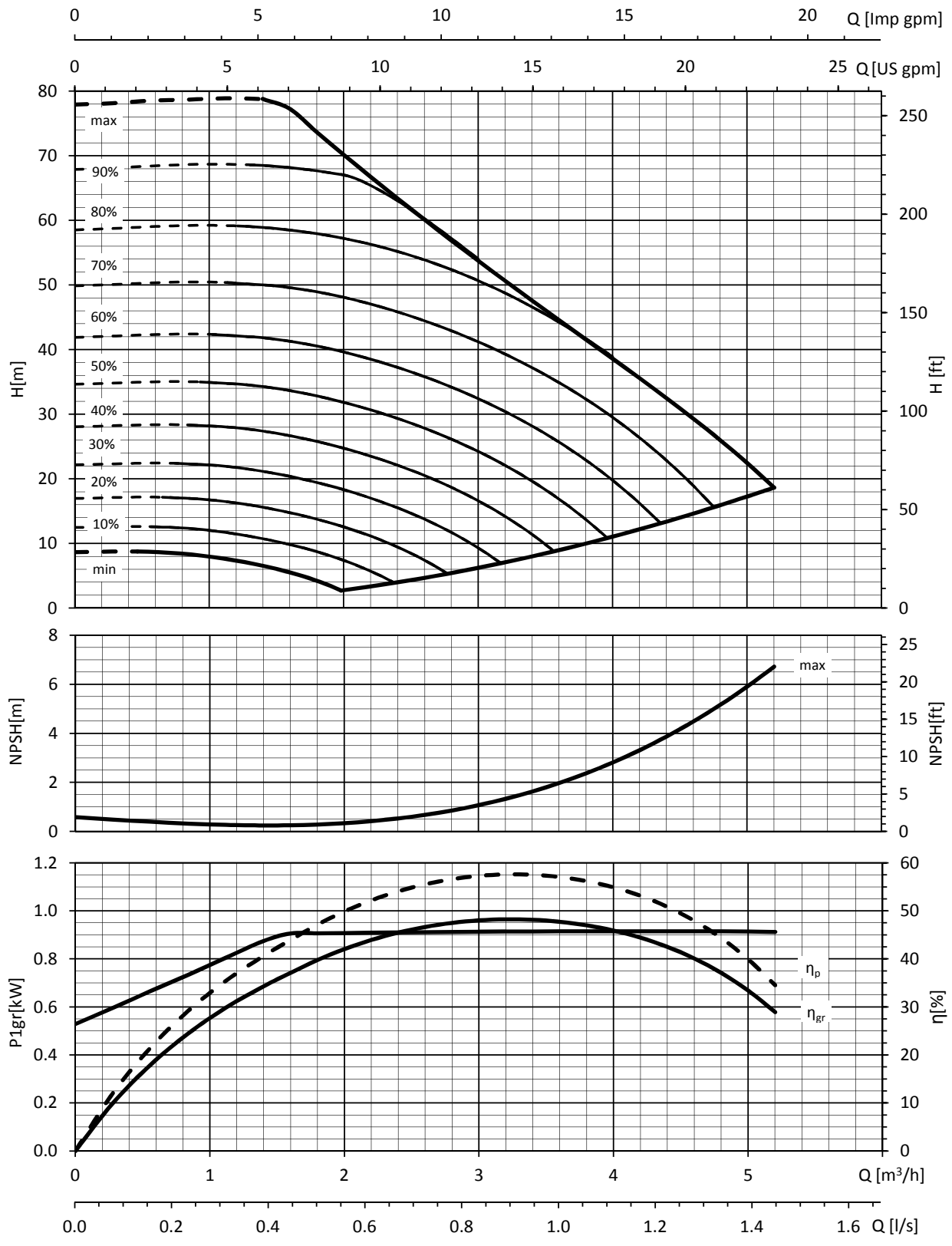
3SVE05..005



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

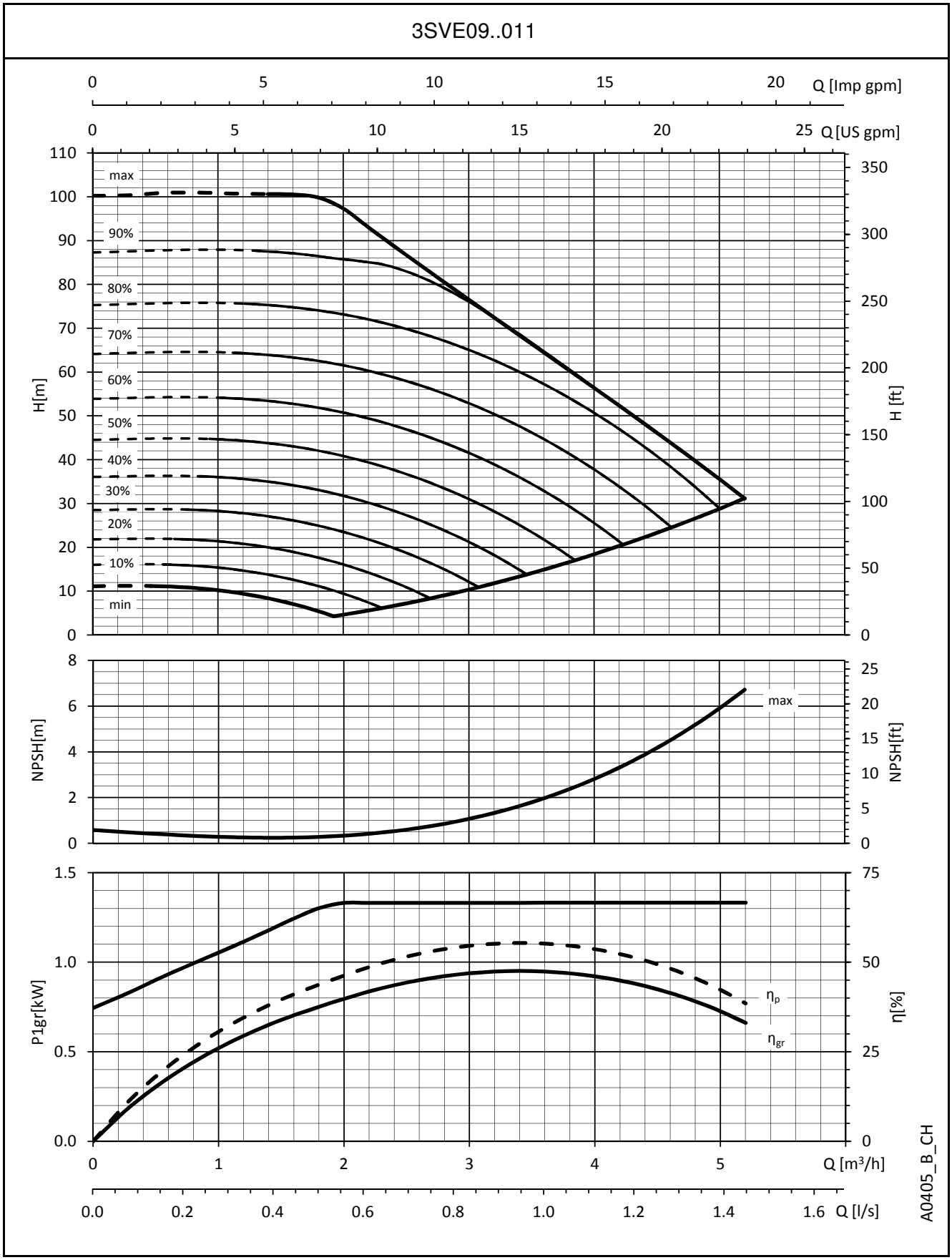
3SVE SERIES
OPERATING CHARACTERISTICS

3SVE07..007



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVE SERIES
OPERATING CHARACTERISTICS

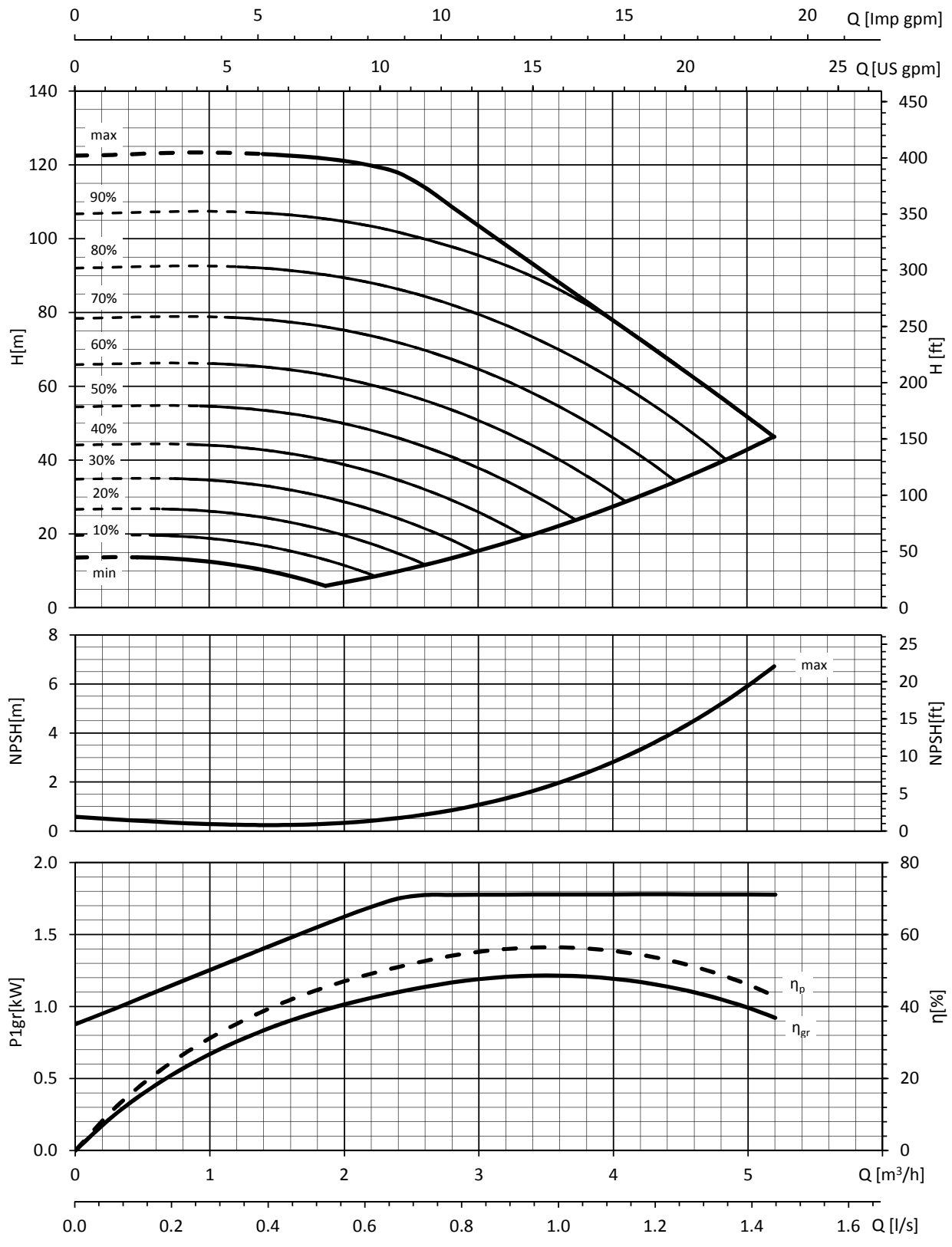


The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

3SVE SERIES
OPERATING CHARACTERISTICS

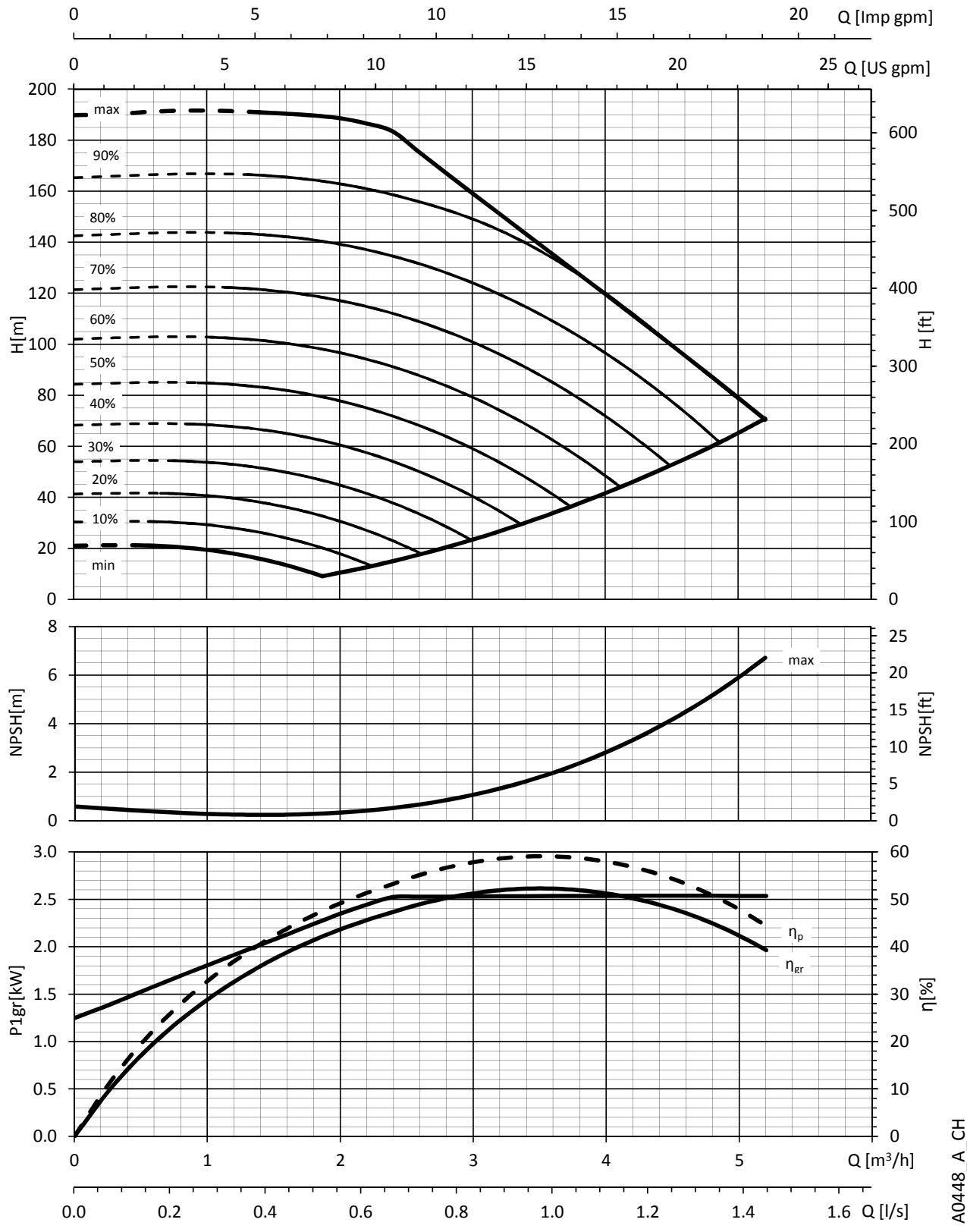
3SVE11..015



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

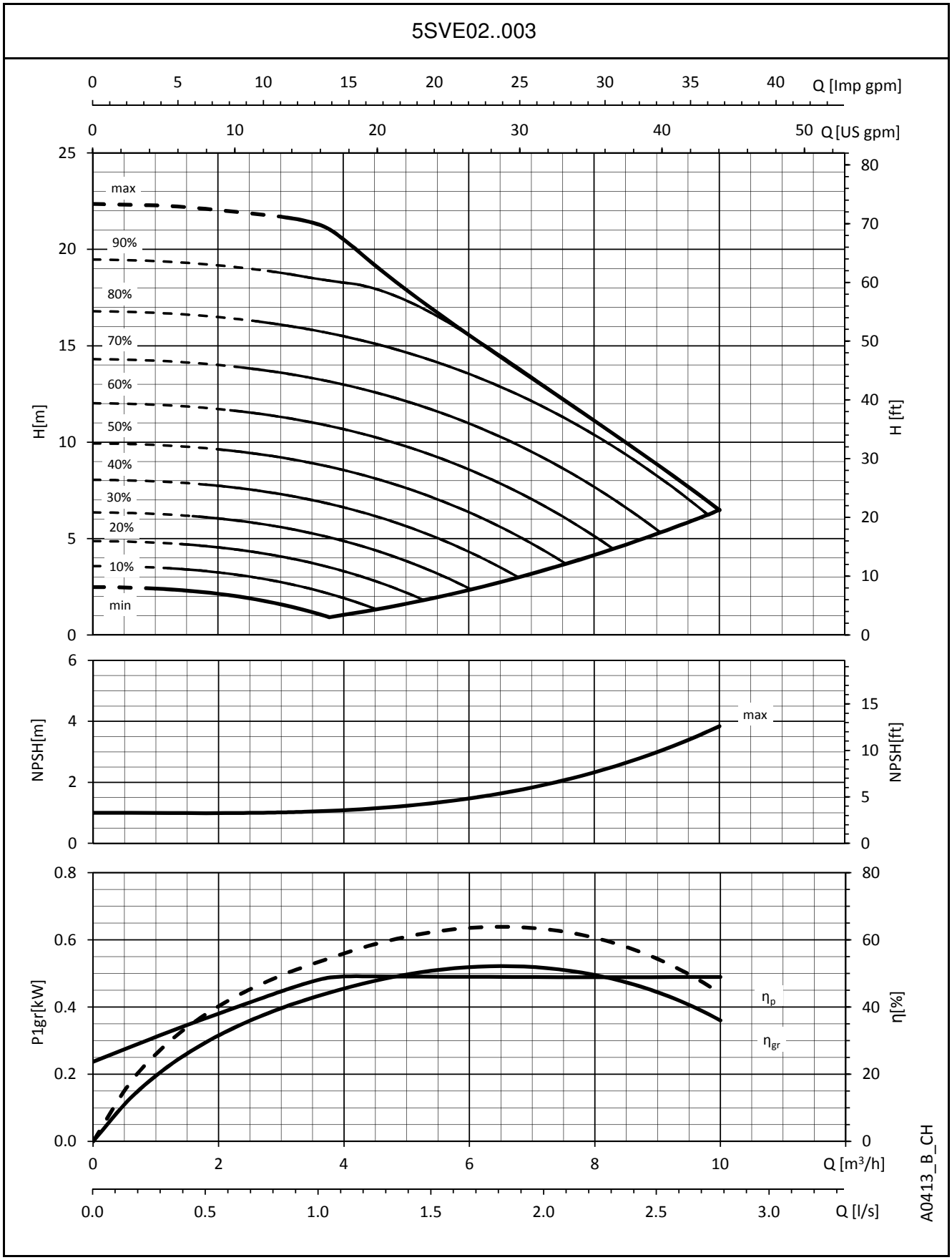
3SVE SERIES
OPERATING CHARACTERISTICS

3SVE17..022



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

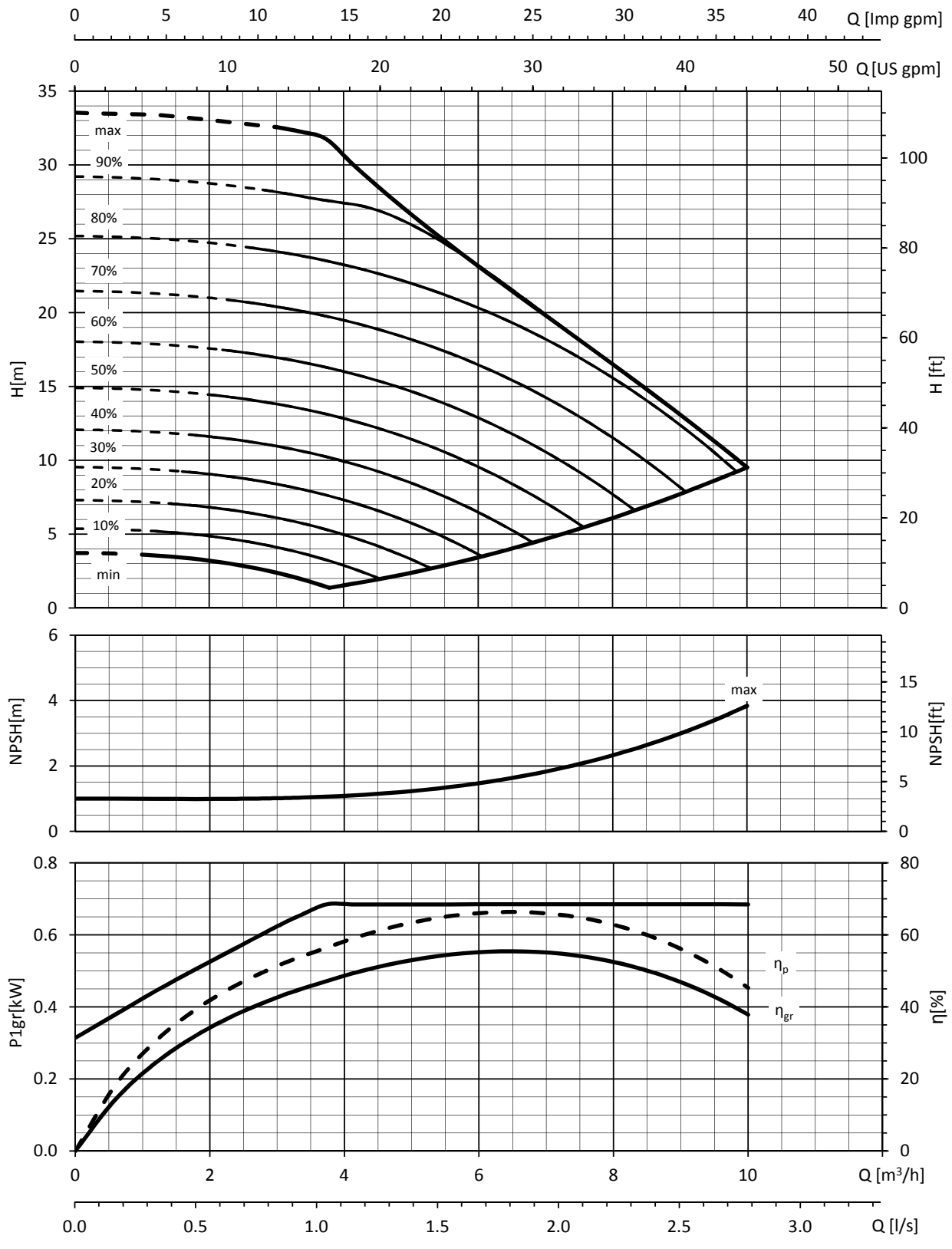
5SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVE SERIES
OPERATING CHARACTERISTICS

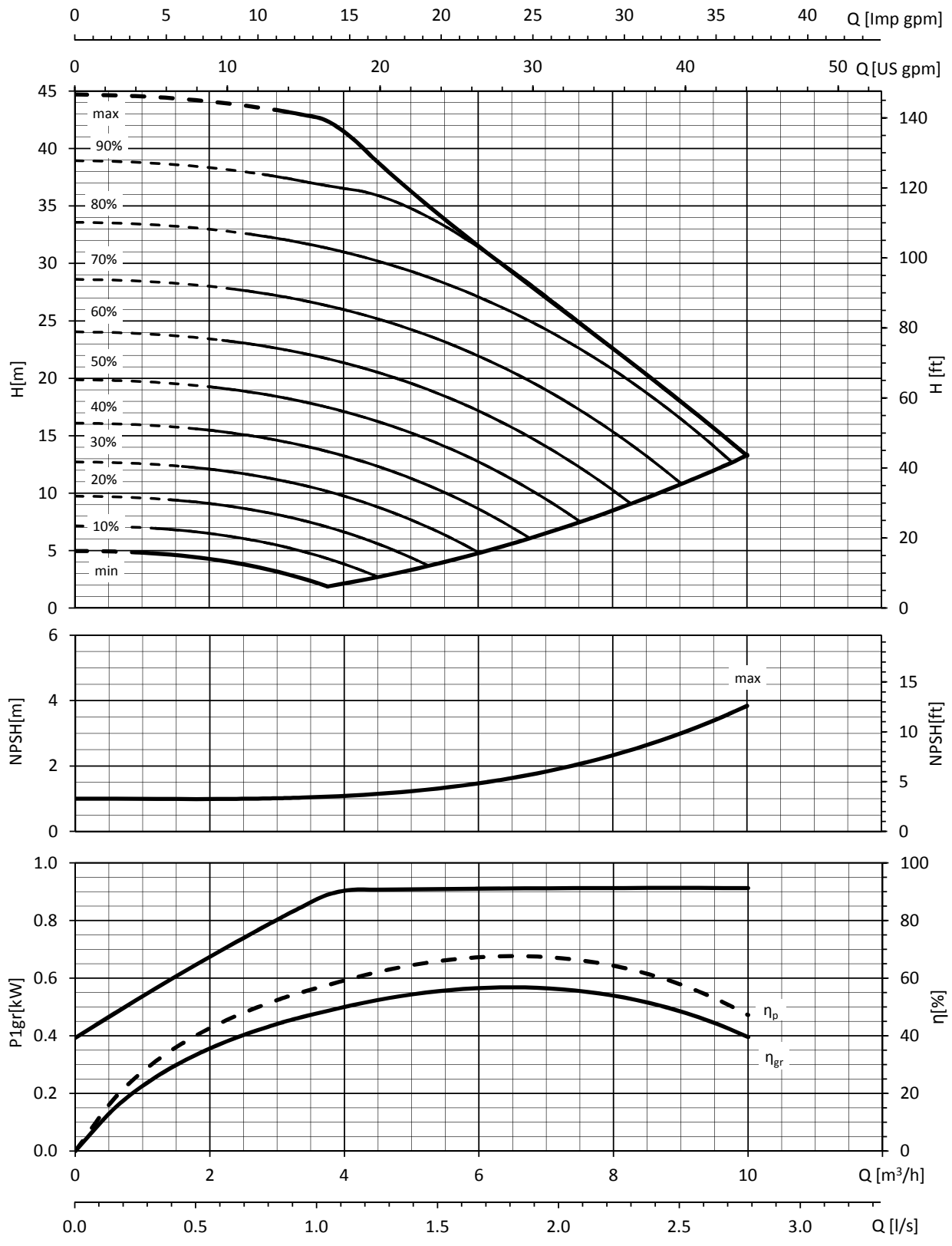
5SVE03..005



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVE SERIES
OPERATING CHARACTERISTICS

5SVE04..007

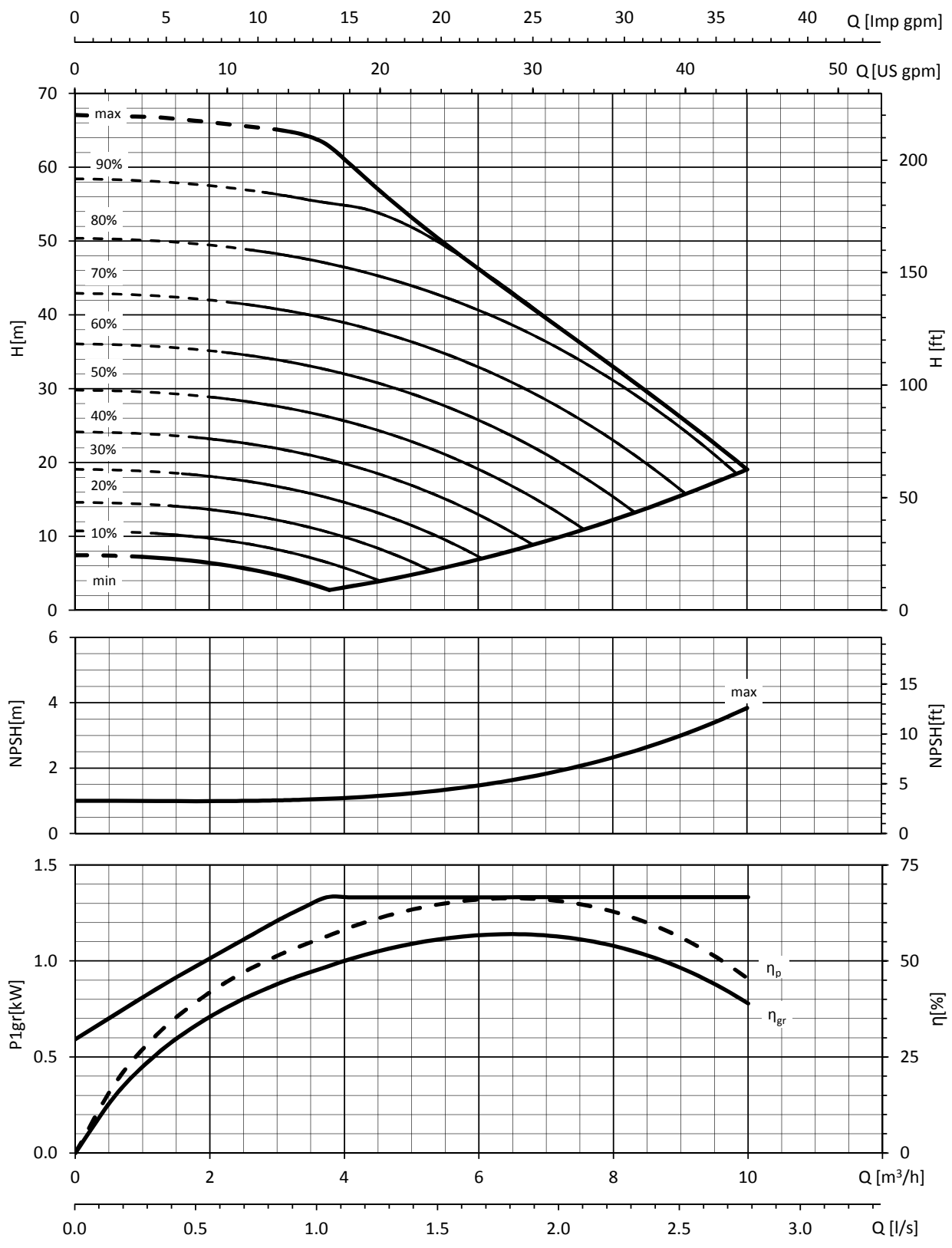


The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

LOWARA
a xylem brand

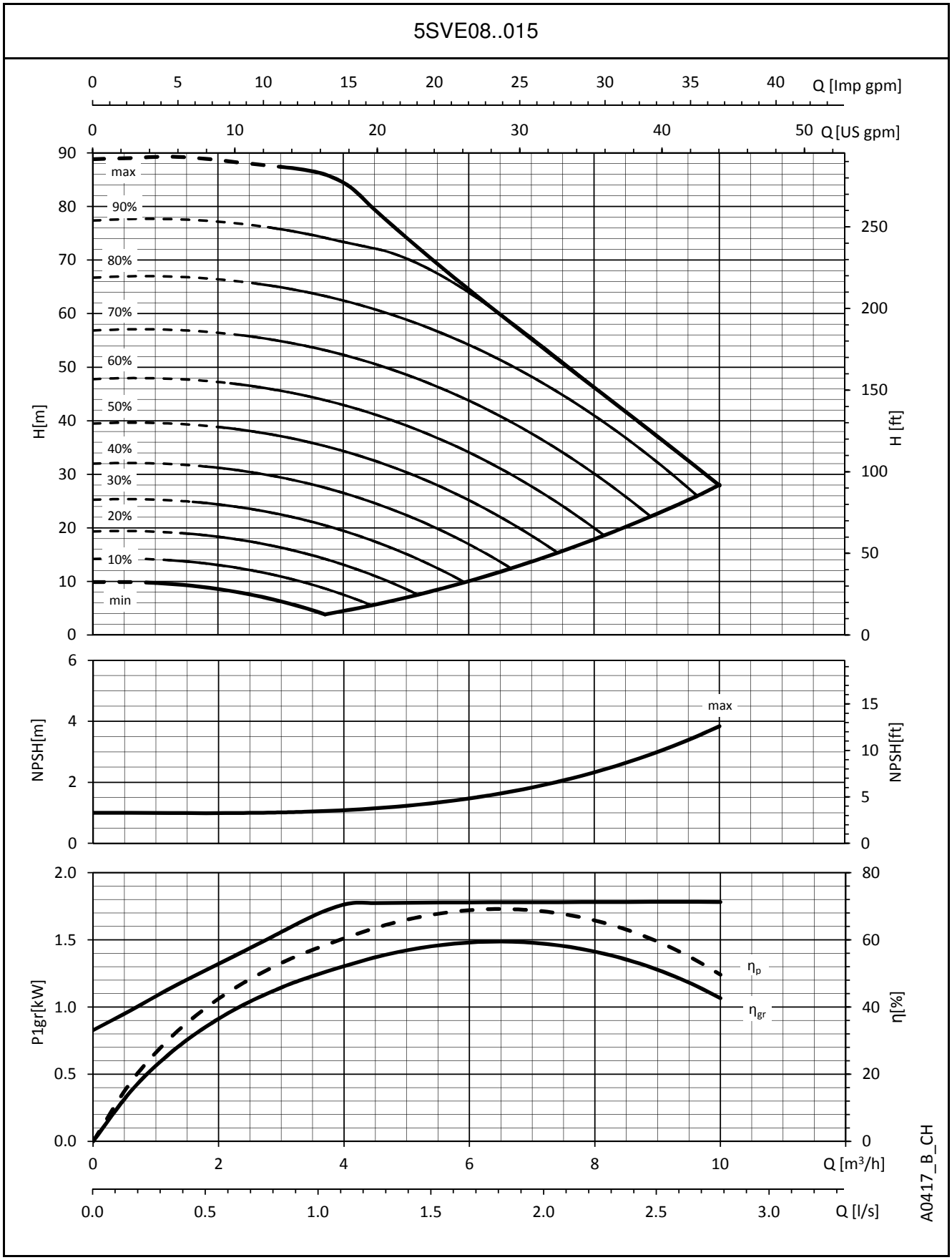
5SVE SERIES
OPERATING CHARACTERISTICS

5SVE06..011



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

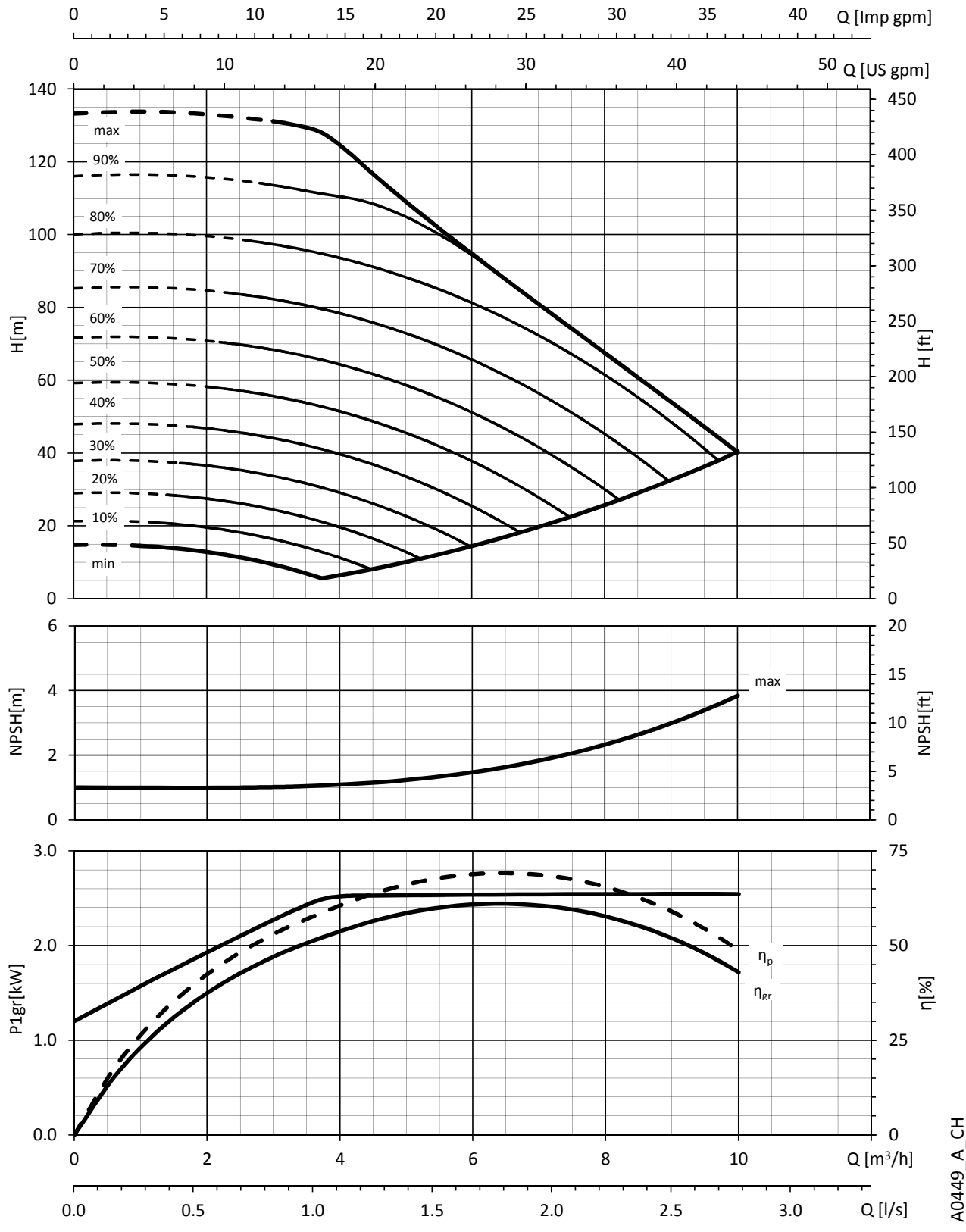
5SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

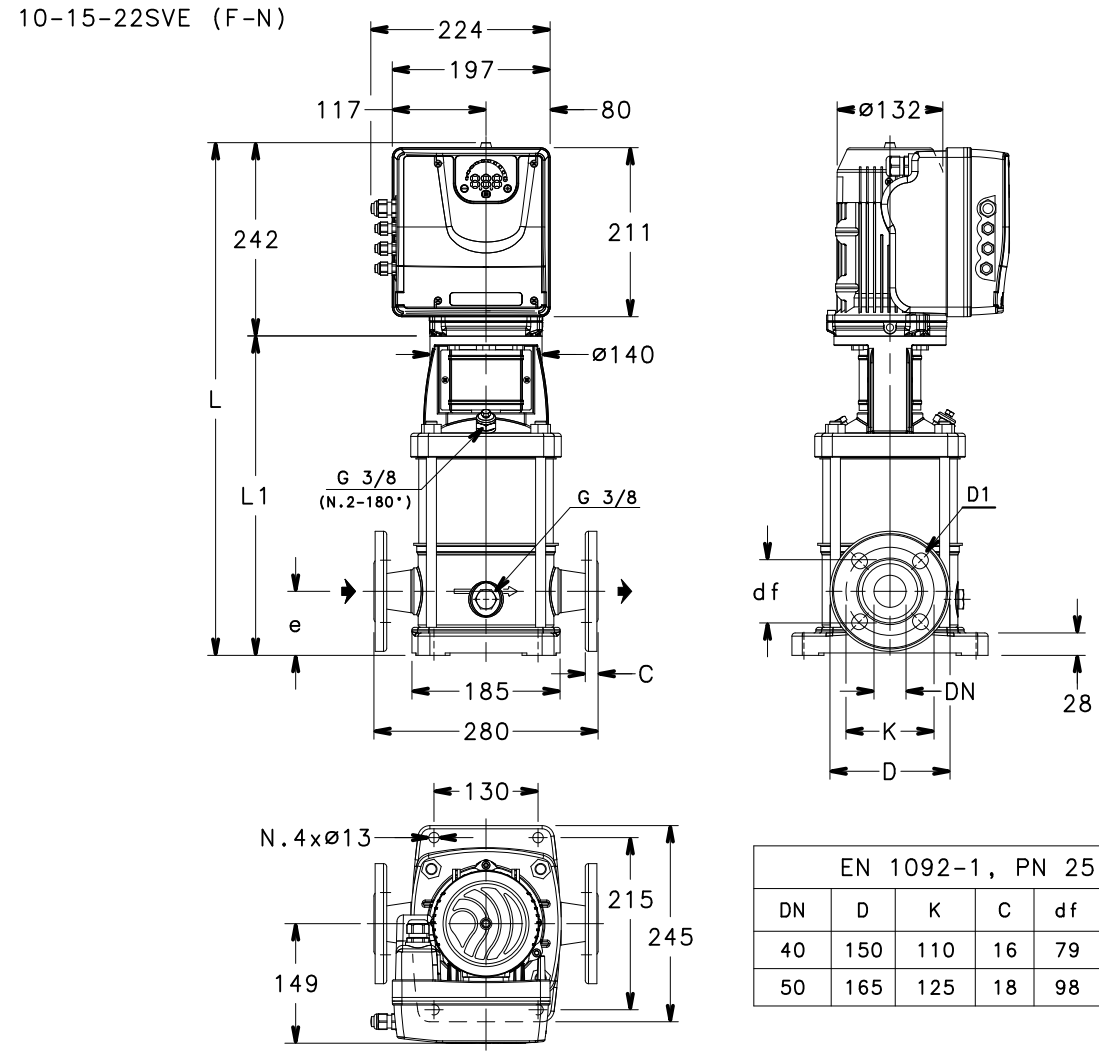
5SVE SERIES
OPERATING CHARACTERISTICS

5SVE12..022



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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



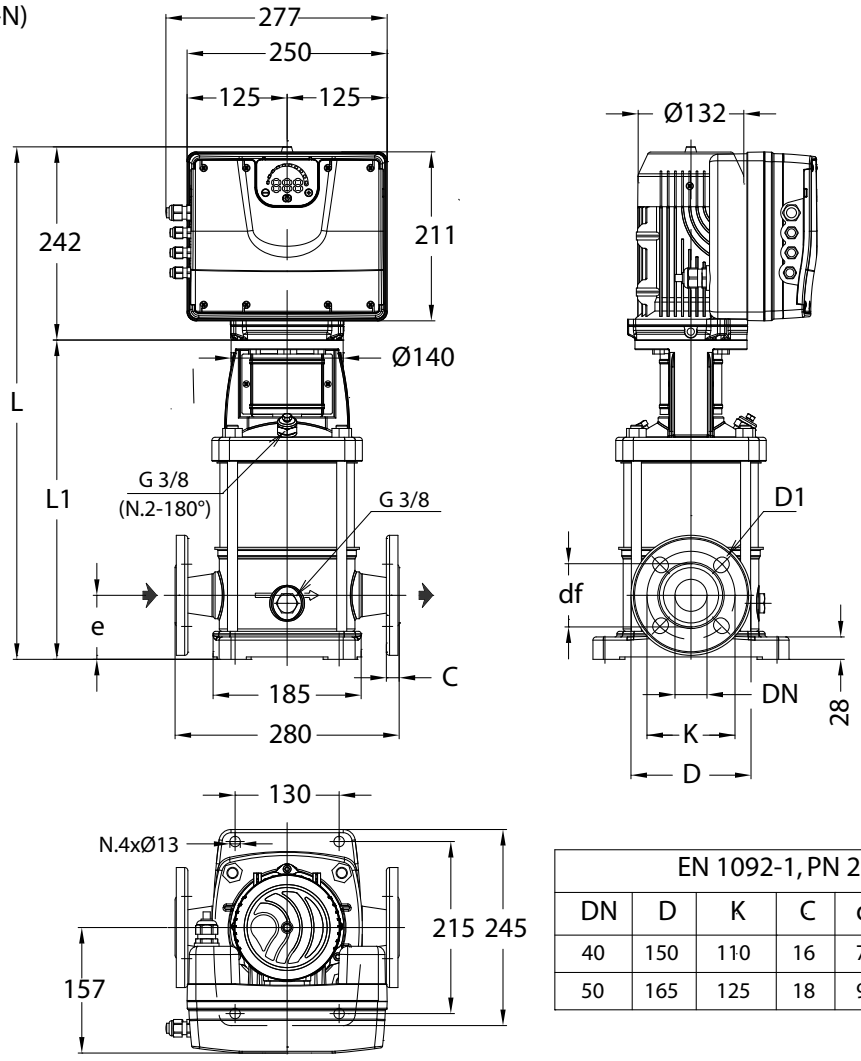
EN 1092-1, PN 25					
DN	D	K	C	df	D1
40	150	110	16	79	4x18
50	165	125	18	98	4x18

PUMP TYPE SVE F (SINGLE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	e	DN	WEIGHT (kg) PUMP	ELECTRIC PUMP
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

10-15-22SVE (F-N)



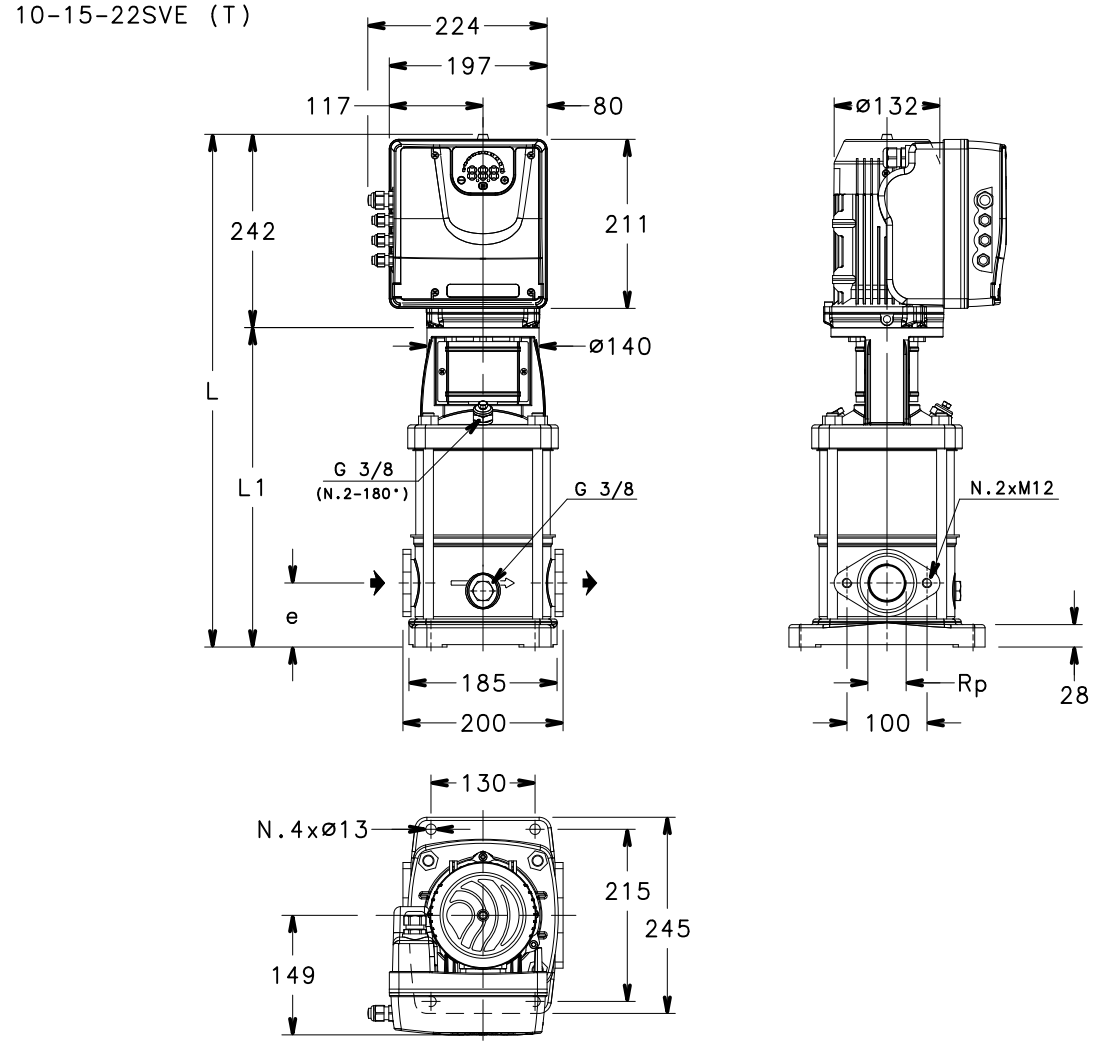
EN 1092-1, PN 25					
DN	D	K	C	df	L
40	150	110	16	79	4x18
50	165	125	18	98	4x18

10-22SVEF-T_eSM_A_DD

PUMP TYPE SVE F (THREE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	e	DN	WEIGHT (kg) PUMP	ELECTRIC PUMP
10SVE01F005P0T	0,55	90	609	367	80	40	14,6	27,7
10SVE02F007P0T	0,75	90	609	367	80	40	15,5	28,6
10SVE02F011P0T	1,1	90	609	367	80	40	15,5	30
10SVE03F015P0T	1,5	90	641	399	80	40	16,5	31,0
10SVE04F022P0T	2,2	90	673	431	80	40	17,5	33,5
15SVE01F007P0T	0,75	90	661	419	90	50	15,4	28,5
15SVE01F011P0T	1,1	90	661	419	90	50	15,4	29,9
15SVE02F015P0T	1,5	90	661	419	90	50	16,8	31,3
15SVE02F022P0T	2,2	90	661	419	90	50	18,2	34,2
22SVE01F007P0T	0,75	90	661	419	90	50	15,4	28,5
22SVE01F011P0T	1,1	90	661	419	90	50	15,4	29,9
22SVE02F015P0T	1,5	90	661	419	90	50	16,8	31,3
22SVE02F022P0T	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

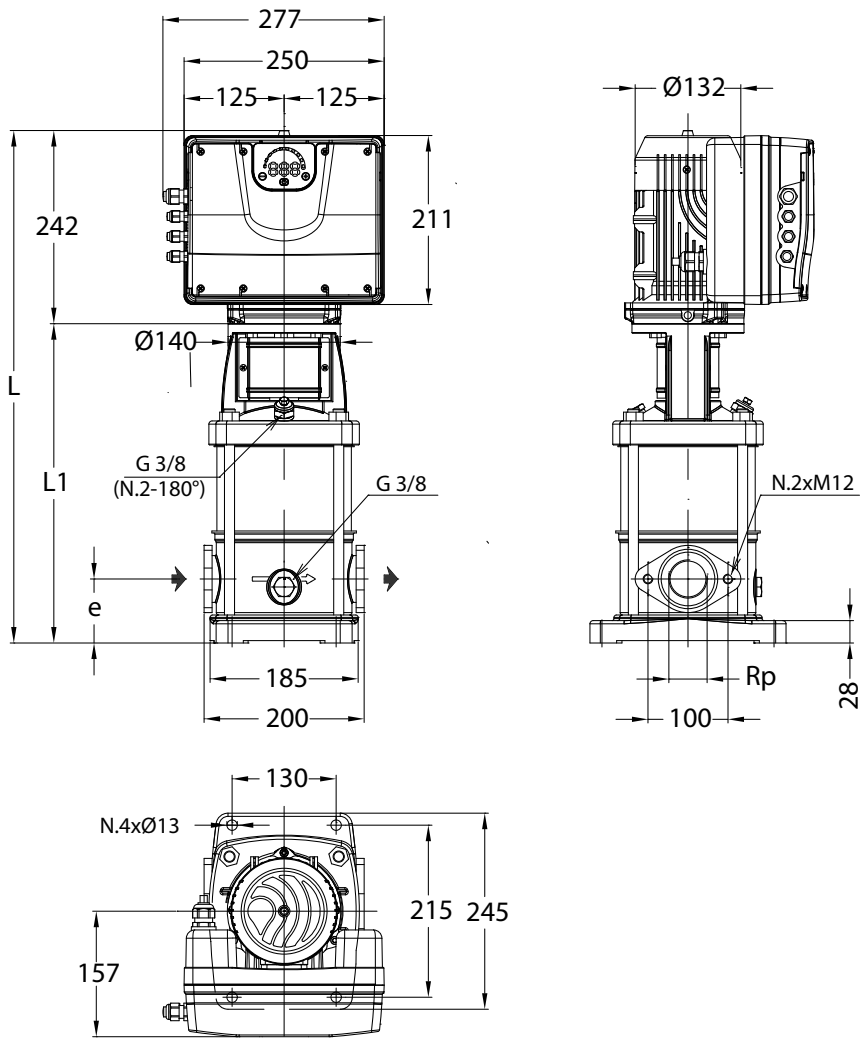


PUMP TYPE SVE T (SINGLE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	e	Rp	WEIGHT (kg) PUMP	ELECTRIC PUMP
10SVE01T005P0M	0,55	90	609	367	80	1 1/2	14,1	21,6
10SVE02T007P0M	0,75	90	609	367	80	1 1/2	15	22,5
10SVE02T011P0M	1,1	90	609	367	80	1 1/2	15	23,9
10SVE03T015P0M	1,5	90	641	399	80	1 1/2	16	24,9
15SVE01T007P0M	0,75	90	651	409	90	2	14,1	21,6
15SVE01T011P0M	1,1	90	651	409	90	2	14,1	23
15SVE02T015P0M	1,5	90	651	409	90	2	15,5	24,4
22SVE01T007P0M	0,75	90	651	409	90	2	14,1	21,6
22SVE01T011P0M	1,1	90	651	409	90	2	14,1	23
22SVE02T015P0M	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

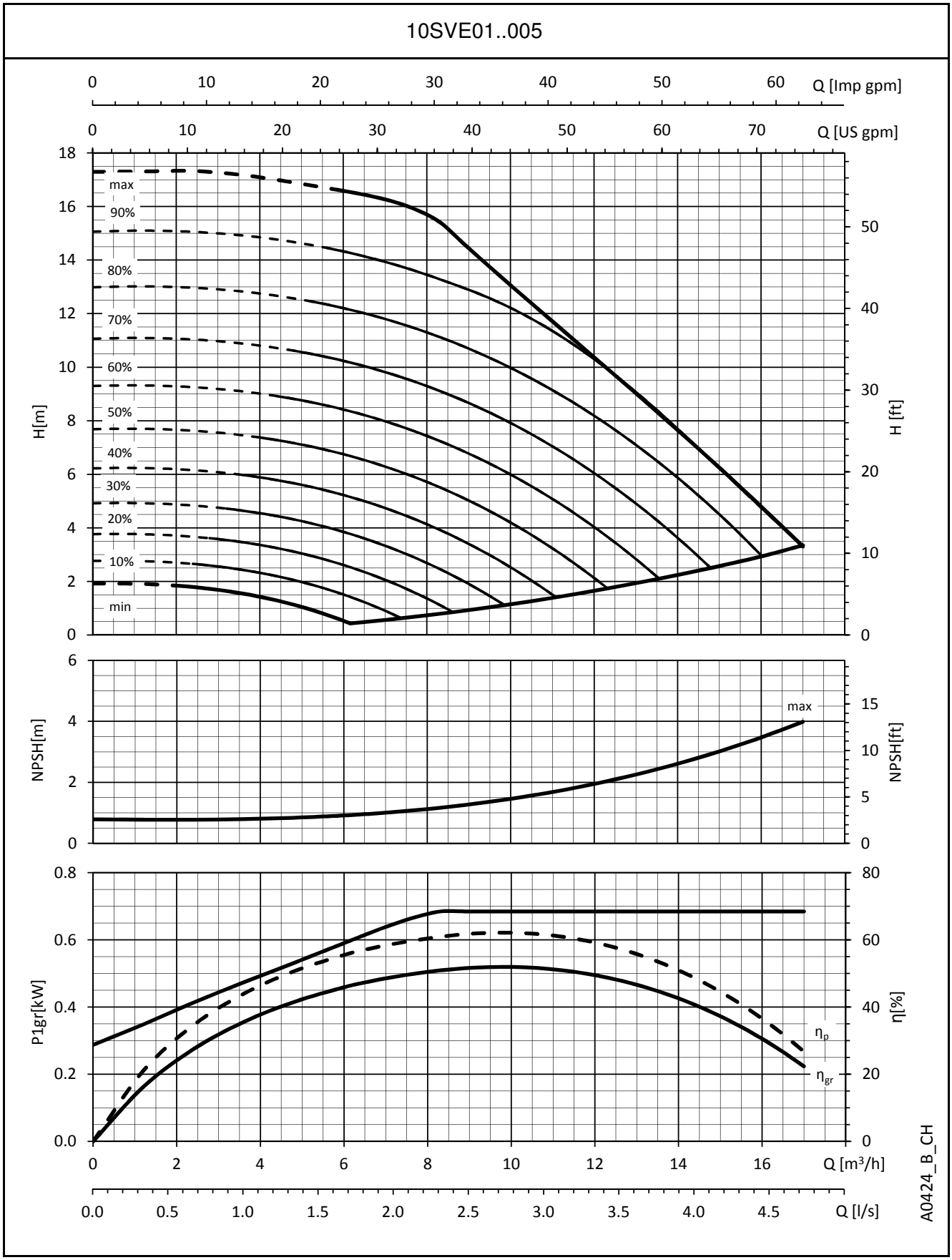
10-15-22SVE (T)



PUMP TYPE SVE T (THREE-PHASE)	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	L1	e	Rp	WEIGHT (kg) PUMP	ELECTRIC PUMP
10SVE01T005P0T	0,55	90	609	367	80	1 1/2	14,1	27,1
10SVE02T007P0T	0,75	90	609	367	80	1 1/2	15	28
10SVE02T011P0T	1,1	90	609	367	80	1 1/2	15	29,4
10SVE03T015P0T	1,5	90	641	399	80	1 1/2	16	30,4
10SVE04T022P0T	2,2	90	673	431	80	1 1/2	17	32
15SVE01T007P0T	0,75	90	651	409	90	2	14,1	27,1
15SVE01T011P0T	1,1	90	651	409	90	2	14,1	28,5
15SVE02T015P0T	1,5	90	651	409	90	2	15,5	29,9
15SVE02T022P0T	2,2	90	651	409	90	2	15,5	31,5
22SVE01T007P0T	0,75	90	651	409	90	2	14,1	27,1
22SVE01T011P0T	1,1	90	651	409	90	2	14,1	28,5
22SVE02T015P0T	1,5	90	651	409	90	2	15,5	29,9
22SVE02T022P0T	2,2	90	651	409	90	2	15,5	31,5

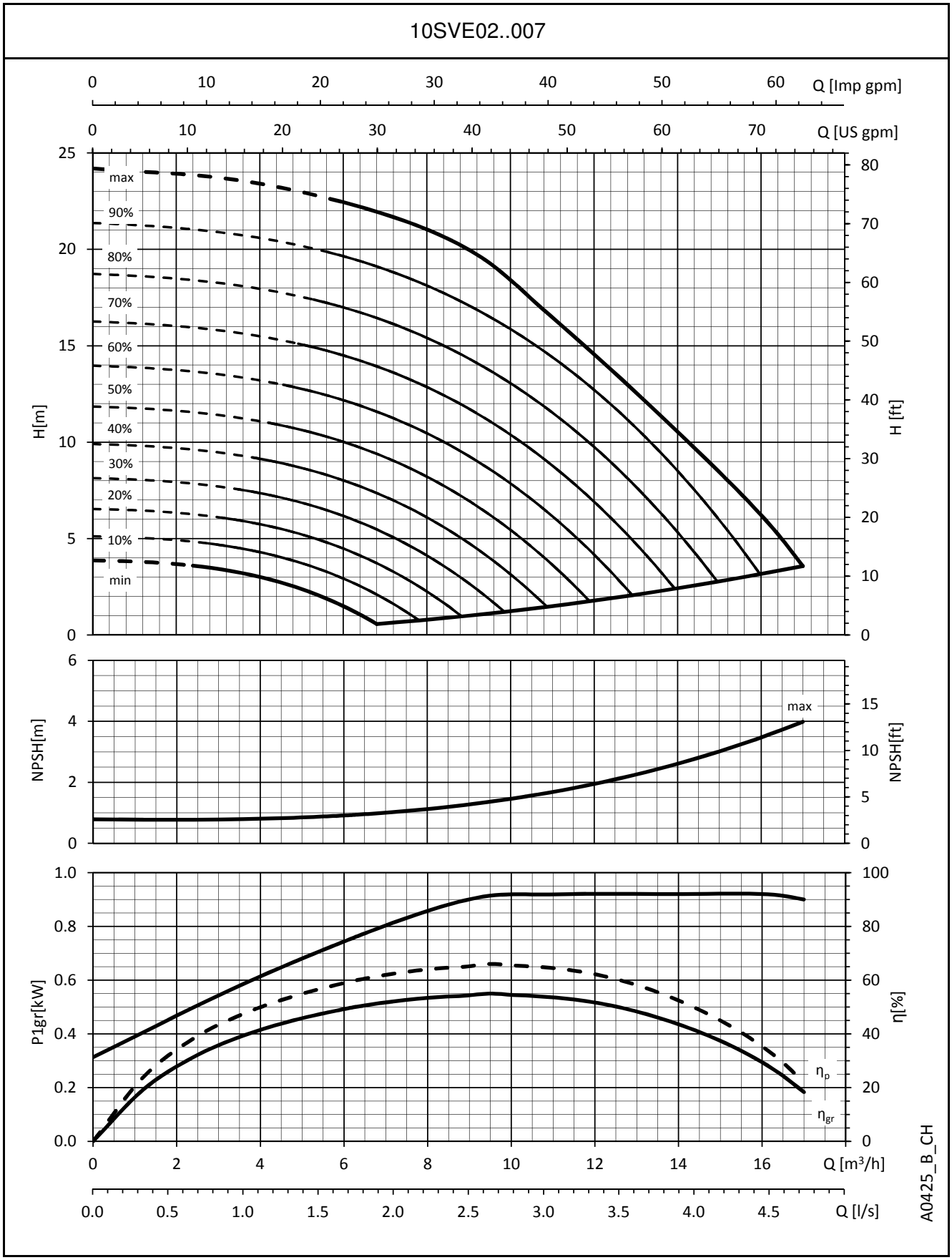
10-22sveT-esm-2p50-en_a_td

10SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

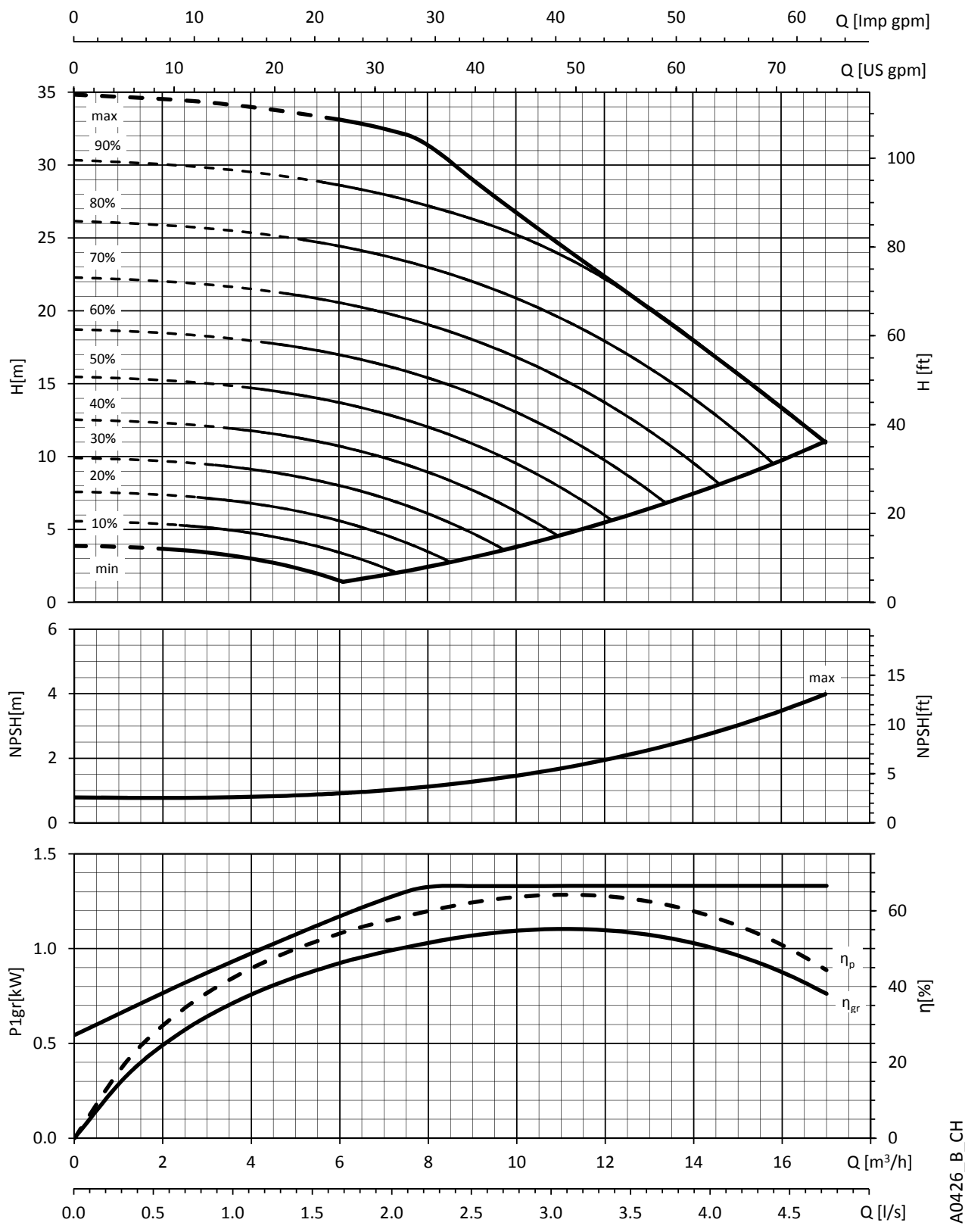
10SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

10SVE SERIES
OPERATING CHARACTERISTICS

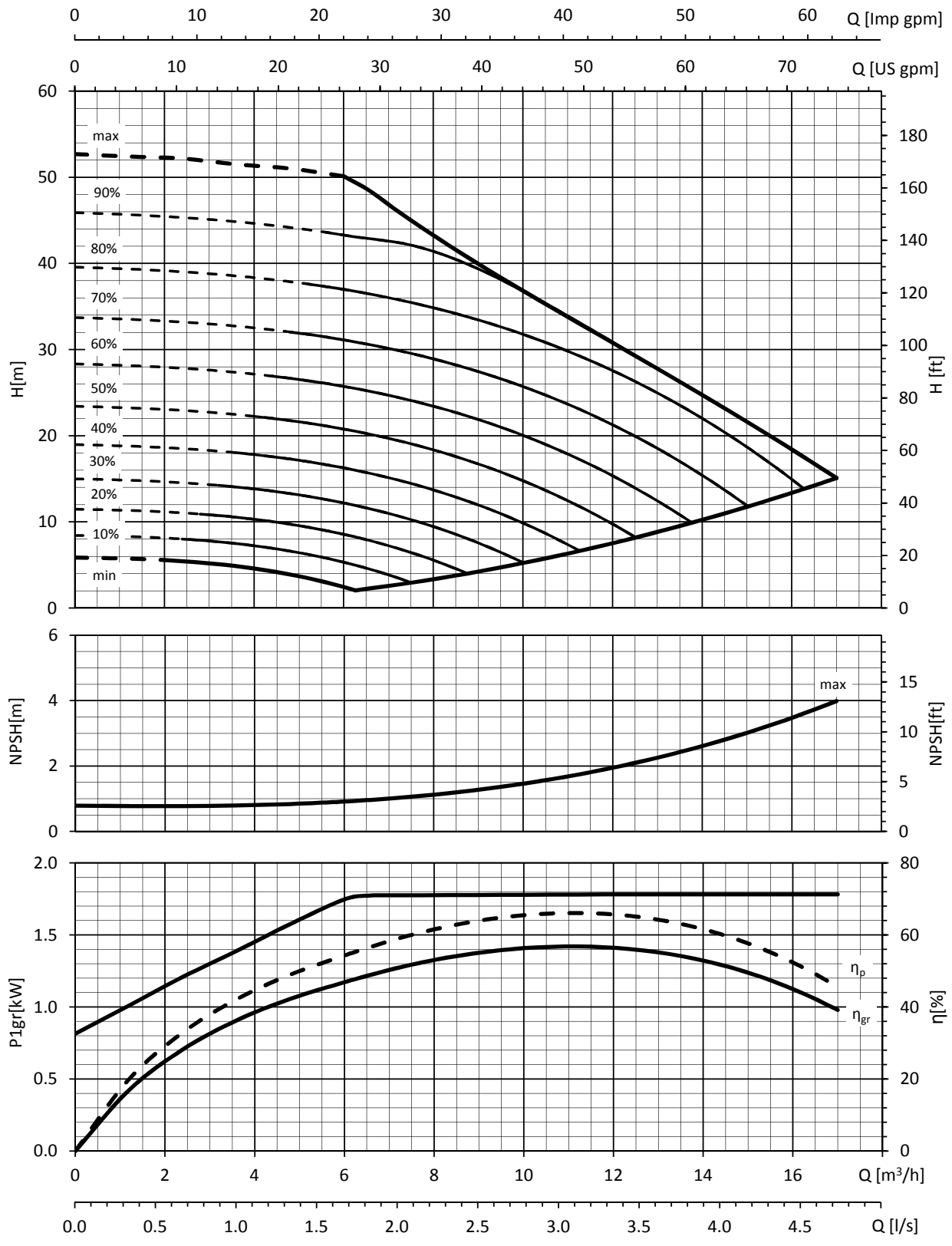
10SVE02..011



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

10SVE SERIES
OPERATING CHARACTERISTICS

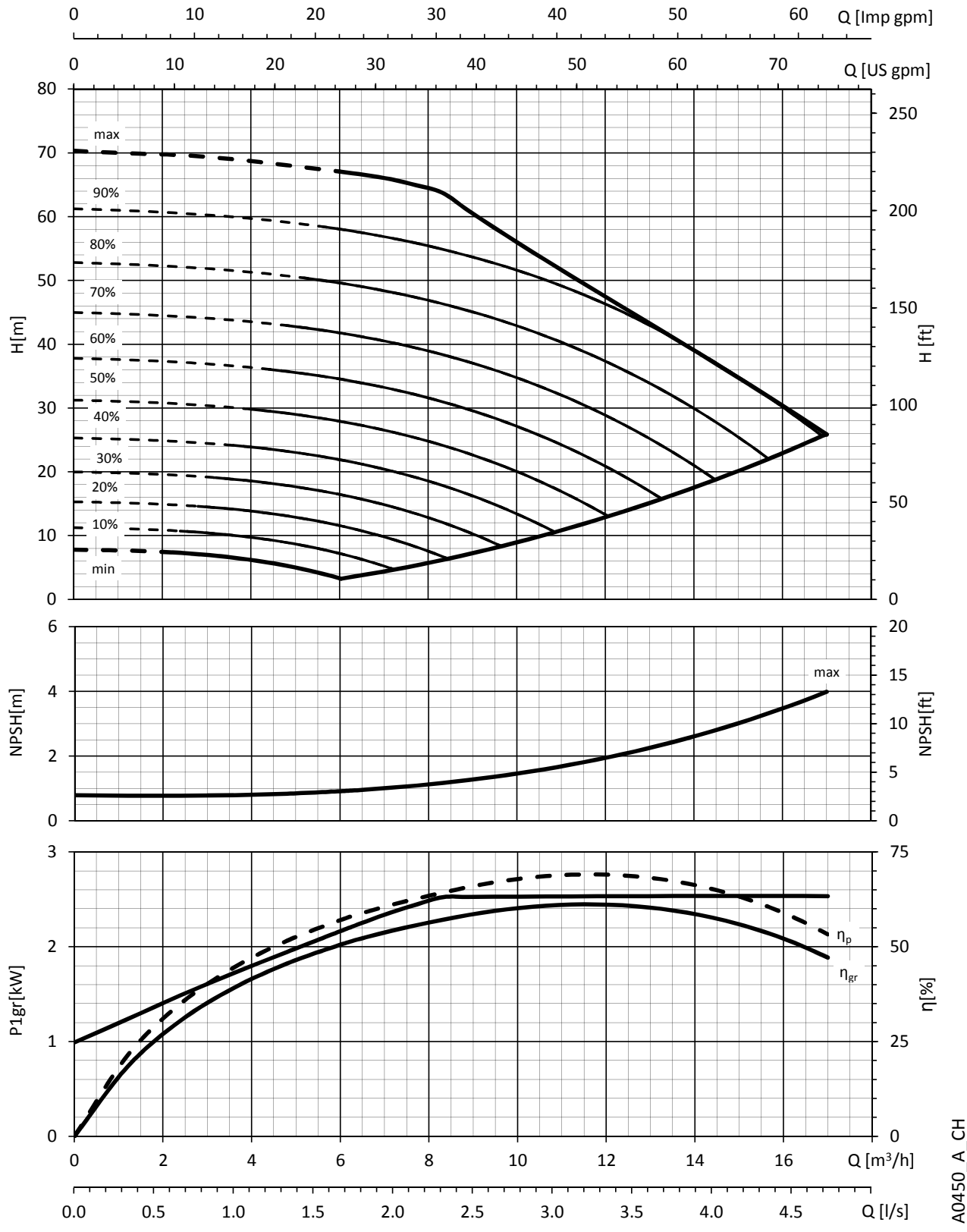
10SVE03..015



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

10SVE SERIES
OPERATING CHARACTERISTICS

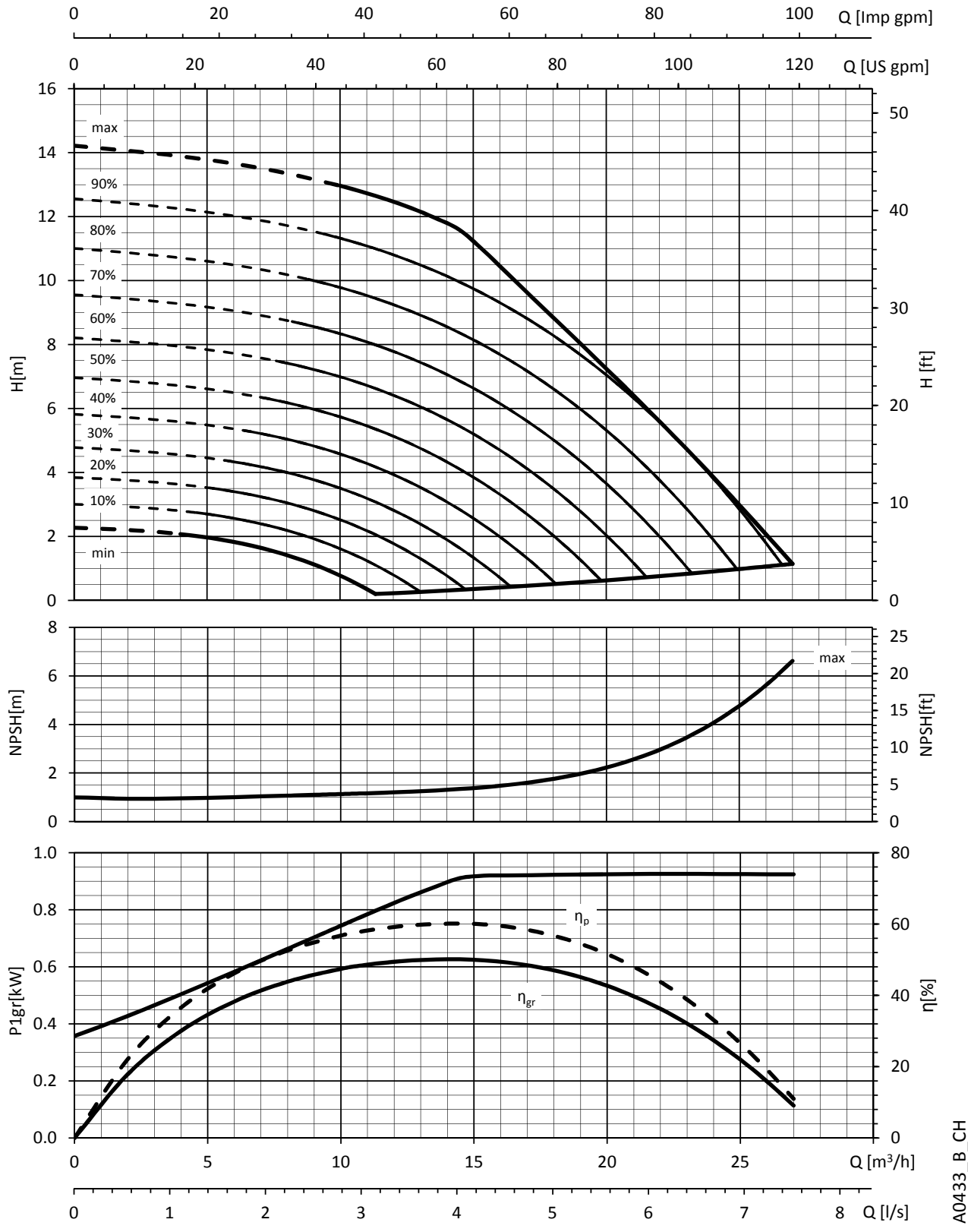
10SVE04..022



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

15SVE SERIES
OPERATING CHARACTERISTICS

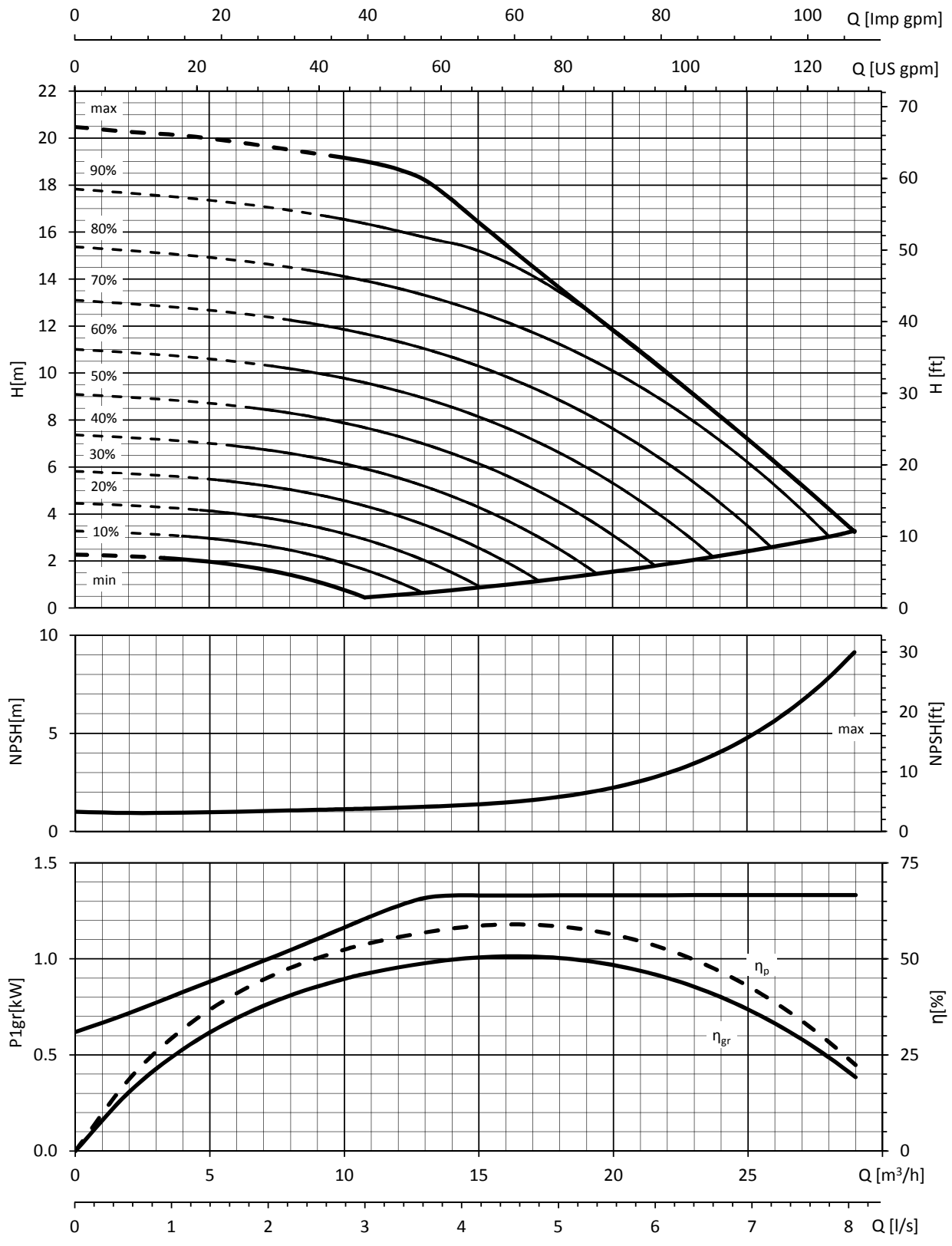
15SVE01..007



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

15SVE SERIES
OPERATING CHARACTERISTICS

15SVE01..011



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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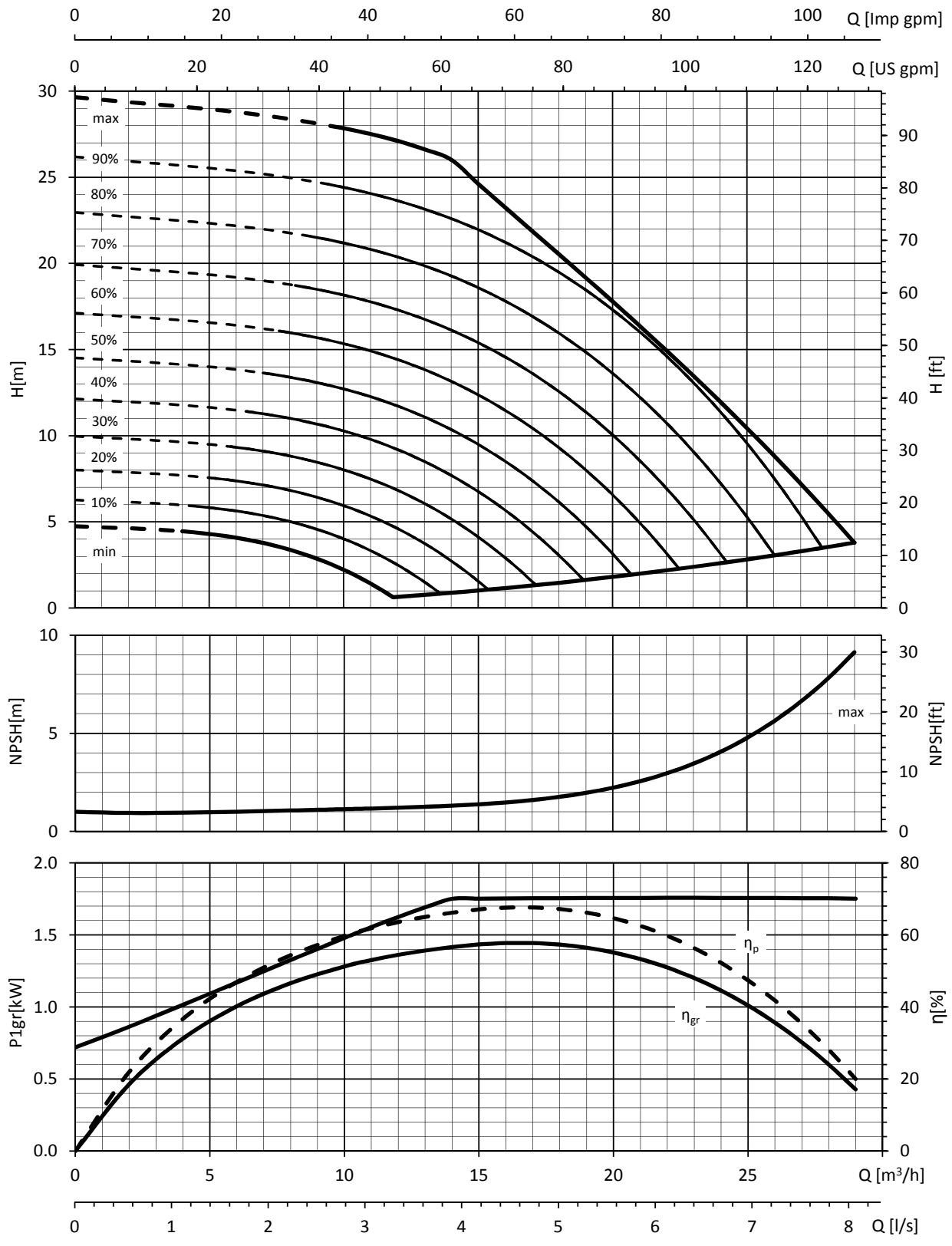
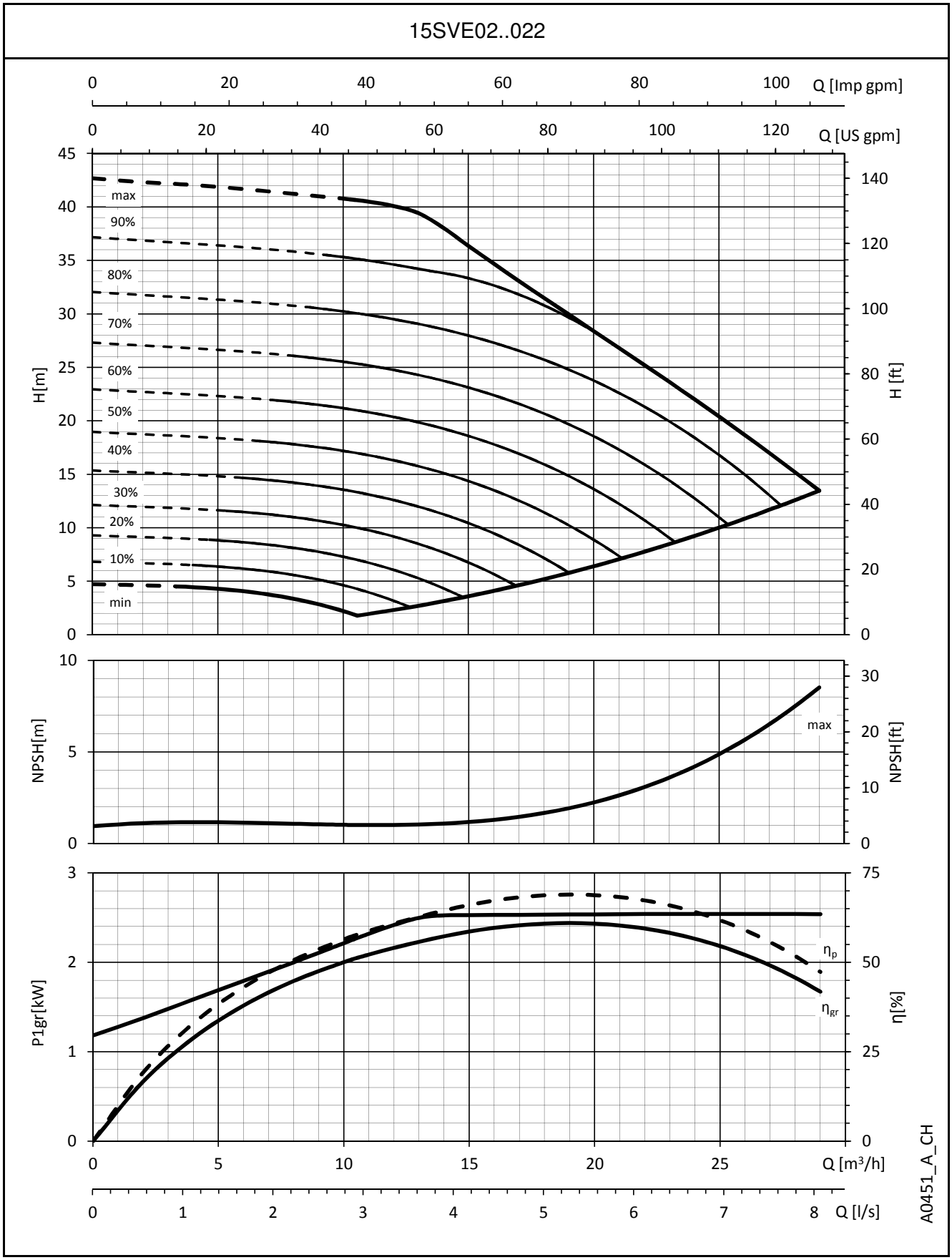
15SVE SERIES
OPERATING CHARACTERISTICS

15SVE02..015



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

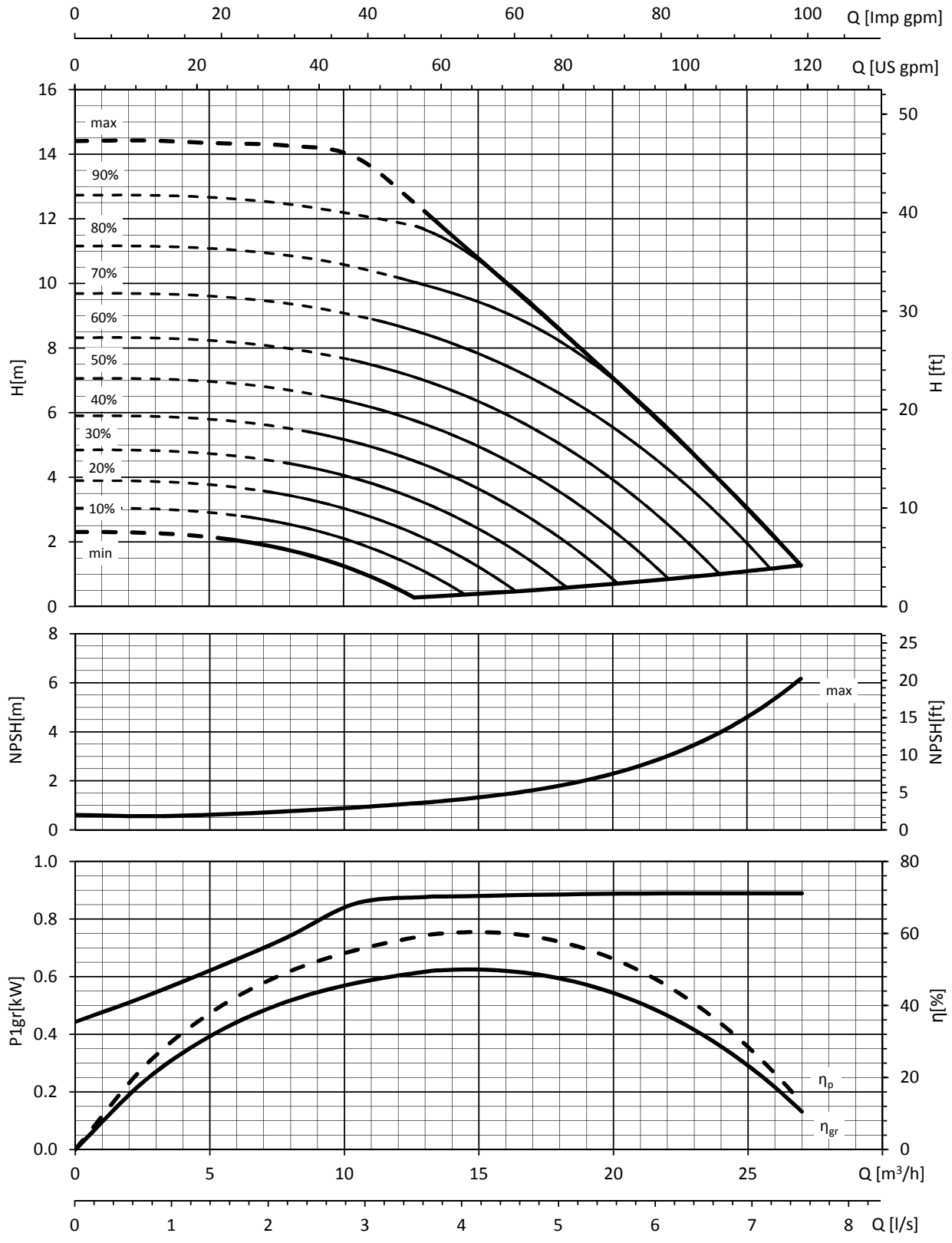
15SVE SERIES
OPERATING CHARACTERISTICS



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

22SVE SERIES
OPERATING CHARACTERISTICS

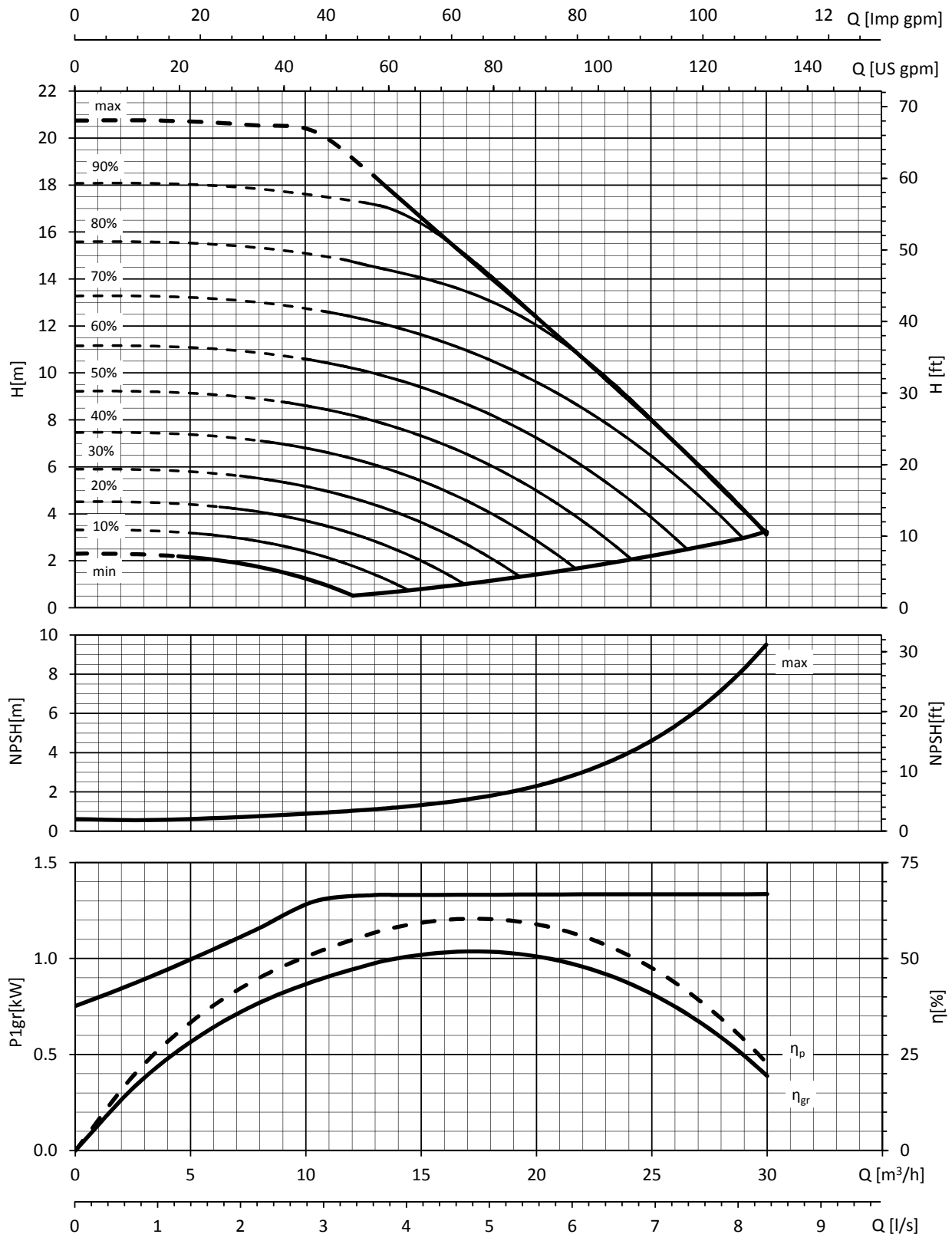
22SVE01..007



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

22SVE SERIES
OPERATING CHARACTERISTICS

22SVE01..011



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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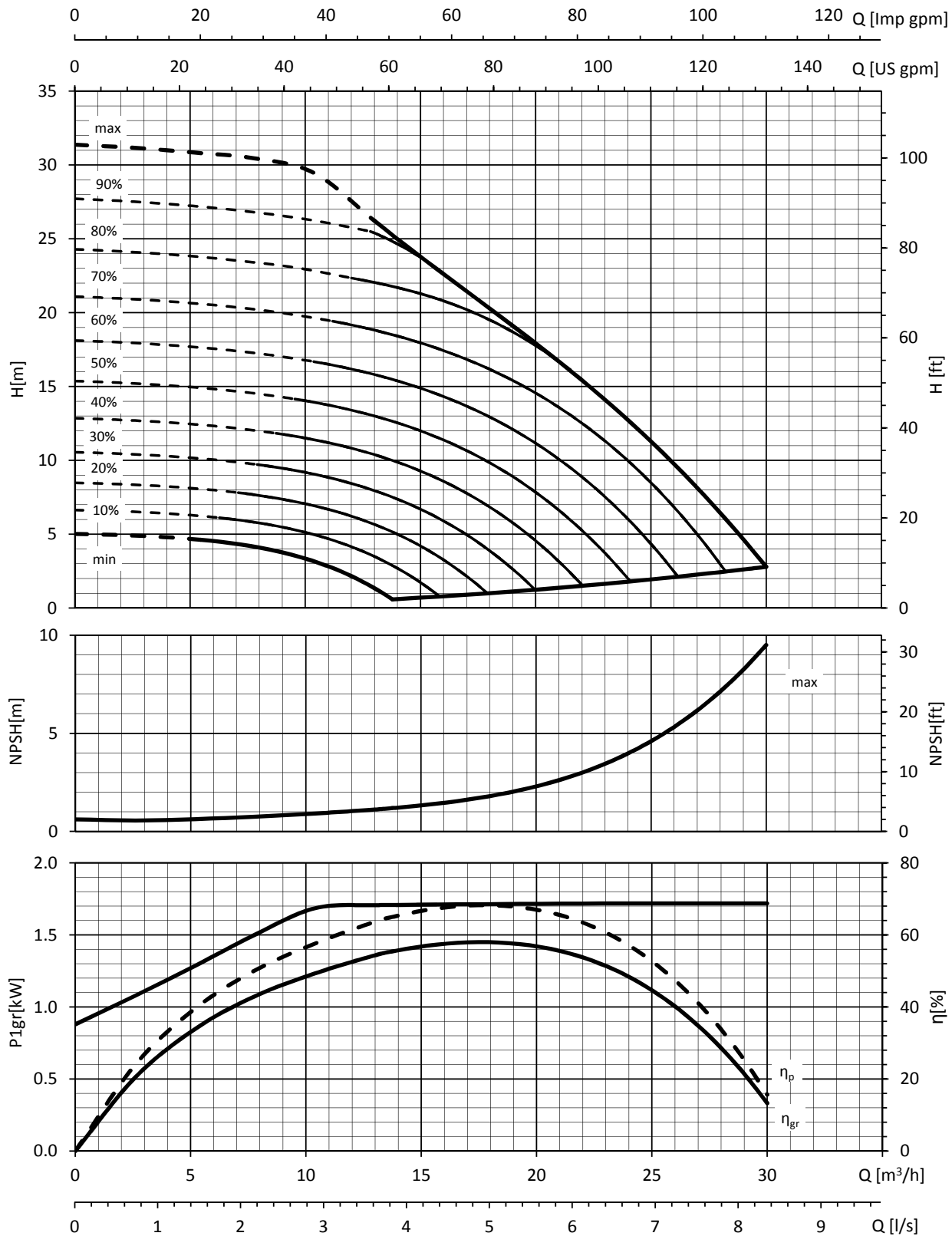
22SVE SERIES
OPERATING CHARACTERISTICS

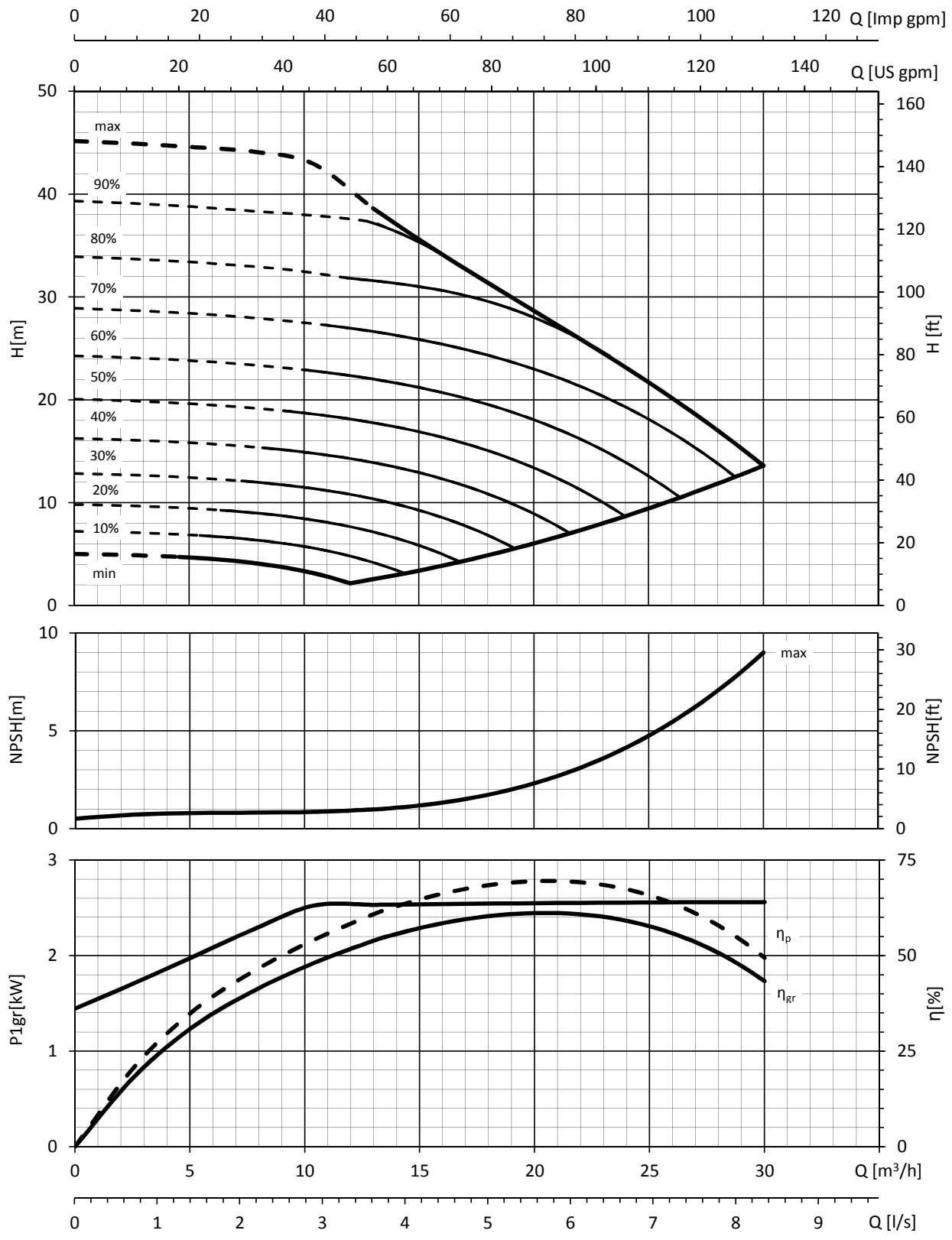
22SVE02..015



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

22SVE SERIES
OPERATING CHARACTERISTICS

22SVE02..022



The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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ACCESSORIES

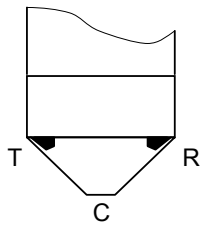
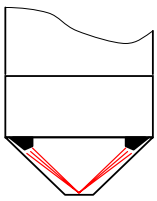
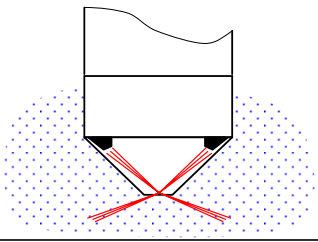
PROTECTION SENSOR AGAINST DRY RUNNING

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 featuresgo

- **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

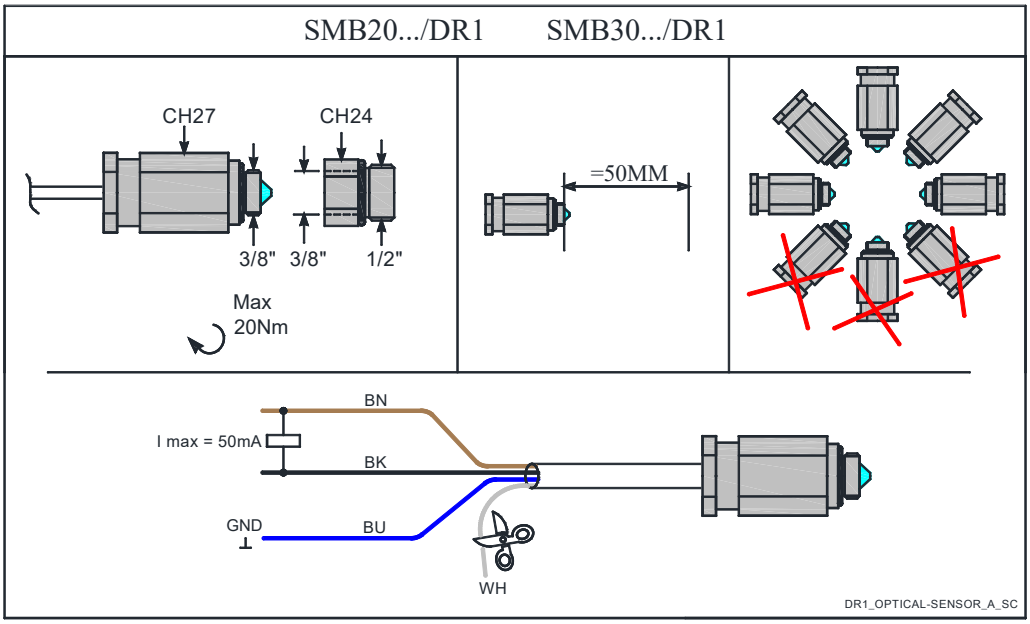
Operation is based on the change in the refractive index on the surfaces. The optic sensor comprises a glass cap (C) containing a transmitter (T) and an infrared receiver (R).	If there is no liquid, all the infrared light emitted by the transmitter is internally reflected by the surface of the glass 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 suitably
  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^2 (PVC-CEI 20-22) 2 metres long.

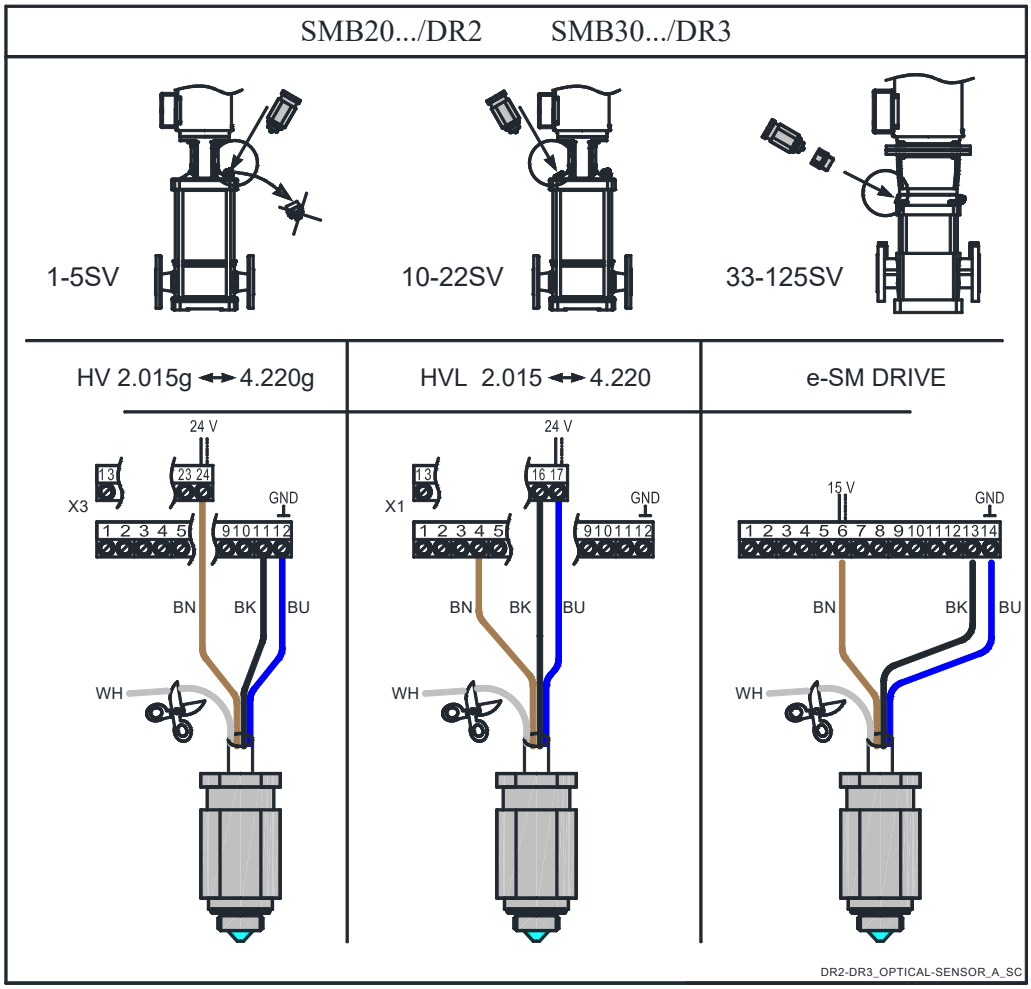
WIRING DIAGRAM

SENSOR KIT DRP-GP (code 109394610)



SENSOR KIT DRP-HV (code 109394600)

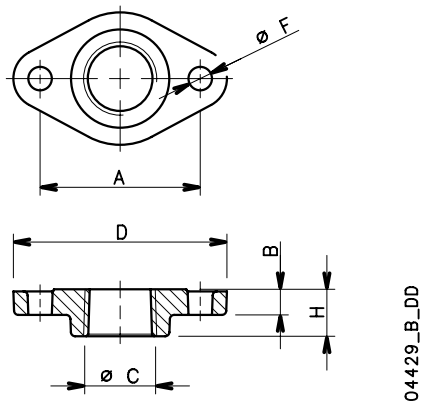
The sensor can be directly mounted on the filling plug of the e-SV pumps.
For the 33, 46, 66, 92, 125SV series, the 3/8" x 1/2" adaptor ring included in the Kit must also be mounted.



DIMENSIONS OF OVAL COUNTERFLANGES (SV T)

PUMP TYPE	DN	ø C	DIMENSIONS (mm) A	B	D	H	HOLES ø F	N°	TIGHTENING TORQUE (Nm)	PN
1-3SVT	25	Rp 1	75	12	100	22	11	2	40	16
5SVT	32	Rp 1¼	75	12	100	22	11	2	40	16
10SVT	40	Rp 1½	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

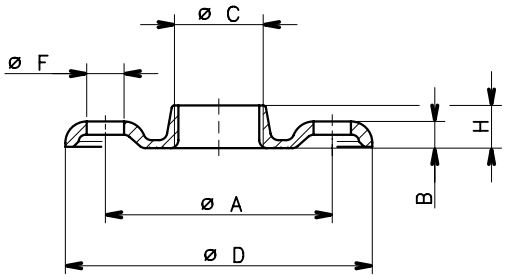


Standard supply (included with the pump)
- AISI 304L stainless steel (T versions).

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

PUMP TYPE	DN	ø C	DIMENSIONS (mm) ø A	B	ø D	H	HOLES ø F	N°	TIGHTENING TORQUE (Nm)	PN
1-3SV	25	Rp 1	85	10	115	16	14	4	50	25
5SV	32	Rp 1¼	100	13	140	16	18	4	100	25
10SV	40	Rp 1½	110	14	150	19	18	4	100	25
15-22SV	50	Rp 2	125	16	165	24	18	4	100	25
33SV	65	Rp 2½	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

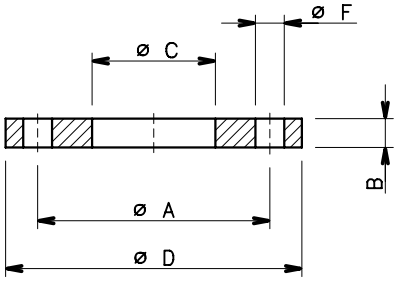


Round counterflanges Kit available on request:
Kit containing 2 counterflanges with bolts and gaskets.
- threaded, galvanized steel (F, R, G versions).
- threaded, AISI 316L stainless steel (N versions).

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

PUMP TYPE	DN	ø C	DIMENSIONS (mm) ø A	B	ø D	HOLES ø F	N°	TIGHTENING TORQUE (Nm)	PN
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

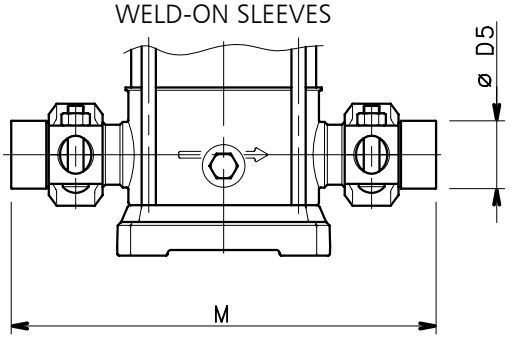


Round counterflanges Kit available on request:
Kit containing 2 counterflanges with bolts and gaskets.
- weld-on counterflanges, galvanized steel (G versions).
- weld-on counterflanges, AISI 316L stainless steel (N versions).

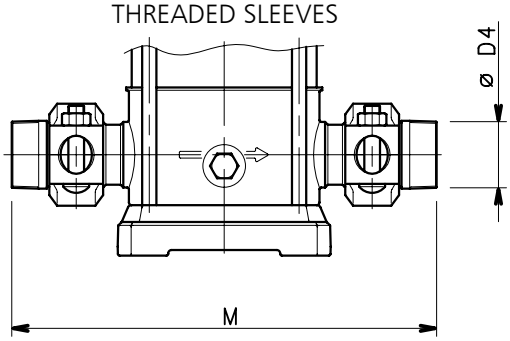
DIMENSIONS OF VICTAULIC® COUPLINGS (SV V)

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



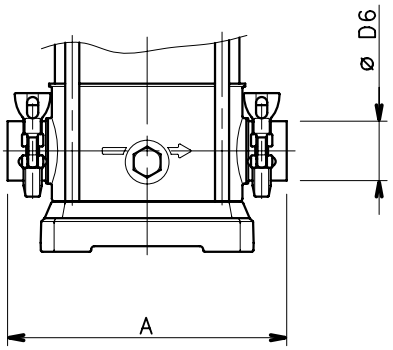
P.NUMBER	DESCRIPTION	PUMP TYPE	DIMENSIONS (mm) DN	ø D	M	H
109390880	KIT SINGLE VICTAULIC THREADED R 1"1/4 EPDM	1-3-5SV V	DN32	R 1"1/4	320	75
109390980	KIT SINGLE VICTAULIC THREADED R 1"1/4 FPM	1-3-5SV V	DN32	R 1"1/4	320	75
109390890	KIT SINGLE VICTAULIC THREADED R 2" EPDM	10-15-22SV V	DN50	R 2"	378	90
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

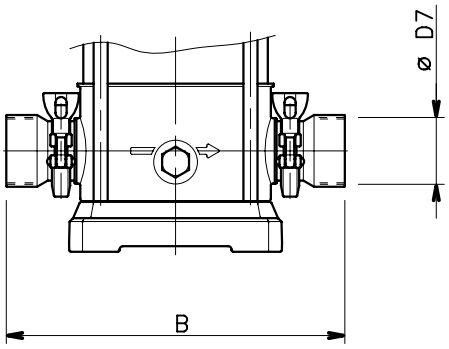
04427_B_DD

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 1¼
10-15-22SV C	248	301	53	Rp 2

1-22sv-giunti-clamp-en_a_td

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.

04426_B_DD

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.

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REPORTS AND DECLARATIONS

REPORTS AND DECLARATIONS

i) Test reports

a) **Factory Test Report**
(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**
- 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**
(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**
(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**
- does not include test results on supplied or similar products.

b) **EN 10204:2004 - type 2.2**
- 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, EMC 2014/30/EU, 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.

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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 hz at which to install the machine under safe conditions, the following formula must be verified:

hp + hz $\geq$ **(NPSHr + 0.5) + hf + hpv** 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.; hz 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. hpv is the quotient between the Pv 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° 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.

Water temperature (°C)	20	40	60	80	90	110	120
Suction loss (m)	0,2	0,7	2,0	5,0	7,4	15,4	21,5

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

Friction loss is shown in the tables Flow Resistance 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 ~15°C $\gamma = 1$ kg/dm^3
Flow rate required: 25 m^3/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 m^3/h, of 2 m.

For water at 15 °C

hp = Pa / γ = 10,33m, hpv = Pv / γ = 0,174m (0,01701 bar)

The Hf flow resistance in the suction line with foot valves is ~ 1,2 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	T	ps	ρ
°C	K	bar	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	0,24850	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	T	ps	ρ
°C	K	bar	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	T	ps	ρ
°C	K	bar	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

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

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

The hr values must be multiplied by:

0,71 for galvanized or painted steel pipes

0,54 for stainless steel or copper pipes

0,47 for PVC or PE pipes

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

V = water speed (m/s)

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

PRESSURE AND HEAD

Newton per square metre N/m^2	kilo Pascal kPa	bar bar	Pound force per square inch psi	Metre of water m H_2O	Millimetre of mercury mm Hg
1,0000	0,0010	1×10^{-5}	$1,45 \times 10^{-4}$	$1,02 \times 10^{-4}$	0,0075
1 000,0000	**1,0000**	0,0100	0,1450	0,1020	7,5006
1×10^5	100,0000	**1,0000**	14,5038	10,1972	750,0638
6 894,7570	6,8948	0,0689	**1,0000**	0,7031	51,7151
9 806,6500	9,8067	0,0981	1,4223	**1,0000**	73,5561
133,3220	0,1333	0,0013	0,0193	0,0136	**1,0000**

LENGTH

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

VOLUME

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

TEMPERATURE

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

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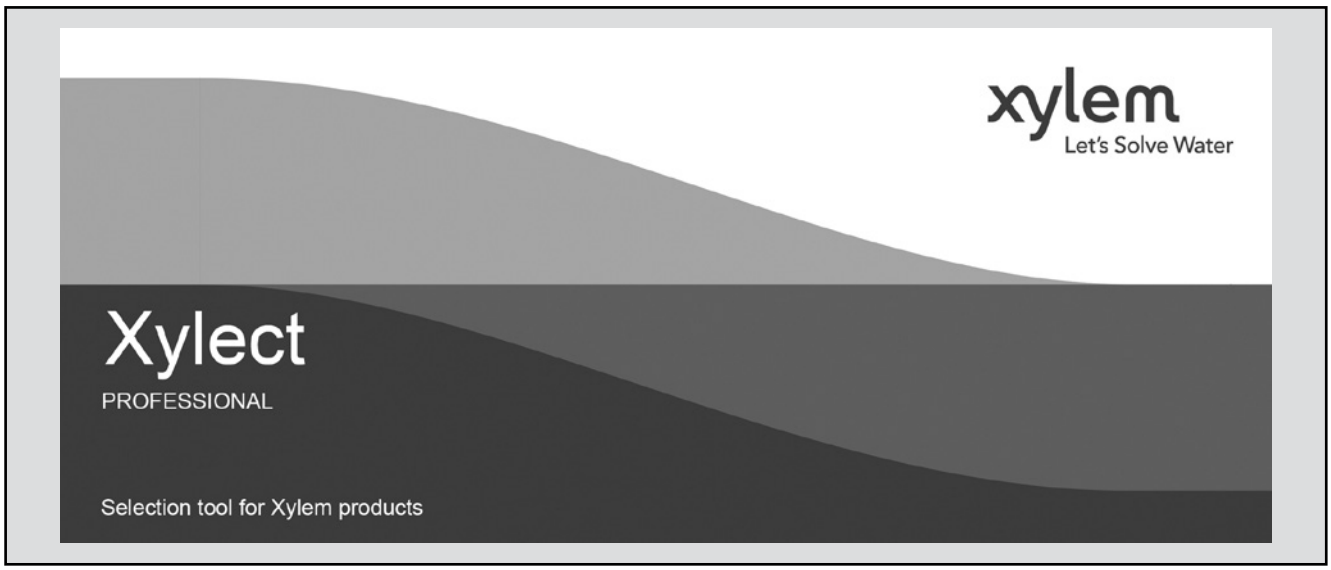
FURTHER PRODUCT SELECTION AND DOCUMENTATION
Xylect



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.

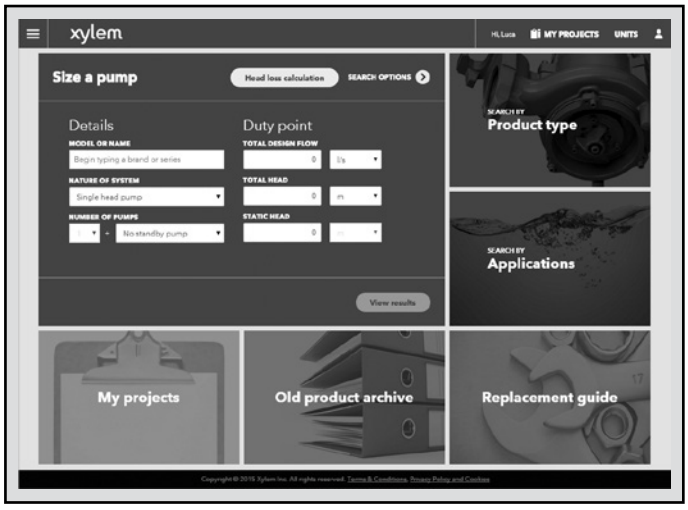
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara products.

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

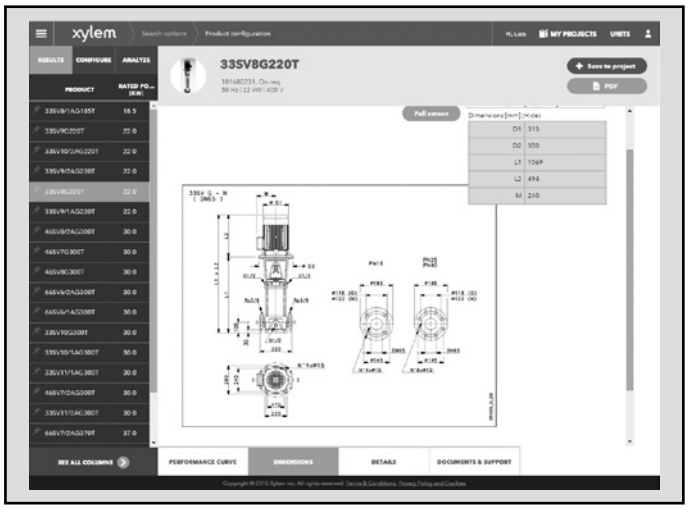
The detailed output makes it easy to select the optimal pump from the given alternatives.

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.



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

Xylem |'zīləm|

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.

LOWARA®

xylem
Let's Solve Water

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