HIGH PRESSURE (50/60 Hz)

e-SV™ SERIES - HIGH PRESSURE 50/60 Hz

Background and context

In the water treatment industry (Ultra or Nano filtration, reverse osmosis) in the washing and cleaning industry (High pressure washdown systems) or with boiler-feed application, high pressure is mandatory to ensure consistency in the performance of the systems. Therefore Lowara has developed e-SV™ High Pressure: a wide range of pumps and pump systems able to deliver robust and durable performances up to 45 bar.

Benefits of e-SV™ HIGH PRESSURE

Versatile range: e-SV™ High Pressure is available in two different configurations: single pump solution or tandem pump solution (two pumps in series). If the inlet pressure value is already high, Lowara delivers a single pump able to withstand the high inlet pressure and deliver up to 45 bar pressure at the outlet. With applications where the high pressure has to be delivered starting from atmospheric pressure in the inlet, Lowara delivers the tandem solution able to deliver up to 45 bar pressure at the outlet of the system.

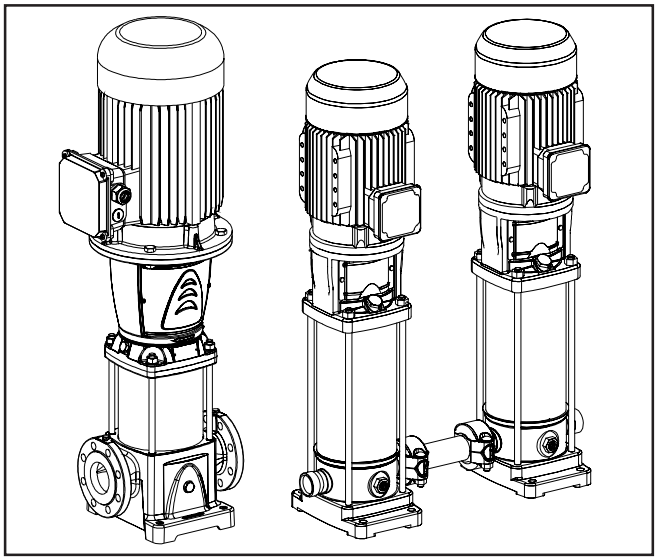
Long lasting performances: e-SV™ High Pressure benefits of a particular design of the sleeve to withstand the internal pressure without any limitation in the inlet pressure but with maximum 45 bar measured at the outlet. The specific balanced mechanical seal and the balanced design of the impeller and the hard material intermediate bush bearing allows e-SV™ withstanding up to 45 bar without stressing the motor and the pump components, with a direct consequence on the reduction of the life cycle cost.

Easy installation and maintenance: e-SV™ High Pressure in tandem system is composed of two identical standard e-SV™ High Pressure pumps making replacement easy and cost-effective. e-SV™ High Pressure in tandem has to be ordered as two single e-SV™ High Pressure pumps together with the specific accessories for the installation (see specific accessories section).

Code identification

e-SV™ High Pressure design is identified with a "**P**" in the product codification of the whole e-SV™ range.

Example: 3SV13**P**015T
P = High Pressure version.



Special features / product benefits

-**Double sleeve design** to withstand high pressure up to 45 bar.
- **Balanced standard mechanical seal** (EN12756) on all models. **Easy to replace**, **without removing the motor** from 5,5 kW.
- **Hard material intermediate bush bearing** (Tungsten Carbide) to improve lifetime and capacity of working in extreme conditions, available on all sizes.
- **Balanced impeller design** to reduce axial thrust for longer standard motor bearing life.
- Wide range of size to cover all requested duty points: from 1SV to 125SV.
- **IE2 or IE3 standard motors**, 3-phase, 2-poles from 0,75 kW to 55 kW with blocked bearing **to support maximum thrust without limiting inlet pressure.**
- **i-ALERT™ device** to reduce life cycle costs by increasing Mean time between Failures (MTBF).

Special configurations

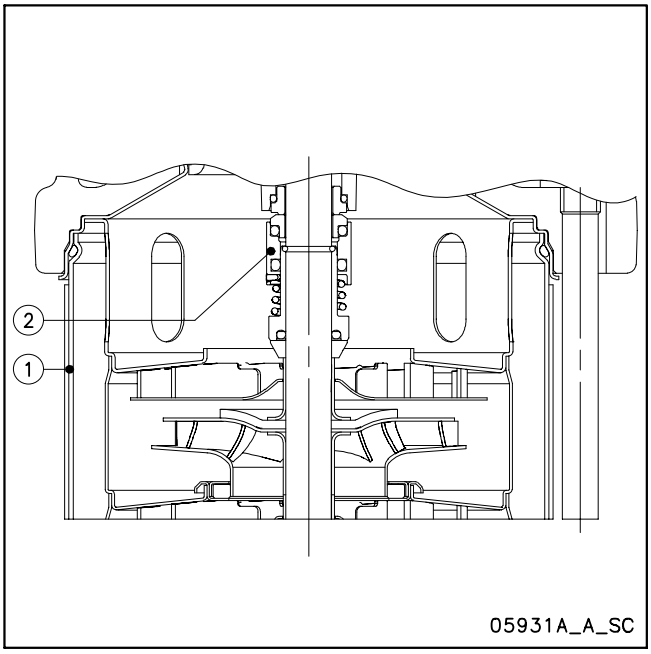
e-SV™ High Pressure offers a wide range of configurations:
- Materials used: see the Materials section.
- Options for mechanical seals and gaskets: see the mechanical seals and gaskets section.
- Options for motors and configuration: see the motors section.
- HYDROVAR™ system included: see the e-SVH section (e-SV™ with HYDROVAR™).

e-SV™ SERIES - HIGH PRESSURE 50/60 Hz

Technical characteristics - Design

1: Double sleeve design for optimized resistance to pressure up to 45 bar.

2: Balanced mechanical seal to withstand high pressure.



Operating characteristics for single pump

For the hydraulic performances of the single pump, please refer to the standard catalogue of e-SV™.

TECHNICAL CHARACTERISTICS

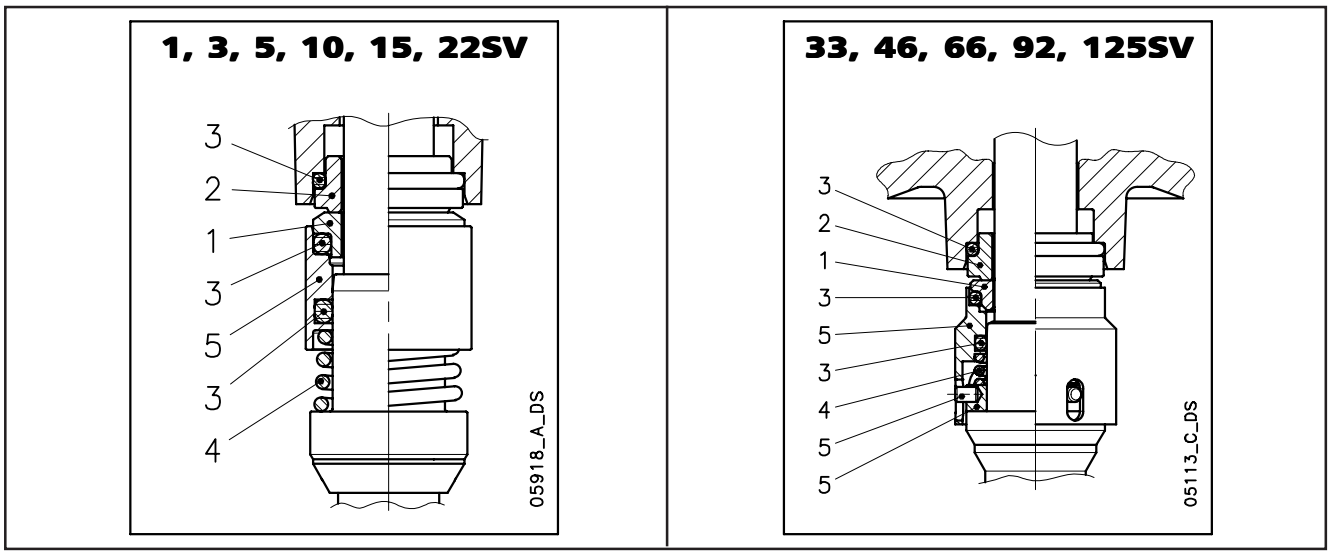
P VERSIONS - 50 Hz	1SV	3SV	5SV	10SV	15SV	22SV	33SV	46SV	66SV	92SV	125SV
Max efficiency flow (m³/h)	1,7	3	5,5	10,5	16,5	20,5	31	43	72	90	120
Flow range (m³/h)	0,7÷2,4	1,2÷4,4	2,4÷8,5	5÷14	8÷24	11÷29	15÷40	22÷60	30÷85	45÷120	60÷160
Maximum head (m)	450	440	450	450	450	430	450	450	450	430	370
PN (bar)	45										
Motor power (kW)	0,37÷2,2	0,37÷3	0,37÷5,5	0,75÷11	1,1÷15	1,1÷18,5	2,2÷30	3÷45	4÷45	5,5÷45	7,5÷55
Max η (%) of pump	50	60	70	71	72	73	77	79	78	80	78
Standard temperature of pumped liquid (°C)	-30 +120										
Standard ambient temp. (°C)	-15 +40										
Inlet min. pressure (bar)	No minimum inlet pressure required with Lowara motors										
Material execution	No variation according to e-SV N version (AISI 316)										
Mechanical seal configuration	Balanced mechanical seal. Standard materials: Silicon Carbide / Carbon / EPDM										
Flange configuration	Victaulic® coupling (1, 3, 5, 10, 15, 22SV versions)										
	Round flange (33, 46, 66, 92, 125SV versions)										

svp-50-en_b_tg

P VERSIONS - 60 Hz	1SV	3SV	5SV	10SV	15SV	22SV	33SV	46SV	66SV	92SV	125SV
Max efficiency flow (m³/h)	2	3,6	7	12,4	21,8	24,5	40	50	87	108	144
Flow range (m³/h)	0,8÷2,8	1,4÷5,2	3÷10	6÷17	10÷29	13÷34	18÷48	27÷72	36÷102	54÷144	60÷160
Maximum head (m)	450	440	450	450	450	450	450	450	430	330	360
PN (bar)	45										
Motor power (kW)	0,37÷3	0,37÷4	0,55÷5,5	0,75÷11	1,5÷18,5	2,2÷18,5	3÷37	5,5÷45	7,5÷45	11÷45	15÷55
Max η (%) of pump	50	60	70	71	72	73	77	79	78	80	78
Standard temperature of pumped liquid (°C)	-30 +120										
Standard ambient temp. (°C)	-15 +40										
Inlet min. pressure (bar)	No minimum inlet pressure required with Lowara motors										
Material execution	No variation according to e-SV N version (AISI 316)										
Mechanical seal configuration	Balanced mechanical seal. Standard materials: Silicon Carbide / Carbon / EPDM										
Flange configuration	Victaulic® coupling (1, 3, 5, 10, 15, 22SV versions)										
	Round flange (33, 46, 66, 92, 125SV versions)										

svp-60-en_b_tg

e-SV™ SERIES - HIGH PRESSURE BALANCED MECHANICAL SEALS, ACCORDING TO EN 12756



LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
Q_1 : Silicon Carbide	E : EPDM	G : AISI 316
B : Resin impregnated carbon	V : FPM	

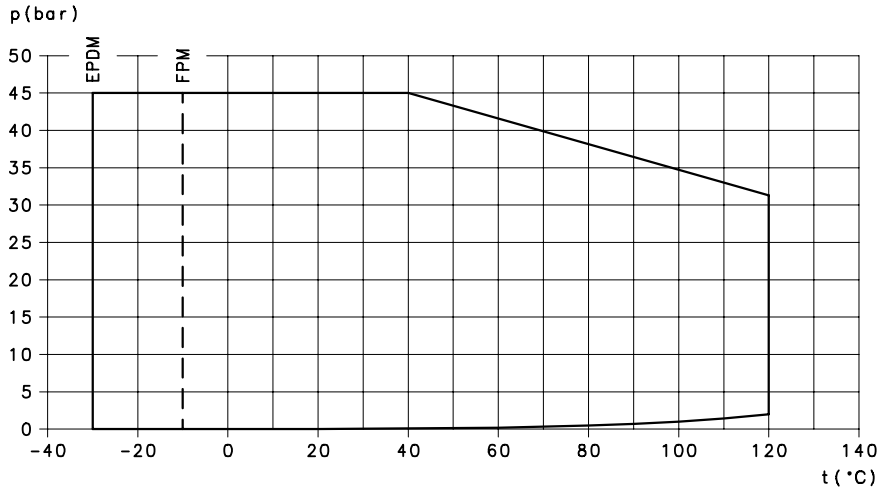
1-125sv-p_ten-mec-en_a_tm

TYPE OF SEAL

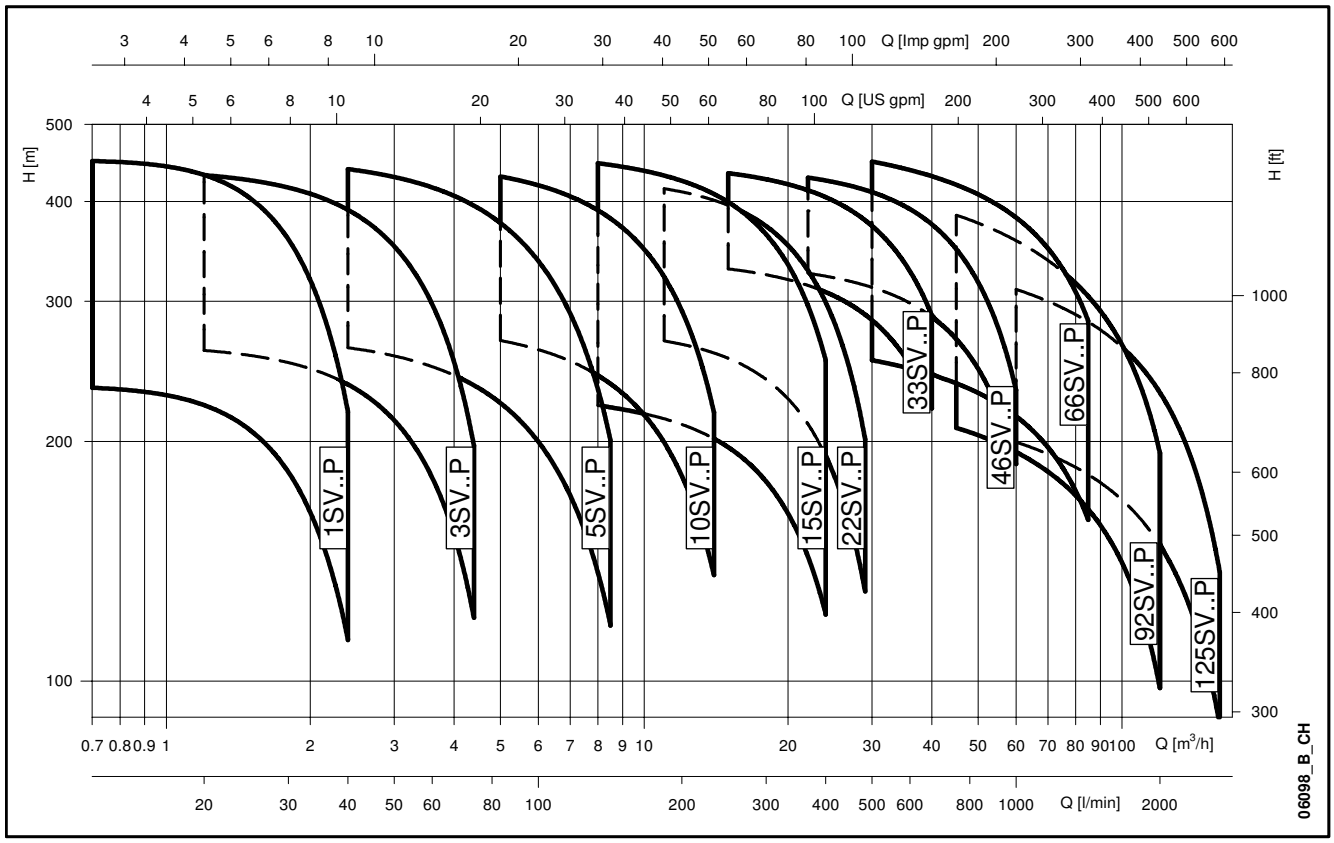
TYPE	POSITION 1 ROTATING PART	2 STATIONARY PART	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	TEMPERATURE (°C)
STANDARD MECHANICAL SEAL						
Q_1 B E G G	Q_1	B	E	G	G	-30 +120
OTHER TYPES OF AVAILABLE MECHANICAL SEAL						
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-30 +120
Q_1 B V G G	Q_1	B	V	G	G	-10 +120
Q_1 Q_1 V G G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

1-125sv-p_tipi-ten-mec-en_a_tc

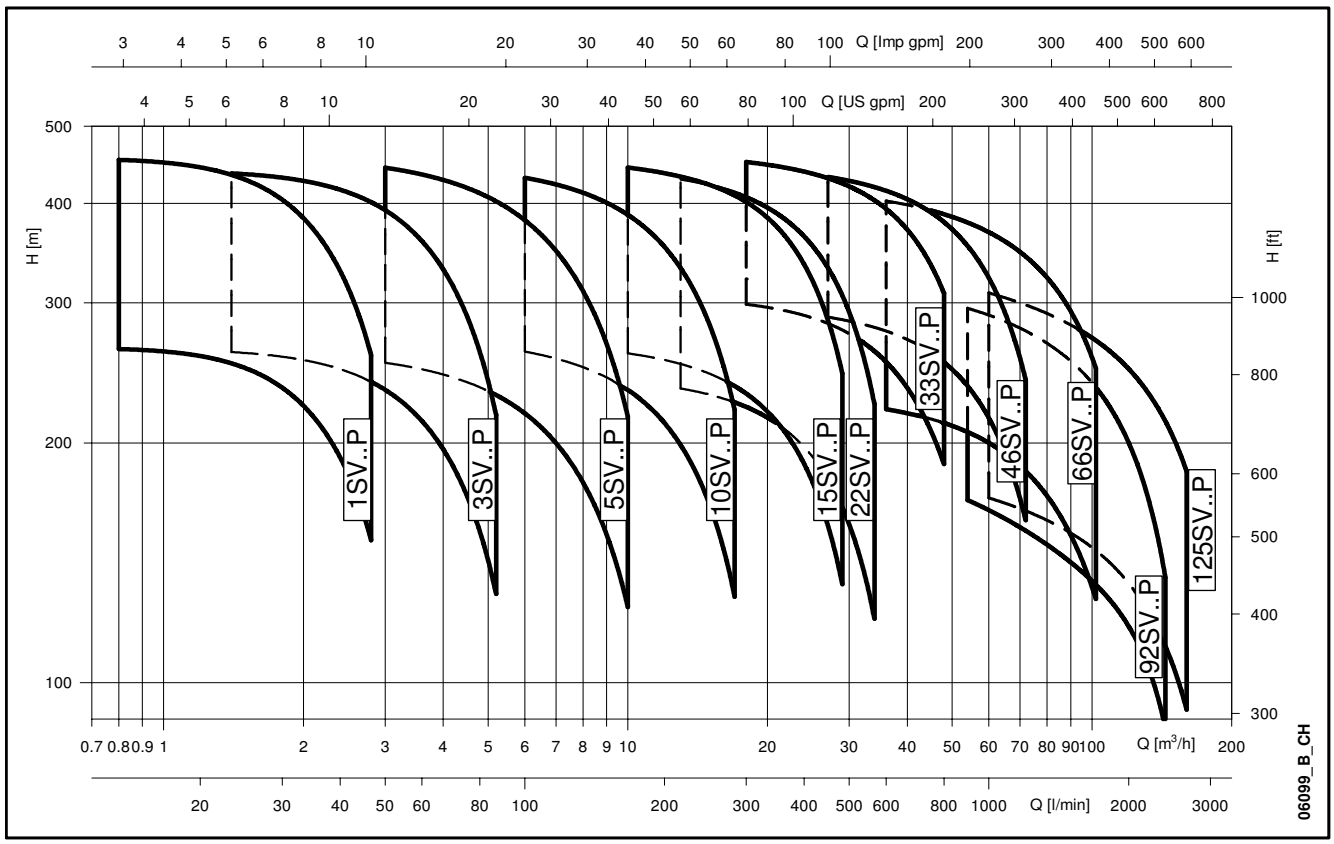
PRESSURE/TEMPERATURE APPLICATION LIMITS FOR COMPLETE PUMP (APPLICABLE WITH ANY OF THE SEALS LISTED ABOVE)



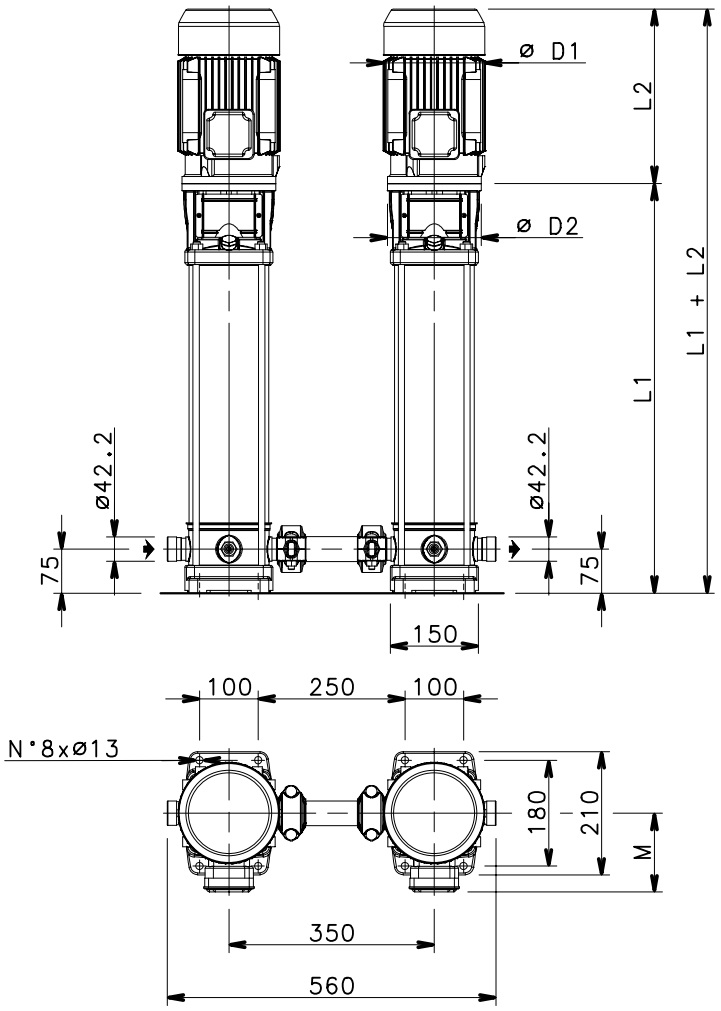
SV..P SERIES - HIGH PRESSURE
HYDRAULIC PERFORMANCE RANGE AT 50 Hz



SV..P SERIES - HIGH PRESSURE
HYDRAULIC PERFORMANCE RANGE AT 60 Hz



1SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



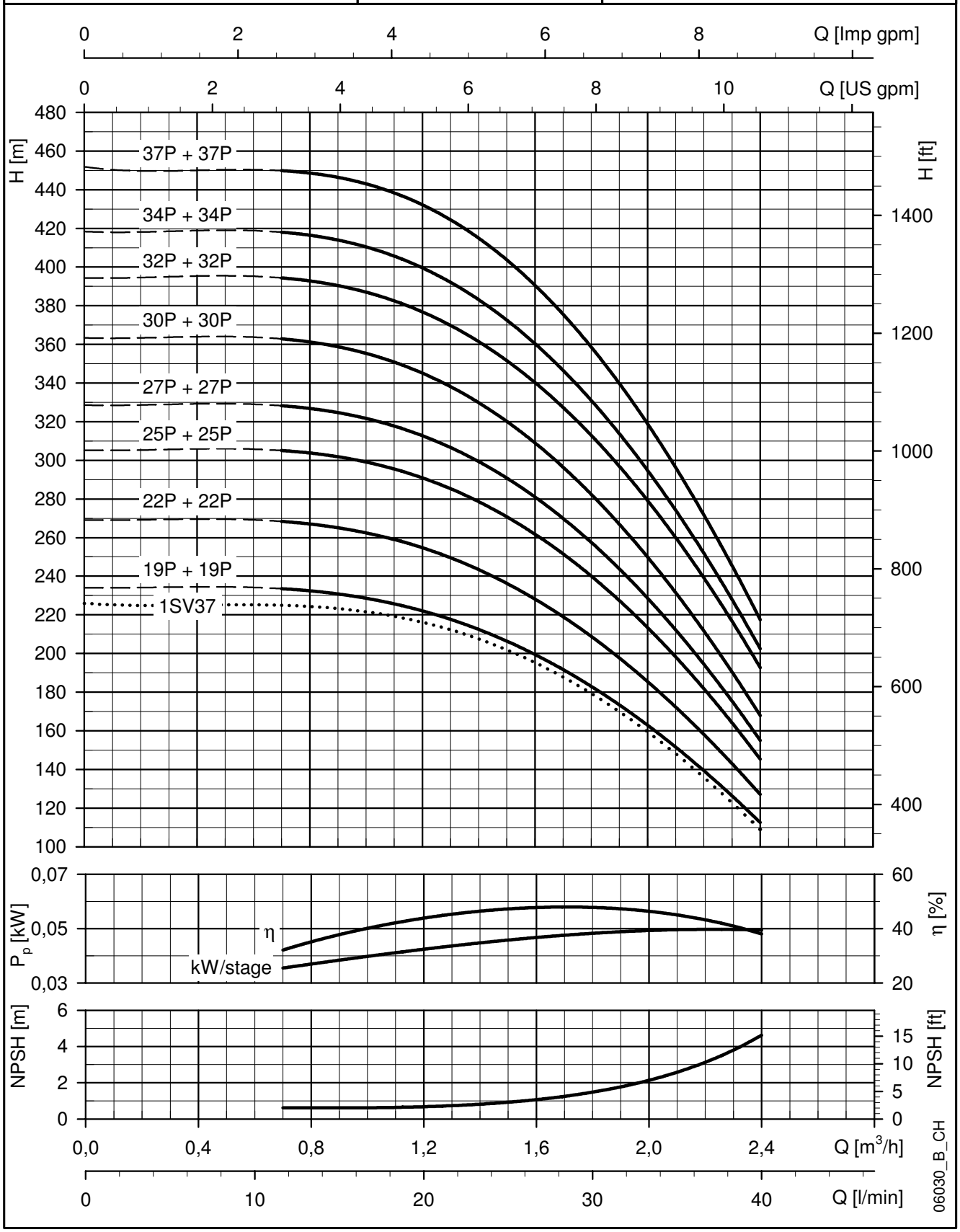
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
1SV19P../D	1,1	80	628	263	129	155	120	17,5	29,1
1SV22P../D	1,1	80	688	263	129	155	120	19	30,6
1SV25P../D	1,5	90	758	263	129	155	140	21,2	34,2
1SV27P../D	1,5	90	798	263	129	155	140	22,2	35,2
1SV30P../D	1,5	90	858	263	129	155	140	23,6	36,6
1SV32P..	2,2	90	898	298	134	174	140	24,6	42,8
1SV34P..	2,2	90	938	298	134	174	140	25,6	43,8
1SV37P..	2,2	90	998	298	134	174	140	27	45,2

Dimensions and weights are related to one electric pump.

1sv-p-2p50-en_b_td

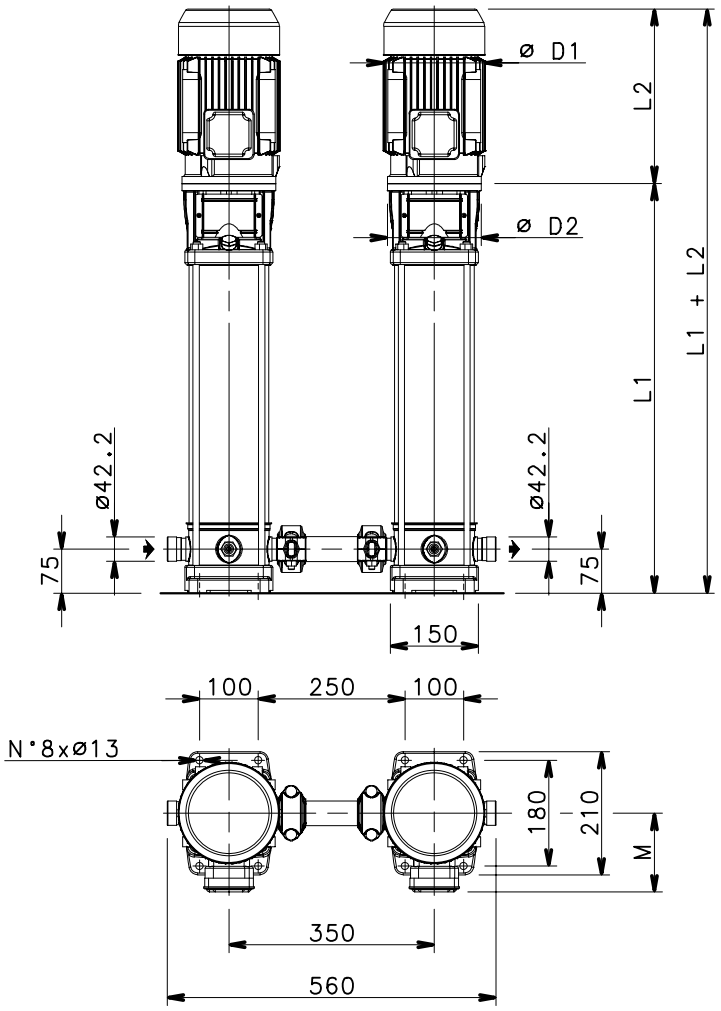
1SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

1SV..P	~ 2900 [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.

3SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



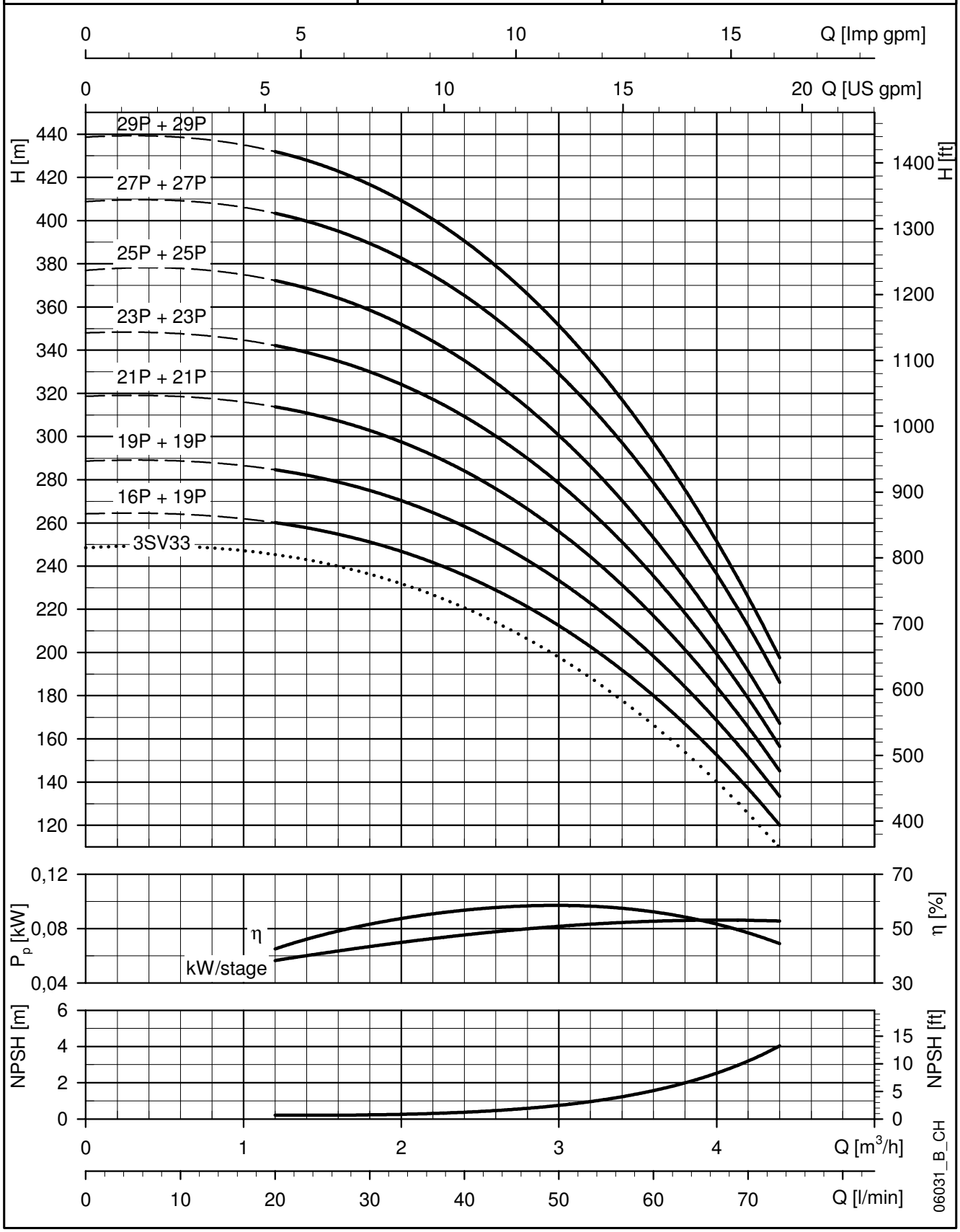
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
3SV16P../D	1,5	90	578	263	129	155	140	17	
3SV19P..	2,2	90	638	298	134	174	140	18,4	36,6
3SV21P..	2,2	90	678	298	134	174	140	19,4	37,6
3SV23P..	2,2	90	718	298	134	174	140	20,3	38,5
3SV25P..	2,2	90	758	298	134	174	140	21,4	39,6
3SV27P..	3	100	808	298	134	174	160	23,4	44,4
3SV29P..	3	100	848	298	134	174	160	24,3	45,3

Dimensions and weights are related to one electric pump.

3sv-p-2p50-en_c_td

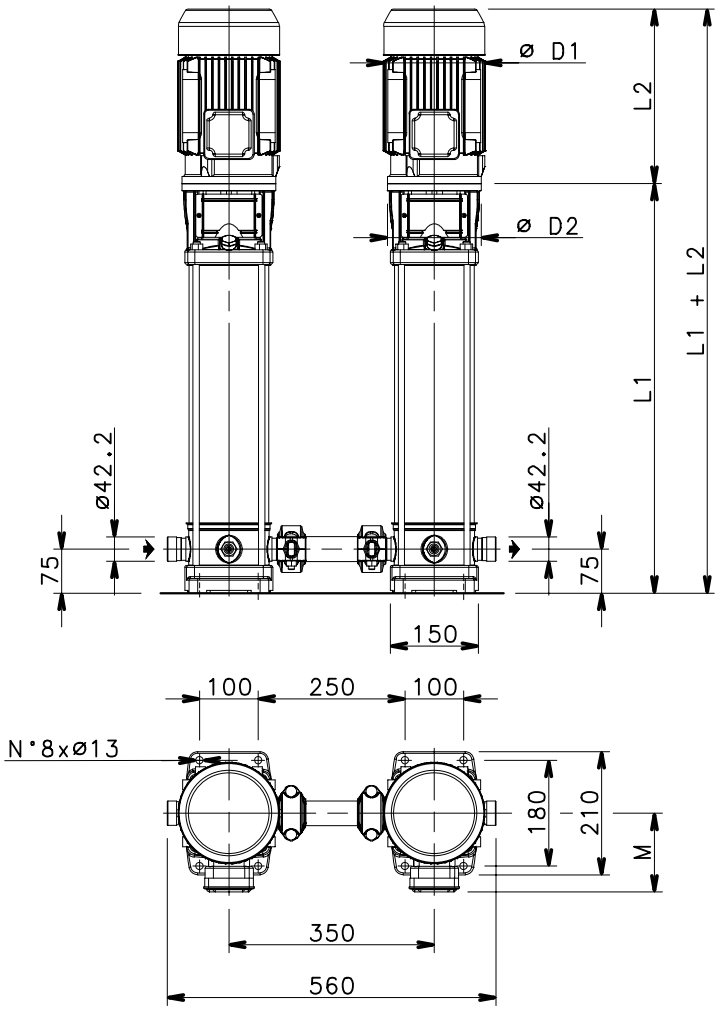
3SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

3SV..P	~ 2900 [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.

5SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



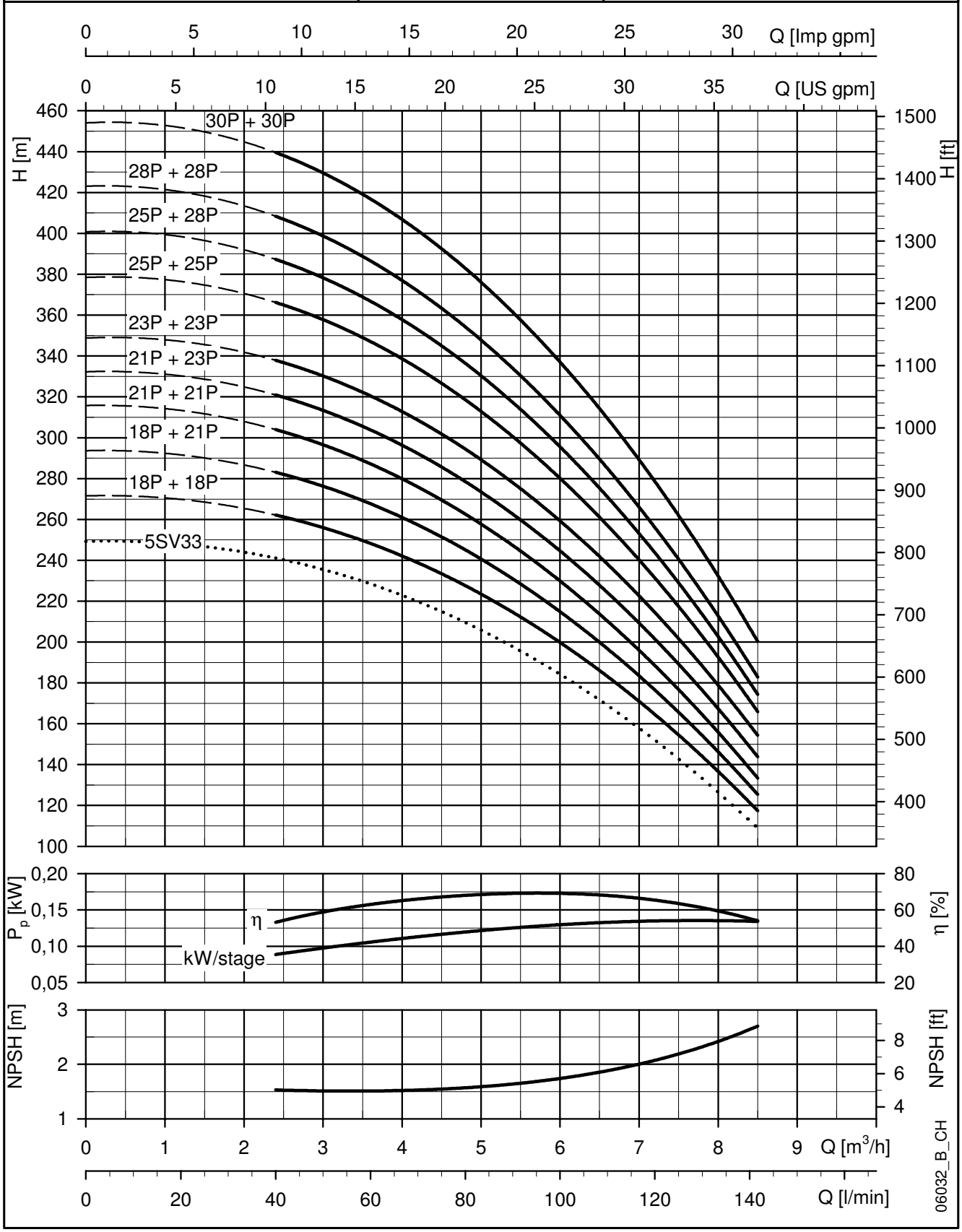
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
5SV18P..	3	100	723	298	134	174	160	20,4	41,4
5SV21P..	3	100	798	298	134	174	160	22,1	43,1
5SV23P..	4	112	848	319	154	197	160	23,3	49,7
5SV25P..	4	112	898	319	154	197	160	24,4	50,8
5SV28P..	4	112	973	319	154	197	160	26,4	52,8
5SV30P..	5,5	132	1043	375	168	214	300	31,7	69,3

Dimensions and weights are related to one electric pump.

5sv-p-2p50-en_c_td

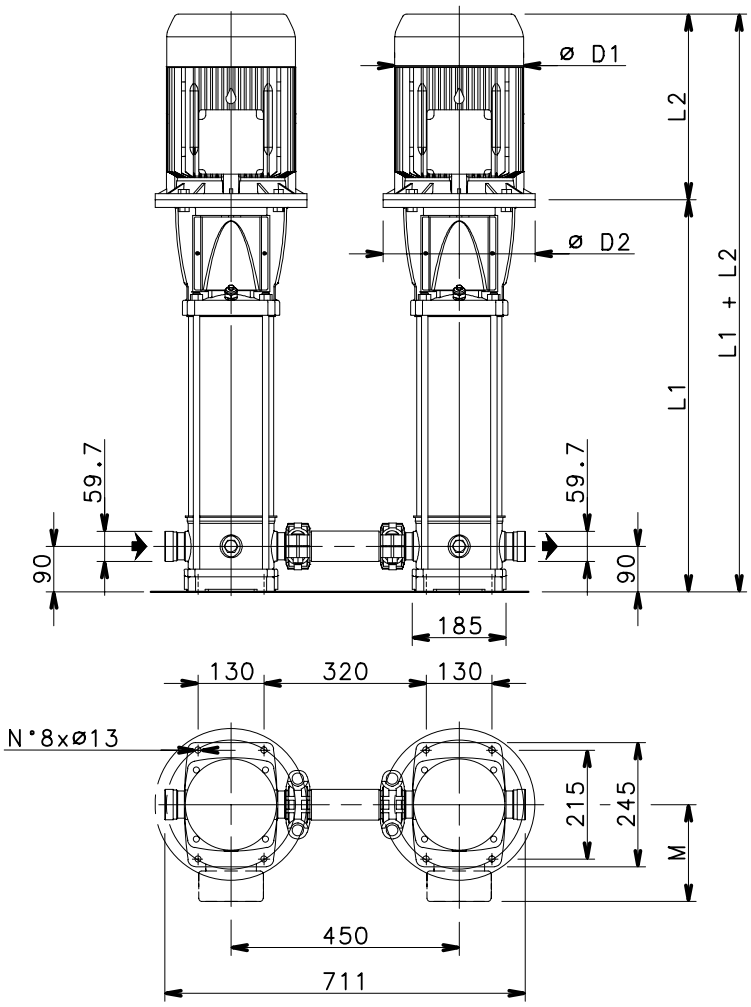
5SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

5SV..P	~ 2900 [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.

10SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



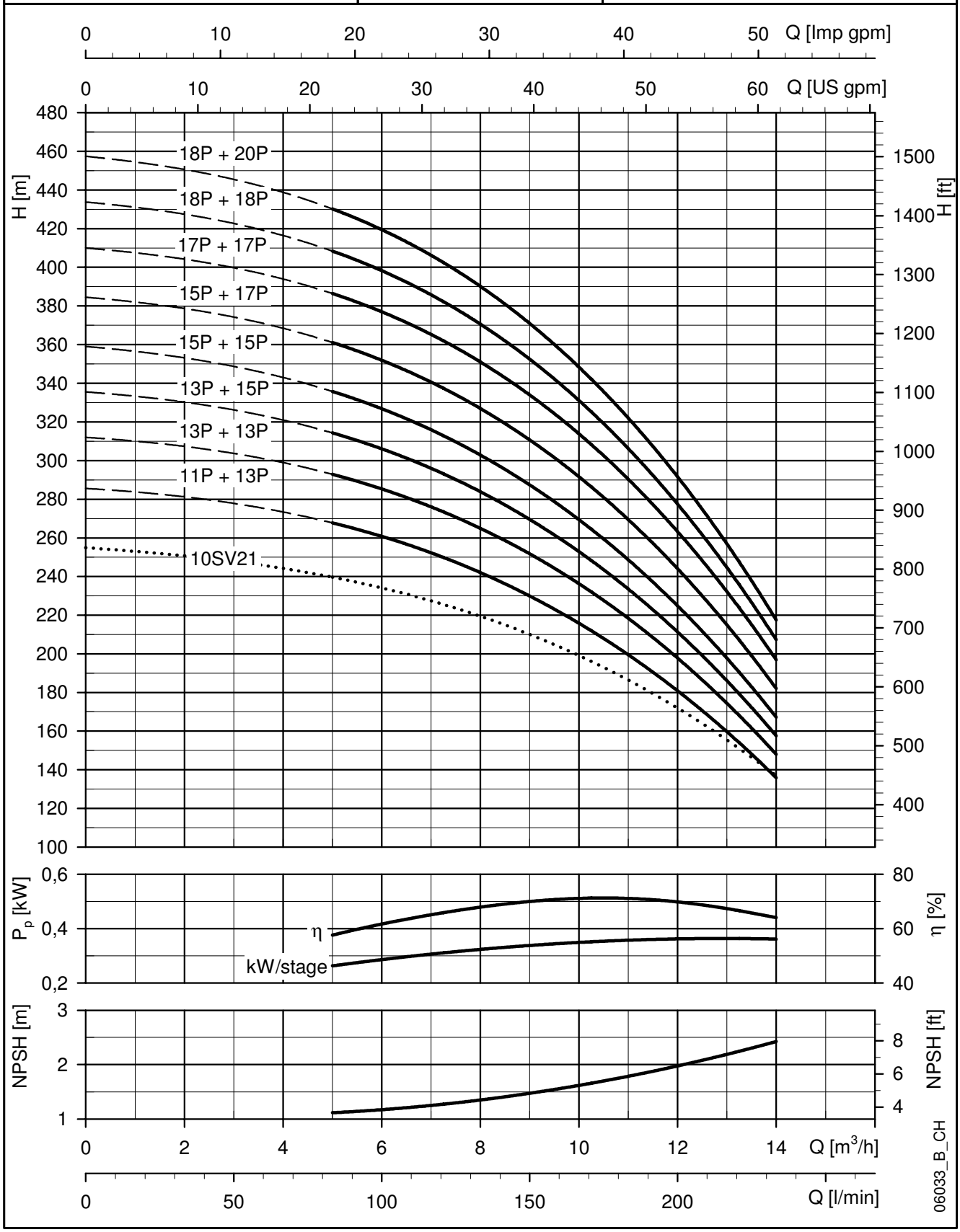
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
10SV11P..	4	112	675	319	154	197	160	27,5	54
10SV13P..	5,5	132	806	375	168	214	300	35,8	74
10SV15P..	5,5	132	870	375	168	214	300	38,1	76
10SV17P..	7,5	132	934	367	191	256	300	40,4	97
10SV18P..	7,5	132	966	367	191	256	300	41,5	98
10SV20P..	7,5	132	1030	367	191	256	300	43,8	100

Dimensions and weights are related to one electric pump.

10sv-p-2p50-en_c_td

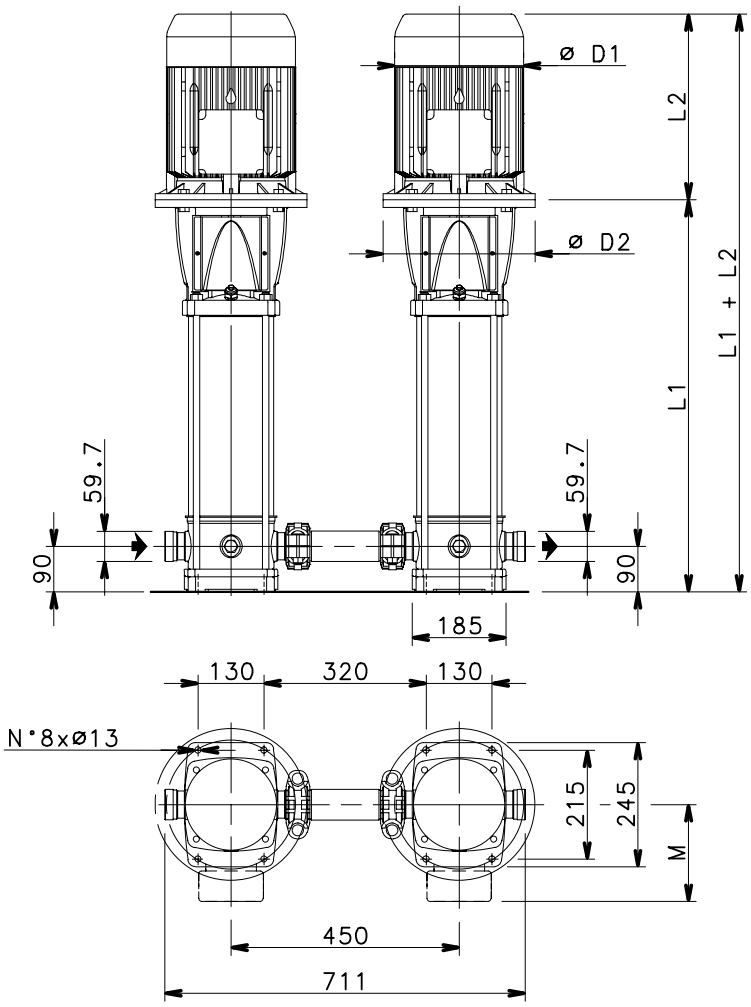
10SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

10SV..P	~ 2900 [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.

15SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



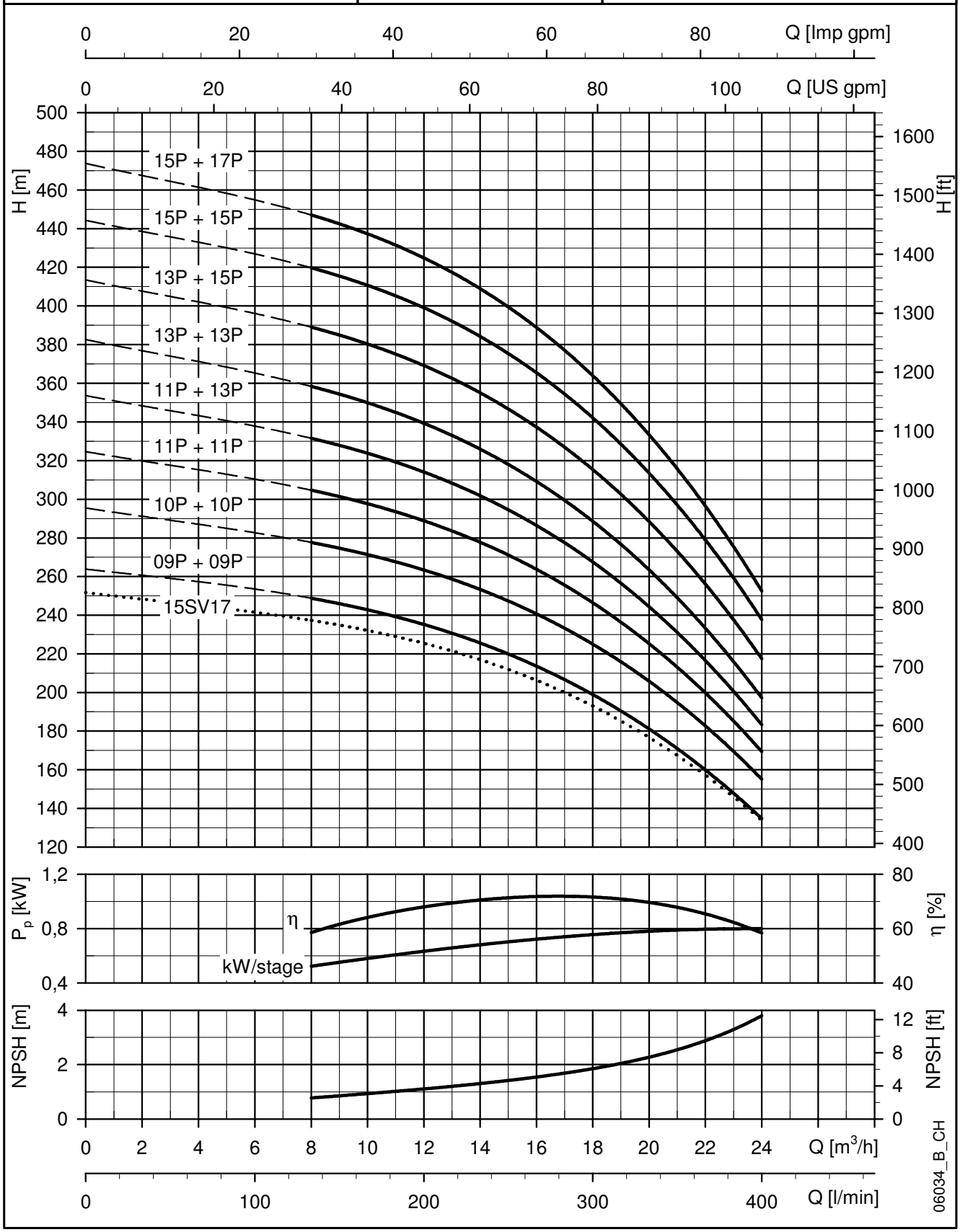
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
15SV09P..	7,5	132	822	367	191	256	300	35,6	92
15SV10P..	11	160	900	428	191	256	350	40,1	111
15SV11P..	11	160	948	428	191	256	350	41,7	113
15SV13P..	11	160	1044	428	191	256	350	45	116
15SV15P..	15	160	1140	494	240	313	350	48,4	151
15SV17P..	15	160	1236	494	240	313	350	52	154

Dimensions and weights are related to one electric pump.

15sv-p-2p50-en_c_td

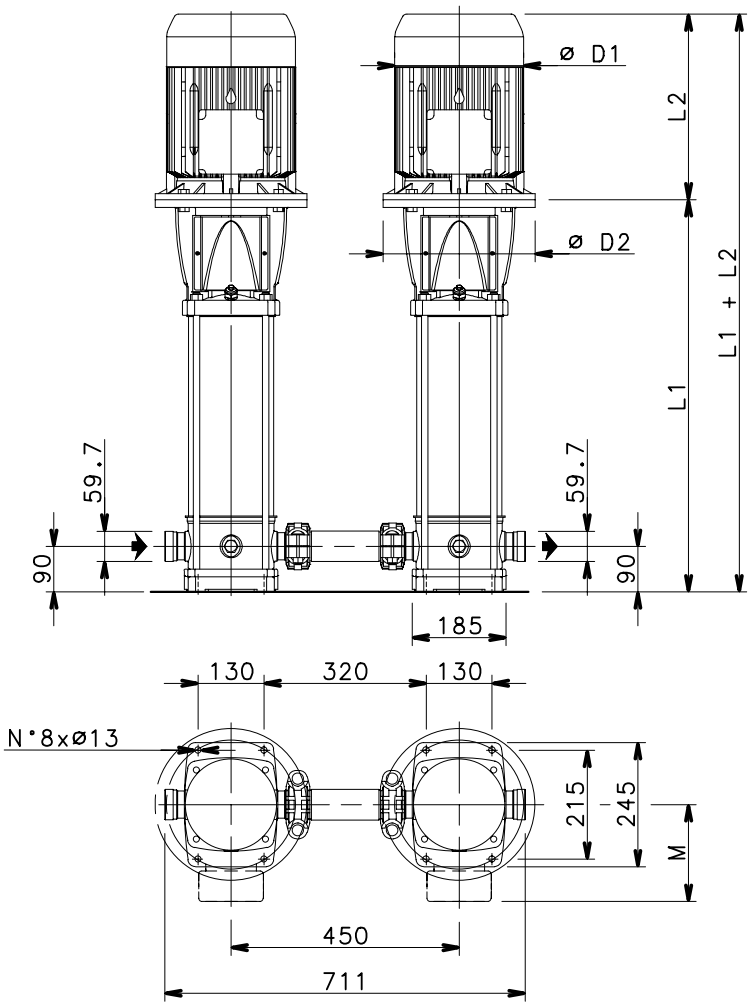
15SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

15SV..P	~ 2900 [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.

22SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



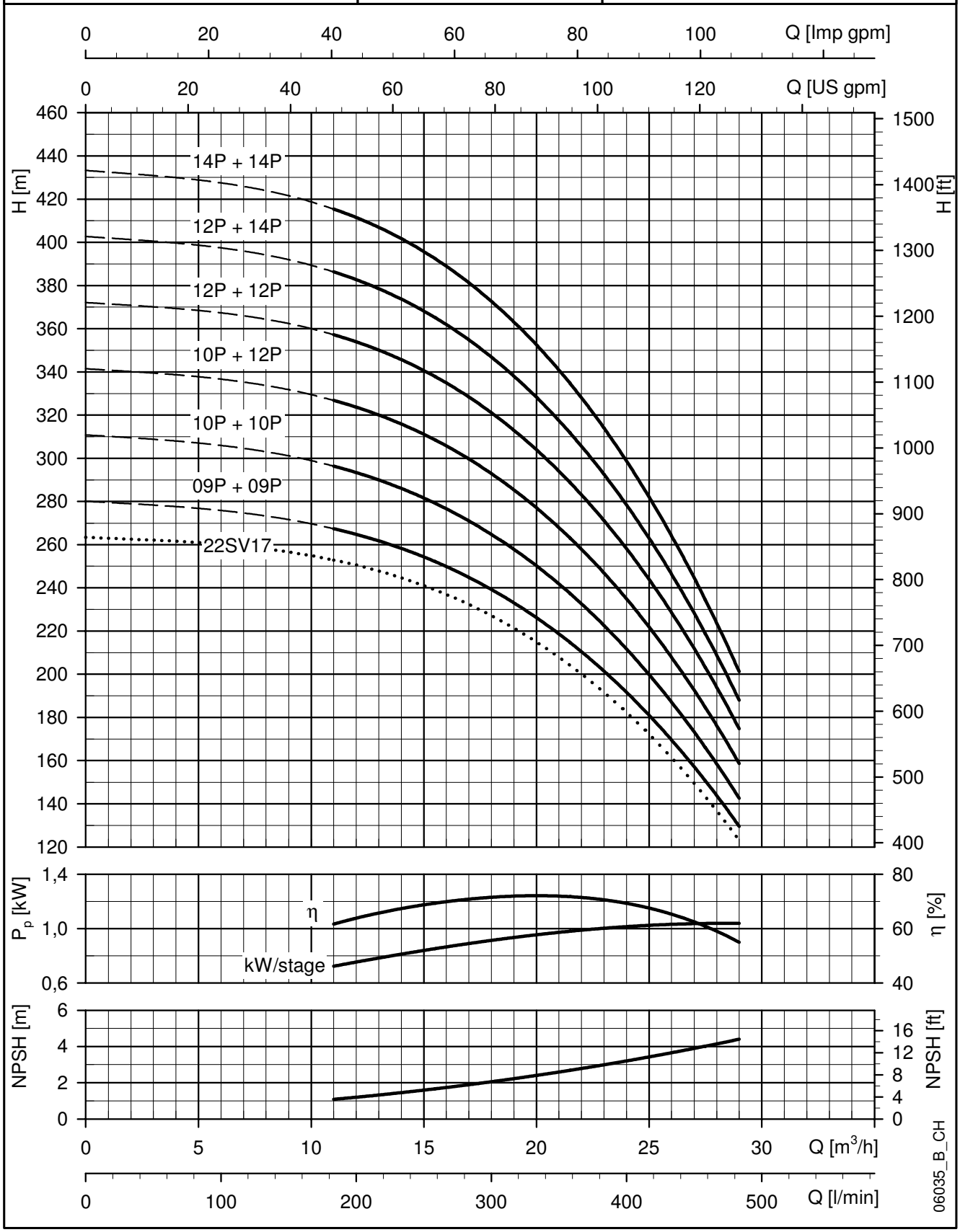
PUMP TYPE	MOTOR		DIMENSIONS (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
22SV09P..	11	160	852	428	191	256	350	37,2	108
22SV10P..	11	160	900	428	191	256	350	40	111
22SV12P..	15	160	996	494	240	313	350	42,2	145
22SV14P..	15	160	1092	494	240	313	350	45,5	148

Dimensions and weights are related to one electric pump.

22sv-p-2p50-en_b_td

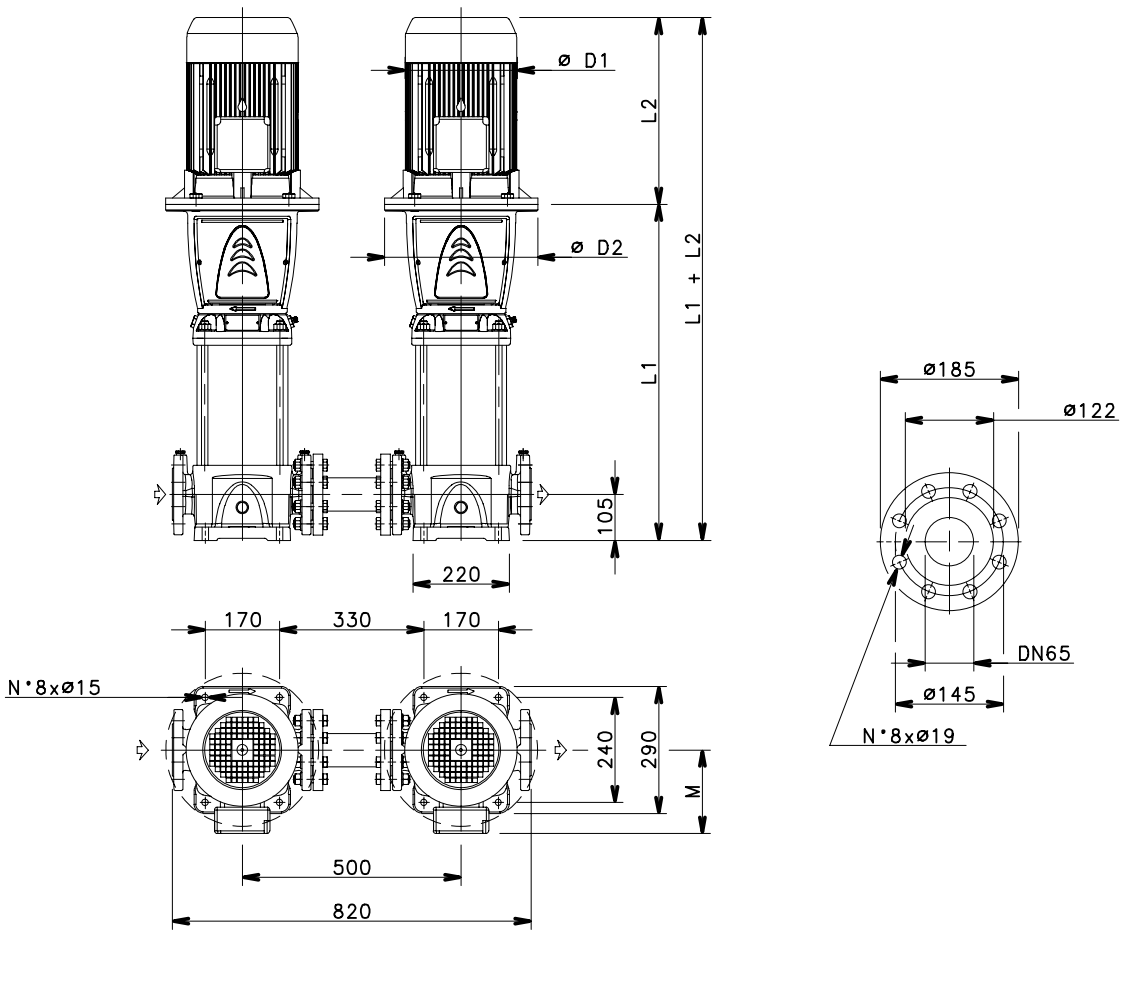
22SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

22SV..P	~ 2900 [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.

33SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



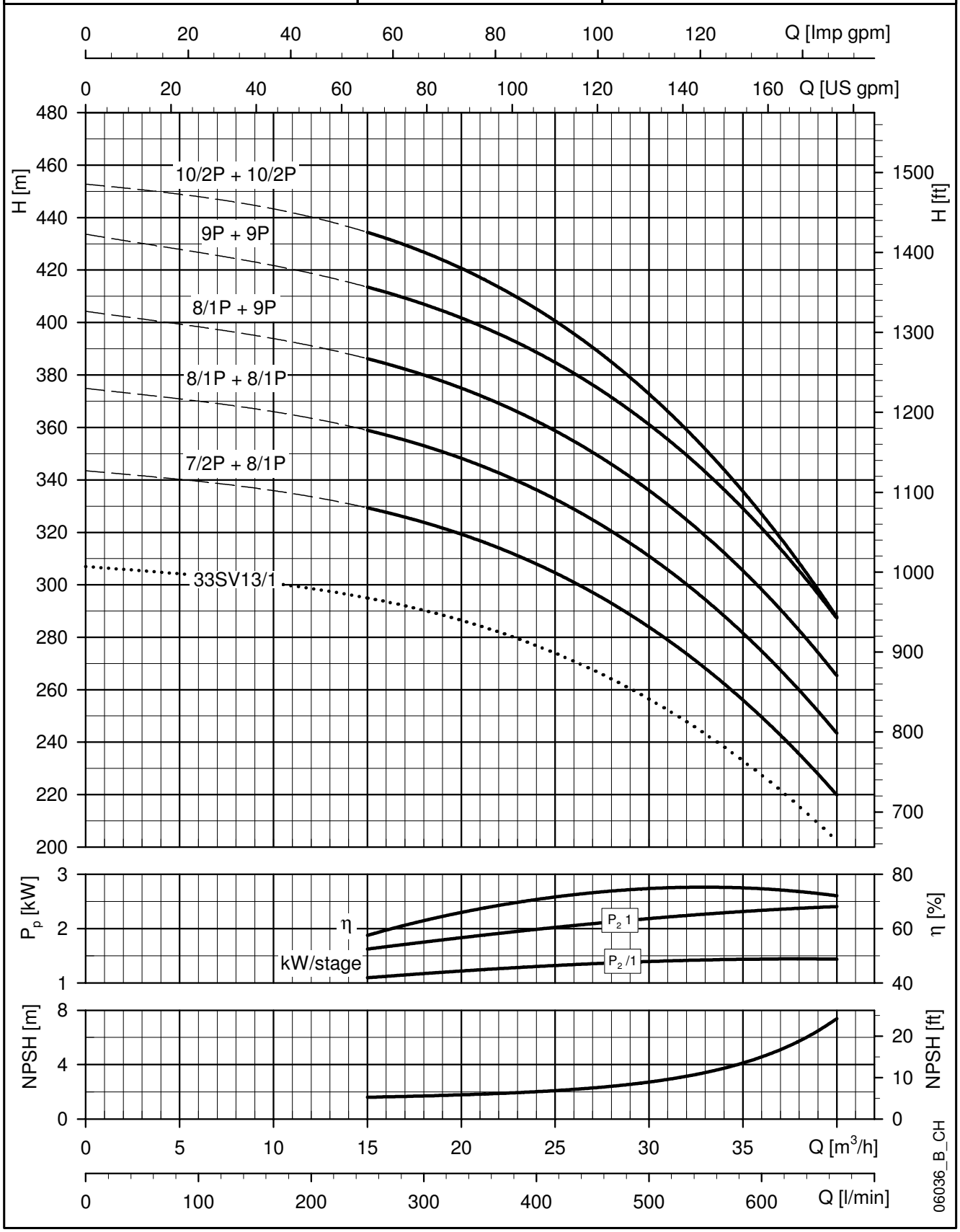
PUMP TYPE	MOTOR		DIMENSION (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
33SV7/2AP..	15	160	994	494	240	313	350	88	190
33SV8/1AP..	18,5	160	1069	494	240	313	350	93	204
33SV9P..	22	180	1144	494	240	313	350	98	219
33SV10/2AP..	22	180	1219	494	240	313	350	103	224

Dimensions and weights are related to one electric pump.

33sv-p-2p50-en_b_td

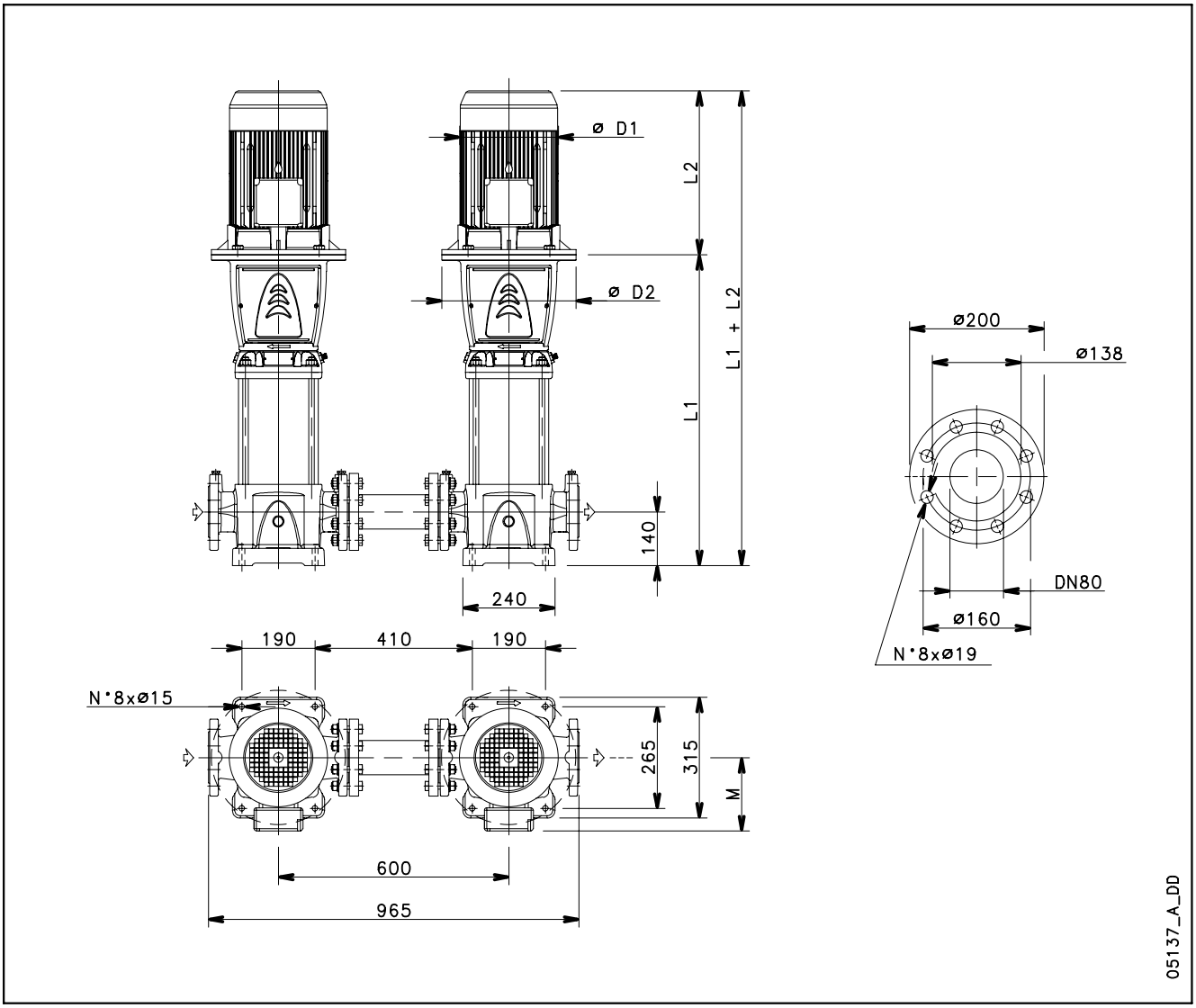
33SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

33SV..P	~ 2900 [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.

46SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



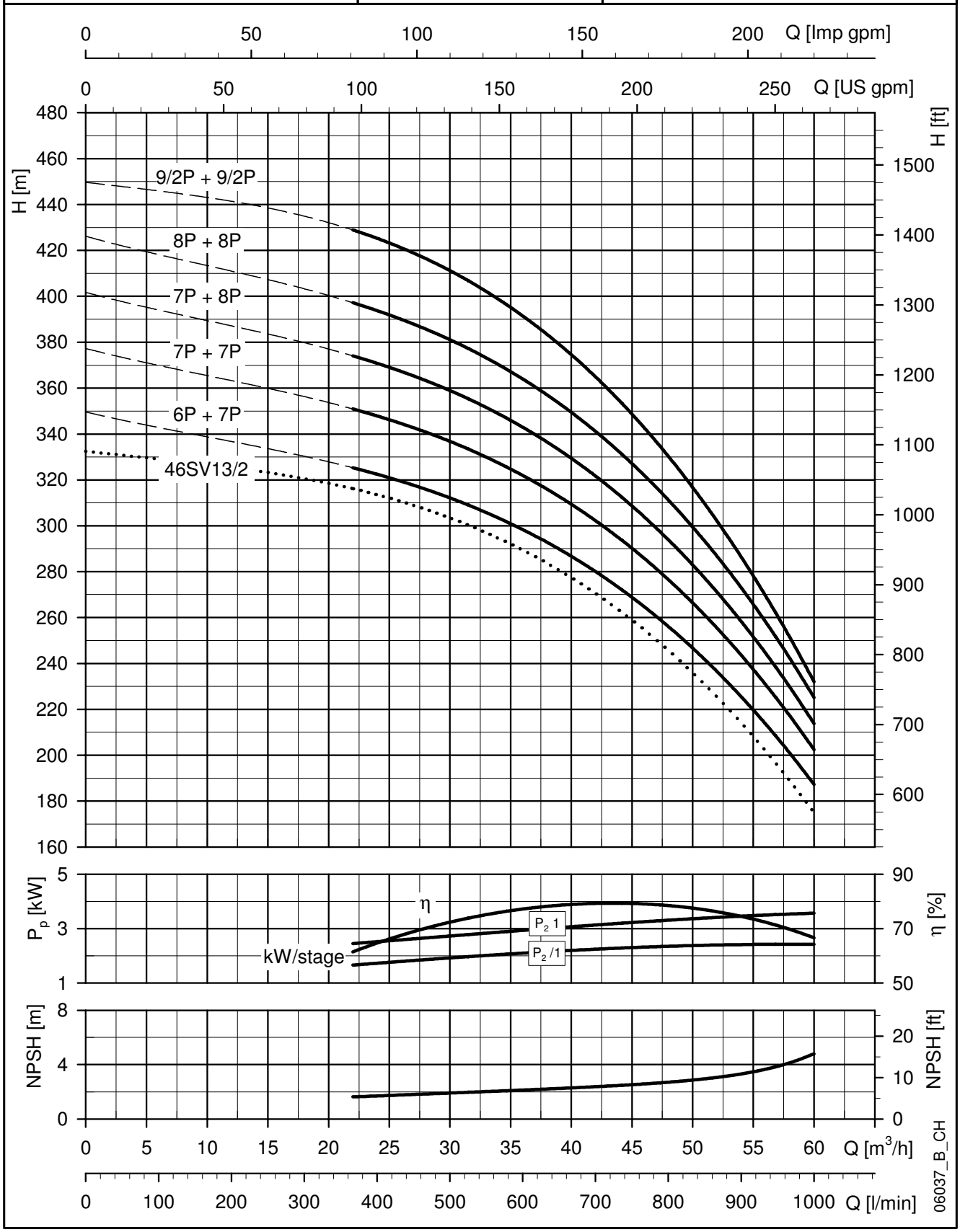
PUMP TYPE	MOTOR		DIMENSION (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
46SV6P..	22	180	959	494	240	313	350	91	212
46SV7P..	30	200	1034	657	317	402	400	101	327
46SV8P..	30	200	1109	657	317	402	400	106	332
46SV9/2AP..	30	200	1184	657	317	402	400	110	336

Dimensions and weights are related to one electric pump.

46sv-p-2p50-en_b_td

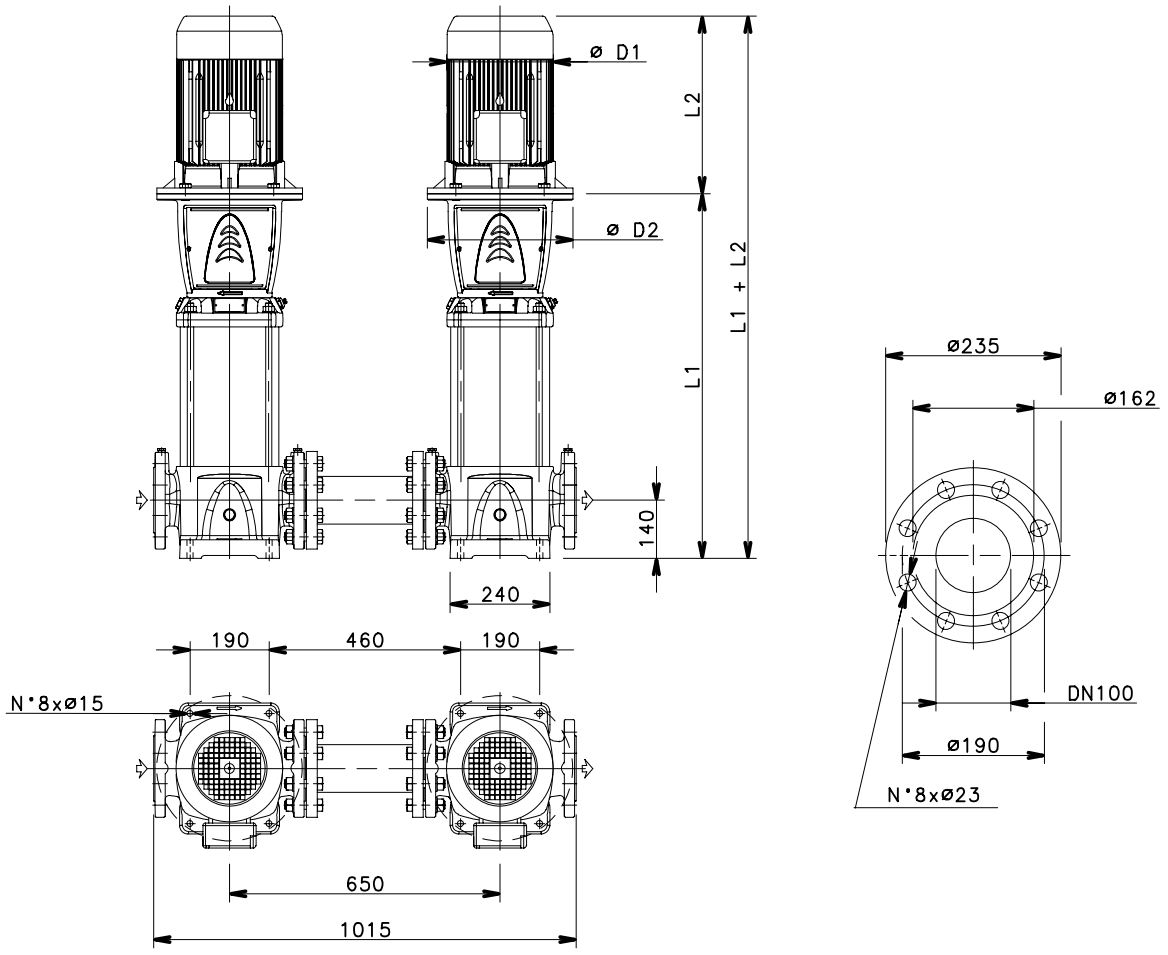
46SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

46SV..P	~ 2900 [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.

66SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



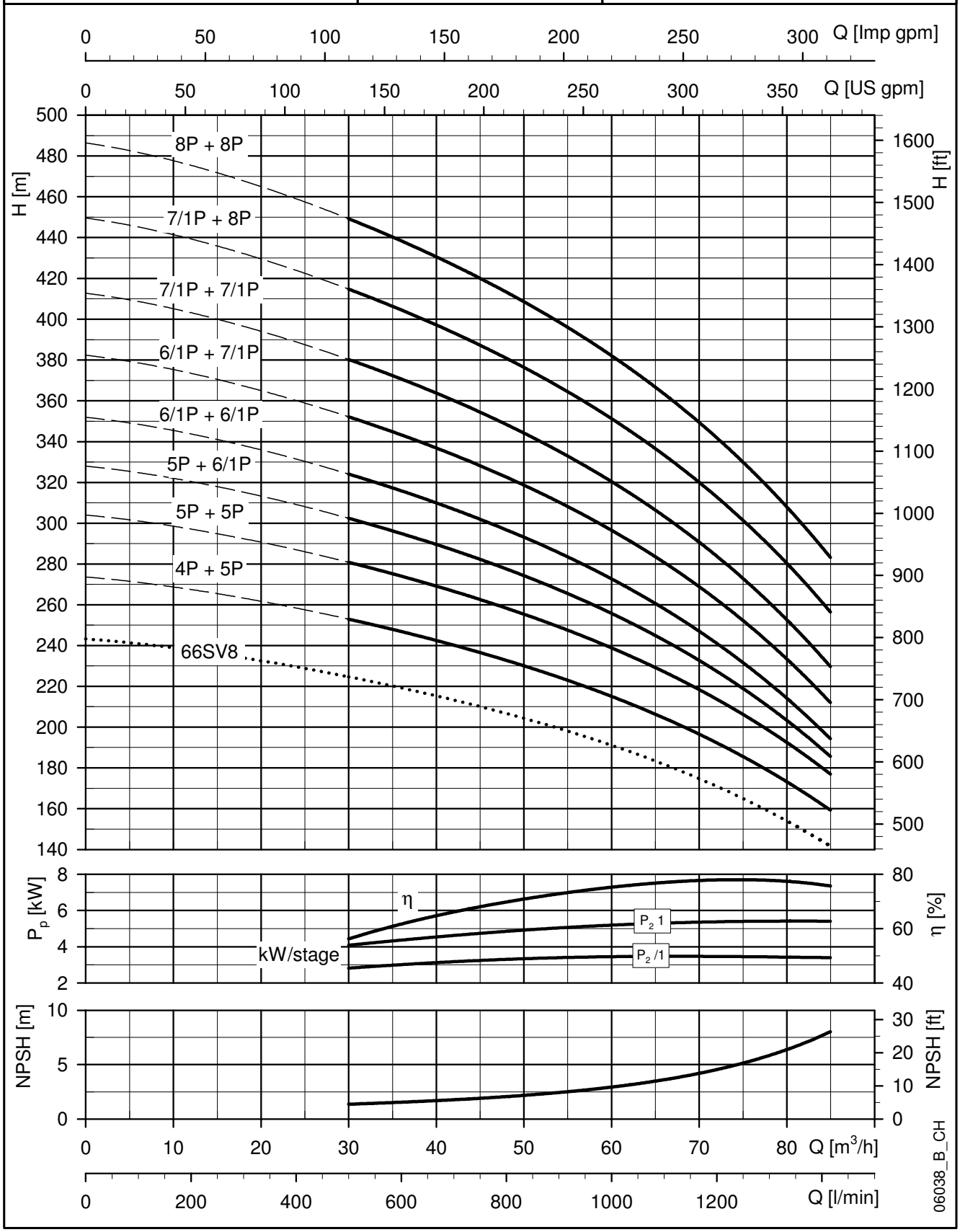
PUMP TYPE	MOTOR		DIMENSION (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
66SV4P..	22	180	879	494	240	313	350	97	218
66SV5P..	30	200	969	657	317	402	400	110	336
66SV6/1AP..	30	200	1059	657	317	402	400	119	345
66SV7/1AP..	37	200	1149	657	317	402	400	125	380
66SV8P..	45	225	1239	746	384	455	450	135	491

Dimensions and weights are related to one electric pump.

66sv-p-2p50-en_b_td

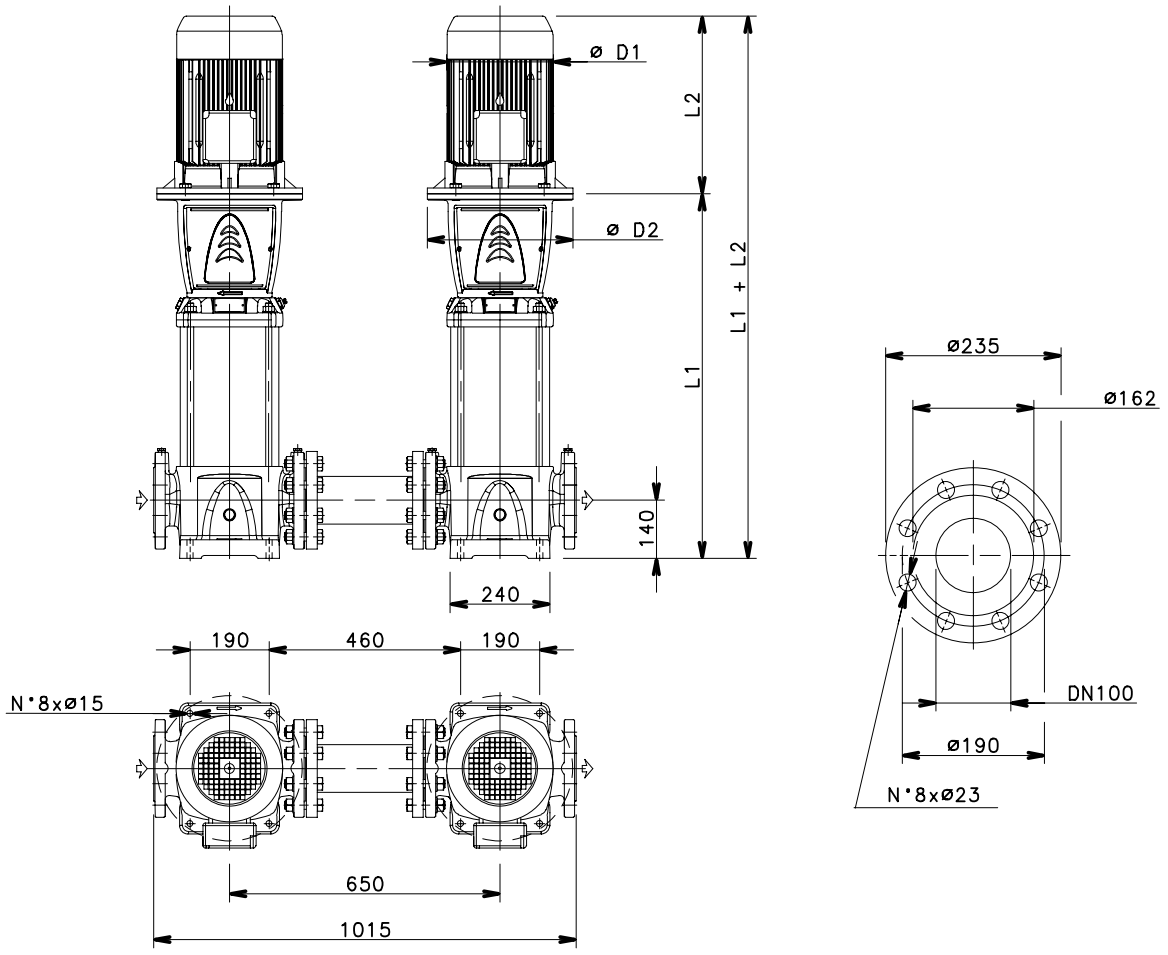
66SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

66SV..P	~ 2900 [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.

92SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



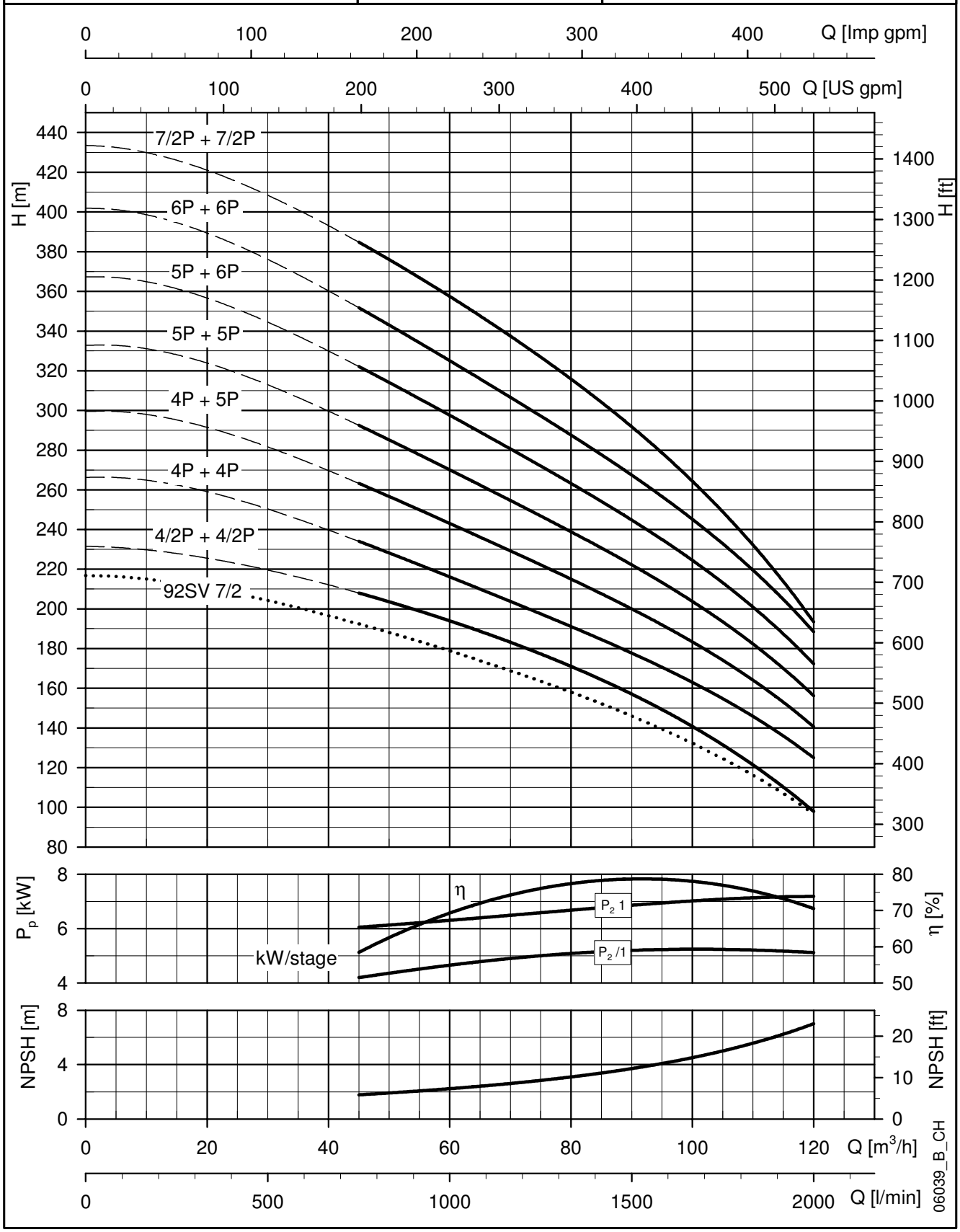
PUMP TYPE	MOTOR		DIMENSION (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
92SV4/2AP..	30	200	879	657	317	402	400	103	329
92SV4P..	30	200	879	657	317	402	400	103	329
92SV5P..	37	200	969	657	317	402	400	112	367
92SV6P..	45	225	1059	746	384	455	450	122	478
92SV7/2AP..	45	225	1149	746	384	455	450	128	484

Dimensions and weights are related to one electric pump.

92sv-p-2p50-en_b_td

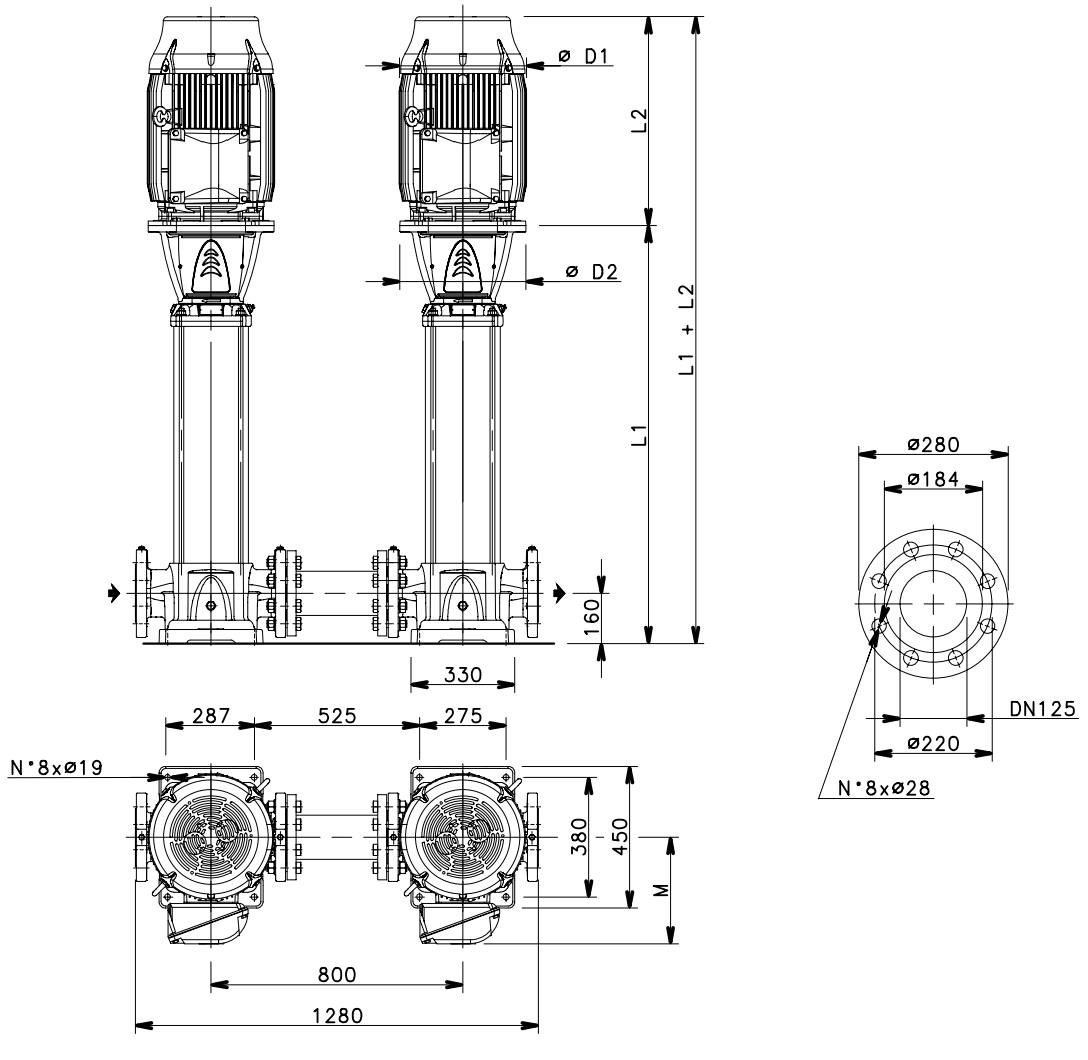
92SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

92SV..P	~ 2900 [rpm]	ISO 9906:2012 - Grade 3B



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

125SV..P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE



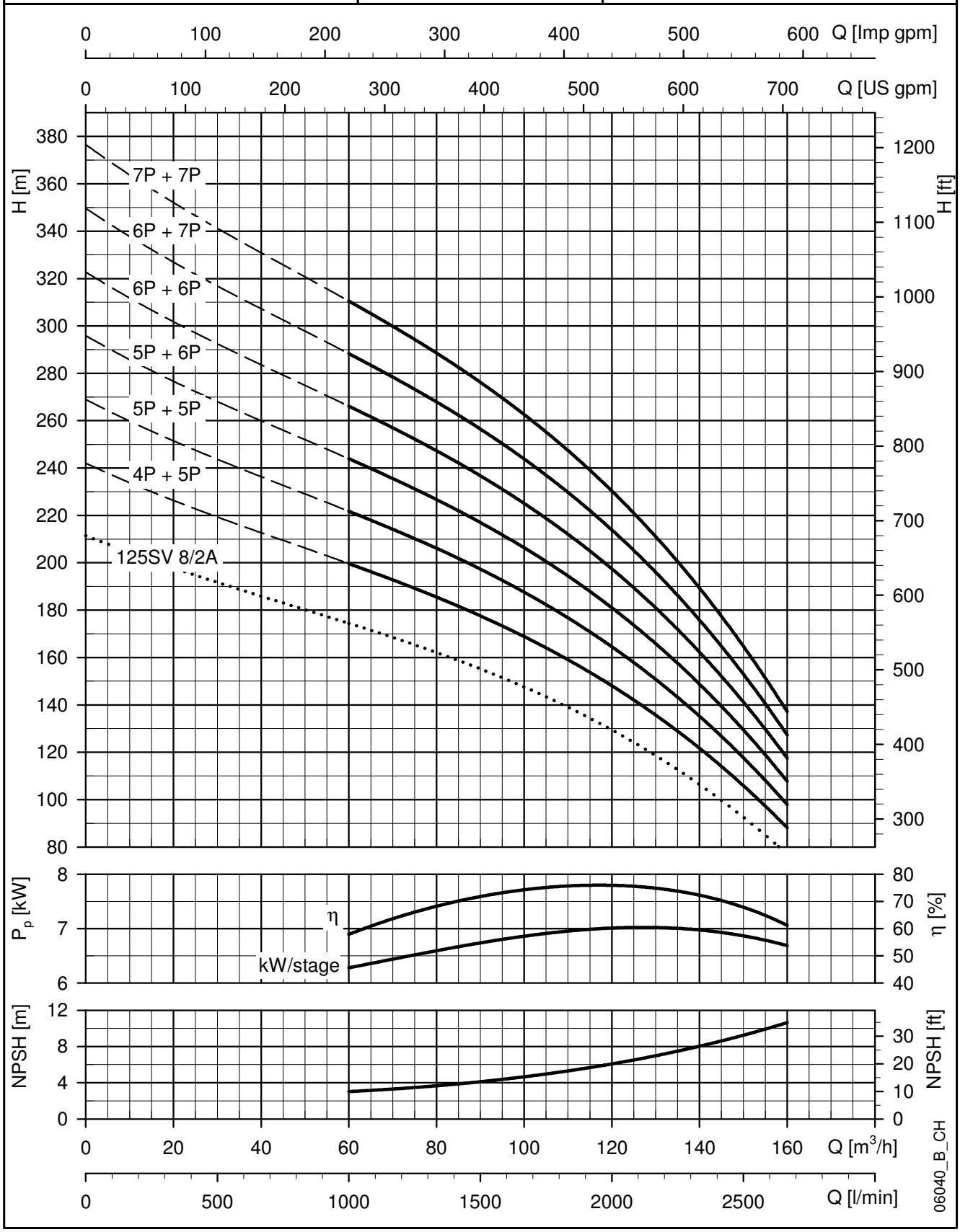
PUMP TYPE	MOTOR		DIMENSION (mm)					WEIGHT (Kg)	
	kW	Size	L1	L2	M	D1	D2	PUMP	ELECTRIC PUMP
125SV4P..	30	200	1178	657	317	402	400	168	394
125SV5P..	37	200	1328	657	317	402	400	181	436
125SV6P..	45	225	1478	746	384	455	450	198	554
125SV7P..	55	250	1658	825	402	486	550	228	641

Dimensions and weights are related to one electric pump.

125sv-p-2p50-en_b_td

125SV..P SERIES - HIGH PRESSURE
OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE

125SV..P	~ 2900 [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.