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Let's Solve Water

60 Hz

e-SVI Series

SUBMERSIBLE VERTICAL ELECTRIC PUMPS

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

ErP 2009/125/EC

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Cod. 191012091 Rev. E Ed.09/2021

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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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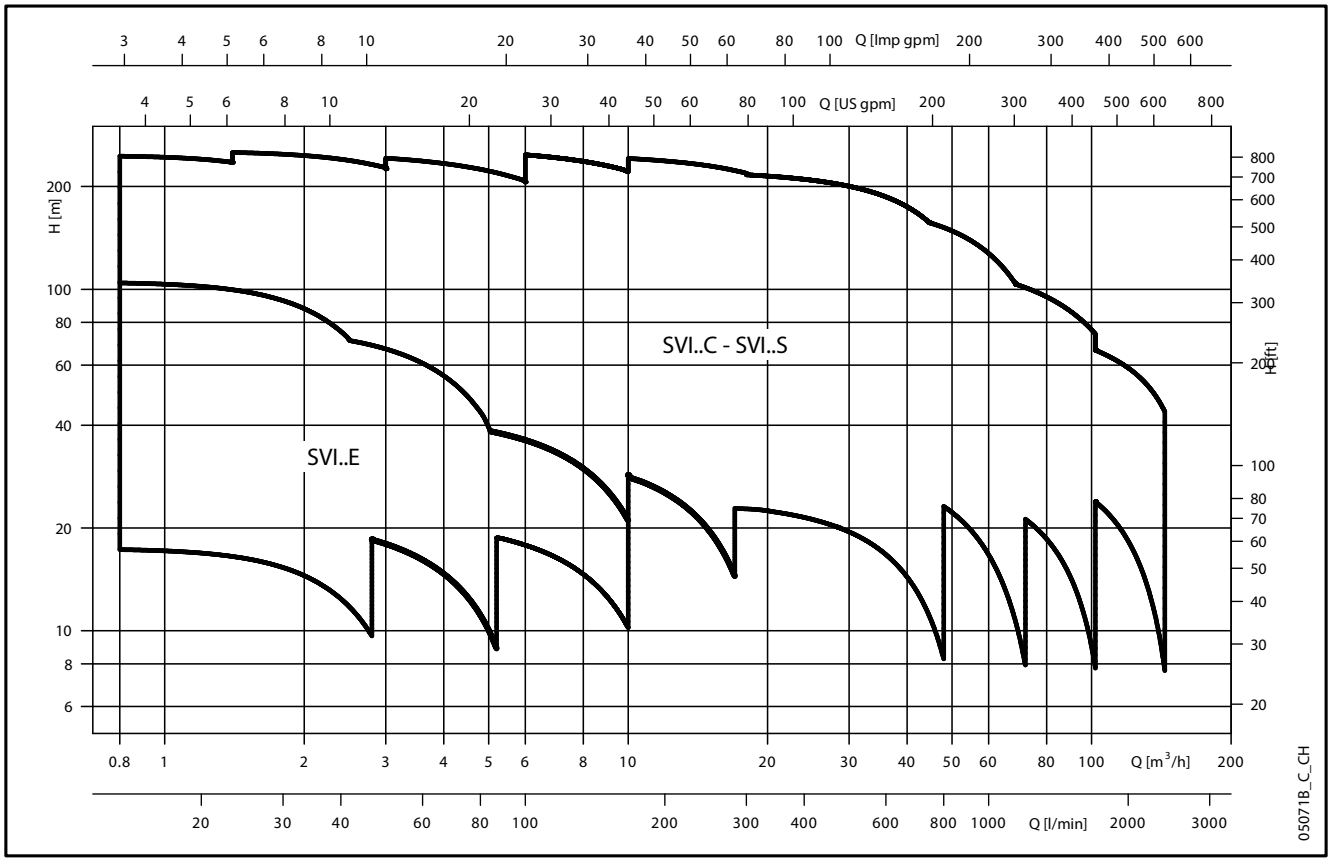
e-SVI SERIES
HYDRAULIC PERFORMANCE RANGE AT 60 Hz



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e-SVI SERIES
VERTICAL MULTISTAGE ELECTRIC PUMP WITH SUBMERGED STEM

The e-SVI pump is a vertical axis multistage centrifugal pump with submerged stem for the suction of liquids inside tanks.

The e-SVI pump is available in several hydraulic sizes, with rated flow rates from 1 to 92 m³/h and a variable number of impeller alternatives, capable of dealing with a wide range of duty points. Moreover, it can also be configured by adding empty stages, so that the length of the submerged section may be modified to reach the desired suction depth.

The e-SVI pump is available in two versions:
- coupled with coupling with a standard motor (C and M, S and N version)
- compact version without coupling (version E; 1SVI, 3SVI and 5SVI models only).

The high efficiency hydraulic components, which ensure life savings during the whole life cycle, are designed for maximum reliability and, thanks to the 1 to 22 m³/h impeller design, to also reduce the axial load on the motor.

SPECIFICATIONS

PUMP
- **Delivery**: up to 144 m³/h.
- **Head**: up to 260 m.
- **Temperature** of pumped liquid (with standard mechanical seal):
  - da -10°C a +90°C for version with coupling (C, M, S, N)
  - da -10°C +60°C for version with extended shaft (E)
- Maximum **operating pressure**:
  - PN 25 for version with coupling (C, M, N, S) (PN 16 for SVI 66 and 92 series)
  - PN10 for version with extended shaft (E)
- 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 motor for versions with coupling (C, M, S, N)
- Extended shaft motor for the compact version (E)
- **IP55 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.
- Operating temperature:
  - Single-phase version: from 0°C up to +40°C
  - Three-phase version: from 0°C up to +55°C

APPLICATIONS

- Cooling and lubricating circuits for tools (emulsions, cutting oil).
- Cooling systems (mixtures water-glycols in high quantity).
- Washing systems (mixtures water-detergents).

CONSTRUCTION

The hydraulic components are in stainless steel, while the pump body with the discharge port is available in both AISI 316 stainless steel and cast iron.

The mechanical seal for 1 to 22 m³/h models with coupling can consist of either a strong cartridge construction (version C), or it can be traditional (version M for 1 to 22 m³/h models and higher).
With motors with powers from 5,5 kW and higher, the traditional seal may be replaced without removing the motor from the pump.

Compact models with motor with extended shaft (version E) are supplied as standard with a chamber for the draining of significant liquid leaks inside the suction tank, caused by a break of the mechanical seal.

e-SVI pumps can be supplied with Hydrovar control system or e-SM drive, for the efficient management of the pump at variable speeds

e-SVI SERIES
CHARACTERISTICS OF 1, 3, 5, 10, 15, 22SVI SERIES

- The following versions are available:
  - C: version with coupling and cartridge mechanical seal.
  - E: version with extended shaft (1, 3, 5 SVI only).
  - M: version with coupling and standard mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069 for 1, 3, 5SVI series and 10, 15, 22SVI series (up to 4 kW).
- Possible choice of the following materials:
  - G: AISI 304 hydraulic components; cast iron body and discharge port.
  - N: AISI 316 hydraulic components, body and discharge port
- Reduced axial thrusts enable the use of standard motors that are easily found in the market.
- Liquid temperature between -30°C and +90°C, depending on the mechanical seal used.
- Minimum liquid level at the suction 20 mm.

CHARACTERISTICS OF 33, 46, 66, 92SVI SERIES

- Vertical pump with submersible body.
- The following versions are available:
  - S: version with standard motor; impellers, diffusers, tie-rods, suction base and filter made entirely of stainless steel. Adapter and upper head in cast iron.
  - N: version with standard motor; made entirely of AISI 316 stainless steel.
- Delivery port can be coupled to counter-flanges, according to EN 1092.
- Motor versions, depending on the model:
  - with standard bearings for powers up to 15 kW.
  - with reinforced bearings, able to support the vertical axial thrust of the pump for powers ≥ 18,5 kW.
- Balanced mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069, which can be replaced without removing the motor from the pump.
- Standard version for liquid temperatures ranging from -10°C e +90°C.

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.

- 4 poles version.
- Special voltages.
- Special materials for mechanical seals and gaskets.
- Horizontal installation.

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GENERAL CHARACTERISTICS
e-SVI 2 POLES

		COMPACT VERSION			VERSION WITH COUPLING									
		1SVI	3SVI	5SVI	1SVI	3SVI	5SVI	10SVI	15SVI	22SVI	SVI 33	SVI 46	SVI 66	SVI92
Max efficiency flow (m³/h)		2	3,6	7	2	3,6	7	12,4	21,8	24,5	40	50	87	108
Flow range (m³/h)	min	0,8	1,4	3	0,8	1,4	3	6	10	13	18	27	36	54
	max	2,8	5,2	10	2,8	5,2	10	17	29	34	48	72	102	144
Maximum head (m)		105	76	44	250	250	250	260	260	220	225	180	130	100
Motor power (kW)	min	0,37	0,37	0,37	0,37	0,37	0,55	0,75	1,5	2,2	3	5,5	7,5	11
	max	1,1	1,1	1,1	3	4	5,5	11	18,5	18,5	30	30	30	30
Max η (%) of pump		50	60	70	50	60	70	71	72	73	76,5	79	78	79,5
Standard temperature (°C)		-10 +60			-10 +90									

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e-SVI AVAILABLE VERSIONS

	VERSION	MECH. SEAL	HYDRAULIC	UPPER HEAD	DELIVERY PORT
1-3-5SVI..EG	Close-coupled	Standard	AISI 304	Cast iron	Threaded Rp 3/4
1-3-5SVI..EN	Close-coupled	Standard	AISI 316	AISI 316	Threaded Rp 3/4
1-3-5SVI..CG	With coupling	Cartridge	AISI 304	Cast iron	Threaded Rp 1 1/4
1-3-5SVI..CN	With coupling	Cartridge	AISI 316	AISI 316	Threaded Rp 1 1/4
10-15-22SVI..CG	With coupling	Cartridge	AISI 304	Cast iron	Threaded Rp 2
10-15-22SVI..CN	With coupling	Cartridge	AISI 316	AISI 316	Threaded Rp 2
1-3-5SVI..MG	With coupling	Standard	AISI 304	Cast iron	Threaded Rp 1 1/4
1-3-5SVI..MN	With coupling	Standard	AISI 316	AISI 316	Threaded Rp 1 1/4
10-15-22SVI..MG	With coupling	Standard	AISI 304	Cast iron	Threaded Rp 2
10-15-22SVI..MN	With coupling	Standard	AISI 316	AISI 316	Threaded Rp 2
SVI33-46-66-92S	With coupling	Standard	AISI 304	Cast iron	Flanged DN 80
SVI33-46-66-92N	With coupling	Standard	AISI 316	AISI 316	Flanged DN 80

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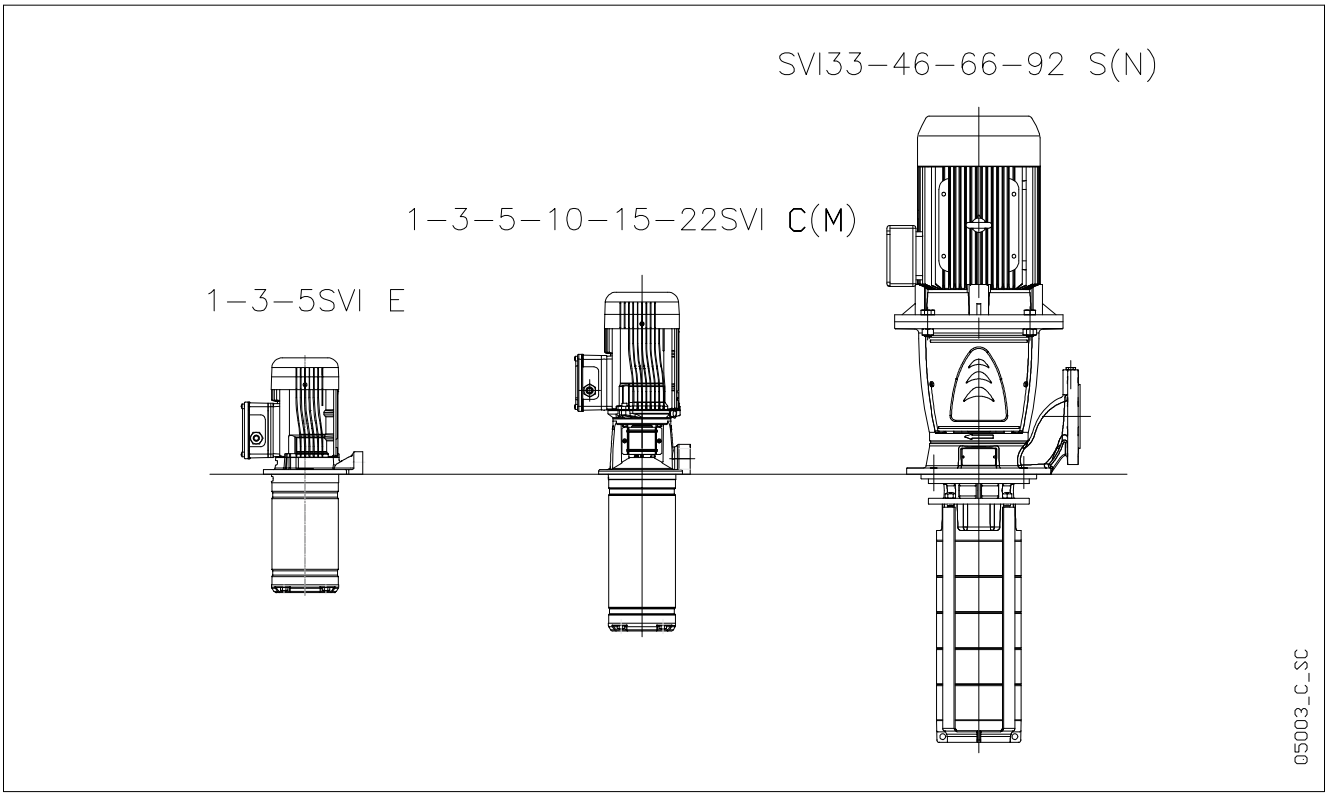
VERSION DIAGRAM



e-SVI SERIES
TYPICAL APPLICATIONS

Thanks to its flexibility and reliability, the e-SVI pump is suitable for use in several industrial applications, from machine tools to filtering systems, to process control, and similar, even outside the industrial sector.

APPLICATIONS

- Cooling circuits and tool lubrication.
- Cooling systems
- Process temperature control
- Industrial washing systems (degreasing of mechanical components).
- Clean liquid pressure boosting.
- Transfer of condensation.
- Filtering systems.
- Washing and cleaning systems (washing of wells, cars and trucks).
- Electronic industrial sector circuit washing.
- Commercial washers.

PUMPED LIQUID

- Coolants.
- Emulsions.
- Cutting oil.
- Condensation.
- Mixtures water-detergents.
- Mixtures water-glycols.

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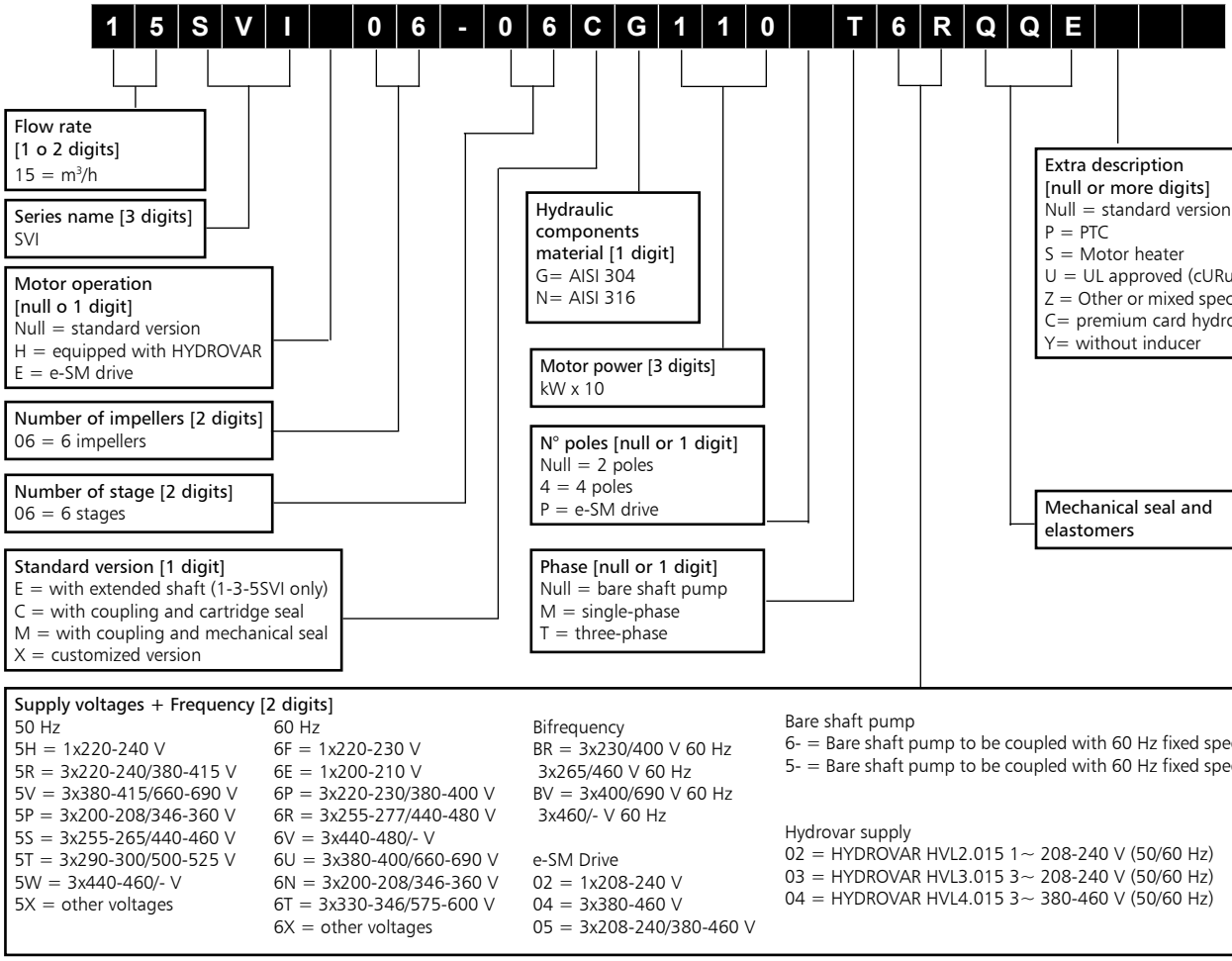
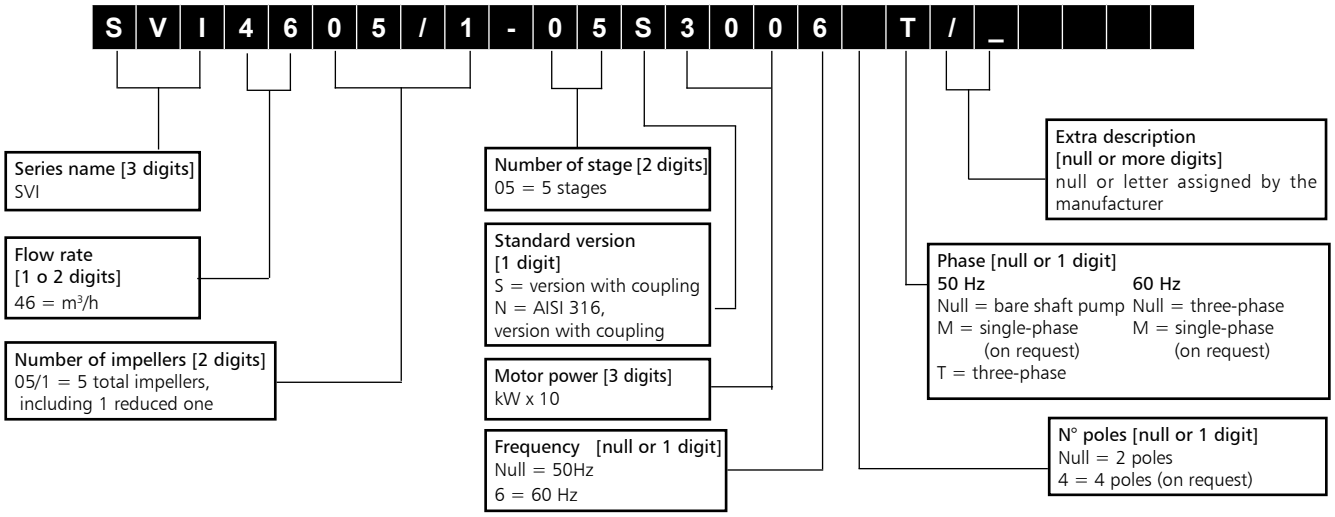
IDENTIFICATION CODE

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



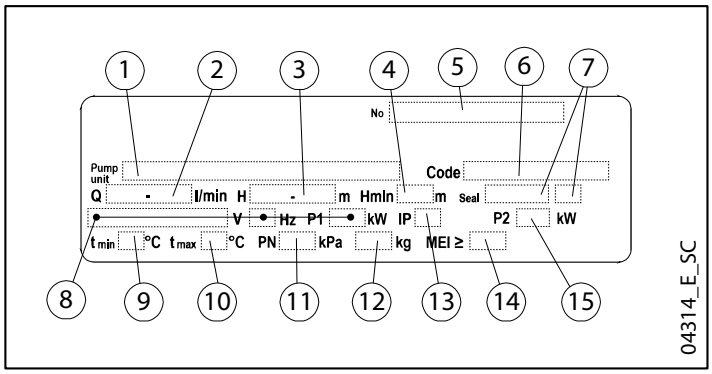
EXAMPLE : 15SVI06-06CG110T6RQQE
e-SVI series electric pump, nominal flow 15 m³/h, number of impeller 6, number of stage 6, C version with coupling and cartridge mechanical seal, made of AISI 304, motor power 11 kW, 2 pole three-phase 60 Hz version, supply voltage 3x255-277/440-480 V, SiC-SiC-EPDM mech. seal.

e-SVI SERIES 33, 46, 66, 92



EXAMPLE : SVI4605/1-05S3006T
SVI Series Electric pump, flow rate 46 m³/h, number of impellers 5 including 1 reduced one, number of stages 5, S version with coupling, rated motor power 30 kW, 60 Hz version, three-phase.

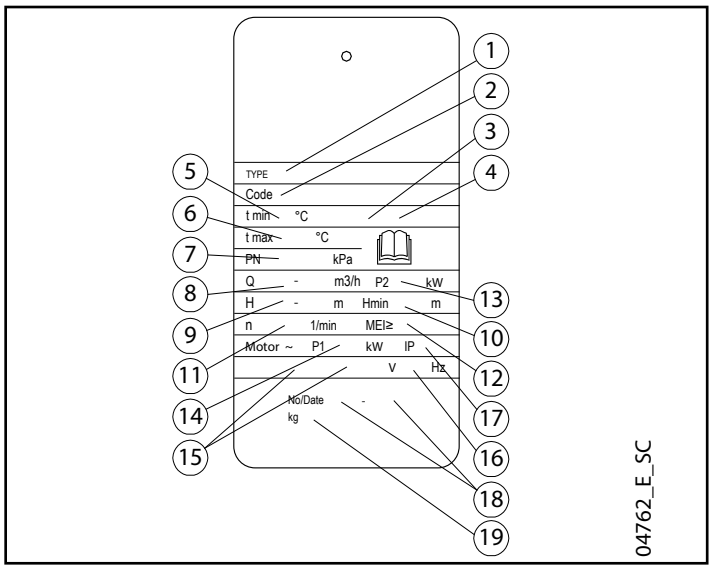
RATING PLATE
1, 3, 5SVI (E) - SINGLE PHASE



LEGEND

1 - Electric pump / Pump type
2 - Delivery range
3 - Head range
4 - Minimum head (EN 60335-2-41)
5 - Serial number
6 - Code
7 - Mechanical seal material identification code
O-ring material identification code
8 - Electrical data (rated voltage range, frequency, electric pump unit absorbed power)
9 - Minimum operating temperature*
10 - Maximum operating liquid temperature* (uses as EN 60335-2-41)
11 - Maximum operating pressure*
12 - Weight
13 - Protection class
14 - MEI (Regulation (EU) n. 547/2012), only 50 Hz
15 - Motor nominal power

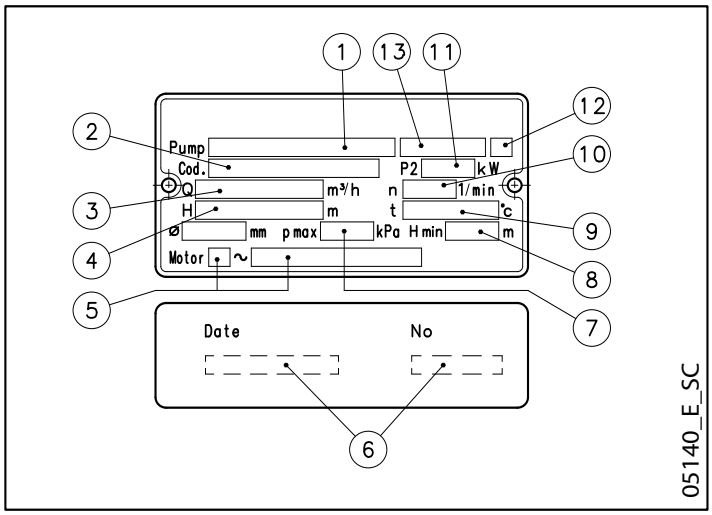
1, 3, 5SVI (E) - THREE PHASE
1, 3, 5, 10, 15, 22SVI (C, M)



LEGEND

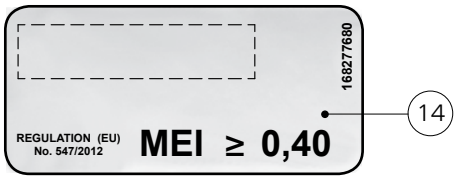
1 - Electric pump / Pump type
2 - Code
3 - Mechanical seal material identification code
4 - O-ring material identification code
5 - Minimum operating temperature*
6 - Maximum operating liquid temperature* (uses as EN 60335-2-41)
7 - Maximum operating pressure*
8 - Delivery range
9 - Head range
10 - Minimum head (EN 60335-2-41)
11 - Speed
12 - MEI (Regulation (EU) n. 547/2012) , only 50 Hz
13 - Motor nominal power
14 - Electric pump unit absorbed power
15 - Rated voltage range
16 - Frequency
17 - Protection class
18 - Serial number (date + progressive number)
19 - Weight

SVI 33, 46, 66, 92 (S, N)



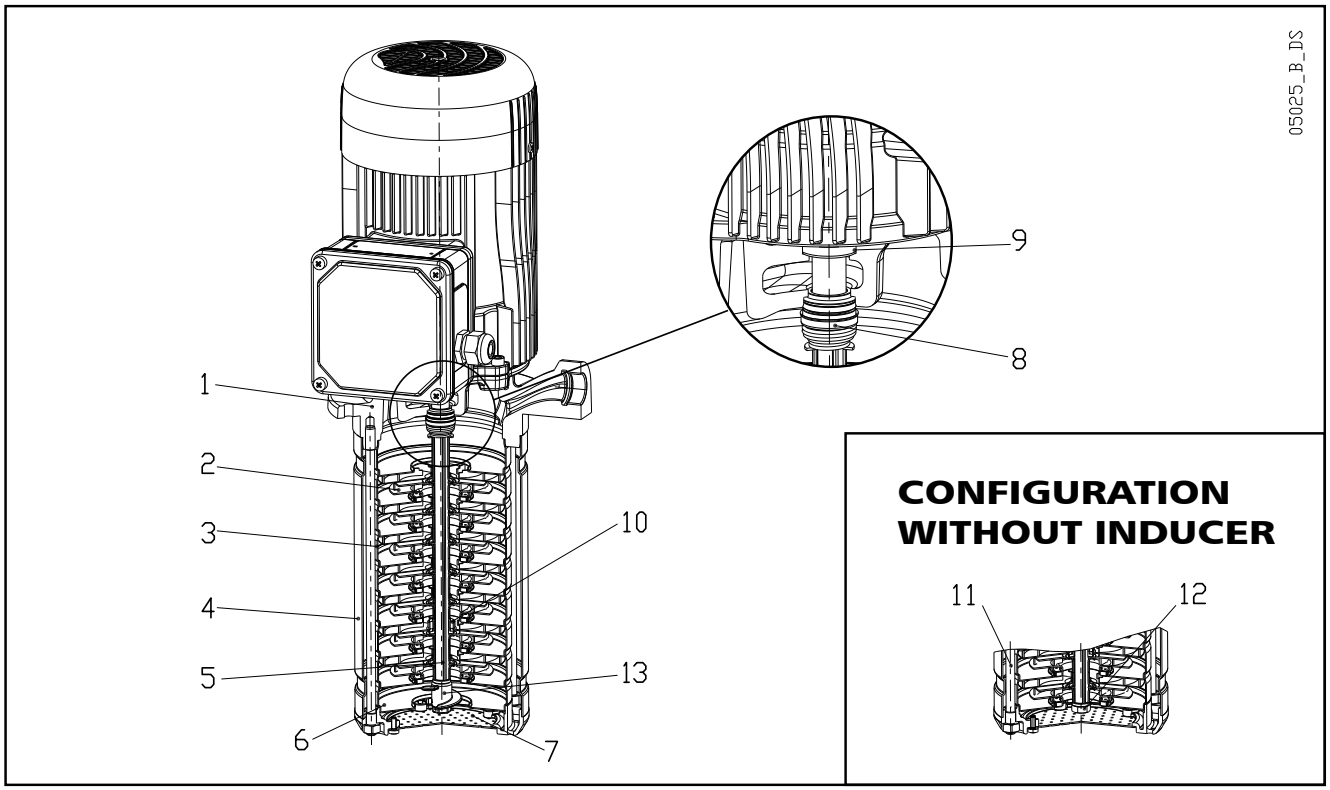
LEGEND

1 - Electrip pump type
2 - Code
3 - Delivery range
4 - Head range
5 - Motor type
6 - Date of manufacturing and serial number
7 - Maximum operating pressure*
8 - Minimum head
9 - Maximum operating temperature*
10 - Speed
11 - Rated power
12 - O-ring material identification code
13 - Mechanical seal material identification code
14 - MEI (Regulation (EU) n. 547/2012), only 50 Hz



* Pressure/temperature limit diagrams (pages 14-16).

1, 3, 5SVI SERIES - COMPACT VERSION (E)
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



G VERSION

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
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-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
6	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
7	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
8	Mechanical seal	Silicon carbide / Carbon / FKM* / AISI 316		
9	Sealing ring	NBR		
10	Shaft sleeve and bushing	Tungsten carbide		
11	Tie rods	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
12	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
13	Inducer	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)

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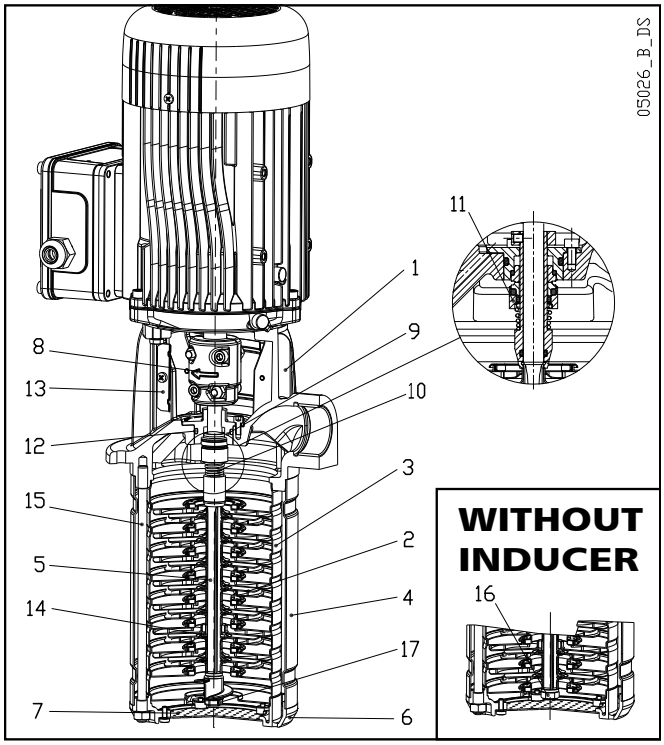
N VERSION

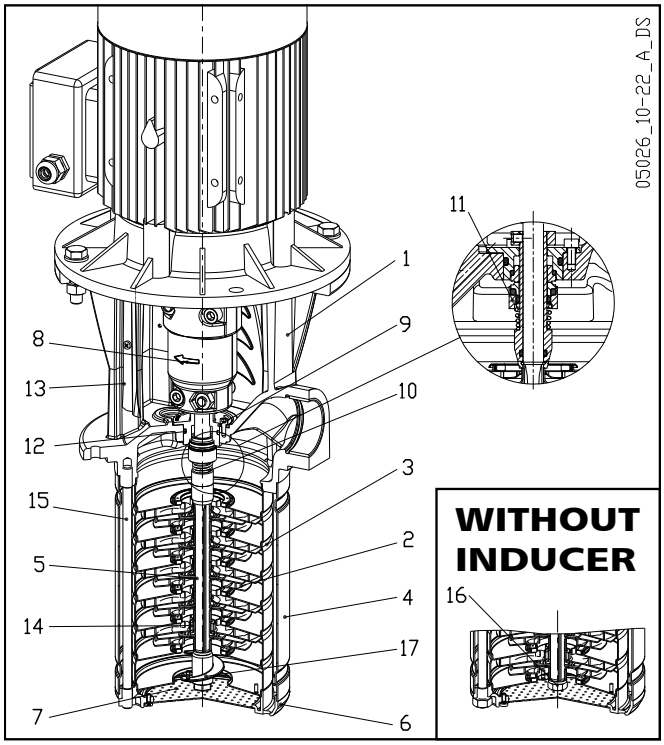
REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Adapter	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Outer sleeve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
7	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
8	Mechanical seal	Silicon carbide / Carbon / FKM* / AISI 316		
9	Sealing ring	NBR		
10	Shaft sleeve and bushing	Tungsten carbide		
11	Tie rods	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
12	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
13	Inducer	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)

svie-n-en_a_tm

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

1, 3, 5, 10, 15, 22SVI SERIES - VERSION WITH COUPLING (C, M)
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS





G VERSION

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
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-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Shaft	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
6	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
7	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	-
9	Removable seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-10-2 (1.4308)	ASTM CF8M (AISI 316 cast)
10	Mechanical seal	Silicon carbide / Carbon / FKM* / AISI 316		
11	Cartrige seal	Silicon carbide / Carbon / FKM* / AISI 316		
12	Elastomers	FKM*		
13	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
14	Shaft sleeve and bushing	Tungsten carbide		
15	Tie rods	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
17	Inducer	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)

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N VERSION

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Adapter	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	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
7	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
8	Coupling	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	-
9	Removable seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-10-2 (1.4308)	ASTM CF8M (AISI 316 cast)
10	Mechanical seal	Silicon carbide / Carbon / FKM* / AISI 316		
11	Cartrige seal	Silicon carbide / Carbon / FKM* / AISI 316		
12	Elastomers	FKM*		
13	Coupling protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
14	Shaft sleeve and bushing	Tungsten carbide		
15	Tie rods	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
16	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
17	Inducer	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

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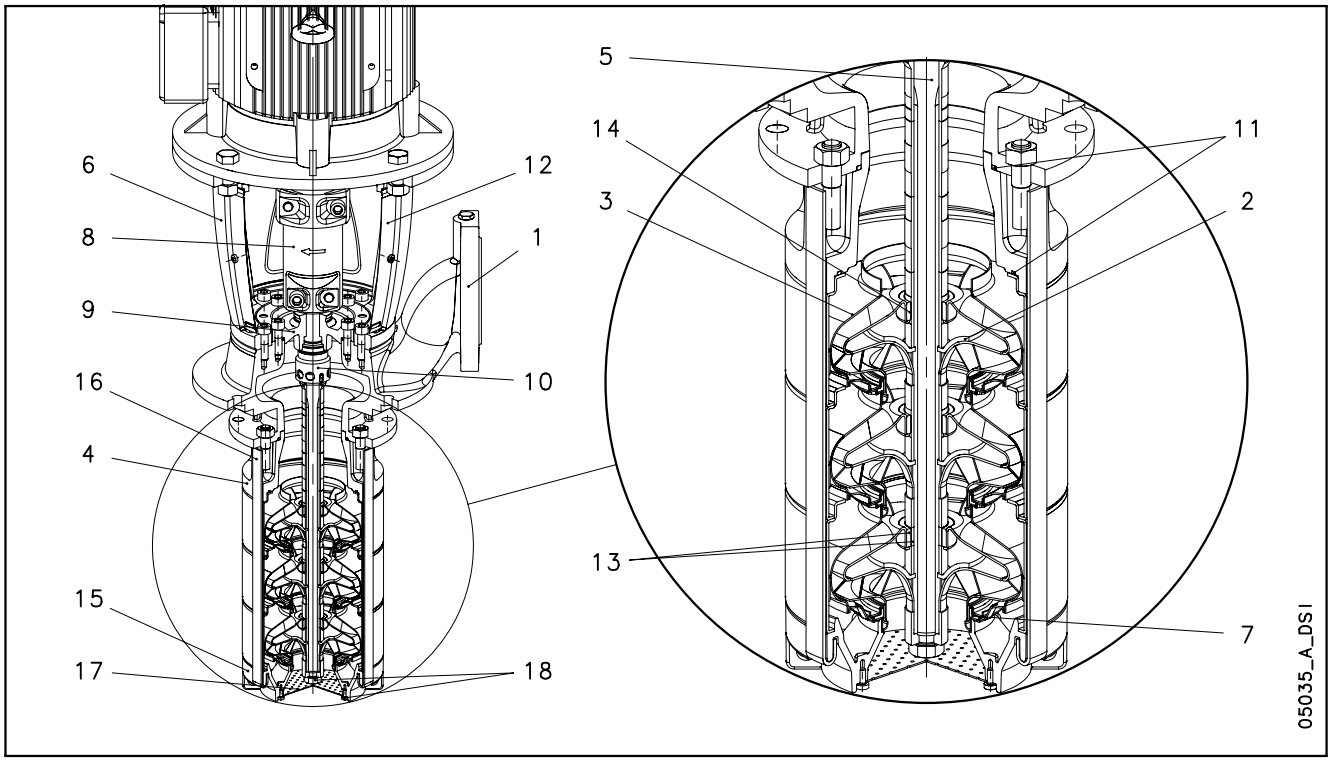
SVI SERIES 33, 46, 66, 92 - VERSION WITH COUPLING (S, N)
ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS



S VERSION

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Upper head	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	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
5	Shaft	Stainless steel	EN 10088-1 - X17CrNi16-2 (1.4057)	AISI 431
6	Motor 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	Seal housing	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
10	Mechanical seal	Silicon carbide / Carbon / FKM*		
11	Elastomers	FKM*		
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	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
16	Tie rods	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
17	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
18	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

svi33-92-s-en b tm

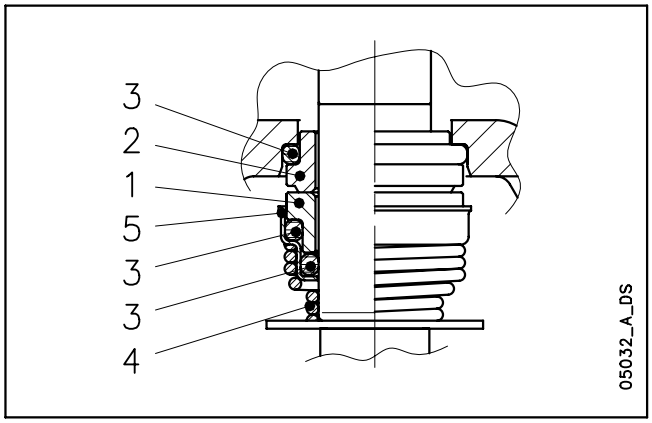
N VERSION

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Upper head	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	Adapter	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
5	Shaft	Duplex stainless steel	EN 10088-1-X2CrNiMoN22-5-3 (1.4462)	UNS S 31803
6	Motor 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	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
10	Mechanical seal	Silicon carbide / Carbon / FKM*		
11	Elastomers	FKM*		
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	Suction base	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (AISI 316 cast)
16	Tie rods	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
17	Strainer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
18	Screws	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

svi33-92-n-en_b_tm

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

1, 3, 5SVI SERIES - COMPACT VERSION (E) MECHANICAL SEAL, ACCORDING TO EN 12756



LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
B_3 : Resin impregnated carbon	V : FKM (FPM)*	G : AISI 316
Q_6 : Silicon Carbide	E : EPDM	
U_1 : Tungsten Carbide		

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

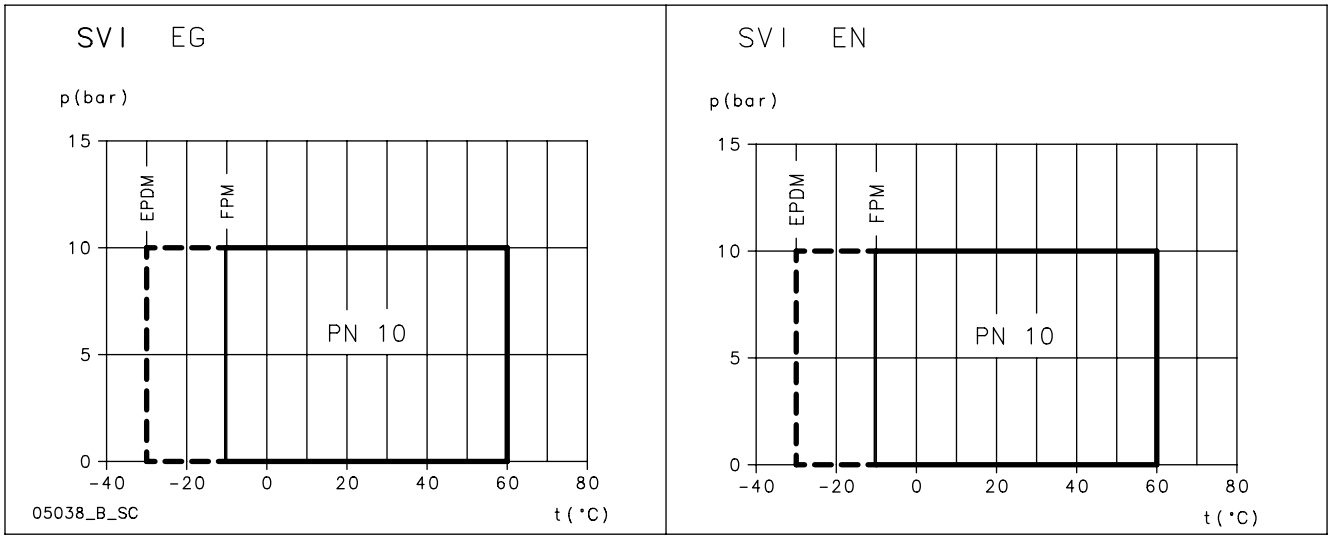
svi-e_ten-mec-en_c_tm

SEAL TYPES

TYPE	POSITION 1 ROTATING PART	2 STATIONARY PART	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	TEMPERATURE (°C)
STANDARD MECHANICAL SEAL						
Q_6 B_3 V G G	Q_6	B_3	V	G	G	-10 +60
OTHER TYPES OF MECHANICAL SEAL						
Q_6 Q_6 E G G	Q_6	Q_6	E	G	G	-30 +60
Q_6 Q_6 V G G	Q_6	Q_6	V	G	G	-10 +60
U_1 U_1 V G G	U_1	U_1	V	G	G	-10 +60

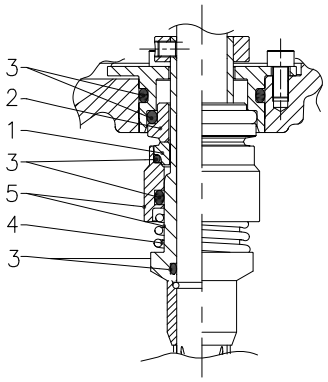
svi-e_tipi-ten-mec-en_c_tc

COMPLETE PUMP PRESSURE / TEMPERATURE OPERATING LIMITS



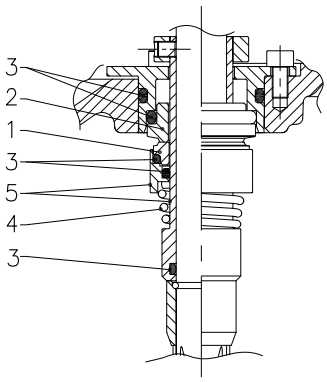
1, 3, 5, 10, 15, 22SVI SERIES - VERSION WITH COUPLING (C, M) MECHANICAL SEAL, ACCORDING TO EN 12756

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



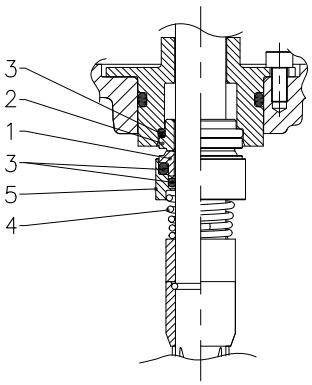
UNBALANCED CARTRIDGE SEAL

10, 15, 22SVI ≥ 5,5 kW



BALANCED CARTRIDGE SEAL

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



UNBALANCED MECHANICAL SEAL

05113-C_A_DS

LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
Q_1 : Silicon Carbide	V : FKM (FPM)*	G : AISI 316
B : Resin impregnated carbon	E : EPDM	
U_3 : Tungsten Carbide		

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

svi-c_ten-mec-en_a_tm

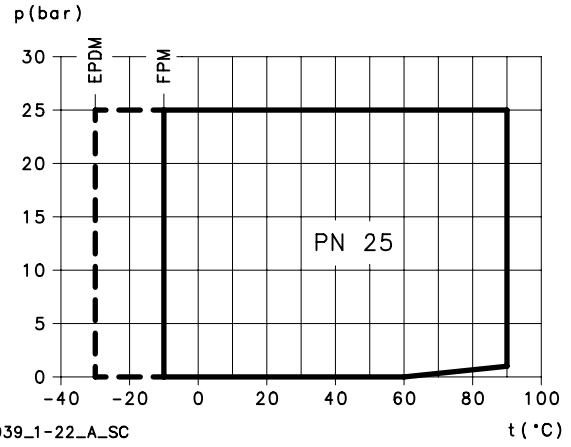
SEAL TYPES

TYPE	POSITION					TEMPERATURE (°C)
	1	2	3	4	5	
	ROTATING PART	STATIONARY PART	ELASTOMERS	SPRINGS	OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
Q_1 B V G G	Q_1	B	V	G	G	-10 +90
OTHER TYPES OF MECHANICAL SEAL						
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 +90
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-30 +90
U_3 U_3 V G G	U_3	U_3	V	G	G	-10 +90

svi-c_tipi-ten-mec-en_a_tc

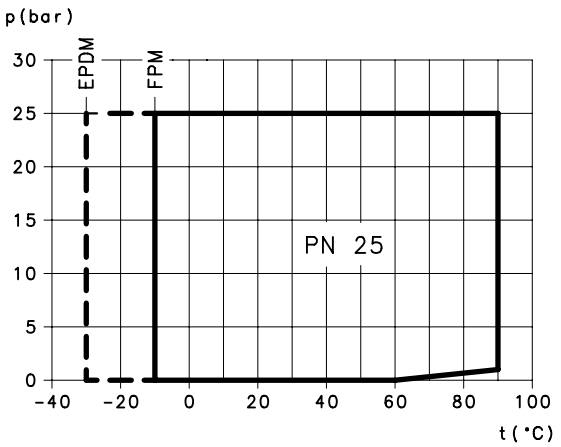
COMPLETE PUMP PRESSURE / TEMPERATURE OPERATING LIMITS

SVI G

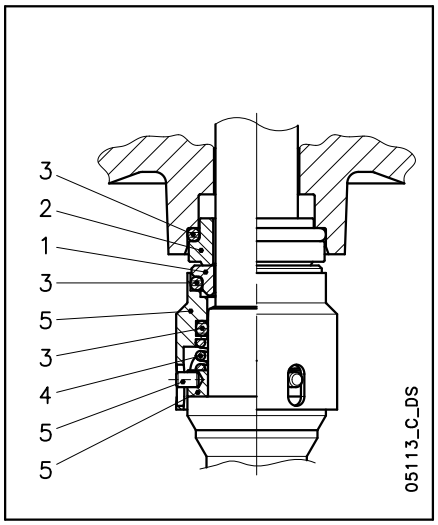


05039_1-22_A_SC

SVI N



e-SVI SERIES 33, 46, 66, 92 - VERSION WITH COUPLING (S, N) MECHANICAL SEAL, ACCORDING TO EN 12756



LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
Q_1 : Silicon Carbide	V : FKM (FPM)*	G : AISI 316
B : Resin impregnated carbon	E : EPDM	
U_3 : Tungsten Carbide	T : PTFE	

* Fluoro-elastomer: FPM (old ISO), FKM (ASTM & new ISO).

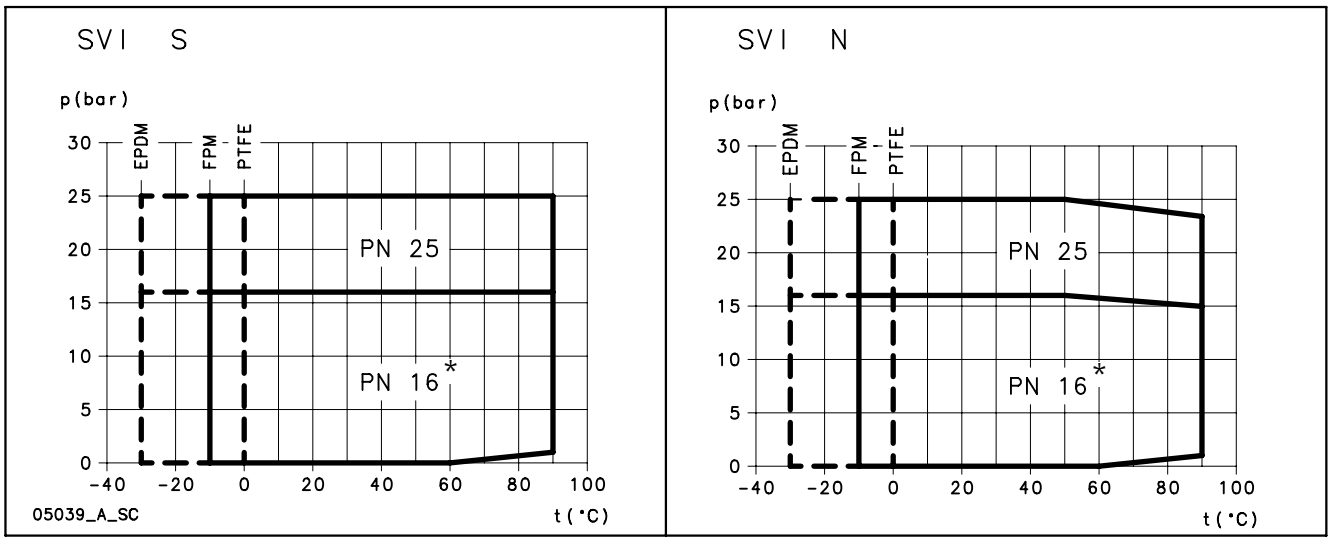
svi-s_ten-mec-en_c_tm

SEAL TYPES

TYPE	POSITION 1	2	3	4	5	TEMPERATURE (°C)
	ROTATING PART	STATIONARY PART	ELASTOMERS	SPRINGS	OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
Q_1 B V G G	Q_1	B	V	G	G	-10 +90
OTHER TYPES OF MECHANICAL SEAL						
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 +90
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-30 +90
Q_1 Q_1 T G G	Q_1	Q_1	T	G	G	0 +90
U_3 U_3 V G G	U_3	U_3	V	G	G	-10 +90

svi-s_tipi-ten-mec-en_b_tc

COMPLETE PUMP PRESSURE / TEMPERATURE OPERATING LIMITS



* = PN16 limit for SVI 66 and SVI 92 series

e-SVI SERIES MOTORS

- Short-circuit squirrel-cage motor, enclosed construction with external ventilation (TEFC).
- **IP 55** 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 kW (one per phase, 155°C).
- **Single-phase** version: 220-230 V 60 Hz (on request).
- **Three-phase** version 2 poles: 220 V Δ, 380 V Y, 60 Hz. Overload protection to be provided by the user.

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.

e-SVI SERIES - 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.

LOWARA
a xylem brand

e-SVI (E) SERIES
THREE-PHASE MOTORS AT 60 Hz, 2 POLES

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 cosφ	ls / I_N	TN Nm	Ts/T_N	Tm/Tn
0,37	SM63SVIE(N)/304/E	63	SPECIAL	2	60	0,79	5,06	1,16	3,42	3,44
0,55	SM71SVIE(N)/305/E	71				0,71	7,26	1,52	4,39	4,48
0,75	SM80SVIE(N)/307/E PE	80				0,79	8,25	2,05	3,80	4,02
1,1	SM80SVIE(N)/311/E PE	80				0,80	9,11	3,01	4,15	4,29

P_N kW	Voltage U_N V Δ 220 V	230 V	Y 380 V	400 V	Δ 380 V	400 V	Y 660 V	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 ÷ 3390	1000	-15 / 40	No
0,55	2,54	2,25	1,31	1,28	-	-	-	-	3405 ÷ 3465			
0,75	3,03	3,01	1,47	1,30	-	-	-	-	3490 ÷ 3500			
1,1	4,24	4,24	2,45	2,45	-	-	-	-	3495 ÷ 3505	VI		

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	-	-	-	-	-	-	3
1,1	85,6	85,0	82,1	85,6	85,0	82,1	-	-	-	-	-	-	

svi-e-ie3-mott-2p60_c_te

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

LOWARA
a xylem brand

e-SVI (C, M, S, N) 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/E	71R	V18/B14	2	60	0,79	5,06	1,16	3,42	3,44
0,55	SM71B14/305/E	71				0,71	7,26	1,52	4,39	4,48
0,75	SM80B14/307/E PE	80				0,79	8,25	2,05	3,80	4,02
1,1	SM80B14/311/E PE	80				0,80	9,11	3,01	4,15	4,29
1,5	SM90RB14/315/E 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 — I_N (A)	n_N min^{-1}	Operating conditions **: Altitude above sea Level (m)	T. amb min/max °C	ATEX
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	1,30	-	-	-	-	3465 ÷ 3475			
0,75	3,03	3,01	1,75	1,74	1,75	1,74	1,01	1,00	3490 ÷ 3500			
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		-15 / 50	
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.

svi-s-ie3-mott-2p60_c_te

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

LOWARA
a xylem brand

e-SVI (S, N) SERIES
THREE-PHASE MOTORS AT 60 Hz, 2 POLES (above 30 kW)

P_N kW	Manufacturer / Model	IEC SIZE	Construction Design	N. of Poles	f_N Hz	Data for 400 V / 50 Hz Voltage: cosφ	Is / I_N	T_N Nm	Ts/T_N	Tm/Tn
30	OMEGA MOTOR SANAYI A.Ş. Dudullu Organize Sanayi Bölgesi 2. Cadde No: 10 34775 Ümraniye İSTANBUL/TURKEY Reg.No.913733 — 3MAS 200LA2 V1 30 kW E3	200	V1	2	60	0,90	7,60	80,4	2,40	2,90

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	-20 / 50	No

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

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

svi-s-IE3-mott30-2p50-en_c_te

MOTOR NOISE

The tables below show the mean sound pressure levels (Lp) measured at 1 meter distance in a free field according to EN ISO 11203. The noise values are measured on 60 Hz motors and have a tolerance of 3 dB (A) according to EN ISO 4871.

e-SVI (E) THREE-PHASE 60 Hz, 2 POLES MOTORS

POWER kW	MOTOR TYPE IEC SIZE	NOISE LpA dB
0,37	63	<70
0,55	63	<70
0,75	63	<70
1,1	80	<70

e-SVI (C, M, S, N) THREE-PHASE 60 Hz, 2 POLES MOTORS

POWER kW	MOTOR TYPE IEC* SIZE	NOISE LpA dB
0,55	71	<70
0,75	80	<70
1,1	80	<70
1,5	90	<70
2,2	90	<70
3	100R	<70
4	112R	<70
5,5	132R	<70
7,5	132	75
11	160R	77
15	160	74
18,5	160	75
22	180R	73
30	200	74

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

svi_mott-60-en_d_tr

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

	TRIFASE - 2 POLI															
	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
0,30	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,37	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,45	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 = Tensione Standard o = Tensione opzionale - = Non disponibile svi-volt-lowa_b_te

For higher power motors special voltages available on request.

Tolerances on nominal voltages

- **60 Hz**:

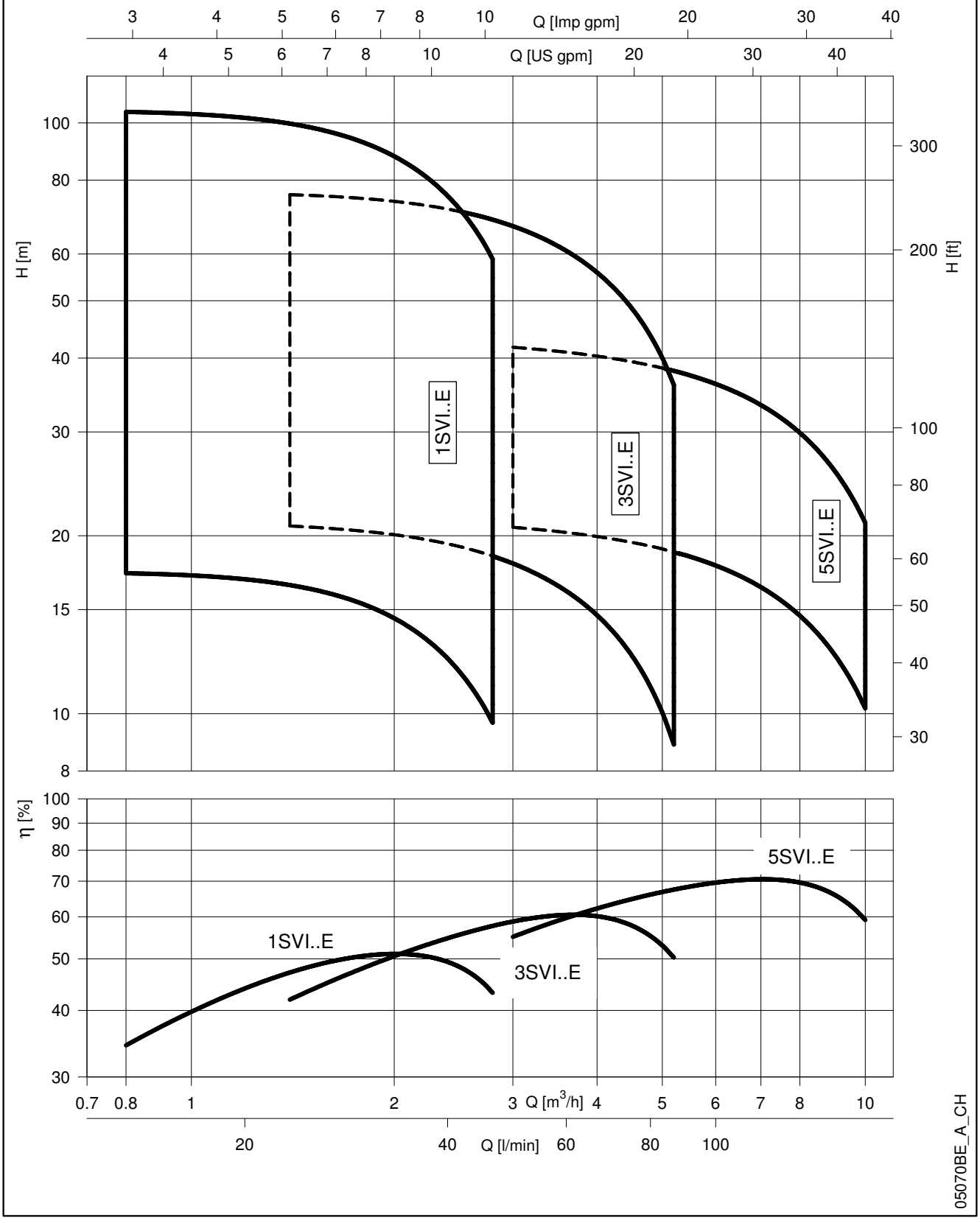
± 10% on the single voltage value shown on the rating plate.
± 5% on voltage range shown on the rating plate.

- **60 Hz**:

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

1, 3, 5SVI SERIES - COMPACT VERSION
HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES

SVI..E	~ 3500 [rpm]	ISO 9906:2012 - Grade 3B



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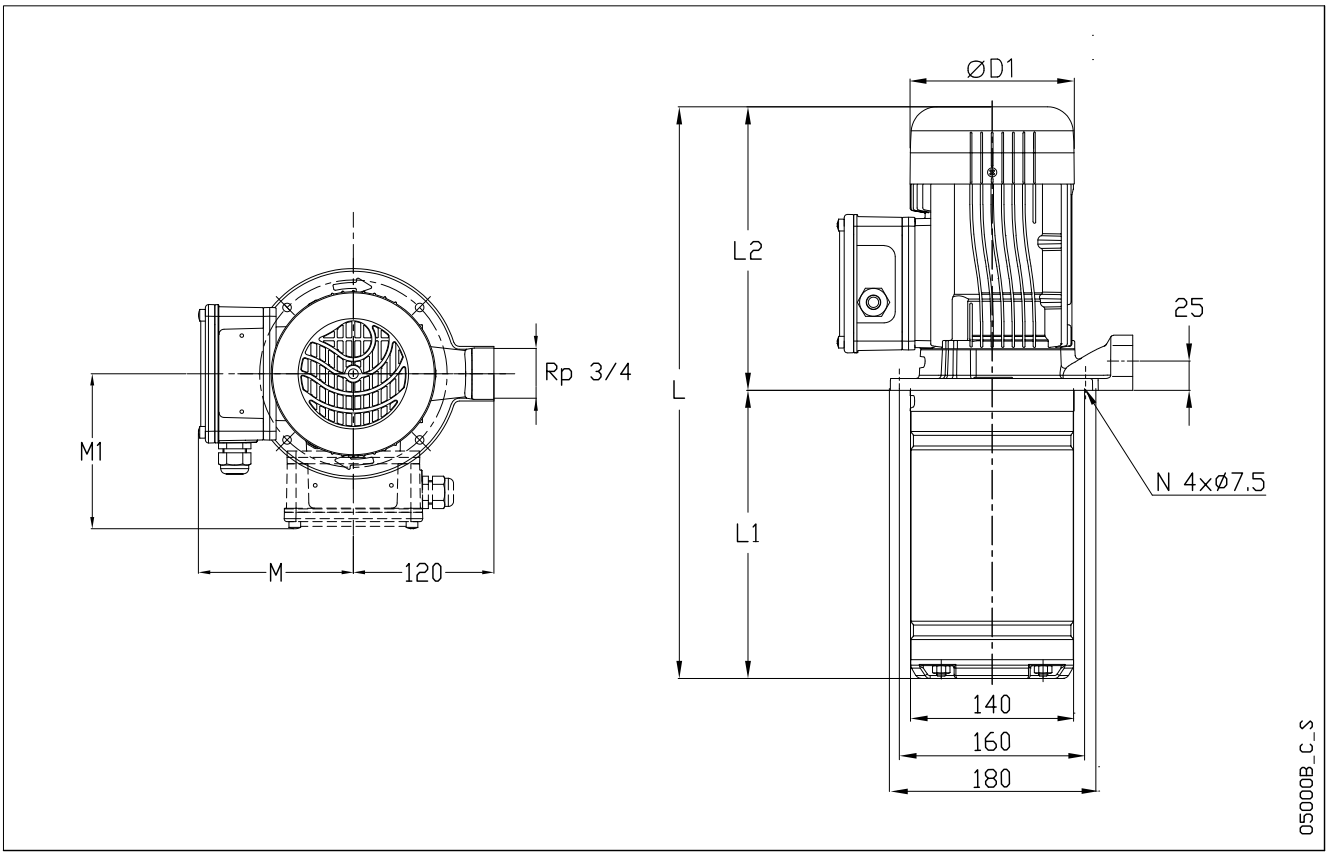
1, 3, 5SVI SERIES - VERSION COMPACT
TABLE OF HYDRAULIC PERFORMANCES AT 60 Hz, 2 POLES

PUMP TYPE SVI..E	RATED POWER		Q = DELIVERY													
			l/min 0	13,3	20,0	23,4	30,0	35,0	46,6	50,0	60,0	70,0	86,6	100,0	120,0	166,7
			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													
1SV02-02E	0,37	0,5	17,4	17,3	16,9	16,5	15,3	14,0	9,7							
1SV03-03E	0,37	0,5	25,7	25,4	24,7	24,0	22,2	20,2	13,5							
1SV04-04E	0,37	0,5	33,9	33,1	32,0	31,1	28,5	25,7	16,8							
1SV05-05E	0,55	0,75	43,6	43,4	42,4	41,5	38,6	35,4	24,6							
1SV06-06E	0,55	0,75	52,1	51,7	50,4	49,2	45,6	41,7	28,6							
1SV07-07E	0,75	1	61,0	60,8	59,4	58,1	54,1	49,6	34,5							
1SV08-08E	0,75	1	69,4	69,1	67,5	65,9	61,2	56,0	38,7							
1SV09-09E	0,75	1	77,9	77,3	75,4	73,6	68,2	62,3	42,7							
1SV10-10E	1,1	1,5	87,6	87,5	85,7	83,8	78,1	71,8	50,3							
1SV11-11E	1,1	1,5	96,2	96,0	93,9	91,8	85,5	78,5	54,7							
1SV12-12E	1,1	1,5	104,7	104,4	102,0	99,7	92,7	85,0	59,0							
3SV02-02E	0,37	0,5	21,3			20,8	20,4	19,9	18,5	18,0	16,1	13,9	8,9			
3SV03-03E	0,55	0,75	32,6			32,3	31,8	31,3	29,3	28,6	26,0	22,7	15,4			
3SV04-04E	0,75	1	43,4			43,1	42,5	41,8	39,3	38,3	34,8	30,5	20,8			
3SV05-05E	1,1	1,5	54,7			54,6	53,9	53,1	50,0	48,8	44,6	39,2	27,1			
3SV06-06E	1,1	1,5	65,4			65,2	64,3	63,2	59,4	58,0	52,8	46,3	31,8			
3SV07-07E	1,1	1,5	76,1			75,6	74,5	73,2	68,6	66,9	60,8	53,1	36,1			
5SV02-02E	0,55	0,75	21,9							20,7	20,3	19,8	18,8	17,8	16,1	10,2
5SV03-03E	0,75	1	32,7							30,9	30,3	29,5	28,1	26,6	24,0	15,2
5SV04-04E	1,1	1,5	43,9							41,7	40,9	40,0	38,1	36,2	32,7	21,0

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

1-5svi-2p60_a_th

1SVI..E SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



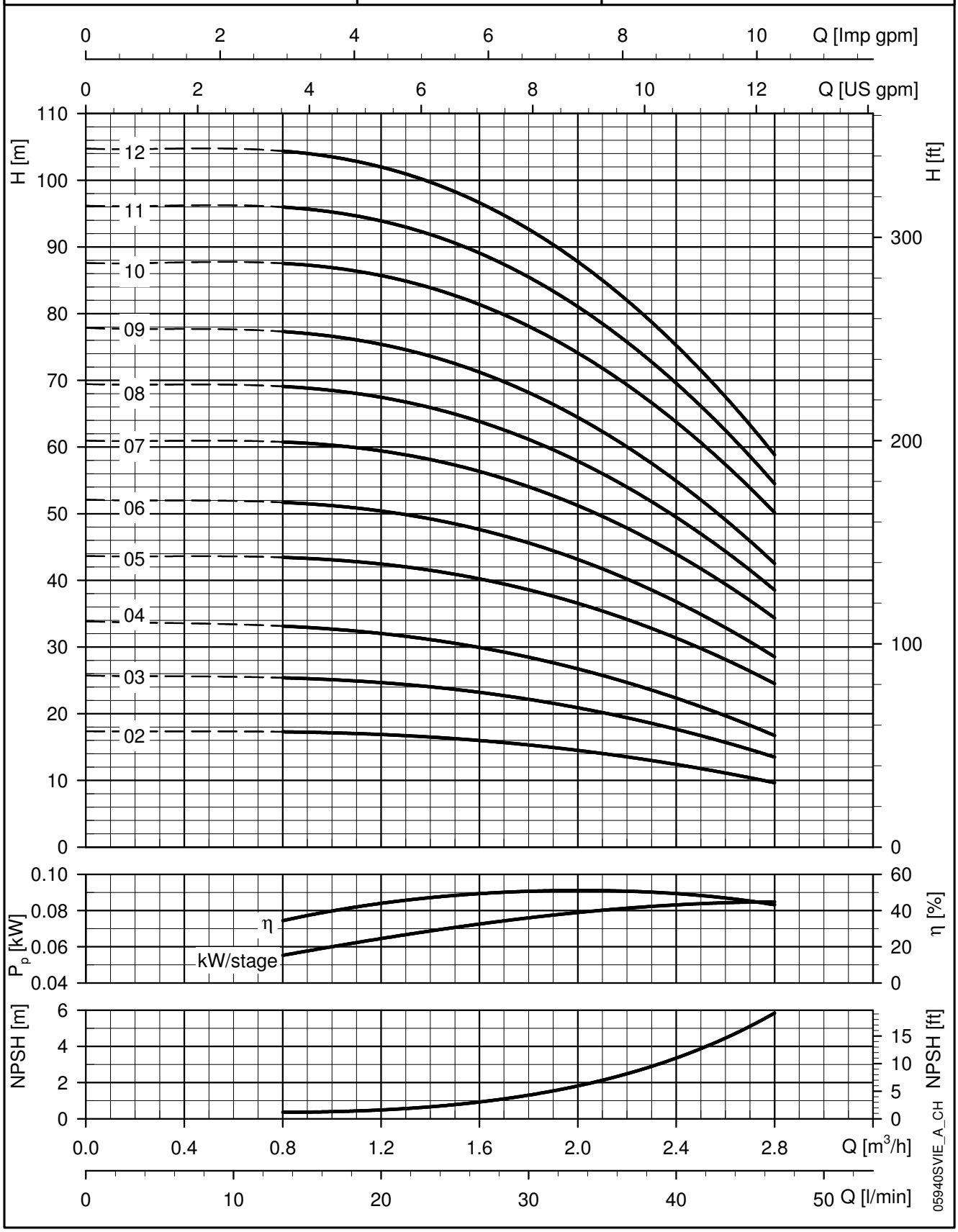
PUMP TYPE	MOTOR		DIMENSIONS (mm)						ELECTRIC PUMP WEIGHT (kg)
	kW	SIZE	L	L1	L2	M (max)	M1 (max)	D1 (max)	
1SVI02-02E..003	0,37	63	335	126	209	122	-	120	11
1SVI03-03E..003	0,37	63	355	146	209	122	-	120	11
1SVI04-04E..003	0,37	63	375	166	209	122	-	120	11
1SVI05-05E..005	0,55	71	417	186	231	132	-	140	13
1SVI06-06E..005	0,55	71	437	206	231	132	-	140	14
1SVI07-07E..007	0,75	80	489	226	263	-	140	155	17
1SVI08-08E..007	0,75	80	509	246	263	-	140	155	17
1SVI09-09E..007	0,75	80	529	266	263	-	140	155	17
1SVI10-10E..011	1,1	80	549	286	263	-	140	155	20
1SVI11-11E..011	1,1	80	569	306	263	-	140	155	20
1SVI12-12E..011	1,1	80	589	326	263	-	140	155	20

1svi_e-2p60_a_td

All listed dimensions are with inducer.
e.g. 1SVI10-10 has 10 stages with impeller and 1 inducer chamber.

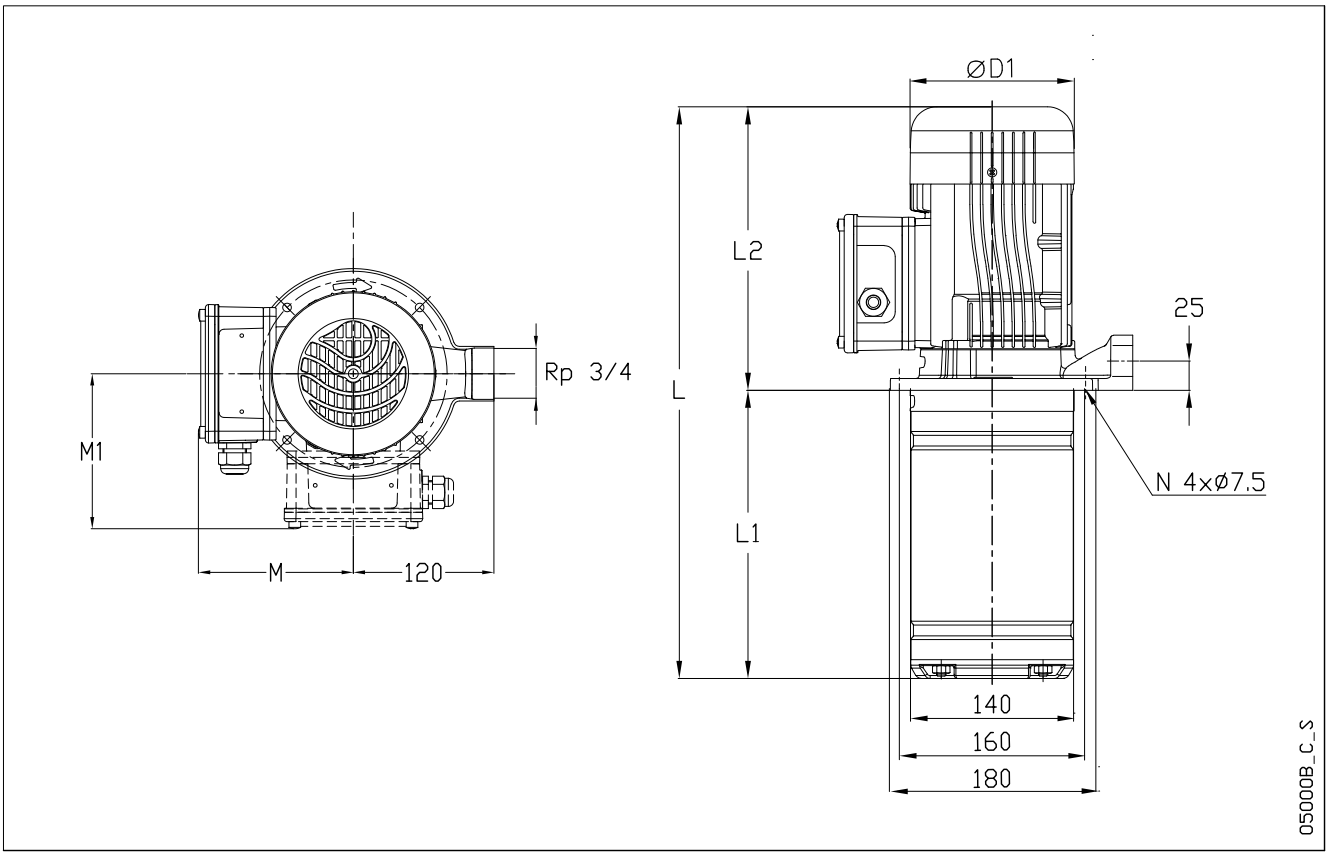
1SVI..E SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

1SVI..E	~ 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.

3SVI..E SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



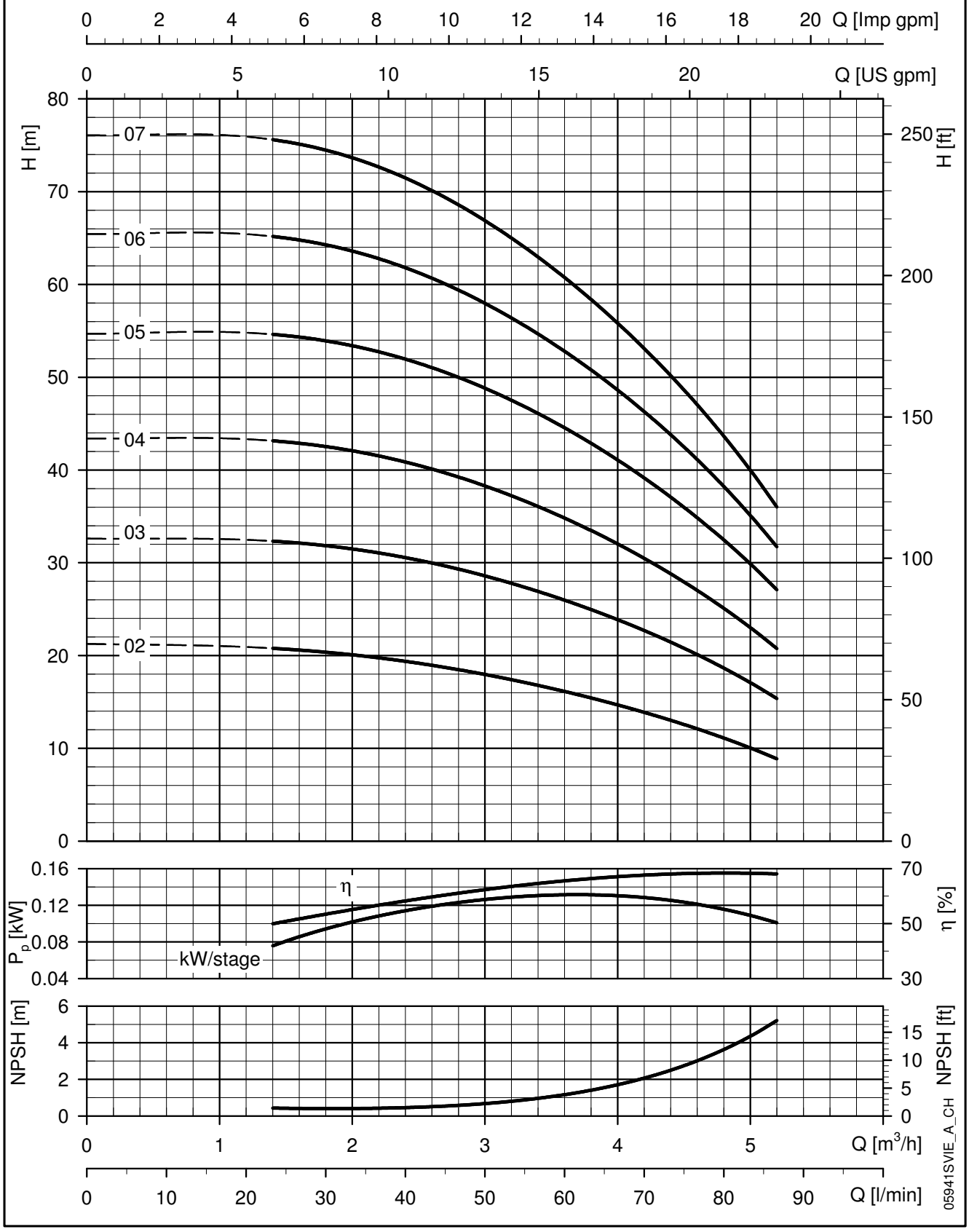
PUMP TYPE	MOTOR		DIMENSIONS (mm)						ELECTRIC PUMP WEIGHT (kg)
	kW	SIZE	L	L1	L2	M (max)	M1 (max)	D1 (max)	
3SVI02-02E..003	0,37	63	335	126	209	122	-	120	11
3SVI03-03E..005	0,55	71	377	146	231	132	-	140	13
3SVI04-04E..001	0,75	80	429	166	263	-	140	155	16
3SVI05-05E..011	1,1	80	449	186	263	-	140	155	18
3SVI06-06E..011	1,1	80	469	206	263	-	140	155	19
3SVI07-07E..011	1,1	80	489	226	263	-	140	155	19

3svi_e-2p60_a_td

All listed dimensions are with inducer.
e.g. 3SVI07-07 has 7 stages with impeller and 1 inducer chamber.

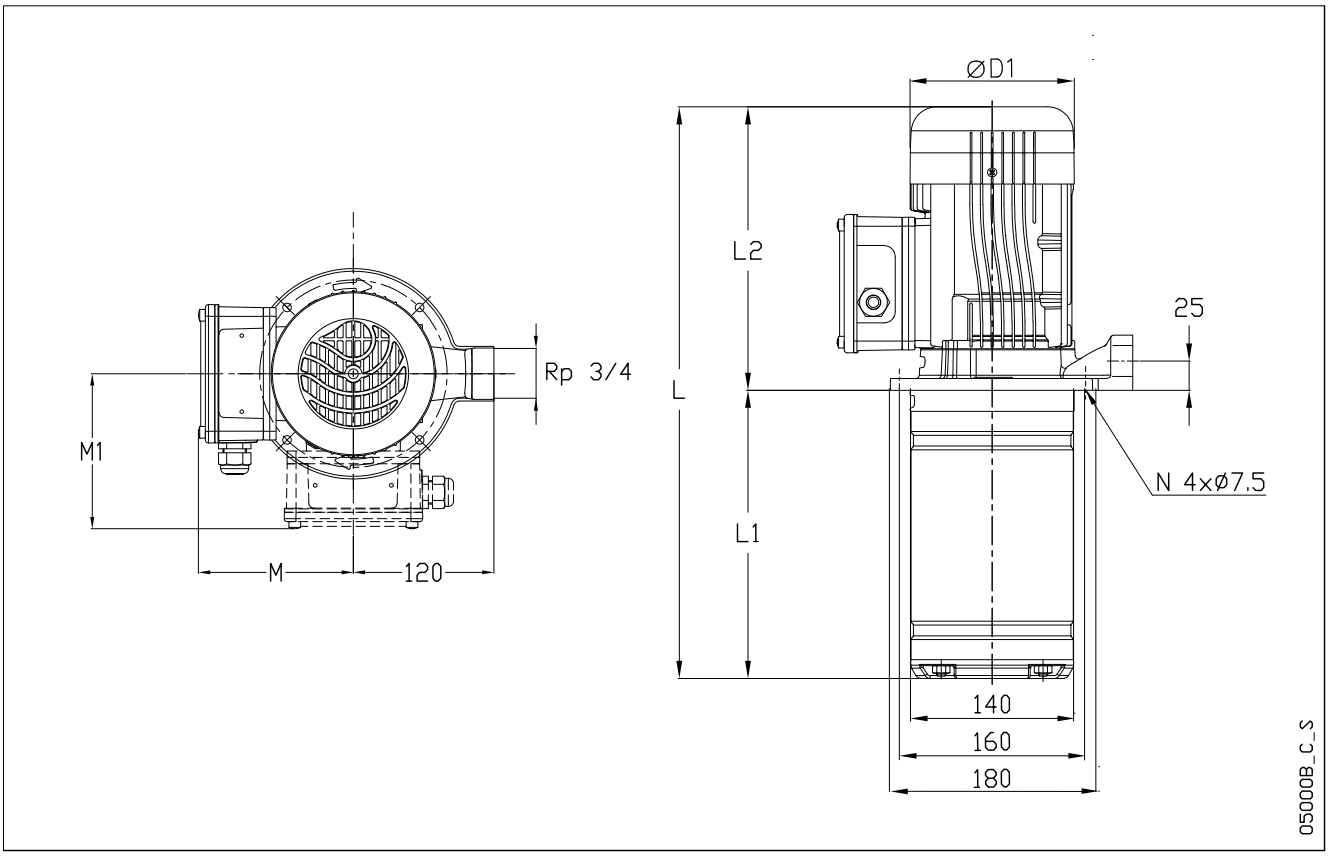
3SVI..E SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

3SVI..E	~ 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.

5SVI..E SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)						ELECTRIC PUMP WEIGHT (kg)
	kW	SIZE	L	L1	L2	M (max)	M1 (max)	D1 (max)	
5SVI02-02E..005	0.55	71	372	141	231	132	-	140	13
5SVI03-03E..007	0.75	80	429	166	263	-	140	155	16
5SVI04-04E..011	1.1	80	454	191	263	-	140	155	18

5svi_e-2p60_a_td

All listed dimensions are with inducer.
e.g. 5SVI04-04 has 4 stages with impeller and 1 inducer chamber.

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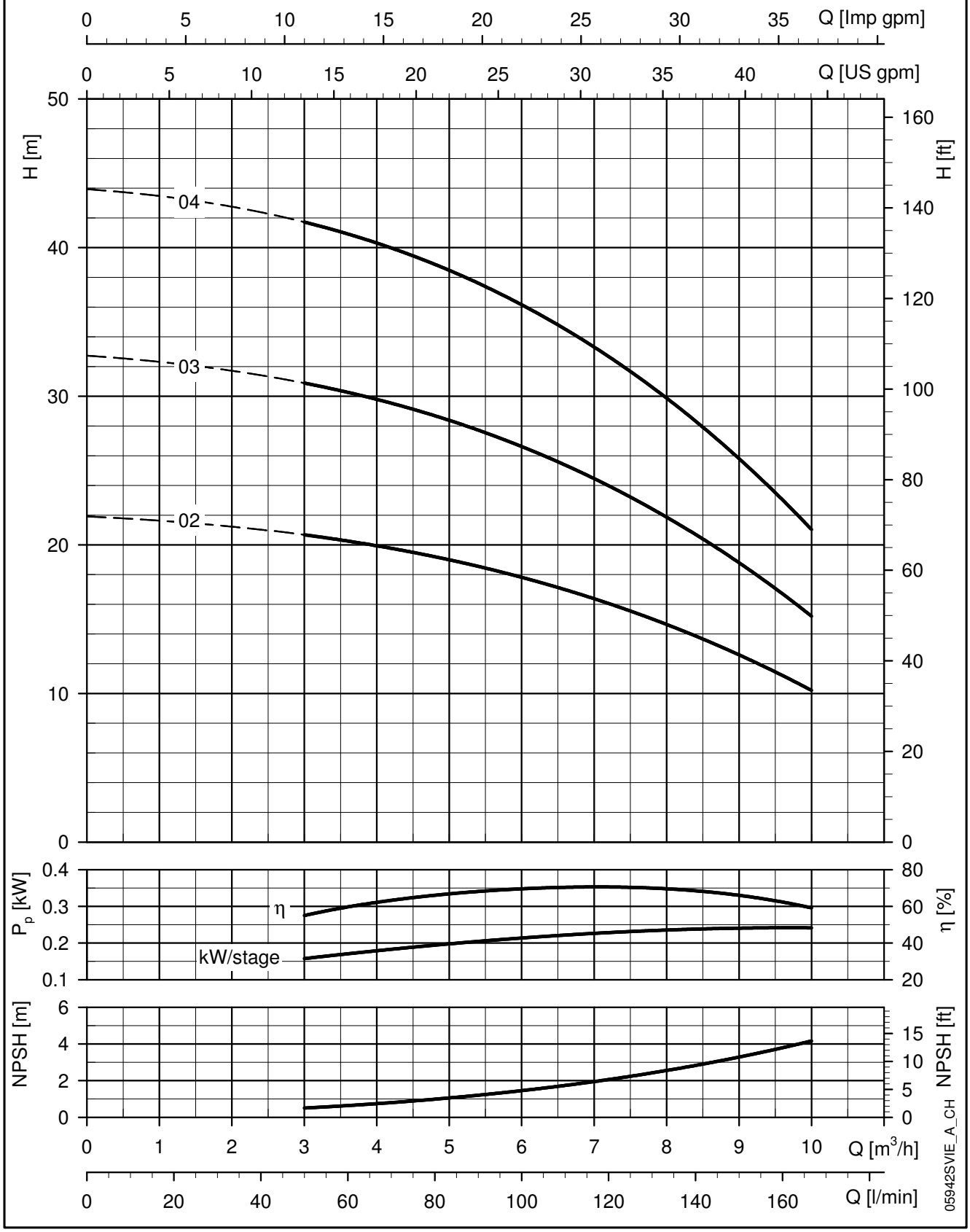
5SVI..E SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

5SVI..E	~ 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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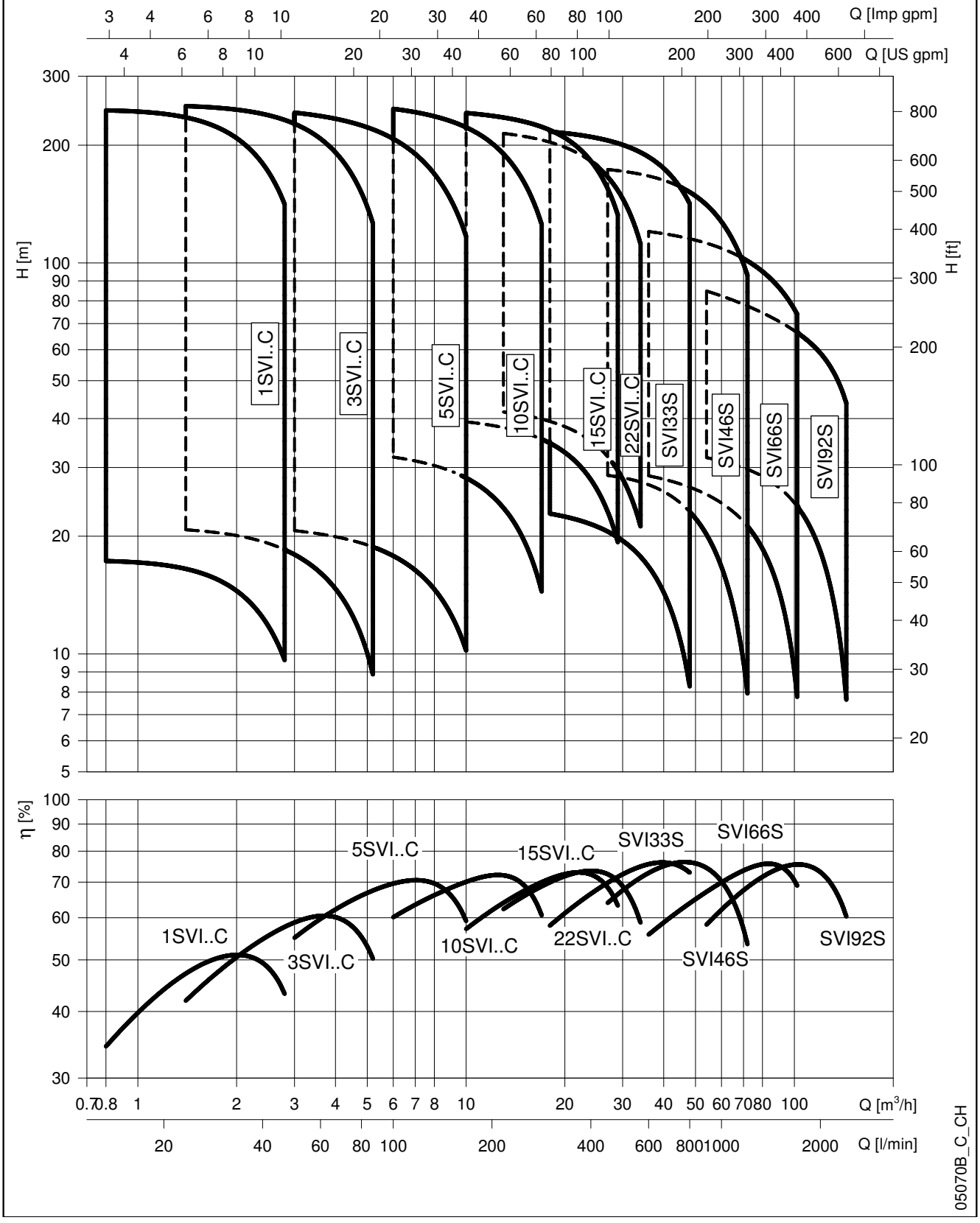
e-SVI SERIES - VERSION WITH COUPLING
HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES

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



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1, 3, 5SVI SERIES - VERSION WITH COUPLING
TABLE OF HYDRAULIC PERFORMANCES AT 60 Hz, 2 POLES

PUMP TYPE SVI..C SVI..M	RATED POWER kW	RATED POWER HP	Q = DELIVERY l/min 0	13,3	20	23,4	30	35	46,6	50	60	70	86,6	100	120	166,7
			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
			H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
1SVI02-02..	0,37	0,5	17,4	17,3	16,9	16,5	15,3	14,0	9,7							
1SVI03-03..	0,37	0,5	25,7	25,4	24,7	24,0	22,2	20,2	13,5							
1SVI04-04..	0,37	0,5	33,9	33,1	32,0	31,1	28,5	25,7	16,8							
1SVI05-05..	0,55	0,75	43,6	43,4	42,4	41,5	38,6	35,4	24,6							
1SVI06-06..	0,55	0,75	52,1	51,7	50,4	49,2	45,6	41,7	28,6							
1SVI07-07..	0,75	1	61,0	60,8	59,4	58,1	54,1	49,6	34,5							
1SVI08-08..	0,75	1	69,4	69,1	67,5	65,9	61,2	56,0	38,7							
1SVI09-09..	0,75	1	77,9	77,3	75,4	73,6	68,2	62,3	42,7							
1SVI10-10..	1,1	1,5	87,6	87,5	85,7	83,8	78,1	71,8	50,3							
1SVI11-11..	1,1	1,5	96,2	96,0	93,9	91,8	85,5	78,5	54,7							
1SVI12-12..	1,1	1,5	104,7	104,4	102,0	99,7	92,7	85,0	59,0							
1SVI13-13..	1,1	1,5	113,2	112,7	110,0	107,5	99,8	91,4	63,0							
1SVI15-15..	1,5	2	131,2	131,2	128,6	125,8	117,4	108,0	75,7							
1SVI17-17..	1,5	2	148,3	148,1	145,0	141,8	132,1	121,4	84,5							
1SVI18-18..	2,2	3	158,4	158,7	155,6	152,5	142,5	131,4	93,0							
1SVI20-20..	2,2	3	175,7	175,8	172,4	168,8	157,7	145,2	102,4							
1SVI22-22..	2,2	3	192,9	193,0	189,1	185,0	172,6	158,8	111,6							
1SVI24-24..	2,2	3	210,1	210,0	205,5	201,1	187,4	172,3	120,5							
1SVI26-26..	2,2	3	227,3	226,8	221,9	217,1	202,1	185,6	129,2							
1SVI28-28..	3	4	245,4	245,4	240,5	235,4	219,6	202,0	141,8							
3SVI02-02..	0,37	0,5	21,3			20,8	20,4	19,9	18,5	18,0	16,1	13,9	8,9			
3SVI03-03..	0,55	0,75	32,6			32,3	31,8	31,3	29,3	28,6	26,0	22,7	15,4			
3SVI04-04..	0,75	1	43,4			43,1	42,5	41,8	39,3	38,3	34,8	30,5	20,8			
3SVI05-05..	1,1	1,5	54,7			54,6	53,9	53,1	50,0	48,8	44,6	39,2	27,1			
3SVI06-06..	1,1	1,5	65,4			65,2	64,3	63,2	59,4	58,0	52,8	46,3	31,8			
3SVI07-07..	1,1	1,5	76,1			75,6	74,5	73,2	68,6	66,9	60,8	53,1	36,1			
3SVI08-08..	1,5	2	87,2			86,6	85,5	84,2	79,5	77,7	70,9	62,2	43,1			
3SVI09-09..	1,5	2	97,8			97,0	95,7	94,2	88,8	86,7	79,1	69,3	47,8			
3SVI10-10..	2,2	3	109,5			108,9	107,6	106,0	100,3	98,0	89,7	78,9	55,0			
3SVI11-11..	2,2	3	120,3			119,5	118,1	116,3	109,9	107,4	98,2	86,3	60,0			
3SVI12-12..	2,2	3	131,0			130,1	128,4	126,4	119,4	116,6	106,6	93,5	64,8			
3SVI13-13..	2,2	3	141,8			140,6	138,7	136,6	128,8	125,8	114,8	100,7	69,6			
3SVI14-14..	2,2	3	152,5			151,0	148,9	146,5	138,1	134,8	123,0	107,7	74,2			
3SVI15-15..	3	4	164,4			163,7	161,8	159,4	150,9	147,4	134,9	118,5	82,0			
3SVI17-17..	3	4	185,9			184,8	182,5	179,8	169,9	166,0	151,6	132,9	91,4			
3SVI19-19..	3	4	207,3			205,8	203,1	200,0	188,7	184,3	168,1	147,1	100,7			
3SVI21-21..	4	5,5	230,9			230,4	227,7	224,6	212,7	207,9	190,5	167,6	116,7			
3SVI23-23..	4	5,5	252,5			251,7	248,7	245,1	232,1	226,9	207,7	182,6	126,5			
5SVI02-02..	0,55	0,75	21,9							20,7	20,3	19,8	18,8	17,8	16,1	10,2
5SVI03-03..	0,75	1	32,7							30,9	30,3	29,5	28,1	26,6	24,0	15,2
5SVI04-04..	1,1	1,5	43,9							41,7	40,9	40,0	38,1	36,2	32,7	21,0
5SVI05-05..	1,5	2	55,0							52,3	51,4	50,2	47,9	45,5	41,2	26,8
5SVI06-06..	1,5	2	65,9							62,4	61,2	59,7	56,8	54,0	48,8	31,3
5SVI07-07..	2,2	3	76,5							74,0	72,7	71,0	67,6	64,2	57,8	37,0
5SVI08-08..	2,2	3	87,2							84,2	82,6	80,7	76,7	72,8	65,5	41,6
5SVI09-09..	2,2	3	97,8							94,3	92,5	90,3	85,7	81,2	72,9	46,0
5SVI10-10..	3	4	109,2							105,8	103,9	101,5	96,7	91,8	82,7	53,0
5SVI11-11..	3	4	119,9							116,0	113,9	111,3	105,9	100,4	90,4	57,7
5SVI12-12..	3	4	130,6							126,1	123,8	120,9	114,9	108,9	98,0	62,2
5SVI13-13..	4	5,5	142,5							138,2	135,6	132,4	125,7	119,1	107,0	68,1
5SVI14-14..	4	5,5	153,4							148,5	145,7	142,2	135,0	127,9	114,8	72,9
5SVI15-15..	4	5,5	164,2							158,8	155,8	152,0	144,3	136,6	122,5	77,6
5SVI16-16..	4	5,5	174,9							169,0	165,8	161,8	153,4	145,2	130,2	82,2
5SVI17-17..	5,5	7,5	186,4							180,5	177,2	173,0	164,3	155,7	139,9	89,0
5SVI19-19..	5,5	7,5	208,0							201,2	197,4	192,7	182,9	173,2	155,4	98,5
5SVI21-21..	5,5	7,5	229,6							221,7	217,4	212,2	201,3	190,4	170,8	107,9
5SVI23-23..	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)

1-5svi-c-2p60_a_th

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10, 15, 22SVI SERIES - VERSION WITH COUPLING
TABLE OF HYDRAULIC PERFORMANCES AT 60 Hz, 2 POLES

PUMP TYPE SVI..C SVI..M	RATED POWER kW	RATED POWER HP	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
			H = TOTAL HEAD IN METRES OF COLUMN OF WATER													
10SVI02-02..	1.5	2	34.2	31.9	31.0	30.0	28.2	26.3	23.7	14.5						
10SVI03-03..	2.2	3	51.8	48.3	47.0	45.4	42.9	40.1	36.3	23.3						
10SVI04-04..	3	4	69.2	64.7	63.0	61.0	57.7	54.1	49.1	31.6						
10SVI05-05..	4	5.5	87.3	82.2	80.2	77.9	73.9	69.5	63.3	41.2						
10SVI06-06..	4	5.5	104.5	98.1	95.7	92.8	87.9	82.6	75.1	48.6						
10SVI07-07..	5.5	7.5	122.1	114.5	111.7	108.4	102.7	96.5	87.8	56.9						
10SVI08-08..	5.5	7.5	139.2	130.3	127.1	123.1	116.6	109.4	99.4	64.1						
10SVI09-09..	7.5	10	157.4	148.5	145.2	141.2	134.3	126.6	115.8	76.6						
10SVI10-10..	7.5	10	174.7	164.6	160.9	156.3	148.6	140.1	128.0	84.5						
10SVI11-11..	7.5	10	192.0	180.6	176.5	171.4	162.9	153.5	140.1	92.2						
10SVI13-13..	11	15	226.7	215.3	210.3	204.0	193.5	181.9	165.9	110.0						
10SVI15-15..	11	15	261.2	247.6	241.7	234.4	222.1	208.7	190.1	125.5						
15SVI02-02..	3	4	41.9				39.2	38.7	38.0	35.4	33.6	31.7	19.3			
15SVI03-03..	4	5.5	63.0				59.1	58.3	57.2	53.4	50.6	47.9	29.3			
15SVI04-04..	5.5	7.5	83.9				78.7	77.6	76.2	71.2	67.4	63.8	39.1			
15SVI05-05..	7.5	10	105.4				99.4	98.1	96.3	90.3	85.7	81.2	50.6			
15SVI06-06..	11	15	126.7				119.8	118.3	116.2	109.1	103.7	98.3	61.7			
15SVI07-07..	11	15	147.6				139.4	137.6	135.1	126.7	120.3	114.0	71.2			
15SVI08-08..	15	20	171.9				161.2	159.5	157.1	148.7	142.2	135.6	88.7			
15SVI09-09..	15	20	193.2				181.0	179.0	176.3	166.8	159.5	152.1	99.1			
15SVI10-10..	15	20	214.4				200.8	198.5	195.4	184.8	176.6	168.3	109.4			
15SVI11-11..	18.5	25	236.4				221.8	219.4	216.1	204.6	195.7	186.7	122.3			
15SVI12-12..	18.5	25	257.8				241.7	239.0	235.3	222.8	213.0	203.1	132.7			
22SVI02-02..	4	5.5	44.5						41.6	39.9	38.7	37.5	29.5	28.1	25.2	21.3
22SVI03-03..	5.5	7.5	66.7						62.1	59.5	57.6	55.8	43.7	41.6	37.3	31.4
22SVI04-04..	7.5	10	89.0						85.0	81.6	79.1	76.7	60.1	57.2	51.5	43.6
22SVI05-05..	11	15	111.5						106.7	102.6	99.5	96.5	75.9	72.3	65.2	55.4
22SVI06-06..	11	15	133.5						127.5	122.4	118.6	114.9	90.1	85.8	77.2	65.4
22SVI07-07..	15	20	156.4						150.1	144.4	140.1	135.9	107.3	102.3	92.4	78.7
22SVI08-08..	15	20	178.6						171.0	164.4	159.5	154.7	121.9	116.2	104.8	89.1
22SVI09-09..	18.5	25	201.3						193.2	186.0	180.5	175.2	138.5	132.1	119.4	101.8
22SVI10-10..	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)

10-22svi-2p60_a_th

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SVI33, 46 SERIES - VERSION WITH COUPLING
TABLE OF HYDRAULIC PERFORMANCES AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY											
			l/min 0	300	400	450	500	600	700	800	900	1000	1100	1200
SVI..S			m^3/h 0	18	24	27	30	36	42	48	54	60	66	72
SVI..N	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER											
SVI 3301/1..	3	4	24,5	22,8	21,5	20,6	19,5	16,7	13,0	8,3				
SVI 3301..	5,5	7,5	34,5	33,1	32,2	31,6	30,9	29,1	26,6	23,2				
SVI 3302/2..	5,5	7,5	49,6	47,7	45,3	43,6	41,5	36,1	28,9	20,0				
SVI 3302/1..	7,5	10	59,6	56,5	54,3	52,8	51,0	46,4	40,2	32,2				
SVI 3303/2..	11	15	86,0	81,8	78,4	76,1	73,4	66,4	57,0	44,7				
SVI 3303..	15	20	104,2	100,2	97,6	95,9	93,9	88,5	81,1	71,1				
SVI 3304..	18,5	25	138,3	132,9	129,4	127,1	124,4	117,2	107,2	93,8				
SVI 3305/1..	22	30	163,9	157,5	152,9	149,8	146,1	136,5	123,2	105,3				
SVI 3306/2..	22	30	189,0	181,7	175,9	172,0	167,4	155,3	138,6	116,0				
SVI 3307/2..	30	40	224,6	216,5	210,0	205,6	200,4	186,6	167,5	141,8				
SVI 4601/1..	5,5	7,5	29,1			28,6	28,3	27,1	25,4	23,1	20,2	16,7	12,6	7,9
SVI 4601..	7,5	10	39,9			35,6	34,9	33,4	31,6	29,6	27,1	24,2	20,6	16,4
SVI 4602/1..	11	15	67,8			64,8	64,0	61,9	58,9	55,1	50,2	44,3	37,2	29,0
SVI 4602..	15	20	78,2			72,1	71,3	69,4	66,9	63,8	59,7	54,7	48,5	40,8
SVI 4603..	18,5	25	117,2			108,1	106,9	104,0	100,2	95,3	89,1	81,5	72,3	61,5
SVI 4604/2..	22	30	134,1			130,3	128,9	125,2	119,8	112,6	103,4	92,0	78,5	62,7
SVI 4605/1..	30	40	183,1			173,3	171,5	166,8	160,3	151,7	140,8	127,4	111,5	93,0

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

svi33-46-2p60-en_c_th

SVI66, 92 SERIES - VERSION WITH COUPLING
TABLE OF HYDRAULIC PERFORMANCES AT 60 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY											
			l/min 0	600	700	800	900	1100	1300	1500	1700	2000	2200	2400
SVI..S			m^3/h 0	36	42	48	54	66	78	90	102	120	132	144
SVI..N	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER											
SVI 6601/1..	7,5	10	31,4	28,6	27,7	26,7	25,6	22,9	19,3	14,4	7,8			
SVI 6601..	11	15	43,8	40,0	39,0	37,9	36,8	34,4	31,6	28,1	23,4			
SVI 6602/2..	15	20	64,5	60,1	59,1	57,8	56,3	52,1	46,1	37,9	27,0			
SVI 6602..	18,5	25	85,4	79,5	77,7	75,8	73,7	69,0	63,3	56,3	47,7			
SVI 6603/2..	22	30	106,6	99,5	97,8	95,7	93,1	86,3	77,1	65,7	52,2			
SVI 6603..	30	40	127,8	120,3	118,0	115,3	112,3	105,3	96,7	86,3	74,0			
SVI 9201/1..	11	15	36,4				31,8	30,5	28,8	26,6	23,9	18,3	13,5	7,6
SVI 9201..	15	20	49,5				41,7	39,0	36,5	34,2	31,9	28,1	24,7	19,9
SVI 9202/2..	18,5	25	69,9				64,0	61,7	58,7	54,8	49,7	39,6	31,1	21,1
SVI 9202/1..	22	30	83,6				74,2	70,6	66,8	62,6	57,8	49,0	41,5	32,1
SVI 9202..	30	40	97,9				84,7	79,9	75,3	70,8	66,4	58,8	52,4	43,8

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

svi66-92-2p50-en_c_th

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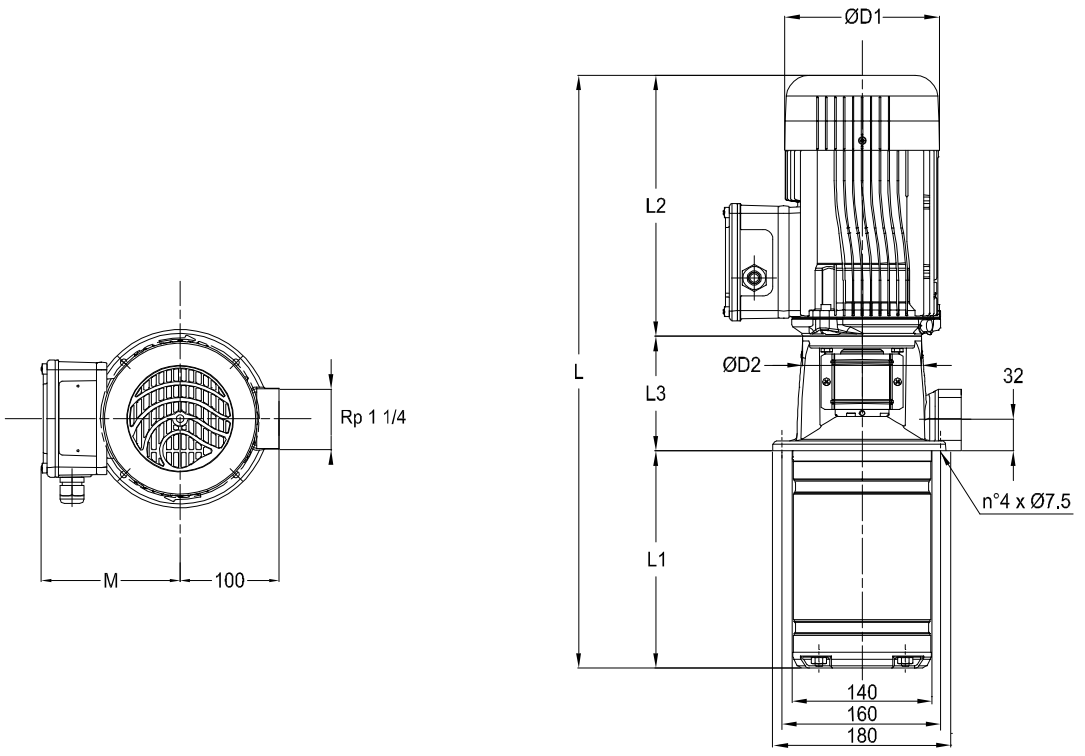
1SVI..C - 1SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2		PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~				1~	3~
1SVI02-02..003	0,37	71R	433,5	433,5	119	209	209	105,5	111	122	120	120	105		6	12	12
1SVI03-03..003	0,37	71R	453,5	453,5	139	209	209	105,5	111	122	120	120	105		7	12	12
1SVI04-04..003	0,37	71R	473,5	473,5	159	209	209	105,5	111	122	120	120	105		7	12	12
1SVI05-05..005	0,55	71	515,5	515,5	179	231	231	105,5	121	132	140	140	105		7	15	15
1SVI06-06..005	0,55	71	535,5	535,5	199	231	231	105,5	121	132	140	140	105		8	15	15
1SVI07-07..007	0,75	80	560,5	597,5	219	226	263	115,5	121	140	140	155	120		9	19	19
1SVI08-08..007	0,75	80	580,5	617,5	239	226	263	115,5	121	140	140	155	120		9	19	19
1SVI09-09..007	0,75	80	600,5	637,5	259	226	263	115,5	121	140	140	155	120		9	20	20
1SVI10-10..011	1,1	80	657,5	657,5	279	263	263	115,5	137	140	155	155	120		10	20	20
1SVI11-11..011	1,1	80	677,5	677,5	299	263	263	115,5	137	140	155	155	120		10	20	20
1SVI12-12..011	1,1	80	697,5	697,5	319	263	263	115,5	137	140	155	155	120		11	21	21
1SVI13-13..011	1,1	80	717,5	717,5	339	263	263	115,5	137	140	155	155	120		11	21	21
1SVI15-15..015	1,5	90R	767,5	767,5	379	263	263	125,5	121	140	155	155	140		12	26	24
1SVI17-17..015	1,5	90R	807,5	807,5	419	263	263	125,5	137	140	155	155	140		13	26	25
1SVI18-18..022	2,2	90	862,5	862,5	439	298	298	125,5	151	134	174	174	140		13	34	31
1SVI20-20..022	2,2	90	902,5	902,5	479	298	298	125,5	151	134	174	174	140		14	35	32
1SVI22-22..022	2,2	90	942,5	942,5	519	298	298	125,5	151	134	174	174	140		15	36	33
1SVI24-24..022	2,2	90	982,5	982,5	559	298	298	125,5	151	134	174	174	140		16	37	34
1SVI26-26..022	2,2	90	1023	1023	599	298	298	125,5	151	134	174	174	140		16	37	34
1SVI28-28..030	3	100R	-	1073	639	-	298	135,5	-	134	-	174	160		18	-	39

1svi_c-2p60_a_td

All listed dimensions are with inducer.
e.g. 1SVI28-28 has 28 stages with impeller and 1 inducer chamber.

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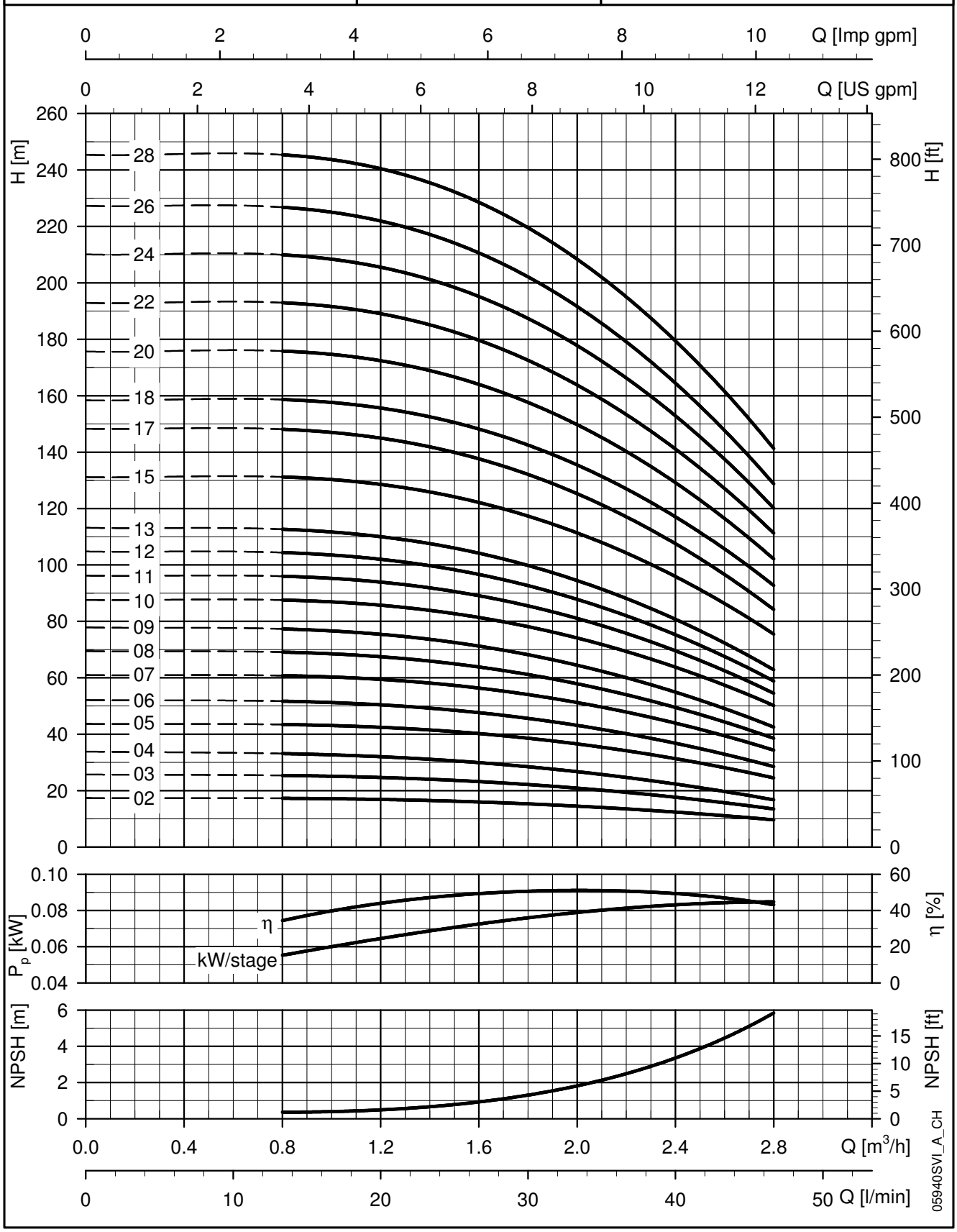
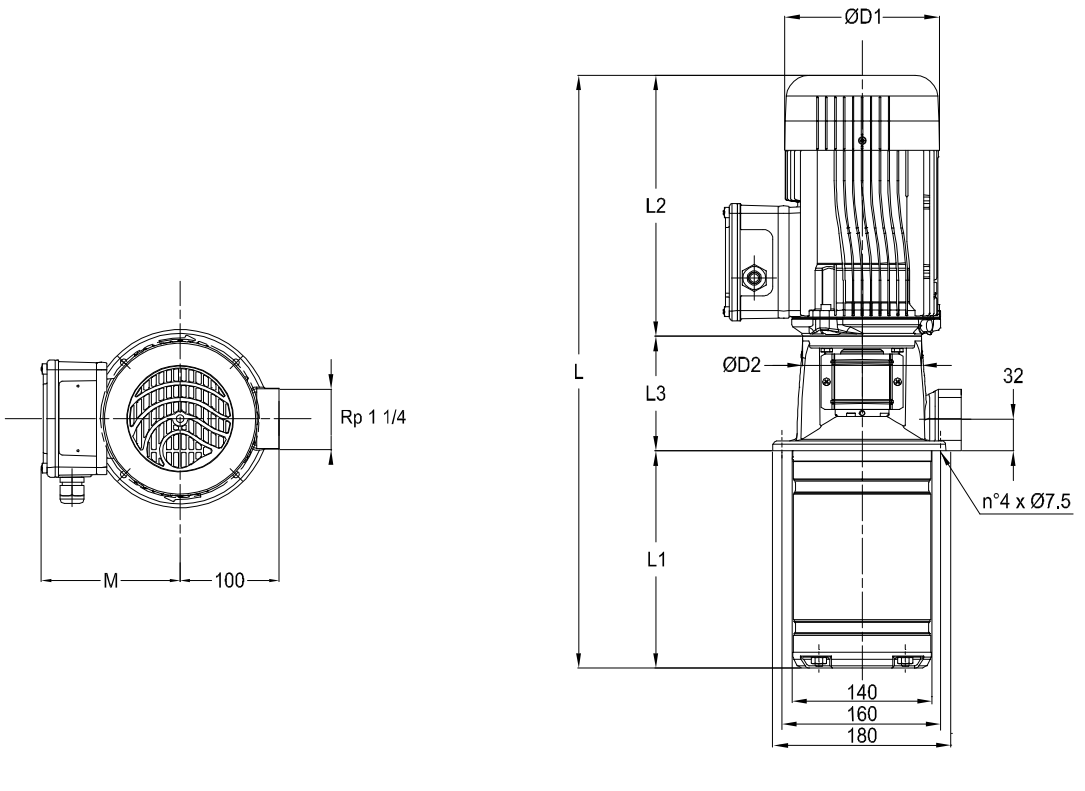
1SVI..C - 1SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

1SVI	~ 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.

3SVI..C - 3SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



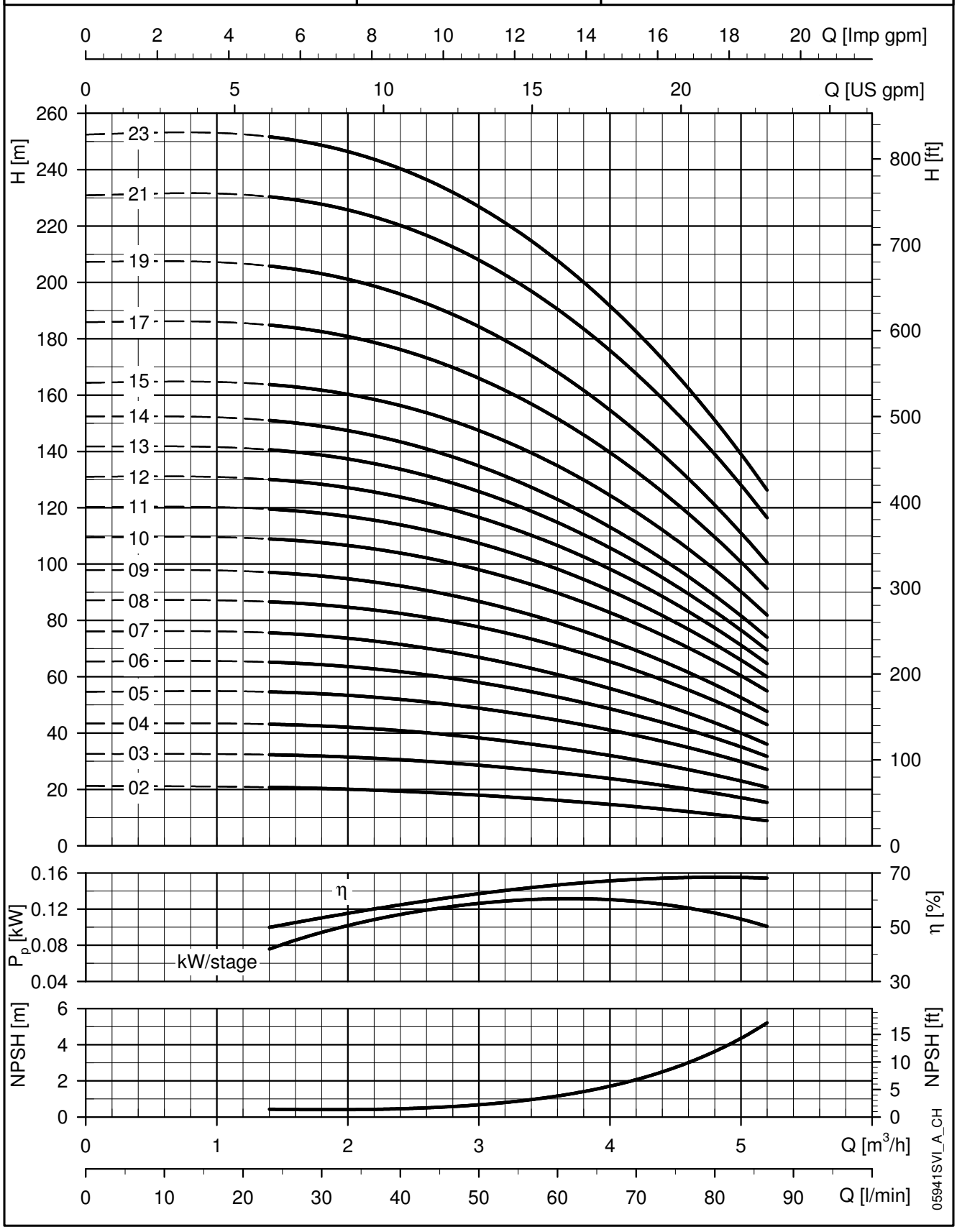
PUMP TYPE	MOTOR		DIMENSIONS (mm)											WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2	PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~			1~	3~
3SVI02-02..003	0,37	71R	433,5	433,5	119	209	209	105,5	111	122	120	120	105	6	12	12
3SVI03-03..005	0,55	71	475,5	475,5	139	231	231	105,5	121	132	140	140	105	7	15	14
3SVI04-04..007	0,75	80	500,5	537,5	159	226	263	115,5	121	140	140	155	120	8	18	18
3SVI05-05..011	1,1	80	557,5	557,5	179	263	263	115,5	137	140	155	155	120	8	18	18
3SVI06-06..011	1,1	80	577,5	577,5	199	263	263	115,5	137	140	155	155	120	8	18	18
3SVI07-07..011	1,1	80	597,5	597,5	219	263	263	115,5	137	140	155	155	120	9	19	19
3SVI08-08..015	1,5	90R	627,5	627,5	239	263	263	125,5	137	140	155	155	140	10	23	22
3SVI09-09..015	1,5	90R	647,5	647,5	259	263	263	125,5	137	140	155	155	140	10	23	22
3SVI10-10..022	2,2	90	702,5	702,5	279	298	298	125,5	151	134	174	174	140	10	31	28
3SVI11-11..022	2,2	90	722,5	722,5	299	298	298	125,5	151	134	174	174	140	11	32	29
3SVI12-12..022	2,2	90	742,5	742,5	319	298	298	125,5	151	134	174	174	140	11	32	29
3SVI13-13..022	2,2	90	762,5	762,5	339	298	298	125,5	151	134	174	174	140	12	33	30
3SVI14-14..022	2,2	90	782,5	782,5	359	298	298	125,5	151	134	174	174	140	12	33	30
3SVI15-15..030	3	100R	-	812,5	379	-	298	135,5	-	134	-	174	160	13	-	34
3SVI17-17..030	3	100R	-	852,5	419	-	298	135,5	-	134	-	174	160	14	-	35
3SVI19-19..030	3	100R	-	892,5	459	-	298	135,5	-	134	-	174	160	15	-	36
3SVI21-21..040	4	112R	-	953,5	499	-	319	135,5	-	154	-	197	160	15	-	41
3SVI23-23..040	4	112R	-	993,5	539	-	319	135,5	-	154	-	197	160	16	-	42

3svi_c-2p60_a_td

All listed dimensions are with inducer.
e.g. 3SVI23-23 has 23 stages with impeller and 1 inducer chamber.

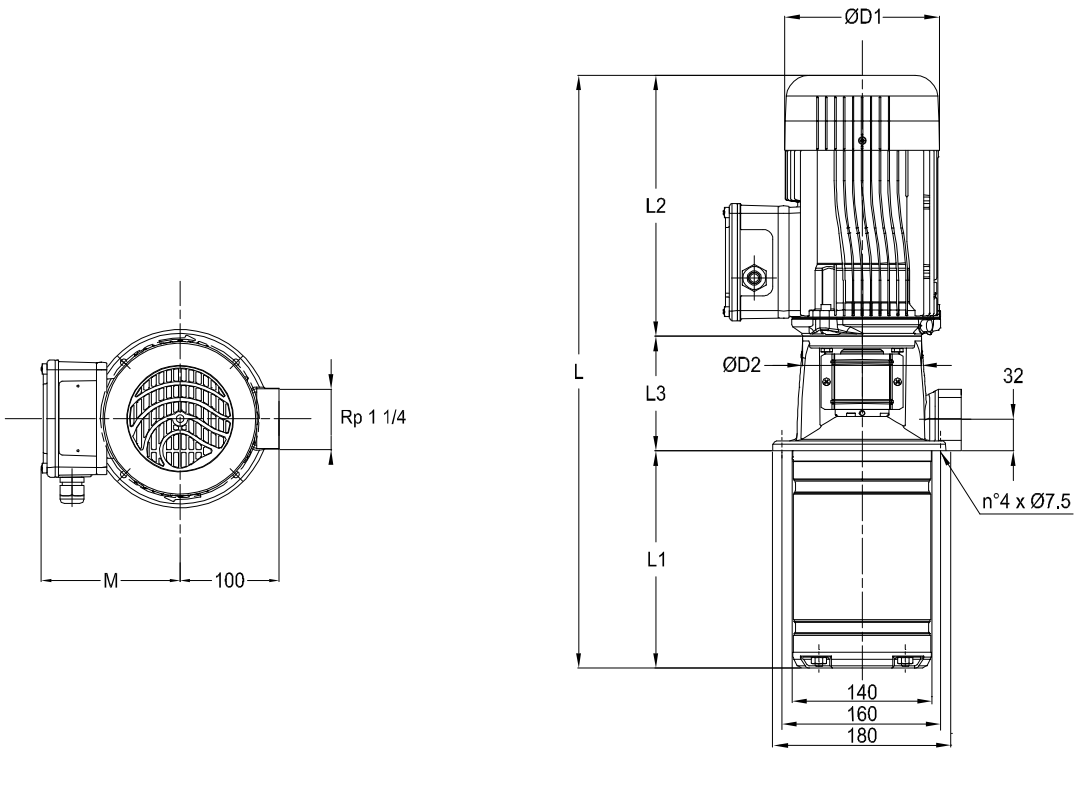
3SVI..C - 3SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

3SVI	~ 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.

5SVI..C - 5SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)												WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2		PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~				1~	3~
5SVI02-02..005	0,55	71	470,5	470,5	134	231	231	105,5	121	132	140	140	105		7	14	14
5SVI03-03..007	0,75	80	500,5	537,5	159	226	263	115,5	121	140	140	155	120		8	18	18
5SVI04-04..011	1,1	80	562,5	562,5	184	263	263	115,5	137	140	155	155	120		8	18	18
5SVI05-05..015	1,5	90R	597,5	597,5	209	263	263	125,5	137	140	155	155	140		9	22	21
5SVI06-06..015	1,5	90R	622,5	622,5	234	263	263	125,5	137	140	155	155	140		9	23	21
5SVI07-07..022	2,2	90	682,5	682,5	259	298	298	125,5	151	134	174	174	140		10	31	28
5SVI08-08..022	2,2	90	707,5	707,5	284	298	298	125,5	151	134	174	174	140		10	31	28
5SVI09-09..022	2,2	90	732,5	732,5	309	298	298	125,5	151	134	174	174	140		11	32	29
5SVI10-10..030	3	100R	-	767,5	334	-	298	135,5	-	134	-	174	160		12	-	33
5SVI11-11..030	3	100R	-	792,5	359	-	298	135,5	-	134	-	174	160		12	-	33
5SVI12-12..030	3	100R	-	817,5	384	-	298	135,5	-	134	-	174	160		12	-	33
5SVI13-13..040	4	112R	-	863,5	409	-	319	135,5	-	154	-	197	160		13	-	39
5SVI14-14..040	4	112R	-	888,5	434	-	319	135,5	-	154	-	197	160		13	-	40
5SVI15-15..040	4	112R	-	913,5	459	-	319	135,5	-	154	-	197	160		14	-	40
5SVI16-16..040	4	112R	-	938,5	484	-	319	135,5	-	154	-	197	160		14	-	41
5SVI17-17..055	5,5	132R	-	1040	509	-	375	155,5	-	168	-	214	300		19	-	56
5SVI19-19..055	5,5	132R	-	1090	559	-	375	155,5	-	168	-	214	300		20	-	57
5SVI21-21..055	5,5	132R	-	1140	609	-	375	155,5	-	168	-	214	300		20	-	58
5SVI23-23..055	5,5	132R	-	1190	659	-	375	155,5	-	168	-	214	300		21	-	59

All listed dimensions are with inducer.
e.g. 5SVI23-23 has 23 stages with impeller and 1 inducer chamber.

5svi_c-2p60_a_td

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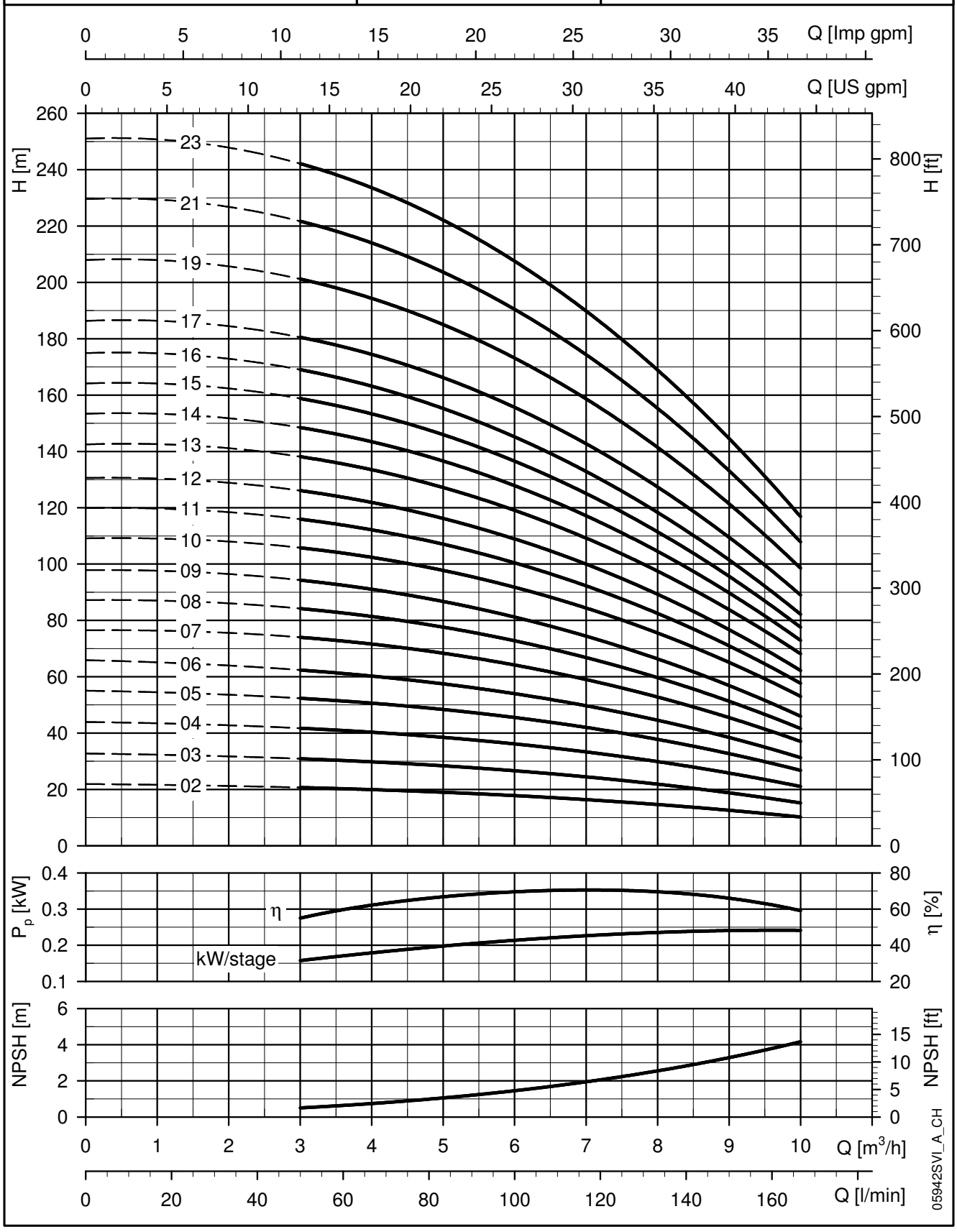
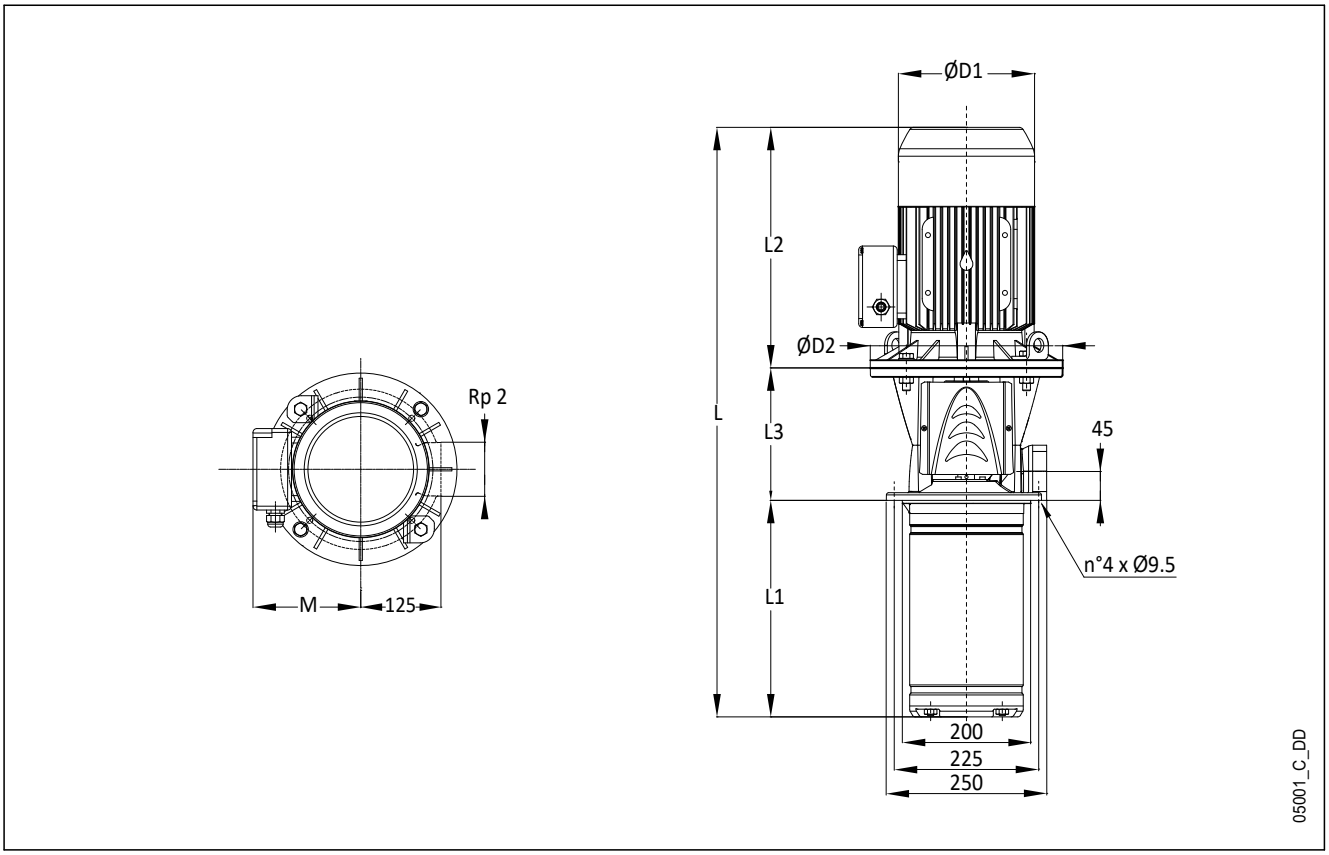
5SVI..C - 5SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

5SVI	~ 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.

10SVI..C - 10SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



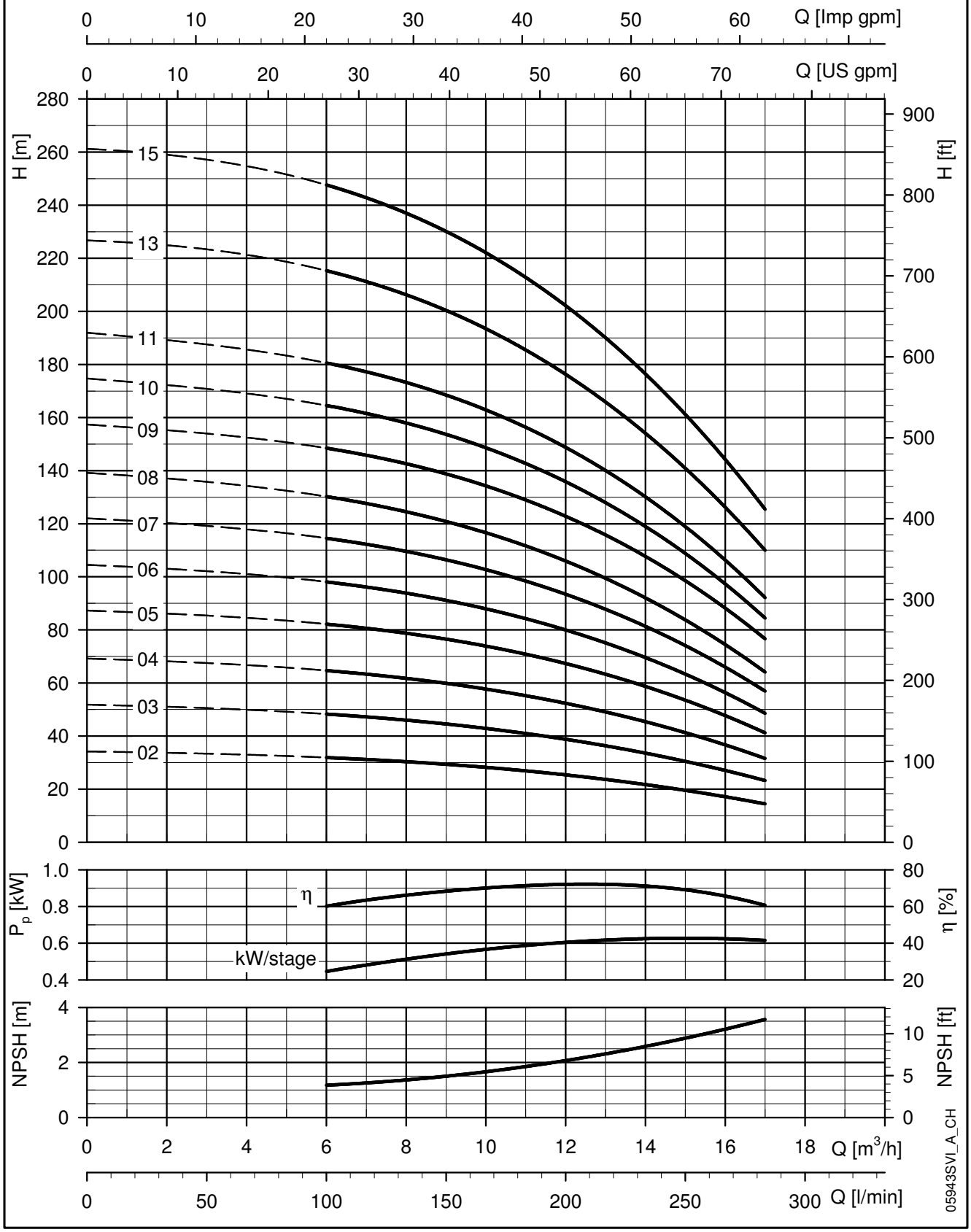
PUMP TYPE	MOTOR		DIMENSIONS (mm)											WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2	PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~			1~	3~
10SVI02-02..015	1,5	90R	572,5	572,5	177,5	263	263	132	137	140	155	155	140	13	26	25
10SVI03-03..022	2,2	90	639,5	639,5	209,5	298	298	132	151	134	174	174	140	14	35	32
10SVI04-04..030	3	100R	-	681,5	241,5	-	298	142	-	134	-	174	160	16	-	37
10SVI05-05..040	4	112R	-	734,5	273,5	-	319	142	-	154	-	197	160	17	-	43
10SVI06-06..040	4	112R	-	766,5	305,5	-	319	142	-	154	-	197	160	18	-	44
10SVI07-07..055	5,5	132R	-	919	337,5	-	375	206,5	-	168	-	214	300	24	-	62
10SVI08-08..055	5,5	132R	-	951	369,5	-	375	206,5	-	168	-	214	300	25	-	63
10SVI09-09..075	7,5	132	-	975	401,5	-	367	206,5	-	191	-	256	300	26	-	83
10SVI10-10..075	7,5	132	-	1007	433,5	-	367	206,5	-	191	-	256	300	27	-	84
10SVI11-11..075	7,5	132	-	1039	465,5	-	367	206,5	-	191	-	256	300	28	-	85
10SVI13-13..110	11	160R	-	1196	529,5	-	428	238,5	-	191	-	256	350	38	-	108
10SVI15-15..110	11	160R	-	1260	593,5	-	428	238,5	-	191	-	256	350	40	-	110

10svi_c-2p60_a_td

All listed dimensions are with inducer.
e.g. 10SVI15-15 has 15 stages with impeller and 1 inducer chamber.

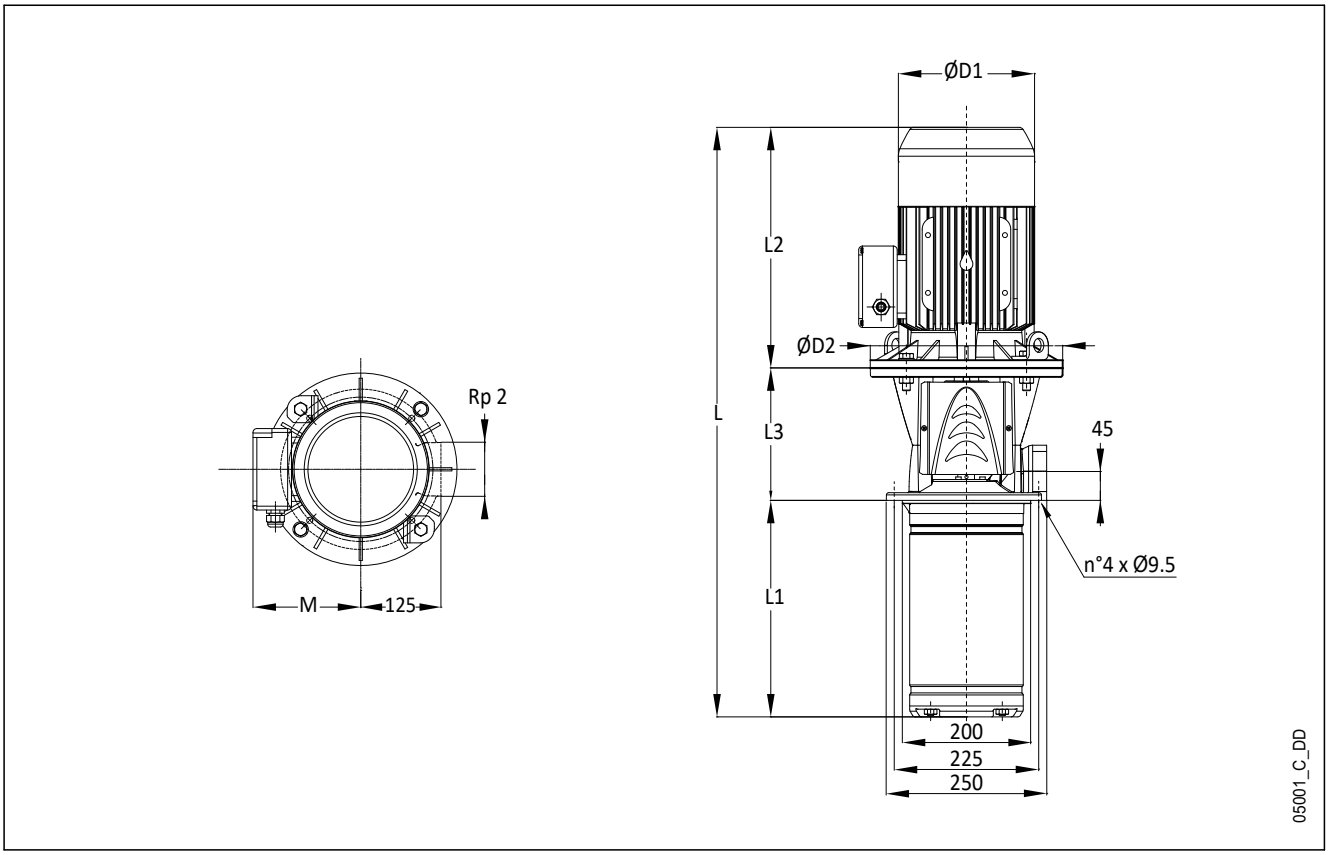
10SVI..C - 10SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

10SVI	~ 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.

15SVI..C - 15SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)											WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2	PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~			1~	3~
15SVI02-02..030	3	100R	-	665,5	225,5	-	298	142	-	134	-	174	160	15	-	36
15SVI03-03..040	4	112R	-	734,5	273,5	-	319	142	-	154	-	197	160	17	-	43
15SVI04-04..055	5,5	132R	-	903	321,5	-	375	206,5	-	168	-	214	300	23	-	61
15SVI05-05..075	7,5	132	-	943	369,5	-	367	206,5	-	191	-	256	300	25	-	82
15SVI06-06..110	11	160R	-	1084	417,5	-	428	238,5	-	191	-	256	350	34	-	104
15SVI07-07..110	11	160R	-	1132	465,5	-	428	238,5	-	191	-	256	350	35	-	105
15SVI08-08..150	15	160	-	1246	513,5	-	494	238,5	-	240	-	313	350	36	-	138
15SVI09-09..150	15	160	-	1294	561,5	-	494	238,5	-	240	-	313	350	37	-	139
15SVI10-10..150	15	160	-	1342	609,5	-	494	238,5	-	240	-	313	350	39	-	141
15SVI11-11..185	18,5	160	-	1390	657,5	-	494	238,5	-	240	-	313	350	40	-	142
15SVI12-12..185	18,5	160	-	1438	705,5	-	494	238,5	-	240	-	313	350	41	-	143

15svi_c-2p60_a_td

All listed dimensions are with inducer.
e.g. 15SVI12-12 has 12 stages with impeller and 1 inducer chamber.

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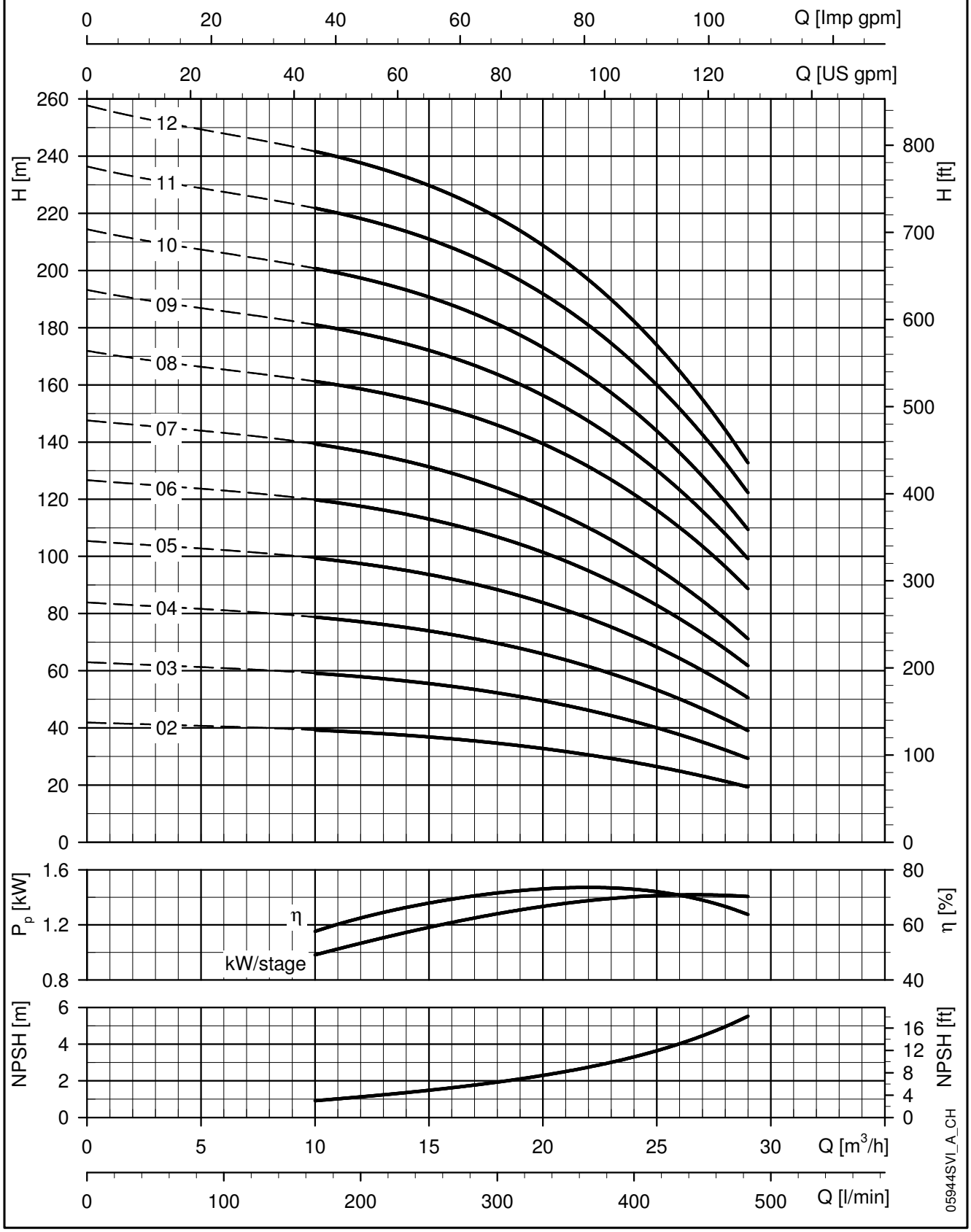
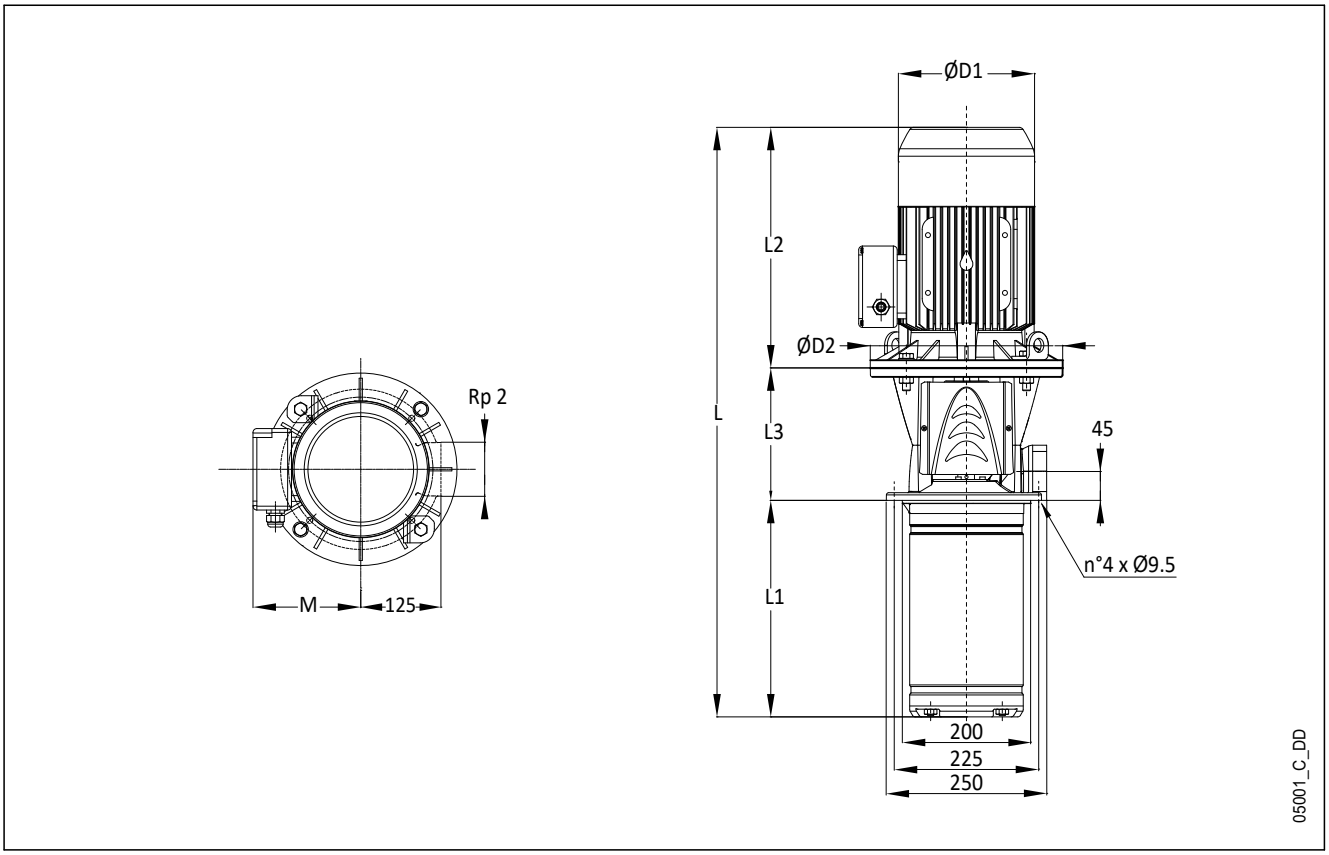
15SVI..C - 15SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

15SVI	~ 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.

22SVI..C - 22SVI..M SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)											WEIGHT (kg)		
			L		L1	L2		L3	M		D1		D2	PUMP	ELECTRIC PUMP	
	kW	SIZE	1~	3~		1~	3~		1~	3~	1~	3~			1~	3~
22SVI02-02..040	4	112R	-	686,5	225,5	-	319	142	-	154	-	197	160	15	-	42
22SVI03-03..055	5,5	132R	-	855	273,5	-	375	206,5	-	168	-	214	300	22	-	60
22SVI04-04..075	7,5	132	-	895	321,5	-	367	206,5	-	191	-	256	300	23	-	80
22SVI05-05..110	11	160R	-	1036	369,5	-	428	238,5	-	191	-	256	350	32	-	103
22SVI06-06..110	11	160R	-	1084	417,5	-	428	238,5	-	191	-	256	350	34	-	104
22SVI07-07..150	15	160	-	1198	465,5	-	494	238,5	-	240	-	313	350	35	-	137
22SVI08-08..150	15	160	-	1246	513,5	-	494	238,5	-	240	-	313	350	36	-	138
22SVI09-09..185	18,5	160	-	1294	561,5	-	494	238,5	-	240	-	313	350	38	-	140
22SVI10-10..185	18,5	160	-	1342	609,5	-	494	238,5	-	240	-	313	350	39	-	141

22svi_c-2p60_a_td

All listed dimensions are with inducer.
e.g. 22SVI10-10 has 10 stages with impeller and 1 inducer chamber.

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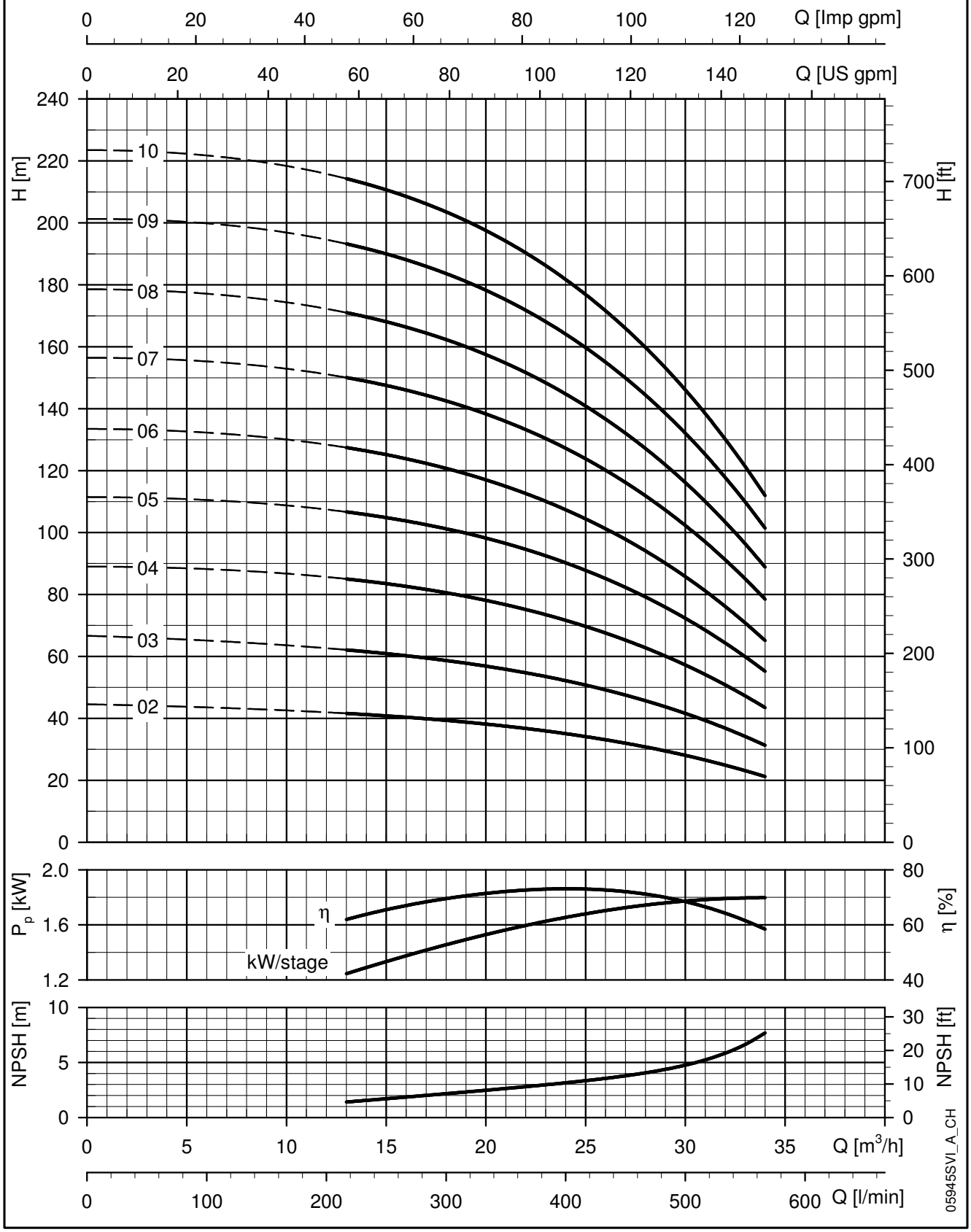
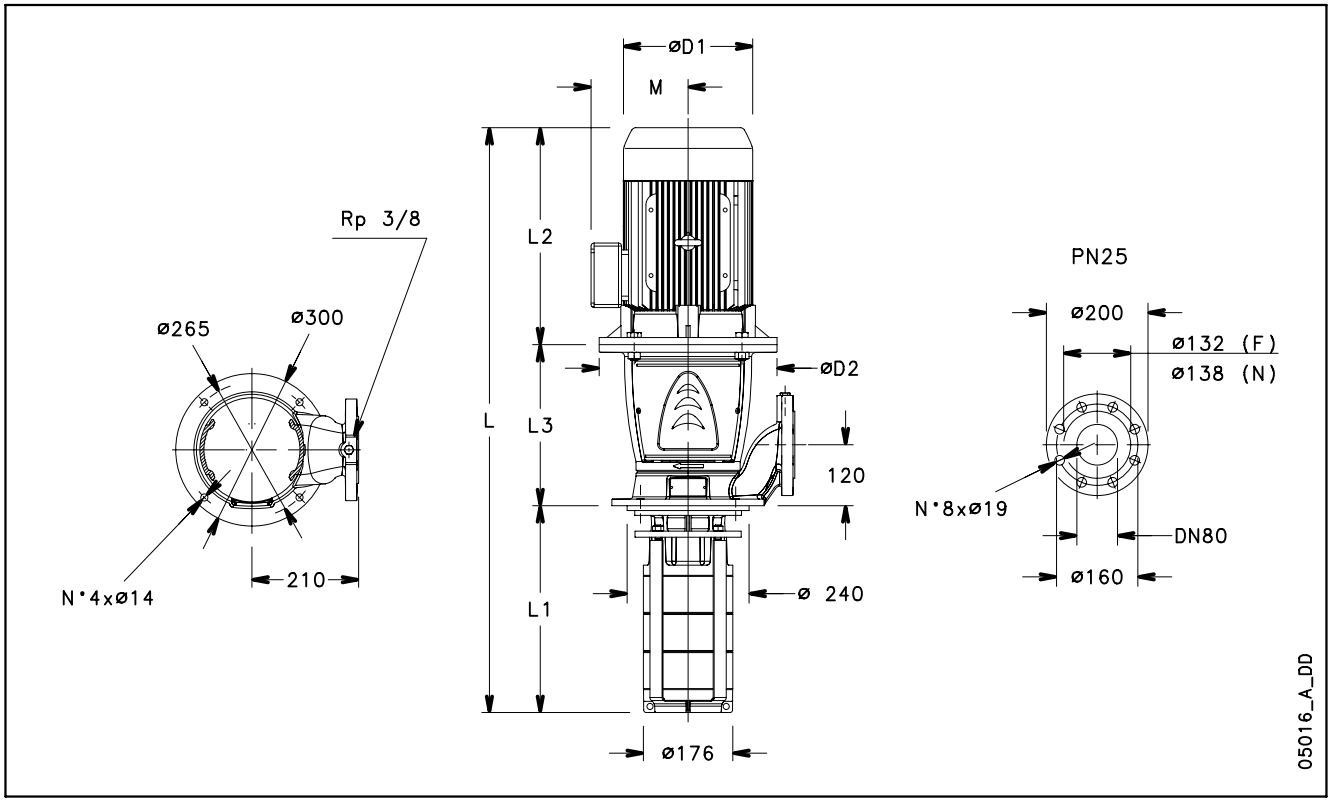
22SVI..C - 22SVI..M SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

22SVI	~ 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.

SVI33..S - SVI33..N SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES

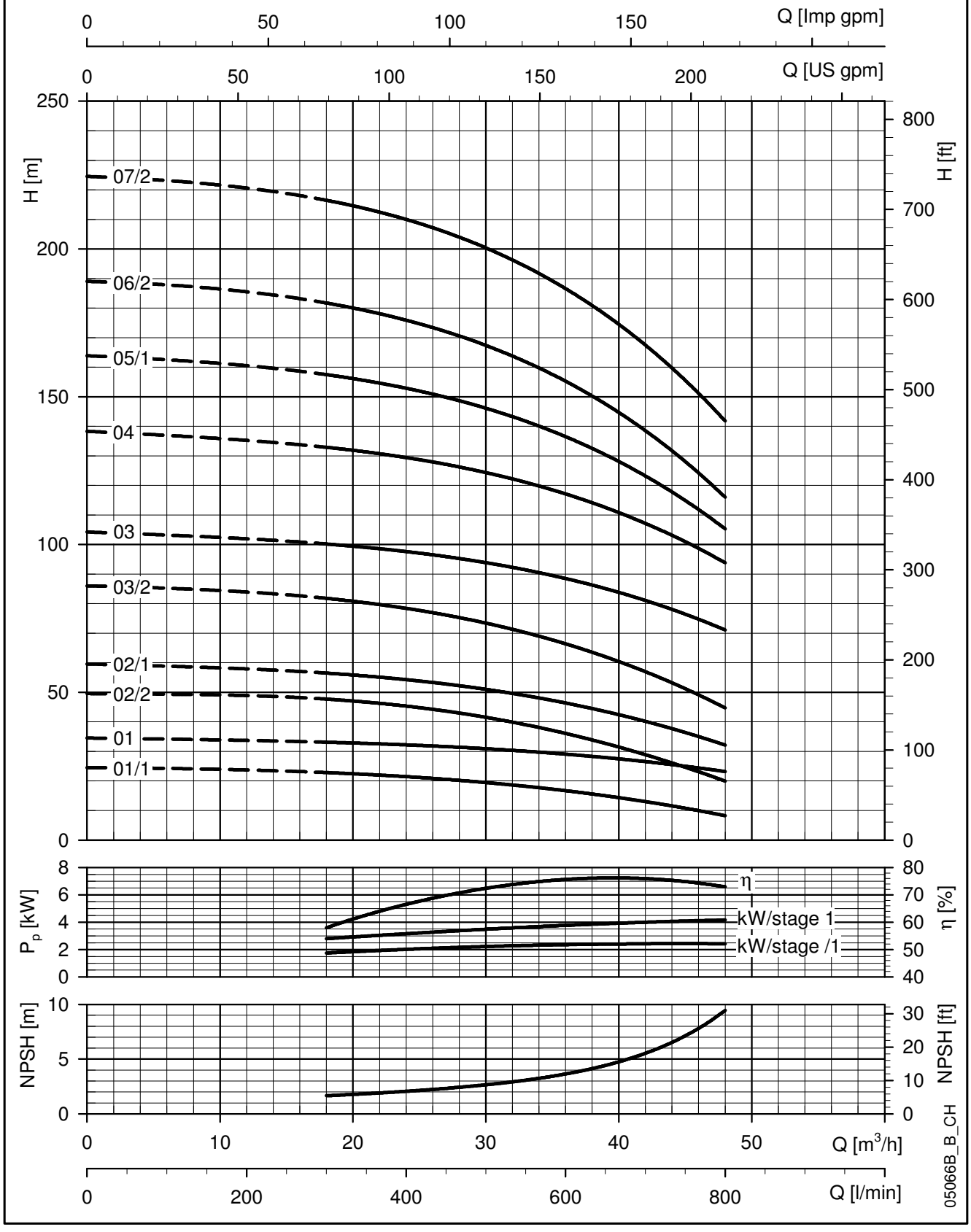


PUMP TYPE	MOTOR		DIMENSIONS (mm)							WEIGHT (kg)	
										PUMP	ELECTRIC PUMP
	kW	SIZE	L	L1	L2	L3	M	D1	D2		
SVI3301/1-01..306/P	3	100	817	257	298	262	134	174	160	43	64
SVI3301-01..556/P	5,5	132	914	257	375	282	168	214	300	44	82
SVI3302/2-02..556/P	5,5	132	989	332	375	282	168	214	300	47	85
SVI3302/1-02..756/P	7,5	132	981	332	367	282	191	256	300	48	104
SVI3303/2-03..1106/P	11	160	1152	407	428	317	191	256	350	54	125
SVI3303-03..1506/P	15	160	1218	407	494	317	240	313	350	55	157
SVI3304-04..1856/P	18,5	160	1293	482	494	317	240	313	350	57	168
SVI3305/1-05..2206/P	22	180	1368	557	494	317	240	313	350	60	182
SVI3306/2-06..2206/P	22	180	1443	632	494	317	240	313	350	63	185
SVI3307/2-07..3006/C	30	200	1695	707	671	317	285	408	400	89	297

svi33s-2p60-en_d_td

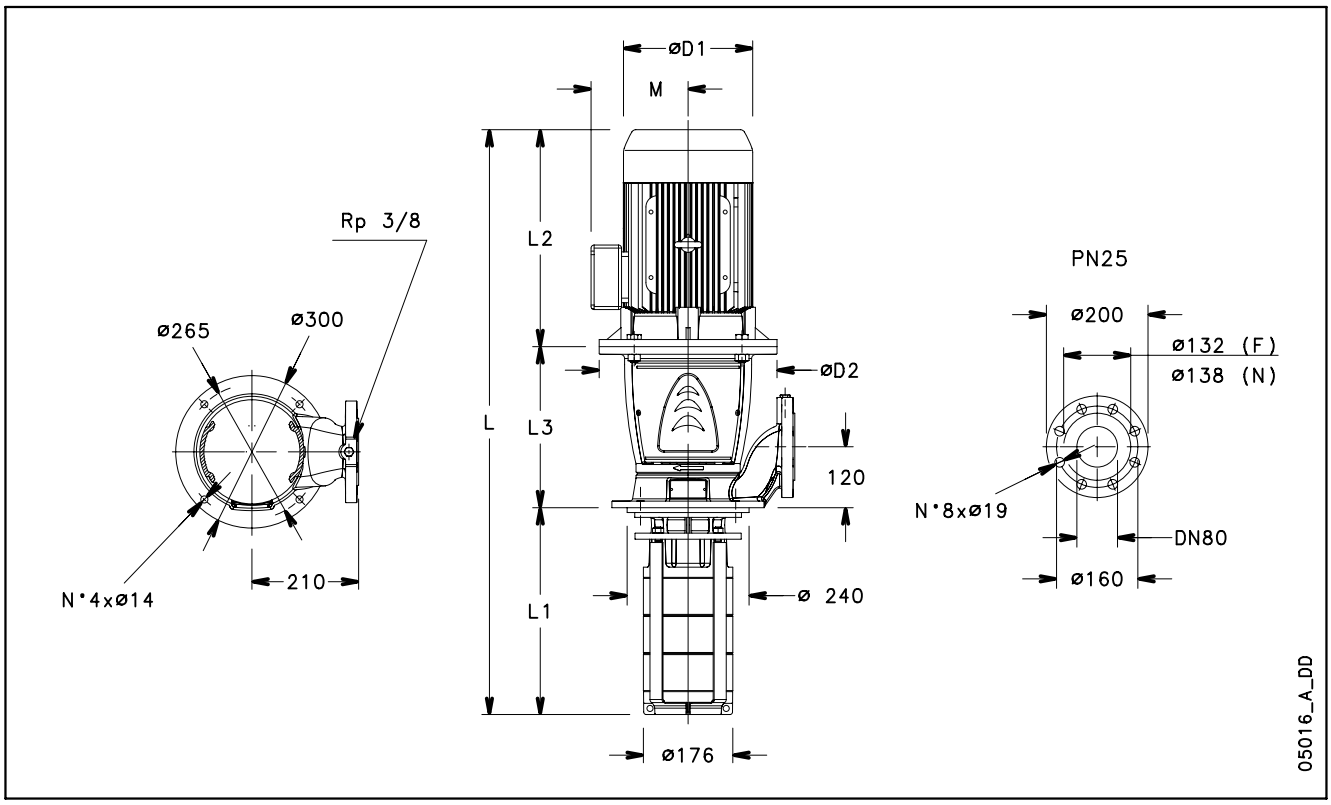
SVI33..S - SVI33..N SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

SVI33	~ 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.

SVI46..S - SVI46..N SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)							WEIGHT (kg)	
										PUMP	ELECTRIC
	kW	SIZE	L	L1	L2	L3	M	D1	D2		PUMP
SVI4601/1-01..556/P	5,5	132	914	257	375	282	168	214	300	44	82
SVI4601-01..756/P	7,5	132	906	257	367	282	191	256	300	45	101
SVI4602/1-02..1106/P	11	160	1077	332	428	317	191	256	350	51	122
SVI4602-02..1506/P	15	160	1143	332	494	317	240	313	350	52	154
SVI4603-03..1856/P	18,5	160	1218	407	494	317	240	313	350	54	165
SVI4604/2-04..2206/P	22	180	1293	482	494	317	240	313	350	57	179
SVI4605/1-05..3006/C	30	200	1545	557	671	317	285	408	400	80	288

svi46s-2p60-en_d_td

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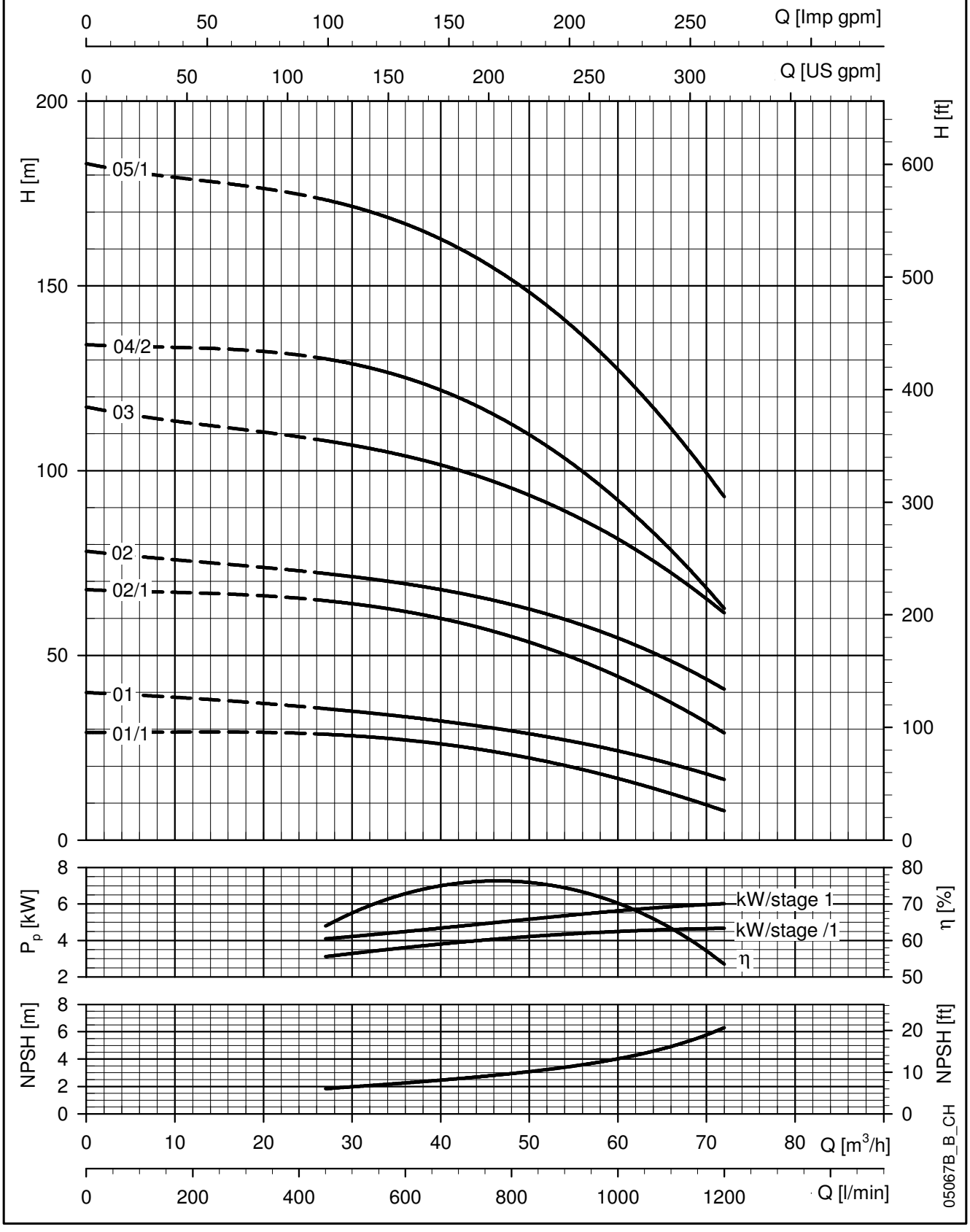
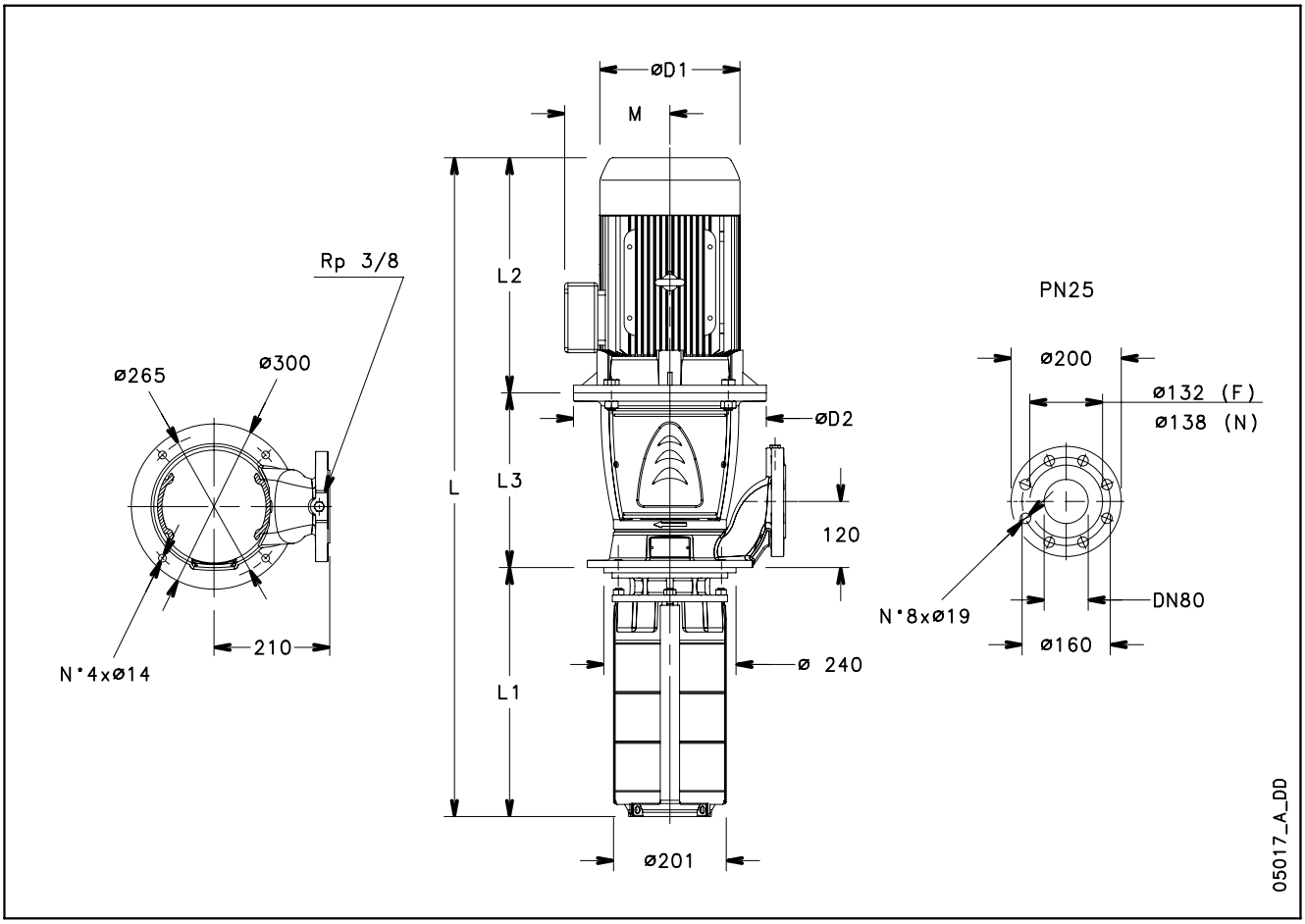
SVI46..S - SVI46..N SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

SVI46	~ 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.

SVI66..S - SVI66..N SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES

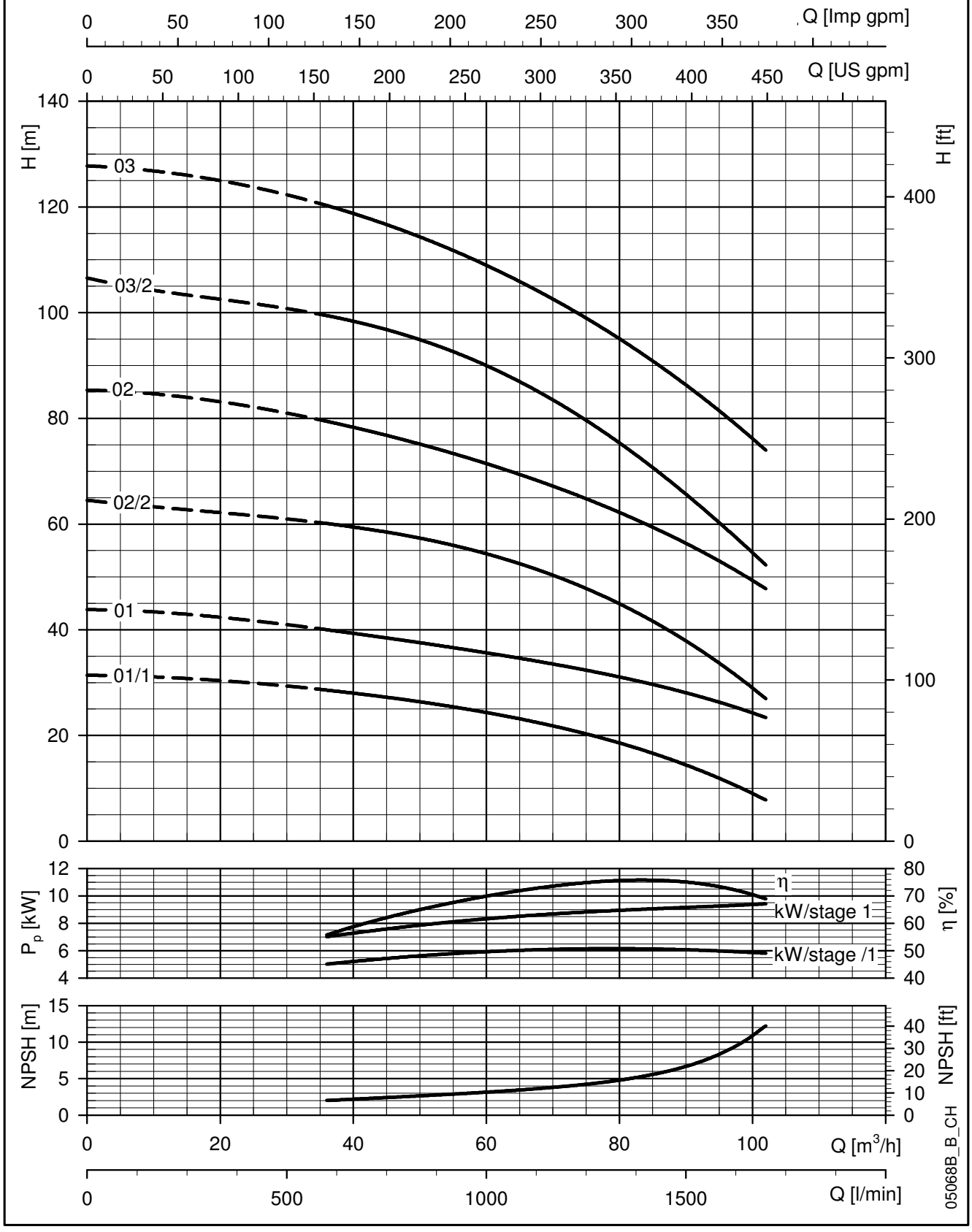


PUMP TYPE	MOTOR		DIMENSIONS (mm)							WEIGHT (kg)	
										PUMP	ELECTRIC PUMP
	kW	SIZE	L	L1	L2	L3	M	D1	D2		
SVI6601/1-01..756/P	7,5	132	921	272	367	282	191	256	300	47	103
SVI6601-01..1106/P	11	160	1017	272	428	317	191	256	350	50	121
SVI6602/2-02..1506/P	15	160	1173	362	494	317	240	313	350	54	156
SVI6602-02..1856/P	18,5	160	1173	362	494	317	240	313	350	54	165
SVI6603/2-03..2206/P	22	180	1263	452	494	317	240	313	350	58	180
SVI6603-03..3006/C	30	200	1440	452	671	317	285	408	400	78	286

svi66s-2p60-en_d_td

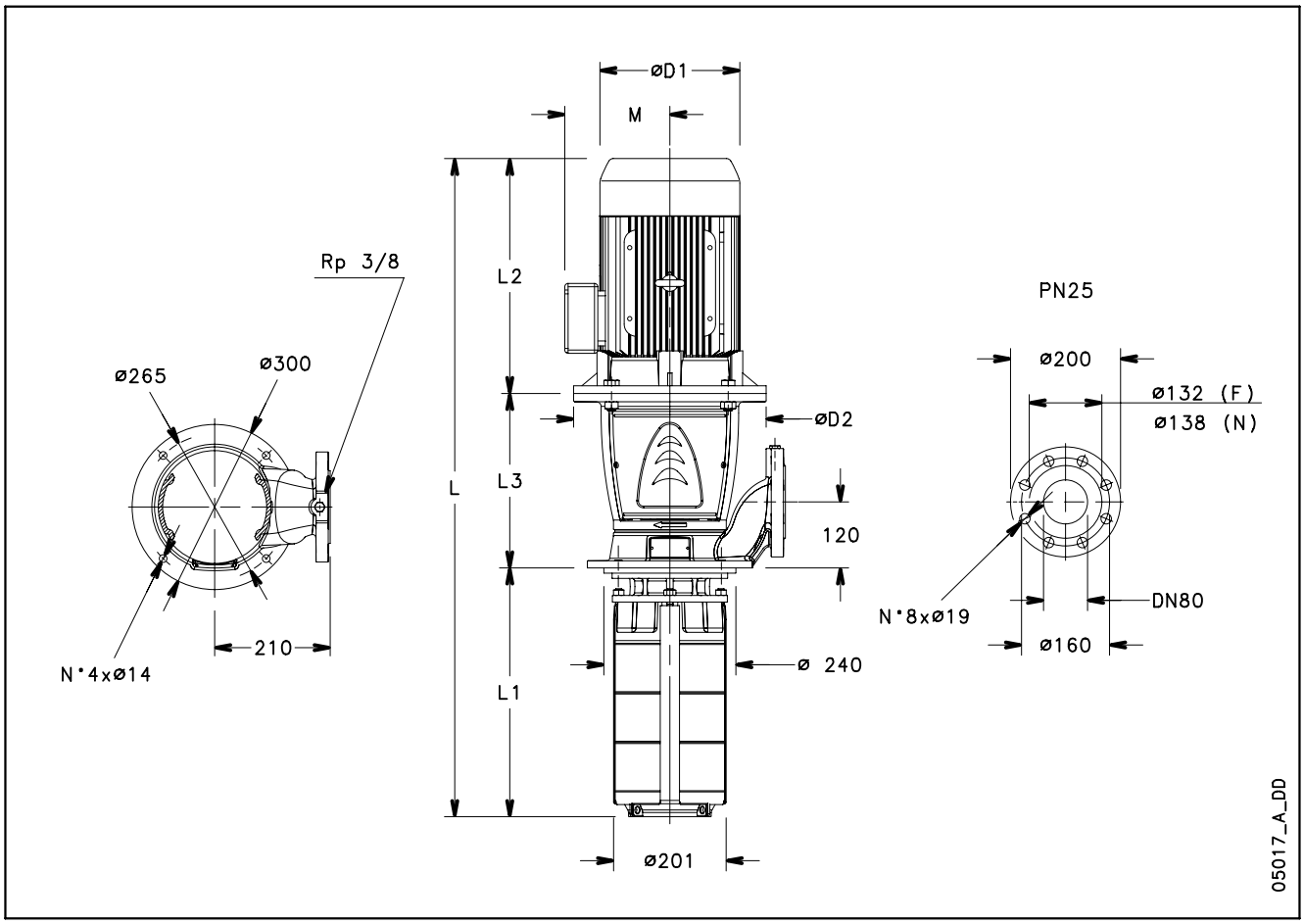
SVI66..S - SVI66..N SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

SVI66	~ 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.

SVI92..S - SVI92..N SERIES
DIMENSIONS AND WEIGHTS AT 60 Hz, 2 POLES



PUMP TYPE	MOTOR		DIMENSIONS (mm)							WEIGHT (kg)	
	kW	SIZE	L	L1	L2	L3	M	D1	D2	PUMP	ELECTRIC PUMP
SVI9201/1-01..1106/P	11	160	1017	272	428	317	191	256	350	50	121
SVI9201-01..1506/P	15	160	1083	272	494	317	240	313	350	51	153
SVI9202/2-02..1856/P	18,5	160	1173	362	494	317	240	313	350	54	165
SVI9202/1-02..2206/P	22	180	1173	362	494	317	240	313	350	54	176
SVI9202-02..3006/C	30	200	1350	362	671	317	285	408	400	75	283

svi92s-2p60-en_d_td

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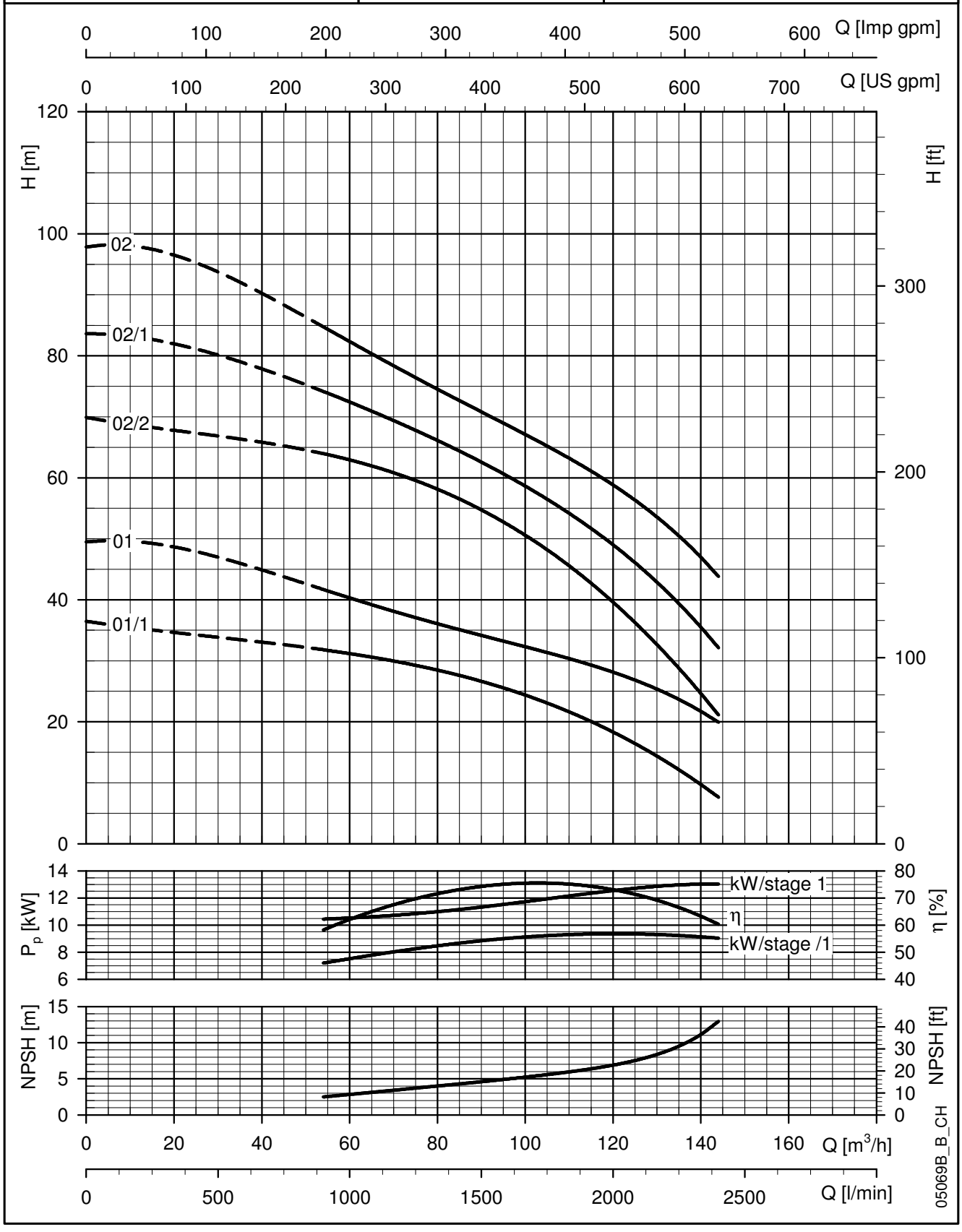
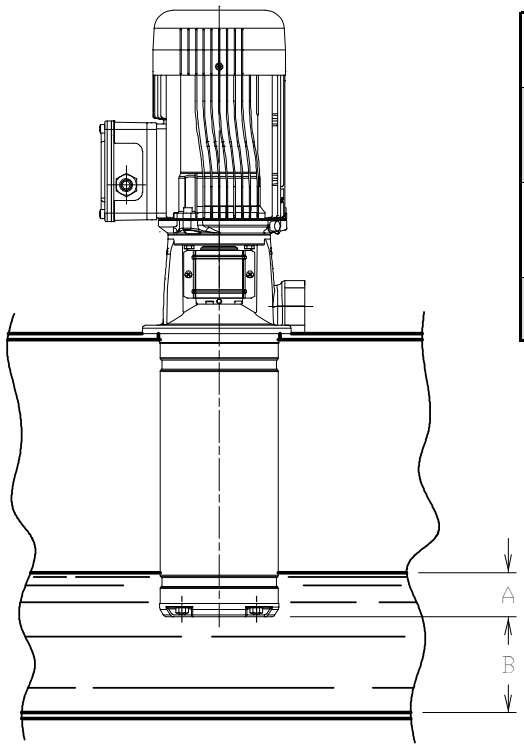
SVI92..S - SVI92..N SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES

SVI92	~ 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.

INSTALLATION



PUMP TYPE	MINIMUM IMMERSION LEVEL A [mm]		DISTANCE FROM THE BOTTOM B [mm]
	WITH INDUCER	WITHOUT INDUCER	
1SVI 3SVI 5SVI	20	30	20
10SVI 15SVI 22SVI	20	30	25
SVI33-46 SVI66-92	-	60	25

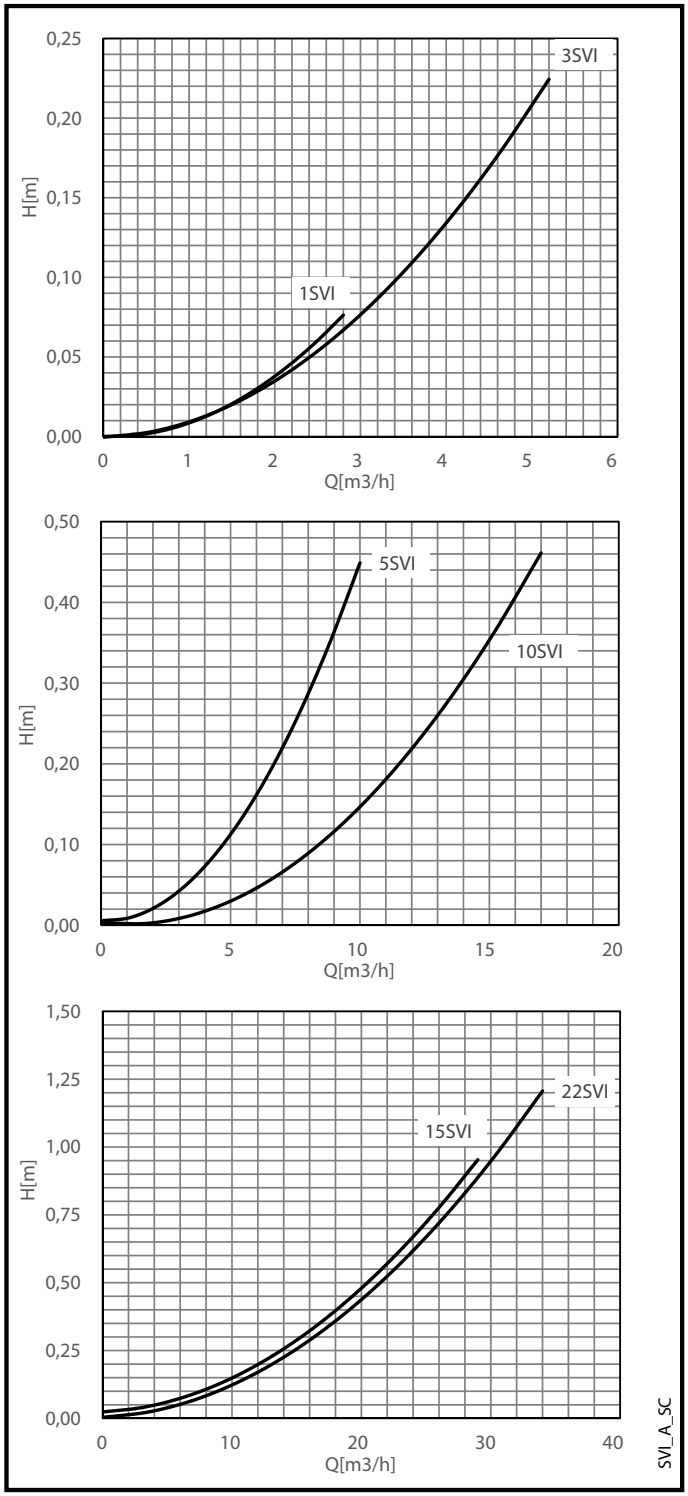
svi-liv-liq_b_td

05005_B_SC

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

EMPTY STAGES
OPERATING CHARACTERISTICS AND DIMENSIONAL DATA

The charts below illustrate the pressure losses to be considered per empty stage when empty stages are used to extend the pump depth.



To calculate the head of a pump with empty stages you can do the calculation as shown below:

Example:

Pump type: 5SVI06-13; 6 impellers, 13 total stages as per nomenclature at page 9
Flow: 6 m^3/h
Head: 54 m

The head 54 m is read from the performance curve for an 5SVI06-06 pump, see page 39.

The number of empty chambers is:
13 total stages - 6 impellers = 7 empty chambers

From the pressure loss curve of 5SVI, it appears that the pressure loss of each empty chamber at 6 m^3/h is 0,16 m. This result in a total pressure loss of:
Total pressure loss = 0,16 x 7 = 1,12 m

The reduced head of the 5SVI06-13 pump including pressure losses caused by empty chambers is:
Head = 54 - 1,12 = 52,88 m

In SVI33,46,66 and 92 pumps, empty stages allow the passage of the liquid through a wide opening, eliminating pressure loss in the pump.

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EMPTY STAGES - VERSION WITH COUPLING
OPERATING CHARACTERISTICS AND DIMENSIONAL DATA

The immersion depth of e-SVI pump can be varied to meet the required depths of different tanks. The table below illustrates the number of total stages to be used to achieve the required depth. The pump head depends on the number of the impeller used (see head curves on the previous pages of this catalogue)

NUMBER OF STAGE	IMMERSION DEPTH (mm)									
	PUMP TYPE									
	1SVI	3SVI	5SVI	10SVI	15SVI	22SVI	SVI 33	SVI 46	SVI 66	SVI 92
1	-	-	-	-	-	-	257	257	272	272
2	119	119	134	177,5	225,5	225,5	332	332	362	362
3	139	139	159	209,5	273,5	273,5	407	407	452	452
4	159	159	184	241,5	321,5	321,5	482	482	542	542
5	179	179	209	273,5	369,5	369,5	557	557	632	632
6	199	199	234	305,5	417,5	417,5	632	632	722	722
7	219	219	259	337,5	465,5	465,5	707	707	812	812
8	239	239	284	369,5	513,5	513,5	782	782	902	902
9	259	259	309	401,5	561,5	561,5	857	857	992	992
10	279	279	334	433,5	609,5	609,5	932	932	1082	1082
11	299	299	359	465,5	657,5	657,5	1007	1007		
12	319	319	384	497,5	705,5	705,5	1082	1082		
13	339	339	409	529,5	753,5	753,5				
14	359	359	434	561,5	801,5	801,5				
15	379	379	459	593,5	849,5	849,5				
16	399	399	484	625,5	897,5	897,5				
17	419	419	509	657,5	945,5	945,5				
18	439	439	534	689,5	993,5	993,5				
19	459	459	559	721,5	1041,5	1041,5				
20	479	479	584	753,5						
21	499	499	609	785,5						
22	519	519	634	817,5						
23	539	539	659	849,5						
24	559	559	684	881,5						
25	579	579	709	913,5						
26	599	599	734	945,5						
27	619	619	759	977,5						
28	639	639	784	1009,5						
29	659	659	809	1041,5						
30	679	679	834							
31	699	699	859							
32	719	719	884							
33	739	739	909							
34	759	759	934							
35	779	779	959							
36	799	799	984							
37	819	819	1009							
38	839	839								
39	859	859								
40	879	879								
41	899	899								
42	919	919								
43	939	939								
44	959	959								
45	979	979								
46	999	999								
47	1019	1019								

svi-en_a_tcm

EMPTY STAGES - COMPACT VERSION
OPERATING CHARACTERISTICS AND DIMENSIONAL DATA

NUMBER OF STAGE	IMMERSION DEPTH (mm)		
	PUMP TYPE		
	1SVI	3SVI	5SVI
1	-	-	-
2	126	126	141
3	146	146	166
4	166	166	191
5	186	186	216
6	206	206	241
7	226	226	266
8	246	246	291
9	266	266	316
10	286	286	341
11	306	306	366
12	326	326	391
13	346	346	416
14	366	366	
15	386	386	
16	406	406	
17	426	426	

svie_a_tcm

EMPTY STAGES - TOTAL WEIGHT CALCULATION

It is possible to calculate the total weight of the pump with empty stages from the weight of the pump with full stages shown in the dimensional tables in this catalog. The table below illustrates for each size the constant weight factor of an empty stage.

PUMP TYPE	WEIGHT (kg)
1-3SVI	0,20
5SVI	0,24
10SVI	0,57
15-22SVI	0,79
SVI33-46	1,35
SVI66-92	1,72

To calculate the real weight you can perform the calculation as shown below:

Example:

Pump type: 5SVI06-13; 6 impellers, 13 total stages as per nomenclature at page 9
Pump weight: 9 kg

The number of empty stages is:
13 total stages - 6 impellers = 7 empty stages

From the above table for size 5SVI the weight of each empty stage is 0,24 kg.
This results in a total weight due to the empty stages of:
Total weight of empty stages = 0.24 x 7 = 1.68 kg

The total weight of the 5SVI06-13 pump is:
Total weight = 9 + 1,68 = 10,68 kg

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e-SVI WITH VARIABLE FREQUENCY DRIVE

e-SVIH SERIES
e-SVI 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-SVIH: an intelligent pumping system which assures high level performance with energy consumption tailored to the system's demand.

Benefits of e-SVIH with HYDROVAR

Saving: e-SVIH transforms the e-SVI 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-SVIH 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-SVIH models are fitted with three-phase standard TEFC motors with insulation class 155 (F) and IE3 efficiency level from 0,75 to 22 kW.

Key Features of the HYDROVAR

- **No need for additional pressure sensors**:
  The e-SVIH is fitted with a pressure transmitter or differential pressure transmitters, depending on the application. The pressure sensors(s) are pre-wired. For e-SVI with round flanges (S and N versions) the sensors can be installed on the pump flanges.

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

- **e-SVIH 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-SVIH 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-SVIH SERIES
e-SVI WITH HYDROVAR

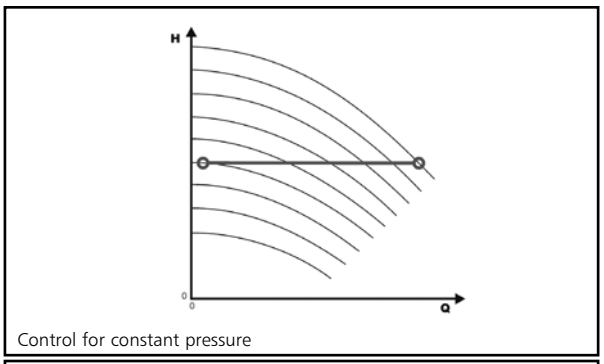
The basic function of the HYDROVAR device is to control the pump to meet the system demands.

HYDROVAR performs these functions by:

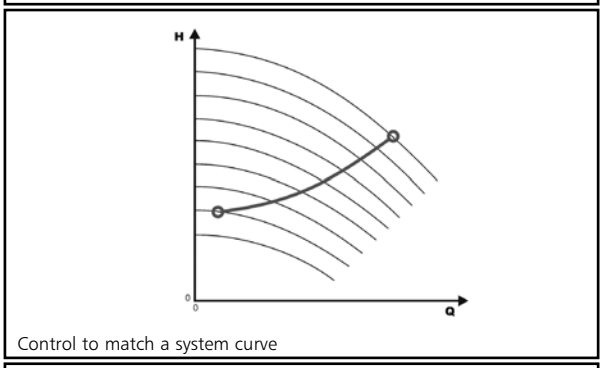
1) Measuring the system pressure or flow via a transmitter mounted on the pump's delivery side.
2) Calculating the motor speed to maintain the correct flow or pressure.
3) Sending out a signal to the pump to start the motor, increase speed, decrease speed or stop.
4) In the case of multiple pump installations,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

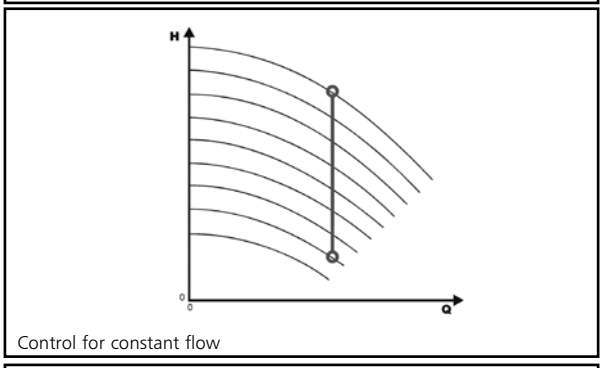
- Stop the pump(s) at zero demand.
- Stop the pump(s) in case of water failure on the suction side (protection against dry running).
- Stop the pump if the required delivery exceeds the pump's capacity (protection against cavitation caused by excessive demand), or automatically switch on the next pump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



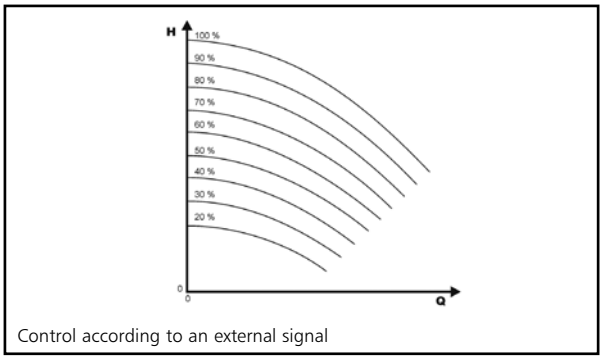
Control for constant pressure



Control to match a system curve



Control for constant flow



Control according to an external signal

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e-SVIH 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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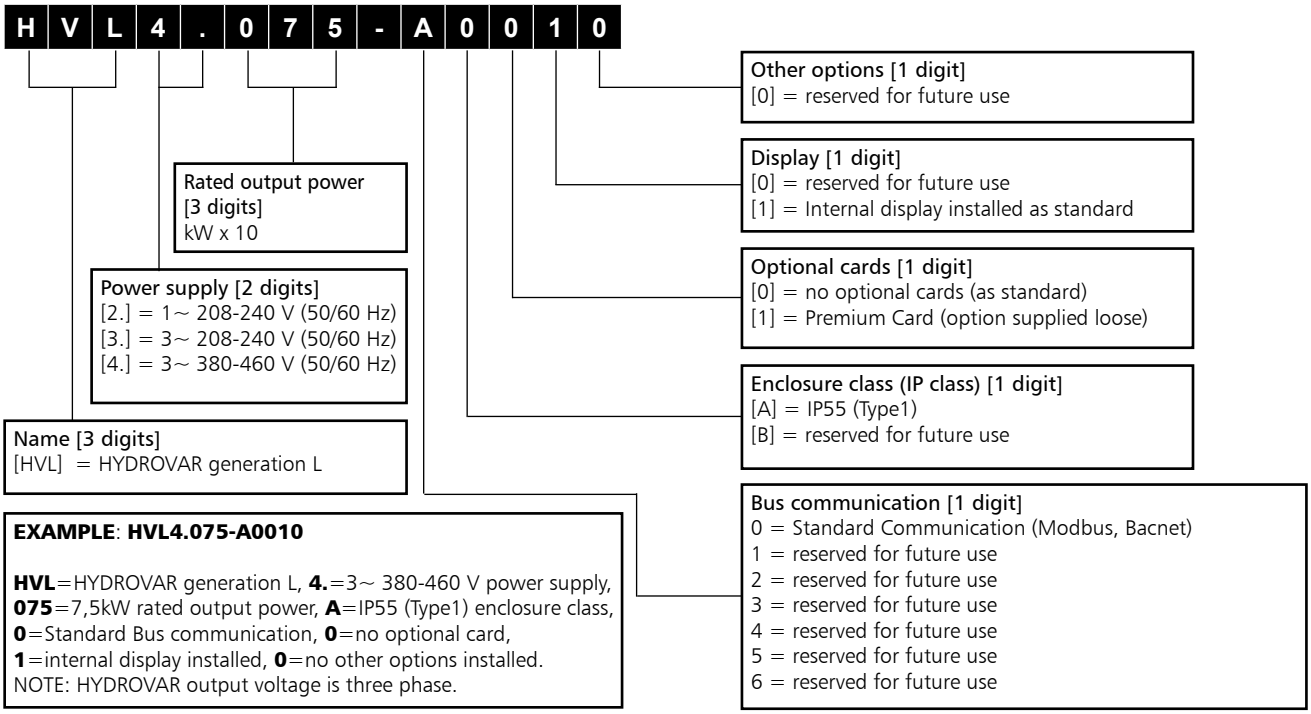
HYDROVAR HVL
IDENTIFICATION CODE



DIMENSIONS AND WEIGHTS

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

HVL_dim-en_b_td

HYDROVAR HVL
EMC COMPATIBILITY

EMC requirements

HYDROVAR fulfills the product standard EN61800-3:2004 + A1:2012, which defines categories (C1 to C4) for device application areas.
Depending on the motor cable length, a classification of HYDROVAR by category (based on EN61800-3) is reported in the following tables:

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

(*) 0,75 motor cable length; contact Xylem for further information En-Rev_A

CARD

Premium Card HYDROVAR (optional)

For the e-SVH series, the Premium Card comes fitted as option on the standalone HYDROVAR.
This allows to control up to five fix speed pumps via an external panel.
The Premium Card will allow additional features listed below:

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

OPTIONAL COMPONENTS

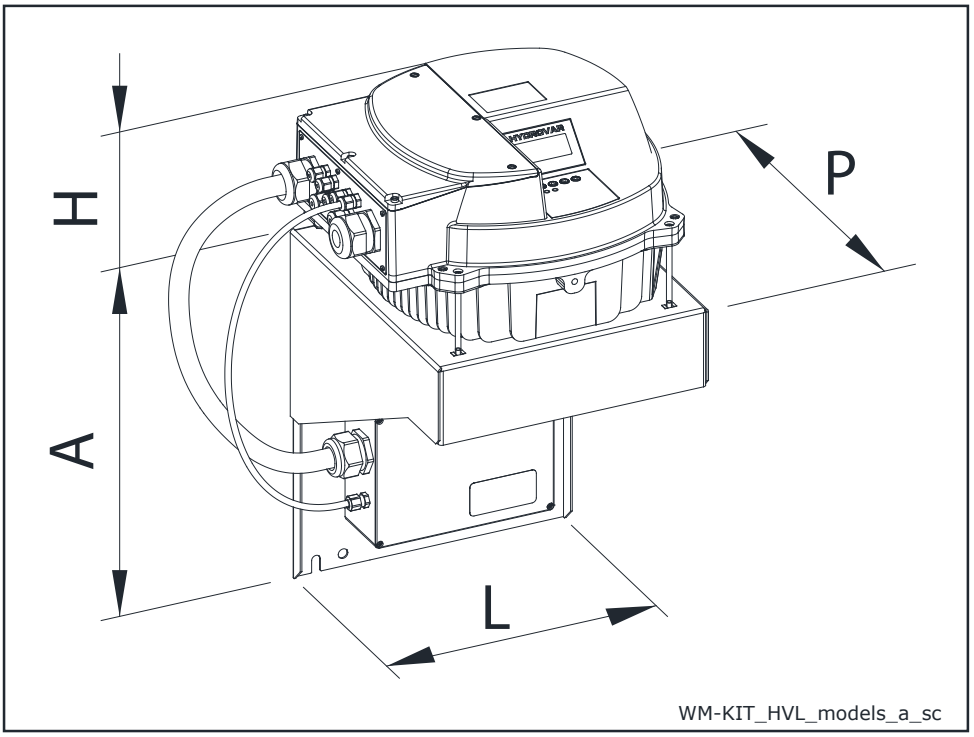
Sensors

The following sensors are available for HYDROVAR:

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

HYDROVAR HVL (WALL MOUNTING KIT) DIMENSIONS AND WEIGHTS

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



WM KIT TIPE	kW	WM KIT POWER SUPPLY	HVL SIZE	DIMENSIONS (mm)				WEIGHT (kg)	
				A	H	L	P	HVL	WM KIT
WM KIT HVL 2.015	1,5	1~ 230V	A	220	170	202	232	5,6	2,6
WM KIT HVL 2.022	2,2			220	170	202	232	5,6	2,6
WM KIT HVL 2.030	3		B	240	175	258	290	10,5	8,2
WM KIT HVL 2.040	4			320	175	288	305	10,5	5,4
WM KIT HVL 3.015	1,5	3~ 230V	A	220	170	202	232	5,6	2,6
WM KIT HVL 3.022	2,2			220	170	202	232	5,6	2,6
WM KIT HVL 3.030	3		B	240	175	258	290	10,5	8,2
WM KIT HVL 3.040	4			240	175	258	290	10,5	8,2
WM KIT HVL 3.055	5,5			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

e-SVIE SERIES
(e-SVI 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-SVI 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-SVI Smart series a good choice in applications and systems where fixed speed pumps are commonly used.
The e-SVI 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-SVI 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

e-SM system

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

Pump

- Flow rate: up to 30 m^3/h
- Head: up to 235 m
- 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, (TEFC), closed structure, air-cooled
- Insulation class 155 (F)
- Overload protection and locked rotor with automatic reset incorporated

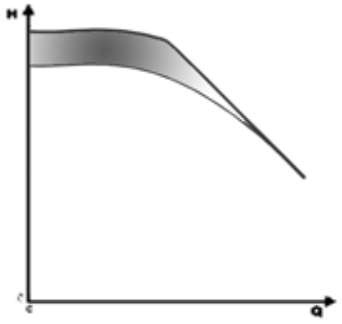
Regulations (EU) 2019/1781 e 2021/341 Annex I – point 4 (Product information)

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-SVIE SERIES
(e-SVI SMART)

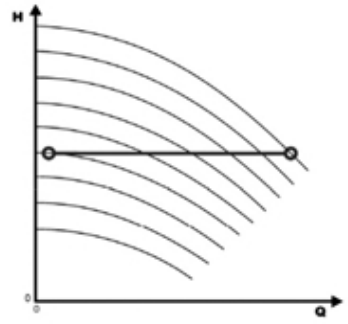
e-SVI Smart series is equipped with an intelligent control that optimizes hydraulic performance while minimizing waste.

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").

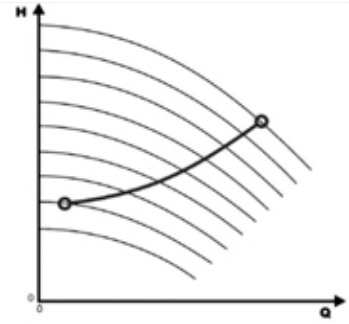


Integrated intelligence

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.



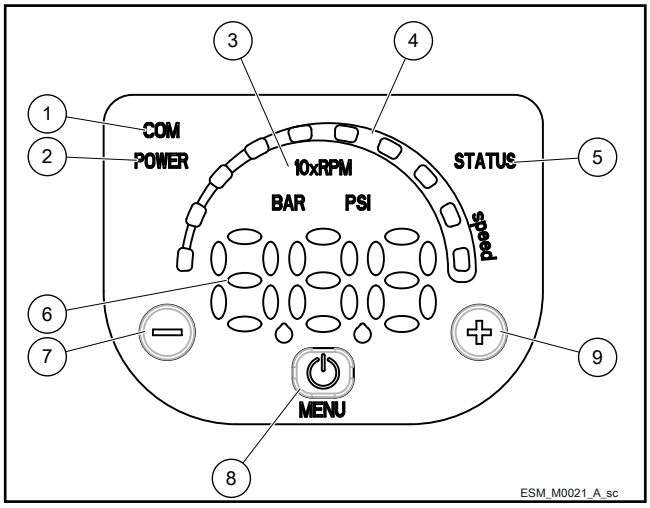
Control for constant pressure



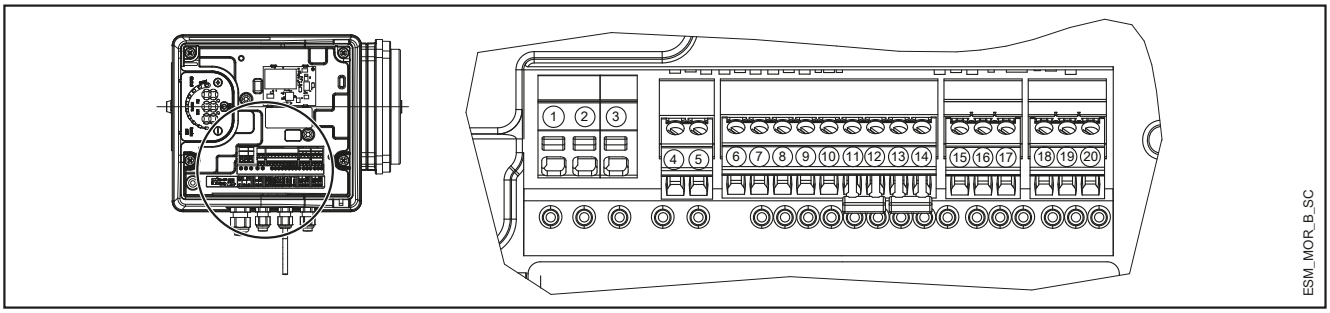
Control to match a system curve

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-SVIE 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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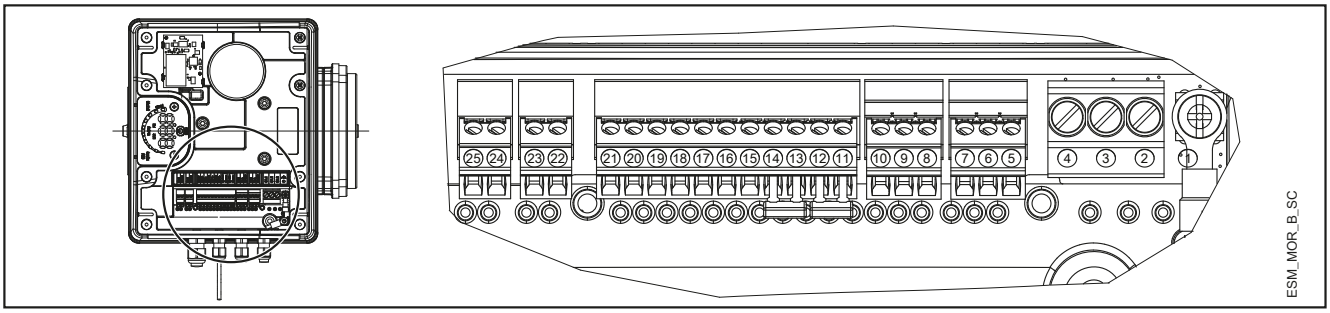
THREE-PHASE TERMINAL BLOCK



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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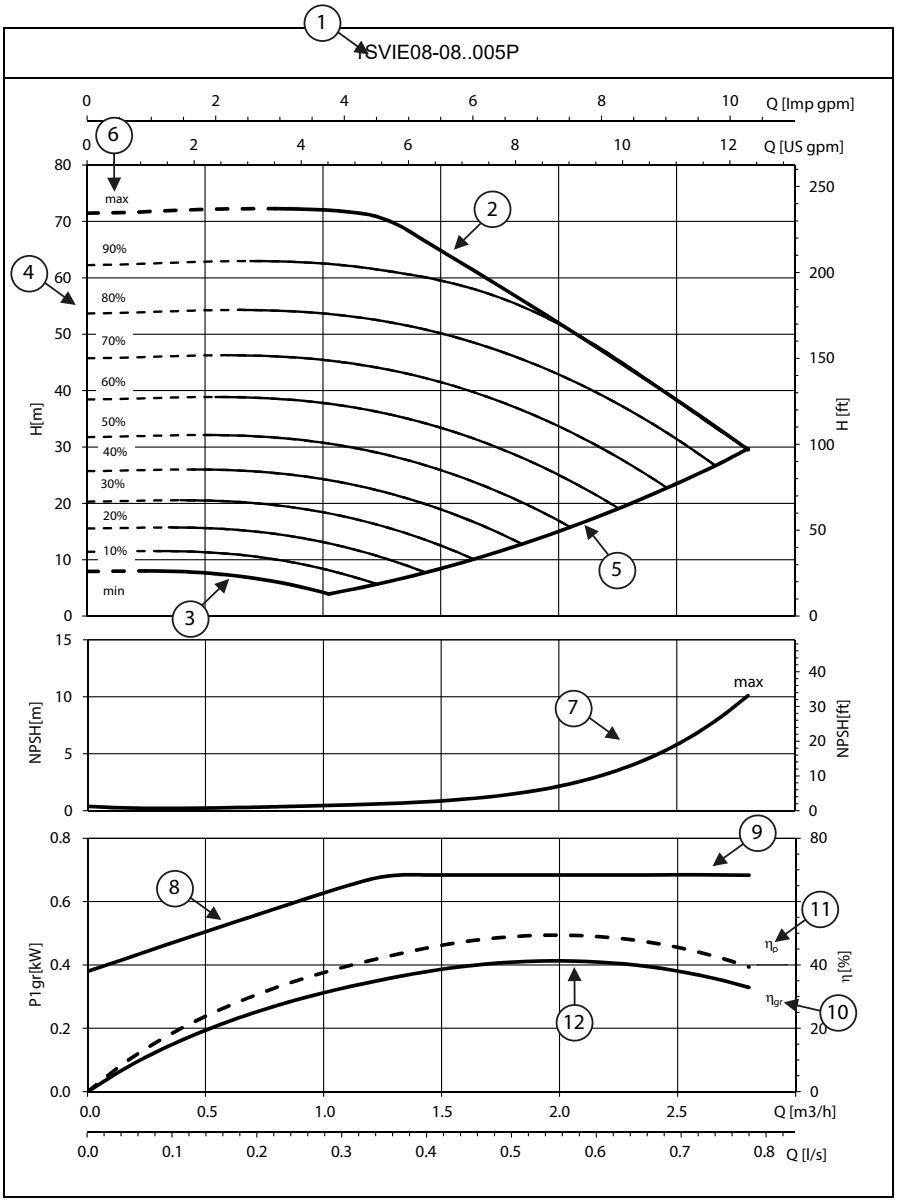
e-SVIE SERIES
HOW TO READ SMART PUMP SERIES CURVES

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



① **Pump model**

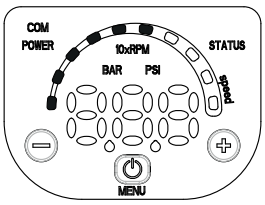
② **Maximum speed curve**: equal to 3600 rpm

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 he pump can only operate intermittently for short period s 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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1, 3, 5SVIE..E SERIES, SINGLE-PHASE VERSION HYDRAULIC PERFORMANCE 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
SVIE	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							
1SVIE05-05E..003	0,37	ESM 80/103 SVIEE	0,49	2,24	44,7	45,0	45,2	44,6	41,5	35,0	28,1	20,8
1SVIE08-08E..005	0,55	ESM 80/105 SVIEE	0,68	3,07	71,5	72,0	72,3	71,2	62,3	52,0	41,2	29,6
1SVIE11-11E..007	0,75	ESM 80/107 SVIEE	0,91	4,04	98,3	99,1	99,3	97,7	85,1	70,9	56,0	40,0
1SVIE15-15E..011	1,1	ESM 80/111 SVIEE	1,33	5,85	134,1	135,1	135,5	133,8	123,6	103,9	83,3	61,4

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
SVIE	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							
3SVIE03-03E..003	0,37	ESM 80/103 SVIEE	0,49	2,24	33,4	33,7	33,6	30,7	24,9	19,5	14,0	10,9
3SVIE05-05E..005	0,55	ESM 80/105 SVIEE	0,69	3,08	55,7	56,2	55,8	46,3	37,1	28,4	19,5	14,4
3SVIE07-07E..007	0,75	ESM 80/107 SVIEE	0,92	4,06	77,9	78,7	77,2	63,4	50,7	38,6	26,0	18,7
3SVIE09-09E..011	1,1	ESM 80/111 SVIEE	1,33	5,85	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2

PUMP	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	26,7	53,3	80,0	106,7	133,3	160,0	166,7
SVIE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	1,6	3,2	4,8	6,4	8,0	9,6	10,0
Single-phase	kW	1x230 V	kW	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
5SVIE02-02E..003	0,37	ESM 80/103 SVIEE	0,49	2,24	22,4	22,2	21,6	18,4	14,7	11,1	7,5	6,5
5SVIE03-03E..005	0,55	ESM 80/105 SVIEE	0,68	3,07	33,5	33,2	32,4	27,4	21,8	16,5	11,0	9,5
5SVIE04-04E..007	0,75	ESM 80/107 SVIEE	0,91	4,05	44,7	44,3	43,2	37,3	29,7	22,6	15,2	13,3
5SVIE06-06E..011	1,1	ESM 80/111 SVIEE	1,33	5,86	67,1	66,5	64,8	54,8	43,6	33,0	22,0	19,1

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

1-5svie-e-esm-2p50-en_a_th

1, 3, 5SVIE..E SERIES, THREE-PHASE VERSION HYDRAULIC PERFORMANCE TABLE

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	6,7	13,3	20,0	26,7	33,3	40,0	46,7
SVIE	PN	TYPE	* P1	208-240 V	380-460 V	m3/h 0	0,4	0,8	1,2	1,6	2,0	2,4	2,8
Three-phase	kW		kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
1SVIE05-05E..003	0,37	ESM80/303 SVIE	0,49	2,14	1,45	44,7	45,0	45,2	44,6	41,5	34,9	28,0	20,8
1SVIE08-08E..005	0,55	ESM80/305 SVIE	0,69	2,81	1,90	71,5	72,0	72,3	71,2	62,4	52,1	41,2	29,7
1SVIE11-11E..007	0,75	ESM80/307 SVIE	0,91	3,55	2,40	98,3	99,1	99,3	97,7	85,0	70,9	56,0	40,1
1SVIE15-15E..011	1,1	ESM80/311 SVIE	1,37	4,94	3,45	134,1	135,1	135,5	133,8	123,6	104,0	83,3	61,4

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	13,3	26,7	40,0	53,3	66,7	80,0	86,7
SVIE	PN	TYPE	* P1	208-240 V	380-460 V	m3/h 0	0,8	1,6	2,4	3,2	4,0	4,8	5,2
Three-phase	kW		kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
3SVIE03-03E..003	0,37	ESM80/303 SVIE	0,49	2,14	1,47	33,4	33,8	33,6	30,7	24,9	19,5	14,0	10,9
3SVIE05-05E..005	0,55	ESM80/305 SVIE	0,70	2,81	1,92	55,7	56,2	55,8	46,3	37,1	28,4	19,4	14,4
3SVIE07-07E..007	0,75	ESM80/307 SVIE	0,93	3,55	2,43	77,9	78,7	77,2	63,3	50,6	38,6	26,0	18,7
3SVIE09-09E..011	1,1	ESM80/311 SVIE	1,37	4,96	3,45	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	26,7	53,3	80,0	106,7	133,3	160,0	166,7
SVIE	PN	TYPE	* P1	208-240 V	380-460 V	m3/h 0	1,6	3,2	4,8	6,4	8,0	9,6	10,0
Three-phase	kW		kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
5SVIE02-02E..003	0,37	ESM80/303 SVIE	0,50	2,13	1,48	22,4	22,2	21,6	18,4	14,7	11,1	7,5	6,5
5SVIE03-03E..005	0,55	ESM80/305 SVIE	0,69	2,80	1,92	33,5	33,2	32,4	27,4	21,8	16,5	11,0	9,5
5SVIE04-04E..007	0,75	ESM80/307 SVIE	0,92	3,55	2,42	44,7	44,3	43,2	37,3	29,7	22,6	15,2	13,3
5SVIE06-06E..011	1,1	ESM80/311 SVIE	1,38	4,96	3,46	67,1	66,5	64,8	54,8	43,6	33,0	22,0	19,1

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

1-5svie-esm-2p50T-en_a_th

1, 3, 5, 10, 15, 22 SVIE..C - 1, 3, 5, 10, 15, 22 SVIE..M SERIES
SINGLE-PHASE VERSION
HYDRAULIC PERFORMANCE 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
SVIE	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							
1SVIE05-05..003	0,37	ESM90R/103 SVIE	0,49	2,24	44,7	45,0	45,2	44,6	41,5	35,0	28,1	20,8
1SVIE08-08..005	0,55	ESM90R/105 SVIE	0,68	3,07	71,5	72,0	72,3	71,2	62,3	52,0	41,2	29,6
1SVIE11-11..007	0,75	ESM90R/107 SVIE	0,91	4,04	98,3	99,1	99,3	97,7	85,1	70,9	56,0	40,0
1SVIE15-15..011	1,1	ESM90R/111 SVIE	1,33	5,85	134,1	135,1	135,5	133,8	123,6	103,9	83,3	61,4
1SVIE20-20..015	1,5	ESM90R/115 SVIE	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
SVIE	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							
3SVIE03-03..003	0,37	ESM90R/103 SVIE	0,49	2,24	33,4	33,7	33,6	30,7	24,9	19,5	14,0	10,9
3SVIE05-05..005	0,55	ESM90R/105 SVIE	0,69	3,08	55,7	56,2	55,8	46,3	37,1	28,4	19,5	14,4
3SVIE07-07..007	0,75	ESM90R/107 SVIE	0,92	4,06	77,9	78,7	77,2	63,4	50,7	38,6	26,0	18,7
3SVIE09-09..011	1,1	ESM90R/111 SVIE	1,33	5,85	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2
3SVIE11-11..015	1,5	ESM90R/115 SVIE	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	26,7	53,3	80,0	106,7	133,3	160,0	166,7
SVIE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	1,6	3,2	4,8	6,4	8,0	9,6	10,0
Single-phase	kW	1x230 V	kW	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
5SVIE02-02..003	0,37	ESM90R/103 SVIE	0,49	2,24	22,4	22,2	21,6	18,4	14,7	11,1	7,5	6,5
5SVIE03-03..005	0,55	ESM90R/105 SVIE	0,68	3,07	33,5	33,2	32,4	27,4	21,8	16,5	11,0	9,5
5SVIE04-04..007	0,75	ESM90R/107 SVIE	0,91	4,05	44,7	44,3	43,2	37,3	29,7	22,6	15,2	13,3
5SVIE06-06..011	1,1	ESM90R/111 SVIE	1,33	5,86	67,1	66,5	64,8	54,8	43,6	33,0	22,0	19,1
5SVIE08-08..015	1,5	ESM90R/115 SVIE	1,78	7,81	88,8	89,1	87,1	76,3	60,8	46,2	31,7	27,9

PUMP	MOTOR		e-SM SET		Q = DELIVERY							
TYPE				* I	l/min 0	43,3	86,7	130,0	173,3	216,7	260,0	283,3
SVIE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	2,6	5,2	7,8	10,4	13,0	15,6	17,0
Single-phase	kW	1x230 V	kW	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
10SVIE02-02..007	0,75	ESM90R/107 SVIE	0,92	4,09	24,2	23,8	22,9	21,2	17,6	12,6	7,1	3,6
10SVIE02-02..011	1,1	ESM90R/111 SVIE	1,33	5,85	34,8	34,4	33,5	31,8	25,9	20,2	14,3	11,0
10SVIE03-03..015	1,5	ESM90R/115 SVIE	1,78	7,81	52,7	52,1	50,9	44,0	35,6	27,8	19,7	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
SVIE	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							
15SVIE02-02..015	1,5	ESM90R/115 SVIE	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	73,3	146,7	220,0	293,3	366,7	440,0	500,0
SVIE	P_N	TYPE	* P_1	208-240 V	m^3/h 0	4,4	8,8	13,2	17,6	22,0	26,4	30,0
Single-phase	kW	1x230 V	kW	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
22SVIE02-02..015	1,5	ESM90R/115 SVIE	1,72	7,56	31,4	30,9	30,2	26,0	20,8	15,4	9,1	2,8

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

1-22sve-esm-2p50-en_a_th

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1, 3, 5, 10, 15, 22 SVIE..C - 1, 3, 5, 10, 15, 22 SVIE..M SERIES
THREE-PHASE VERSION
HYDRAULIC PERFORMANCE TABLE

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	6,7	13,3	20,0	26,7	33,3	40,0	46,7
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	0,4	0,8	1,2	1,6	2,0	2,4	2,8
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
1SVIE05-05..003	0,37	ESM90R/303 SVIE	0,49	2,14	1,45	44,7	45,0	45,2	44,6	41,5	34,9	28,0	20,8
1SVIE08-08..005	0,55	ESM90R/305 SVIE	0,69	2,81	1,90	71,5	72,0	72,3	71,2	62,4	52,1	41,2	29,7
1SVIE11-11..007	0,75	ESM90R/307 SVIE	0,91	3,55	2,40	98,3	99,1	99,3	97,7	85,0	70,9	56,0	40,1
1SVIE15-15..011	1,1	ESM90R/311 SVIE	1,37	4,94	3,45	134,1	135,1	135,5	133,8	123,6	104,0	83,3	61,4
1SVIE20-20..015	1,5	ESM90R/315 SVIE	1,82	6,34	4,41	178,9	180,1	180,6	178,4	168,1	141,7	114,0	84,7
1SVIE26-26..022	2,2	ESM90R/322 SVIE	2,53	-	5,85	232,5	234,0	235,0	231,6	222,2	204,4	170,0	130,7

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	13,3	26,7	40,0	53,3	66,7	80,0	86,7
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	0,8	1,6	2,4	3,2	4,0	4,8	5,2
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
3SVIE03-03..003	0,37	ESM90R/303 SVIE	0,49	2,14	1,47	33,4	33,8	33,6	30,7	24,9	19,5	14,0	10,9
3SVIE05-05..005	0,55	ESM90R/305 SVIE	0,70	2,81	1,92	55,7	56,2	55,8	46,3	37,1	28,4	19,4	14,4
3SVIE07-07..007	0,75	ESM90R/307 SVIE	0,93	3,55	2,43	77,9	78,7	77,2	63,3	50,6	38,6	26,0	18,7
3SVIE09-09..011	1,1	ESM90R/311 SVIE	1,37	4,96	3,45	100,2	101,0	100,5	88,8	72,5	56,4	39,9	31,2
3SVIE11-11..015	1,5	ESM90R/315 SVIE	1,82	6,35	4,42	122,5	123,3	122,5	117,9	98,4	77,9	57,2	46,4
3SVIE17-17..022	2,2	ESM90R/322 SVIE	2,54	-	5,87	189,8	191,6	190,4	183,4	151,3	119,6	87,4	70,6

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	26,7	53,3	80,0	106,7	133,3	160,0	166,7
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	1,6	3,2	4,8	6,4	8,0	9,6	10,0
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
5SVIE02-02..003	0,37	ESM90R/303 SVIE	0,50	2,13	1,48	22,4	22,2	21,6	18,4	14,7	11,1	7,5	6,5
5SVIE03-03..005	0,55	ESM90R/305 SVIE	0,69	2,80	1,92	33,5	33,2	32,4	27,4	21,8	16,5	11,0	9,5
5SVIE04-04..007	0,75	ESM90R/307 SVIE	0,92	3,55	2,42	44,7	44,3	43,2	37,3	29,7	22,6	15,2	13,3
5SVIE06-06..011	1,1	ESM90R/311 SVIE	1,38	4,96	3,46	67,1	66,5	64,8	54,8	43,6	33,0	22,0	19,1
5SVIE08-08..015	1,5	ESM90R/315 SVIE	1,83	6,38	4,43	88,8	89,1	87,1	76,3	60,8	46,3	31,7	28,0
5SVIE12-12..022	2,2	ESM90R/322 SVIE	2,55	-	5,88	133,2	133,5	130,6	112,2	89,2	67,5	45,9	40,3

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	43,3	86,7	130,0	173,3	216,7	260,0	283,3
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	2,6	5,2	7,8	10,4	13,0	15,6	17,0
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
10SVIE02-02..007	0,75	ESM90R/307 SVIE	0,94	3,52	2,46	24,2	23,8	22,9	21,2	17,6	12,6	7,1	3,6
10SVIE02-02..011	1,1	ESM90R/311 SVIE	1,37	4,94	3,45	34,8	34,4	33,5	31,8	25,9	20,2	14,3	11,0
10SVIE03-03..015	1,5	ESM90R/315 SVIE	1,83	6,38	4,43	52,7	52,1	50,9	44,0	35,6	27,8	19,7	15,1
10SVIE04-04..022	2,2	ESM90R/322 SVIE	2,54	-	5,86	70,3	69,6	67,8	64,8	54,3	43,3	32,2	25,9

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	70,0	140,0	210,0	280,0	350,0	420,0	483,3
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	4,2	8,4	12,6	16,8	21,0	25,2	29,0
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
15SVIE02-02..015	1,5	ESM90R/315 SVIE	1,76	7,71	4,34	29,6	29,1	28,3	26,8	22,2	16,4	10,1	3,8
15SVIE02-02..022	2,2	ESM90R/322 SVIE	2,54	-	5,87	42,7	42,0	41,1	39,7	33,4	26,8	20,1	13,5

PUMP	MOTOR		e-SM SET			Q = DELIVERY							
TYPE				* I	* I	l/min 0	73,3	146,7	220,0	293,3	366,7	440,0	500,0
SVIE	P_N	TYPE	* P_1	208-240 V	380-460 V	m^3/h 0	4,4	8,8	13,2	17,6	22,0	26,4	30,0
Three-phase	kW	1x230 V	kW	A	A	H = TOTAL HEAD IN METRES OF COLUMN OF WATER							
22SVIE02-02..015	1,5	ESM90R/315 SVIE	1,76	6,18	4,31	31,4	30,9	30,2	26,0	20,8	15,4	9,1	2,8
22SVIE02-02..022	2,2	ESM90R/322 SVIE	2,56	-	5,91	45,2	44,7	43,8	38,3	31,9	26,0	19,6	13,6

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

1-22svie-esm-2p50T-en_a_th

e-SVIE 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						IES
				(RPM)**	I (A)	In	cosφ	Tn	η %			
kW				min^{-1}	208-240 V	A		Nm	4/4	3/4	2/4	
0,37	ESM80/103 SVIEE	80	special	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	
0,37	ESM90R/103 SVIE	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	ESM80/105 SVIEE	80	special	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	
0,55	ESM90R/105 SVIE	90R	V18/B14	3000	3,27-2,85	2,96	0,97	1,75	83,3	82,2	78,8	2
				3600	3,27-2,85	2,96		1,46	83,3	81,5	77,5	
0,75	ESM80/107 SVIEE	80	special	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	
0,75	ESM90R/107 SVIE	90R	V18/B14	3000	4,43-3,84	4,00	0,98	2,39	83,3	83,3	81,5	2
				3600	4,38-3,79	3,94		1,99	84,5	83,5	80,6	
1,10	ESM80/111 SVIEE	80	special	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	
1,10	ESM90R/111 SVIE	90R	V18/B14	3000	6,26-5,35	5,64	0,99	3,50	85,7	85,1	82,7	2
				3600	6,20-5,32	5,63		2,92	85,9	84,6	81,4	
1,50	ESM90R/115 SVIE	90R	V18/B14	3000	8,57-7,32	7,69	0,99	4,77	85,60	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.

eSVI_Smart-motm_a_te

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

THREE-PHASE VERSION

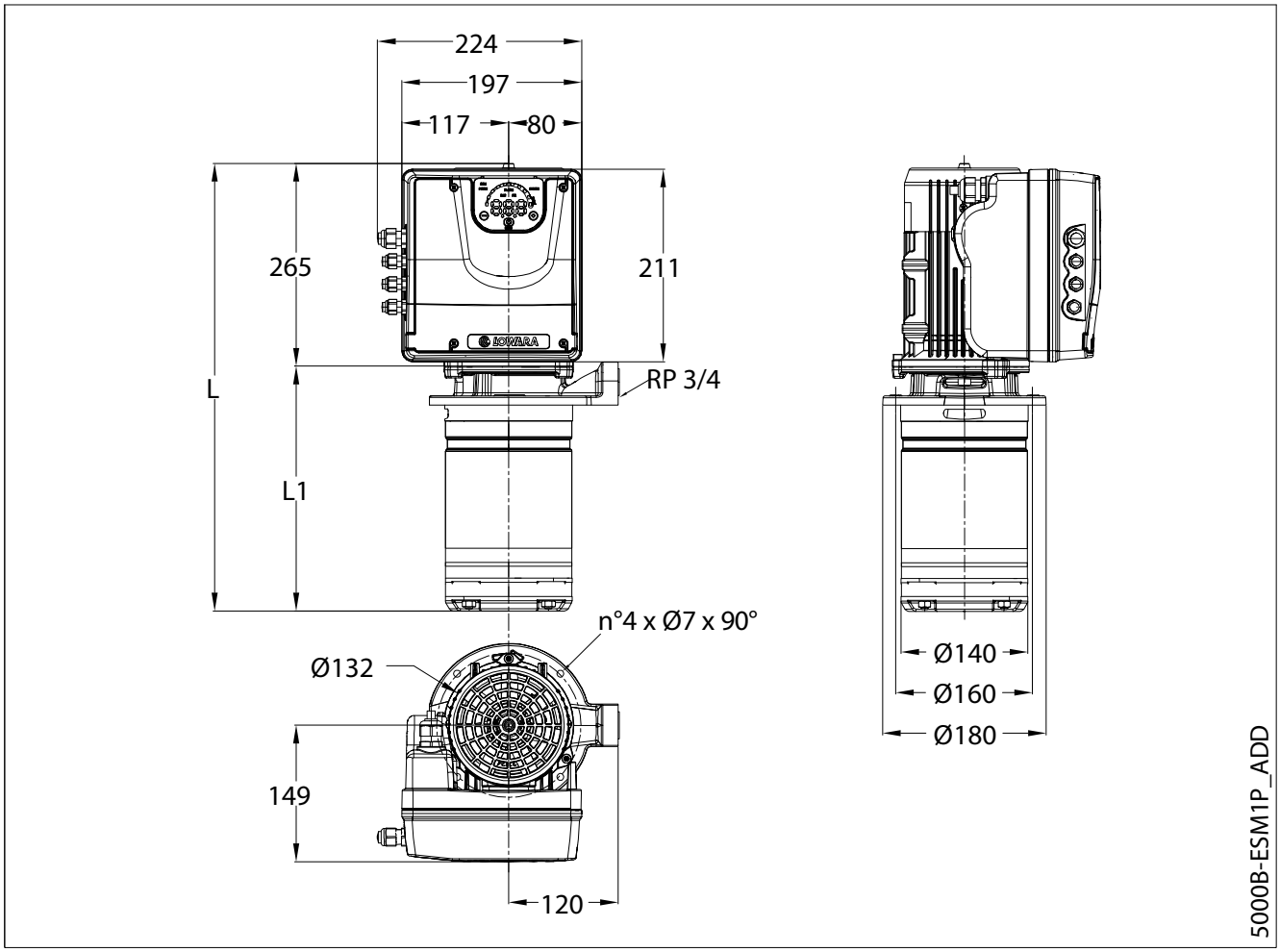
P_N	MOTOR TYPE	IEC SIZE*	Construction Design	SPEED	INPUT CURRENT	DATA RELATED TO THE VOLTAGE OF 400V						IES
				(RPM)**	I (A)	In	cosφ	Tn	η %			
kW				min^{-1}	208-240/380-460 V	A		Nm	4/4	3/4	2/4	
0,37	ESM80/303 SVIEE	80	special	3000	2,01-1,85/1,41-1,28	1,42	0,48	1,18	78,6	75,6	70,1	2
				3600	2,13-1,83/1,43-1,33	1,36		0,98	83,1	80,7	76,1	
0,37	ESM90R/303 SVIE	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	ESM80/305 SVIEE	80	special	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	
0,55	ESM90R/305 SVIE	90R	V18/B14	3000	2,81-2,57/1,89-1,69	1,88	0,52	1,75	81,1	79,3	75,5	2
				3600	2,90-2,52/1,90-1,73	1,80		1,46	85,4	83,8	80,6	
0,75	ESM80/307 SVIEE	80	special	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	
0,75	ESM90R/307 SVIE	90R	V18/B14	3000	3,70-3,37/2,44-2,17	2,41	0,55	2,39	81,9	81,2	78,6	2
				3600	3,74-3,28/2,43-2,20	2,31		1,99	86,1	85,5	83,1	
1,10	ESM80/311 SVIEE	80	special	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	
1,10	ESM90R/311 SVIE	90R	V18/B14	3000	5,12-4,73/3,41-3,01	3,35	0,57	3,50	82,8	81,3	77,7	2
				3600	5,15-4,69/3,45-3,06	3,32		2,92	83,5	81,6	77,6	
1,50	ESM90R/315 SVIE	90R	V18/B14	3000	6,73-6,17/4,49-3,95	4,39	0,59	4,77	83,1	82,8	80,6	2
				3600	6,69-6,08/4,48-3,97	4,32		3,98	84,6	83,6	80,8	
2,20	ESM90R/322 SVIE	90R	V18/B14	3000	- /6,03-5,32	5,81	0,62	7,00	87,6	87,4	85,9	2
				3600	- /5,93-5,24	5,74		5,84	88,9	88,2	86,3	

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

eSVI_Smart-mott_en_a_te

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

1, 3, 5SVIE..E SERIES, SINGLE-PHASE VERSION DIMENSIONS AND WEIGHTS

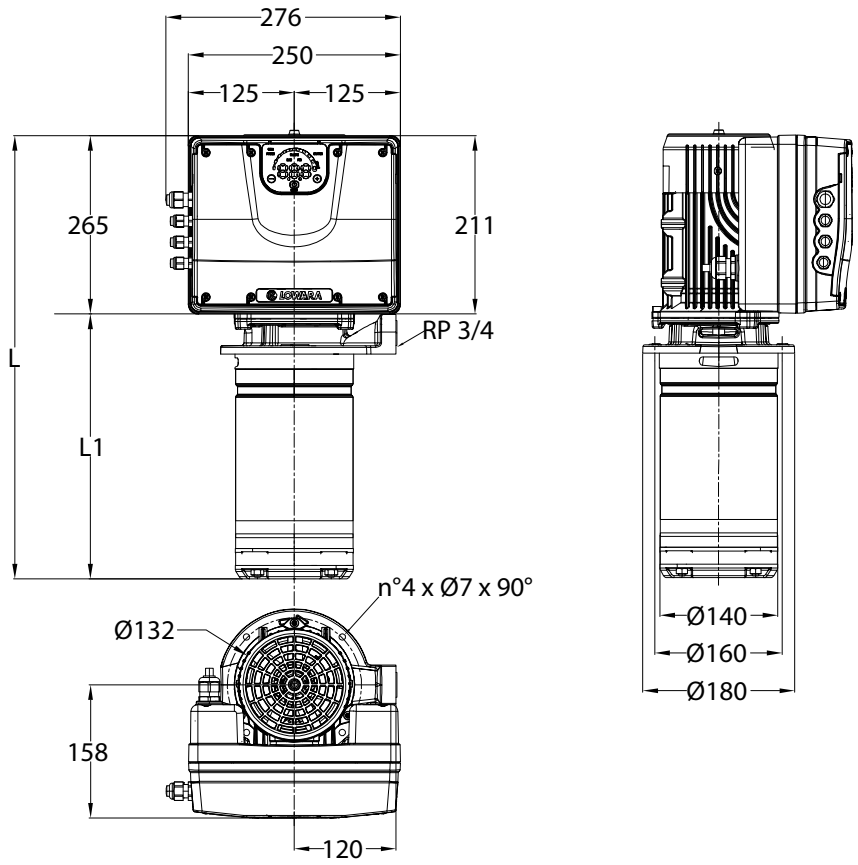


PUMP TYPE SINGLE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVIE05-05E..003	0,37	80	451	186	3	15
1SVIE08-08E..005	0,55	80	511	246	4	16
1SVIE11-11E..007	0,75	80	571	306	5	18
1SVIE15-15E..011	1,10	80	651	386	6	19
3SVIE03-03E..003	0,37	80	411	146	6	18
3SVIE05-05E..005	0,55	80	451	186	8	21
3SVIE07-07E..007	0,75	80	491	226	9	22
3SVIE09-09E..011	1,10	80	531	266	10	23
5SVIE02-02E..003	0,37	80	406	141	6	17
5SVIE03-03E..005	0,55	80	431	166	6	18
5SVIE04-04E..007	0,75	80	456	191	7	21
5SVIE06-06E..011	1,10	80	506	241	9	22

1-5svie-e_1ph-en_a_td

All listed dimensions are with inducer.

1, 3, 5SVIE..E SERIES, THREE-PHASE VERSION
DIMENSIONS AND WEIGHTS

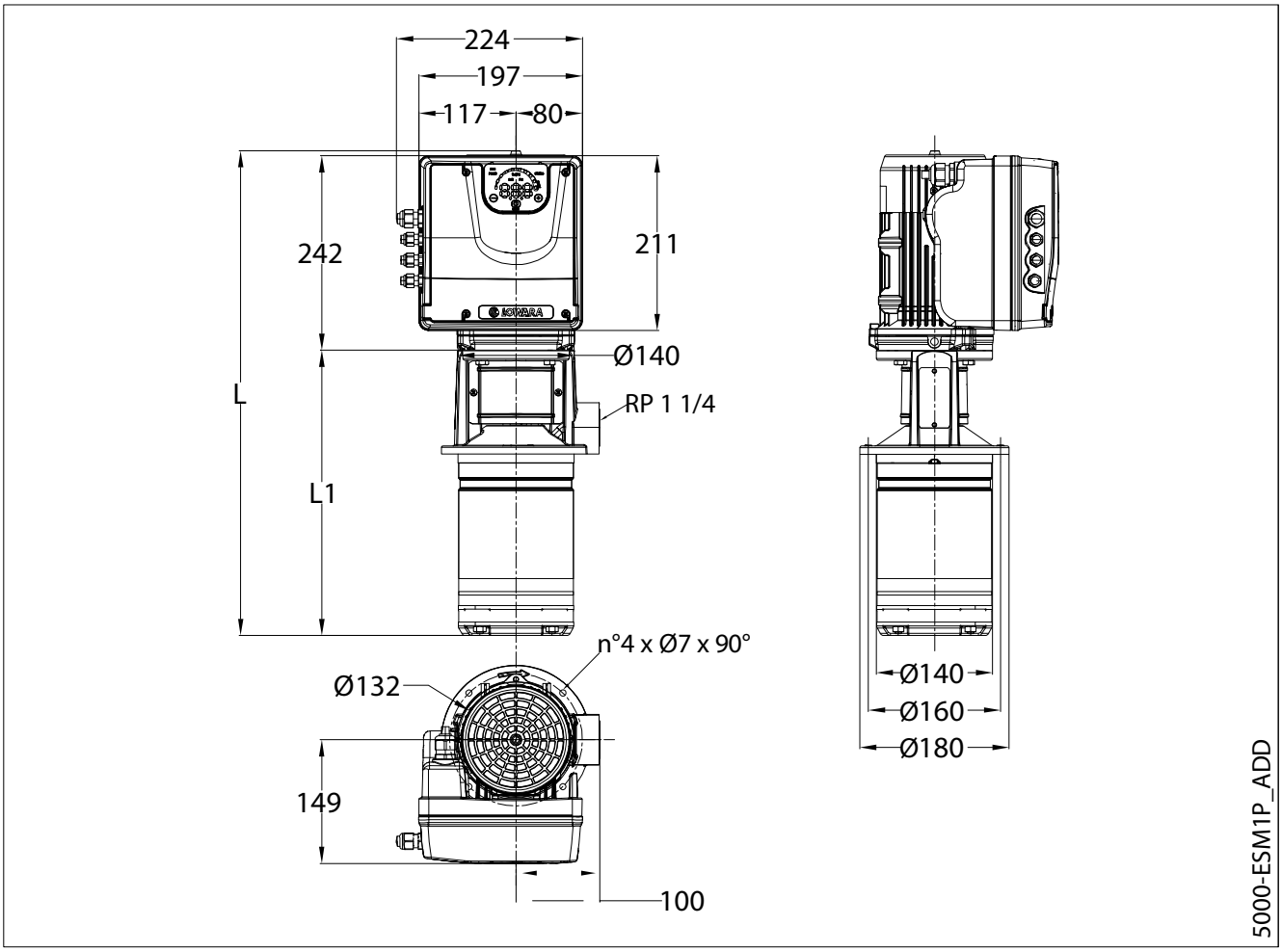


PUMP TYPE THREE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVIE05-05E..003	0,37	80	451	186	3	21
1SVIE08-08E..005	0,55	80	511	246	4	22
1SVIE11-11E..007	0,75	80	571	306	5	24
1SVIE15-15E..011	1,10	80	651	386	6	25
3SVIE03-03E..003	0,37	80	411	146	6	24
3SVIE05-05E..005	0,55	80	451	186	8	26
3SVIE07-07E..007	0,75	80	491	226	9	28
3SVIE09-09E..011	1,10	80	531	266	10	29
5SVIE02-02E..003	0,37	80	406	141	6	23
5SVIE03-03E..005	0,55	80	431	166	6	24
5SVIE04-04E..007	0,75	80	456	191	7	26
5SVIE06-06E..011	1,10	80	506	241	9	28

1-5svie-e_3ph-en_a_td

All listed dimensions are with inducer.

1, 3, 5 SVIE..C - 1, 3, 5 SVIE..M SERIES, SINGLE-PHASE VERSION
DIMENSIONS AND WEIGHTS

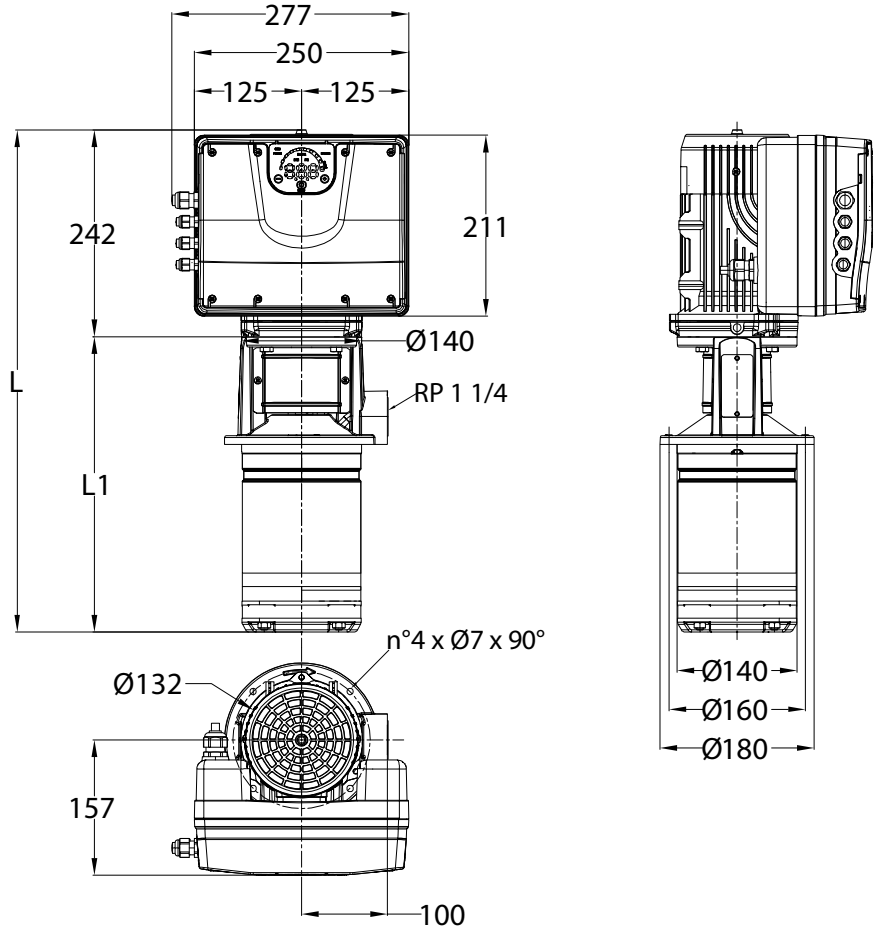


PUMP TYPE SINGLE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVIE05-05..003	0,37	90R	547	305	8	16
1SVIE08-08..005	0,55	90R	607	365	9	17
1SVIE11-11..007	0,75	90R	667	425	11	18
1SVIE15-15..011	1,10	90R	747	505	12	21
1SVIE20-20..015	1,50	90R	847	605	14	23
3SVIE03-03..003	0,37	90R	507	265	8	15
3SVIE05-05..005	0,55	90R	547	305	8	16
3SVIE07-07..007	0,75	90R	587	345	9	17
3SVIE09-09..011	1,10	90R	627	385	10	19
3SVIE11-11..015	1,50	90R	667	425	11	20
5SVIE02-02..003	0,37	90R	502	260	7	15
5SVIE03-03..005	0,55	90R	527	285	8	15
5SVIE04-04..007	0,75	90R	552	310	8	16
5SVIE06-06..011	1,10	90R	602	360	9	18
5SVIE08-08..015	1,50	90R	652	410	10	19

All listed dimensions are with inducer.

1-5svie_1ph-en_a_td

1, 3, 5 SVIE..C - 1, 3, 5 SVIE..M SERIES, SINGLE-PHASE VERSION
DIMENSIONS AND WEIGHTS

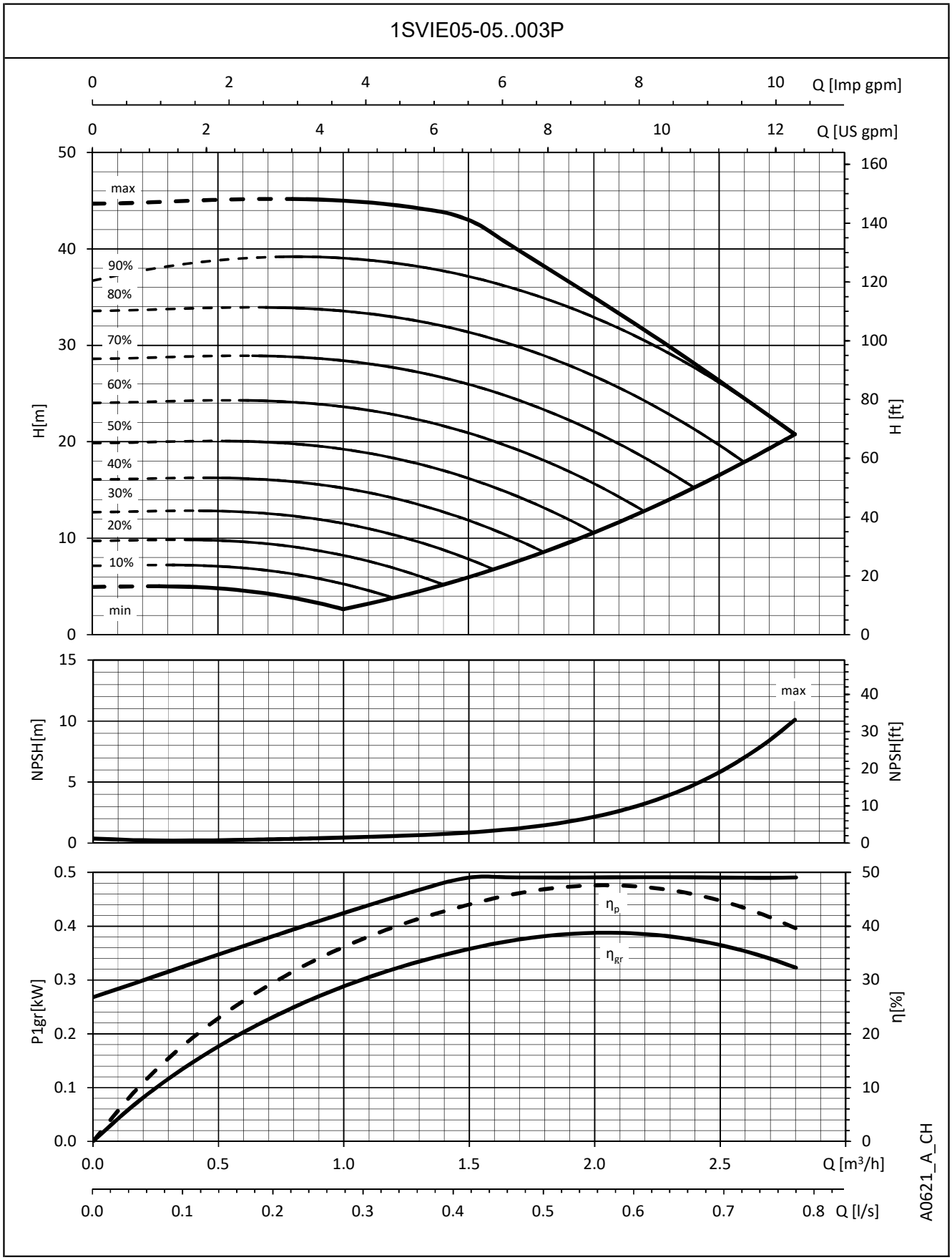


PUMP TYPE THREE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
1SVIE05-05..003	0,37	90R	547	305	8	21
1SVIE08-08..005	0,55	90R	607	365	9	23
1SVIE11-11..007	0,75	90R	667	425	11	24
1SVIE15-15..011	1,10	90R	747	505	12	27
1SVIE20-20..015	1,50	90R	847	605	14	29
1SVIE26-26..022	2,20	90R	967	725	16	31
3SVIE03-03..003	0,37	90R	507	265	8	21
3SVIE05-05..005	0,55	90R	547	305	8	21
3SVIE07-07..007	0,75	90R	587	345	9	22
3SVIE09-09..011	1,10	90R	627	385	10	24
3SVIE11-11..015	1,50	90R	667	425	11	25
3SVIE17-17..022	2,20	90R	787	545	13	28
5SVIE02-02..003	0,37	90R	502	260	7	21
5SVIE03-03..005	0,55	90R	527	285	8	21
5SVIE04-04..007	0,75	90R	552	310	8	21
5SVIE06-06..011	1,10	90R	602	360	9	24
5SVIE08-08..015	1,50	90R	652	410	10	25
5SVIE12-12..022	2,20	90R	752	510	12	26

All listed dimensions are with inducer.

1-5svie_3ph-en_a_td

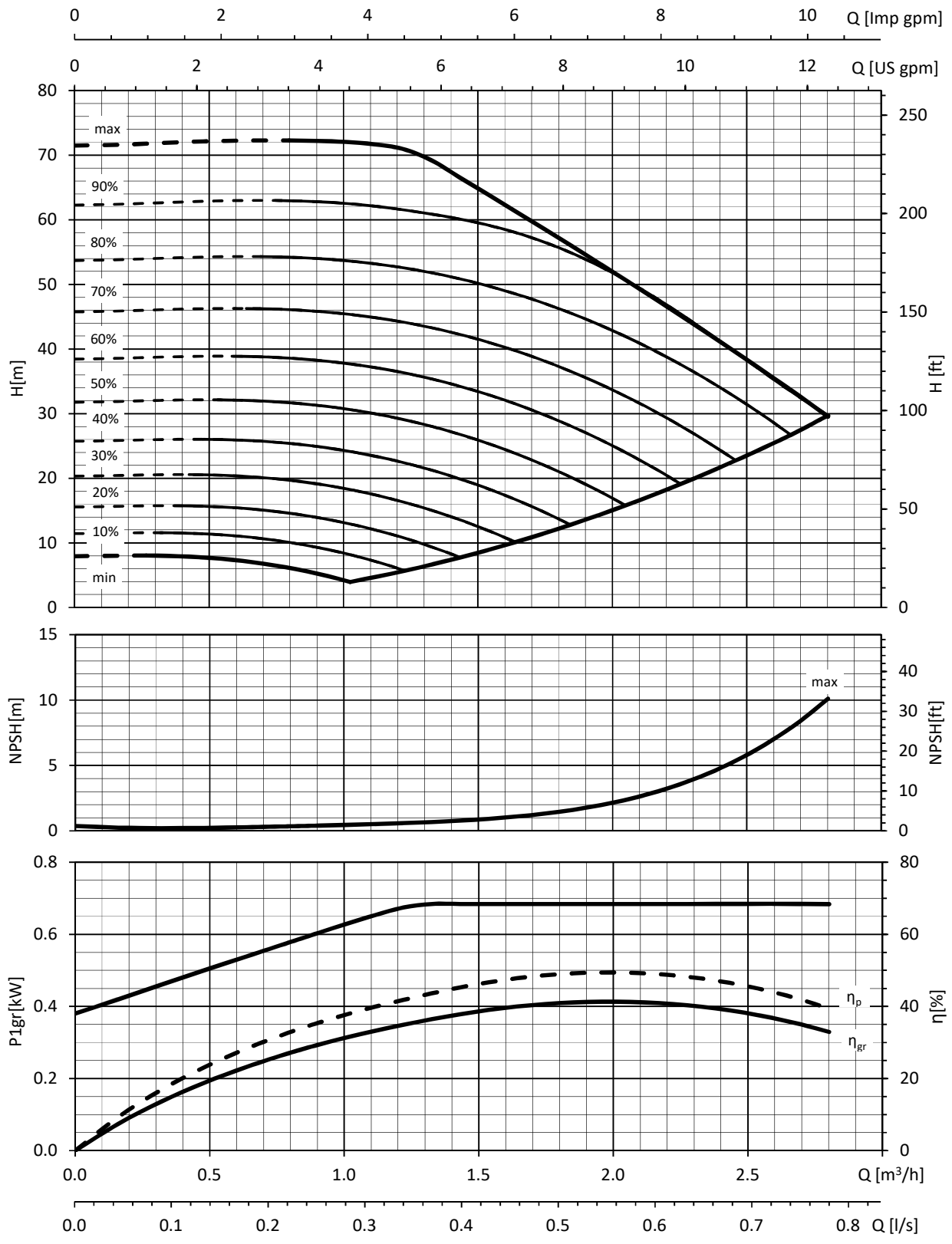
1SVIE SERIES
OPERATING CHARACTERISTICS



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

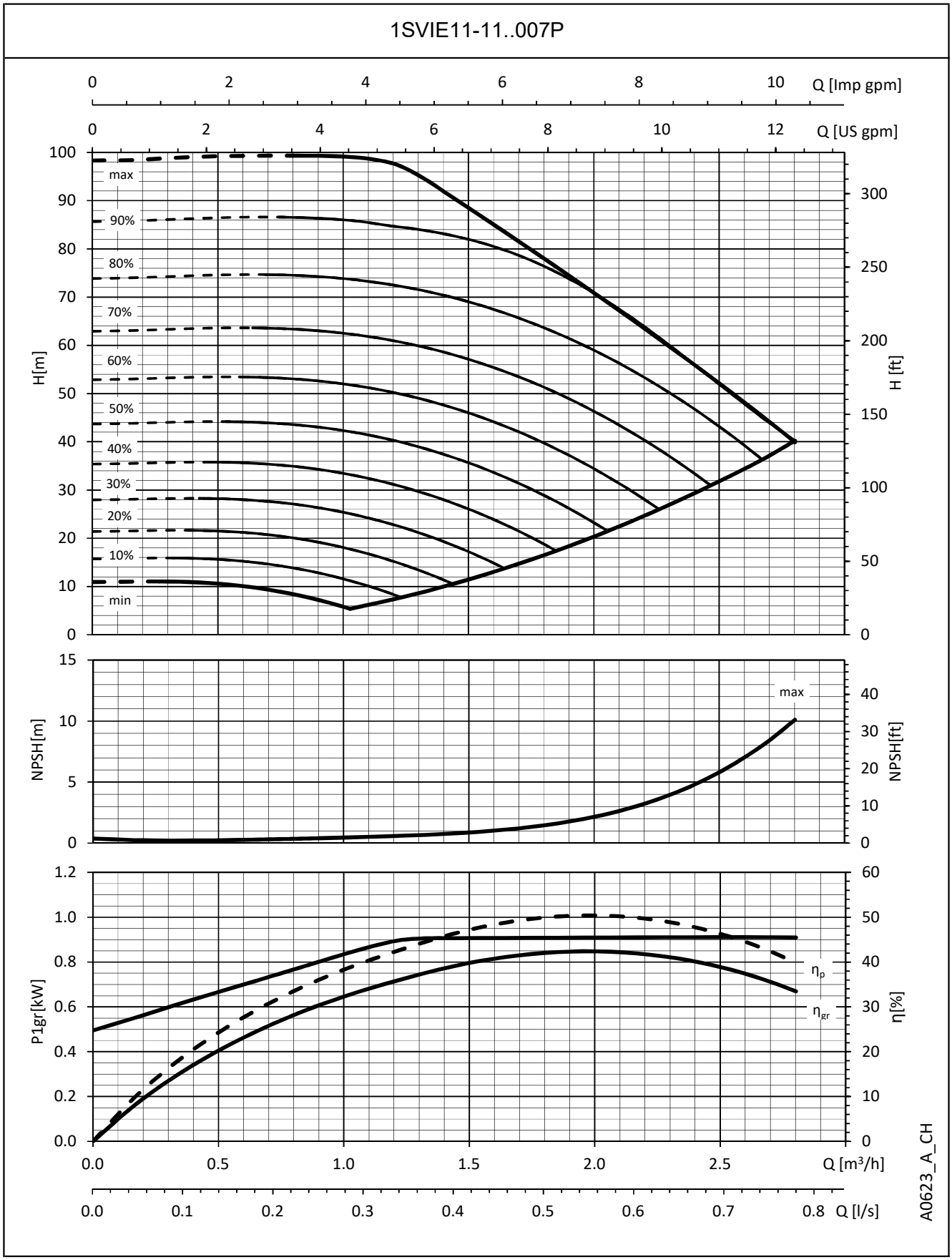
1SVIE SERIES
OPERATING CHARACTERISTICS

1SVIE08-08..005P



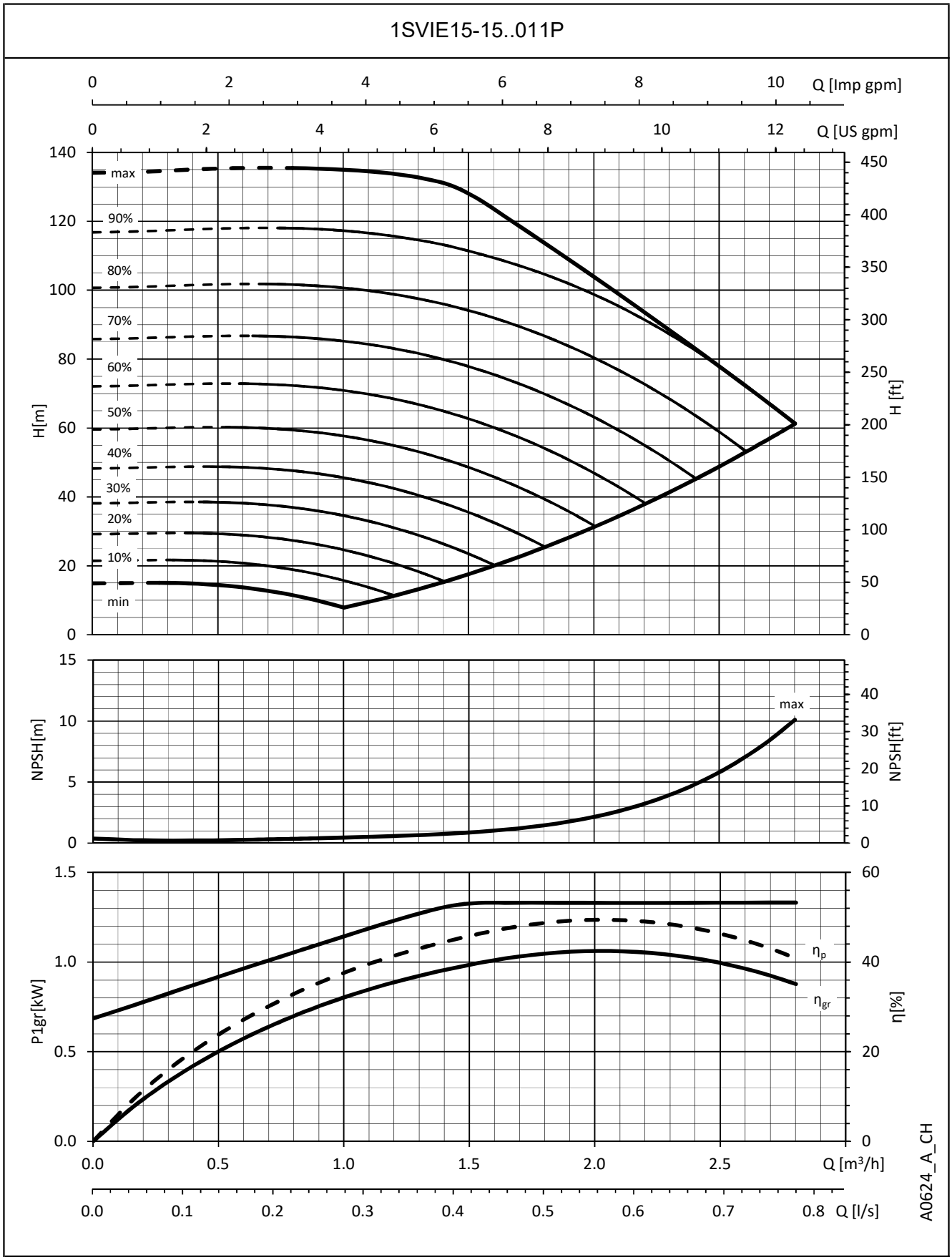
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

1SVIE SERIES
OPERATING CHARACTERISTICS



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

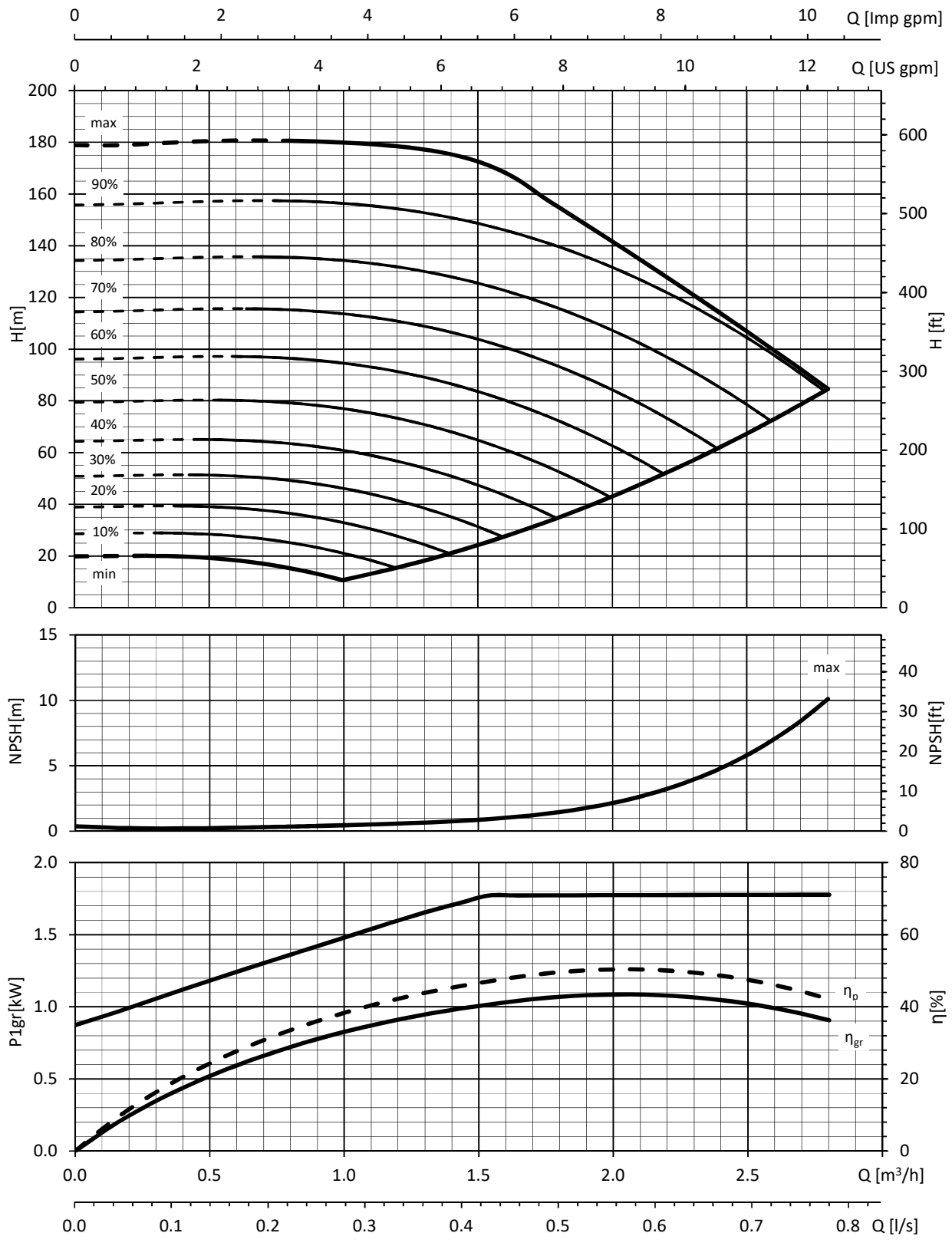
1SVIE SERIES
OPERATING CHARACTERISTICS



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

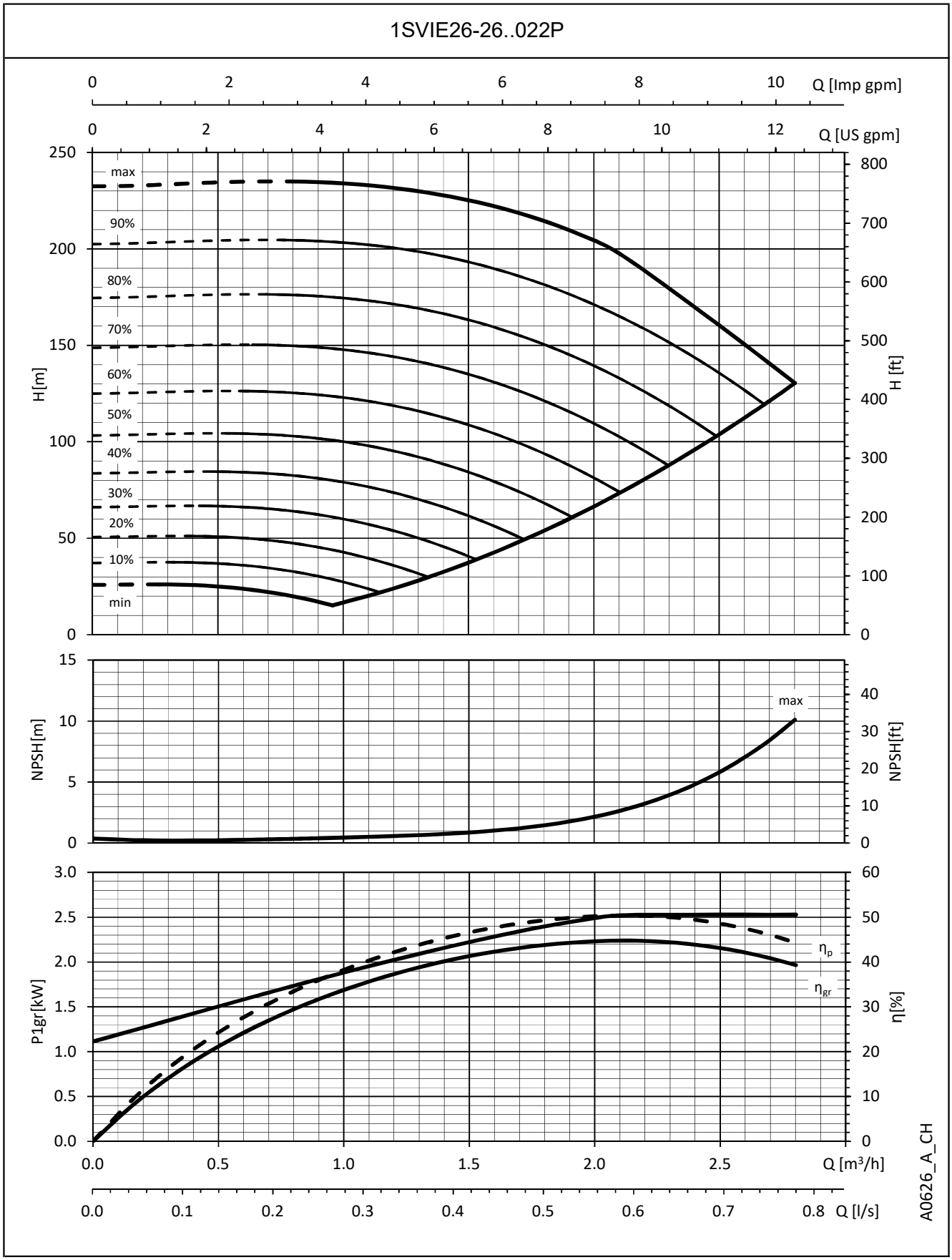
1SVIE SERIES
OPERATING CHARACTERISTICS

1SVIE20-20..015P



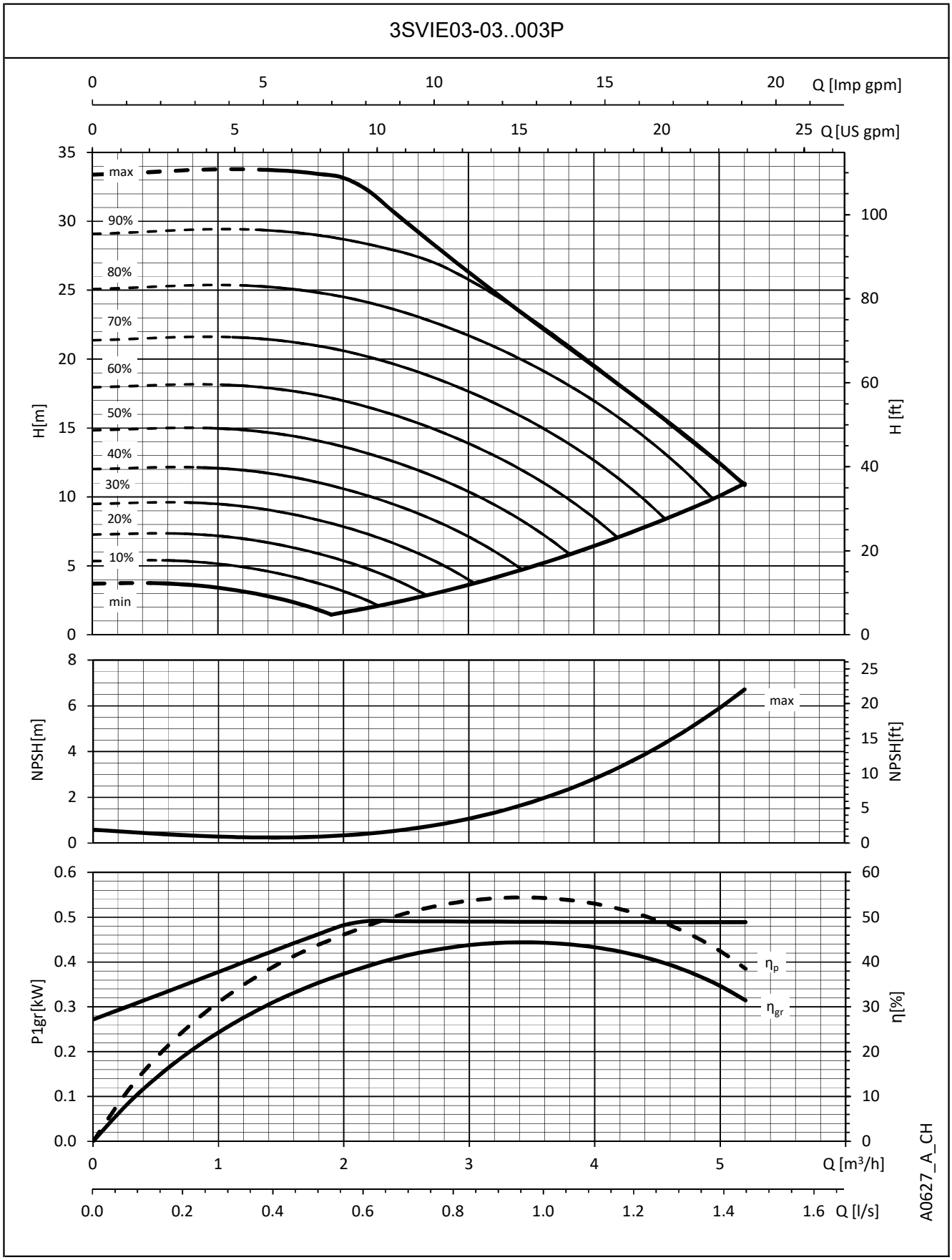
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

1SVIE SERIES
OPERATING CHARACTERISTICS



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

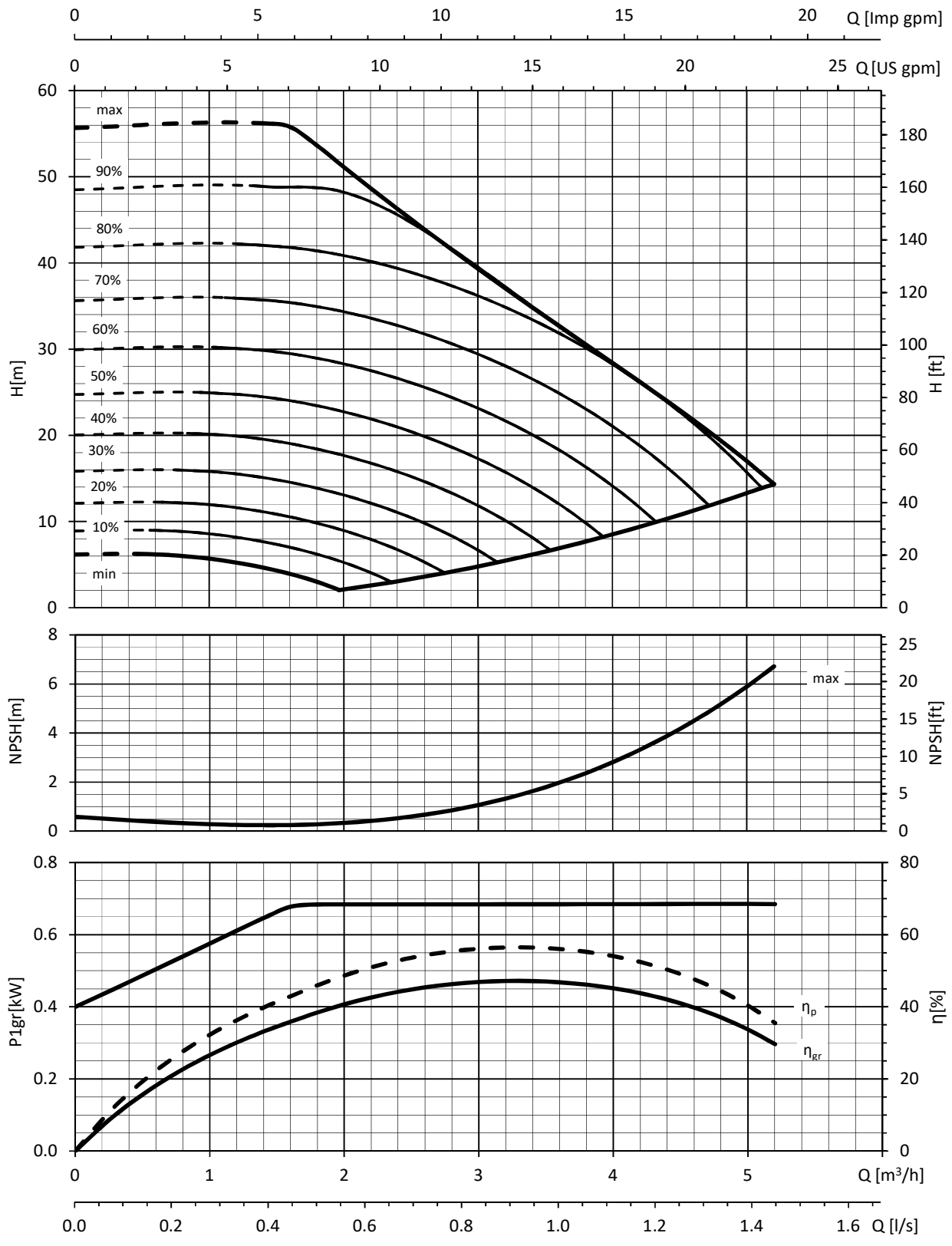
3SVIE SERIES
OPERATING CHARACTERISTICS



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

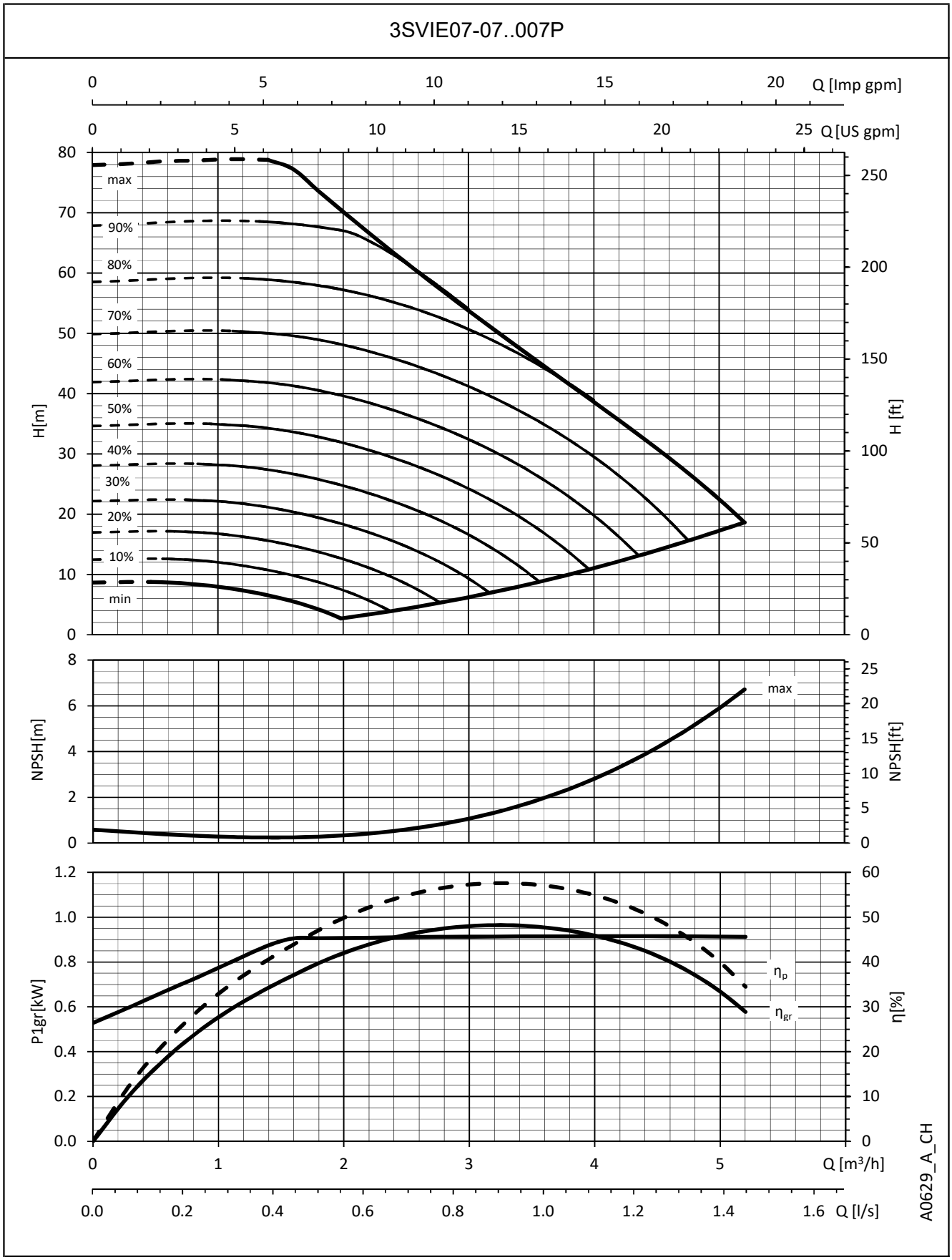
3SVIE SERIES
OPERATING CHARACTERISTICS

3SVIE05-05..005P



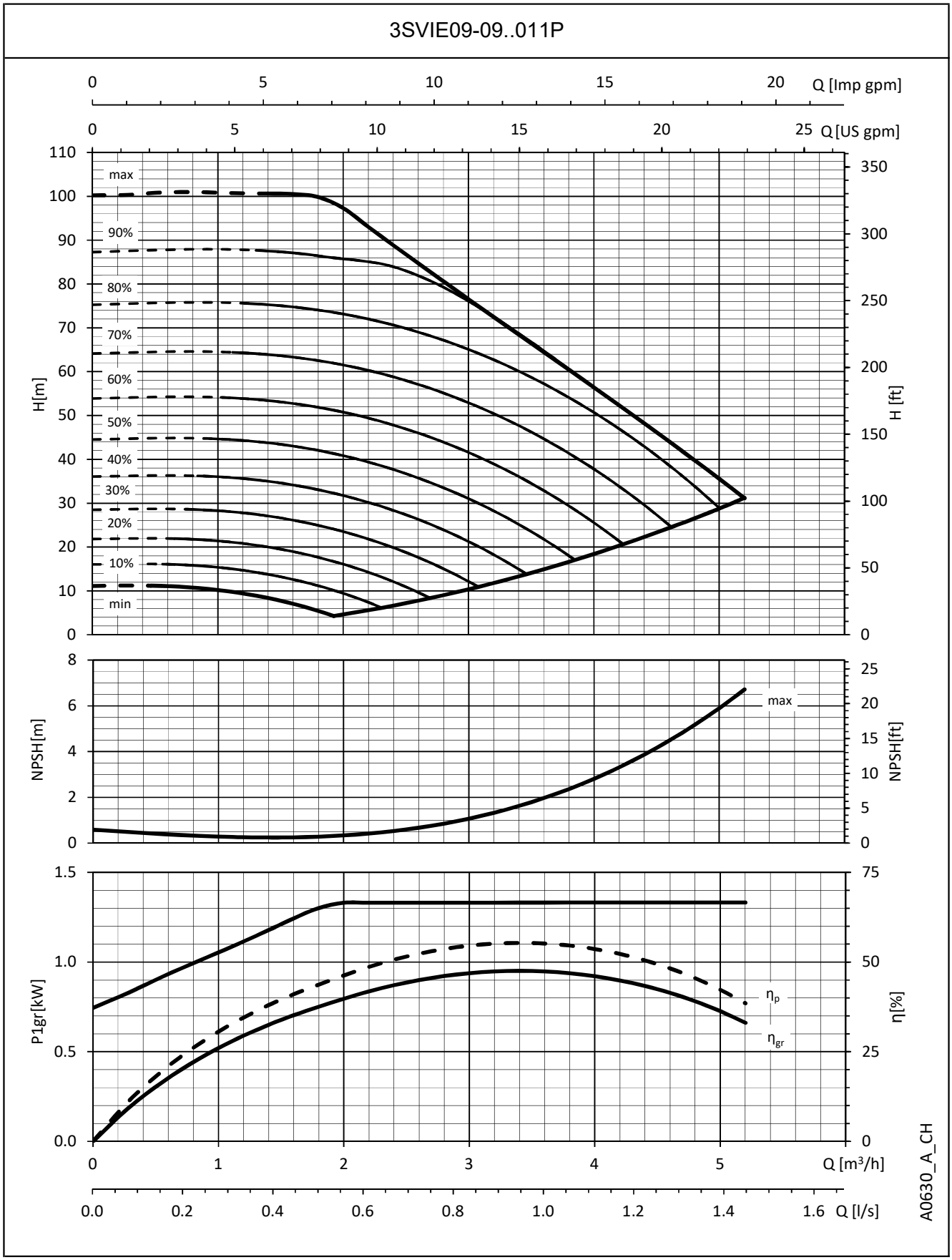
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVIE SERIES
OPERATING CHARACTERISTICS



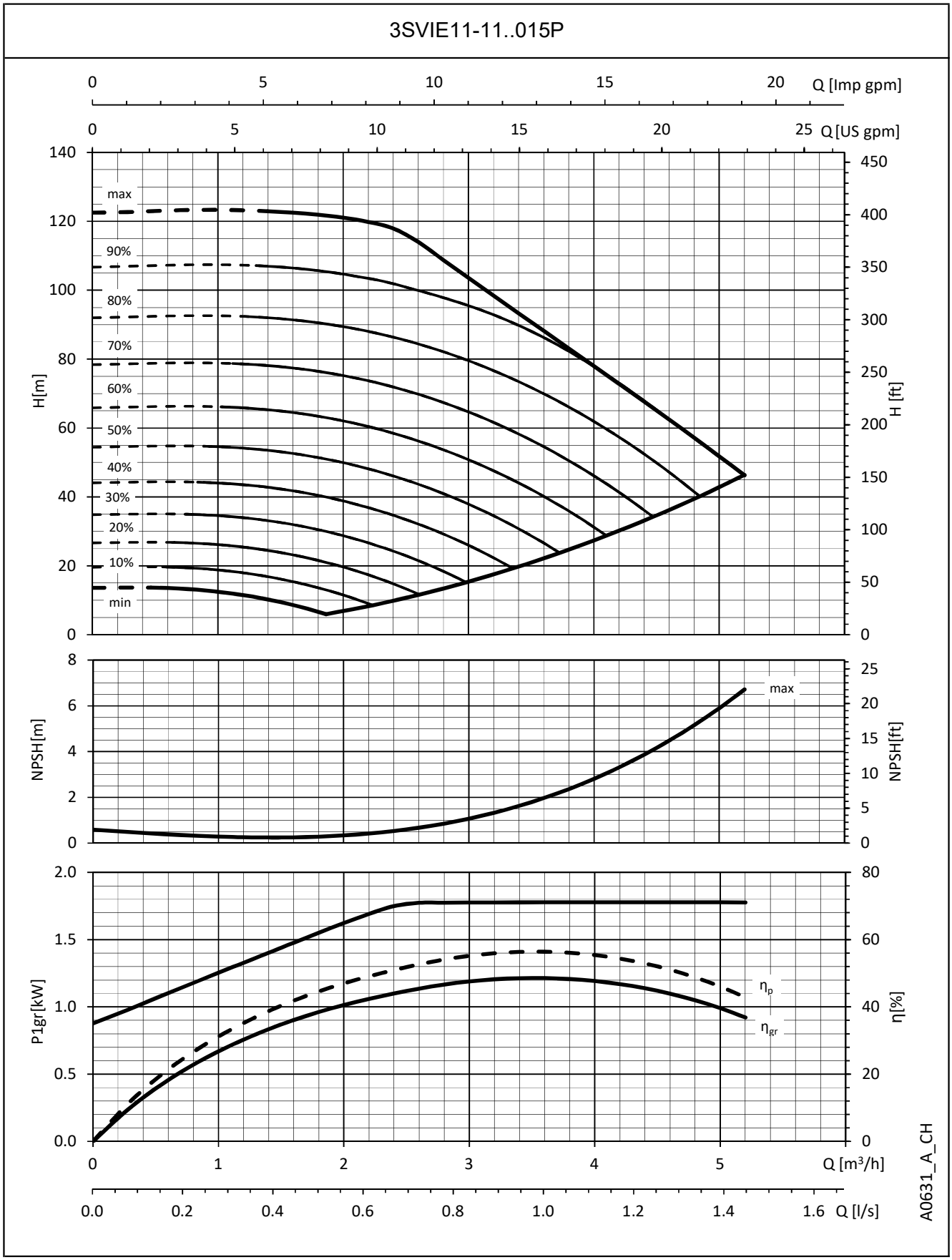
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVIE SERIES
OPERATING CHARACTERISTICS



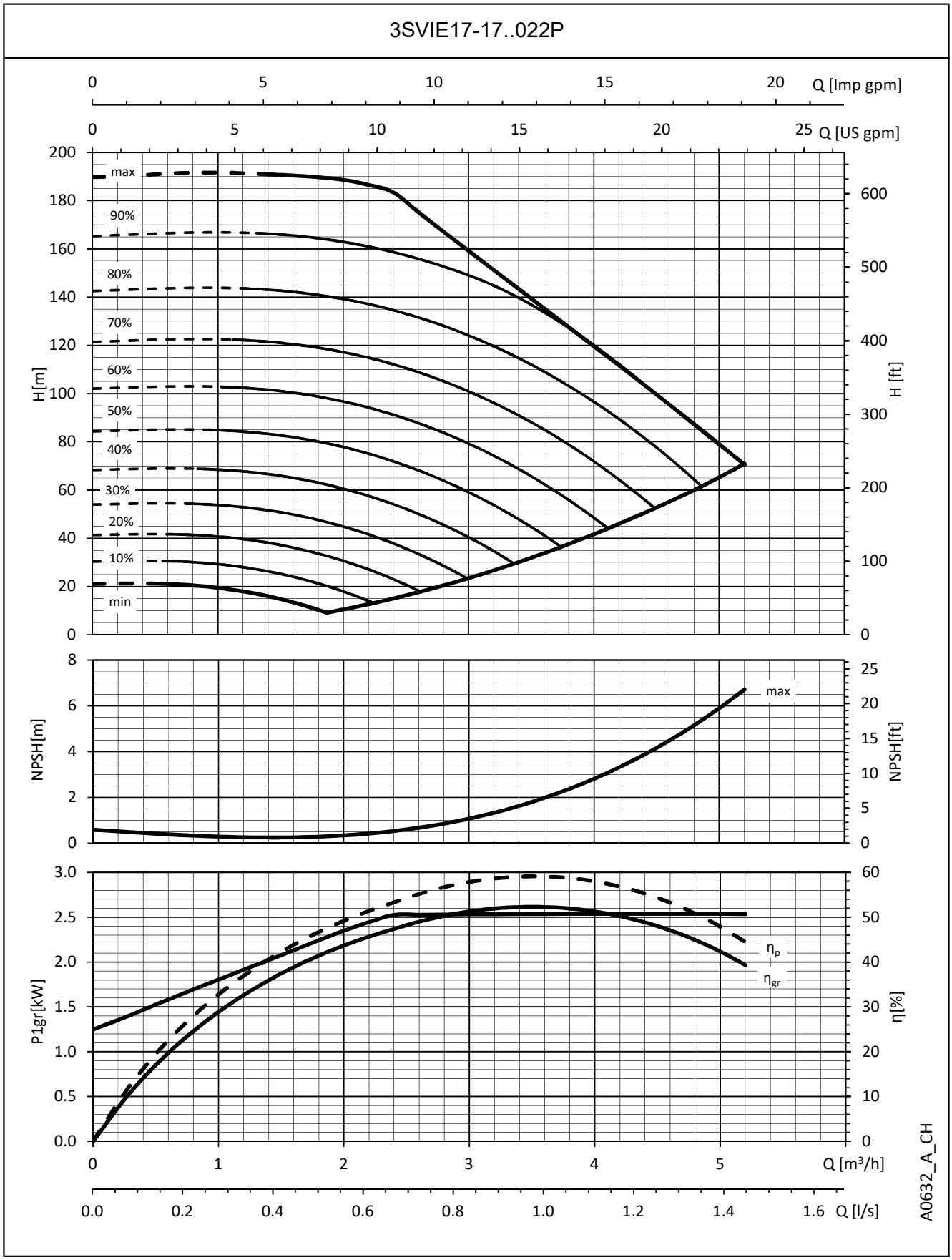
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVIE SERIES
OPERATING CHARACTERISTICS



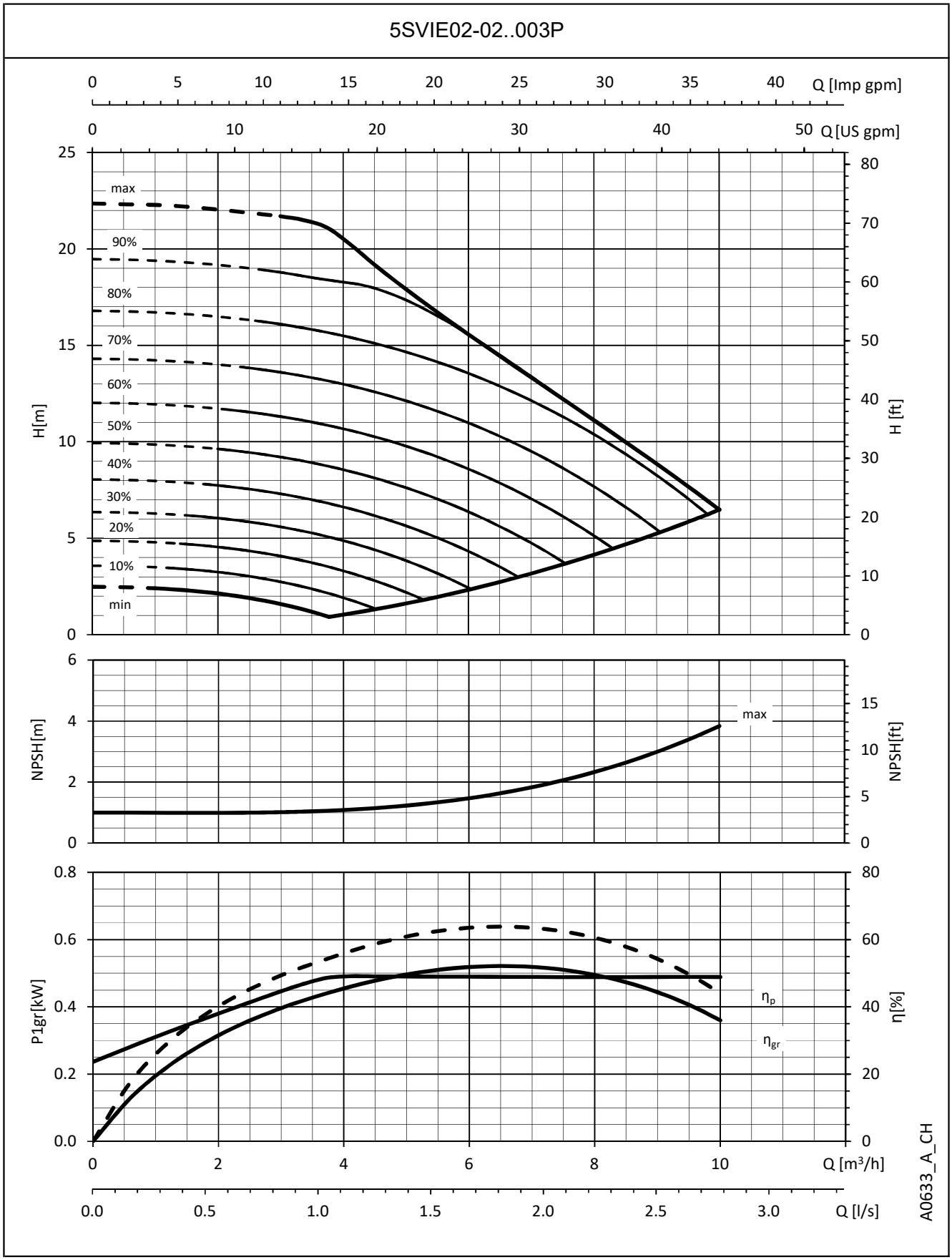
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

3SVIE SERIES
OPERATING CHARACTERISTICS



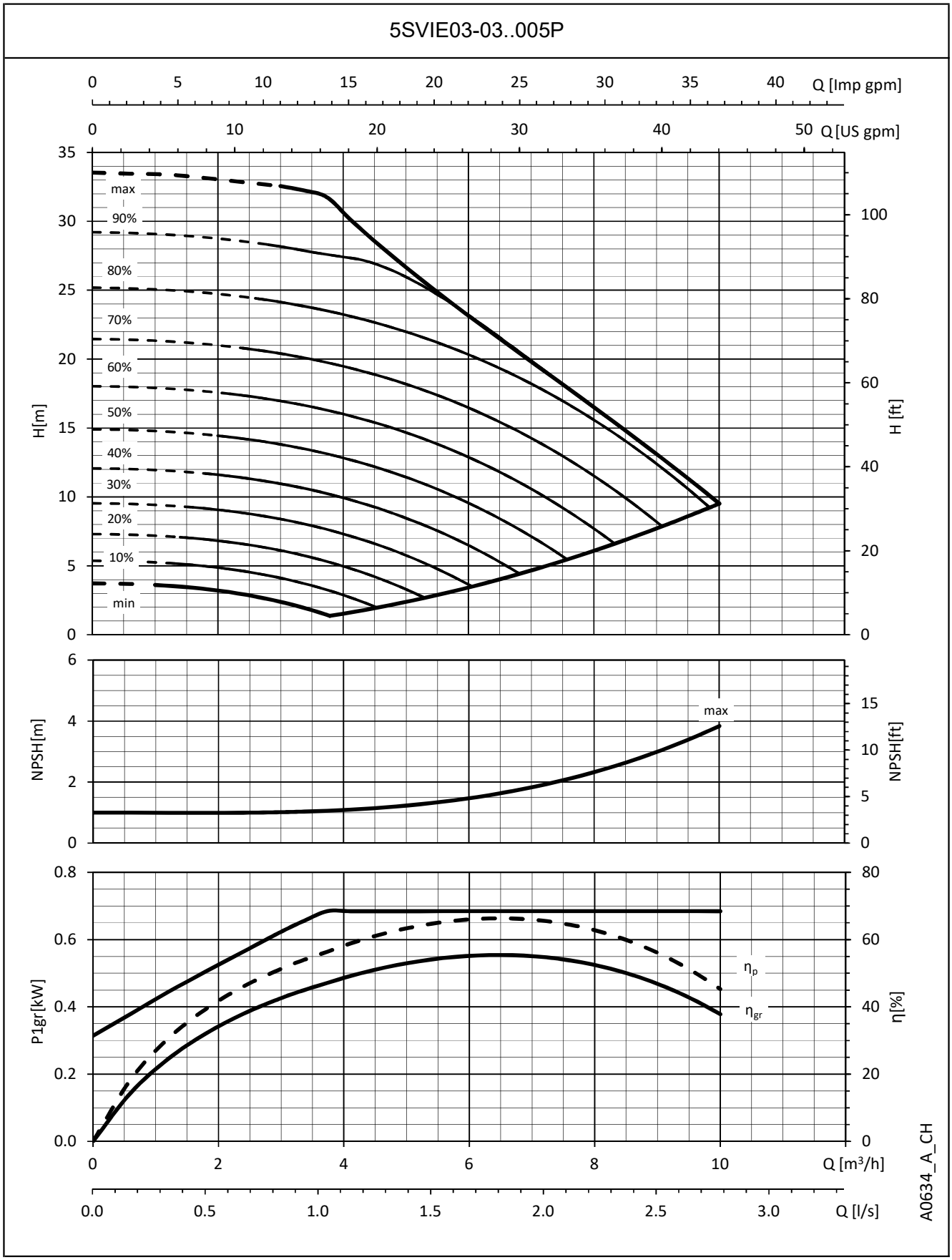
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVIE SERIES
OPERATING CHARACTERISTICS



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

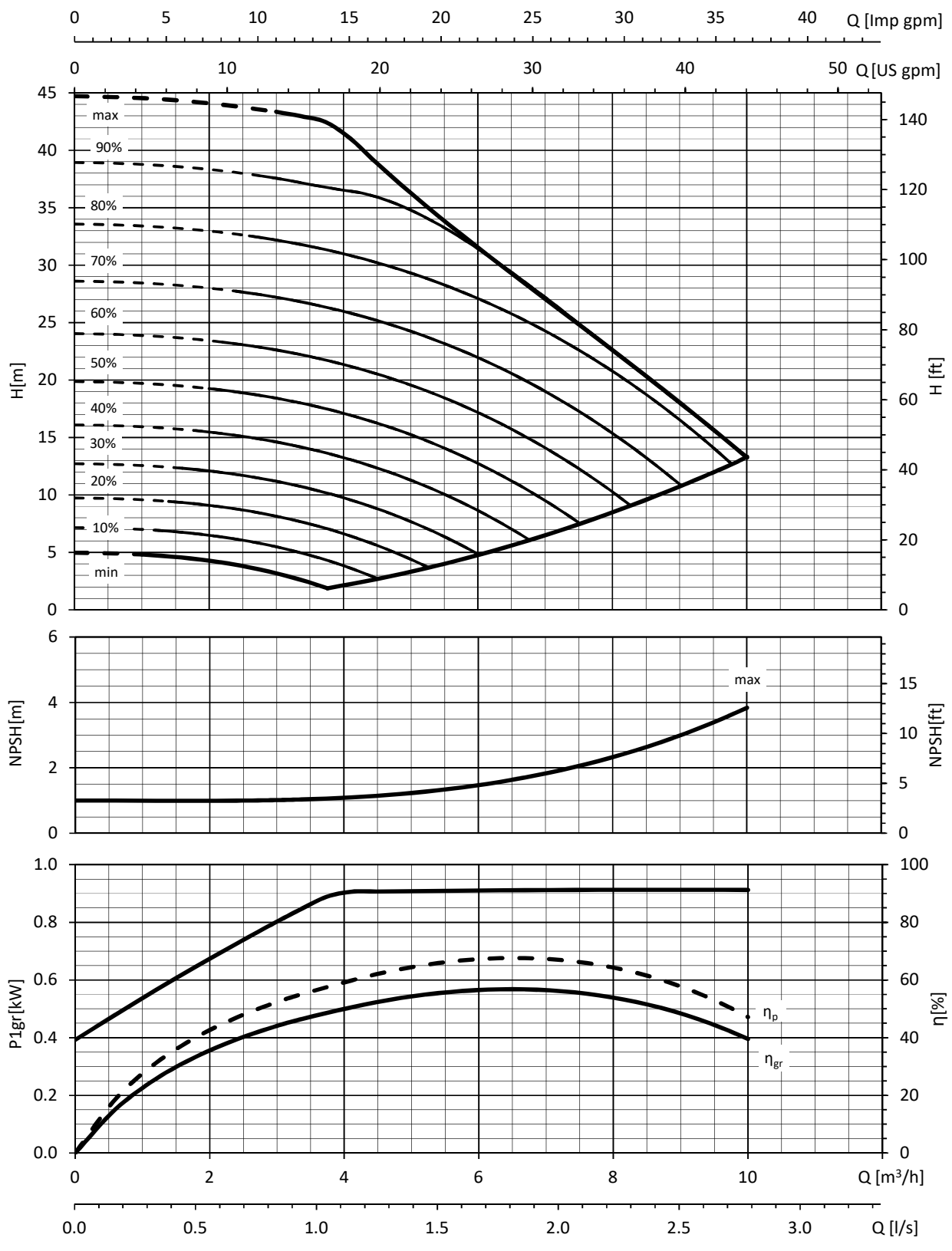
5SVIE SERIES
OPERATING CHARACTERISTICS



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

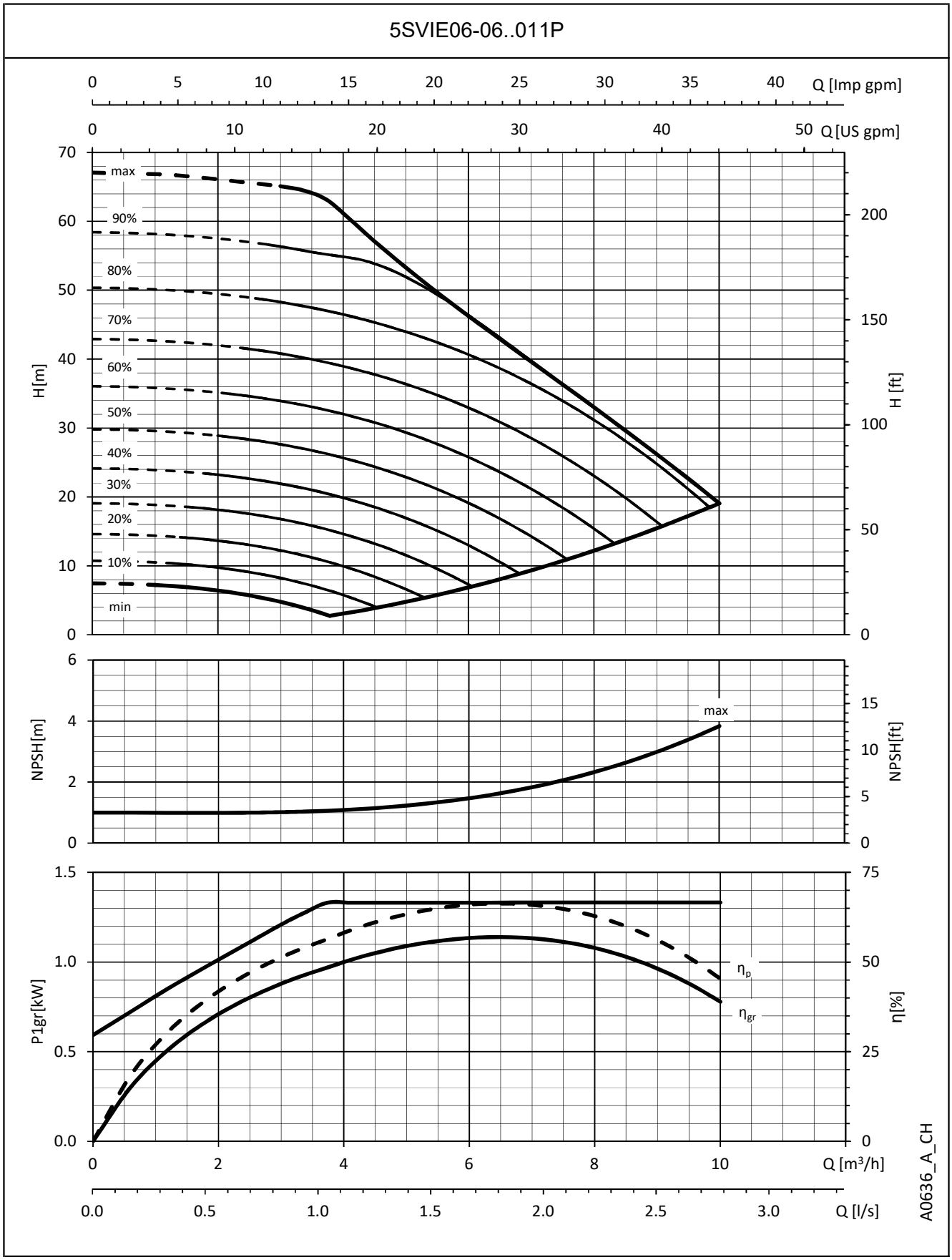
5SVIE SERIES
OPERATING CHARACTERISTICS

5SVIE04-04..007P



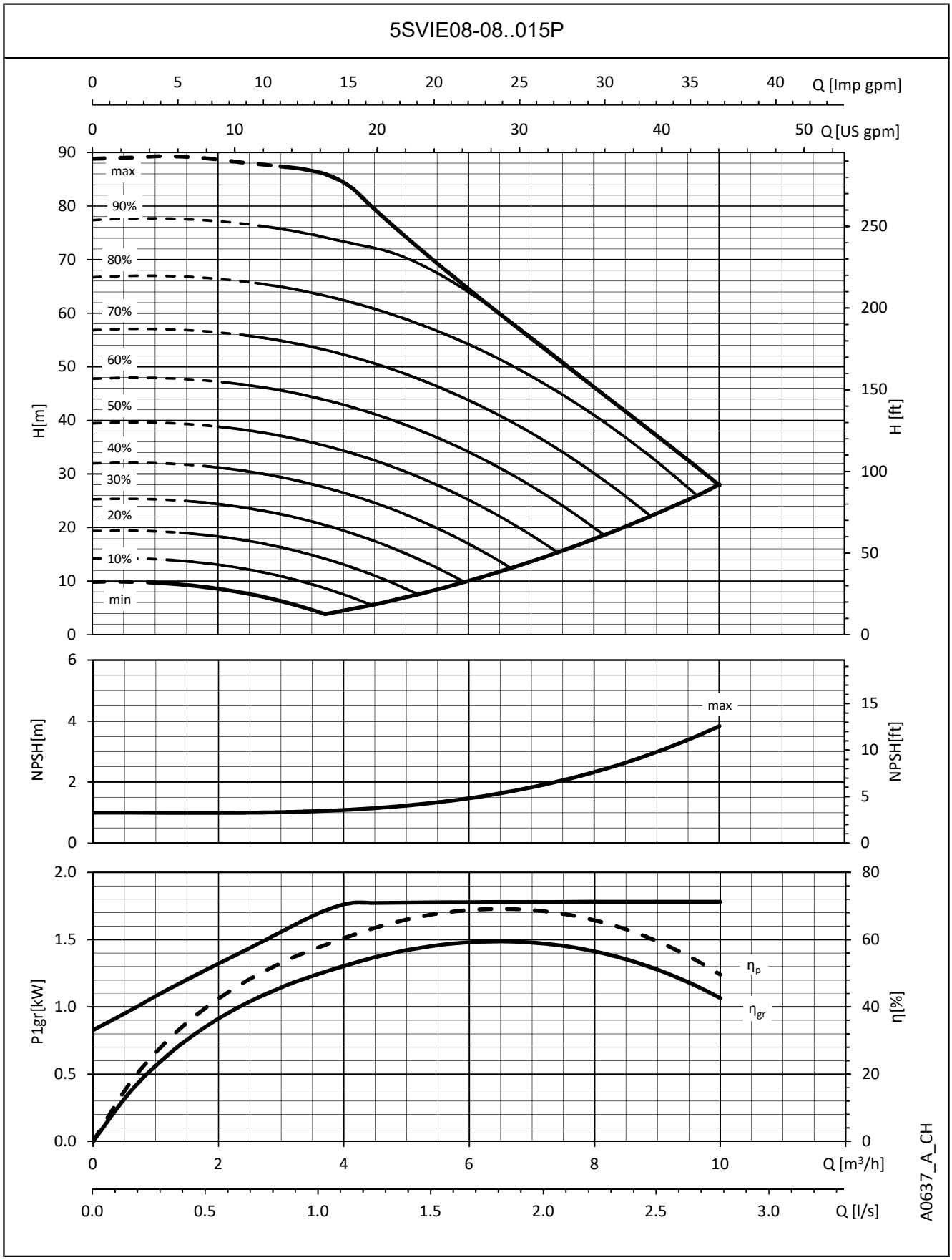
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVIE SERIES
OPERATING CHARACTERISTICS



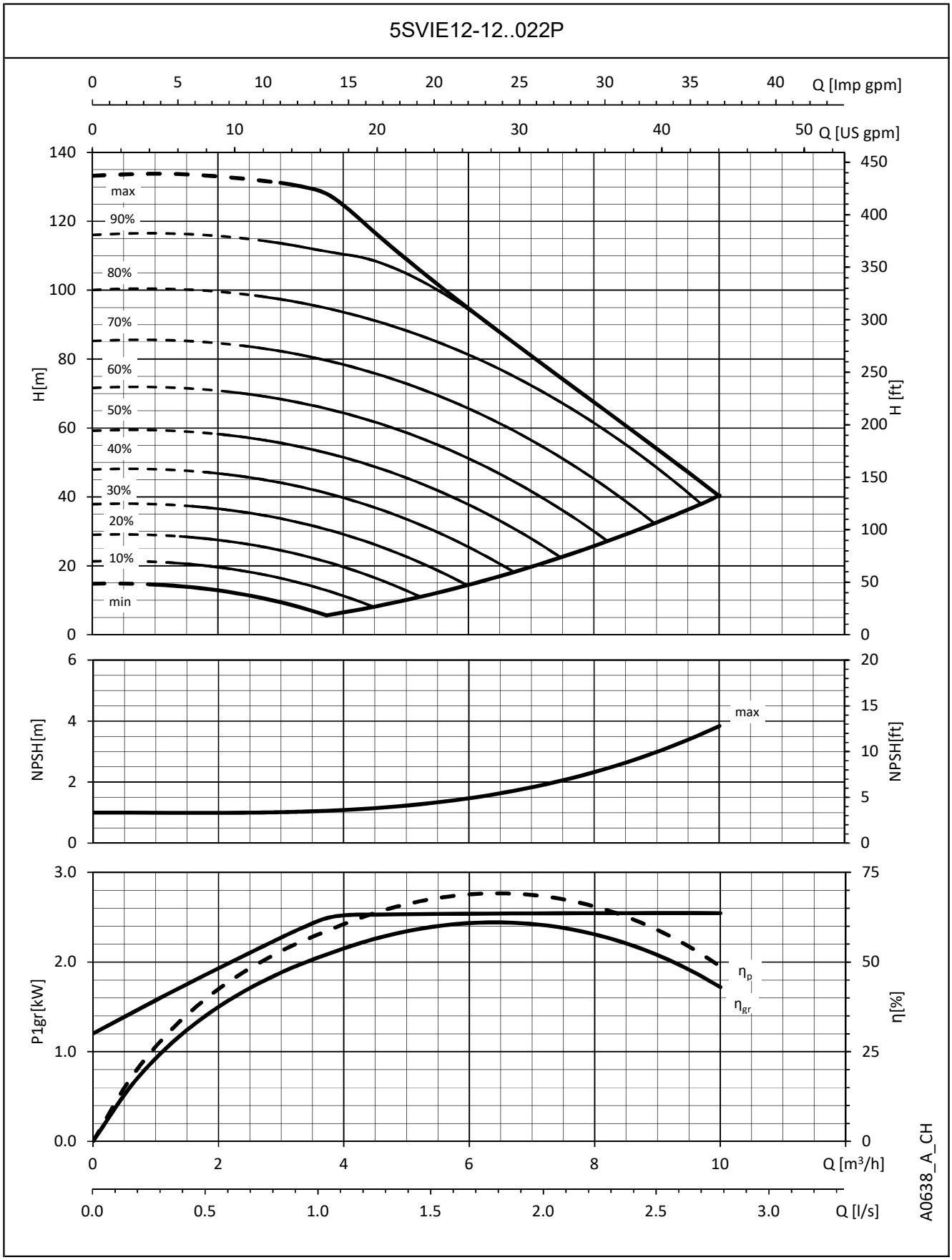
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVIE SERIES
OPERATING CHARACTERISTICS



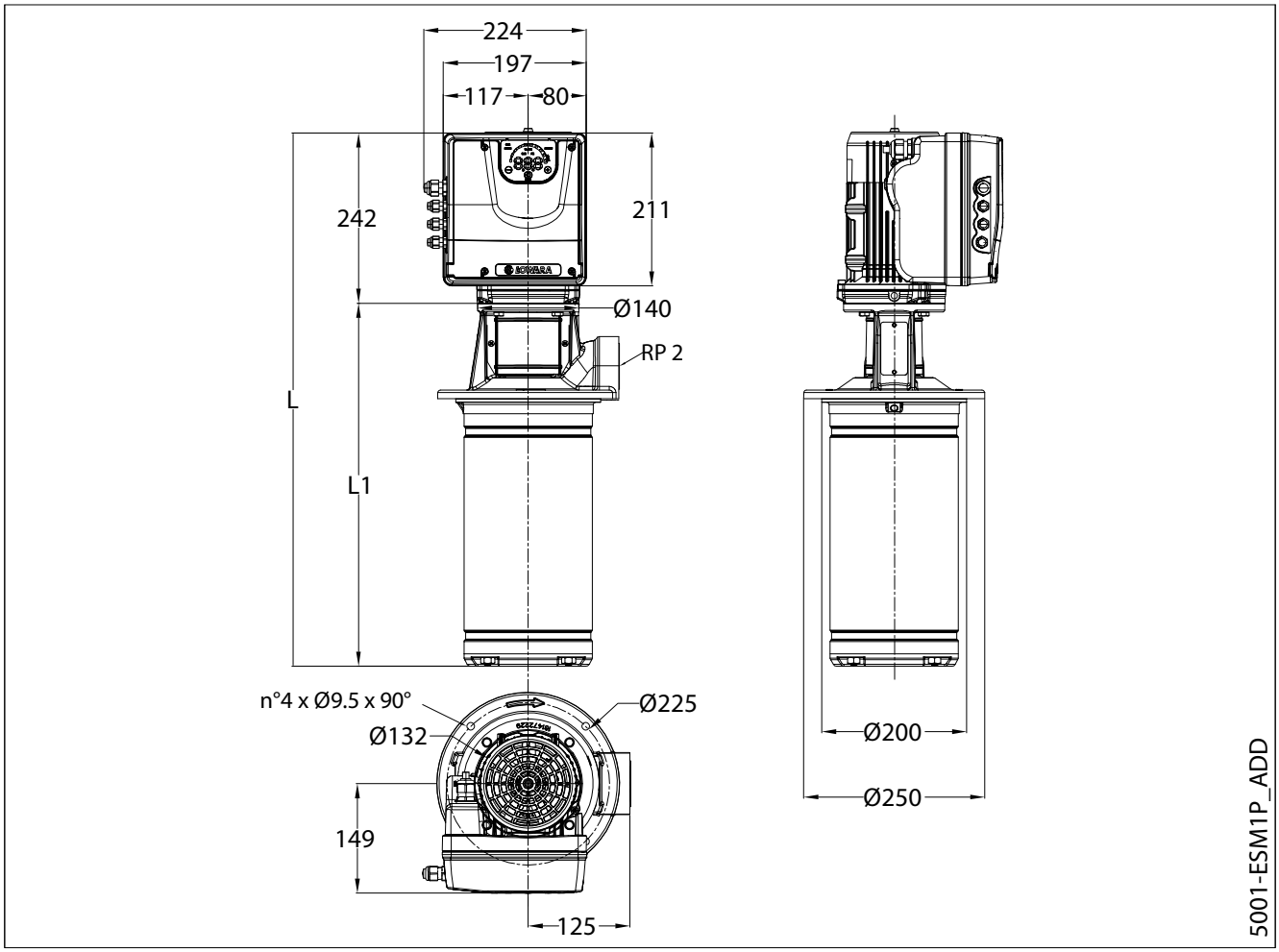
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

5SVIE SERIES
OPERATING CHARACTERISTICS



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

10, 15, 22 SVIE..C - 10, 15, 22 SVIE..M SERIES, SINGLE-PHASE VERSION
DIMENSIONS AND WEIGHTS

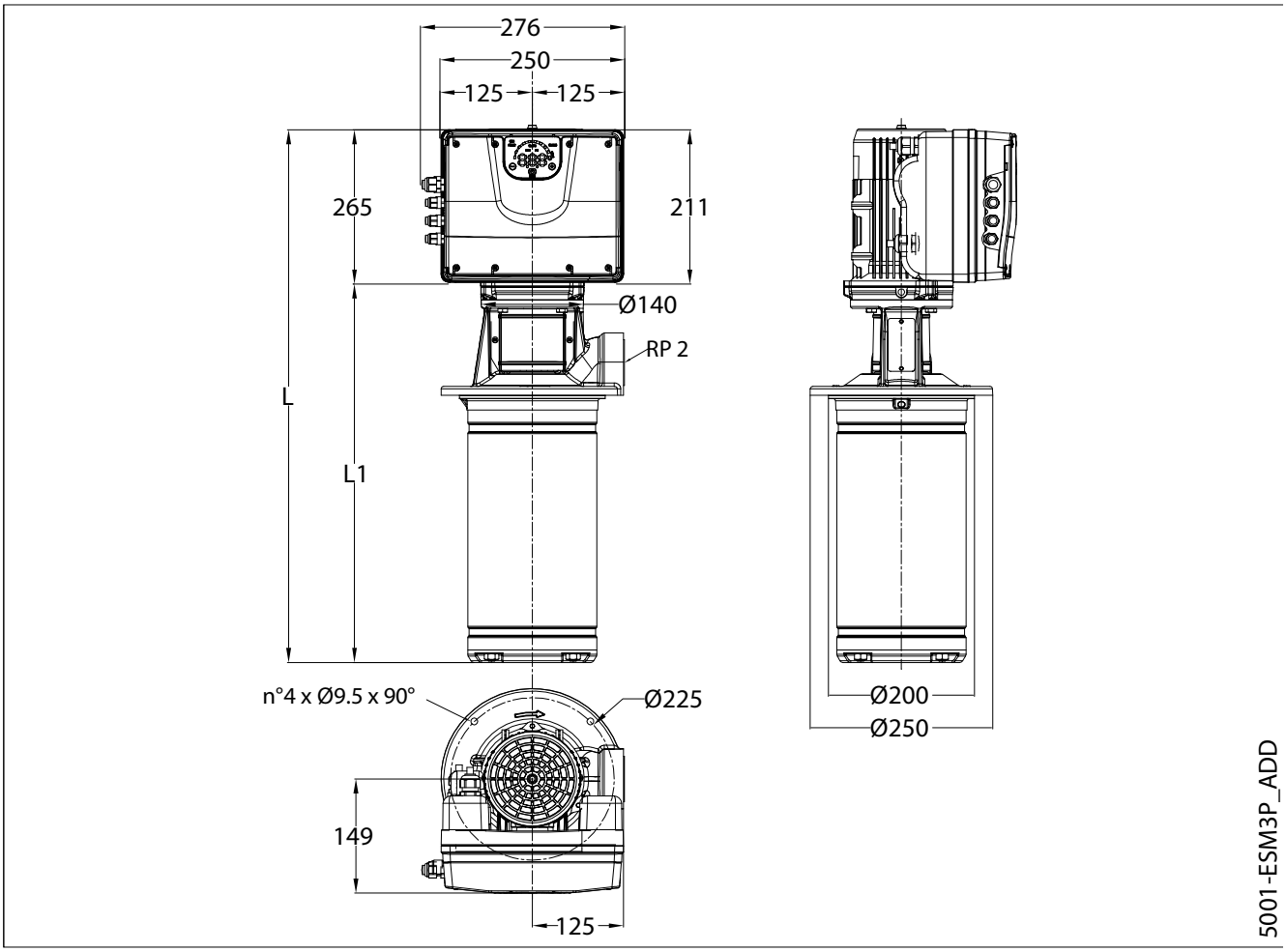


PUMP TYPE SINGLE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
10SVIE02-02..007	0,75	90R	552	310	13	21
10SVIE02-02..011	1,1	90R	552	310	13	22
10SVIE03-03..015	1,5	90R	584	342	14	23
15SVIE02-02..015	1,5	90R	600	358	14	23
22SVIE02-02..015	1,5	90R	600	358	14	35

All listed dimensions are with inducer.

10-22svie_1ph-en_a_td

10, 15, 22 SVIE..C - 10, 15, 22 SVIE..M SERIES, THREE-PHASE VERSION
DIMENSIONS AND WEIGHTS

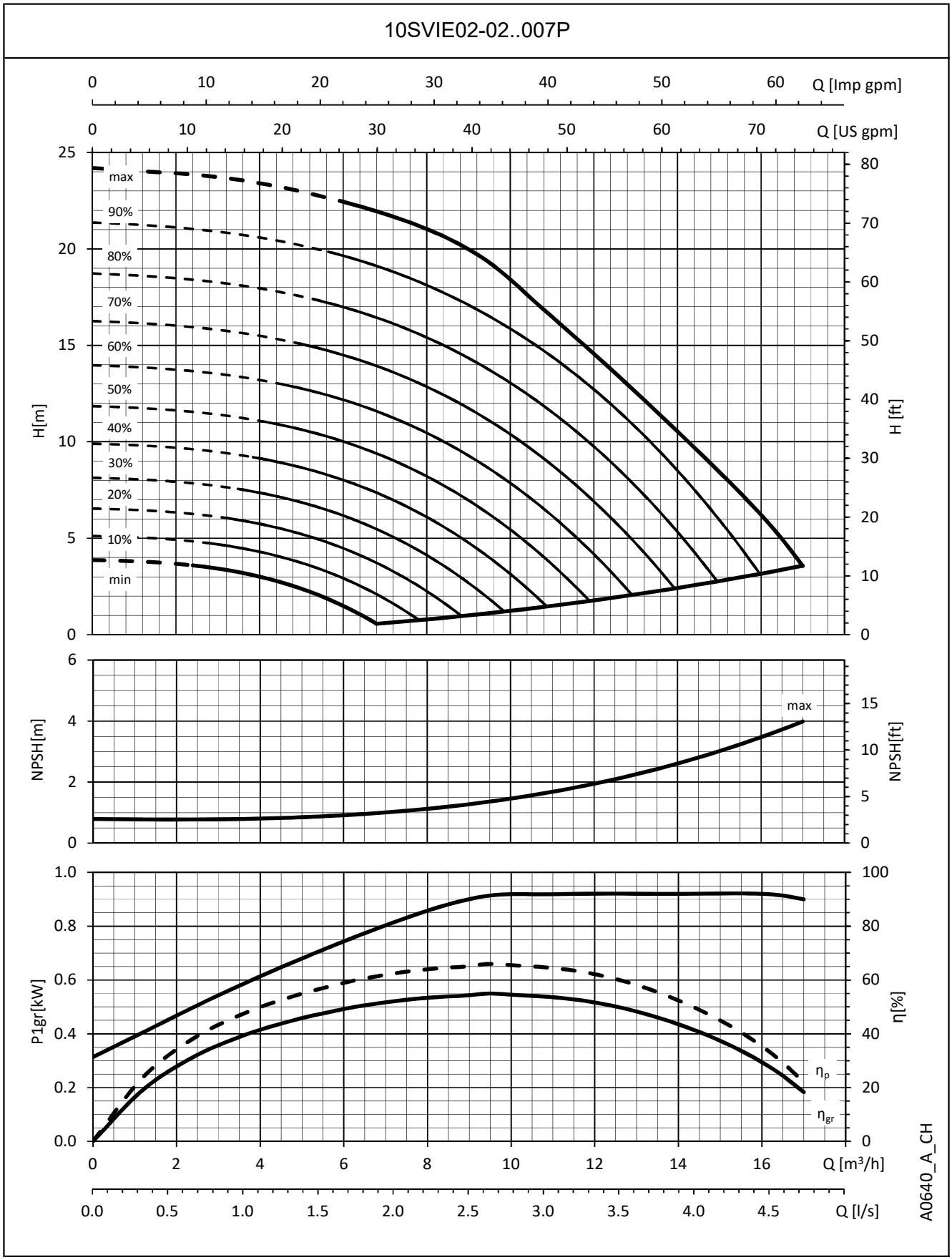


PUMP TYPE THREE-PHASE	MOTOR kW	MOTOR SIZE	DIMENSIONS (mm) L	DIMENSIONS (mm) L1	WEIGHT (kg) PUMP	WEIGHT (kg) ELECTRIC PUMP
10SVIE02-02..007	0,75	90R	552	310	13	26
10SVIE02-02..011	1,1	90R	552	310	13	28
10SVIE03-03..015	1,5	90R	584	342	14	29
10SVIE04-04..022	2,2	90R	616	374	15	30
15SVIE02-02..015	1,5	90R	600	358	14	29
15SVIE02-02..022	2,2	90R	600	358	14	29
22SVIE02-02..015	1,5	90R	600	358	14	32
22SVIE02-02..022	2,2	90R	600	358	14	32

All listed dimensions are with inducer.

10-22svie_3ph-en_a_td

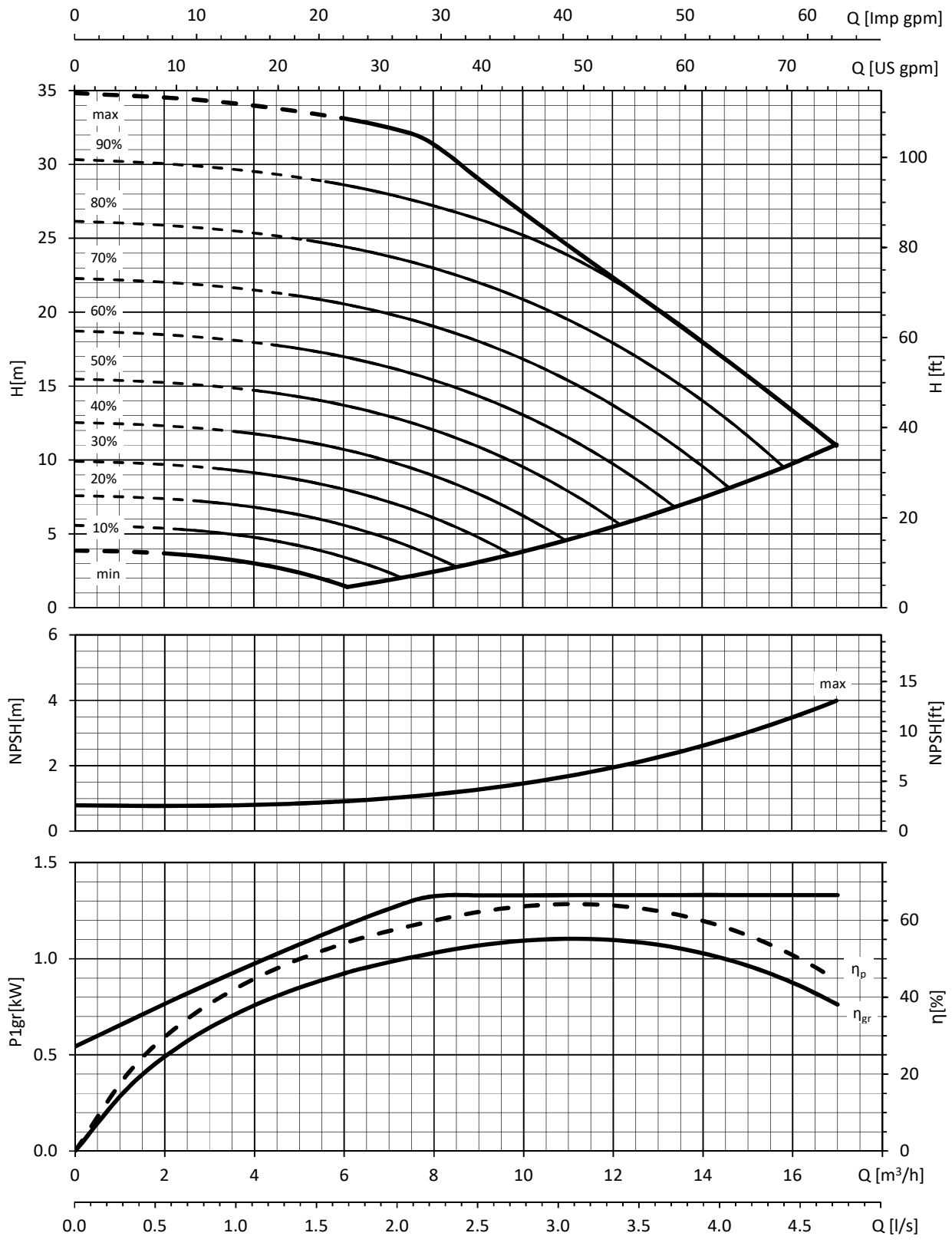
10SVIE SERIES
OPERATING CHARACTERISTICS



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

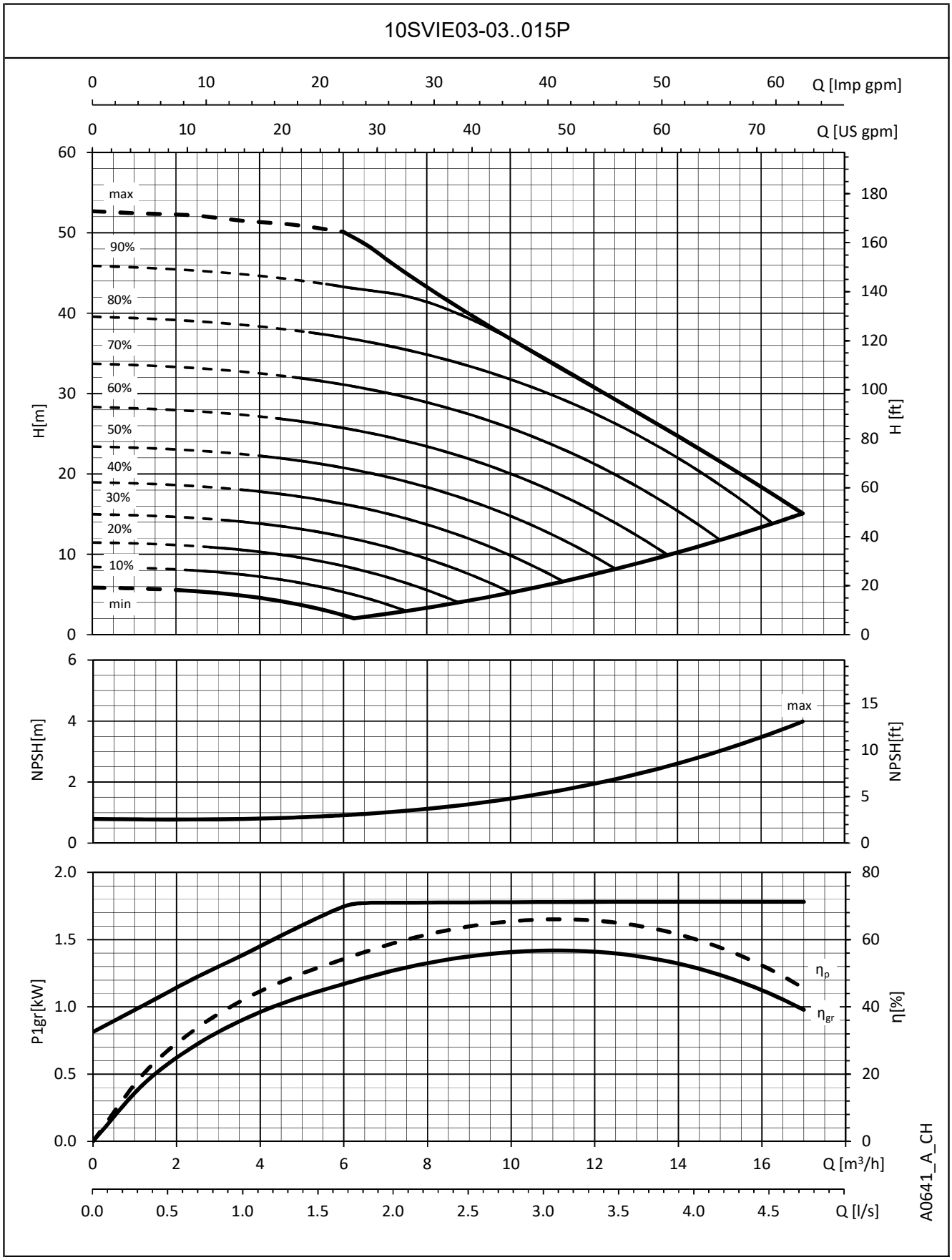
10SVIE SERIES
OPERATING CHARACTERISTICS

10SVIE02-02..011P



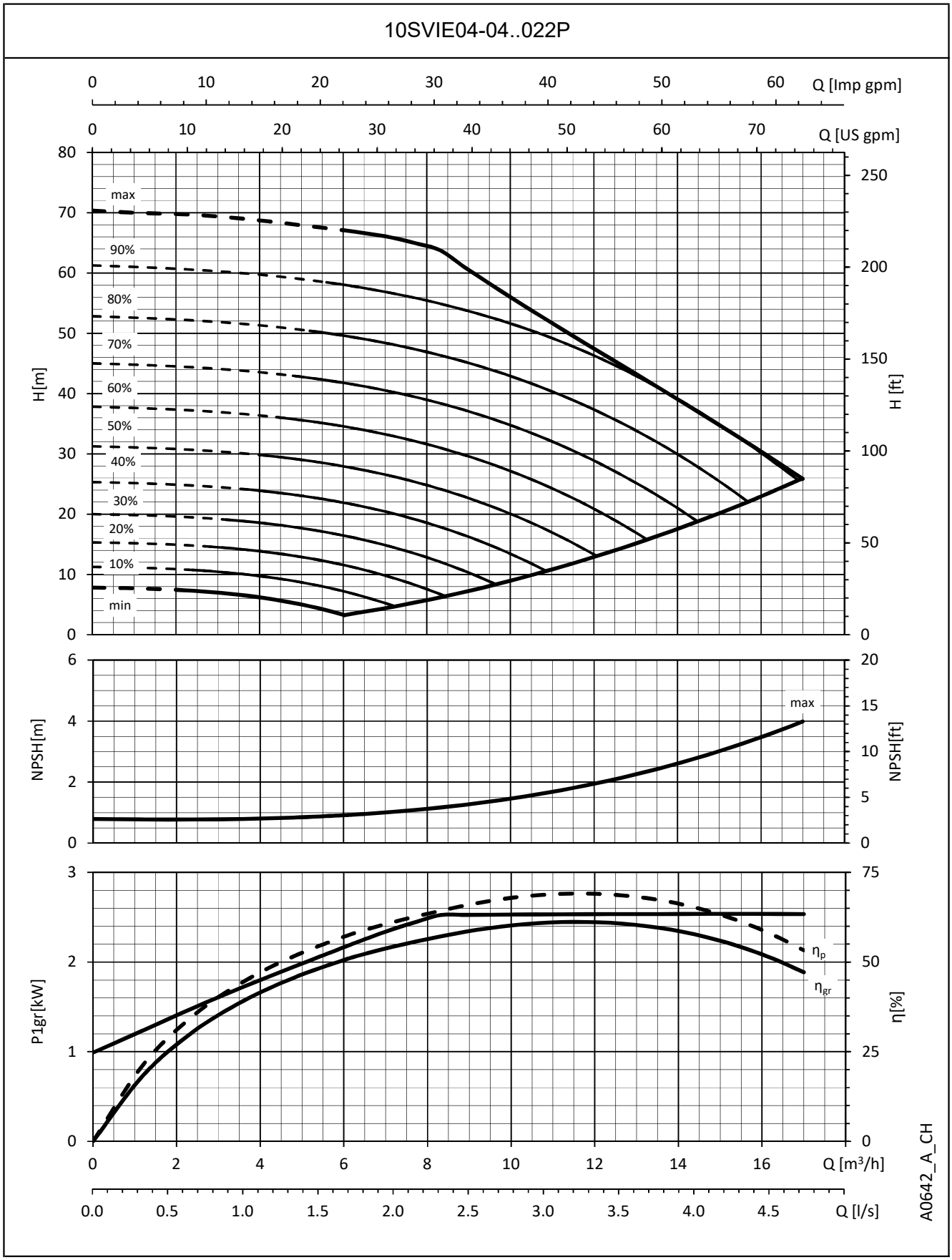
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

10SVIE SERIES
OPERATING CHARACTERISTICS



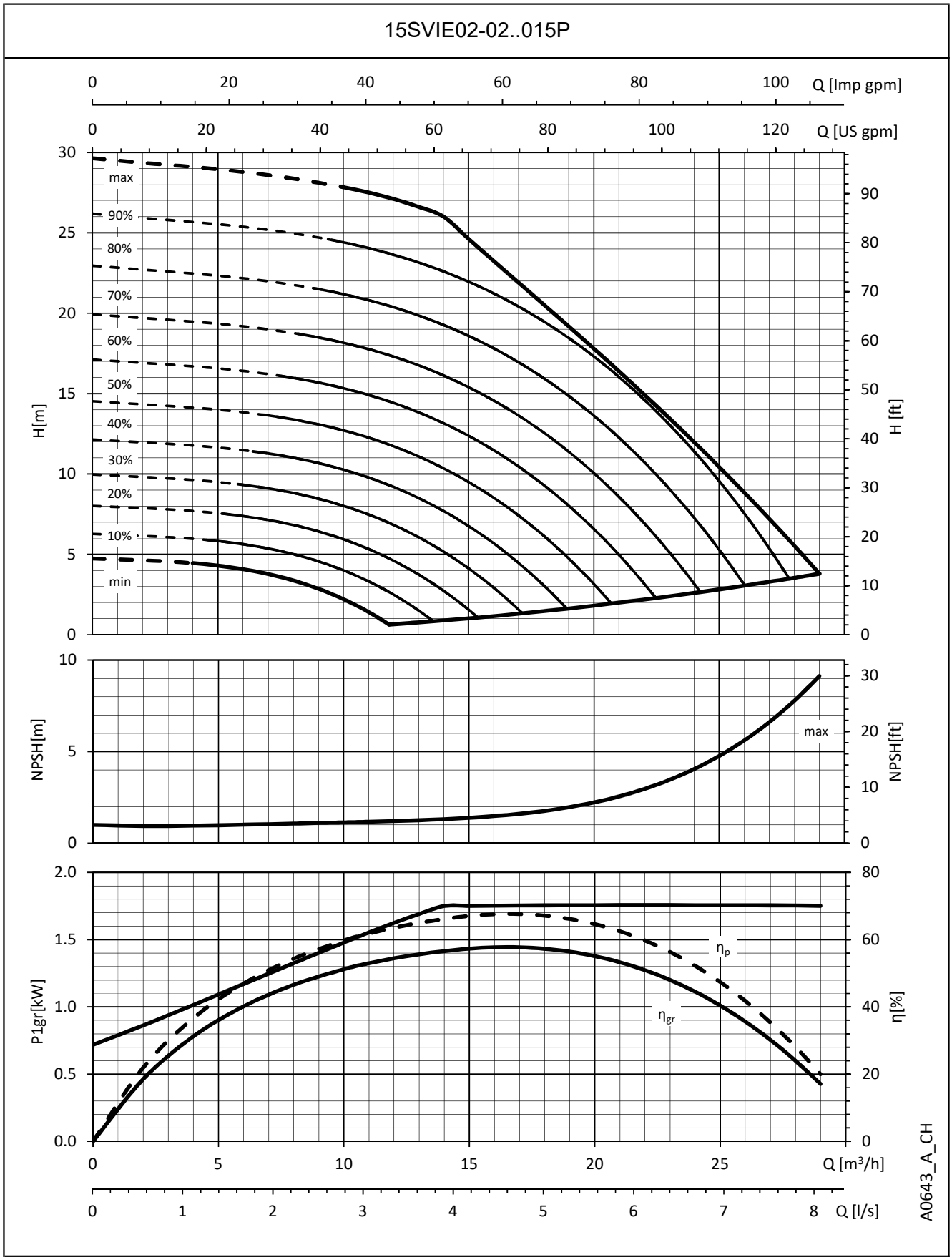
The performances are valid for liquid with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

10SVIE SERIES
OPERATING CHARACTERISTICS



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

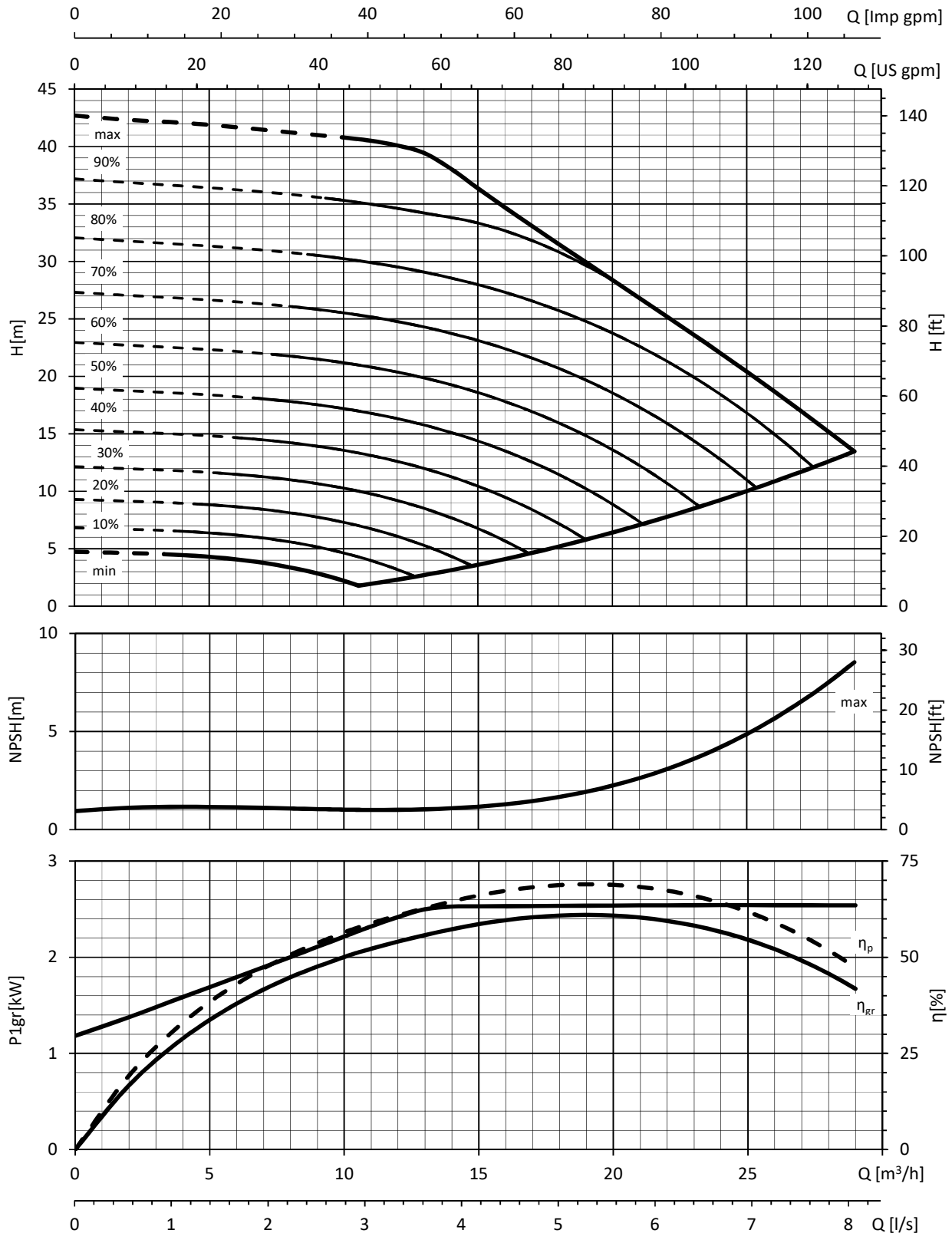
15SVIE SERIES
OPERATING CHARACTERISTICS



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

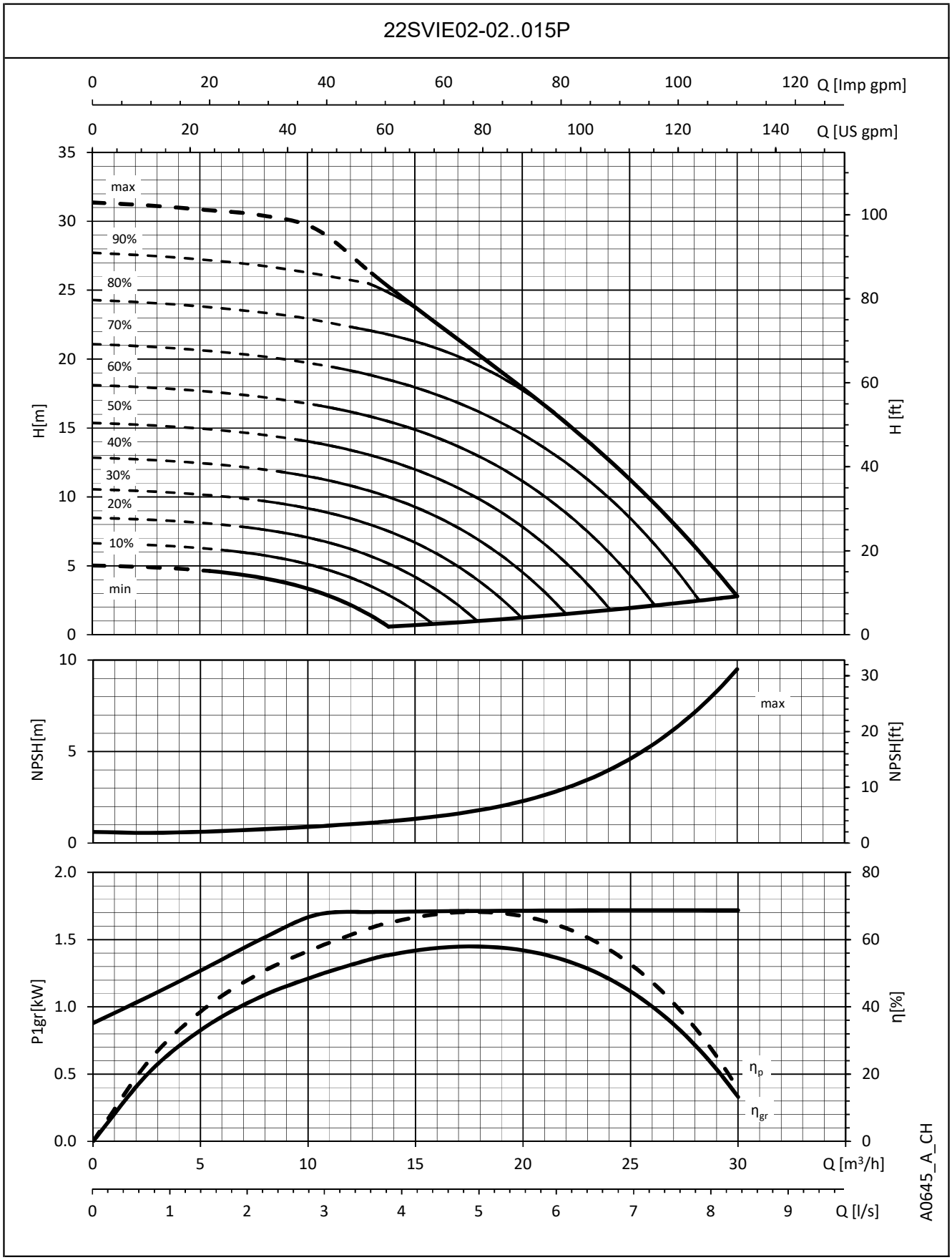
15SVIE SERIES
OPERATING CHARACTERISTICS

15SVIE02-02..022P



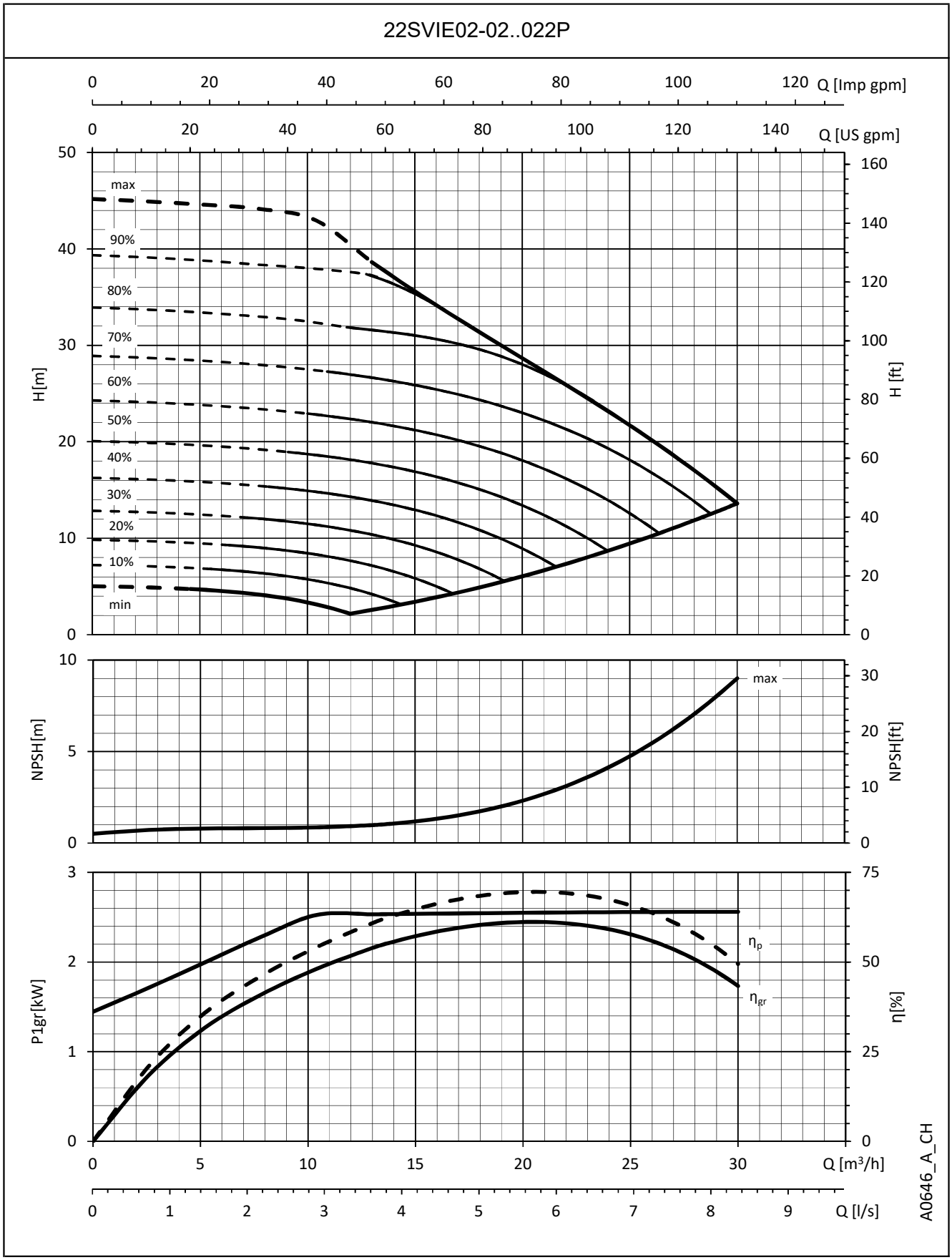
The performances are valid for liquid with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

22SVIE SERIES
OPERATING CHARACTERISTICS



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

22SVIE SERIES
OPERATING CHARACTERISTICS



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

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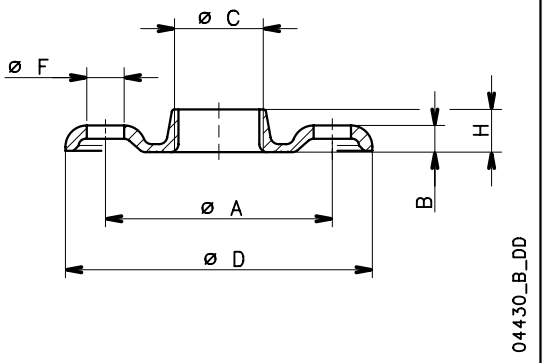
ACCESSORIES

SVI 33, 46, 66, 92 SERIES (S, N VERSIONS)
DIMENSIONS OF ROUND THREADED COUNTERFLANGES

PUMP TYPE	DN	ø C	DIMENSIONS (mm) ø A	B	ø D	H	HOLES ø F	N°	PN
SVI33	80	Rp 3	160	17	200	27	18	8	16
SVI46									
SVI66									
SVI92									

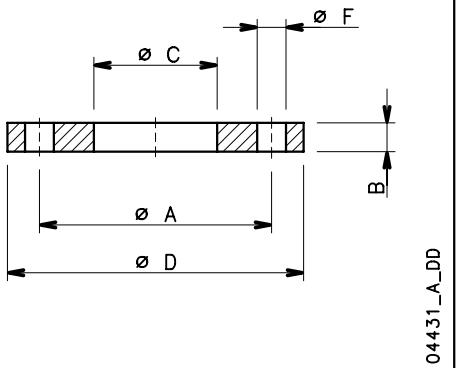
svi-ctf-tonde-f-en_a_td



SVI 33, 46, 66, 92 SERIES (S, N VERSIONS)
DIMENSIONS PF ROUND WELD-ON COUNTERFLANGES

PUMP TYPE	DN	ø C	DIMENSIONS (mm) ø A	B	ø D	HOLES ø F	N°	PN
SVI33	80	90	160	20	200	18	8	16
SVI46								
SVI66								
SVI92								
SVI33	80	90	160	24	200	18	8	25
SVI46								
SVI66								
SVI92								

svi-ctf-tonde-s-en_a_td



ROUND COUNTERFLANGES

- SVI 33, 46, 66, 92 S versions : Kit containing weld-on counterflange (PN16, PN25) or threaded one PN16 made of galvanized steel. Each Kit contains 1 counterflange plus bolts and gasket.

- SVI 33, 46, 66, 92 N versions : Kit containing weld-on counterflange (PN16, PN25) or threaded one PN16 made of AISI 316L stainless steel. Each Kit contains 1 counterflange plus bolts and gasket.

TIGHTENING TORQUE

PUMP TYPE	WELD-ON ROUND COUNTERFLANGES Ø	TIGHTENING TORQUE (Nm)	PN	THREADED COUNTERFLANGES Ø	TIGHTENING TORQUE (Nm)	PN
33SVI	M16	200	25	M16	100	16
46SVI	M16	200	25	M16	100	16
66SVI-92SVI	M20	200	25	M16	100	16

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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 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

G-at_npsh_b_sc

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

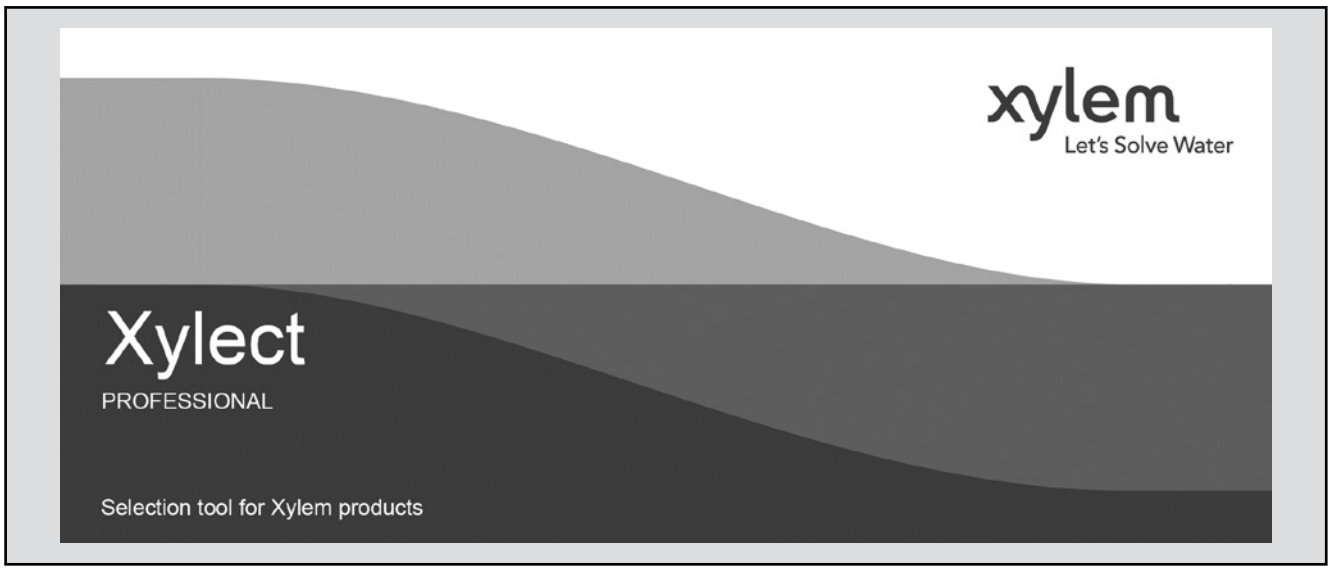
Cubic metre m^3	Litre L	Millilitre ml	Imperial gallon imp. gal.	U.S. gallon US gal.	Cubic foot ft^3
1,0000	1 000,0000	1×10^6	219,9694	264,1720	35,3147
0,0010	**1,0000**	1 000,0000	0,2200	0,2642	0,0353
1×10^{-6}	0,0010	**1,0000**	$2,2 \times 10^{-4}$	$2,642 \times 10^{-4}$	$3,53 \times 10^{-5}$
0,0045	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	

G-at_pp-en_b_sc

FURTHER PRODUCT SELECTION AND DOCUMENTATION
Xylect



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

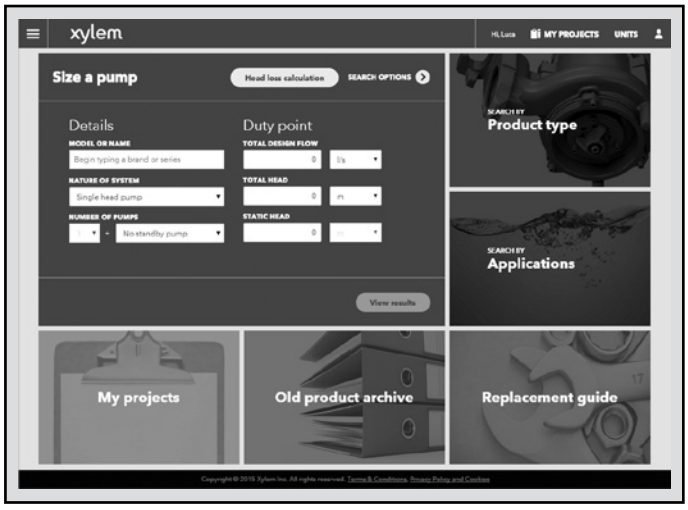
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect gives a detailed output:

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



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

FURTHER PRODUCT SELECTION AND DOCUMENTATION
Xylect

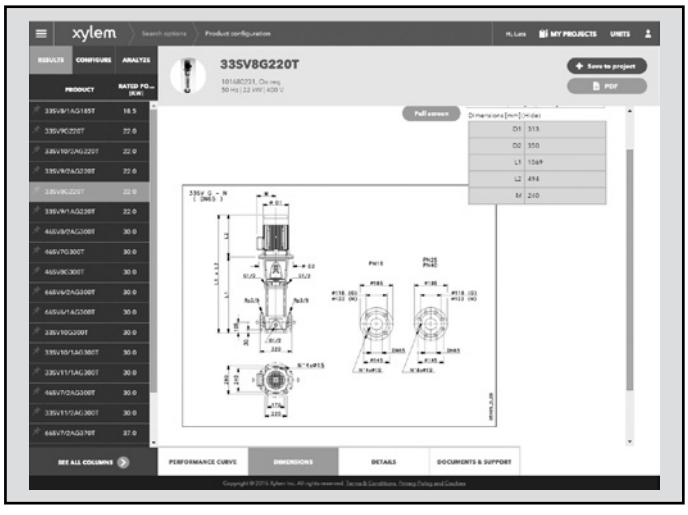
The detailed output makes it easy to select the optimal pump from the given alternatives.

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

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

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

For more information about Xylect please contact our sales network or visit www.xylect.com.



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.

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For information and technical support
Xylem Service Italia Srl

Via Dottor Vittorio Lombardi 14
36075 - Montecchio Maggiore (VI) - Italy
Tel. (+39) 0444 707111
Fax (+39) 0444 491043
www.xylem.com/lowara