



Lowara® 1300 Series Pure performance

SUBMERSIBLE PUMP RANGE

LENNTECH
WATER TREATMENT SOLUTIONS

info@lennotech.com Tel. +31-152-610-900
www.lennotech.com Fax. +31-152-616-289

Xylect™

Xylect™ is a pump solution software with an extensive online database of product information across the entire 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.

Xylect™ can be available:

On the website – www.xylect.com



On Mobile Apps



For more information, please, see page 125-126.

The Lowara 1300 series is a submersible pump line that delivers pure performance at outstanding value.

Combining performance and quality, in a convenient package that delivers value for money, will help ensure the smooth running and profitability of your operation. This is why Lowara pumps are ideal for sewage and surface wastewater within commercial building applications.

Moreover, Lowara makes pump specification easy in three simple steps. We have the right pump for your needs with the availability to support your business.

The Lowara 1300 series is based on technology developed and tested in tough environments the world over. That's why you can count on these pumps for trouble-free, reliable operation.

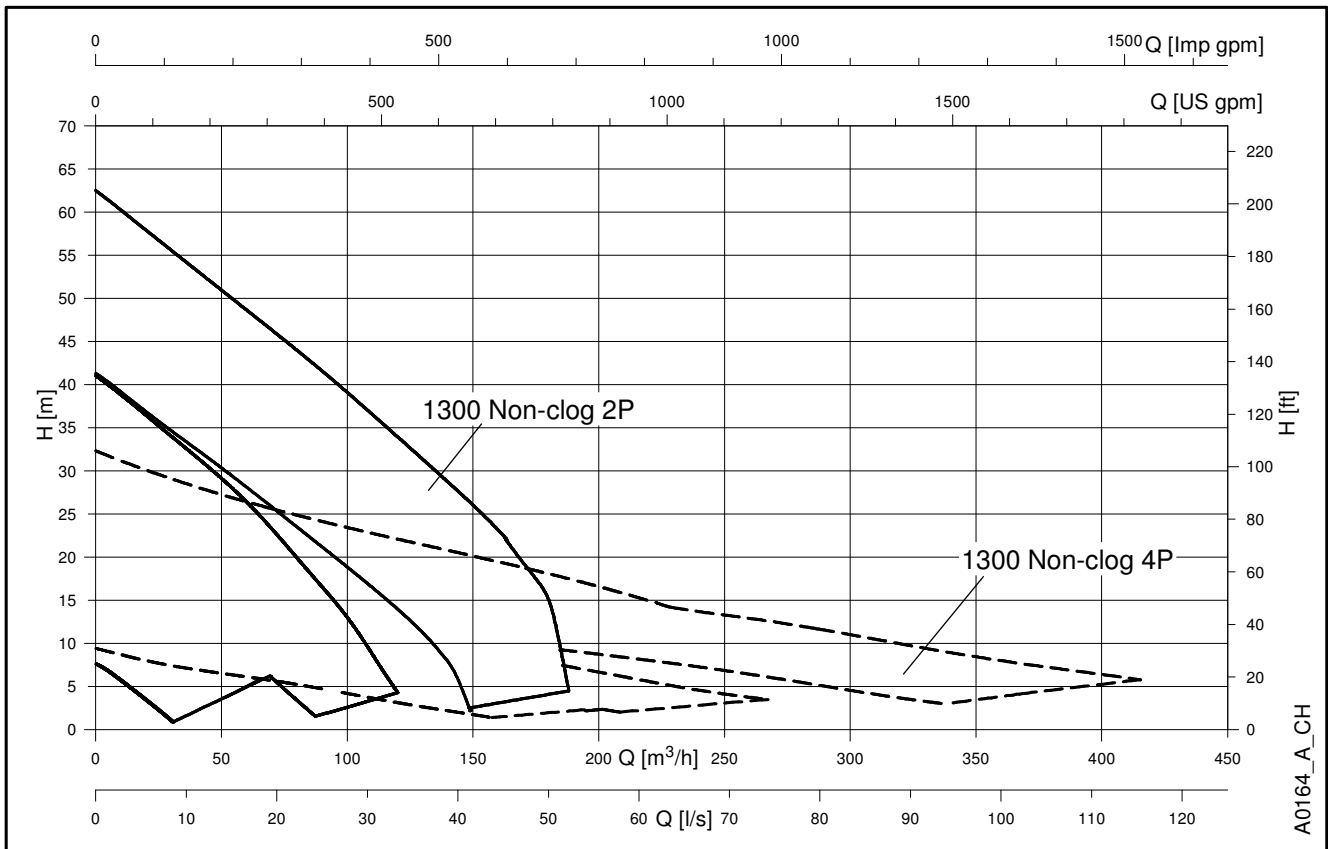
The hydraulic design of the pumps has been proven to reduce clogging and maintain efficiency. These pumps simply work and keep on working. Day in, day out, and under harsh conditions, they won't let you down – they're Lowara 1300.

CONTENTS

Introduction	5
1300 Series complete range	6
Selection guide	7
Identification code	9
1300 Non-clog series Specifications	11
1300 Non-clog series Electrical data table	13
1300 Non-clog series Hydraulic performance range at 50 Hz	14
1300 Non-clog series Table of hydraulic performances at 50 Hz	15
1300 Non-clog series Operating characteristics at 50 Hz	17
1300 Non-clog series Dimensions and weights	29
1300 Vortex series Specifications	59
1300 Vortex series Electrical data table	61
1300 Vortex series Hydraulic performance range at 50 Hz	62
1300 Vortex series Table of hydraulic performances at 50 Hz	63
1300 Vortex series Operating characteristics at 50 Hz	65
1300 Vortex series Dimensions and weights	77
Accessories	101
Technical appendix	121

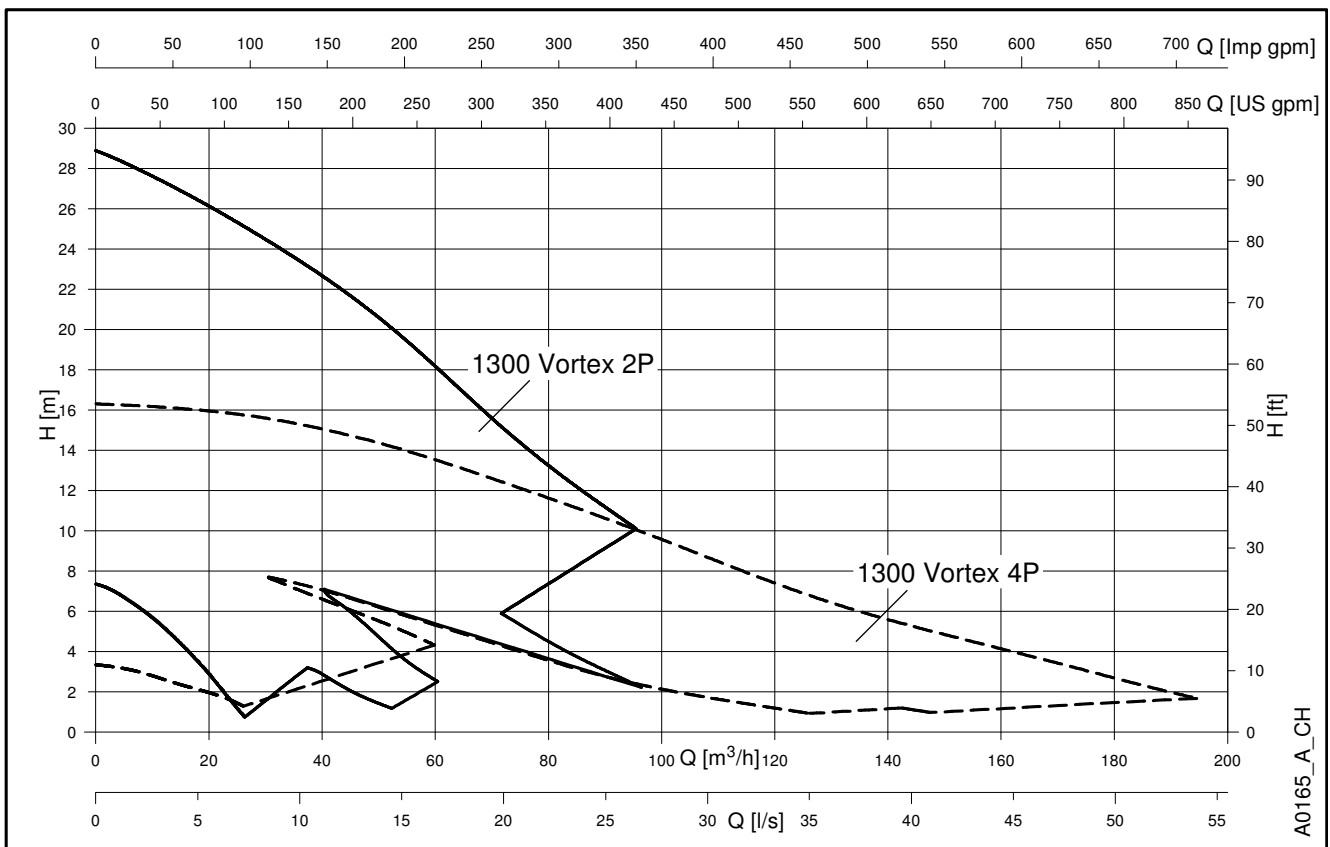
1300 Non-clog SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES



1300 Vortex SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES



1300 SERIES

AVAILABLE. RELIABLE. VALUE FOR MONEY.

With a variety of combinations of non-clog and vortex impellers to choose from, it's easy to find a pump for your needs.

The impeller design gives you efficiency and solids handling capability.

This helps to ensure smooth operation and delivers savings in terms of maintenance costs and energy consumption.

All pumps in the series feature a motor designed for reliable operation in submersible applications.

The motors have F-class insulation or better, which allows for continuous running without overheating, ensuring optimal cooling and a long life.

Additionally, the pumps can handle 15 starts per hour without any problem.

Typically these pumps are installed in permanent installations.

However, some models have the option of a free-standing installation so that the pump can be easily moved from one site to another.

See methods of installation (page 8) for further reference.

Application areas.

- Domestic sewage pumping stations
- Wastewater pumping stations
- Stormwater pumping stations
- Drainage water
- Groundwater

Tough to beat.

Robust

All components are made from robust materials for easy maintenance and long life.

Powerful

The motor is specifically designed for reliable operation in submersible applications and it can run continuously without overheating.

Durable

Heavy-duty bearings with long life provide peace of mind.

Environmentally friendly

The cooling system is designed to use its surroundings to cool the pump; no use of environmentally hazardous fluids such as oils.

Safe and straightforward

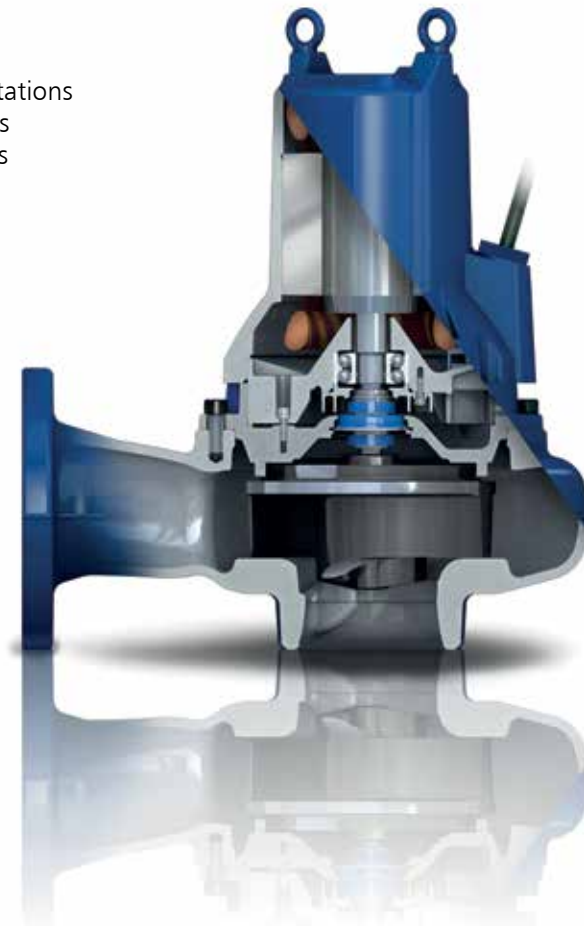
Cable entry prevents both cable strain and leakage.

Smooth

The double mechanical seal provides extra reliability and protects against leakage.

Flexibility

Drilled pump housing, ready for any installation method.



1300 SERIES COMPLETE RANGE THE RIGHT PUMP FOR YOUR NEEDS



1305 Non-clog

Maximum flow 14 l/s
 Maximum pressure 17 m
 Motor Rating 0,75 - 1,2 kW
 Outlet 50 mm
 Weight 32 - 34 kg



1305 Vortex

Maximum flow 10 l/s
 Maximum pressure 11 m
 Motor Rating 0,75 - 1,2 kW
 Outlet 50 mm
 Weight 33 - 34 kg



1310 Non-clog

Maximum flow 18 l/s
 Maximum pressure 25 m
 Motor Rating 1,4 - 2,4 kW
 Outlet 50 - 80 mm
 Weight 35 - 38 kg



1310 Vortex

Maximum flow 16 l/s
 Maximum pressure 16 m
 Motor Rating 1,2 - 2,4 kW
 Outlet 50 - 80 mm
 Weight 35 - 41 kg



1315 Non-clog

Maximum flow 54 l/s
 Maximum pressure 30 m
 Motor Rating 1,8 - 4,4 kW
 Outlet 80 - 100 mm
 Weight 80 - 84 kg



1315 Vortex

Maximum flow 44 l/s
 Maximum pressure 15 m
 Motor Rating 2,2 - 4,4 kW
 Outlet 65 - 100 mm
 Weight 80 - 84 kg



1320 Non-clog

Maximum flow 74 l/s
 Maximum pressure 41 m
 Motor Rating 3,5 - 7,5 kW
 Outlet 80 - 100 mm
 Weight 115 - 134 kg



1320 Vortex

Maximum flow 54 l/s
 Maximum pressure 29 m
 Motor Rating 3,5 - 7,5 kW
 Outlet 80 - 100 mm
 Weight 125 - 134 kg



1325 Non-clog

Maximum flow 115 l/s
 Maximum pressure 63 m
 Motor Rating 9 - 18 kW
 Outlet 80 - 150 mm
 Weight 164 - 179 kg

1300 SERIES SELECTION GUIDE

The **1300 series** of submersible electric pumps featured in the Lowara catalogue are designed to satisfy the most varied liquid handling requirements under even extreme conditions, thanks to the wide variety of materials and impeller and motor types.

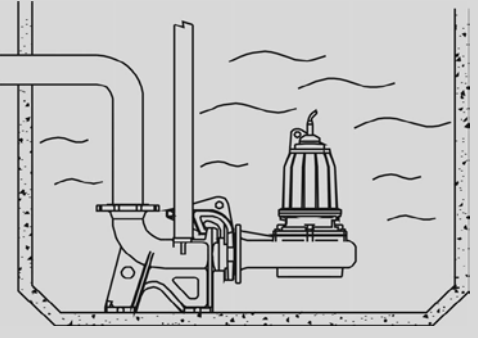
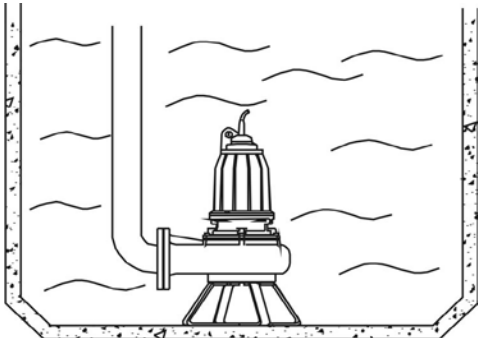
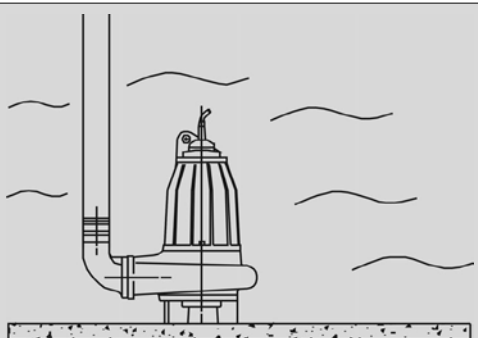
In order to optimise the pump's performances and reduce energy consumption, it is very important to select the "correct" electric pump for intended application.

TYPICAL APPLICATIONS

APPLICATIONS	PUMP TYPE	
	1300 Non-clog	1300 Vortex
Purification systems	✓	✓
Sewers - single-family dwellings, small condominiums, multi-family dwellings	✓	✓
Sewers - campsites	✓	✓
Sewers - restaurants, hotels	✓	✓
Industry	✓	✓
Sludge	✓	✓
Land reclamation, irrigation, agriculture	✓	✓
Stock farming		✓
Aquaculture	✓	✓

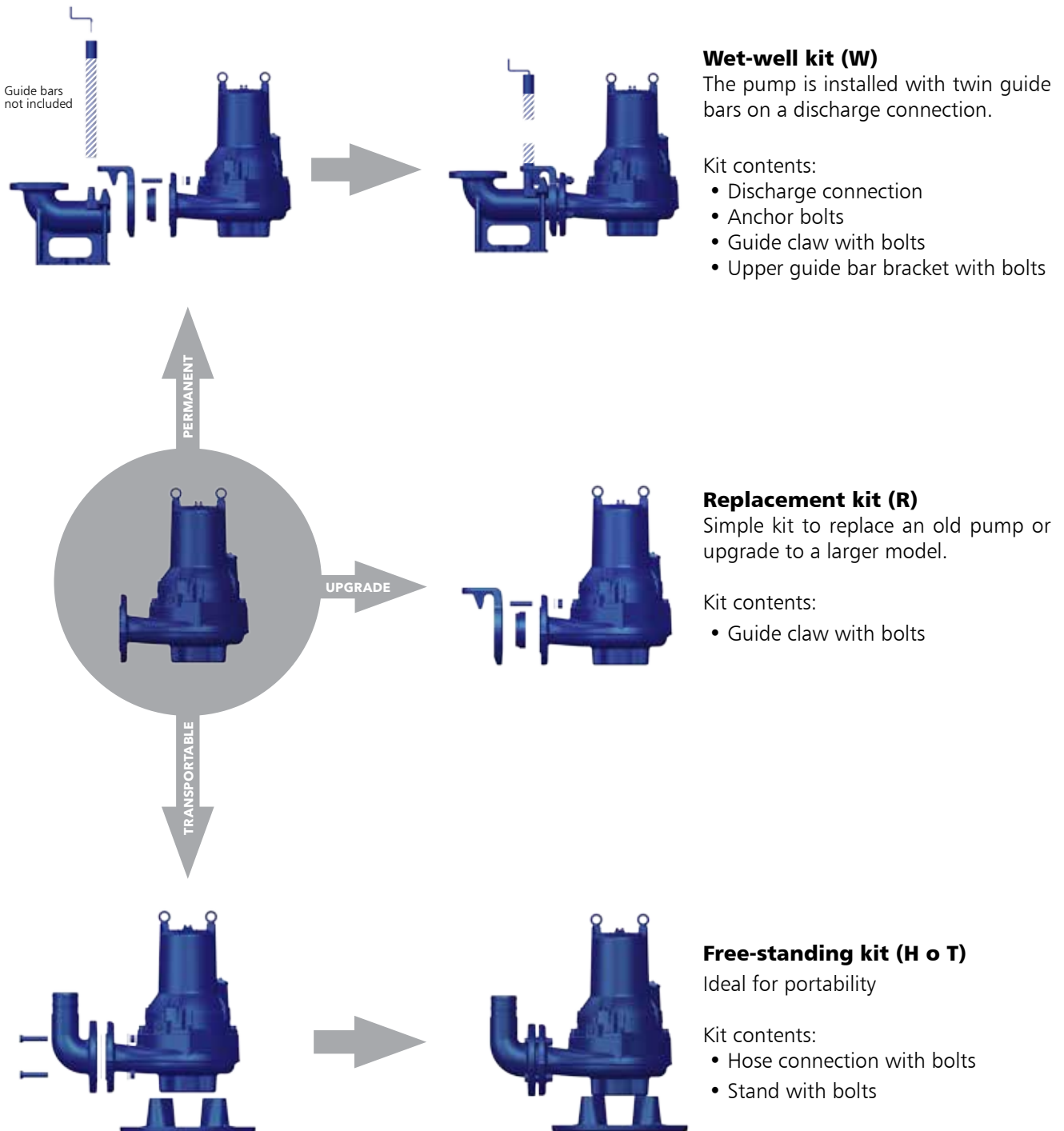
1300-en_a_sc

INSTALLATION

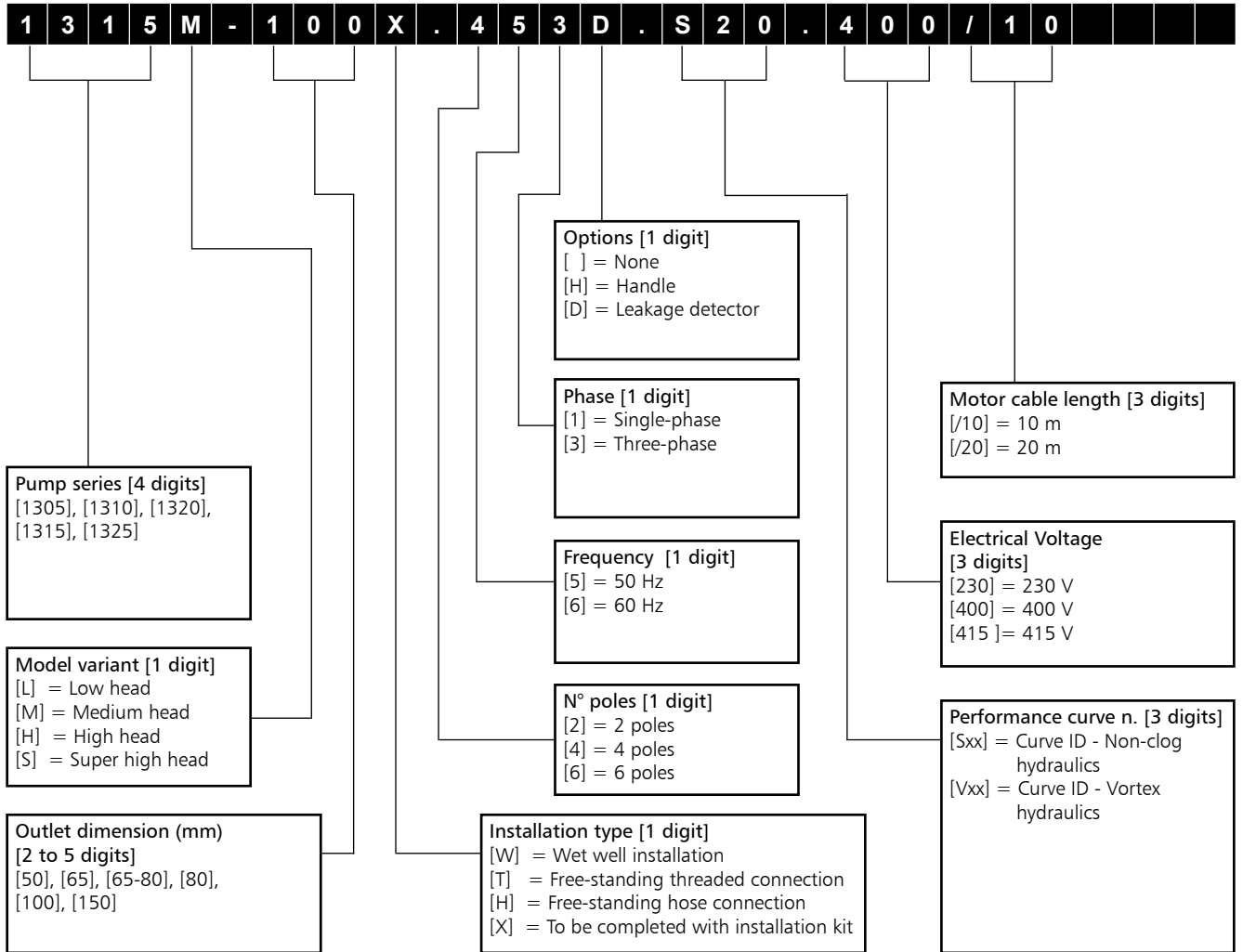
LOWERING SYSTEM		Fixed submerged installation, with coupling foot and guide rails. Access to the electric pump for inspection or maintenance is quick and easy: to extract the pump, just lift it with a chain. The pump's stability and sealing are ensured by its weight. The pump's motor is cooled by the surrounding liquid. A minimum liquid level, indicated in the dimensional drawings for the different versions, must be guaranteed.
PUMP STAND		Portable submerged installation, with pump stand. The pump's motor is cooled by the surrounding liquid. A minimum liquid level, indicated in the dimensional drawings for the different versions, must be guaranteed.
DELIVERY CONNECTION		Free submerged installation with pump stand and delivery connection. The pump's motor is cooled by the surrounding liquid. A minimum liquid level, indicated in the dimensional drawings for the different versions, must be guaranteed.

1300 SERIES INSTALLATION METHODS AND ACCESSORY KITS

The Lowara 1300 series is designed to fit your needs. You start with a bare pump and order the right kit depending on your desired installation method.



1300 SERIES IDENTIFICATION CODE

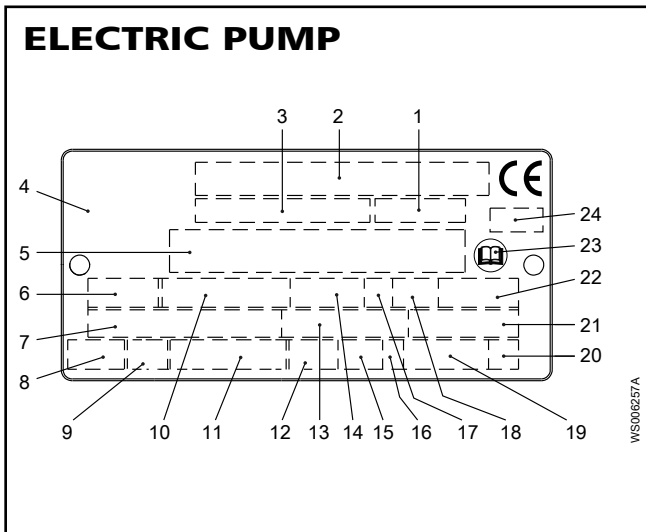


EXAMPLE

1315M-100X.453.S20.400/10

1315 electric pump series, Medium head, 100 mm nominal delivery port, Installation type X, 4 poles version, 50 Hz, three-phase, S20 Curve ID - Non-clog hydraulics, 400 V of voltage, 10 m cable length.

1300 SERIES RATING PLATE



LEGEND

- | | |
|---------------------------------------|--|
| 1 - Curve code or Propeller code | 13 - Rated current |
| 2 - Serial number | 14 - Rated speed |
| 3 - Product number | 15 - Maximum submergence |
| 4 - Country of origin | 16 - Direction of rotation: L=left, R=right |
| 5 - Additional information | 17 - Duty class |
| 6 - Phase; type of current; frequency | 18 - Duty factor |
| 7 - Rated voltage | 19 - Product weight |
| 8 - Thermal protection | 20 - Locked rotor code letter |
| 9 - Thermal class | 21 - Power factor |
| 10 - Rated shaft power | 22 - Maximum ambient temperature |
| 11 - International standard | 23 - Read installation manual |
| 12 - Degree of protection | 24 - Notified body, only for EN-approved Ex products |

Submersible Electric Pumps

1300 Non-clog Series



MARKET SECTORS

RESIDENTIAL AND COMMERCIAL BUILDINGS, INDUSTRIES.

APPLICATIONS

- Submersible pumps for pumping clean water, surface water and wastewater containing solids or long-fibred material.

SPECIFICATIONS

- **Delivery:** up to 115 l/s.
- **Head:** up to 63 m.
- **Discharge connection:** DN 50, 65, 80, 100, 150 mm.
- **Motor power:** up to 18 kW.
- Maximum liquid **temperature:** 40 °C.
- Maximum immersion **depth:** 20 m.
- **pH pumped liquid:** pH 5,5-14.
- Maximum liquid **density:** 1100 Kg/m³.
- Motor with IP68 **protection** and class 155°C (F).
- **Power supply** 230V single-phase, 400V three-phase, 50 Hz.
- Voltage **variation:**
 - continuous running: max ±5%.
 - intermittent running: max ±10%.
- Voltage **imbalance** between phases: max 2%.
- Maximum number of starts per hour: 30.

OPTIONAL FEATURES

- 20 m cable.
- Different voltages: 380V and 415V for three-phase version 220V and 240V for single-phase version.

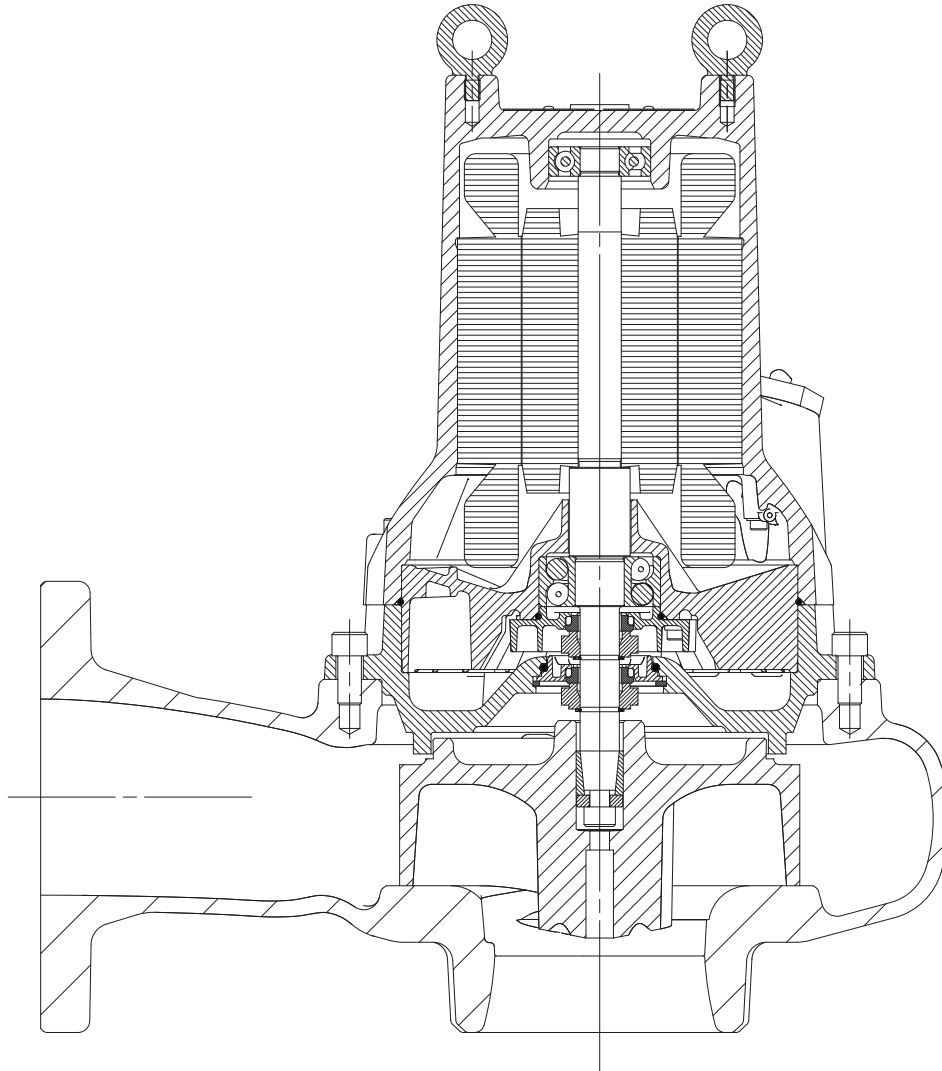
ACCESSORIES / INSTALLATION

- Wet well kit for guided installation.
- Free standing kit, Threaded or Hose connection.
- Replacement kit for upgrades.
- Ball check valve.
- Wastewater level regulators.
- Command and control panels.
- Lifting chains.

CONSTRUCTION CHARACTERISTICS

- Sturdy cast iron construction.
- Self-Cleaning **impeller**.
- **Double seal:** seal material varies depending on model. Please see next page.
- **Cable** (10 m standard version):
 - Direct-on-line start: SUBCAB® 4G1,5+2x1,5.
 - Y/D start: SUBCAB® 7G2,5+2x1,5.
- Motor thermal **protection:** opening temperature 125°C class 155°C (F).

1300 Non-clog SERIES
PUMP SECTION AND TABLE OF MATERIALS



PART	MATERIAL	
	1305 - 1310 - 1315	1320 - 1325
Impeller	Grey cast iron	
Pump housing	Grey cast iron	
Stator housing	Grey cast iron	
Shaft	Stainless steel	
Inner mechanical seal	Carbon / aluminum oxide	Carbon / Cemented carbide
Outer mechanical seal	Cemented carbide / aluminum oxide	Cemented carbide / Cemented carbide
O-rings	Nitrile	
Cable sheathing	Nitrile	

1300S-en_A_tm

1300 Non-clog SERIES

ELECTRICAL DATA TABLE AT 50 Hz

PUMP TYPE	min ⁻¹	Pabs (P1) kW *	Prated (P2) kW **	VOLTAGE / PHASES ***	CURRENT		START	ELECTRIC CABLE TYPE	RUNNING CAPACITOR μF/V	STARTING CAPACITOR μF/V	INSULATION CLASS
					ABSORBED I _{abs} (A)	INRUSH I _{sp} (A)					
1305S-50T.251.S66...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305S-50T.251.S64...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305S-50W.251.S66...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305S-50W.251.S64...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305S-50T.253.S66...	2785	0,95	0,75	400/3	2,2	17	Y	4G1,5 + 2x1,5	-	-	F
1305S-50T.253.S62...	2785	1,5	1,2	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1305S-50T.253.S60...	2785	1,5	1,2	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1305S-50W.253.S66...	2785	0,95	0,75	400/3	2,2	17	Y	4G1,5 + 2x1,5	-	-	F
1305S-50W.253.S62...	2785	1,5	1,2	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1305S-50W.253.S60...	2785	1,5	1,2	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1310S-50T.251.S64...	2900	1,9	1,5	230/1	8,9	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50T.251.S62...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50T.251.S60...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50W.251.S64...	2900	1,9	1,5	230/1	8,9	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50W.251.S62...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50W.251.S60...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-65X.251.S64...	2900	1,9	1,5	230/1	8,9	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-65X.251.S62...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-65X.251.S60...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-80X.251.S64...	2900	1,9	1,5	230/1	8,9	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-80X.251.S62...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-80X.251.S60...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310S-50T.253.S64...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-50T.253.S62...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-50T.253.S60...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-50W.253.S64...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-50W.253.S62...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-50W.253.S60...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-65X.253.S64...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-65X.253.S62...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-65X.253.S60...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-80X.253.S64...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-80X.253.S62...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310S-80X.253.S60...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1315S-65X.253.S63...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315S-65X.253.S62...	2855	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315S-65X.253.S61...	2900	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315S-80X.253.S63...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315S-80X.253.S62...	2900	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315S-80X.253.S61...	2900	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315M-100X.453.S23...	1450	2,2	1,8	400/3	4,8	33	Y	4G1,5 + 2x1,5	-	-	F
1315M-100X.453.S22...	1435	2,7	2,2	400/3	5,4	33	Y	4G1,5 + 2x1,5	-	-	F
1315M-100X.453.S21...	1395	4,3	3,3	400/3	7,4	33	Y	4G1,5 + 2x1,5	-	-	F
1315M-100X.453.S20...	1395	4,3	3,3	400/3	7,4	33	Y	4G1,5 + 2x1,5	-	-	F
1320S-80X.253.S64...	2935	5,4	4,8	400/3	9,8	107	YD	7G2,5 + 2x1,5	-	-	F
1320S-80X.253.S62...	2915	7	6,2	400/3	12	107	YD	7G2,5 + 2x1,5	-	-	F
1320S-80X.253.S60...	2895	8,6	7,5	400/3	14	107	YD	7G2,5 + 2x1,5	-	-	F
1320H-100X.453.S43...	1465	4,1	3,5	400/3	8,8	60	YD	7G2,5 + 2x1,5	-	-	F
1320H-100X.453.S42...	1455	5,3	4,5	400/3	10	60	YD	7G2,5 + 2x1,5	-	-	F
1320H-100X.453.S41...	1435	7,1	5,9	400/3	13	60	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.S24...	1465	4,1	3,5	400/3	8,8	60	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.S22...	1455	5,3	4,5	400/3	10	60	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.S20...	1435	7,1	5,9	400/3	13	60	YD	7G2,5 + 2x1,5	-	-	F
1325S-80X.253.S63...	2950	9,9	9	400/3	18	213	YD	7G2,5 + 2x1,5	-	-	F
1325S-80X.253.S62...	2930	13,2	12	400/3	22	213	YD	7G2,5 + 2x1,5	-	-	F
1325S-80X.253.S61...	2910	16,6	15	400/3	27	213	YD	7G2,5 + 2x1,5	-	-	F
1325S-80X.253.S60...	2890	20	18	400/3	32	213	YD	7G2,5 + 2x1,5	-	-	F
1325H-100X.453.S43...	1470	10,2	9	400/3	20	145	YD	7G2,5 + 2x1,5	-	-	F
1325H-100X.453.S42...	1465	12,5	11	400/3	23	145	YD	7G2,5 + 2x1,5	-	-	F
1325H-100X.453.S41...	1455	15,6	13,5	400/3	27	145	YD	7G2,5 + 2x1,5	-	-	F
1325M-150X.453.S24...	1470	10,2	9	400/3	20	145	YD	7G2,5 + 2x1,5	-	-	F
1325M-150X.453.S23...	1465	12,5	11	400/3	23	145	YD	7G2,5 + 2x1,5	-	-	F
1325M-150X.453.S22...	1465	12,5	11	400/3	23	145	YD	7G2,5 + 2x1,5	-	-	F
1325M-150X.453.S21...	1455	15,6	13,5	400/3	27	145	YD	7G2,5 + 2x1,5	-	-	F

Stator thermal protection included in all models.

1300S-en_a_te

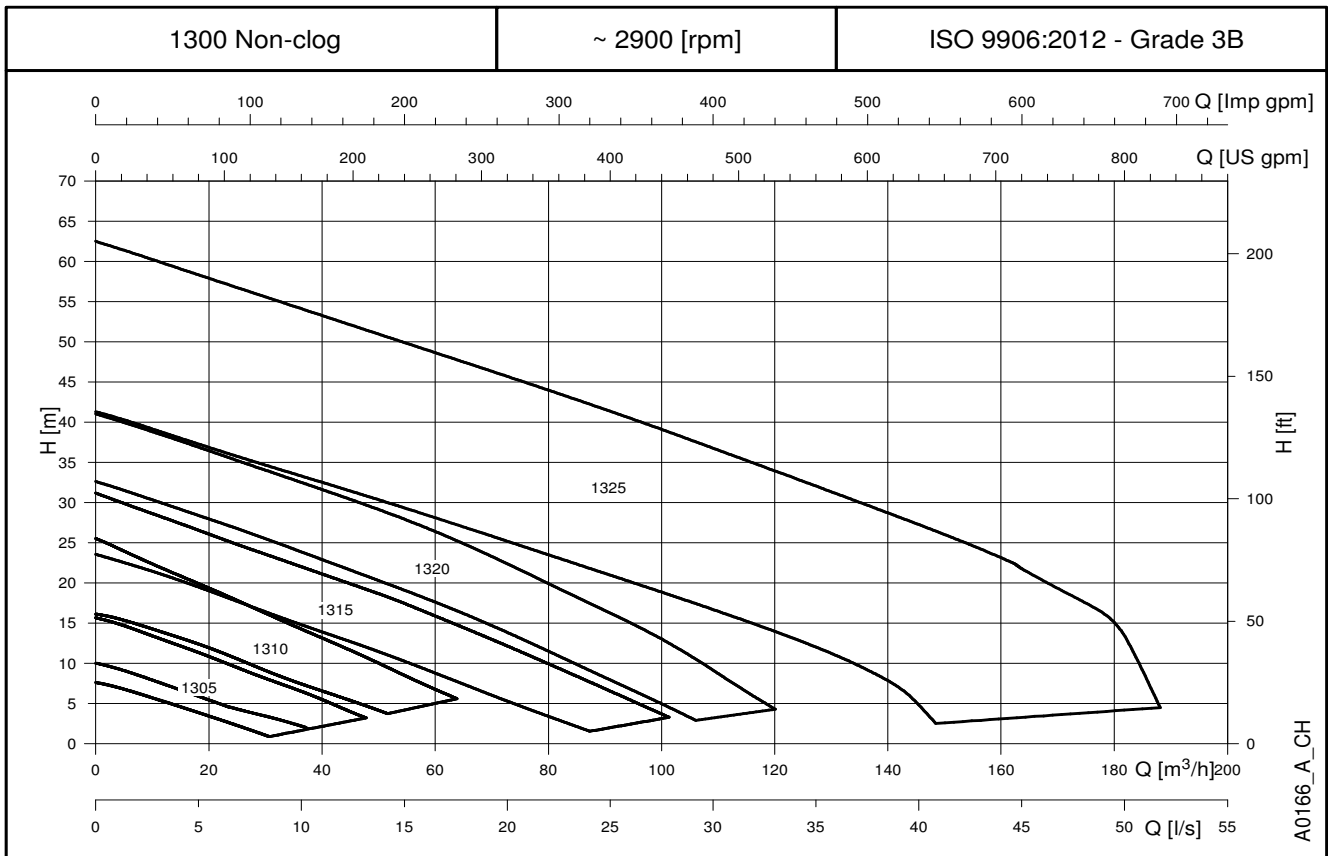
* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

*** The pumps are available also in 220V and 240V versions (single-phase) and 380V and 415V versions (three-phase).

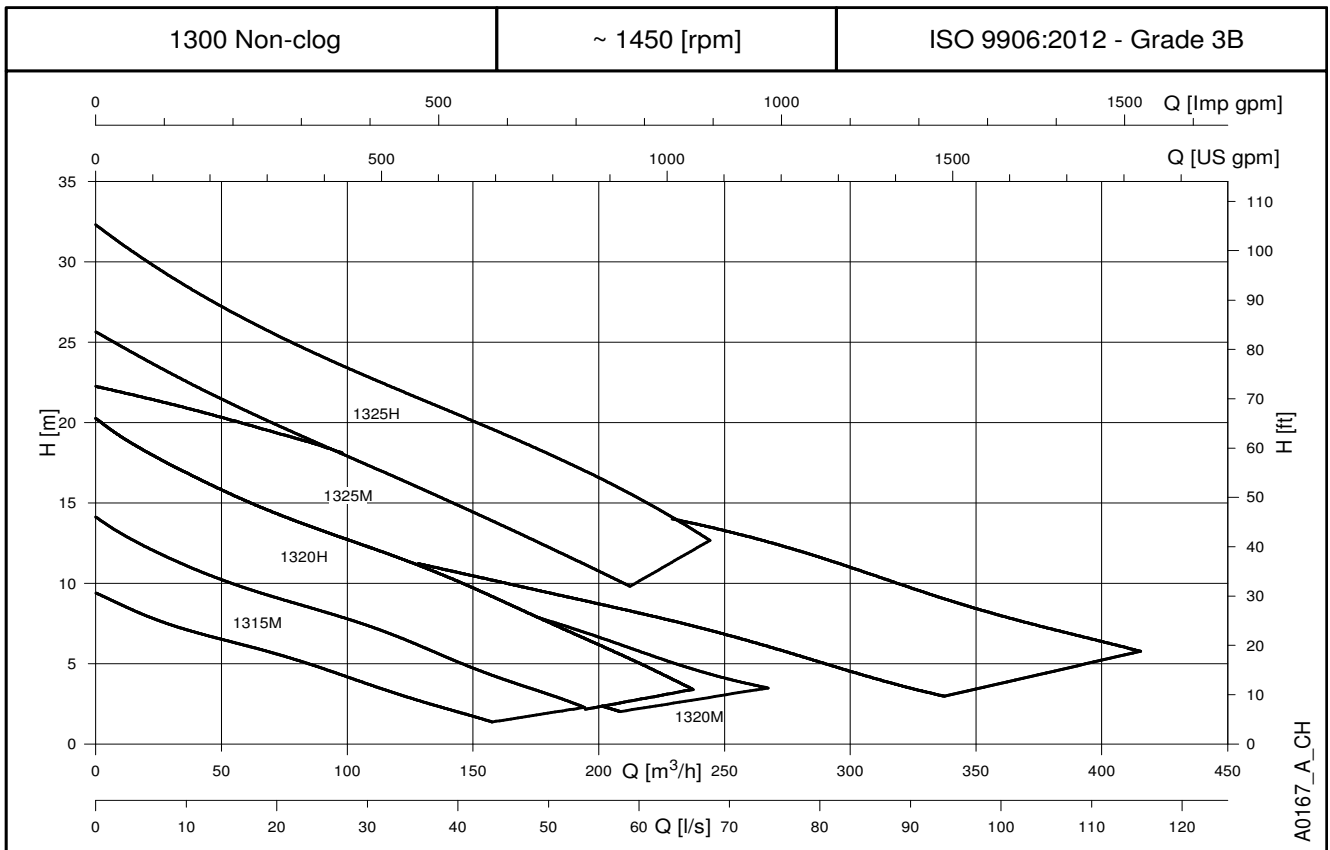
1300 Non-clog SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES



1300 Non-clog SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES



1300 Non-clog SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY														
	(P1)	(P2)				l/s 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	kW	kW				m3/h 0	3,6	7,2	10,8	14,4	18,0	21,6	25,2	28,8	32,4	36,0	39,6	43,2	46,8	50,4
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER														
1305S-50T.251.S66...	0,95	0,75	95	35,8	2825	7,6	7,0	6,3	5,5	4,7	3,9	3,1	2,2	1,3						
1305S-50T.251.S64...	0,95	0,75	104	43,7	2825	10,0	9,4	8,6	7,7	6,8	5,9	5,0	4,1	3,2	2,2	1,2				
1305S-50W.251.S66...	0,95	0,75	95	42,4	2825	7,8	7,4	6,8	6,1	5,4	4,7	4,0	3,4	2,8	2,3					
1305S-50W.251.S64...	0,95	0,75	100	46,4	2825	9,0	8,5	7,9	7,2	6,5	5,7	5,0	4,3	3,6	3,0	2,3				
1305S-50T.253.S66...	0,95	0,75	95	35,8	2785	7,8	7,2	6,5	5,7	4,8	4,0	3,2	2,3	1,4						
1305S-50T.253.S62...	1,5	1,2	109	48,6	2785	12,1	11,4	10,5	9,6	8,7	7,7	6,7	5,7	4,7	3,7	2,6	1,5			
1305S-50T.253.S60...	1,5	1,2	120	55,0	2785	15,7	14,9	14,0	13,0	11,9	10,9	9,8	8,7	7,6	6,4	5,3	4,1	2,8		
1305S-50W.253.S66...	0,95	0,75	95	42,4	2785	8,0	7,5	6,9	6,3	5,6	4,9	4,2	3,5	2,9	2,4					
1305S-50W.253.S62...	1,5	1,2	109	53,0	2785	12,1	11,5	10,8	10,0	9,2	8,3	7,4	6,5	5,7	4,8	4,0	3,2			
1305S-50W.253.S60...	1,5	1,2	120	59,1	2785	15,7	15,0	14,2	13,3	12,3	11,4	10,4	9,4	8,5	7,5	6,6	5,6	4,6	3,5	

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY														
	(P1)	(P2)				l/s 0	1	3	4	5	6	8	9	10	12	13	14	15	16	17
	kW	kW				m3/h 0	3,6	10,8	14,4	18,0	21,6	28,8	32,4	36,0	43,2	46,8	50,4	54,0	57,6	61,2
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER														
1310S-50T.251.S64...	1,9	1,5	120	58,0	2900	16,4	15,8	14,3	13,5	12,6	11,7	9,6	8,6	7,7	5,9	5,1	4,2			
1310S-50T.251.S62...	2,2	1,7	128	62,0	2880	20,1	19,3	17,6	16,7	15,7	14,7	12,6	11,5	10,5	8,4	7,4	6,4	5,4		
1310S-50T.251.S60...	3,2	2,4	140	64,6	2810	25,6	24,4	22,1	21,1	20,0	18,8	16,6	15,5	14,4	12,2	11,0	9,9	8,7	7,5	6,4
1310S-50W.251.S64...	1,9	1,5	120	58,0	2900	16,4	15,8	14,3	13,5	12,6	11,7	9,6	8,6	7,7	5,9	5,1	4,2			
1310S-50W.251.S62...	2,2	1,7	128	62,0	2880	20,1	19,3	17,6	16,7	15,7	14,7	12,6	11,5	10,5	8,4	7,4	6,4	5,4		
1310S-50W.251.S60...	3,2	2,4	140	64,6	2810	25,6	24,4	22,1	21,1	20,0	18,8	16,6	15,5	14,4	12,2	11,0	9,9	8,7	7,5	6,4
1310S-65X.251.S64...	1,9	1,5	120	58,0	2900	16,4	15,8	14,3	13,5	12,6	11,7	9,6	8,6	7,7	5,9	5,1	4,2			
1310S-65X.251.S62...	2,2	1,7	128	62,0	2880	20,1	19,3	17,6	16,7	15,7	14,7	12,6	11,5	10,5	8,4	7,4	6,4	5,4		
1310S-65X.251.S60...	3,2	2,4	140	64,6	2810	25,6	24,4	22,1	21,1	20,0	18,8	16,6	15,5	14,4	12,2	11,0	9,9	8,7	7,5	6,4
1310S-80X.251.S64...	1,9	1,5	120	58,0	2900	16,4	15,8	14,3	13,5	12,6	11,7	9,6	8,6	7,7	5,9	5,1	4,2			
1310S-80X.251.S62...	2,2	1,7	128	62,0	2880	20,1	19,3	17,6	16,7	15,7	14,7	12,6	11,5	10,5	8,4	7,4	6,4	5,4		
1310S-80X.251.S60...	3,2	2,4	140	64,6	2810	25,6	24,4	22,1	21,1	20,0	18,8	16,6	15,5	14,4	12,2	11,0	9,9	8,7	7,5	6,4
1310S-50T.253.S64...	1,7	1,4	120	58,0	2885	16,2	15,6	14,1	13,3	12,4	11,5	9,5	8,5	7,5	5,8	5,0	4,1			
1310S-50T.253.S62...	2,0	1,7	128	62,0	2855	19,8	19,0	17,3	16,4	15,4	14,4	12,3	11,3	10,2	8,2	7,2	6,2	5,2		
1310S-50T.253.S60...	3,0	2,4	140	64,6	2780	25,2	23,9	21,7	20,6	19,6	18,4	16,2	15,1	14,0	11,8	10,7	9,5	8,4	7,2	6,1
1310S-50W.253.S64...	1,7	1,4	120	58,0	2885	16,2	15,6	14,1	13,3	12,4	11,5	9,5	8,5	7,5	5,8	5,0	4,1			
1310S-50W.253.S62...	2,0	1,7	128	62,0	2855	19,8	19,0	17,3	16,4	15,4	14,4	12,3	11,3	10,2	8,2	7,2	6,2	5,2		
1310S-50W.253.S60...	3,0	2,4	140	64,6	2780	25,2	23,9	21,7	20,6	19,6	18,4	16,2	15,1	14,0	11,8	10,7	9,5	8,4	7,2	6,1
1310S-65X.253.S64...	1,7	1,4	120	58,0	2885	16,2	15,6	14,1	13,3	12,4	11,5	9,5	8,5	7,5	5,8	5,0	4,1			
1310S-65X.253.S62...	2,0	1,7	128	62,0	2855	19,8	19,0	17,3	16,4	15,4	14,4	12,3	11,3	10,2	8,2	7,2	6,2	5,2		
1310S-65X.253.S60...	3,0	2,4	140	64,6	2780	25,2	23,9	21,7	20,6	19,6	18,4	16,2	15,1	14,0	11,8	10,7	9,5	8,4	7,2	6,1
1310S-80X.253.S64...	1,7	1,4	120	58,0	2885	16,2	15,6	14,1	13,3	12,4	11,5	9,5	8,5	7,5	5,8	5,0	4,1			
1310S-80X.253.S62...	2,0	1,7	128	62,0	2855	19,8	19,0	17,3	16,4	15,4	14,4	12,3	11,3	10,2	8,2	7,2	6,2	5,2		
1310S-80X.253.S60...	3,0	2,4	140	64,6	2780	25,2	23,9	21,7	20,6	19,6	18,4	16,2	15,1	14,0	11,8	10,7	9,5	8,4	7,2	6,1

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

1305-10S-en_a_th

* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

1300 Non-clog SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY														
	(P1)	(P2)				l/s 0	4	8	11	15	19	23	27	30	34	38	42	45	49	53
	kW	kW				m³/h 0	14,4	28,8	39,6	54,0	68,4	82,8	97,2	108,0	122,4	136,8	151,2	162,0	176,4	190,8
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER														
1315S-65X.253.S63...	3,9	3,3	138	57,2	2900	23,5	20,4	16,7	14,0	10,4	6,5	2,6								
1315S-65X.253.S62...	5,4	4,4	145	57,7	2855	27,0	23,6	19,9	17,0	13,1	9,0	4,8								
1315S-65X.253.S61...	5,4	4,4	154	62,9	2900	31,2	27,5	23,9	21,2	17,6	13,5	9,1	4,6							
1315S-80X.253.S63...	3,9	3,3	138	57,2	2900	23,5	20,4	16,7	14,0	10,4	6,5	2,6								
1315S-80X.253.S62...	5,4	4,4	145	57,7	2900	27,0	23,6	19,9	17,0	13,1	9,0	4,8								
1315S-80X.253.S61...	5,4	4,4	154	62,9	2900	31,2	27,5	23,9	21,2	17,6	13,5	9,1	4,6							
1315M-100X.453.S23...	2,2	1,8	172	66,2	1450	9,4	8,4	7,5	7,0	6,4	5,8	5,1	4,3	3,7	3,0	2,3	1,7			
1315M-100X.453.S22...	2,7	2,2	182	68,2	1435	10,7	9,6	8,6	8,0	7,4	6,8	6,2	5,4	4,8	4,0	3,2	2,5	2,0		
1315M-100X.453.S21...	4,3	3,3	192	71,1	1395	12,4	11,2	10,1	9,4	8,7	8,0	7,4	6,7	6,1	5,2	4,3	3,5	3,0	2,3	
1315M-100X.453.S20...	4,3	3,3	202	73,7	1395	14,1	12,8	11,6	10,8	10,0	9,3	8,6	7,9	7,3	6,5	5,6	4,7	4,0	3,3	2,5

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY														
	(P1)	(P2)				l/s 0	5	11	16	21	26	32	37	42	48	53	58	63	69	74
	kW	kW				m ³ /h 0	18,0	39,6	57,6	75,6	93,6	115,2	133,2	151,2	172,8	190,8	208,8	226,8	248,4	266,4
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER														
1320S-80X.253.S64...	5,4	4,8	159	61,1	2935	32,6	28,4	23,0	18,2	12,9	7,0									
1320S-80X.253.S62...	7,0	6,2	168	62,6	2915	37,0	32,8	27,6	23,0	17,7	11,7									
1320S-80X.253.S60...	8,6	7,5	177	62,3	2895	41,1	36,9	31,7	27,0	21,5	15,3	6,5								
1320H-100X.453.S43...	4,1	3,5	201	69,8	1465	14,3	12,8	11,2	10,1	9,2	8,3	7,1	6,0	4,9	3,5	2,4				
1320H-100X.453.S42...	5,3	4,5	215	72,5	1455	16,9	15,2	13,6	12,4	11,3	10,3	9,2	8,1	7,0	5,6	4,4	3,2			
1320H-100X.453.S41...	7,1	5,9	233	74,1	1435	20,2	18,4	16,6	15,3	14,1	13,1	11,9	10,8	9,6	8,1	6,8	5,5	4,2		
1320M-100X.453.S24...	4,1	3,5	190	63,0	1465	10,3	9,6	9,0	8,4	7,8	7,2	6,2	5,4	4,6	3,7	2,9				
1320M-100X.453.S22...	5,3	4,5	205	66,3	1455	12,8	12,0	11,1	10,5	9,9	9,2	8,3	7,5	6,7	5,6	4,7	3,8	2,9		
1320M-100X.453.S20...	7,1	5,9	224	67,4	1435	16,0	15,0	14,0	13,1	12,3	11,5	10,6	9,8	9,0	8,0	7,1	6,2	5,2	4,2	3,5

PUMP TYPE	Pabs (P1)	Prated (P2)	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY														
	kW	kW				l/s 0	8	16	25	33	41	49	58	66	74	82	90	99	107	115
	*	**				m ³ /h 0	28,8	57,6	90,0	118,8	147,6	176,4	208,8	237,6	266,4	295,2	324,0	356,4	385,2	414,0
	H = TOTAL HEAD METRES COLUMN OF WATER																			
1325S-80X.253.S63...	9,9	9	170	62,8	2950	41,4	34,9	28,7	21,1	14,4	3,3									
1325S-80X.253.S62...	13,2	12	185	66,0	2930	50,3	43,6	37,2	29,6	22,3	14,3									
1325S-80X.253.S61...	16,6	15	195	66,4	2910	55,5	48,7	42,4	35,0	27,4	20,3									
1325S-80X.253.S60...	20,0	18	210	65,7	2890	62,3	55,8	49,2	41,8	34,0	26,9	16,3								
1325H-100X.453.S43...	10,2	9	250	75,0	1470	25,7	23,2	20,9	18,6	16,6	14,6	12,5	10,1							
1325H-100X.453.S42...	12,5	11	261	76,8	1465	28,0	25,7	23,5	21,3	19,3	17,3	15,3	12,8							
1325H-100X.453.S41...	15,6	13,5	275	76,6	1455	32,3	29,2	26,6	24,1	22,2	20,3	18,3	15,9	13,3						
1325M-150X.453.S24...	10,2	9	225	70,2	1470	16,5	15,0	13,8	12,5	11,5	10,5	9,6	8,4	7,3	6,1	4,8	3,5			
1325M-150X.453.S23...	12,5	11	237	71,0	1465	17,9	16,7	15,4	14,1	13,1	12,2	11,3	10,2	9,1	7,9	6,6	5,3	3,9		
1325M-150X.453.S22...	12,5	11	247	71,2	1465	18,9	18,1	16,9	15,6	14,5	13,7	12,9	11,8	10,8	9,6	8,3	6,9	5,6	4,5	
1325M-150X.453.S21...	15,6	13,5	262	73,8	1455	22,2	21,3	20,0	18,5	17,4	16,4	15,6	14,6	13,7	12,6	11,2	9,8	8,2	6,9	5,9

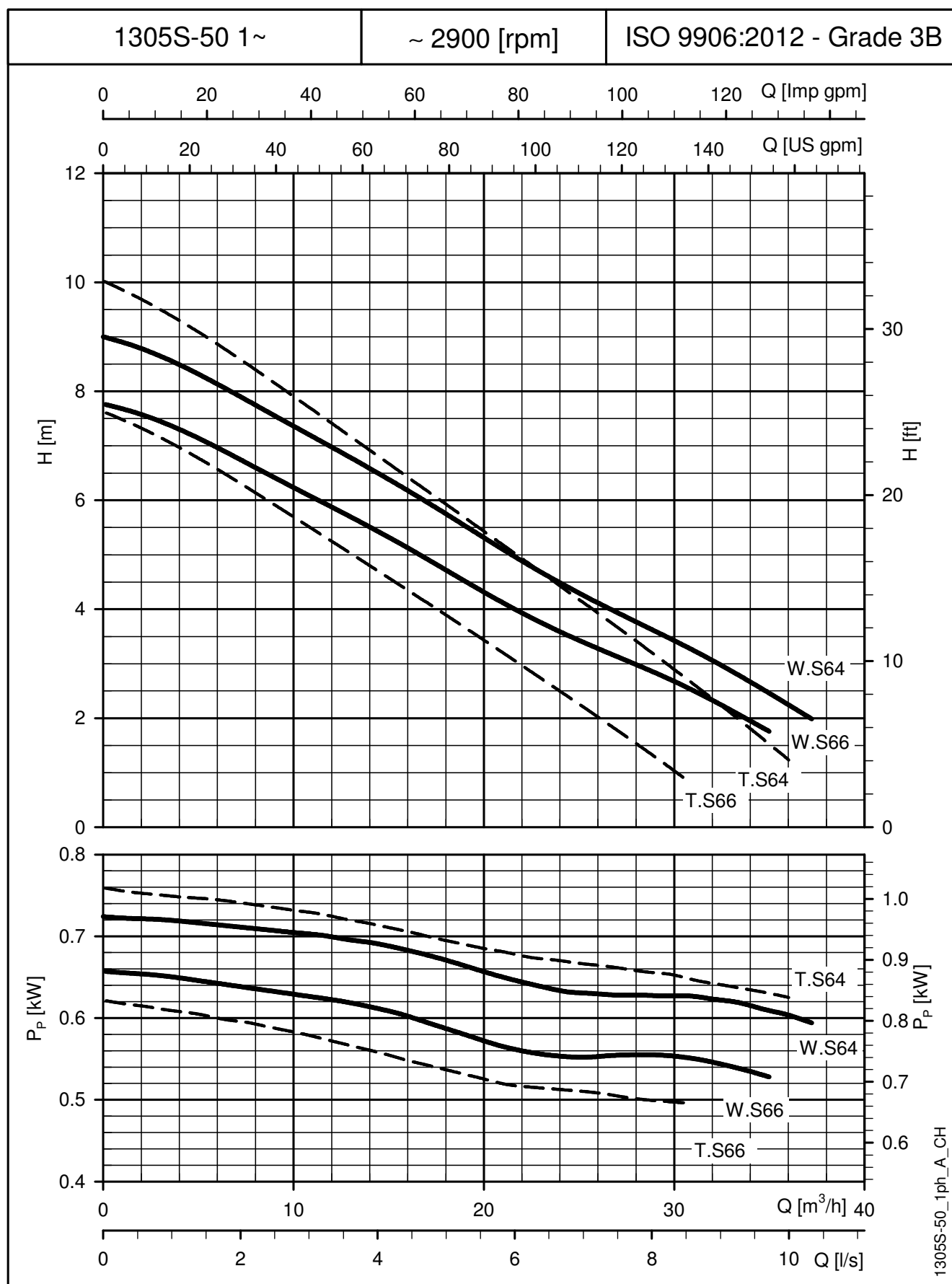
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

1315-25S-en_a_th

* Maximum value of absorbed motor power within the operating range.

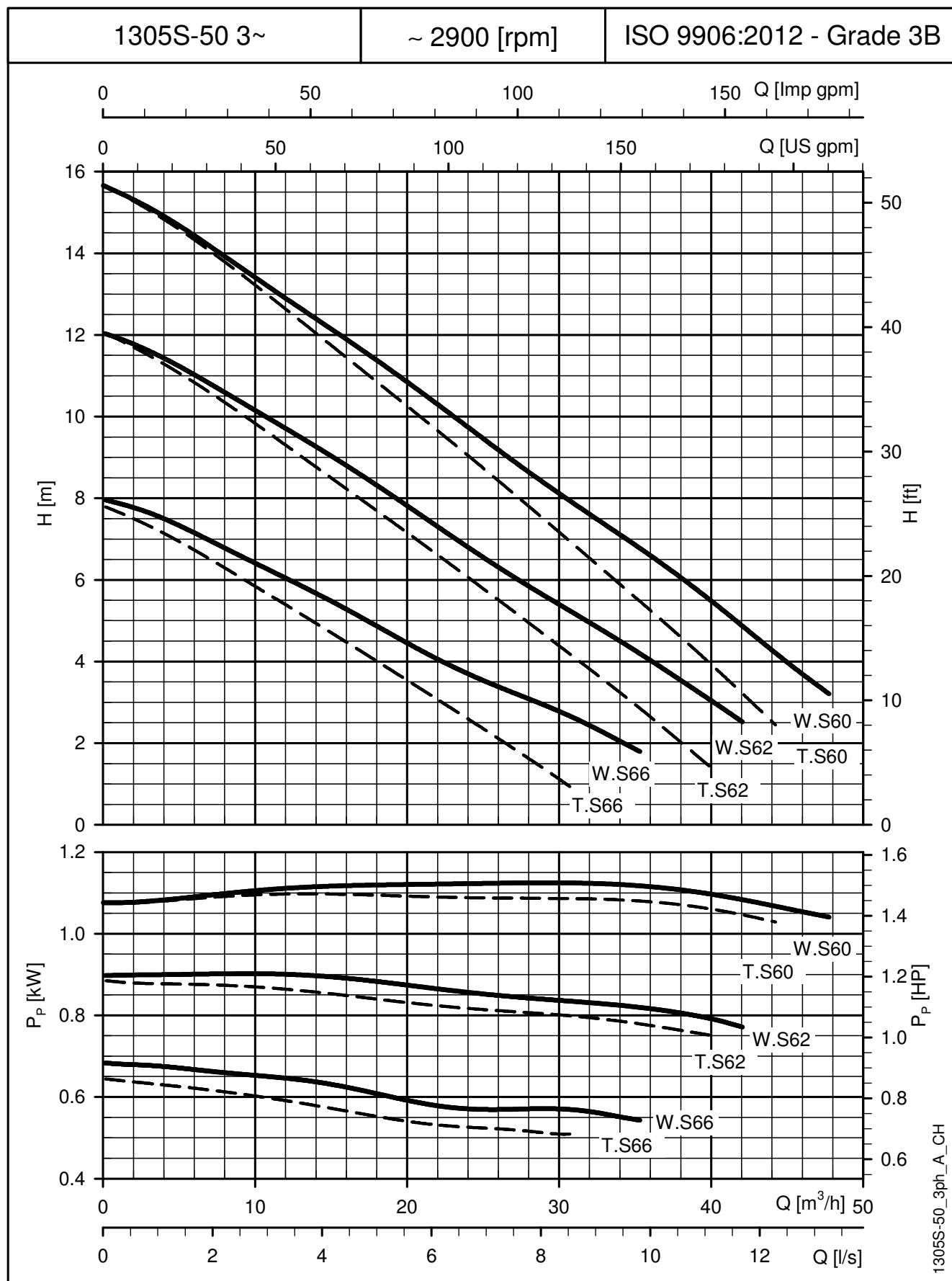
** P2 = Rated shaft power.

1305S Non-clog (DN50) (SINGLE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



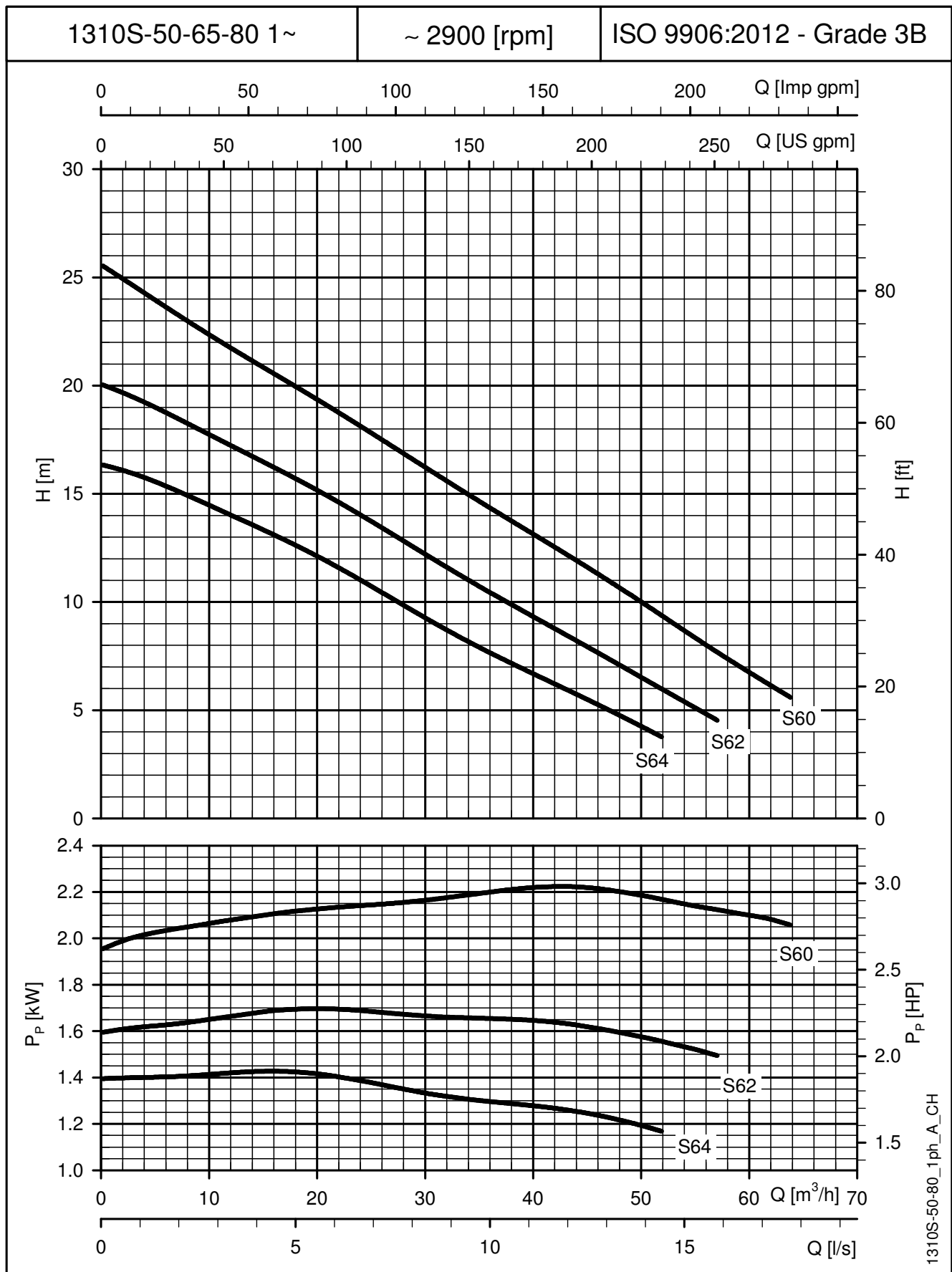
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1305S Non-clog (DN50) (THREE-PHASE) **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



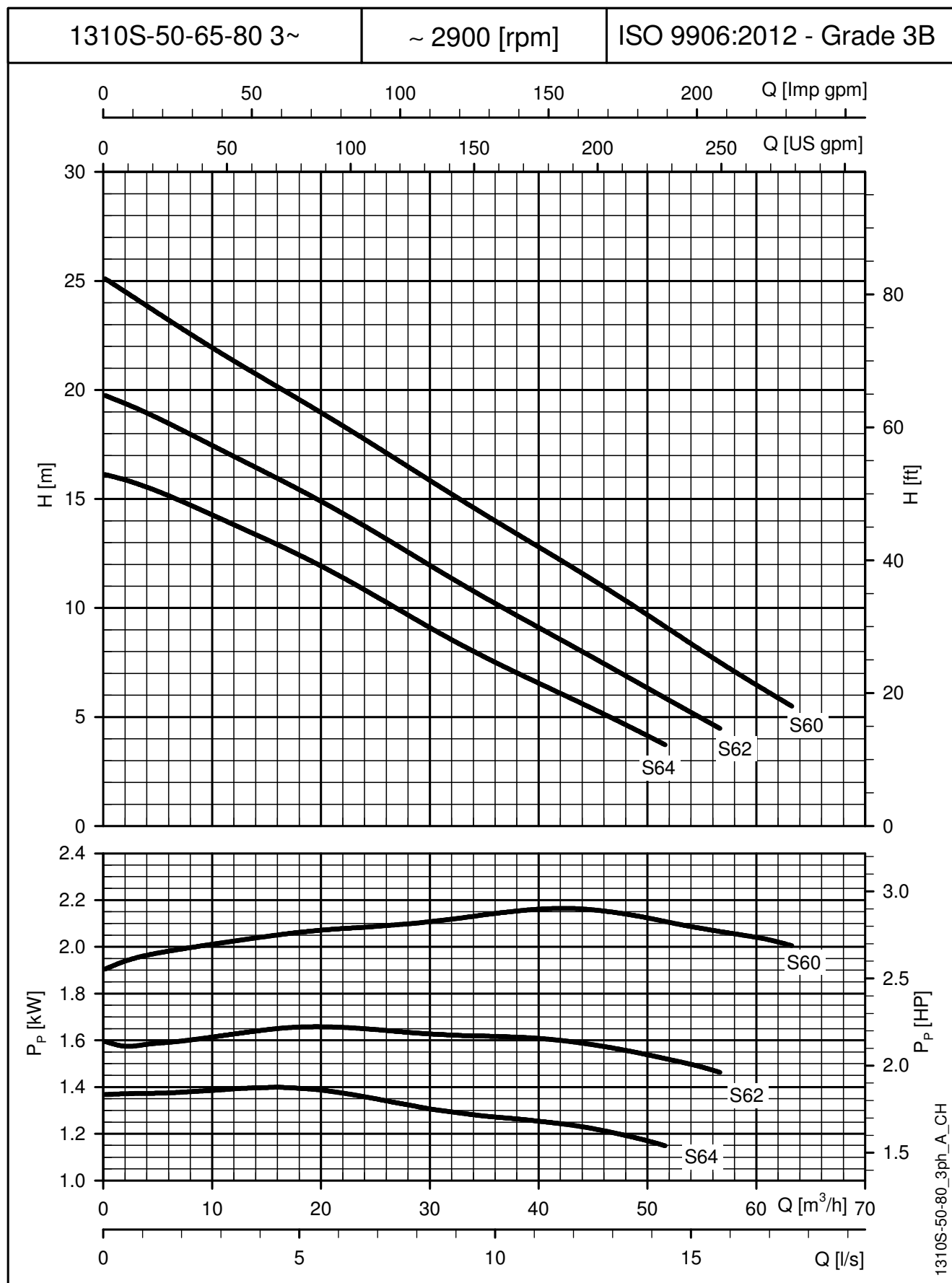
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**1310S Non-clog (DN50, 65, 80) (SINGLE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



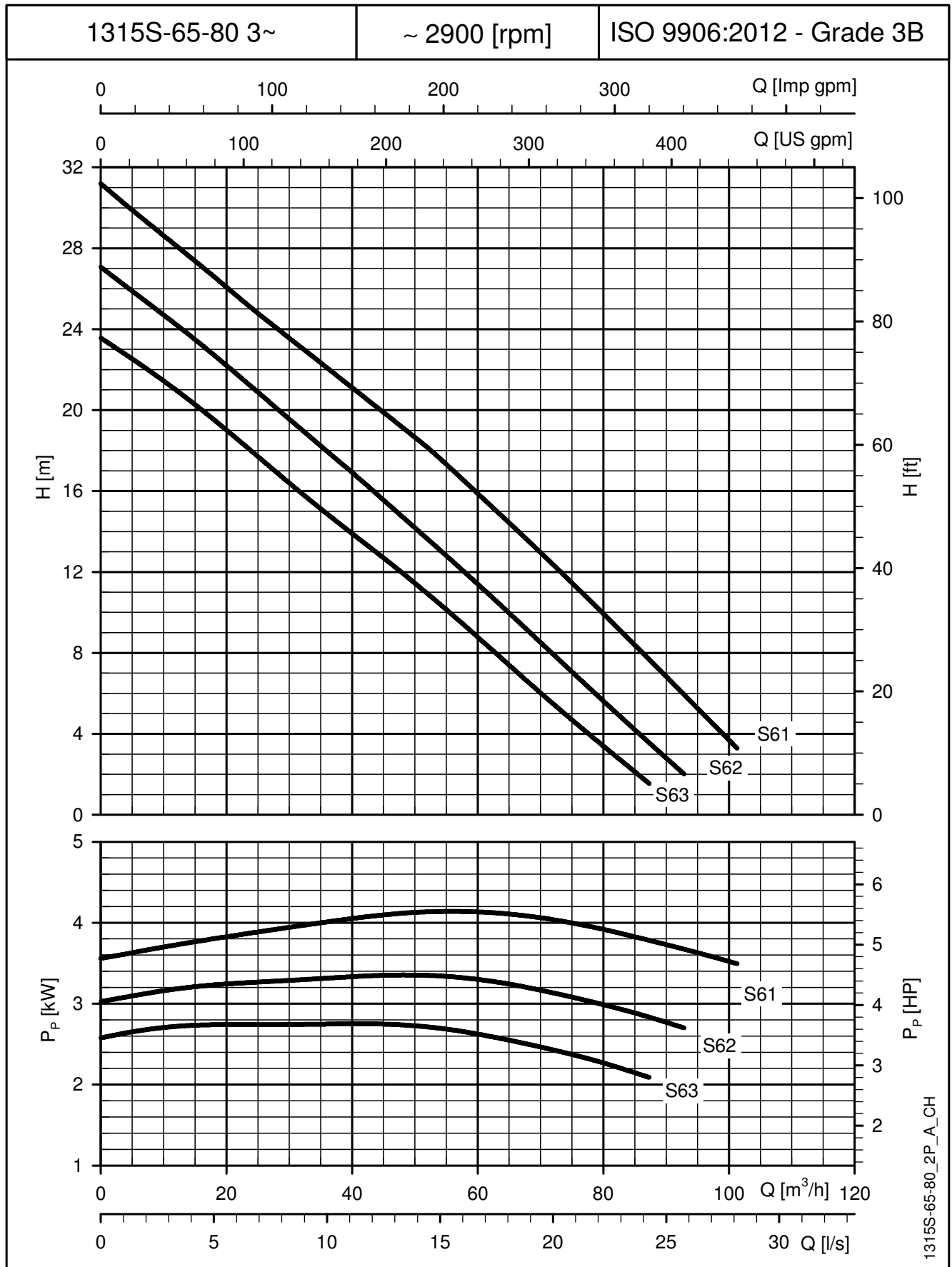
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1310S Non-clog (DN50, 65, 80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



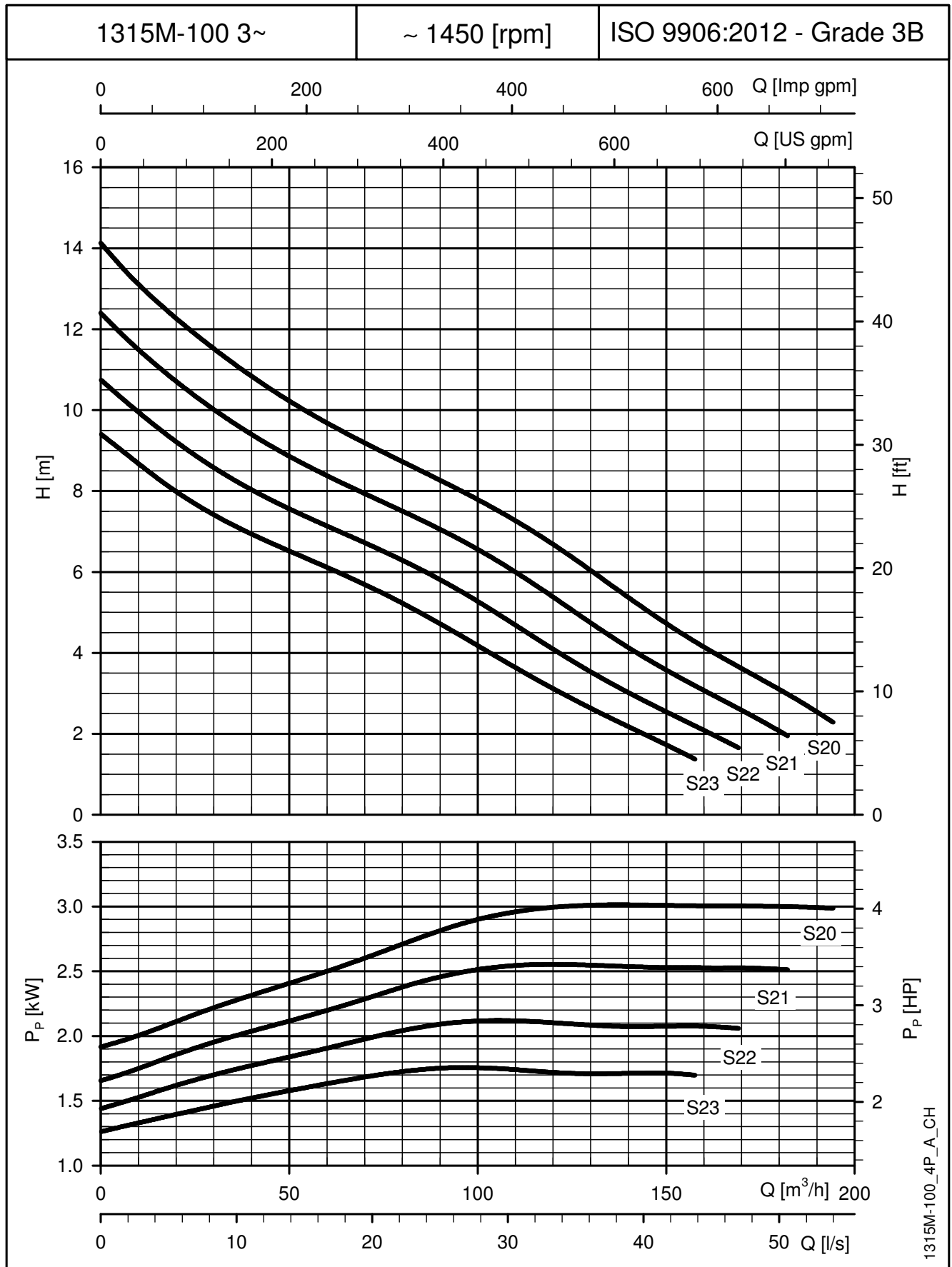
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1315S Non-clog (DN65, 80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



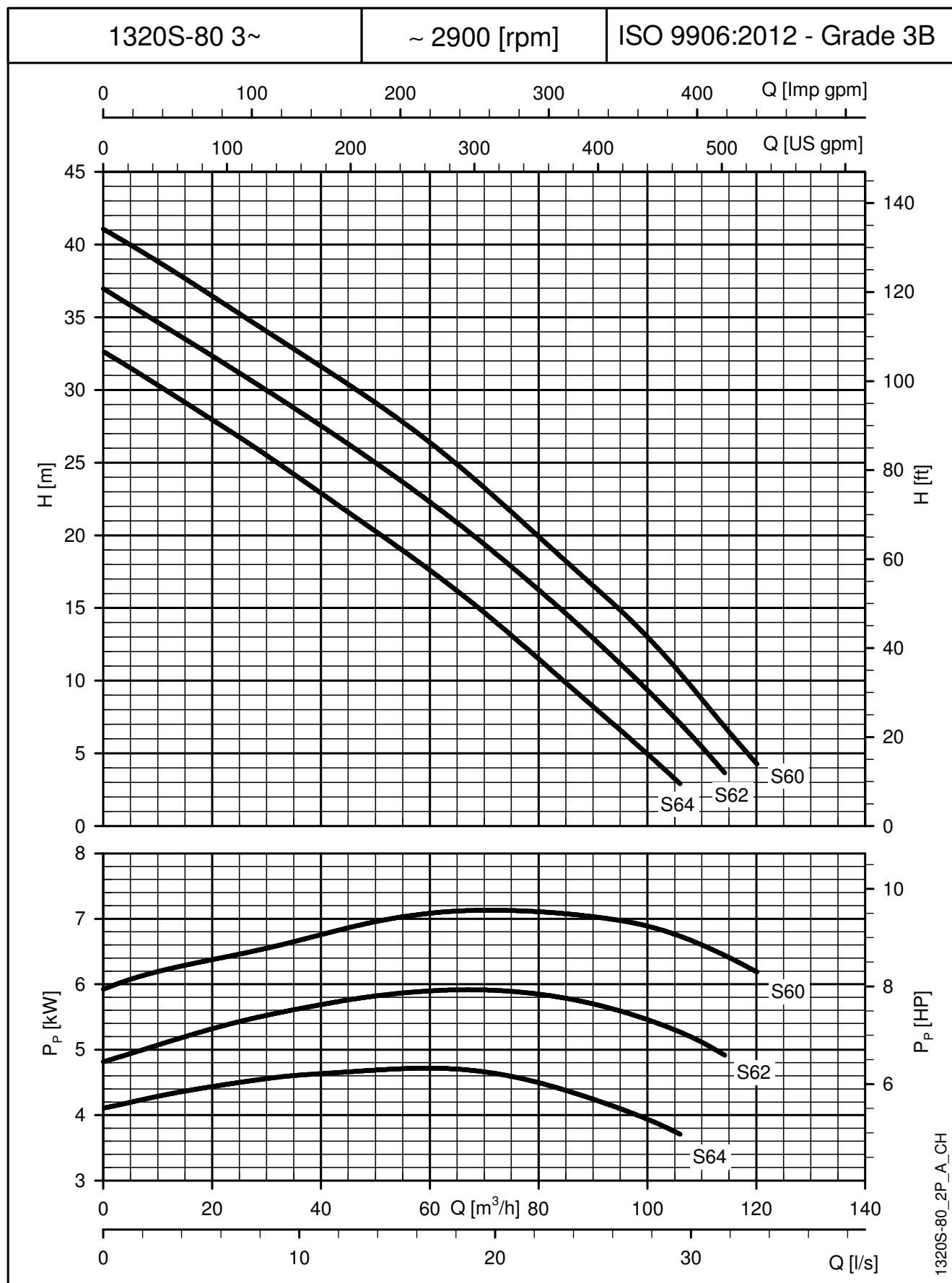
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1315M Non-clog (DN100) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



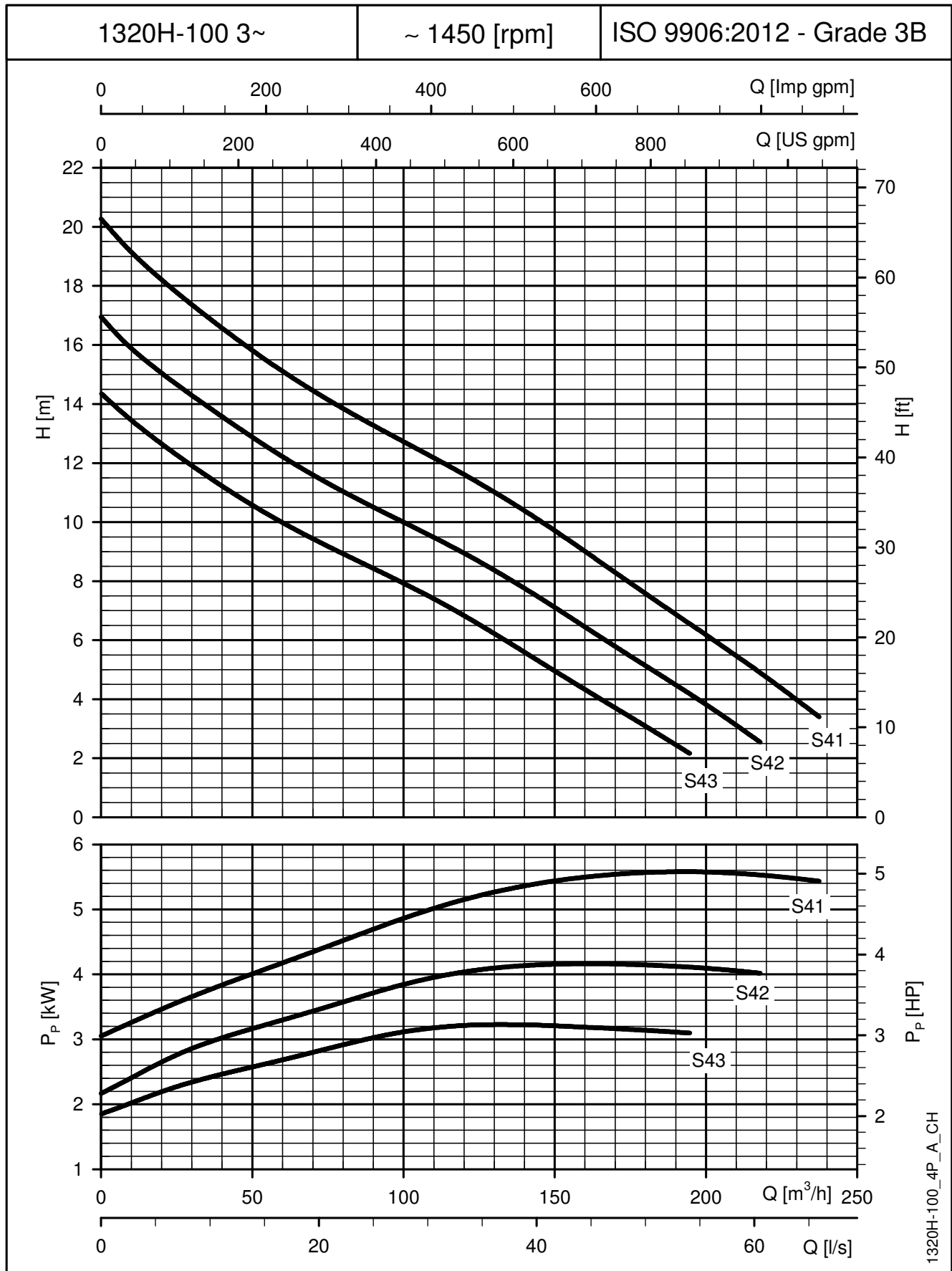
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1320S Non-clog (DN80) (THREE-PHASE) **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



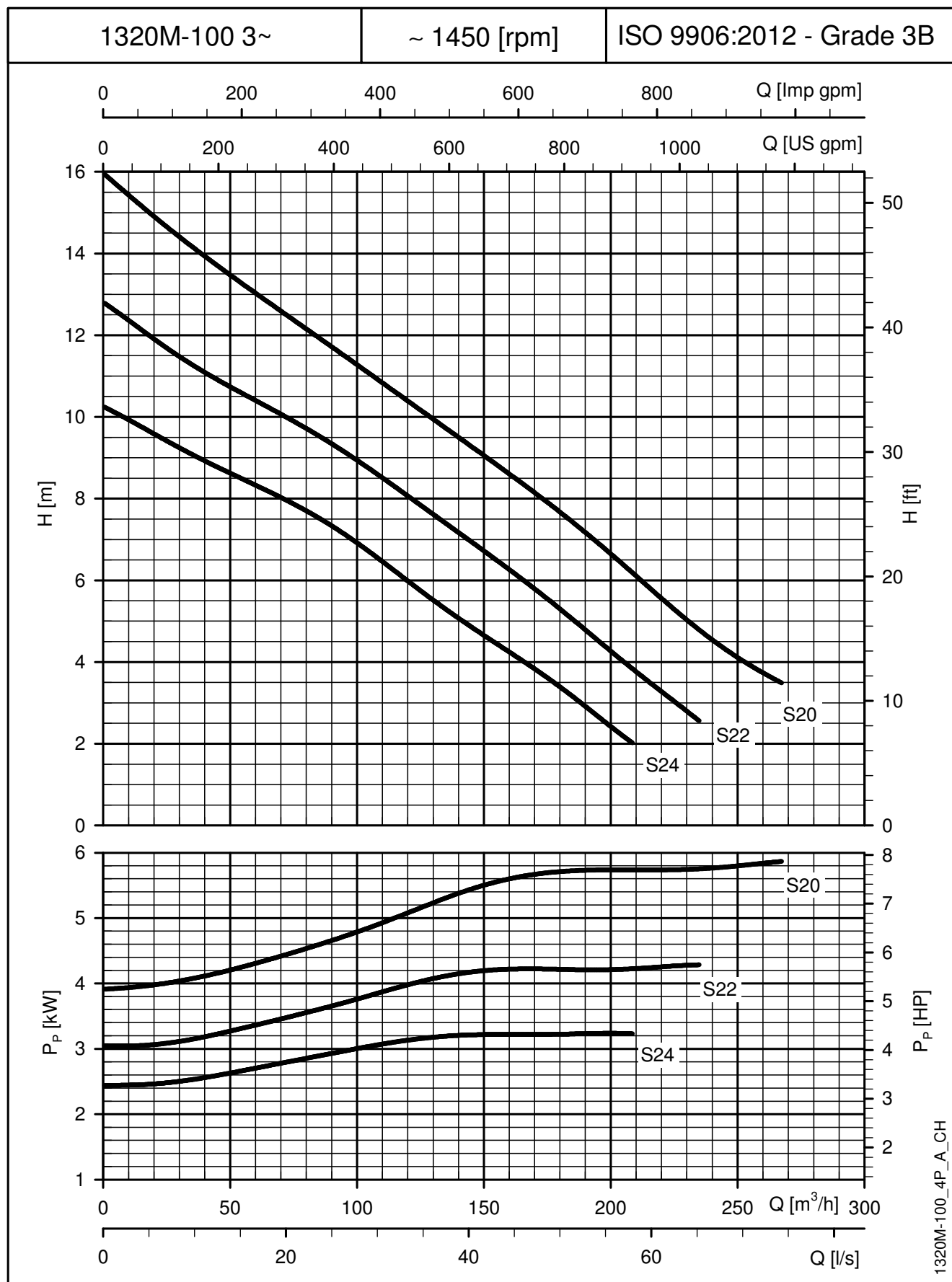
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1320H Non-clog (DN100) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



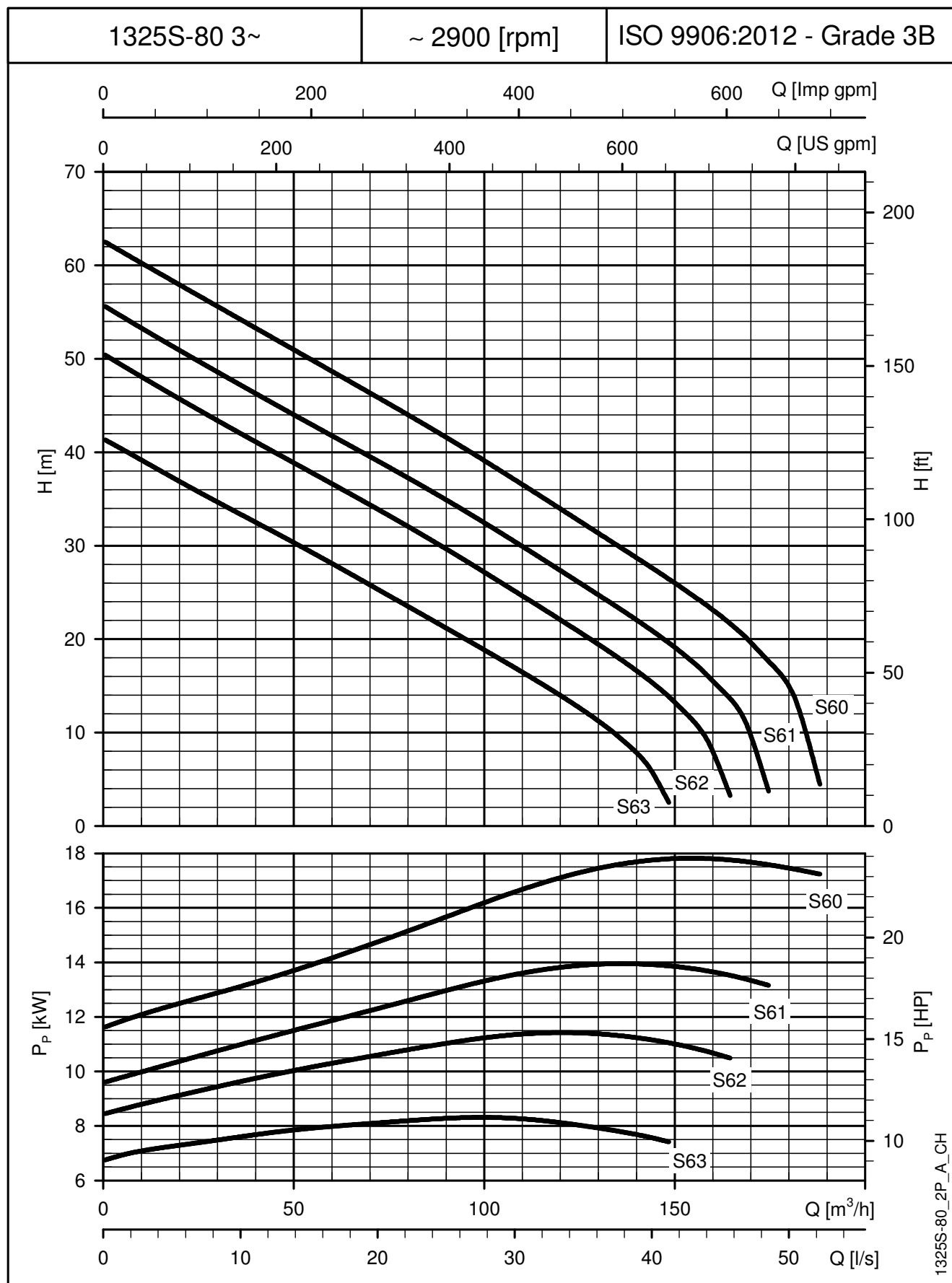
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1320M Non-clog (DN100) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



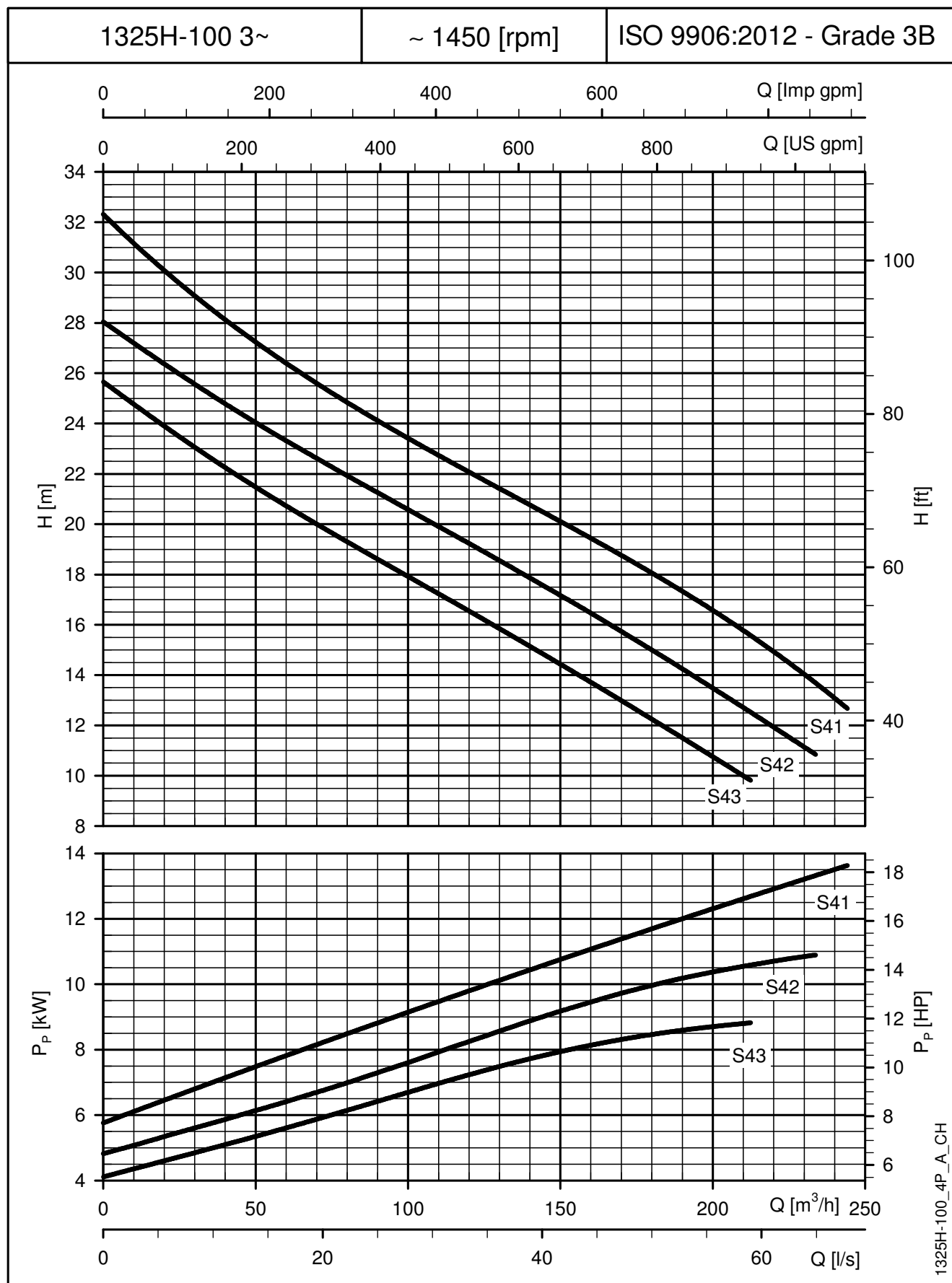
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1325S Non-clog (DN80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



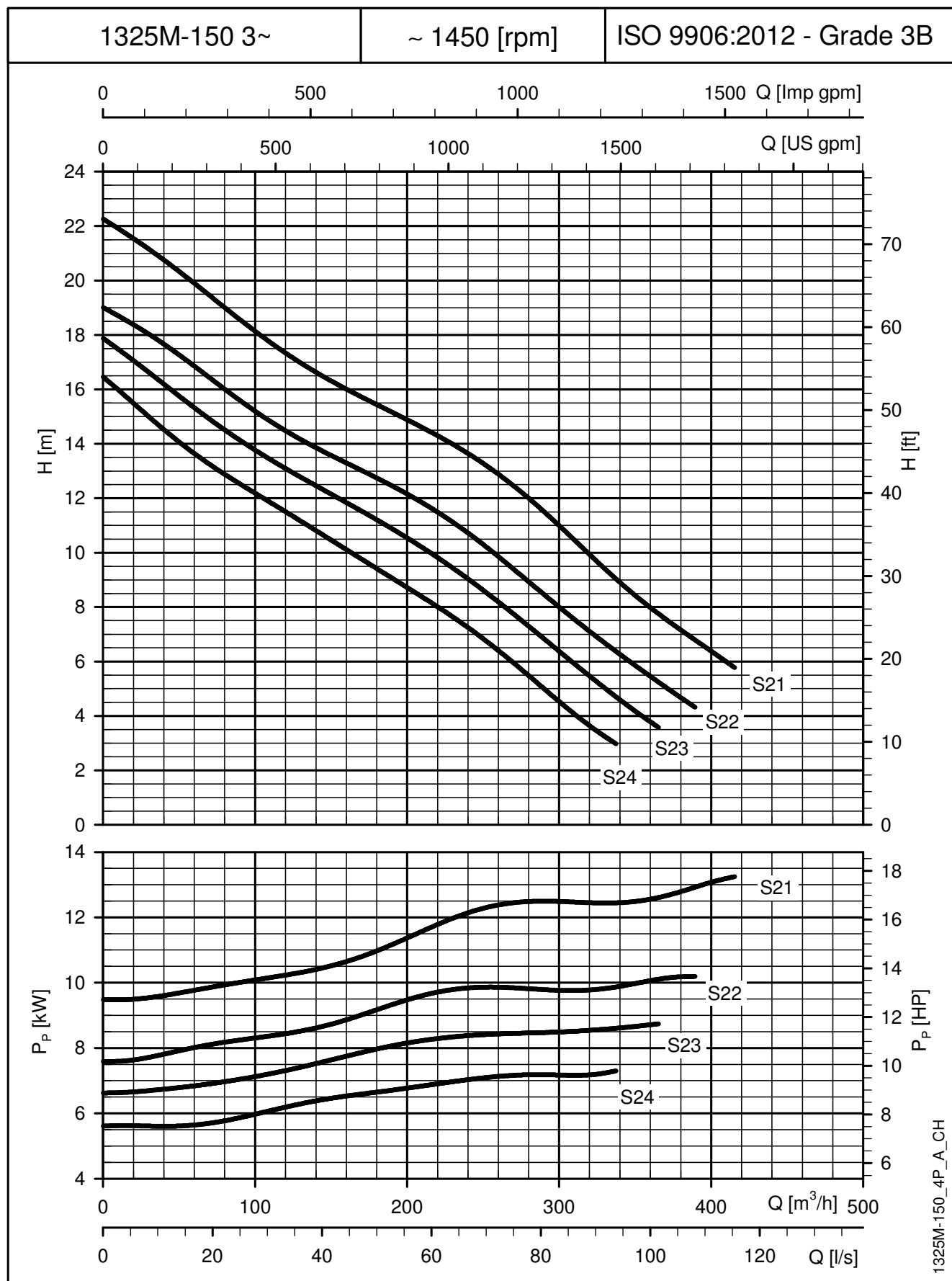
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1325H Non-clog (DN100) (THREE-PHASE) **OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



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

1325M Non-clog (DN150) (THREE-PHASE) **OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**

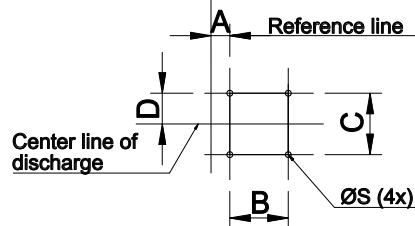
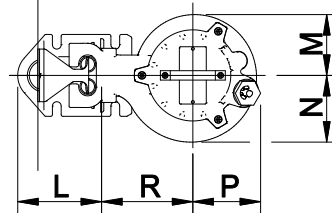
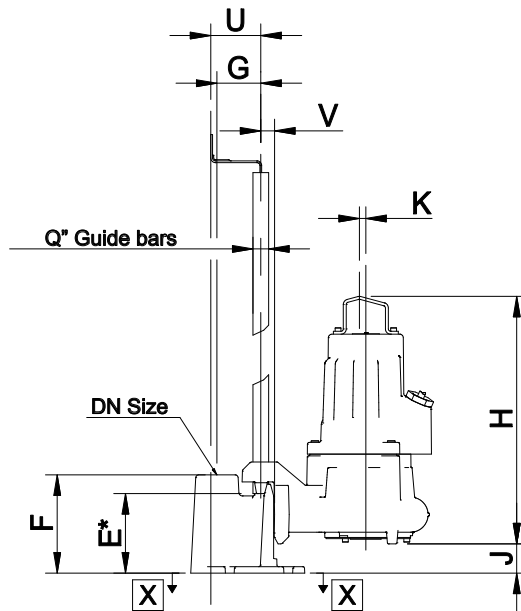


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1300 Non-clog SERIES DIMENSIONS AND WEIGHTS

1305S Non-clog (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



VIEW **X** - **X**

*Dimension to end of guide bars

Impeller	Vortex (V)	Non-clog (S)
Pressure	H	S
Pump Outlet	DN50	DN50
Pump Weight (kg)	34	32
H	423	397
min J	50	56
K	11	11
M	104	97
N	114	120
P	116	116
R	156	156

Max weight without cable.

Discharge Connection	DN50
Discharge Weight (kg)	7
A	33
B	100
C	105
D	53
E	136
F	168
G	75
L	143
Q	3/4
S	M12
U	86
V	24

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN50)
	PUMP /10	PUMP /20	
1305S-50W.251.S66...	35	38	7
1305S-50W.251.S64...	35	38	7
1305S-50W.253.S66...	35	38	7
1305S-50W.253.S62...	35	38	7
1305S-50W.253.S60...	35	38	7

Max weight with cable.

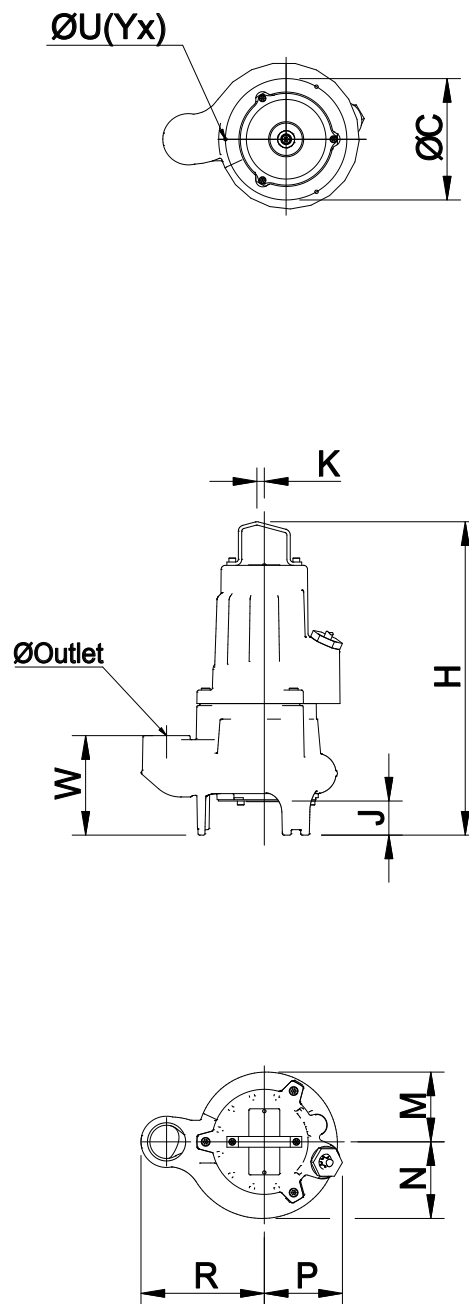
1305S-50W-2p50-en_a_td

1305S Non-clog (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)	Non-clog (S)
Pressure	H	S
Pumphousing Outlet	DN50	DN50
Thread EN/ANSI	ISO G2" /2-11 1/2 NPT	ISO G2" /2-11 1/2 NPT
Pump Weight (kg)	33	32
C	180	-
H	465	418
J	53	35
K	11	11
M	103	97
N	114	119
P	116	116
R	183	182
U	M6	-
Y	3	-
W	148	121

Max weight without cable.



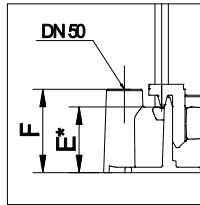
PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1305S-50T.251.S66...	35	38
1305S-50T.251.S64...	35	38
1305S-50T.253.S66...	35	38
1305S-50T.253.S62...	35	38
1305S-50T.253.S60...	35	38

Max weight with cable.

1305S-50T-2p50-en_a_td

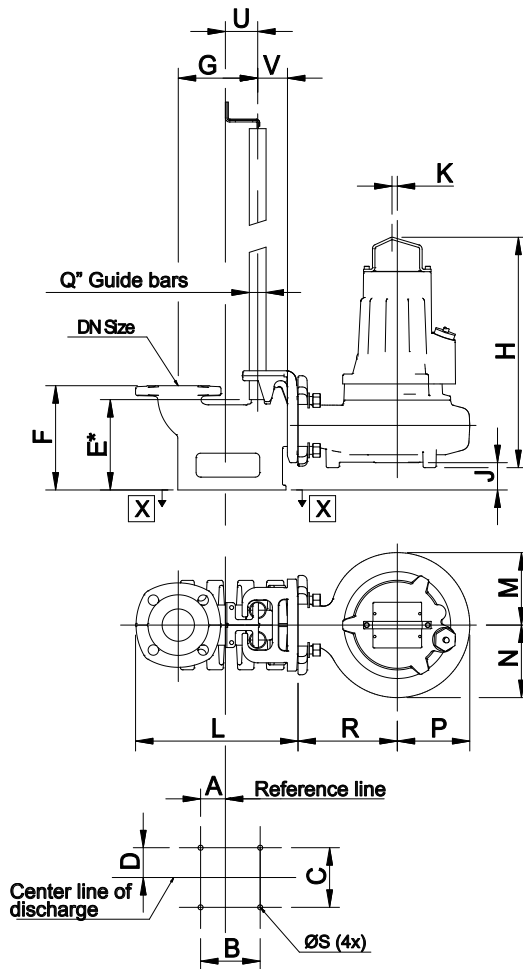
1310S Non-clog (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



Impeller	Vortex (V)							Non-clog (S)				
	L		M				H	S				
Pressure	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	455	422	491	457	491	457
min J	55	75	78	78	98	98	58	55	71	71	91	91
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	114	103	103	103	103	103
N	146	146	106	106	106	106	124	123	123	123	123	123
P	146	146	99	99	99	99	119	112	118	118	118	118
R	200	200	160	160	160	160	166	175	200	200	200	200

Max weight without cable.



Discharge Connection	DN80	DN65	DN50
Discharge Weight (kg)	19	14	7
A	60	50	33
B	130	120	100
C	170	120	105
D	85	60	53
E	212	186	136
F	255	210	168
G	160	160	75
L	337	326	143
Q	1	1	3/4
S	M12	M12	M12
U	65	65	86
V	60	60	24

VIEW X - X *Dimension to end of guide bars

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN50)
	/10	/20	
1310S-50W.251.S64...	38	41	7
1310S-50W.251.S62...	38	41	7
1310S-50W.251.S60...	38	41	7
1310S-50W.253.S64...	38	41	7
1310S-50W.253.S62...	38	41	7
1310S-50W.253.S60...	38	41	7

Max weight with cable.

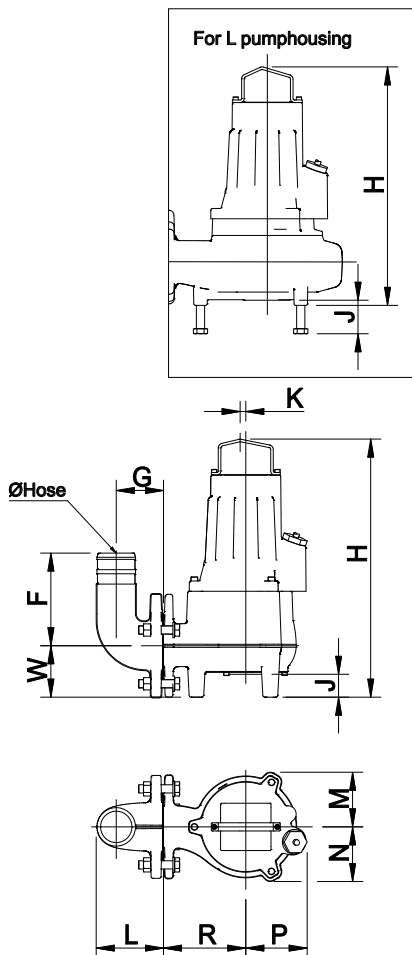
1310S-50W-2p50-en_a_td

1310S Non-clog (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller Pressure	Vortex (V)						Non-clog (S)				
	L		M		H		S				
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1
No of Poles	4	4	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38
H	465	465	535	501	535	501	503	433	491	457	491
J	65	65	50	50	50	50	61	32	49	49	49
K	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	115	103	103	103	103
N	146	146	106	106	106	106	125	123	123	123	123
P	146	146	99	99	99	99	120	112	118	118	118
R	200	200	160	160	160	160	152	152	200	200	200
W	85	85	100	100	100	100	-	-	100	100	100

Max weight without cable.



Pumphousing Outlet	DN80	DN80	DN65	DN65	DN50	DN50
Pressure	L/MS	L/MS	L/MS	L/MS	H	S
Outlet type	Hose	Inner thread	Hose	Inner thread	Inner thread	Inner thread
ØHose/ Thread	Ø75	ISO G3* /3"-8 NPSM	Ø75	ISO G3*	ISO G2*	ISO G2* /2-11 1/2 NPT
Discharge Weight (kg)	7	8	7	8	-	-
F	180	155	180	155	157	121
G	90	90	90	90	-	-
L	129	136	129	136	40	40

PUMP TYPE	WEIGHT (Kg)	
	/10	/20
1310S-50T.251.S64...	38	41
1310S-50T.251.S62...	38	41
1310S-50T.251.S60...	38	41
1310S-50T.253.S64...	38	41
1310S-50T.253.S62...	38	41
1310S-50T.253.S60...	38	41

Max weight with cable.

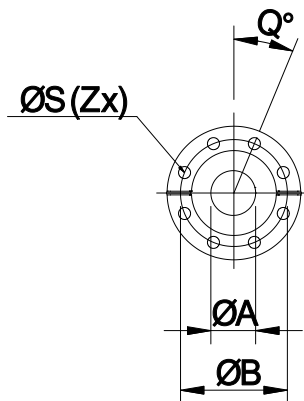
1310S-50T-2p50-en_a_td

1310S Non-clog (DN65, 80) **DIMENSIONS AND WEIGHTS**

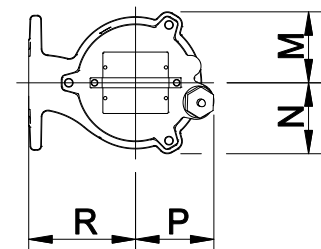
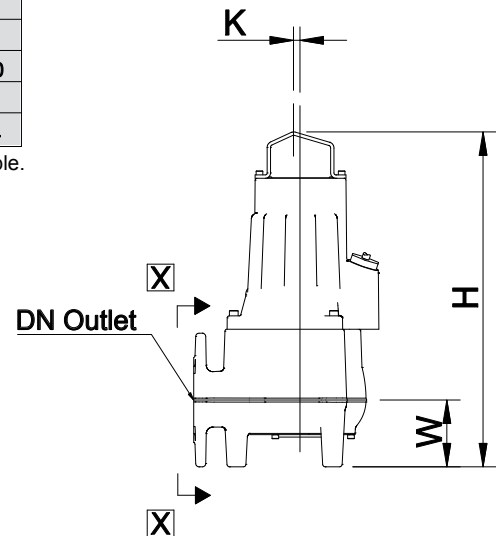
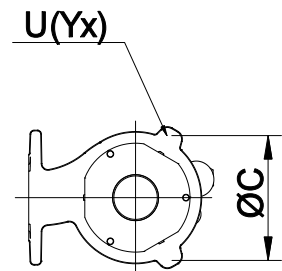
PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)						Non-clog (S)			
	L		M				S			
Pressure										
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	38	38	38	38
Drilling	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI
A	59	59	67	67	67	67	65	65	65	65
B	142	160/152.4	142	142	160/152.4	160/152.4	142	142	160/152.4	160/152.4
C	260	260	-	-	-	-	-	-	-	-
H	465	465	535	501	535	501	491	457	491	457
K	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	103	103	103	103
N	146	146	106	106	106	106	123	123	123	123
P	146	146	99	99	99	99	118	118	118	118
Q	45	45	45	45	22.5/45	22.5/45	45	45	22.5/45	22.5/45
R	200	200	160	160	160	160	200	200	200	200
S	18	18	21	21	18/21	18/21	21	21	18	18
U	M6	M6	-	-	-	-	-	-	-	-
W	85	85	100	100	100	100	100	100	100	100
Y	3	3	-	-	-	-	-	-	-	-
Z	4	4	4	4	8/4	8/4	4	4	8/4	8/4

Max weight without cable.



VIEW X-X



1310S Non-clog (DN65, 80) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1310S-65X.251.S64...	41	44
1310S-65X.251.S62...	41	44
1310S-65X.251.S60...	41	44
1310S-65X.253.S64...	41	44
1310S-65X.253.S62...	41	44
1310S-65X.253.S60...	41	44

Max weight with cable.

1310S-65X-2p50-en_a_td

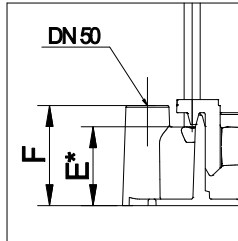
PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1310S-80X.251.S64...	41	44
1310S-80X.251.S62...	41	44
1310S-80X.251.S60...	41	44
1310S-80X.253.S64...	41	44
1310S-80X.253.S62...	41	44
1310S-80X.253.S60...	41	44

Max weight with cable.

1310S-80X-2p50-en_a_td

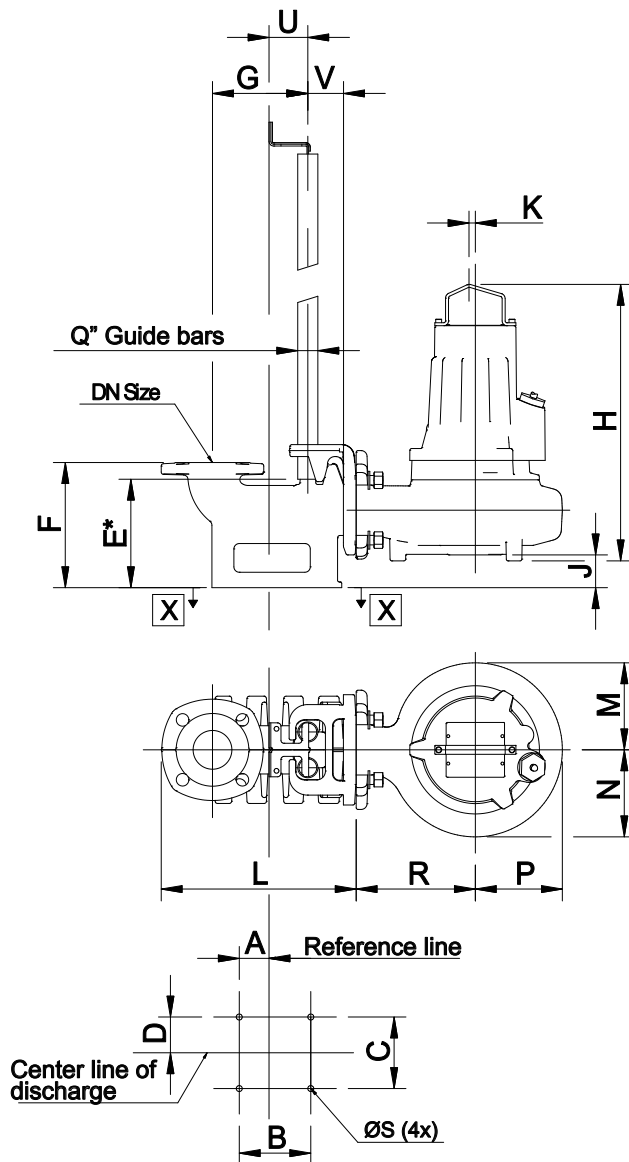
1310S Non-clog (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



Impeller	Vortex (V)						Non-clog (S)					
Pressure	L		M				H	S				
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	455	422	491	457	491	457
min J	55	75	78	78	98	98	58	55	71	71	91	91
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	114	103	103	103	103	103
N	146	146	106	106	106	106	124	123	123	123	123	123
P	146	146	99	99	99	99	119	112	118	118	118	118
R	200	200	160	160	160	160	166	175	200	200	200	200

Max weight without cable.



Discharge Connection	DN80	DN65	DN50
Discharge Weight (kg)	19	14	7
A	60	50	33
B	130	120	100
C	170	120	105
D	85	60	53
E	212	186	136
F	255	210	168
G	160	160	75
L	337	326	143
Q	1	1	3/4
S	M12	M12	M12
U	65	65	86
V	60	60	24

VIEW X - X *Dimension to end of guide bars

1310S Non-clog (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1310S-65X.251.S64...	41	44	14
1310S-65X.251.S62...	41	44	14
1310S-65X.251.S60...	41	44	14
1310S-65X.253.S64...	41	44	14
1310S-65X.253.S62...	41	44	14
1310S-65X.253.S60...	41	44	14

Max weight with cable.

1310S-65W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1310S-80X.251.S64...	41	44	19
1310S-80X.251.S62...	41	44	19
1310S-80X.251.S60...	41	44	19
1310S-80X.253.S64...	41	44	19
1310S-80X.253.S62...	41	44	19
1310S-80X.253.S60...	41	44	19

Max weight with cable.

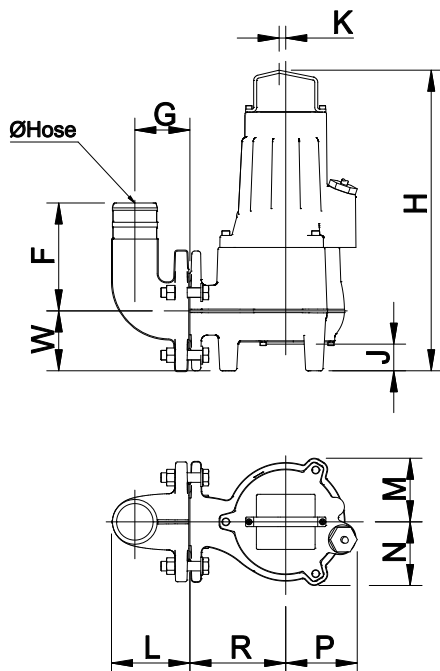
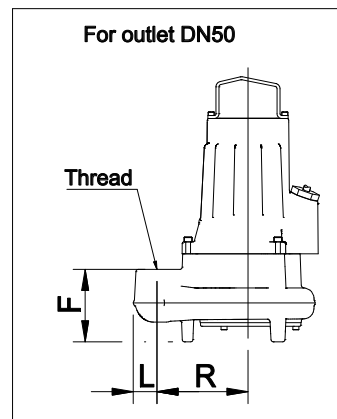
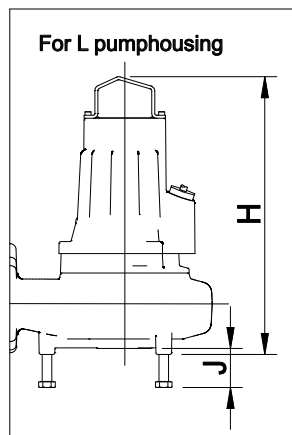
1310S-80W-2p50-en_a_td

1310S Non-clog (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)						Non-clog (S)					
Pressure	L		M				H	S				
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	503	433	491	457	491	457
J	65	65	50	50	50	50	61	32	49	49	49	49
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	115	103	103	103	103	103
N	146	146	106	106	106	106	125	123	123	123	123	123
P	146	146	99	99	99	99	120	112	118	118	118	118
R	200	200	160	160	160	160	152	152	200	200	200	200
W	85	85	100	100	100	100	-	-	100	100	100	100

Max weight without cable.



Pumphousing Outlet	DN80	DN80	DN65	DN65	DN50	DN50
Pressure	L/MS	L/MS	L/MS	L/MS	H	S
Outlet type	Hose	Inner thread	Hose	Inner thread	Inner thread	Inner thread
ØHose/ Thread	Ø75	ISO G3" /3"-8 NPSM	Ø75	ISO G3"	ISO G2"	ISO G2" /2-11 1/2 NPT
Discharge Weight (kg)	7	8	7	8	-	-
F	180	155	180	155	157	121
G	90	90	90	90	-	-
L	129	136	129	136	40	40

1310S Non-clog (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN65)	KIT H (DN65)
	/10	/20		
1310S-65X.251.S64...	41	44	8	7
1310S-65X.251.S62...	41	44	8	7
1310S-65X.251.S60...	41	44	8	7
1310S-65X.253.S64...	41	44	8	7
1310S-65X.253.S62...	41	44	8	7
1310S-65X.253.S60...	41	44	8	7

Max weight with cable.

1310S-65T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1310S-80X.251.S64...	41	44	8	7
1310S-80X.251.S62...	41	44	8	7
1310S-80X.251.S60...	41	44	8	7
1310S-80X.253.S64...	41	44	8	7
1310S-80X.253.S62...	41	44	8	7
1310S-80X.253.S60...	41	44	8	7

Max weight with cable.

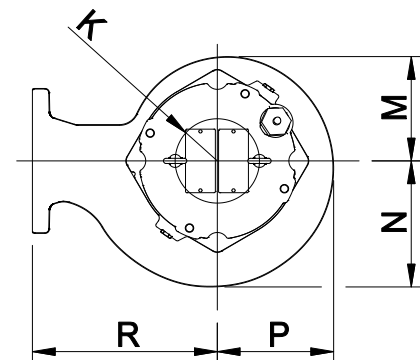
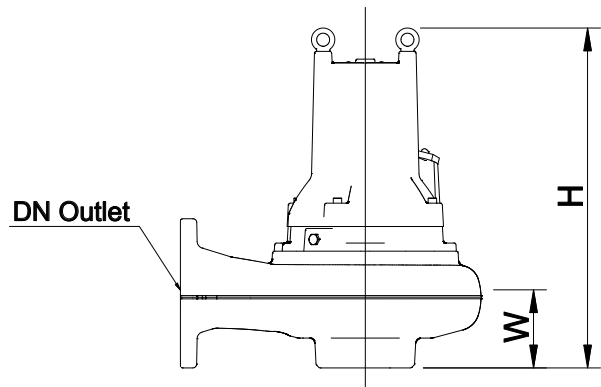
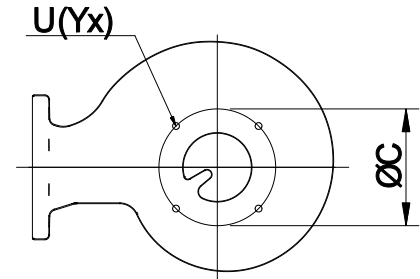
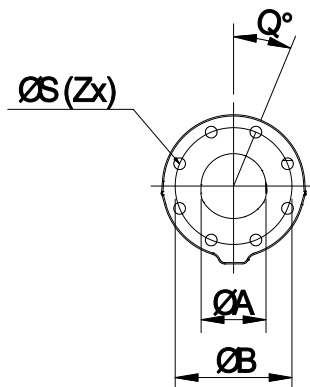
1310S-80T-H-2p50-en_a_td

1315S, M Non-clog (DN65, 80, 100) **DIMENSIONS AND WEIGHTS**

PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)			Non-clog (S)		
	M	H		M	S	
Pump Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
Drilling	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI
A	102	67	67	100	67	67
B	180/190.5	142/-	160/152.4	180/190.5	142/-	160/152.4
C	180	180	180	180	180	180
H	573	523	523	524	508	508
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
Q	22.5	45/-	22.5/45	22.5	45/-	22.5/45
R	225	200	200	285	230	230
S	18/19	21/-	18	18/19	21/-	18
U	M12	M12	M12	M12	M12	M12
W	120	100	100	120	100	100
Y	4	4	4	4	4	4
Z	8	4/-	8/4	8	4/-	8/4

Max weight without cable.



1315S, M Non-clog (DN65, 80, 100) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315S-65X.253.S63...	87	93
1315S-65X.253.S62...	87	93
1315S-65X.253.S61...	87	93

Max weight with cable.

1315S-65X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315S-80X.253.S63...	86	92
1315S-80X.253.S62...	86	92
1315S-80X.253.S61...	86	92

Max weight with cable.

1315S-80X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315M-100X.453.S23...	87	90
1315M-100X.453.S22...	87	90
1315M-100X.453.S21...	87	90
1315M-100X.453.S20...	87	90

Max weight with cable.

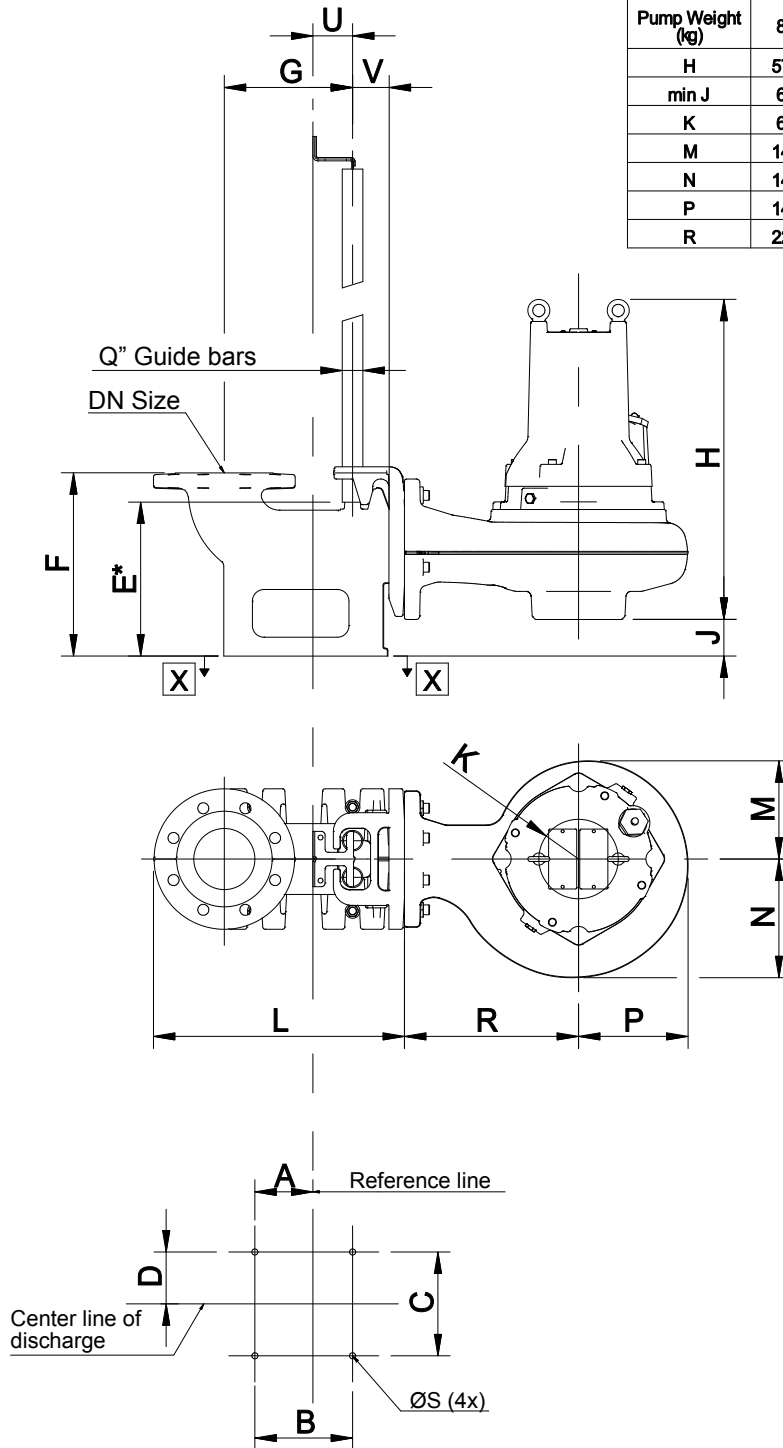
1315M-100X-2p50-en_a_td

1315S, M Non-clog (DN65, 80, 100) **DIMENSIONS AND WEIGHTS**

INSTALLATION W: WET WELL

Impeller Pressure	Vortex (V)			Non-clog (S)		
	M	H		M	S	
Pump Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
H	573	523	523	524	508	508
min J	60	50	50	60	50	50
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
R	225	200	200	285	230	230

Max weight without cable.



VIEW X - X *Dimension to end of guide bars

Discharge Connection	DN100	DN80	DN65
Discharge Weight (kg)	32	24	18
A	95	60	50
B	160	130	120
C	170	170	120
D	85	85	60
E	252	212	186
F	300	255	210
G	210	160	160
L	411	337	326
Q	1	1	1
S	M16	M12	M12
U	65	65	65
V	60	60	60

1315S, M Non-clog (DN65, 80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1315S-65X.253.S63...	87	93	18
1315S-65X.253.S62...	87	93	18
1315S-65X.253.S61...	87	93	18

Max weight with cable.

1315S-65W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1315S-65X.253.S63...	87	93	18
1315S-65X.253.S62...	87	93	18
1315S-65X.253.S61...	87	93	18

Max weight with cable.

1315S-65W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN100)
	PUMP /10	/20	
1315M-100X.453.S23...	87	90	32
1315M-100X.453.S22...	87	90	32
1315M-100X.453.S21...	87	90	32
1315M-100X.453.S20...	87	90	32

Max weight with cable.

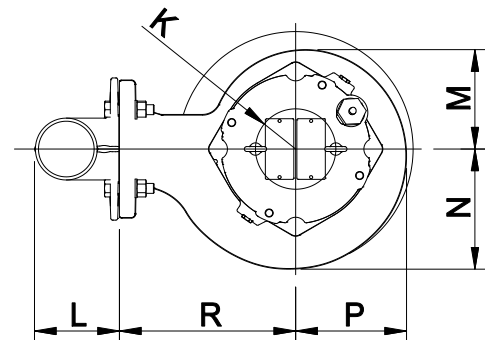
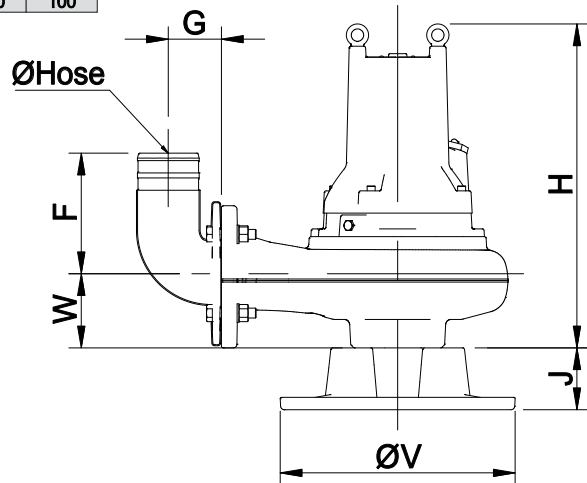
1315M-100W-2p50-en_a_td

1315S, M Non-clog (DN65, 80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)			Non-clog (S)		
Pressure	M	H		M	S	
Pumphousing Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
H	573	523	523	524	508	508
J	100	100	100	100	100	100
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
R	225	200	200	285	230	230
W	120	100	100	120	100	100

Max weight without cable.



Pumphousing Outlet	DN100	DN100	DN80	DN80	DN65	DN65
Outlet type	Hose	Inner thread	Hose	Inner thread	Hose	Inner thread
ØHose/ Thread	Ø100	ISO G4" / 4"-8 NPSM	Ø75	ISO G3" / 3"-8 NPSM	Ø75	ISO G3"
Discharge Weight (kg)	6	7	7	8	7	8
F	195	195	180	155	180	155
L	137	146	129	136	129	136
G	85	85	90	90	90	90
V	380	380	380	380	380	380

1315S, M Non-clog (DN65, 80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN65)	KIT H (DN65)
	/10	/20		
1315S-65X.253.S63...	87	93	8	7
1315S-65X.253.S62...	87	93	8	7
1315S-65X.253.S61...	87	93	8	7

Max weight with cable.

1315S-65T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1315S-80X.253.S63...	86	92	8	7
1315S-80X.253.S62...	86	92	8	7
1315S-80X.253.S61...	86	92	8	7

Max weight with cable.

1315S-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN100)	KIT H (DN100)
	/10	/20		
1315M-100X.453.S23...	87	90	7	6
1315M-100X.453.S22...	87	90	7	6
1315M-100X.453.S21...	87	90	7	6
1315M-100X.453.S20...	87	90	7	6

Max weight with cable.

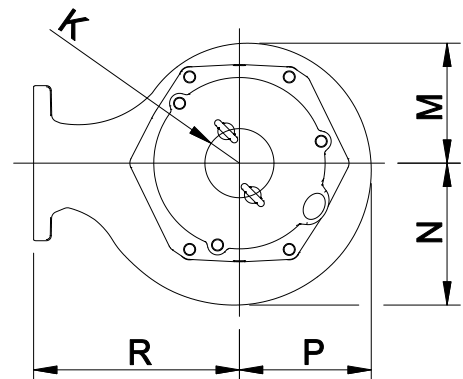
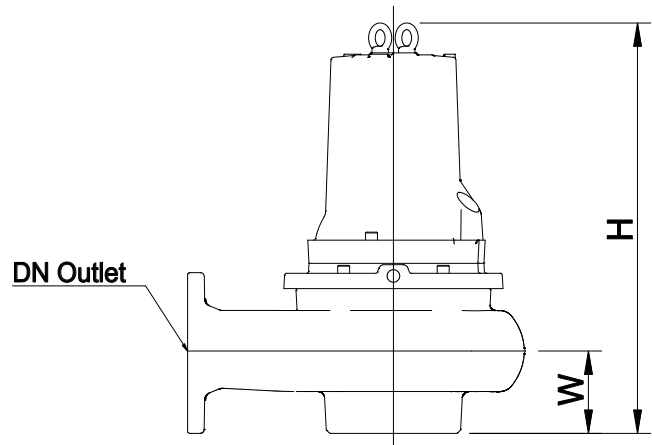
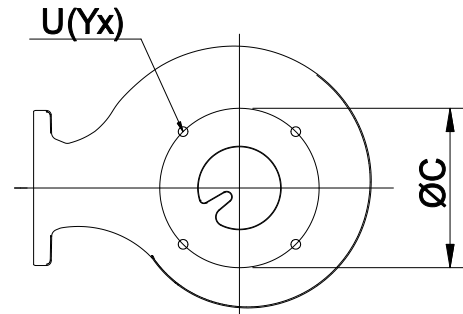
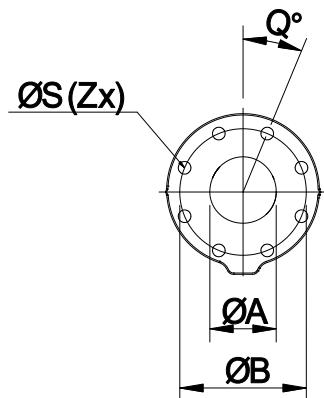
1315M-100T-H-2p50-en_a_td

1320S, H, M Non-clog (DN80, 100) **DIMENSIONS AND WEIGHTS**

PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)		Non-clog (S)		
	M	H	M	H	S
Pump Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
Drilling	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI
A	102	67	100	100	78
B	180/190.5	160/152.4	180/190.5	180/190.5	160/152.4
C	180	180	240	180	180
H	674	610	618	592	570
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
Q	22.5	22.5/45	22.5	22.5	22.5/45
R	245	210	310	310	260
S	18/19	18	18/19	18/19	18
U	M12	M12	M16	M12	M12
W	123	100	124	123	100
Y	4	4	4	4	4
Z	8	8/4	8	8	8/4

Max weight without cable.



1320S, H, M Non-clog (DN80, 100) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1320S-80X.253.S64...	121	127
1320S-80X.253.S62...	121	127
1320S-80X.253.S60...	121	127

Max weight with cable.

1320S-80X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1320H-100X.453.S43...	140	146
1320H-100X.453.S42...	140	146
1320H-100X.453.S41...	140	146
1320M-100X.453.S24...	140	146
1320M-100X.453.S22...	140	146
1320M-100X.453.S20...	140	146

Max weight with cable.

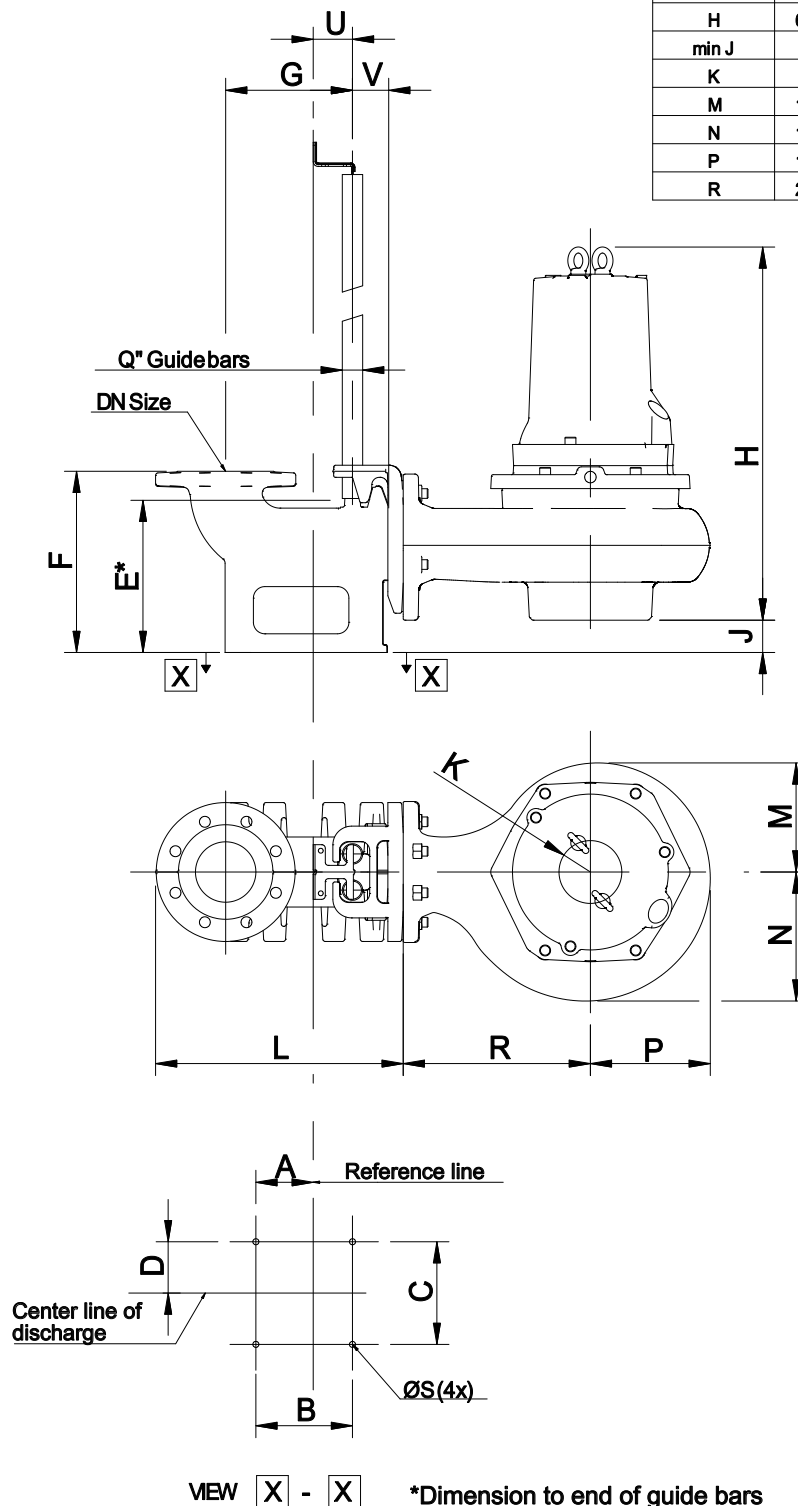
1320H-1320M-100X-2p50-en_a_td

1320S, H, M Non-clog (DN80, 100) **DIMENSIONS AND WEIGHTS**

INSTALLATION W: WET WELL

Impeller	Vortex (V)		Non-clog (S)		
	M	H	M	H	S
Discharge Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
H	674	610	618	592	570
min J	57	50	53	57	50
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
R	245	210	310	310	260

Max weight without cable.



VIEW X - X

*Dimension to end of guide bars

Discharge Connection	DN100	DN80
Discharge Weight (kg)	32	24
A	95	60
B	160	130
C	170	170
D	85	85
E	252	212
F	300	255
G	210	160
L	411	337
Q	1	1
S	M16	M12
U	65	65
V	60	60

1320S, H, M Non-clog (DN80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1320S-80X.253.S64...	121	127	24
1320S-80X.253.S62...	121	127	24
1320S-80X.253.S60...	121	127	24

Max weight with cable.

1320S-80W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN100)
	PUMP /10	/20	
1320H-100X.453.S43...	140	146	32
1320H-100X.453.S42...	140	146	32
1320H-100X.453.S41...	140	146	32
1320M-100X.453.S24...	140	146	32
1320M-100X.453.S22...	140	146	32
1320M-100X.453.S20...	140	146	32

Max weight with cable.

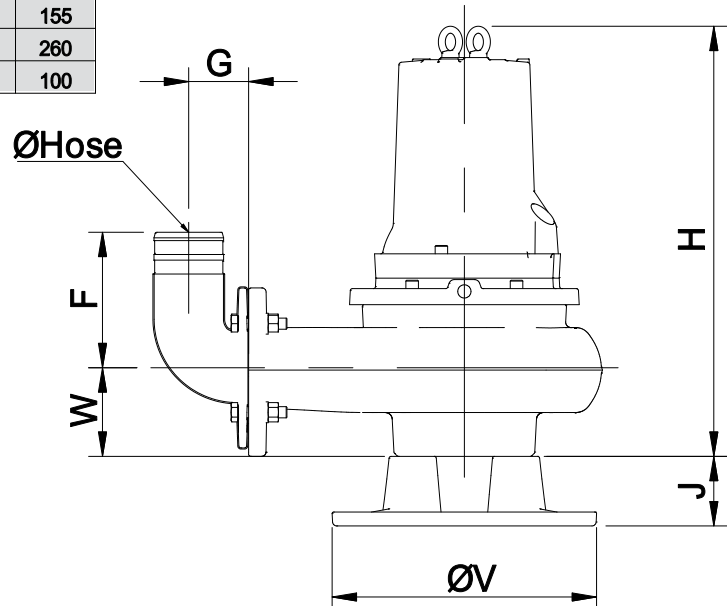
1320H-1320M-100W-2p50-en_a_td

1320S, H, M Non-clog (DN80, 100) DIMENSIONS AND WEIGHTS

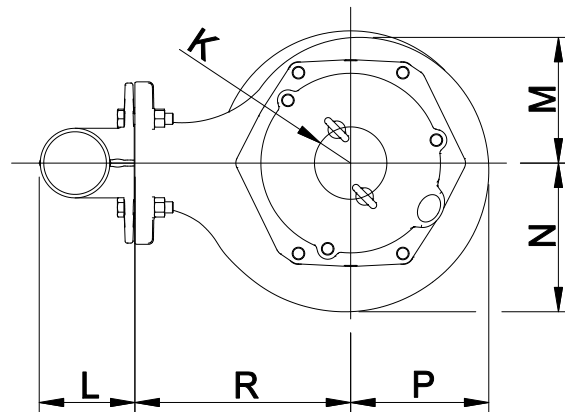
INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)		Non-clog (S)		
	M	H	M	H	S
Pump housing Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
H	674	610	618	592	570
J	100	100	100	100	100
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
R	245	210	310	310	260
W	123	100	124	123	100

Max weight without cable.



Pumphousing Outlet	DN100	DN100	DN80	DN80
Outlet type	Hose	Inner thread	Hose	Inner thread
ØHose/ Thread	Ø100	ISO G4" / 4"-8 NPSM	Ø75	ISO G3" / 3"-8 NPSM
Discharge Weight (kg)	6	7	7	8
F	195	195	180	155
L	137	146	129	136
G	85	85	90	90
V	380	380	380	380



1320S, H, M Non-clog (DN80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1320S-80X.253.S64...	121	127	8	7
1320S-80X.253.S62...	121	127	8	7
1320S-80X.253.S60...	121	127	8	7

Max weight with cable.

1320S-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN100)	KIT H (DN100)
	/10	/20		
1320H-100X.453.S43...	140	146	7	6
1320H-100X.453.S42...	140	146	7	6
1320H-100X.453.S41...	140	146	7	6
1320M-100X.453.S24...	140	146	7	6
1320M-100X.453.S22...	140	146	7	6
1320M-100X.453.S20...	140	146	7	6

Max weight with cable.

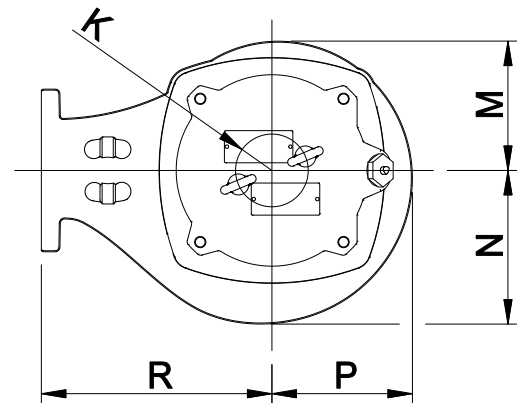
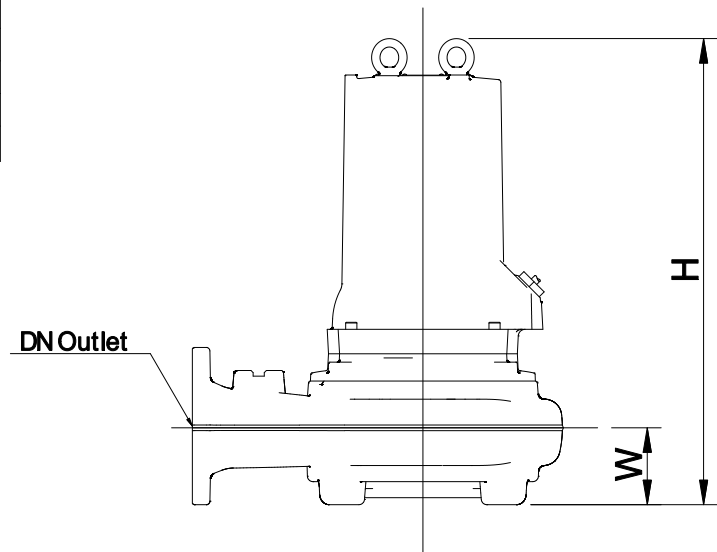
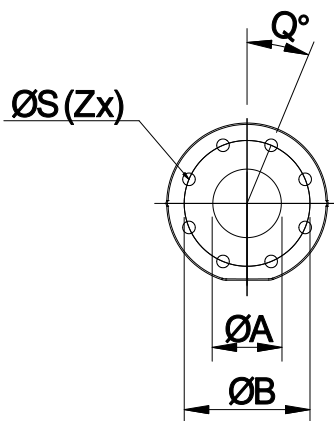
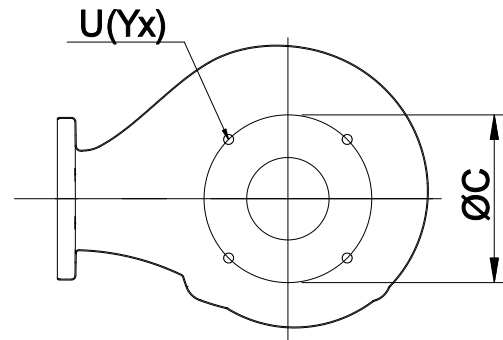
1320H-1320M-100T-H-2p50-en_a_td

1325S, H, M Non-clog (DN80, 100, 150) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

Impeller	Non-clog (S)		
Pressure	M	H	S
Pump Outlet	DN150	DN100	DN80
Pump Weight (kg)	179	164	172
Drilling	EN/ANSI	EN/ANSI	EN/ANSI
A	139	98	78
B	240	180/190.5	160/152.4
C	240	240	240
H	663	667	650
K	52	52	52
M	187	185	175
N	259	220	175
P	220	201	175
Q	22.5	22.5	22.5/45
R	330	330	330
S	23	18/19	18
U	M16	M16	M16
W	137	110	82
Y	4	4	4
Z	8	8	8/4

Max weight without cable.



1325S, H, M Non-clog (DN80, 100, 150) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1325S-80X.253.S63...	178	184
1325S-80X.253.S62...	178	184
1325S-80X.253.S61...	178	184
1325S-80X.253.S60...	178	184

Max weight with cable.

1325S-80X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1325H-100X.453.S43...	170	176
1325H-100X.453.S42...	170	176
1325H-100X.453.S41...	170	176

Max weight with cable.

1325H-100X-2p50-en_a_td

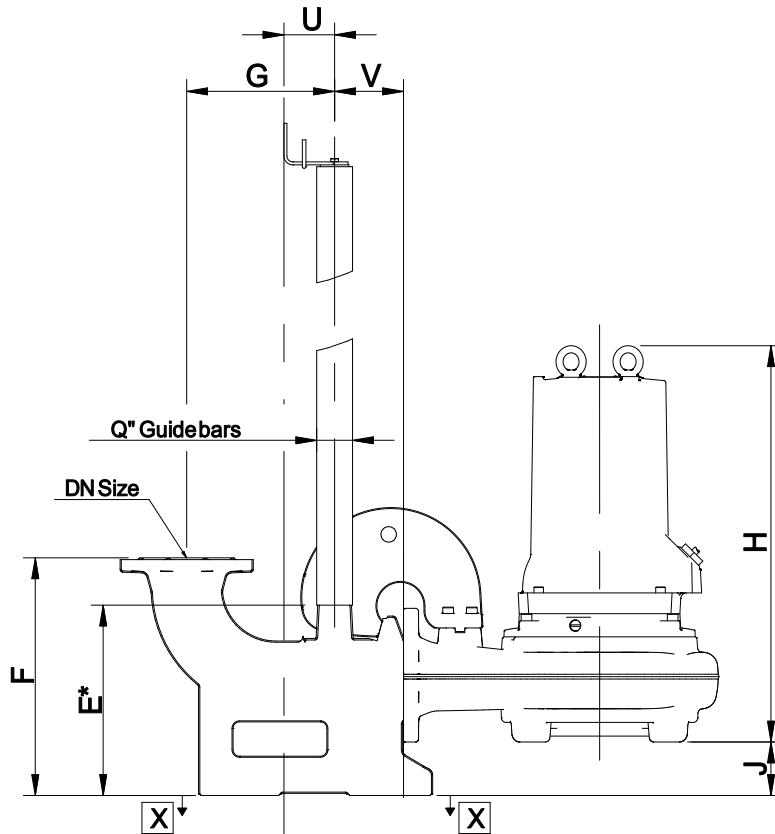
PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1325M-150X.453.S24...	185	191
1325M-150X.453.S23...	185	191
1325M-150X.453.S22...	185	191
1325M-150X.453.S21...	185	191

Max weight with cable.

1325M-150X-2p50-en_a_td

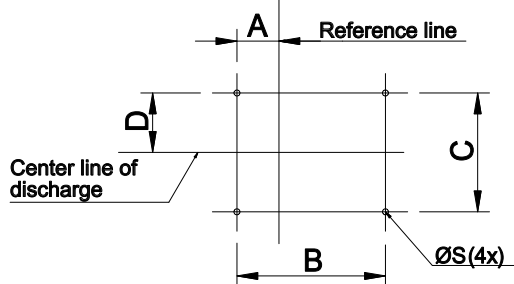
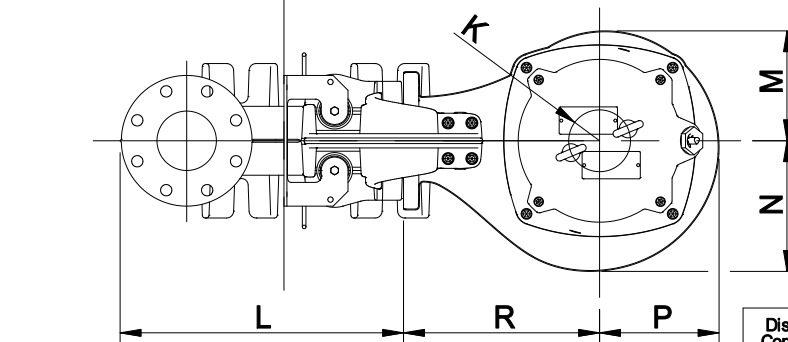
1325S, H, M Non-clog (DN80, 100, 150) **DIMENSIONS AND WEIGHTS**

INSTALLATION W: WET WELL



Impeller	Non-clog (S)		
Pressure	M	H	S
Discharge Outlet	DN150	DN100	DN80
Pump Weight (kg)	179	164	172
H	663	667	650
min J	113	80	72
K	52	52	52
M	187	185	175
N	259	220	175
P	220	201	175
R	330	330	330

Max weight without cable.



Discharge Connection	DN150	DN100	DN80
Discharge Weight (kg)	80	52	42
A	108	71	59
B	280	250	250
C	250	200	200
D	125	100	100
E	392	320	263
F	450	400	400
G	279	249	239
L	542	475	482
Q	2	2	2
S	M16	M16	M16
U	85	85	85
V	116	116	116

VIEW X - X *Dimension to end of guide bars

1325S, H, M Non-clog (DN80, 100, 150) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1325S-80X.253.S63...	178	184	42
1325S-80X.253.S62...	178	184	42
1325S-80X.253.S61...	178	184	42
1325S-80X.253.S60...	178	184	42

Max weight with cable.

1325S-80W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN100)
	PUMP /10	/20	
1325H-100X.453.S43...	170	176	52
1325H-100X.453.S42...	170	176	52
1325H-100X.453.S41...	170	176	52

Max weight with cable.

1325H-100W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN150)
	PUMP /10	/20	
1325M-150X.453.S24...	185	191	80
1325M-150X.453.S23...	185	191	80
1325M-150X.453.S22...	185	191	80
1325M-150X.453.S21...	185	191	80

Max weight with cable.

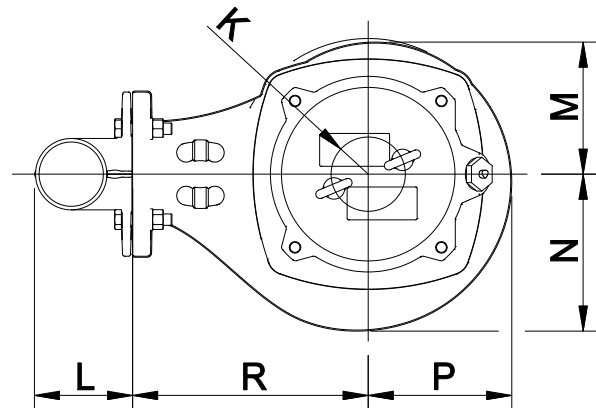
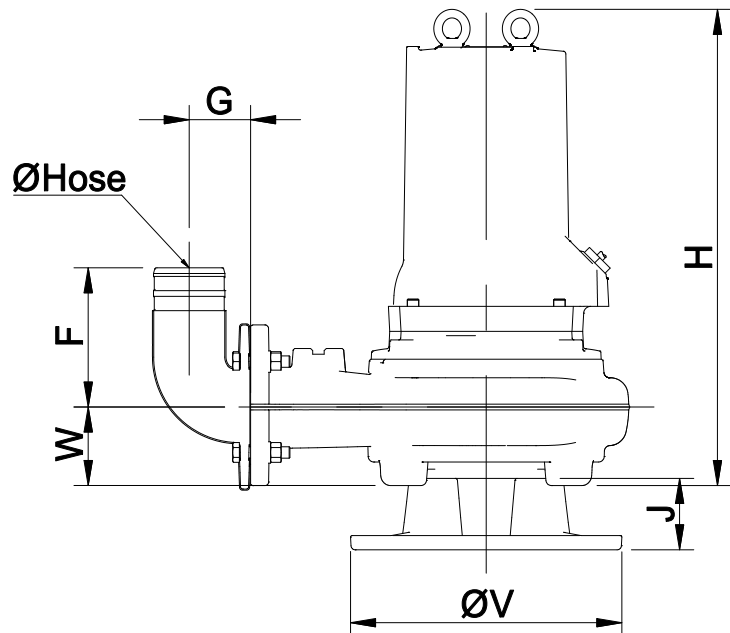
1325M-150W-2p50-en_a_td

1325S, H, M Non-clog (DN80, 100, 150) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Non-clog (S)		
Pressure	M	H	S
Pumphousing Outlet	DN150	DN100	DN80
Pump Weight (kg)	179	164	172
H	663	667	650
J	110	110	104
K	52	52	52
M	187	185	175
N	259	220	175
P	220	201	175
R	330	330	330
W	137	110	82

Max weight without cable.



Pump housing Outlet	DN150	DN150	DN100	DN100	DN80	DN80
Outlet type	Hose	Inner thread	Hose	Inner thread	Hose	Inner thread
ØHose/Thread	Ø150	6"-8 NPSM	Ø100	ISO G4" / 4"-8 NPSM	Ø75	ISO G3" / 3"-8 NPSM
Discharge Weight (kg)	16	18	6	7	7	8
F	250	250	195	195	180	155
L	206	211	137	146	129	136
G	129	129	85	85	90	90
V	380	380	380	380	380	380

1325S, H, M Non-clog (DN80, 100, 150) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1325S-80X.253.S63...	178	184	8	7
1325S-80X.253.S62...	178	184	8	7
1325S-80X.253.S61...	178	184	8	7
1325S-80X.253.S60...	178	184	8	7

Max weight with cable.

1325S-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN100)	KIT H (DN100)
	/10	/20		
1325H-100X.453.S43...	170	176	7	6
1325H-100X.453.S42...	170	176	7	6
1325H-100X.453.S41...	170	176	7	6

Max weight with cable.

1325H-100T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN150)	KIT H (DN150)
	/10	/20		
1325M-150X.453.S24...	185	191	18	16
1325M-150X.453.S23...	185	191	18	16
1325M-150X.453.S22...	185	191	18	16
1325M-150X.453.S21...	185	191	18	16

Max weight with cable.

1325M-150T-H-2p50-en_a_td

Submersible Electric Pumps

MARKET SECTORS

RESIDENTIAL AND COMMERCIAL BUILDINGS, INDUSTRIES.

APPLICATIONS

- Submersible pumps for pumping clean water, surface water and wastewater containing solids or long-fibred material. The vortex impeller is the best choice for low volume, high head applications and in media which contain sand and other abrasive solids.

1300 Vortex Series



SPECIFICATIONS

- **Delivery:** up to 54 l/s.
- **Head:** up to 29 m.
- **Free passage:** up to 100 mm.
- **Discharge connection:** DN 50, 65, 80, 100 mm.
- **Motor power:** up to 7,5 kW.
- Maximum liquid **temperature:** 40 °C.
- Maximum immersion **depth:** 20 m.
- **pH pumped liquid:** pH 5,5-14.
- Maximum liquid **density:** 1100 Kg/m³.
- Motor with IP68 **protection** and class 155°C (F).
- **Power supply** 230V single-phase, 400V three-phase, 50 Hz.
- Voltage **variation:**
 - continuous running: max ±5%.
 - intermittent running: max ±10%.
- Voltage **imbalance** between phases: max 2%.
- Maximum number of starts per hour: 30.

OPTIONAL FEATURES

- 20 m cable.
- Different voltages: 380V and 415V for three-phase version 220V and 240V for single-phase version.

ACCESSORIES / INSTALLATION

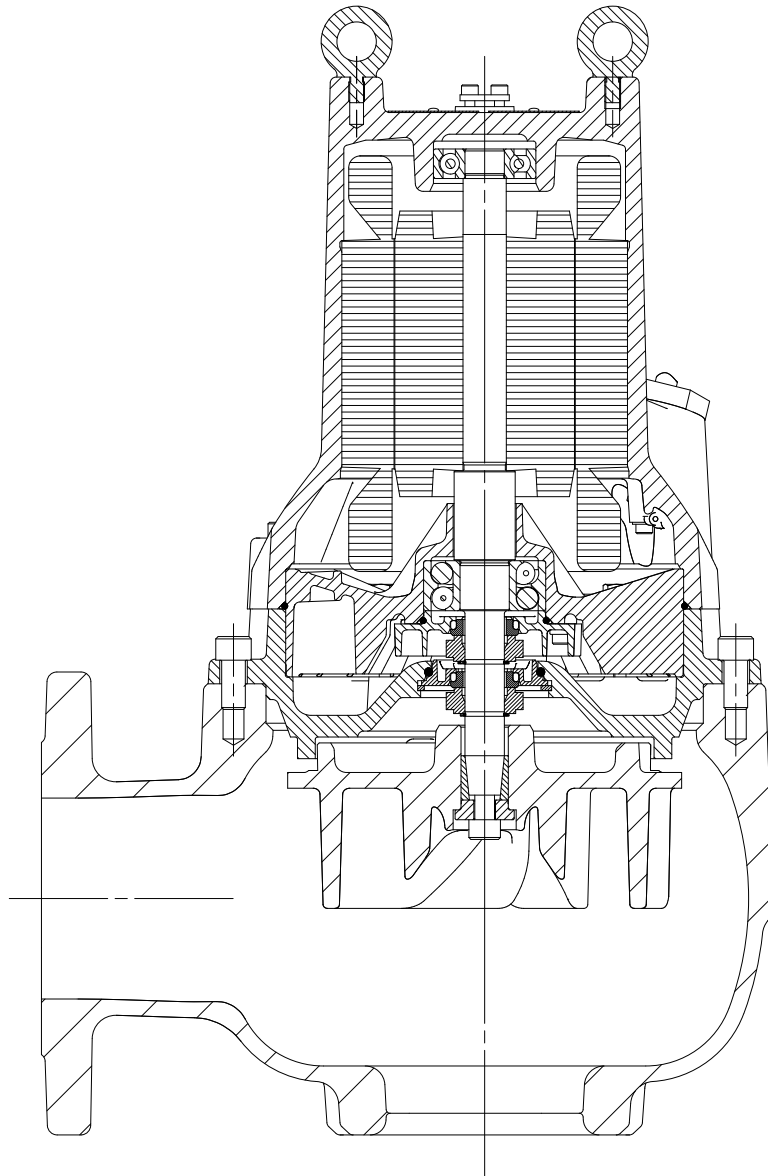
- Wet well kit for guided installation.
- Free standing kit, Threaded or Hose connection.
- Replacement kit for upgrades.
- Ball check valve.
- Wastewater level regulators.
- Command and control panels.
- Lifting chains.

CONSTRUCTION

CHARACTERISTICS

- Sturdy cast iron construction.
- Vortex-type open **impeller**.
- **Double seal:** seal material varies depending on model. Please see next page.
- **Cable** (10 m standard version):
 - Direct-on-line start: SUBCAB® 4G1,5+2x1,5.
 - Y/D start: SUBCAB® 7G2,5+2x1,5.
- Motor thermal **protection:** opening temperature 125°C class 155°C (F).

1300 Vortex SERIES PUMP SECTION AND TABLE OF MATERIALS



PART	MATERIAL	
	1305 - 1310 - 1315	1320
Impeller	Grey cast iron	
Pump housing	Grey cast iron	
Stator housing	Grey cast iron	
Shaft	Stainless steel	
Inner mechanical seal	Carbon / aluminum oxide	Carbon / Cemented carbide
Outer mechanical seal	Cemented carbide / aluminum oxide	Cemented carbide / Cemented carbide
O-rings	Nitrile	
Cable sheathing	Nitrile	

1300V-en_A_tm

1300 Vortex SERIES

ELECTRICAL DATA TABLE AT 50 Hz

PUMP TYPE	min ⁻¹	Pabs (P1) kW *	Prated (P2) kW **	VOLTAGE / PHASES ***	CURRENT		START	ELECTRIC CABLE TYPE	RUNNING CAPACITOR μF/V	STARTING CAPACITOR μF/V	INSULATION CLASS
					ABSORBED I _{abs} (A)	INRUSH I _{sp} (A)					
1305H-50T.251.V92...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305H-50W.251.V92...	2825	0,95	0,75	230/1	4,2	19	DOL	4G1,5 + 2x1,5	14/400	-	F
1305H-50T.253.V92...	2785	0,95	0,75	400/3	2,2	17	Y	4G1,5 + 2x1,5	-	-	F
1305H-50T.253.V90...	2785	1,5	1,2	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1305H-50W.253.V92...	2785	0,95	0,75	400/3	2,8	17	Y	4G1,5 + 2x1,5	-	-	F
1305H-50W.253.V90...	2785	1,5	1,2	400/3	2,2	17	Y	4G1,5 + 2x1,5	-	-	F
1310H-50T.251.V94...	2905	1,8	1,4	230/1	8,4	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50T.251.V92...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50T.251.V90...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50W.251.V94...	2905	1,8	1,4	230/1	8,4	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50W.251.V92...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50W.251.V90...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-65X.251.V89...	2905	1,8	1,4	230/1	8,4	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-65X.251.V87...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-65X.251.V85...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-80X.251.V89...	2905	1,8	1,4	230/1	8,4	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-80X.251.V87...	2880	2,2	1,7	230/1	10	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310M-80X.251.V85...	2810	3,2	2,4	230/1	14	48	DOL	4G1,5 + 2x1,5	45/400	150/330	F
1310H-50T.253.V94...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310H-50T.253.V92...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310H-50T.253.V90...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310H-50W.253.V94...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310H-50W.253.V92...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310H-50W.253.V90...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-65X.253.V89...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-65X.253.V87...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-65X.253.V85...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-80X.253.V89...	2885	1,7	1,4	400/3	3,3	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-80X.253.V87...	2855	2	1,7	400/3	3,8	27	Y	4G1,5 + 2x1,5	-	-	F
1310M-80X.253.V85...	2780	3	2,4	400/3	5,1	27	Y	4G1,5 + 2x1,5	-	-	F
1310L-65-80X.453.V84...	1425	1,7	1,2	400/3	3,4	19	Y	4G1,5 + 2x1,5	-	-	F
1310L-65-80X.453.V83...	1425	1,7	1,2	400/3	3,4	19	Y	4G1,5 + 2x1,5	-	-	F
1310L-65-80X.453.V82...	1425	1,7	1,2	400/3	3,4	19	Y	4G1,5 + 2x1,5	-	-	F
1310L-65-80X.453.V81...	1405	2,1	1,5	400/3	3,9	19	Y	4G1,5 + 2x1,5	-	-	F
1310L-65-80X.453.V80...	1355	2,9	2	400/3	4,9	19	Y	4G1,5 + 2x1,5	-	-	F
1315H-65X.253.V94...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315H-65X.253.V93...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315H-65X.253.V91...	2855	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315H-80X.253.V94...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315H-80X.253.V93...	2900	3,9	3,3	400/3	6,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315H-80X.253.V91...	2855	5,4	4,4	400/3	8,6	49	YD	7G2,5 + 2x1,5	-	-	F
1315M-100X.453.V83...	1435	2,7	2,2	400/3	5,4	33	Y	4G1,5 + 2x1,5	-	-	F
1315M-100X.453.V82...	1395	4,3	3,3	400/3	7,4	33	Y	4G1,5 + 2x1,5	-	-	F
1315M-100X.453.V81...	1395	4,3	3,3	400/3	7,4	33	Y	4G1,5 + 2x1,5	-	-	F
1320H-80X.253.V94...	2935	5,4	4,8	400/3	9,8	107	YD	7G2,5 + 2x1,5	-	-	F
1320H-80X.253.V93...	2915	7	6,2	400/3	12	107	YD	7G2,5 + 2x1,5	-	-	F
1320H-80X.253.V92...	2915	7	6,2	400/3	12	107	YD	7G2,5 + 2x1,5	-	-	F
1320H-80X.253.V91...	2895	8,6	7,5	400/3	14	107	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.V84...	1465	4,1	3,5	400/3	8,8	60	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.V83...	1455	5,3	4,5	400/3	10	60	YD	7G2,5 + 2x1,5	-	-	F
1320M-100X.453.V81...	1435	7,1	5,9	400/3	13	60	YD	7G2,5 + 2x1,5	-	-	F

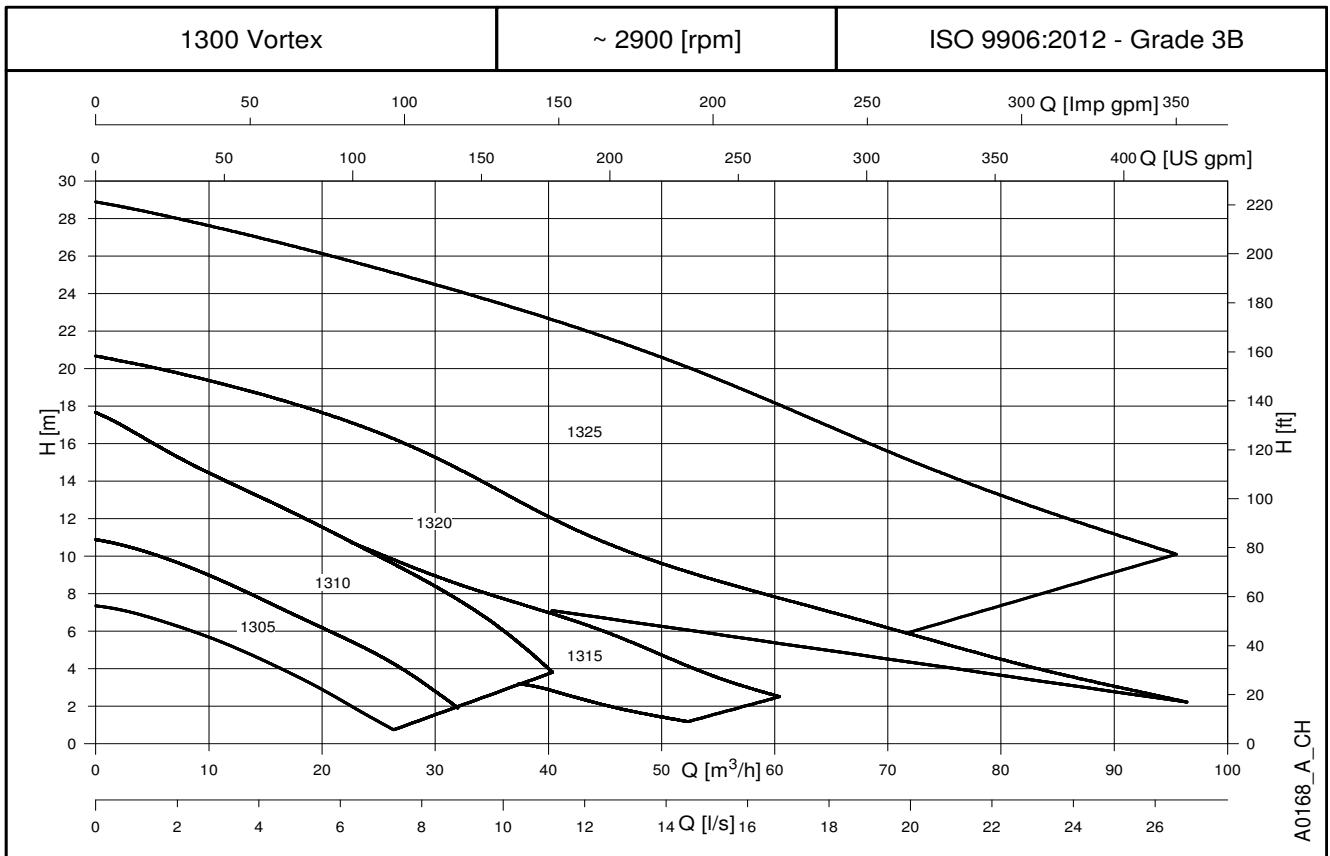
Stator thermal protection included in all models.

1300V-en_a_te

* Maximum value of absorbed motor power within the operating range.

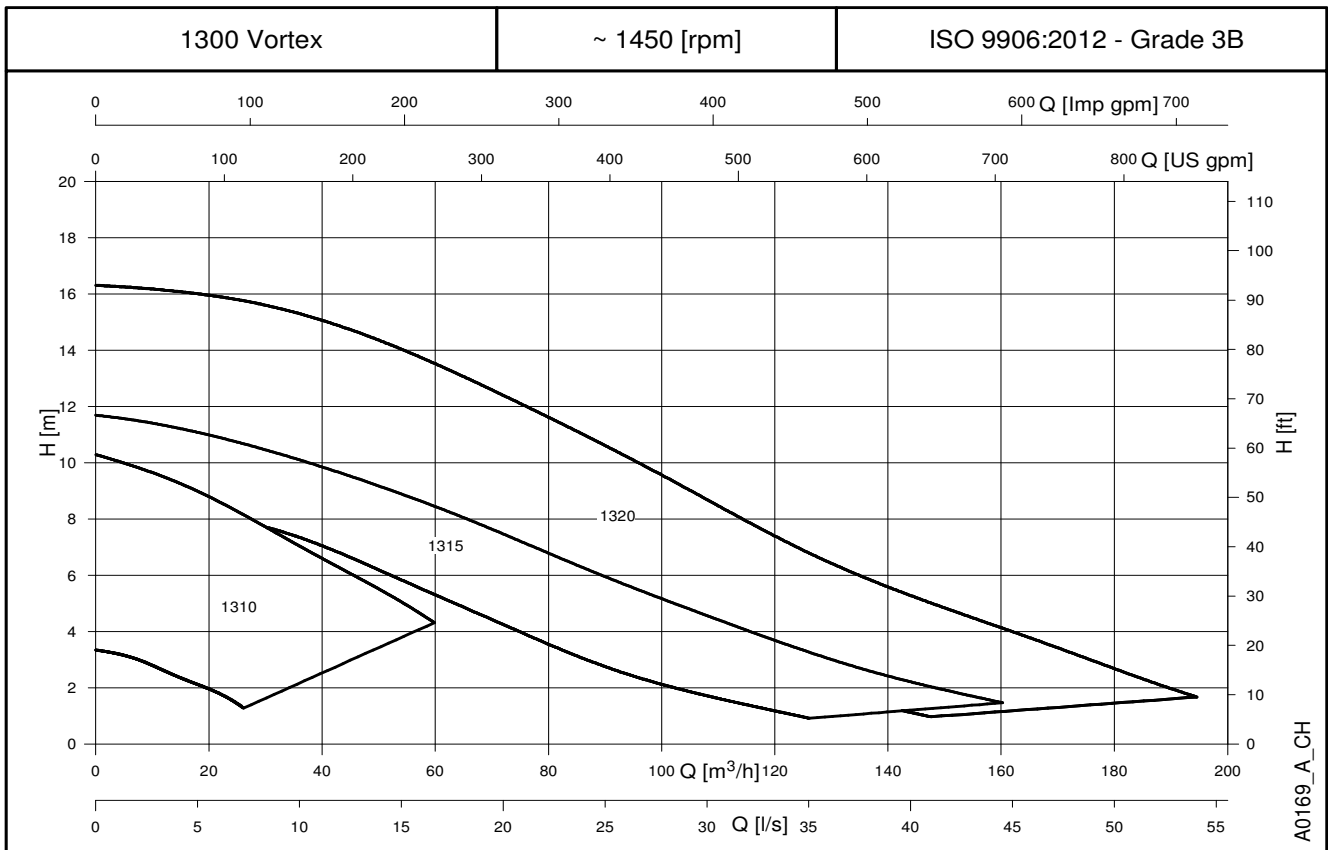
1300 Vortex SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES



1300 Vortex SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES



1300 Vortex SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY															
	(P1)	(P2)				l/s	0,5	1,5	2,0	2,5	3,5	4,0	4,5	5,5	6,0	6,5	7,5	8,0	9,0	9,5	
	kW	kW				m ³ /h	0	1,8	5,4	7,2	9,0	12,6	14,4	16,2	19,8	21,6	23,4	27,0	28,8	32,4	34,2
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER															
1305H-50T.251.V92...	0,95	0,75	90	32,0	2825	7,8	7,5	6,8	6,4	6,0	5,0	4,4	3,9	2,7	2,1	1,4					
1305H-50W.251.V92...	0,95	0,75	90	32,4	2825	7,4	7,2	6,6	6,3	5,9	5,0	4,6	4,1	2,9	2,3	1,7					
1305H-50T.253.V92...	0,95	0,75	90	32,0	2785	7,9	7,6	7,0	6,5	6,1	5,1	4,6	4,0	2,8	2,2	1,6					
1305H-50T.253.V90...	1,5	1,2	103	37,4	2785	10,9	10,7	10,1	9,7	9,2	8,3	7,8	7,3	6,3	5,7	5,2	4,0	3,3			
1305H-50W.253.V92...	0,95	0,75	90	32,4	2785	7,5	7,3	6,7	6,4	6,0	5,2	4,7	4,2	3,1	2,5	1,9					
1305H-50W.253.V90...	1,5	1,2	103	39,8	2785	10,6	10,4	9,9	9,7	9,3	8,6	8,2	7,8	6,9	6,4	6,0	5,0	4,4	3,0	2,2	

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY															
	(P1)	(P2)				l/s 0	1	2	4	5	6	7	8	10	11	12	13	14	15	16	
	kW	kW				m3/h 0	3,6	7,2	14,4	18,0	21,6	25,2	28,8	36,0	39,6	43,2	46,8	50,4	54,0	57,6	
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER															
1310H-50T.251.V94...	1,8	1,4	104	25,7	2905	10,5	9,5	8,4	6,3	5,2	4,2	3,1	1,7								
1310H-50T.251.V92...	2,2	1,7	118	33,6	2880	14,4	13,2	12,2	10,2	9,1	7,9	6,6	5,1								
1310H-50T.251.V90...	3,2	2,4	128	33,1	2810	17,7	16,5	15,3	13,2	12,1	11,1	10,0	8,8	6,0	4,2						
1310H-50W.251.V94...	1,8	1,4	104	26,0	2905	10,5	9,5	8,5	6,6	5,6	4,6	3,5	2,3								
1310H-50W.251.V92...	2,2	1,7	118	34,2	2880	13,8	12,8	12,0	10,4	9,5	8,4	7,1	5,8								
1310H-50W.251.V90...	3,2	2,4	128	35,0	2810	16,4	15,4	14,5	12,9	12,1	11,2	10,3	9,4	7,1	5,5						
1310M-65X.251.V89...	1,8	1,4	105	27,3	2905	9,8	9,4	8,9	7,5	6,8	6,0	5,3	4,6	3,5	3,0	2,5	1,9	1,4			
1310M-65X.251.V87...	2,2	1,7	117	33,1	2880	12,0	11,4	11,0	9,8	9,0	8,1	7,3	6,5	5,2	4,6	3,9	3,2	2,5	1,9		
1310M-65X.251.V85...	3,2	2,4	129	37,9	2810	14,9	14,2	13,7	12,5	11,7	10,9	10,1	9,3	7,8	7,0	6,3	5,5	4,7	3,8	3,0	
1310M-80X.251.V89...	1,8	1,4	105	27,3	2905	9,8	9,4	8,9	7,5	6,8	6,0	5,3	4,6	3,5	3,0	2,5	1,9	1,4			
1310M-80X.251.V87...	2,2	1,7	117	33,1	2880	12,0	11,4	11,0	9,8	9,0	8,1	7,3	6,5	5,2	4,6	3,9	3,2	2,5	1,9		
1310M-80X.251.V85...	3,2	2,4	129	37,9	2810	14,9	14,2	13,7	12,5	11,7	10,9	10,1	9,3	7,8	7,0	6,3	5,5	4,7	3,8	3,0	
1310H-50T.253.V94...	1,7	1,4	104	25,7	2885	10,4	9,4	8,3	6,2	5,2	4,1	3,0	1,6								
1310H-50T.253.V92...	2	1,7	118	33,6	2855	14,3	13,1	12,0	10,0	8,9	7,7	6,4	5,0								
1310H-50T.253.V90...	3	2,4	128	33,1	2780	17,5	16,3	15,1	12,9	11,9	10,8	9,7	8,5	5,8	3,9						
1310H-50W.253.V94...	1,7	1,4	104	26,0	2885	10,4	9,5	8,4	6,5	5,5	4,5	3,5	2,2								
1310H-50W.253.V92...	2	1,7	118	34,2	2855	13,6	12,7	11,8	10,2	9,3	8,2	7,0	5,6								
1310H-50W.253.V90...	3	2,4	128	35,0	2780	16,3	15,2	14,3	12,7	11,9	11,0	10,1	9,1	6,9	5,1						
1310M-65X.253.V89...	1,7	1,4	105	27,3	2885	9,7	9,3	8,8	7,4	6,7	5,9	5,2	4,5	3,4	2,9	2,4	1,8	1,3			
1310M-65X.253.V87...	2	1,7	117	33,1	2855	11,9	11,3	10,8	9,6	8,8	8,0	7,1	6,4	5,1	4,5	3,8	3,1	2,4	1,8		
1310M-65X.253.V85...	3	2,4	129	37,9	2780	14,7	14,0	13,5	12,3	11,5	10,7	9,9	9,0	7,6	6,9	6,1	5,3	4,5	3,6	2,8	
1310M-80X.253.V89...	1,7	1,4	105	27,3	2885	9,7	9,3	8,8	7,4	6,7	5,9	5,2	4,5	3,4	2,9	2,4	1,8	1,3			
1310M-80X.253.V87...	2	1,7	117	33,1	2855	11,9	11,3	10,8	9,6	8,8	8,0	7,1	6,4	5,1	4,5	3,8	3,1	2,4	1,8		
1310M-80X.253.V85...	3	2,4	129	37,9	2780	14,7	14,0	13,5	12,3	11,5	10,7	9,9	9,0	7,6	6,9	6,1	5,3	4,5	3,6	2,8	
1310L-65-80X.453.V84...	1,7	1,2	105	20,9	1425	3,3	3,2	3,0	2,4	2,1	1,8	1,4									
1310L-65-80X.453.V83...	1,7	1,2	125	29,1	1425	5,1	5,0	4,8	4,2	3,8	3,5	3,2	2,9								
1310L-65-80X.453.V82...	1,7	1,2	145	35,2	1425	6,7	6,6	6,4	5,9	5,6	5,3	4,9	4,5	3,7	3,2						
1310L-65-80X.453.V81...	2,1	1,5	165	40,3	1405	8,4	8,3	8,1	7,7	7,4	7,1	6,7	6,4	5,5	5,1	4,6	4,2	3,7			
1310L-65-80X.453.V80...	2,9	2	185	43,7	1355	10,3	10,1	9,9	9,3	9,0	8,6	8,3	7,9	7,0	6,6	6,3	5,9	5,5	5,1	4,6	

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

* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

1305-10V-en_a_th

1300 Vortex SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY															
	(P1)	(P2)				l/s 0	3	6	10	13	16	19	22	25	29	32	35	38	41	44	
	kW	kW				m ³ /h 0	10,8	21,6	36,0	46,8	57,6	68,4	79,2	90,0	104,4	115,2	126,0	136,8	147,6	158,4	
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER															
1315H-65X.253.V94...	3,9	3,3	130	39,2	2900	14,8	13,8	11,9	8,2												
1315H-65X.253.V93...	3,9	3,3	142	40,0	2900	18,0	16,8	14,9	11,0	8,1	5,9										
1315H-65X.253.V91...	5,4	4,4	155	40,2	2855	20,7	19,3	17,4	13,4	10,4	8,1	6,4	4,7	2,9							
1315H-80X.253.V94...	3,9	3,3	130	39,2	2900	14,8	13,8	11,9	8,2												
1315H-80X.253.V93...	3,9	3,3	142	40,0	2900	18,0	16,8	14,9	11,0	8,1	5,9										
1315H-80X.253.V91...	5,4	4,4	155	40,2	2855	20,7	19,3	17,4	13,4	10,4	8,1	6,4	4,7	2,9							
1315M-100X.453.V83...	2,7	2,2	175	43,7	1435	8,8	8,5	8,1	7,3	6,5	5,5	4,5	3,6	2,8	1,9	1,4	0,9				
1315M-100X.453.V82...	4,3	3,3	188	45,9	1395	10,2	9,9	9,5	8,8	8,1	7,2	6,3	5,4	4,5	3,4	2,7	2,1	1,6			
1315M-100X.453.V81...	4,3	3,3	200	46,4	1395	11,7	11,4	10,9	10,1	9,4	8,6	7,8	6,9	6,0	4,8	4,0	3,3	2,6	2,0	1,5	

PUMP TYPE	Pabs	Prated	D Impeller mm	ηp %	min ⁻¹	Q = DELIVERY															
	(P1)	(P2)				l/s 0	4	8	12	15	19	23	27	31	35	39	43	46	50	54	
	kW	kW				m ³ /h 0	14,4	28,8	43,2	54,0	68,4	82,8	97,2	111,6	126,0	140,4	154,8	165,6	180,0	194,4	
	*	**				H = TOTAL HEAD METRES COLUMN OF WATER															
1320H-80X.253.V94...	5,4	4,8	145	38,8	2935	18,5	17,0	15,0	12,0	9,5	6,8										
1320H-80X.253.V93...	7	6,2	154	40,4	2915	22,0	20,2	18,1	15,1	12,3	8,8										
1320H-80X.253.V92...	7	6,2	162	42,3	2915	25,8	23,9	21,7	19,0	16,4	12,6	9,5									
1320H-80X.253.V91...	8,6	7,5	168	43,7	2895	28,9	27,0	24,7	22,1	19,6	16,0	12,6									
1320M-100X.453.V84...	4,1	3,5	185	45,4	1465	10,8	10,5	9,9	8,9	8,0	6,5	5,1	3,8	2,7	1,9	1,3					
1320M-100X.453.V83...	5,3	4,5	204	48,0	1455	13,2	13,0	12,6	11,8	11,0	9,7	8,4	7,1	5,8	4,6	3,6	2,7	2,1			
1320M-100X.453.V81...	7,1	5,9	223	49,2	1435	16,3	16,1	15,6	14,8	14,1	12,8	11,3	9,8	8,3	6,9	5,6	4,5	3,7	2,7	1,6	

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

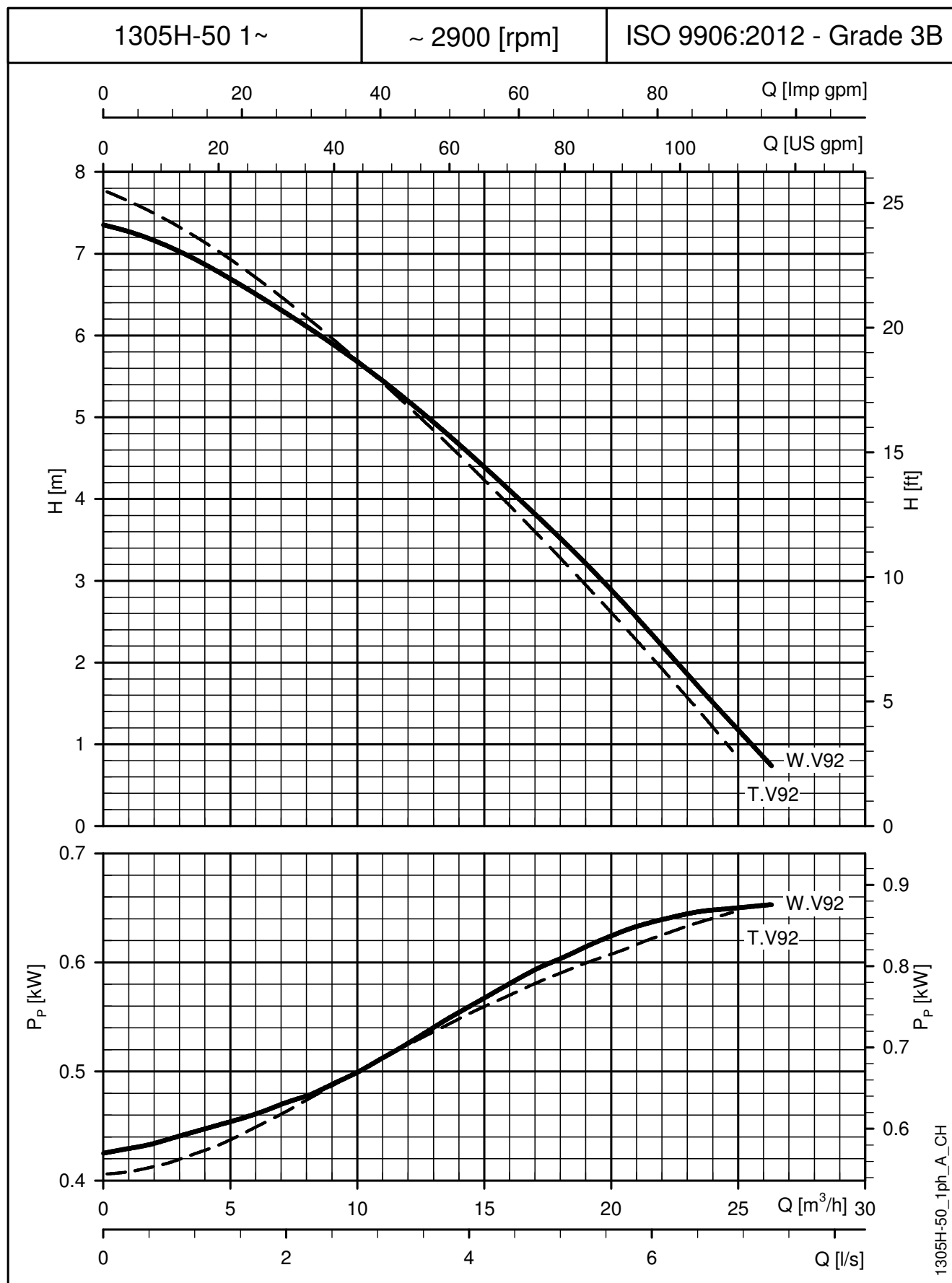
1315-20V-en_a_th

* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

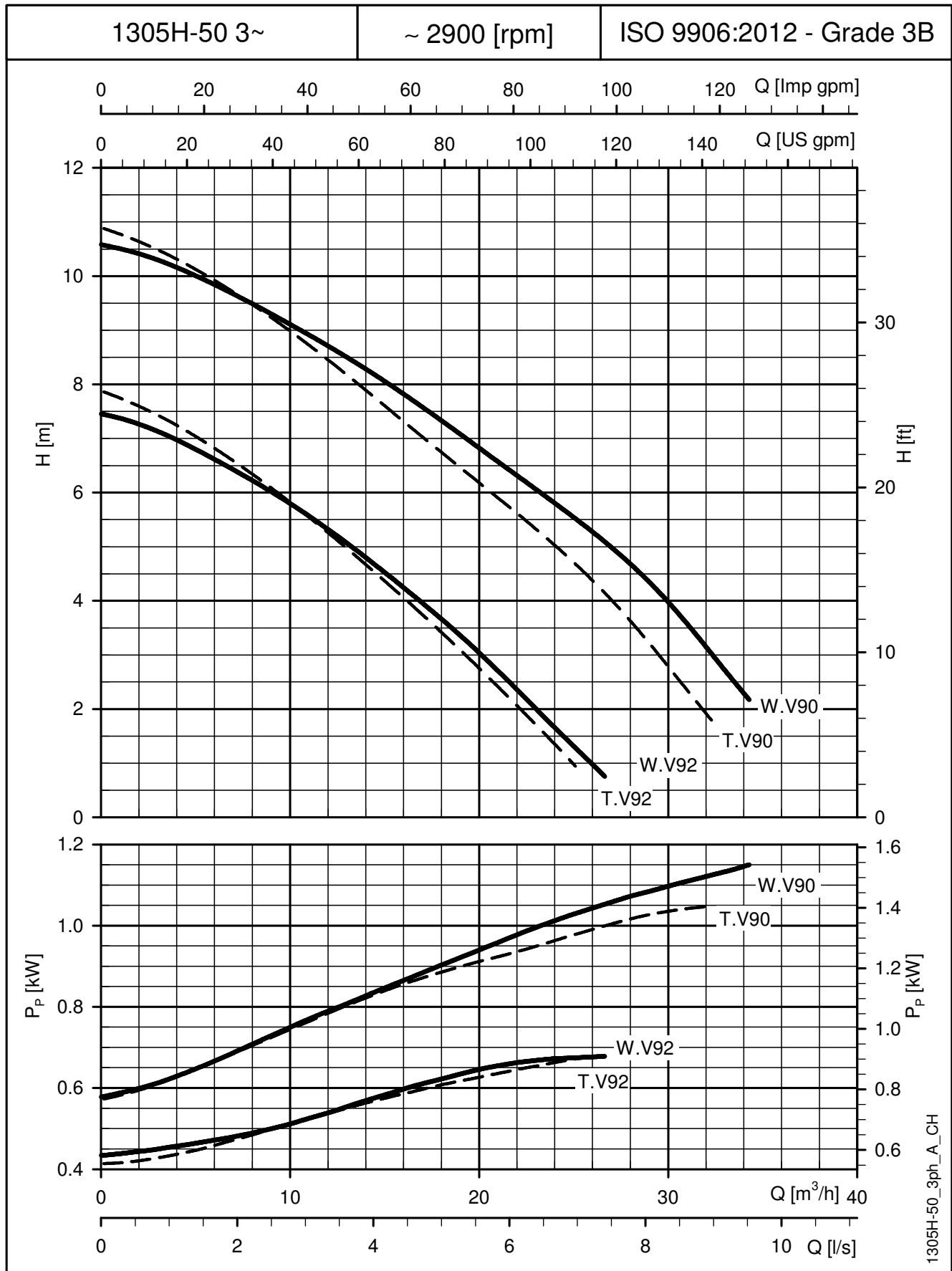
1305H Vortex (DN50) (SINGLE-PHASE)

OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



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

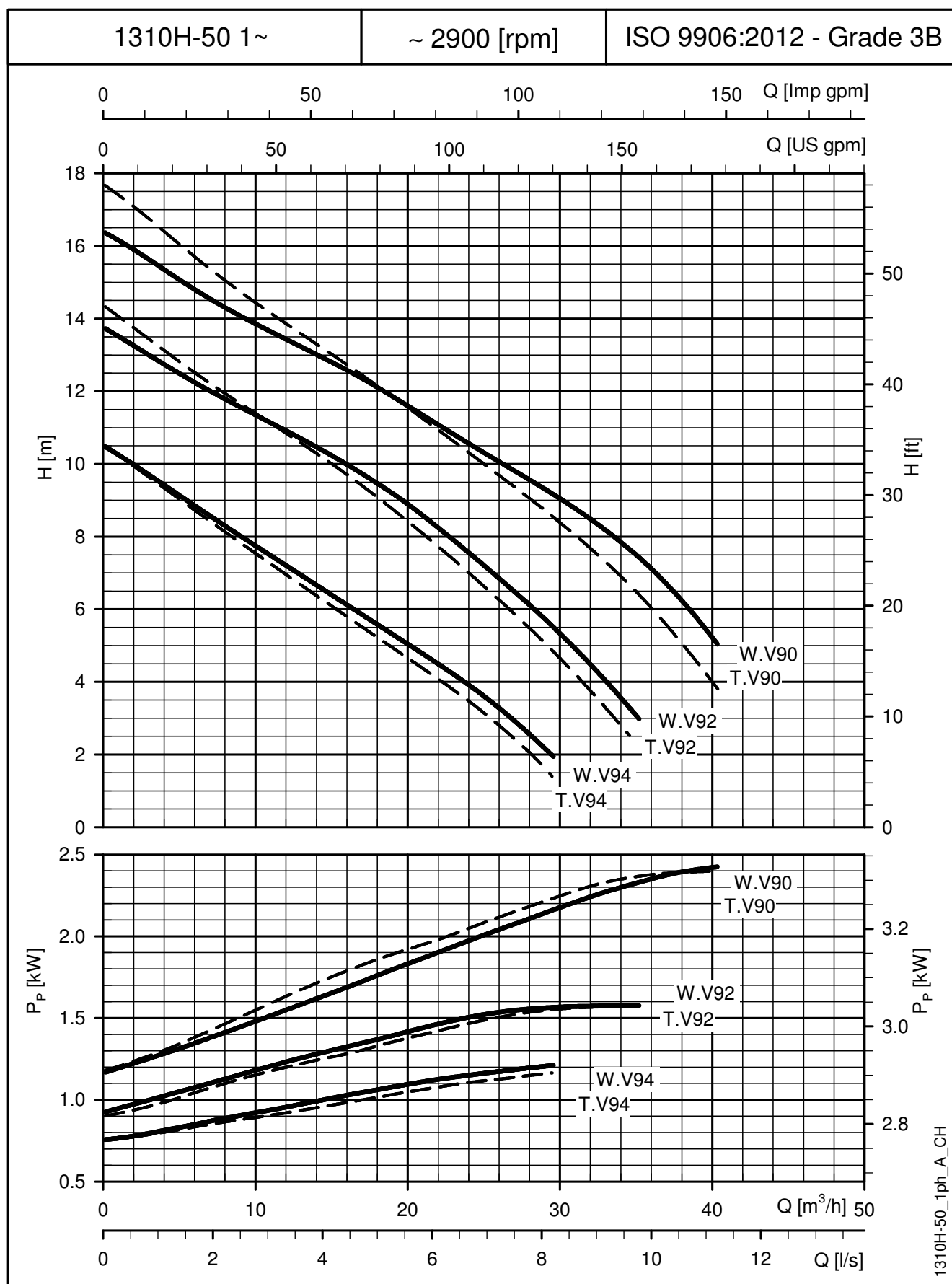
**1305H Vortex (DN50) (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



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

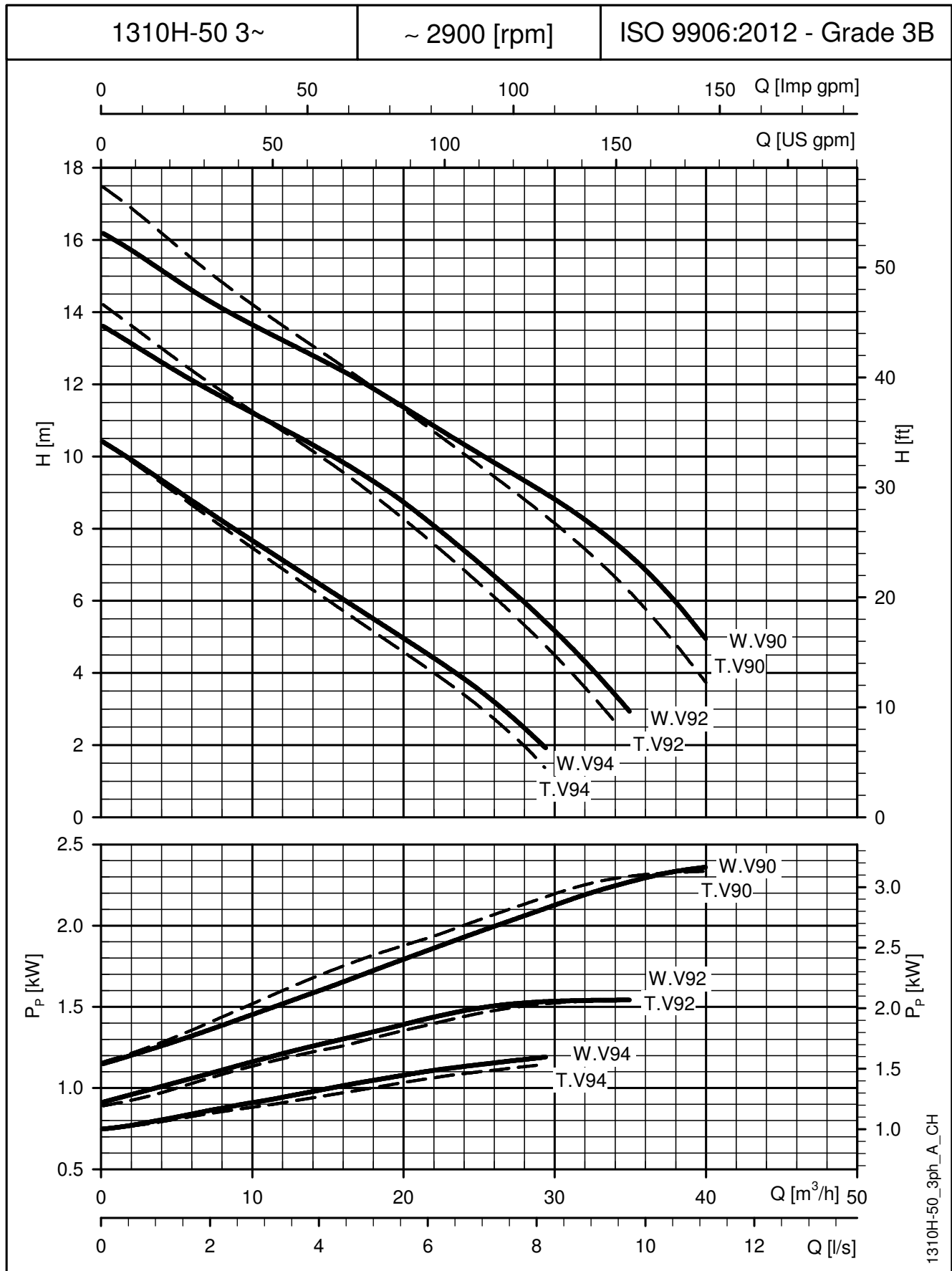
1310H Vortex (DN50) (SINGLE-PHASE)

OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



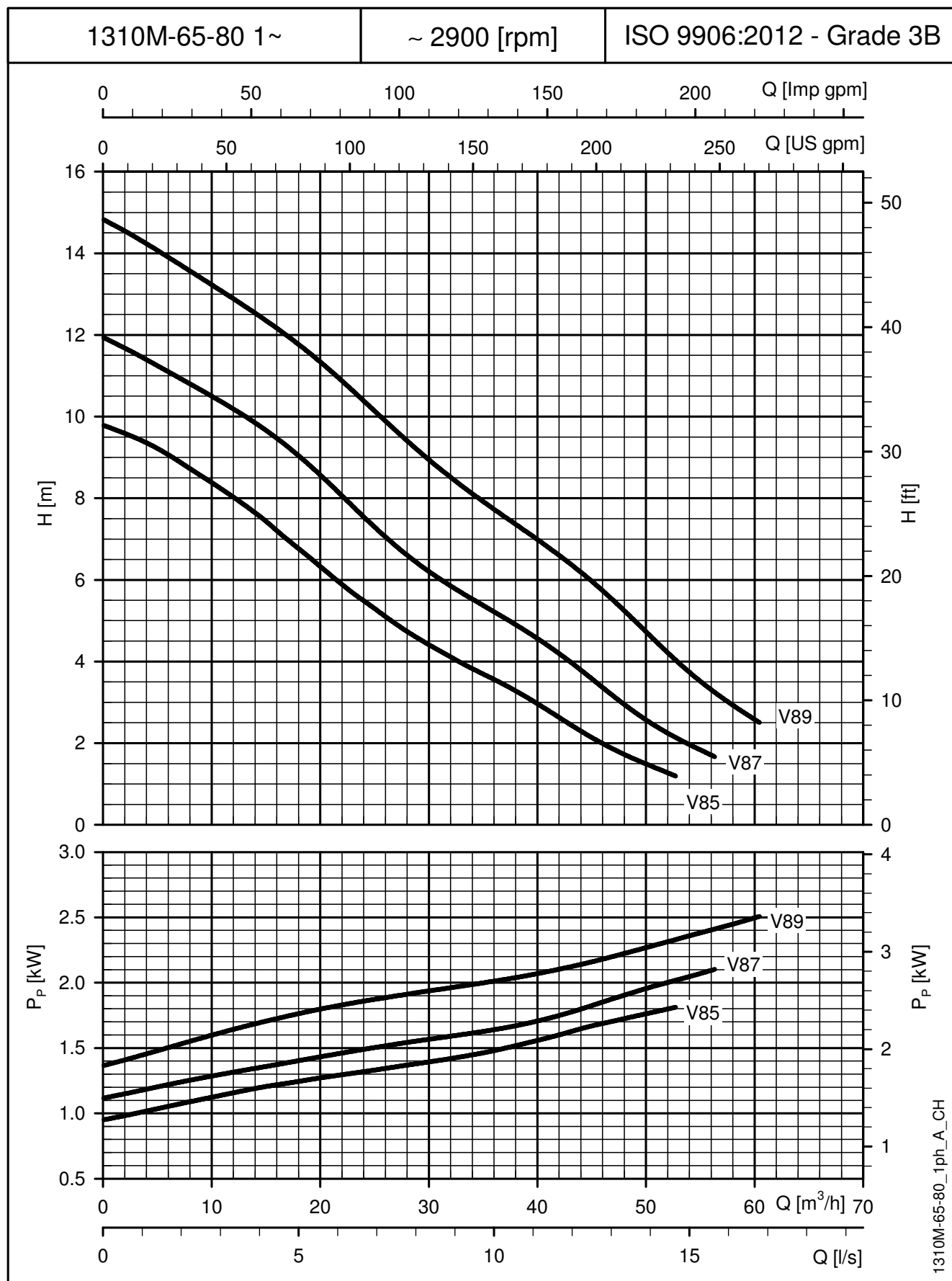
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**1310H Vortex (DN50) (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



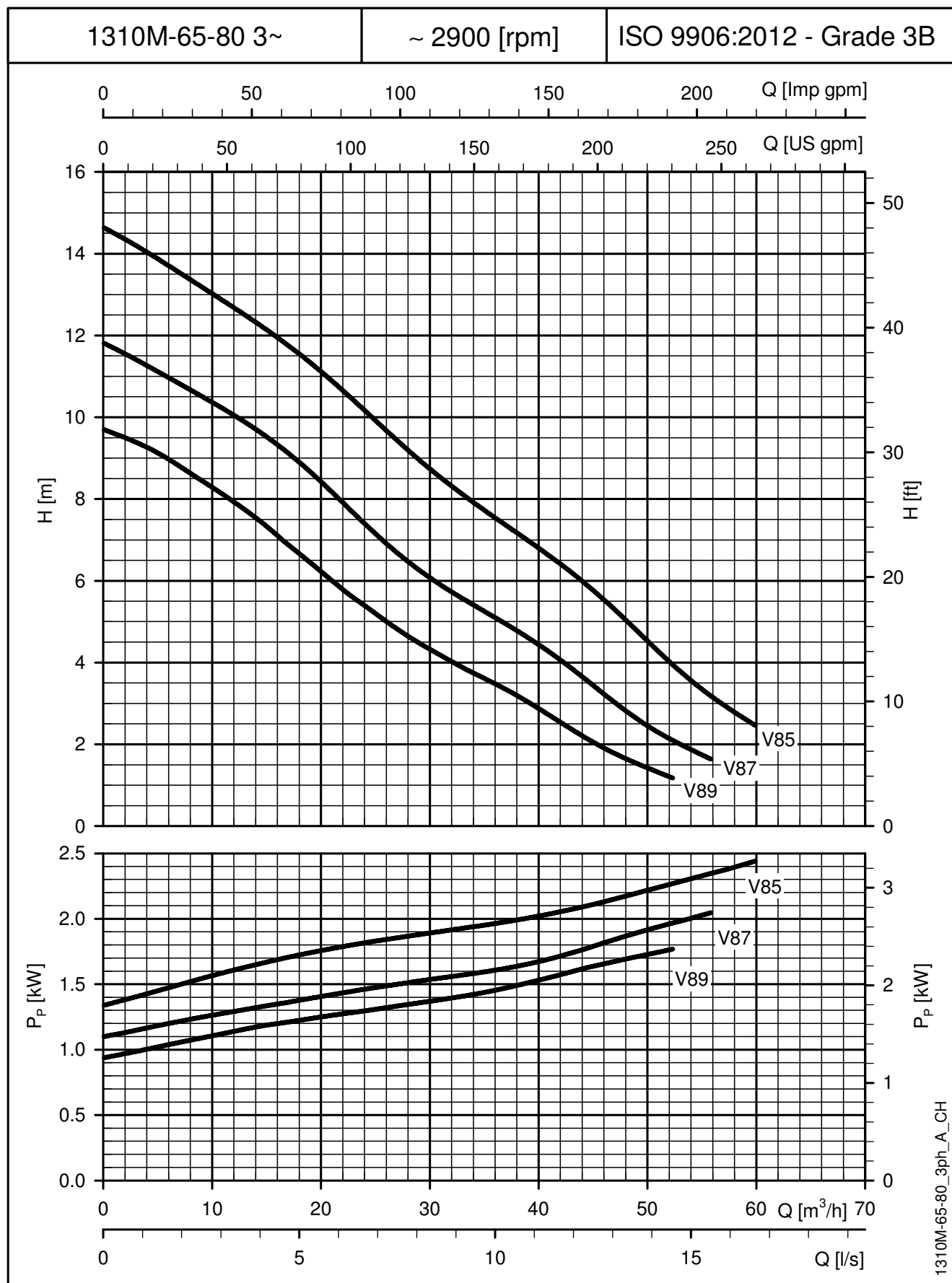
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1310M Vortex (DN65, 80) (SINGLE-PHASE) **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



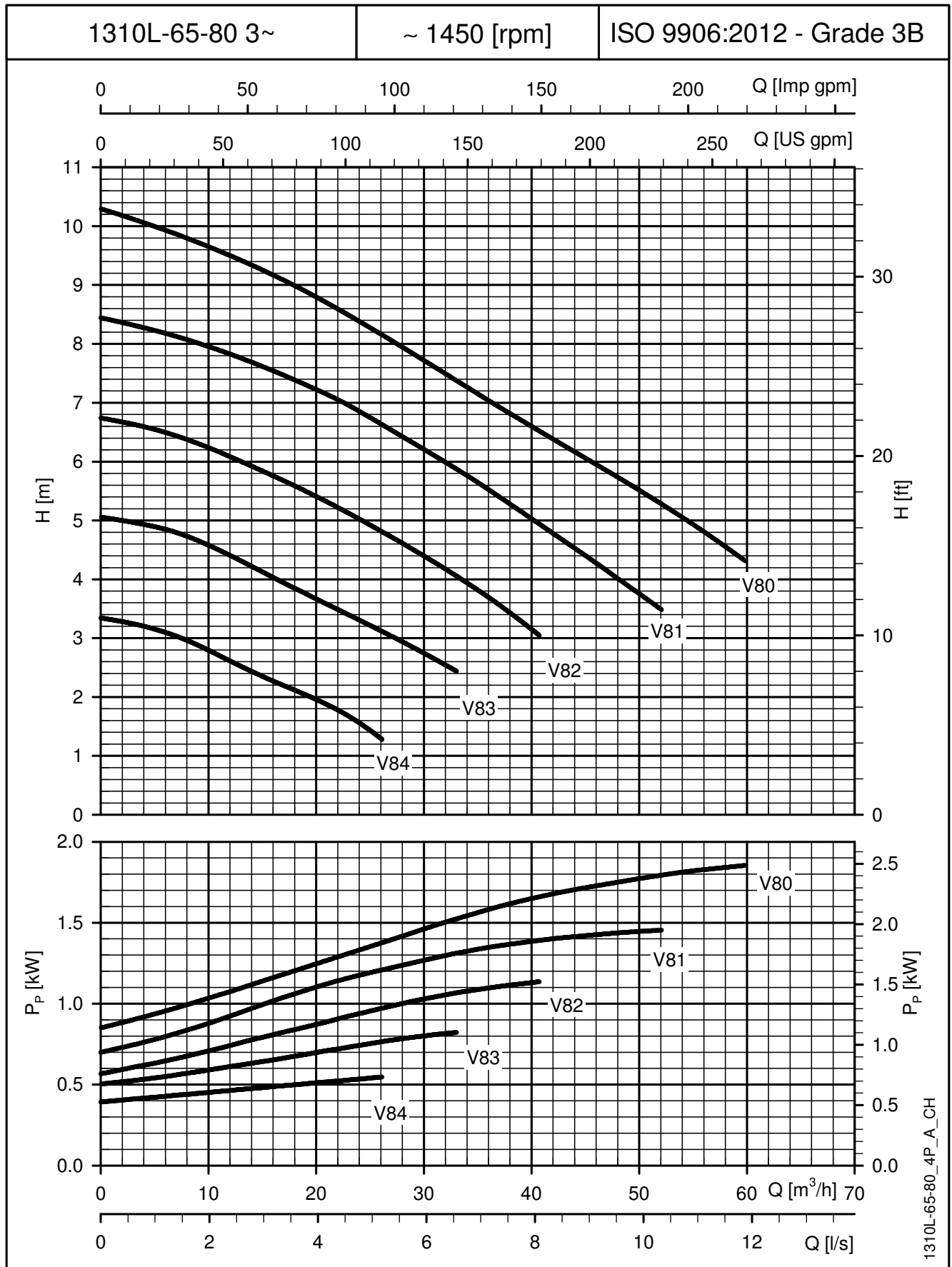
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1310M Vortex (DN65, 80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



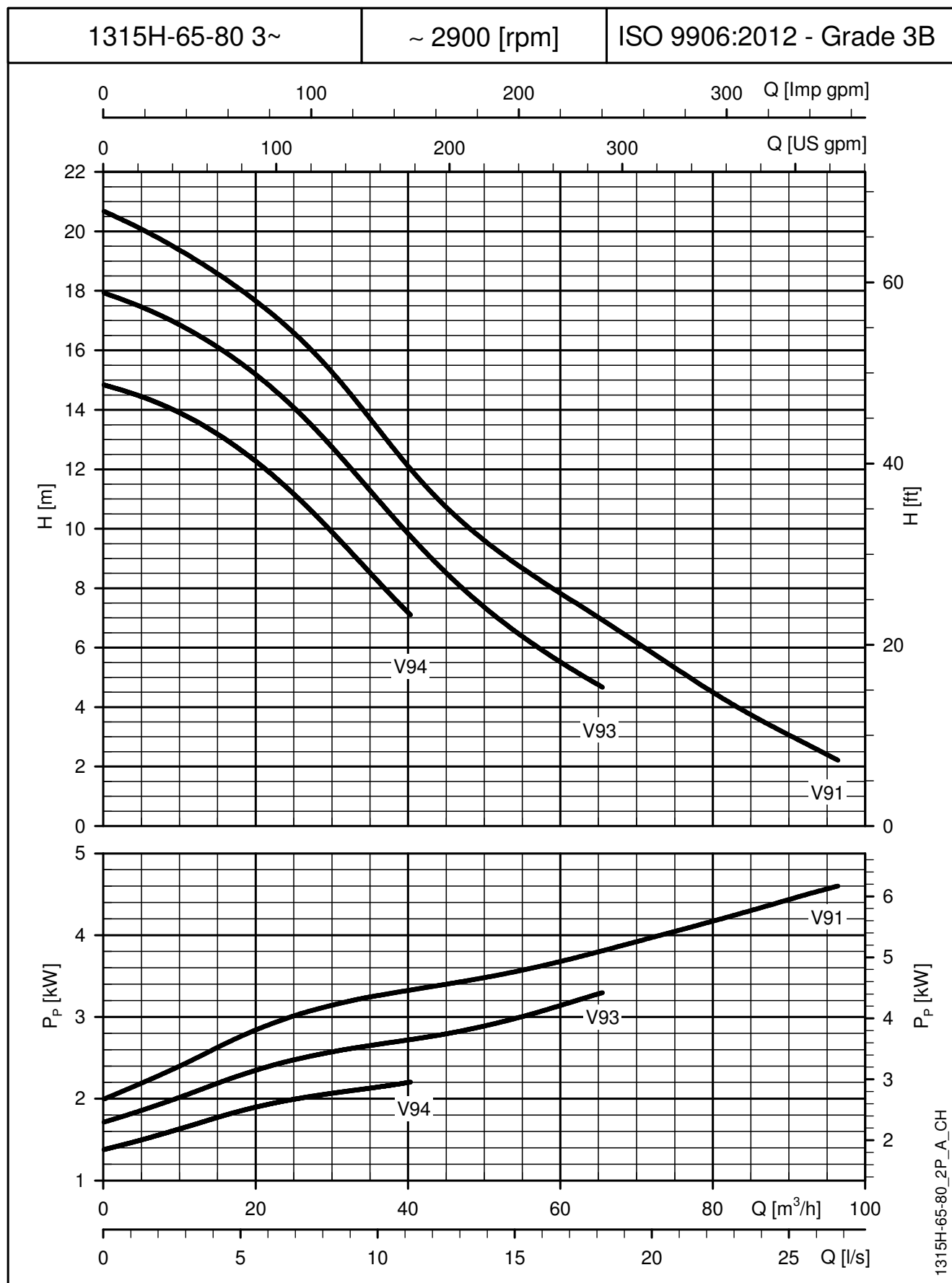
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1310L Vortex (DN65, 80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



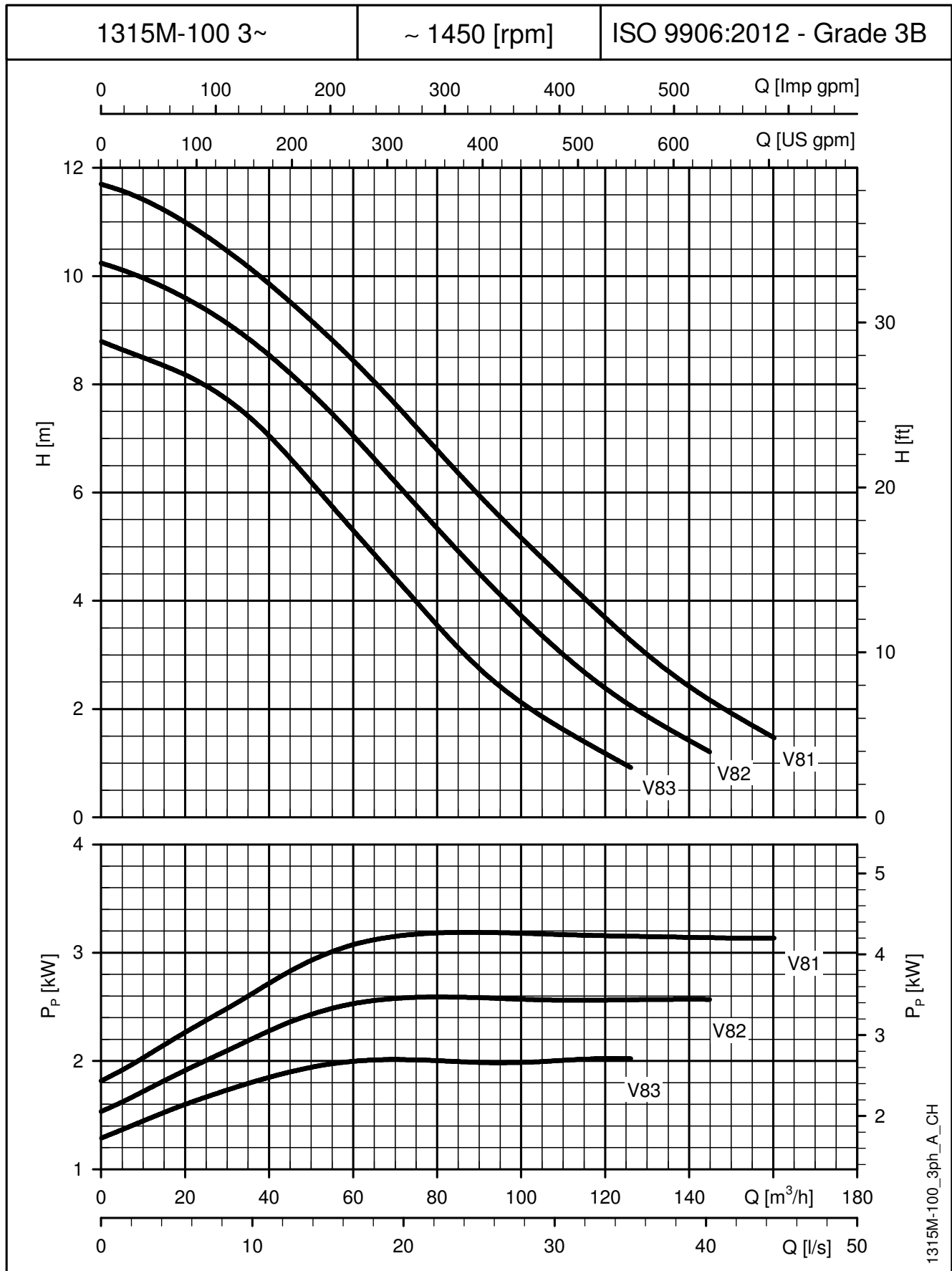
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1315H Vortex (DN65, 80) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



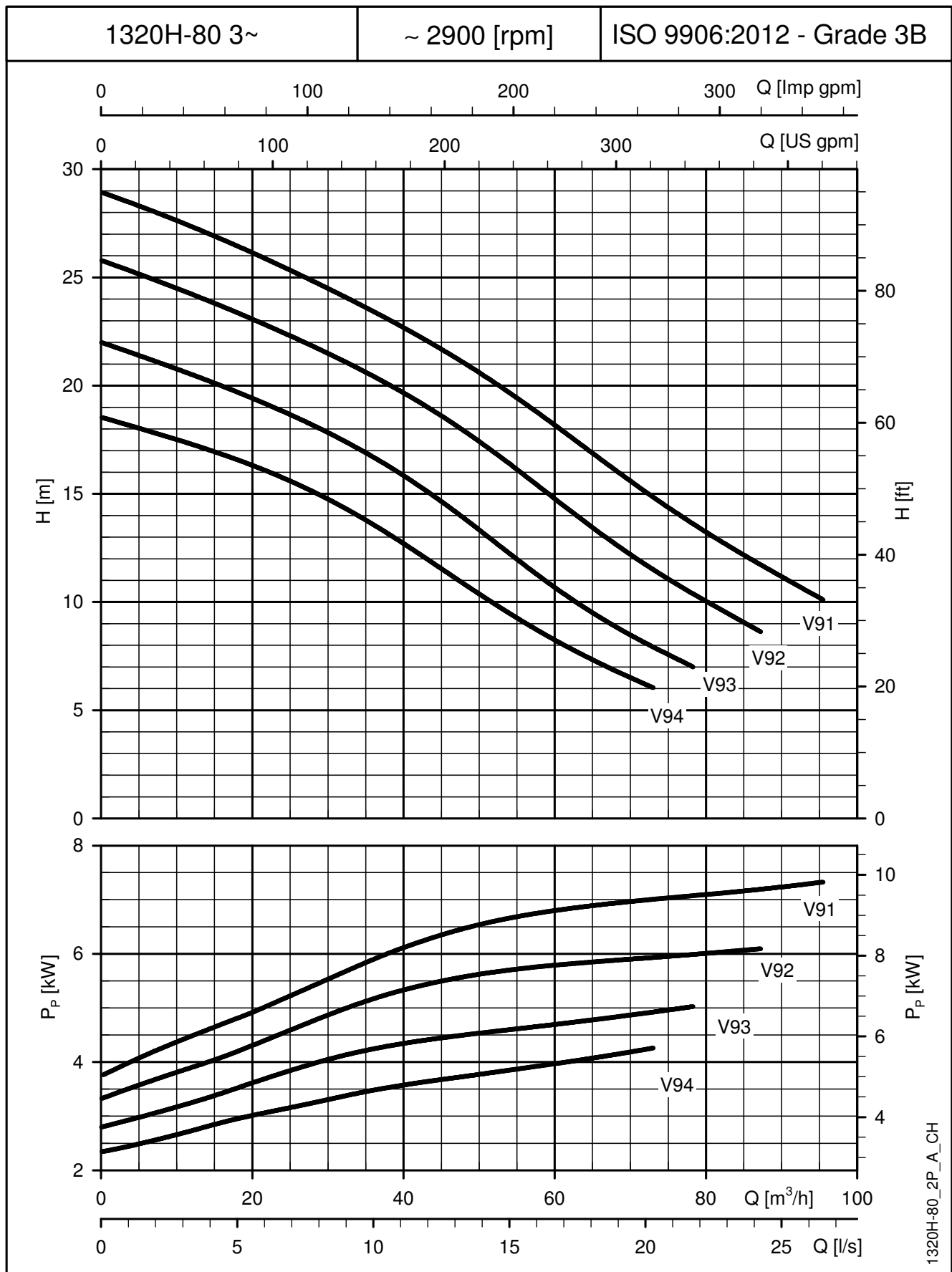
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

1315M Vortex (DN100) (THREE-PHASE) OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES

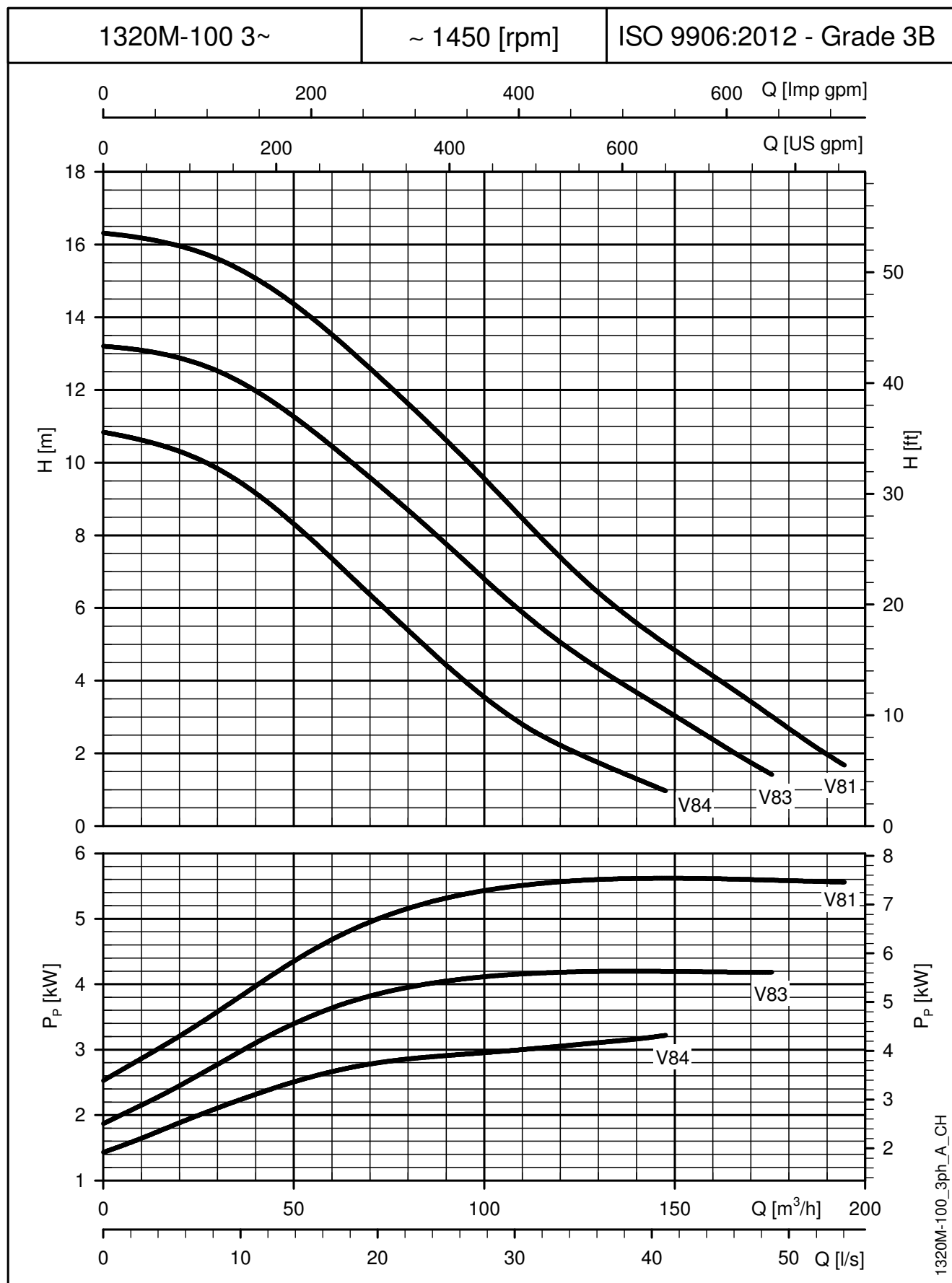


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**1320H Vortex (DN80) (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



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

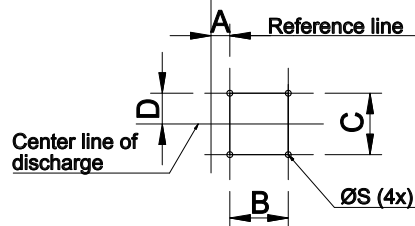
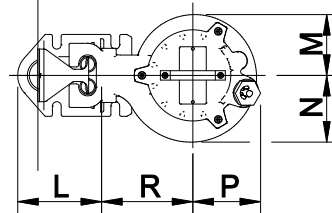
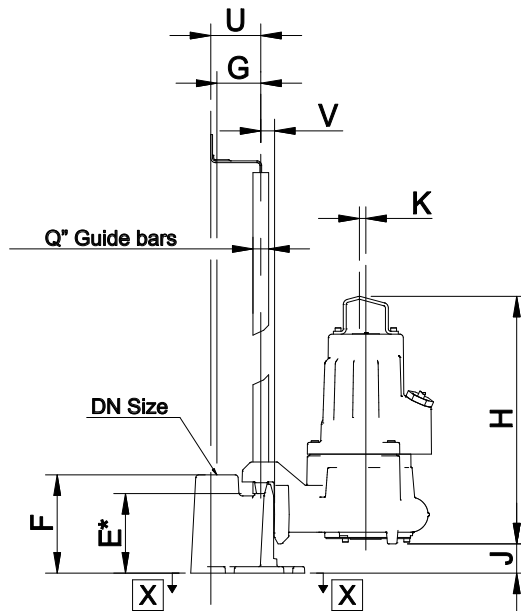
1320M Vortex (DN100) (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES


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

1300 Vortex SERIES DIMENSIONS AND WEIGHTS

1305H Vortex (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



VIEW X - X

*Dimension to end of guide bars

Impeller	Vortex (V)	Non-clog (S)
Pressure	H	S
Pump Outlet	DN50	DN50
Pump Weight (kg)	34	32
H	423	397
min J	50	56
K	11	11
M	104	97
N	114	120
P	116	116
R	156	156

Max weight without cable.

Discharge Connection	DN50
Discharge Weight (kg)	7
A	33
B	100
C	105
D	53
E	136
F	168
G	75
L	143
Q	3/4
S	M12
U	86
V	24

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN50)
	/10	/20	
1305H-50W.251.V92...	37	40	7
1305H-50W.253.V92...	37	40	7
1305H-50W.253.V90...	37	40	7

Max weight with cable.

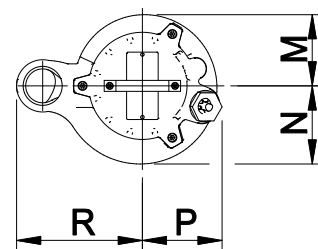
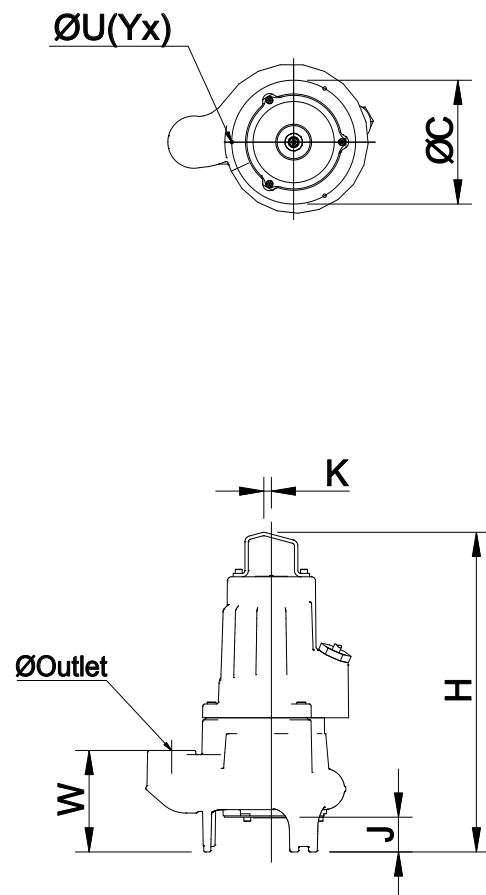
1305H-50W-2p50-en_a_td

1305S Vortex (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)	Non-clog (S)
Pressure	H	S
Pumphousing Outlet	DN50	DN50
Thread EN/ANSI	ISO G2" /2-11 1/2 NPT	ISO G2" /2-11 1/2 NPT
Pump Weight (kg)	33	32
C	180	-
H	465	418
J	53	35
K	11	11
M	103	97
N	114	119
P	116	116
R	183	182
U	M6	-
Y	3	-
W	148	121

Max weight without cable.



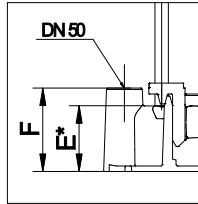
PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1305H-50T.251.V92...	36	39
1305H-50T.253.V92...	36	39
1305H-50T.253.V90...	36	39

Max weight with cable.

1305H-50T-2p50-en_a_td

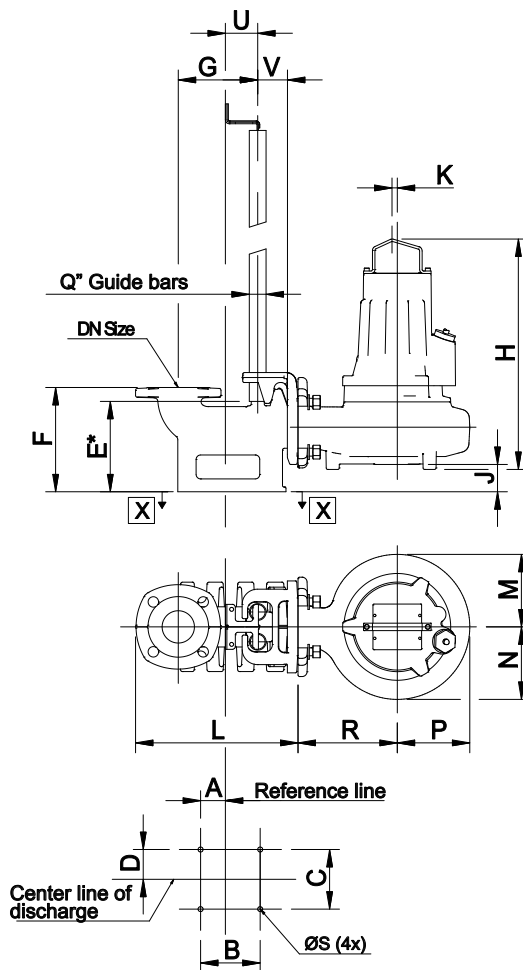
1310H Vortex (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



Impeller Pressure	Vortex (V)							Non-clog (S)				
	L		M			H		S				
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	455	422	491	457	491	457
min J	55	75	78	78	98	98	58	55	71	71	91	91
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	114	103	103	103	103	103
N	146	146	106	106	106	106	124	123	123	123	123	123
P	146	146	99	99	99	99	119	112	118	118	118	118
R	200	200	160	160	160	160	166	175	200	200	200	200

Max weight without cable.



Discharge Connection	DN80	DN65	DN50
Discharge Weight (kg)	19	14	7
A	60	50	33
B	130	120	100
C	170	120	105
D	85	60	53
E	212	186	136
F	255	210	168
G	160	160	75
L	337	326	143
Q	1	1	3/4
S	M12	M12	M12
U	65	65	86
V	60	60	24

VIEW X - X *Dimension to end of guide bars

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN50)
	/10	/20	
1310H-50W.251.V94...	38	41	7
1310H-50W.251.V92...	38	41	7
1310H-50W.251.V90...	38	41	7
1310H-50W.253.V94...	38	41	7
1310H-50W.253.V92...	38	41	7
1310H-50W.253.V90...	38	41	7

Max weight with cable.

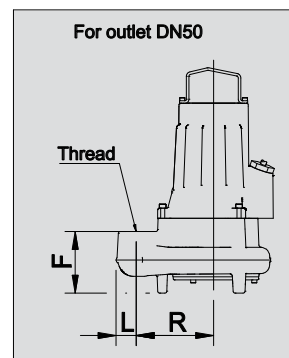
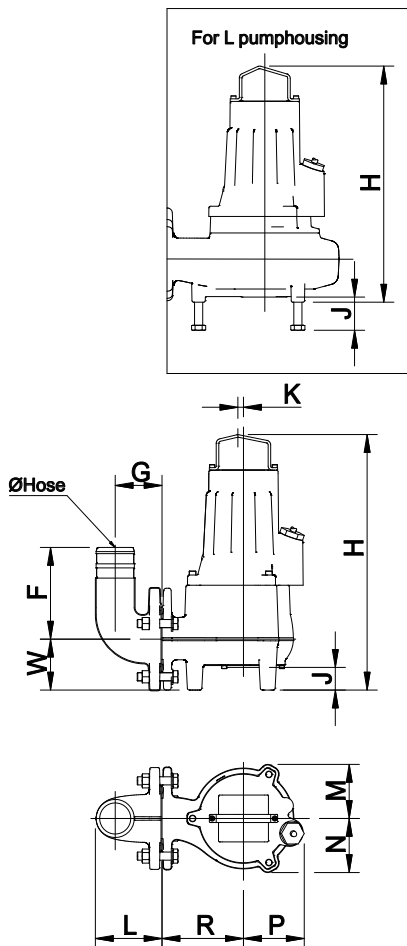
1310H-50W-2p50-en_a_td

1310H Vortex (DN50) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller Pressure	Vortex (V)							Non-clog (S)				
	L		M				H	S				
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	503	433	491	457	491	457
J	65	65	50	50	50	50	61	32	49	49	49	49
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	115	103	103	103	103	103
N	146	146	106	106	106	106	125	123	123	123	123	123
P	146	146	99	99	99	99	120	112	118	118	118	118
R	200	200	160	160	160	160	152	152	200	200	200	200
W	85	85	100	100	100	100	-	-	100	100	100	100

Max weight without cable.



Pumphousing Outlet	DN80	DN80	DN65	DN65	DN50	DN50
Pressure	L/M/S	L/M/S	L/M/S	L/M/S	H	S
Outlet type	Hose	Inner thread	Hose	Inner thread	Inner thread	Inner thread
ØHose/ Thread	Ø75	ISO G3" / 3"-8 NPSM	Ø75	ISO G3"	ISO G2"	ISO G2" / 2-11 1/2 NPT
Discharge Weight (kg)	7	8	7	8	-	-
F	180	155	180	155	157	121
G	90	90	90	90	-	-
L	129	136	129	136	40	40

PUMP TYPE	WEIGHT (Kg)	
	/10	/20
1310H-50T.251.V94...	38	41
1310H-50T.251.V92...	38	41
1310H-50T.251.V90...	38	41
1310H-50T.253.V94...	38	41
1310H-50T.253.V92...	38	41
1310H-50T.253.V90...	38	41

Max weight with cable.

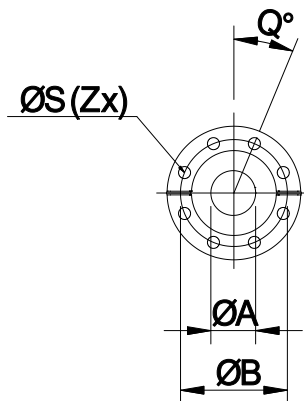
1310H-50T-2p50-en_a_td

1310M, L Vortex (DN65, 80) **DIMENSIONS AND WEIGHTS**

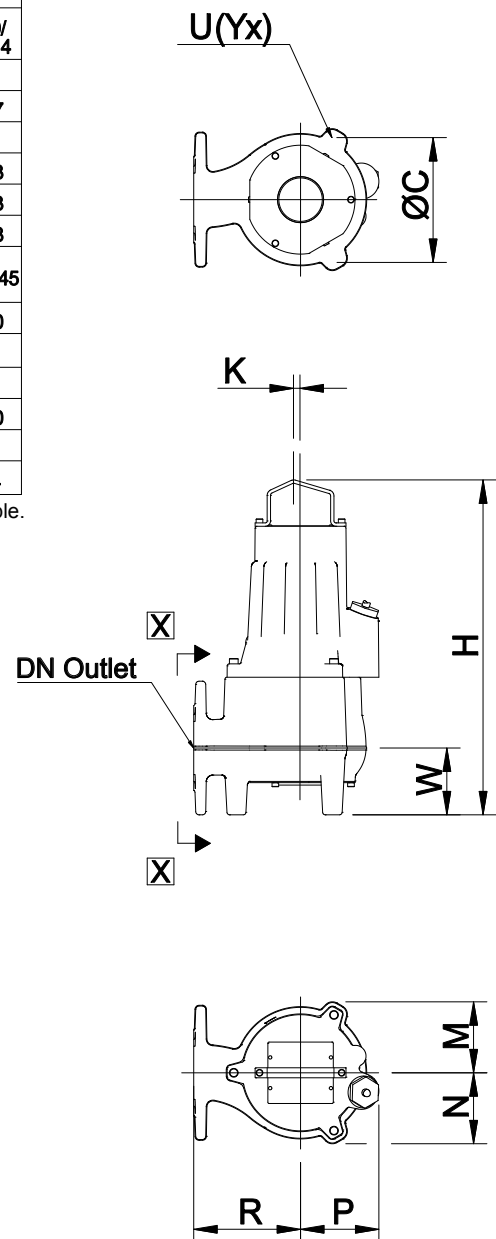
PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)						Non-clog (S)			
	L		M				S			
Pressure	DN65	DN80	DN65	DN65	DN80	DN80	DN65	DN65	DN80	DN80
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	38	38	38	38
Drilling	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI	EN ANSI
A	59	59	67	67	67	67	65	65	65	65
B	142	160/152.4	142	142	160/152.4	160/152.4	142	142	160/152.4	160/152.4
C	260	260	-	-	-	-	-	-	-	-
H	465	465	535	501	535	501	491	457	491	457
K	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	103	103	103	103
N	146	146	106	106	106	106	123	123	123	123
P	146	146	99	99	99	99	118	118	118	118
Q	45	45	45	45	22.5/45	22.5/45	45	45	22.5/45	22.5/45
R	200	200	160	160	160	160	200	200	200	200
S	18	18	21	21	18/21	18/21	21	21	18	18
U	M6	M6	-	-	-	-	-	-	-	-
W	85	85	100	100	100	100	100	100	100	100
Y	3	3	-	-	-	-	-	-	-	-
Z	4	4	4	4	8/4	8/4	4	4	8/4	8/4

Max weight without cable.



VIEW X-X



1310M, L Vortex (DN65, 80)

DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg)	
	PUMP /10	PUMP /20
1310M-65X.251.V89...	43	46
1310M-65X.251.V87...	43	46
1310M-65X.251.V85...	43	46
1310M-65X.253.V89...	43	46
1310M-65X.253.V87...	43	46
1310M-65X.253.V85...	43	46

Max weight with cable.

1310M-65X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)	
	PUMP /10	PUMP /20
1310M-80X.251.V89...	43	46
1310M-80X.251.V87...	43	46
1310M-80X.251.V85...	43	46
1310M-80X.253.V89...	43	46
1310M-80X.253.V87...	43	46
1310M-80X.253.V85...	43	46

Max weight with cable.

1310M-80X-2p50-en_a_td

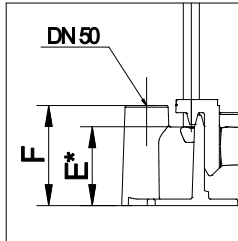
PUMP TYPE	WEIGHT (Kg)	
	PUMP /10	PUMP /20
1310L-65-80X.453.V84...	44	47
1310L-65-80X.453.V83...	44	47
1310L-65-80X.453.V82...	44	47
1310L-65-80X.453.V81...	44	47
1310L-65-80X.453.V80...	44	47

Max weight with cable.

1310L-65-80X-2p50-en_a_td

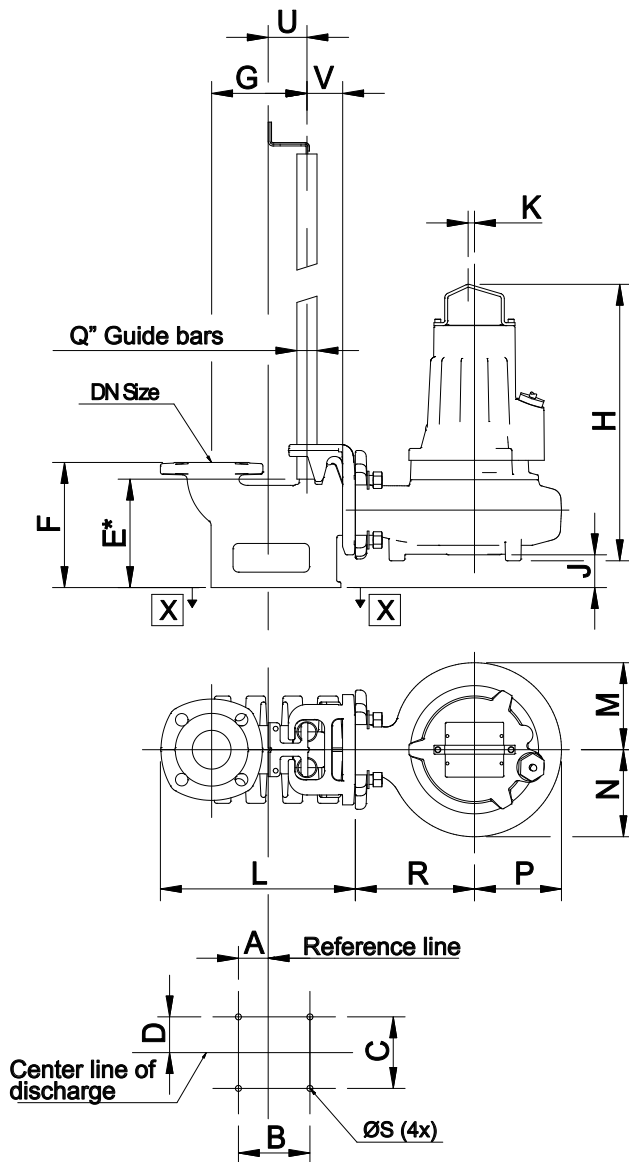
1310M, L Vortex (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL



Impeller	Vortex (V)							Non-clog (S)				
	L		M				H	S				
Pressure	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	455	422	491	457	491	457
min J	55	75	78	78	98	98	58	55	71	71	91	91
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	114	103	103	103	103	103
N	146	146	106	106	106	106	124	123	123	123	123	123
P	146	146	99	99	99	99	119	112	118	118	118	118
R	200	200	160	160	160	160	166	175	200	200	200	200

Max weight without cable.



Discharge Connection	DN80	DN65	DN50
Discharge Weight (kg)	19	14	7
A	60	50	33
B	130	120	100
C	170	120	105
D	85	60	53
E	212	186	136
F	255	210	168
G	160	160	75
L	337	326	143
Q	1	1	3/4
S	M12	M12	M12
U	65	65	86
V	60	60	24

VIEW [X] - [X] *Dimension to end of guide bars

1310M, L Vortex (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1310M-65X.251.V89...	43	46	14
1310M-65X.251.V87...	43	46	14
1310M-65X.251.V85...	43	46	14
1310M-65X.253.V89...	43	46	14
1310M-65X.253.V87...	43	46	14
1310M-65X.253.V85...	43	46	14

Max weight with cable.

1310M-65W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1310M-80X.251.V89...	43	46	19
1310M-80X.251.V87...	43	46	19
1310M-80X.251.V85...	43	46	19
1310M-80X.253.V89...	43	46	19
1310M-80X.253.V87...	43	46	19
1310M-80X.253.V85...	43	46	19

Max weight with cable.

1310M-80W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1310L-65-80X.453.V84...	44	47	14
1310L-65-80X.453.V83...	44	47	14
1310L-65-80X.453.V82...	44	47	14
1310L-65-80X.453.V81...	44	47	14
1310L-65-80X.453.V80...	44	47	14

Max weight with cable.

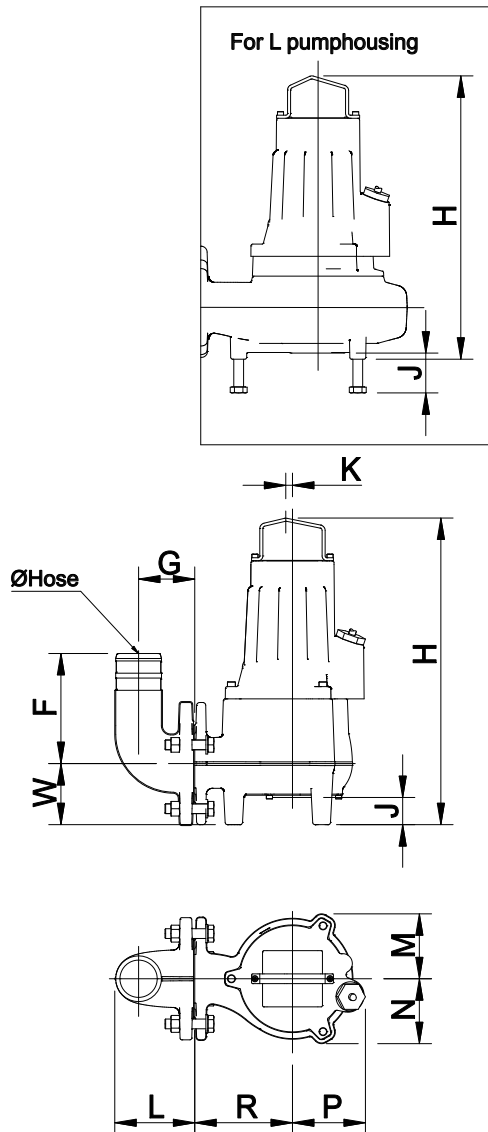
1310L-65-80W-2p50-en_a_td

1310M, L Vortex (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)						Non-clog (S)					
Pressure	L		M				S					
Pump Outlet	DN65	DN80	DN65	DN65	DN80	DN80	DN50	DN50	DN65	DN65	DN80	DN80
No of Phases	1/3	1/3	1	3	1	3	1/3	1/3	1	3	1	3
No of Poles	4	4	2	2	2	2	2	2	2	2	2	2
Pump Weight (kg)	41	41	40	40	40	40	35	35	38	38	38	38
H	465	465	535	501	535	501	503	433	491	457	491	457
J	65	65	50	50	50	50	61	32	49	49	49	49
K	11	11	11	11	11	11	11	11	11	11	11	11
M	146	146	106	106	106	106	115	103	103	103	103	103
N	146	146	106	106	106	106	125	123	123	123	123	123
P	146	146	99	99	99	99	120	112	118	118	118	118
R	200	200	160	160	160	160	152	152	200	200	200	200
W	85	85	100	100	100	100	-	-	100	100	100	100

Max weight without cable.



Pumphousing Outlet	DN80	DN80	DN65	DN65	DN50	DN50
Pressure	L/MS	L/MS	L/MS	L/MS	H	S
Outlet type	Hose	Inner thread	Hose	Inner thread	Inner thread	Inner thread
ØHose/ Thread	Ø75	ISO G3" /3"8 NPSM	Ø75	ISO G3"	ISO G2"	ISO G2" /2-11 1/2 NPT
Discharge Weight (kg)	7	8	7	8	-	-
F	180	155	180	155	157	121
G	90	90	90	90	-	-
L	129	136	129	136	40	40

1310M, L Vortex (DN65, 80) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN65)	KIT H (DN65)
	/10	/20		
1310M-65X.251.V89...	43	46	8	7
1310M-65X.251.V87...	43	46	8	7
1310M-65X.251.V85...	43	46	8	7
1310M-65X.253.V89...	43	46	8	7
1310M-65X.253.V87...	43	46	8	7
1310M-65X.253.V85...	43	46	8	7

Max weight with cable.

1310M-65T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1310M-80X.251.V89...	43	46	8	7
1310M-80X.251.V87...	43	46	8	7
1310M-80X.251.V85...	43	46	8	7
1310M-80X.253.V89...	43	46	8	7
1310M-80X.253.V87...	43	46	8	7
1310M-80X.253.V85...	43	46	8	7

Max weight with cable.

1310M-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN65)	KIT H (DN65)
	/10	/20		
1310L-65-80X.453.V84...	44	47	8	7
1310L-65-80X.453.V83...	44	47	8	7
1310L-65-80X.453.V82...	44	47	8	7
1310L-65-80X.453.V81...	44	47	8	7
1310L-65-80X.453.V80...	44	47	8	7

Max weight with cable.

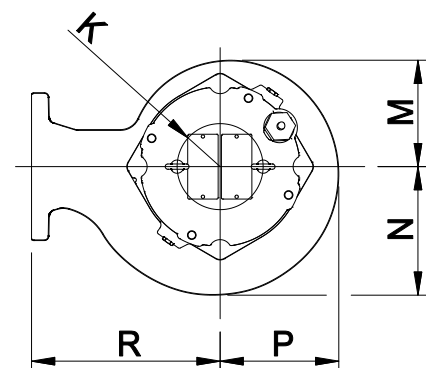
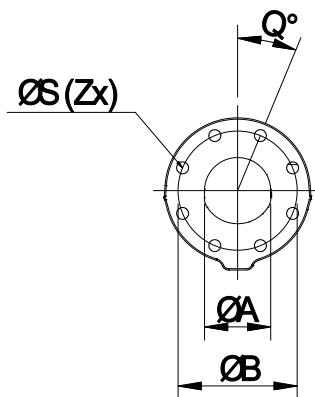
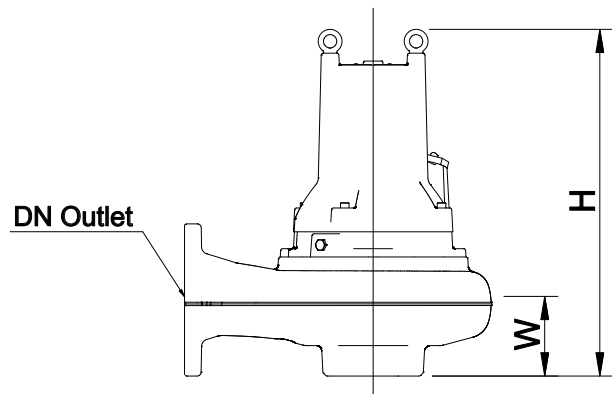
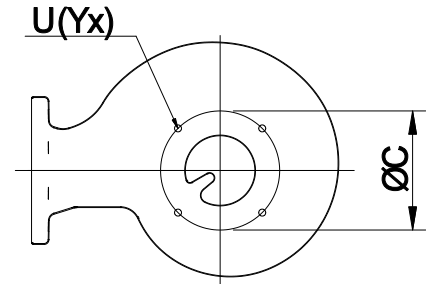
1310L-65-80T-H-2p50-en_a_td

1315H, M Vortex (DN65, 80, 100) **DIMENSIONS AND WEIGHTS**

PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)			Non-clog (S)		
	M	H		M	S	
Pressure						
Pump Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
Drilling	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI
A	102	67	67	100	67	67
B	180/190.5	142/-	160/152.4	180/190.5	142/-	160/152.4
C	180	180	180	180	180	180
H	573	523	523	524	508	508
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
Q	22.5	45/-	22.5/45	22.5	45/-	22.5/45
R	225	200	200	285	230	230
S	18/19	21/-	18	18/19	21/-	18
U	M12	M12	M12	M12	M12	M12
W	120	100	100	120	100	100
Y	4	4	4	4	4	4
Z	8	4/-	8/4	8	4/-	8/4

Max weight without cable.



1315H, M Vortex (DN65, 80, 100) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315H-65X.253.V94...	87	93
1315H-65X.253.V93...	87	93
1315H-65X.253.V91...	87	93

Max weight with cable.

1315H-65X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315H-80X.253.V94...	86	92
1315H-80X.253.V93...	86	92
1315H-80X.253.V91...	86	92

Max weight with cable.

1315H-80X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1315M-100X.453.V83...	95	101
1315M-100X.453.V82...	95	101
1315M-100X.453.V81...	95	101

Max weight with cable.

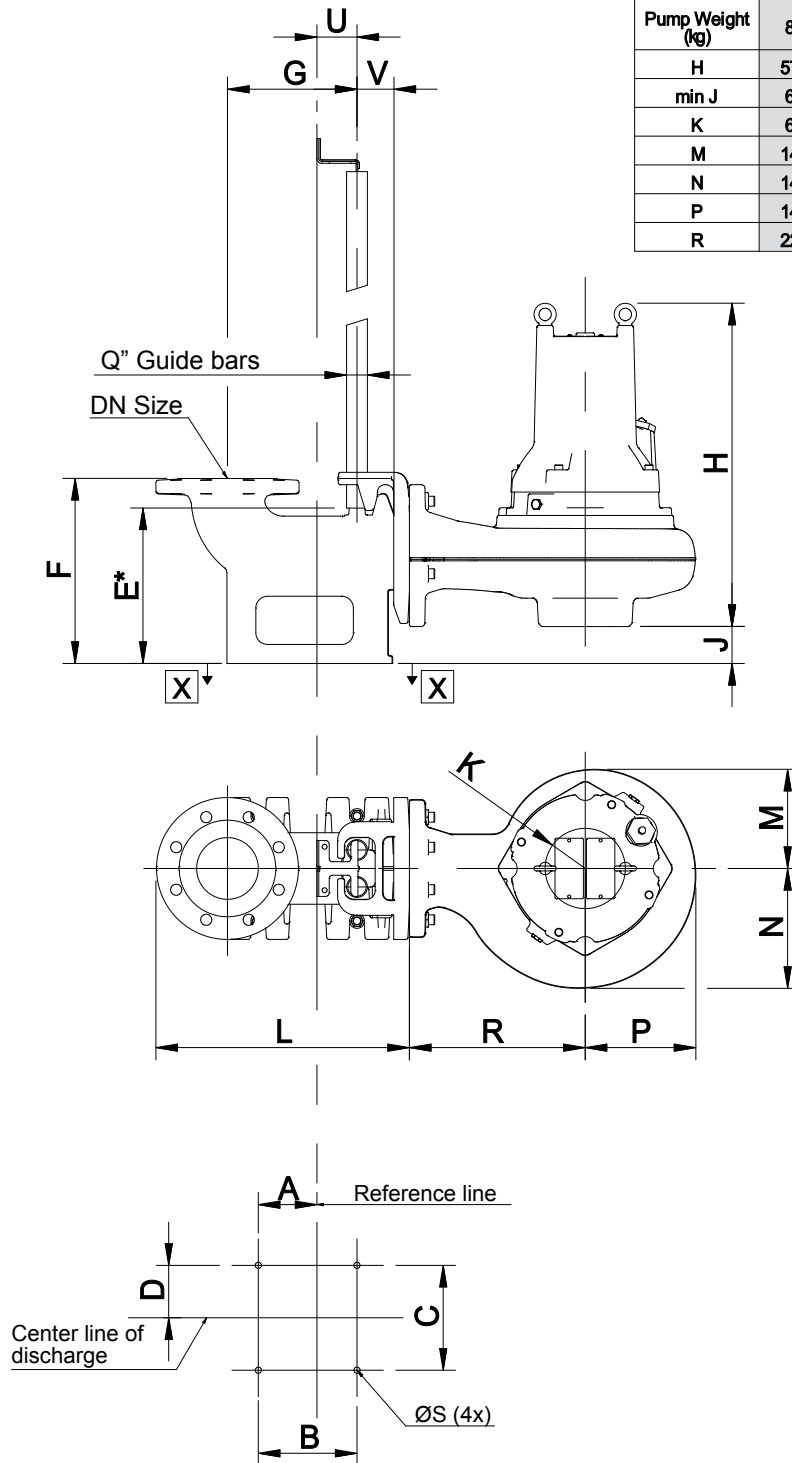
1315M-100X-2p50-en_a_td

1315H, M Vortex (DN65, 80, 100) **DIMENSIONS AND WEIGHTS**

INSTALLATION W: WET WELL

Impeller	Vortex (V)			Non-clog (S)		
	M	H		M	S	
Pump Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
H	573	523	523	524	508	508
min J	60	50	50	60	50	50
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
R	225	200	200	285	230	230

Max weight without cable.



Discharge Connection	DN100	DN80	DN65
Discharge Weight (kg)	32	24	18
A	95	60	50
B	160	130	120
C	170	170	120
D	85	85	60
E	252	212	186
F	300	255	210
G	210	160	160
L	411	337	326
Q	1	1	1
S	M16	M12	M12
U	65	65	65
V	60	60	60

VIEW X - X *Dimension to end of guide bars

1315H, M Vortex (DN65, 80, 100)

DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN65)
	PUMP /10	/20	
1315H-65X.253.V94...	87	93	18
1315H-65X.253.V93...	87	93	18
1315H-65X.253.V91...	87	93	18

Max weight with cable.

1315H-65W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1315H-80X.253.V94...	86	92	24
1315H-80X.253.V93...	86	92	24
1315H-80X.253.V91...	86	92	24

Max weight with cable.

1315H-80W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN100)
	PUMP /10	/20	
1315M-100X.453.V83...	95	101	32
1315M-100X.453.V82...	95	101	32
1315M-100X.453.V81...	95	101	32

Max weight with cable.

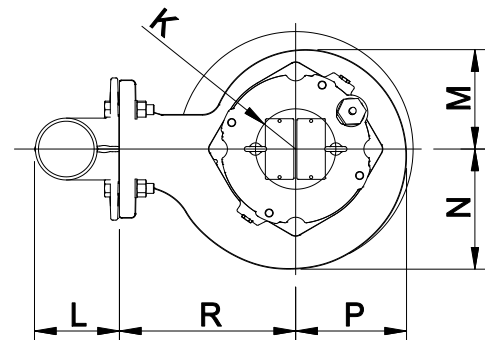
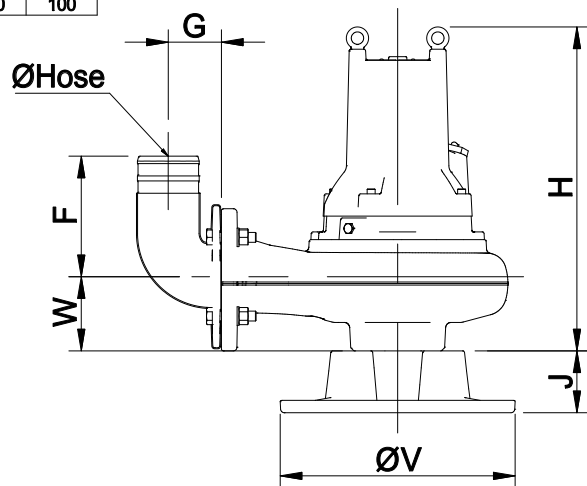
1315M-100W-2p50-en_a_td

1315H, M Vortex (DN65, 80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)			Non-clog (S)		
Pressure	M	H		M	S	
Pumphousing Outlet	DN100	DN65	DN80	DN100	DN65	DN80
Pump Weight (kg)	89	81	80	84	81	80
H	573	523	523	524	508	508
J	100	100	100	100	100	100
K	65	65	65	65	65	65
M	148	144	144	161	148	148
N	147	145	145	194	148	148
P	147	142	142	179	147	147
R	225	200	200	285	230	230
W	120	100	100	120	100	100

Max weight without cable.



Pumphousing Outlet	DN100	DN100	DN80	DN80	DN65	DN65
Outlet type	Hose	Inner thread	Hose	Inner thread	Hose	Inner thread
ØHose/ Thread	Ø100	ISO G4" / 4"-8 NPSM	Ø75	ISO G3" / 3"-8 NPSM	Ø75	ISO G3"
Discharge Weight (kg)	6	7	7	8	7	8
F	195	195	180	155	180	155
L	137	146	129	136	129	136
G	85	85	90	90	90	90
V	380	380	380	380	380	380

1315H, M Vortex (DN65, 80, 100)

DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN65)	KIT H (DN65)
	/10	/20		
1315H-65X.253.V94...	87	93	8	7
1315H-65X.253.V93...	87	93	8	7
1315H-65X.253.V91...	87	93	8	7

Max weight with cable.

1315H-65T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1315H-80X.253.V94...	86	92	8	7
1315H-80X.253.V93...	86	92	8	7
1315H-80X.253.V91...	86	92	8	7

Max weight with cable.

1315H-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN100)	KIT H (DN100)
	/10	/20		
1315M-100X.453.V83...	95	101	7	6
1315M-100X.453.V82...	95	101	7	6
1315M-100X.453.V81...	95	101	7	6

Max weight with cable.

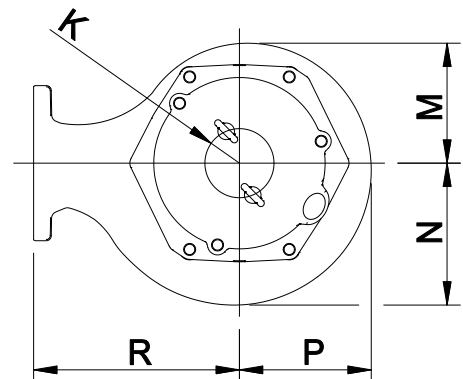
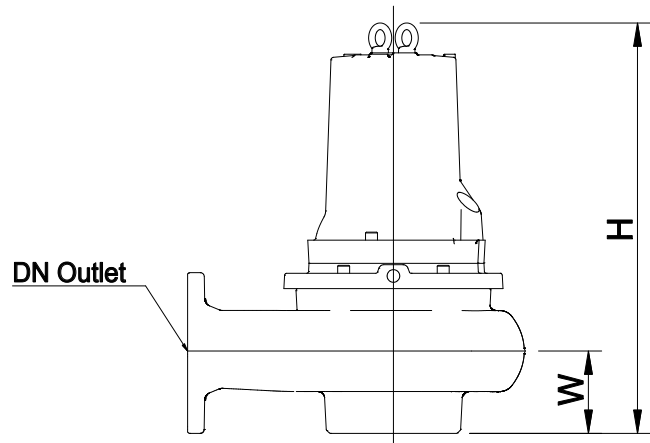
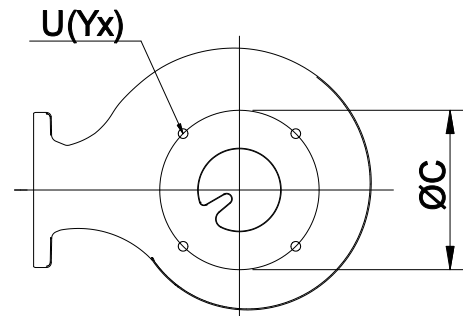
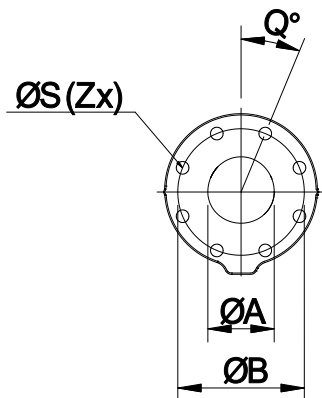
1315M-100T-H-2p50-en_a_td

1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

Impeller	Vortex (V)		Non-clog (S)		
	M	H	M	H	S
Pump Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
Drilling	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI	EN/ANSI
A	102	67	100	100	78
B	180/190.5	160/152.4	180/190.5	180/190.5	160/152.4
C	180	180	240	180	180
H	674	610	618	592	570
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
Q	22.5	22.5/45	22.5	22.5	22.5/45
R	245	210	310	310	260
S	18/19	18	18/19	18/19	18
U	M12	M12	M16	M12	M12
W	123	100	124	123	100
Y	4	4	4	4	4
Z	8	8/4	8	8	8/4

Max weight without cable.



1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

PUMP TYPE X: BASIC VERSION

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1320H-80X.253.V94...	131	137
1320H-80X.253.V93...	131	137
1320H-80X.253.V92...	131	137
1320H-80X.253.V91...	131	137

Max weight with cable.

1320H-80X-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg) PUMP	
	/10	/20
1320M-100X.453.V84...	140	146
1320M-100X.453.V83...	140	146
1320M-100X.453.V81...	140	146

Max weight with cable.

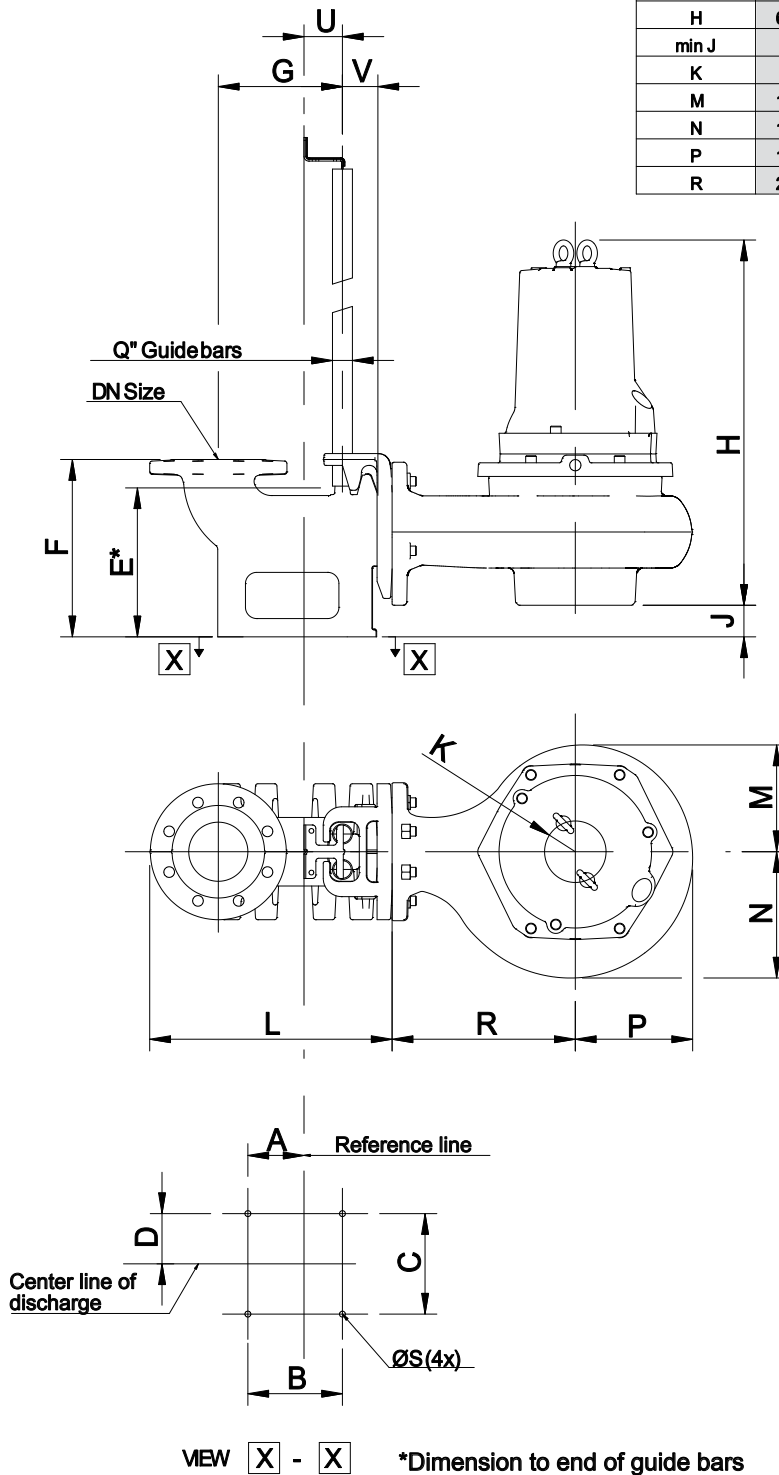
1320M-100X-2p50-en_a_td

1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

Impeller	Vortex (V)		Non-clog (S)		
	M	H	M	H	S
Discharge Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
H	674	610	618	592	570
min J	57	50	53	57	50
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
R	245	210	310	310	260

Max weight without cable.



Discharge Connection	DN100	DN80
Discharge Weight (kg)	32	24
A	95	60
B	160	130
C	170	170
D	85	85
E	252	212
F	300	255
G	210	160
L	411	337
Q	1	1
S	M16	M12
U	65	65
V	60	60

1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION W: WET WELL

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN80)
	PUMP /10	/20	
1320H-80X.253.V94...	131	137	24
1320H-80X.253.V93...	131	137	24
1320H-80X.253.V92...	131	137	24
1320H-80X.253.V91...	131	137	24

Max weight with cable.

1320H-80W-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)		Discharge size (DN100)
	PUMP /10	/20	
1320M-100X.453.V84...	140	146	32
1320M-100X.453.V83...	140	146	32
1320M-100X.453.V81...	140	146	32

Max weight with cable.

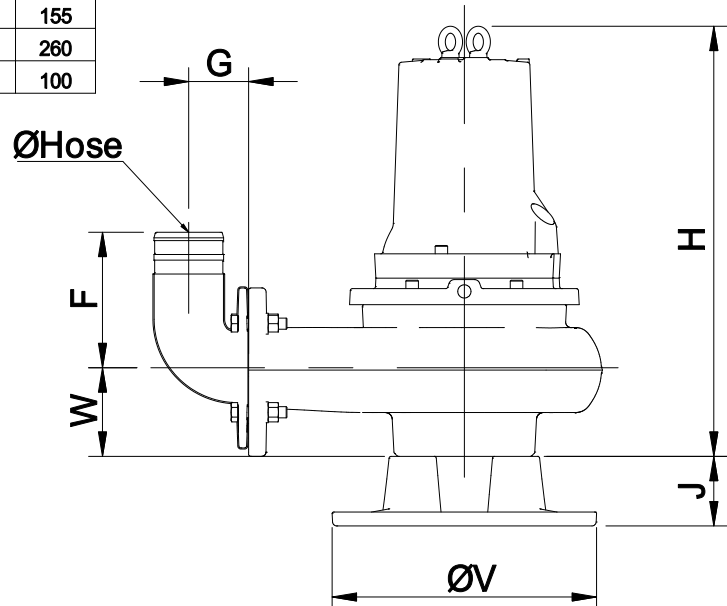
1320M-100W-2p50-en_a_td

1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

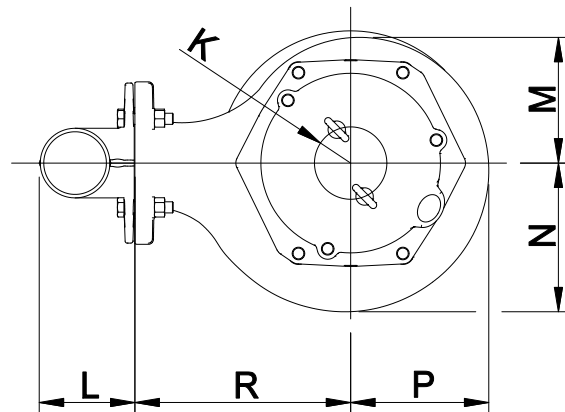
INSTALLATION T: FREE-STANDING

Impeller	Vortex (V)		Non-clog (S)		
Pressure	M	H	M	H	S
Pump housing Outlet	DN100	DN80	DN100	DN100	DN80
Pump Weight (kg)	134	125	134	134	115
H	674	610	618	592	570
J	100	100	100	100	100
K	52	52	52	52	52
M	166	152	180	194	148
N	167	152	214	232	172
P	167	150	199	213	155
R	245	210	310	310	260
W	123	100	124	123	100

Max weight without cable.



Pumphousing Outlet	DN100	DN100	DN80	DN80
Outlet type	Hose	Inner thread	Hose	Inner thread
ØHose/ Thread	Ø100	ISO G4" / 4"-8 NPSM	Ø75	ISO G3" / 3"-8 NPSM
Discharge Weight (kg)	6	7	7	8
F	195	195	180	155
L	137	146	129	136
G	85	85	90	90
V	380	380	380	380



1320H, M Vortex (DN80, 100) DIMENSIONS AND WEIGHTS

INSTALLATION T: FREE-STANDING

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN80)	KIT H (DN80)
	/10	/20		
1320H-80X.253.V94...	131	137	8	7
1320H-80X.253.V93...	131	137	8	7
1320H-80X.253.V92...	131	137	8	7
1320H-80X.253.V91...	131	137	8	7

Max weight with cable.

1320H-80T-H-2p50-en_a_td

PUMP TYPE	WEIGHT (Kg)			
	PUMP		KIT T (DN100)	KIT H (DN100)
	/10	/20		
1320M-100X.453.V84...	140	146	7	6
1320M-100X.453.V83...	140	146	7	6
1320M-100X.453.V81...	140	146	7	6

Max weight with cable.

1320M-100T-H-2p50-en_a_td

ACCESSORIES

Electrical panels	102
Combination table - Control panels	110
Accessories	112
Installation example	117

Electrical panel for drainage pumps

QDRMC Series single-phase



APPLICATIONS

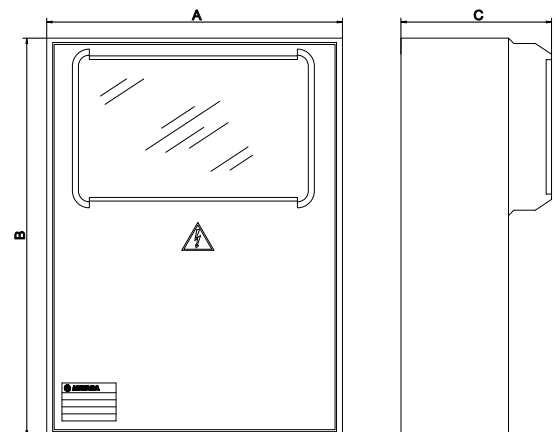
- Protection and control of one single-phase drainage pump with external capacitor.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V $\pm$ 10%.
- Frequency: 50/60 Hz.
- Power: 1,5 kW.
- Direct motor start.
- Protection class: IP55.
- Ambient temperature: -5 to +40 °C (according to EN 61439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 61439-1).
- Wall mounted.
- Plastic enclosure.
- Electronic control module with test and alarm reset buttons, and power-on, pump running, high level alarm, indicator LED's and thermal probe.
- Alarm silencing button.
- Start and run capacitor incorporated in the control panel.
- /TS/13XX version equipped with stator thermal protection circuit for electropumps 1300 series.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	C	Cs
		kW	HP		A	B	C		uF	uF
QDRMC/07/TS/1305	1 ~ 230 $\pm$ 10 % 50 Hz	1,5	2	4 $\div$ 6,3	280	370	160	4	14	/
QDRMC/15/TS/1310		1,5	2	6,3 $\div$ 10					45	150 (n.2: 80+70)
QDRMC/22/TS/1310		2,2	3	10 $\div$ 16					45	150 (n.2: 80+70)

C= Run capacitor; Cs= Start capacitor

CB-QDRMC-en_h_te

Electrical panel for drainage pumps

QDRMC2 Series single-phase



APPLICATIONS

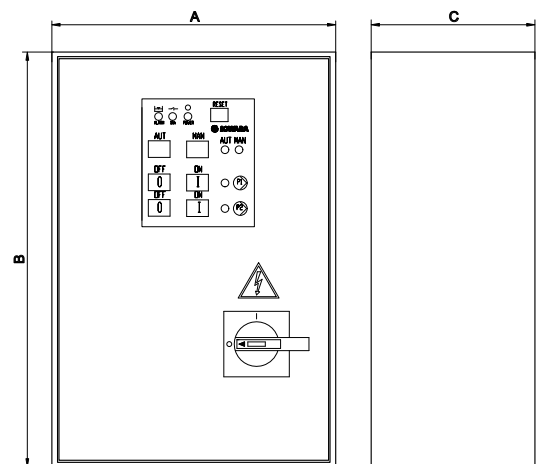
- Protection and control of two single-phase drainage pumps with external capacitor.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V $\pm$ 10%.
- Frequency: 50/60 Hz.
- Power: 1,5 kW.
- Direct motor start.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 61439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 61439-1).
- Wall mounted.
- Plastic enclosure.
- Electronic board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Alarm silencing button.
- Start and run capacitor incorporated in the control panel.
- /TS/13XX version equipped with stator thermal protection circuit for electropumps 1300 series.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.
- Signal relay board kit RILS20 (power, auto/man, start/stop, thermal overload, high level).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT			DIMENSIONS			WEIGHT Kg	C uF	Cs uF
		kW	HP	A			A	B	C			
QDRMC2/07/TS/1305	1 ~ 230 $\pm$ 10 % 50 Hz	1,5	2	4	$\div$	6,3	400	400	200	10	14	/
QDRMC2/15/TS/1310		1,5	2	6,3	$\div$	10	400	600	200		45	150 (n.2: 80+70)
QDRMC2/22/TS/1310		2,2	3	10	$\div$	16	400	600	200		45	150 (n.2: 80+70)

C= Run capacitor; Cs= Start capacitor

CB-QDRMC2-en_g_te

Electrical panel for drainage pumps

QDR Series three-phase



APPLICATIONS

- Protection and control of one three-phase drainage pump.

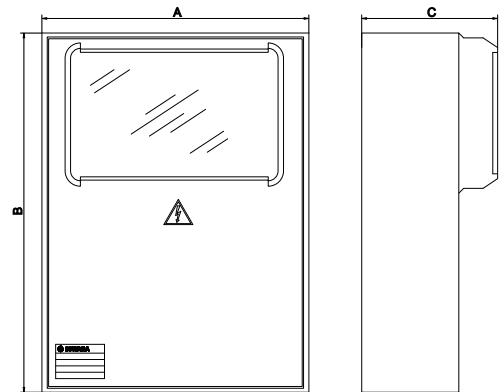
SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V $\pm 10\%$.
- Frequency: 50/60 Hz.
- Power: 0,37 to 7,5 kW.
- Direct motor start.
- Protection class: IP55.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Plastic enclosure.
- Electronic control module with test and alarm reset buttons, and power-on, pump running, high level alarm, indicator LED's and thermal probe.
- Alarm silencing button.

- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A	B mm	C	
QDR/03	3 ~ 400 $\pm 10\%$ 50/60 Hz	0,37	0,5	0,63 ÷ 1	280	370	150	4,1
QDR/05		0,55	0,75	1 ÷ 1,6				
QDR/07		0,75	1	1,6 ÷ 2,5				
QDR/15		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4				
QDR/22		2,2	3	4 ÷ 6,3				
QDR/40		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10				4,5
QDR/75		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16				
QDR/03/TS		0,37	0,5	0,63 ÷ 1				
QDR/05/TS		0,55	0,75	1 ÷ 1,6				
QDR/07/TS		0,75	1	1,6 ÷ 2,5				
QDR/15/TS		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4				
QDR/22/TS		2,2	3	4 ÷ 6,3				0
QDR/40/TS		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10				
QDR/75/TS		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16				
QDR/07/TS		0,75	1	1,6 ÷ 2,5				
QDR/03/WD		0,37	0,5	0,63 ÷ 1				5
QDR/05/WD		0,55	0,75	1 ÷ 1,6				
QDR/07/WD		0,75	1	1,6 ÷ 2,5				
QDR/15/WD		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4				
QDR/22/WD		2,2	3	4 ÷ 6,3				
QDR/40/WD		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10				
QDR/75/WD		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16				
QDR/07/WD		0,75	1	1,6 ÷ 2,5				

The /WD option also includes the /TS option.

CB-QDR-en_d_te

Electrical panel for drainage pumps

QDR2 Series three-phase



APPLICATIONS

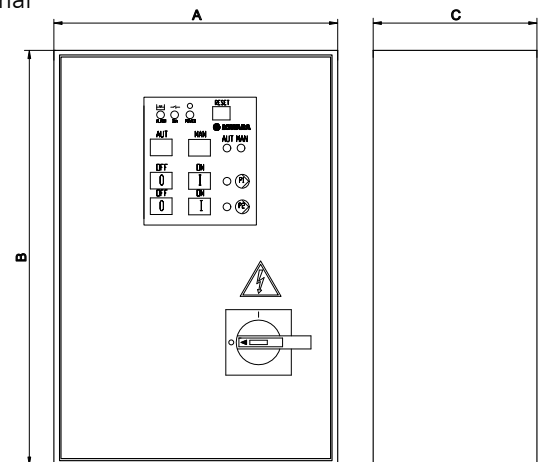
- Protection and control of two three-phase drainage pumps.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V $\pm 10\%$.
- Frequency: 50/60 Hz.
- Power: 0,37 to 7,5 kW.
- Direct motor start.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 61439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 61439-1).
- Wall mounted.
- Metal enclosure.
- Electronic board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Alarm silencing button.
- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.
- Signal relay board kit RILS20 (power, auto/man, start/stop, thermal overload, high level).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	
		kW	HP		A	B mm	C		
QDR2/03	3 ~ 400 ± 10 % 50/60 Hz	0,37	0,5	0,63 ÷ 1	260	380	150	9,4	
QDR2/05		0,55	0,75	1 ÷ 1,6					
QDR2/07		0,75	1	1,6 ÷ 2,5					
QDR2/15		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4					
QDR2/22		2,2	3	4 ÷ 6,3					
QDR2/40		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10					
QDR2/75		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16					
QDR2/07/TS		0,75	1	1,6 ÷ 2,5	400	400	200	14	
QDR2/15/TS		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4					
QDR2/22/TS		2,2	3	4 ÷ 6,3					
QDR2/07/WD		0,75	1	1,6 ÷ 2,5		500		18	
QDR2/15/WD		1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4					
QDR2/22/WD		2,2	3	4 ÷ 6,3					

The /WD option also includes the /TS option.

CB-QDR2-en_d_te

Electrical panel for drainage pumps

QYR Series three-phase



APPLICATIONS

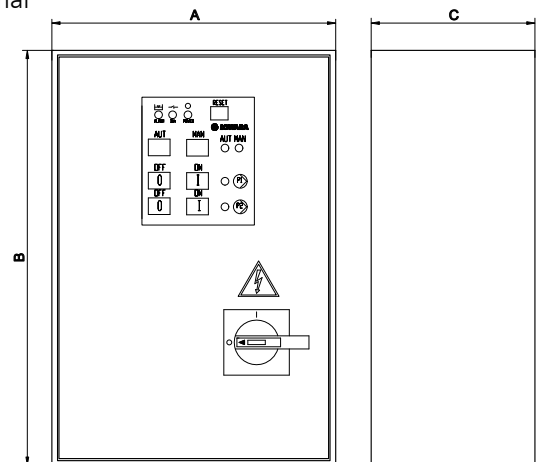
- Protection and control of one three-phase drainage pump with star-delta start.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V $\pm 10\%$.
- Frequency: 50/60 Hz.
- Power: 3 to 75 kW.
- Star-delta motor start.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 61439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 61439-1).
- Wall mounted.
- Metal enclosure.
- Electronic board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Alarm silencing button.
- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.
- Signal relay board kit RILS20 (power, auto/man, start/stop, thermal overload, high level).



QYR SERIES PANELS ELECTRICAL DATA TABLE

MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS				WEIGHT Kg	
		kW	HP		A	B mm	C	*		
QYR/40	3 ~ 400 ± 10 % 50/60 Hz	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	400	500	200	-	25	
QYR/75		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16						
QYR/92		9,2	12,5	16 ÷ 20						
QYR/110		11	15	20 ÷ 25						
QYR/150		15	20	22 ÷ 32						
QYR/185		18,5	25	28 ÷ 40	500	600			27	
QYR/220		22	30	36 ÷ 50						
QYR/300		30	40	45 ÷ 63	600	700	250	P	32	
QYR/370		37	50	57 ÷ 75						
QYR/450		45	60	70 ÷ 90						
QYR/550		55	75	80 ÷ 108						
QYR/750		75	100	105 ÷ 138						
QYR/22/TS		2,2	3	4 ÷ 6,3	400	500	200	-	25	
QYR/40/TS		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10						
QYR/75/TS		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16						
QYR/92/TS		9,2	12,5	16 ÷ 20						
QYR/110/TS		11	15	20 ÷ 25						
QYR/150/TS		15	20	22 ÷ 32	500	600		-	27	
QYR/185/TS		18,5	25	28 ÷ 40						
QYR/220/TS		22	30	36 ÷ 50						
QYR/300/TS		30	40	45 ÷ 63						
QYR/370/TS		37	50	57 ÷ 75	600	700				32
QYR/450/TS		45	60	70 ÷ 90						
QYR/550/TS		55	75	80 ÷ 108						
QYR/750/TS		75	100	105 ÷ 138						
QYR/40/WD		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	400	500	200	P	26	
QYR/75/WD		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16						
QYR/92/WD		9,2	12,5	16 ÷ 20						
QYR/110/WD		11	15	20 ÷ 25						
QYR/150/WD		15	20	22 ÷ 32						
QYR/185/WD		18,5	25	28 ÷ 40	500	600		-	28	
QYR/220/WD		22	30	36 ÷ 50						
QYR/300/WD		30	40	45 ÷ 63	600	700	250		P	33
QYR/370/WD		37	50	57 ÷ 75						
QYR/450/WD		45	60	70 ÷ 90						
QYR/550/WD		55	75	80 ÷ 108						
QYR/750/WD		75	100	105 ÷ 138						
					</					

* Note : P indicates floor mounted control panel.

CB-QYR-en_f_te

Electrical panel for drainage pumps

QYR2 Series three-phase



APPLICATIONS

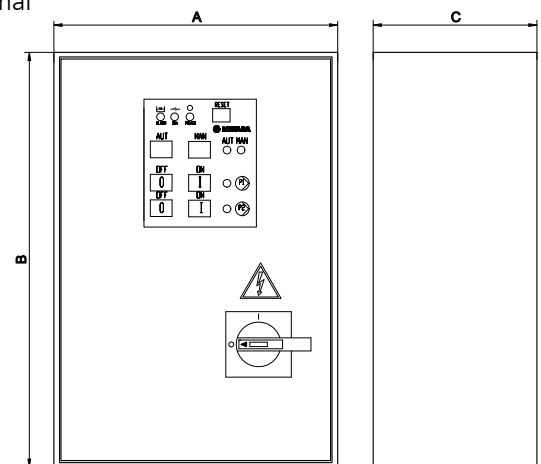
- Protection and control of two three-phase drainage pumps with star-delta start.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V $\pm 10\%$.
- Frequency: 50/60 Hz.
- Power: 3 to 75 kW.
- Star-delta motor start.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 61439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 61439-1).
- Wall mounted.
- Metal enclosure.
- Electronic board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Alarm silencing button.
- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.

OPTIONAL ACCESSORIES

- Audible or visual signalling device, 12 Vdc 0,3 A max (two connection terminals provided inside the electrical panel) for high-level alarm.
- Signal relay board kit RILS20 (power, auto/man, start/stop, thermal overload, high level).



QYR2 SERIES PANELS ELECTRIC DATA TABLE

MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS				WEIGHT Kg		
		kW	HP		A	B mm	C	*			
QYR2/40	3 ~ 400 ± 10 % 50/60 Hz	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	500	700	200	-	55		
QYR2/75		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16							
QYR2/92		9,2	12,5	16 ÷ 20							
QYR2/110		11	15	20 ÷ 25							
QYR2/150		15	20	22 ÷ 32	600	800	250	-	68		
QYR2/185		18,5	25	28 ÷ 40		900			75		
QYR2/220		22	30	36 ÷ 50							
QYR2/300		30	40	45 ÷ 63		1300			300	P	92
QYR2/370		37	50	57 ÷ 75	800	1700	125				
QYR2/450		45	60	70 ÷ 90				1900			148
QYR2/550		55	75	80 ÷ 108							
QYR2/750		75	100	105 ÷ 138							
QYR2/22/TS		2,2	3	4 ÷ 6,3	500	700	200	-	55		
QYR2/40/TS		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10							
QYR2/75/TS		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16							
QYR2/92/TS		9,2	12,5	16 ÷ 20							
QYR2/110/TS		11	15	20 ÷ 25	600	800	250	-	68		
QYR2/150/TS		15	20	22 ÷ 32		900			75		
QYR2/185/TS		18,5	25	28 ÷ 40							
QYR2/220/TS		22	30	36 ÷ 50		1300			300	P	92
QYR2/300/TS		30	40	45 ÷ 63	800	1700	125				
QYR2/370/TS		37	50	57 ÷ 75				1900			148
QYR2/450/TS		45	60	70 ÷ 90							
QYR2/550/TS		55	75	80 ÷ 108							
QYR2/750/TS		75	100	105 ÷ 138							
QYR2/40/WD		3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	500	700	200	-	55		
QYR2/75/WD		5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16							
QYR2/92/WD		9,2	12,5	16 ÷ 20							
QYR2/110/WD		11	15	20 ÷ 25							
QYR2/150/WD		15	20	22 ÷ 32	600	800	250	-	68		
QYR2/185/WD		18,5	25	28 ÷ 40		900			75		
QYR2/220/WD		22	30	36 ÷ 50							
QYR2/300/WD	30	40	45 ÷ 63	1300		300			P	92	
QYR2/370/WD	37	50	57 ÷ 75	800	1700		125				
QYR2/450/WD	45	60	70 ÷ 90					1900		148	
QYR2/550/WD	55	75	80 ÷ 108								
QYR2/750/WD	75	100	105 ÷ 138								

* Note : P indicates floor mounted control panel.

CB-QYR2-en_c_te

1300 Non-clog SERIES

CONTROL PANELS - COMBINATION TABLE

TYPE ELECTRIC PUMP	CURRENT ABSORBED Iabs(A)	START	PANEL TYPE	
			1 PUMP	2 PUMPS
1305S-50T.251.S66...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305S-50T.251.S64...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305S-50W.251.S66...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305S-50W.251.S64...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305S-50T.253.S66...	2,2	Y	QDR/07/TS	QDR2/07/TS
1305S-50T.253.S62...	2,8	Y	QDR/15/TS	QDR2/15/TS
1305S-50T.253.S60...	2,8	Y	QDR/15/TS	QDR2/15/TS
1305S-50W.253.S66...	2,2	Y	QDR/07/TS	QDR2/07/TS
1305S-50W.253.S62...	2,8	Y	QDR/15/TS	QDR2/15/TS
1305S-50W.253.S60...	2,8	Y	QDR/15/TS	QDR2/15/TS
1310S-50T.251.S64...	8,9	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310S-50T.251.S62...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-50T.251.S60...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-50W.251.S64...	8,9	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310S-50W.251.S62...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-50W.251.S60...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-65X.251.S64...	8,9	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310S-65X.251.S62...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-65X.251.S60...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-80X.251.S64...	8,9	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310S-80X.251.S62...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-80X.251.S60...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310S-50T.253.S64...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310S-50T.253.S62...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310S-50T.253.S60...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310S-50W.253.S64...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310S-50W.253.S62...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310S-50W.253.S60...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310S-65X.253.S64...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310S-65X.253.S62...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310S-65X.253.S60...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310S-80X.253.S64...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310S-80X.253.S62...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310S-80X.253.S60...	5,1	Y	QDR/22/TS	QDR2/22/TS
1315S-65X.253.S63...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315S-65X.253.S62...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315S-65X.253.S61...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315S-80X.253.S63...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315S-80X.253.S62...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315S-80X.253.S61...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315M-100X.453.S23...	4,8	Y	QDR/22/TS	QDR2/22/TS
1315M-100X.453.S22...	5,4	Y	QDR/22/TS	QDR2/22/TS
1315M-100X.453.S21...	7,4	Y	QDR/40/TS	QDR2/40/TS
1315M-100X.453.S20...	7,4	Y	QDR/40/TS	QDR2/40/TS
1320S-80X.253.S64...	9,8	YD	QYR/75/TS	QYR2/75/TS
1320S-80X.253.S62...	12	YD	QYR/75/TS	QYR2/75/TS
1320S-80X.253.S60...	14	YD	QYR/75/TS	QYR2/75/TS
1320H-100X.453.S43...	8,8	YD	QYR/40/TS	QYR2/40/TS
1320H-100X.453.S42...	10	YD	QYR/75/TS	QYR2/75/TS
1320H-100X.453.S41...	13	YD	QYR/75/TS	QYR2/75/TS
1320M-100X.453.S24...	8,8	YD	QYR/40/TS	QYR2/40/TS
1320M-100X.453.S22...	10	YD	QYR/75/TS	QYR2/75/TS
1320M-100X.453.S20...	13	YD	QYR/75/TS	QYR2/75/TS
1325S-80X.253.S63...	18	YD	QYR/92/TS	QYR2/92/TS
1325S-80X.253.S62...	22	YD	QYR/110/TS	QYR2/110/TS
1325S-80X.253.S61...	27	YD	QYR/150/TS	QYR2/150/TS
1325S-80X.253.S60...	32	YD	QYR/185/TS	QYR2/185/TS
1325H-100X.453.S43...	20	YD	QYR/110/TS	QYR2/110/TS
1325H-100X.453.S42...	23	YD	QYR/110/TS	QYR2/110/TS
1325H-100X.453.S41...	27	YD	QYR/150/TS	QYR2/150/TS
1325M-150X.453.S24...	20	YD	QYR/110/TS	QYR2/110/TS
1325M-150X.453.S23...	23	YD	QYR/110/TS	QYR2/110/TS
1325M-150X.453.S22...	23	YD	QYR/110/TS	QYR2/110/TS
1325M-150X.453.S21...	27	YD	QYR/150/TS	QYR2/150/TS

1300 Vortex SERIES

CONTROL PANELS - COMBINATION TABLE

TYPE ELECTRIC PUMP	CURRENT ABSORBED I _{abs} (A)	START	PANEL TYPE	
			1 PUMP	2 PUMPS
1305H-50T.251.V92...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305H-50W.251.V92...	4,2	DOL	QDRMC/07/TS/1305	QDRMC2/07/TS/1305
1305H-50T.253.V92...	2,2	Y	QDR/07/TS	QDR2/07/TS
1305H-50T.253.V90...	2,8	Y	QDR/15/TS	QDR2/15/TS
1305H-50W.253.V92...	2,8	Y	QDR/15/TS	QDR2/15/TS
1305H-50W.253.V90...	2,2	Y	QDR/07/TS	QDR2/07/TS
1310H-50T.251.V94...	8,4	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310H-50T.251.V92...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310H-50T.251.V90...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310H-50W.251.V94...	8,4	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310H-50W.251.V92...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310H-50W.251.V90...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310M-65X.251.V89...	8,4	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310M-65X.251.V87...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310M-65X.251.V85...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310M-80X.251.V89...	8,4	DOL	QDRMC/15/TS/1310	QDRMC2/15/TS/1310
1310M-80X.251.V87...	10	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310M-80X.251.V85...	14	DOL	QDRMC/22/TS/1310	QDRMC2/22/TS/1310
1310H-50T.253.V94...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310H-50T.253.V92...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310H-50T.253.V90...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310H-50W.253.V94...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310H-50W.253.V92...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310H-50W.253.V90...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310M-65X.253.V89...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310M-65X.253.V87...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310M-65X.253.V85...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310M-80X.253.V89...	3,3	Y	QDR/15/TS	QDR2/15/TS
1310M-80X.253.V87...	3,8	Y	QDR/22/TS	QDR2/22/TS
1310M-80X.253.V85...	5,1	Y	QDR/22/TS	QDR2/22/TS
1310L-65-80X.453.V84...	3,4	Y	QDR/15/TS	QDR2/15/TS
1310L-65-80X.453.V83...	3,4	Y	QDR/15/TS	QDR2/15/TS
1310L-65-80X.453.V82...	3,4	Y	QDR/15/TS	QDR2/15/TS
1310L-65-80X.453.V81...	3,9	Y	QDR/22/TS	QDR2/22/TS
1310L-65-80X.453.V80...	4,9	Y	QDR/22/TS	QDR2/22/TS
1315H-65X.253.V94...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315H-65X.253.V93...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315H-65X.253.V91...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315H-80X.253.V94...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315H-80X.253.V93...	6,6	YD	QYR/40/TS	QYR2/40/TS
1315H-80X.253.V91...	8,6	YD	QYR/40/TS	QYR2/40/TS
1315M-100X.453.V83...	5,4	Y	QDR/22/TS	QDR2/22/TS
1315M-100X.453.V82...	7,4	Y	QDR/40/TS	QDR2/40/TS
1315M-100X.453.V81...	7,4	Y	QDR/40/TS	QDR2/40/TS
1320H-80X.253.V94...	9,8	YD	QYR/75/TS	QYR2/75/TS
1320H-80X.253.V93...	12	YD	QYR/75/TS	QYR2/75/TS
1320H-80X.253.V92...	12	YD	QYR/75/TS	QYR2/75/TS
1320H-80X.253.V91...	14	YD	QYR/75/TS	QYR2/75/TS
1320M-100X.453.V84...	8,8	YD	QYR/40/TS	QYR2/40/TS
1320M-100X.453.V83...	10	YD	QYR/75/TS	QYR2/75/TS
1320M-100X.453.V81...	13	YD	QYR/75/TS	QYR2/75/TS

1300V-en_A_TQ

1300 Non-clog SERIES ACCESSORIES

TYPE ELECTRIC PUMP	VERSION	PUMP TYPE			INSTALLATION KIT TYPE		
		W	T	X	W	T	H
1305S-50T.251.S66...	~1	-	•	-	-	-	-
1305S-50T.251.S64...		-	•	-	-	-	-
1305S-50W.251.S66...		•	-	-	FL7903820	-	-
1305S-50W.251.S64...		•	-	-	FL7903820	-	-
1305S-50T.253.S66...	~3	-	•	-	-	-	-
1305S-50T.253.S62...		-	•	-	-	-	-
1305S-50T.253.S60...		-	•	-	-	-	-
1305S-50W.253.S66...		•	-	-	FL7903820	-	-
1305S-50W.253.S62...		•	-	-	FL7903820	-	-
1305S-50W.253.S60...		•	-	-	FL7903820	-	-
1310S-50T.251.S64...	~1	-	•	-	-	-	-
1310S-50T.251.S62...		-	•	-	-	-	-
1310S-50T.251.S60...		-	•	-	-	-	-
1310S-50W.251.S64...		•	-	-	FL7903820	-	-
1310S-50W.251.S62...		•	-	-	FL7903820	-	-
1310S-50W.251.S60...		•	-	-	FL7903820	-	-
1310S-65X.251.S64...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-65X.251.S62...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-65X.251.S60...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-80X.251.S64...		-	-	•	FL7903822	FL7903818	FL7903814
1310S-80X.251.S62...		-	-	•	FL7903822	FL7903818	FL7903814
1310S-80X.251.S60...		-	-	•	FL7903822	FL7903818	FL7903814
1310S-50T.253.S64...	~3	-	•	-	-	-	-
1310S-50T.253.S62...		-	•	-	-	-	-
1310S-50T.253.S60...		-	•	-	-	-	-
1310S-50W.253.S64...		•	-	-	FL7903820	-	-
1310S-50W.253.S62...		•	-	-	FL7903820	-	-
1310S-50W.253.S60...		•	-	-	FL7903820	-	-
1310S-65X.253.S64...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-65X.253.S62...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-65X.253.S60...		-	-	•	FL7903821	FL7903806	FL7903801
1310S-80X.253.S64...		-	-	•	FL7903822	FL7903818	FL7903814
1310S-80X.253.S62...		-	-	•	FL7903822	FL7903818	FL7903814
1310S-80X.253.S60...		-	-	•	FL7903822	FL7903818	FL7903814
1315S-65X.253.S63...	~3	-	-	•	FL7903821	FL7903816	FL7903812
1315S-65X.253.S62...		-	-	•	FL7903821	FL7903816	FL7903812
1315S-65X.253.S61...		-	-	•	FL7903821	FL7903816	FL7903812
1315S-80X.253.S63...		-	-	•	FL7903822	FL7903807	FL7903802
1315S-80X.253.S62...		-	-	•	FL7903822	FL7903807	FL7903802
1315S-80X.253.S61...		-	-	•	FL7903822	FL7903807	FL7903802
1315M-100X.453.S23...		-	-	•	FL7903823	FL7903808	FL7903803
1315M-100X.453.S22...		-	-	•	FL7903823	FL7903808	FL7903803
1315M-100X.453.S21...		-	-	•	FL7903823	FL7903808	FL7903803
1315M-100X.453.S20...		-	-	•	FL7903823	FL7903808	FL7903803

LEGEND

Pump Type W = Wet well version.

Pump Type T = Threaded version with integrated support foot in the pump body.

Pump Type X = Basic version to be completed with installation kit.

Kit Type W = Includes coupling feet, counterflange guide, upper bracket guide and bolts.

Kit Type T = Includes threaded connection and support with bolts.

Kit Type H = Includes Hose connection and support with bolts.

1300 Non-clog SERIES ACCESSORIES

TYPE ELECTRIC PUMP	VERSION	PUMP TYPE			INSTALLATION KIT TYPE		
		W	T	X	W	T	H
1320S-80X.253.S64...	~3	-	-	•	FL7903822	FL7903807	FL7903802
1320S-80X.253.S62...		-	-	•	FL7903822	FL7903807	FL7903802
1320S-80X.253.S60...		-	-	•	FL7903822	FL7903807	FL7903802
1320H-100X.453.S43...		-	-	•	FL7903823	FL7903808	FL7903803
1320H-100X.453.S42...		-	-	•	FL7903823	FL7903808	FL7903803
1320H-100X.453.S41...		-	-	•	FL7903823	FL7903808	FL7903803
1320M-100X.453.S24...		-	-	•	FL7903823	FL7903808	FL7903803
1320M-100X.453.S22...		-	-	•	FL7903823	FL7903808	FL7903803
1320M-100X.453.S20...		-	-	•	FL7903823	FL7903808	FL7903803
1325S-80X.253.S63...	~3	-	-	•	FL7903832	FL7903807	FL7903802
1325S-80X.253.S62...		-	-	•	FL7903832	FL7903807	FL7903802
1325S-80X.253.S61...		-	-	•	FL7903832	FL7903807	FL7903802
1325S-80X.253.S60...		-	-	•	FL7903832	FL7903807	FL7903802
1325H-100X.453.S43...		-	-	•	FL7903824	FL7903809	FL7903804
1325H-100X.453.S42...		-	-	•	FL7903824	FL7903809	FL7903804
1325H-100X.453.S41...		-	-	•	FL7903824	FL7903809	FL7903804
1325M-150X.453.S24...		-	-	•	FL7903825	FL7903810	FL7903805
1325M-150X.453.S23...		-	-	•	FL7903825	FL7903810	FL7903805
1325M-150X.453.S22...		-	-	•	FL7903825	FL7903810	FL7903805
1325M-150X.453.S21...		-	-	•	FL7903825	FL7903810	FL7903805
LEGEND							
Pump Type W = Wet well version.							
Pump Type T = Threaded version with integrated support foot in the pump body.							
Pump Type X = Basic version to be completed with installation kit.							
Kit Type W = Includes coupling feet, counterflange guide, upper bracket guide and bolts.							
Kit Type T = Includes threaded connection and support with bolts.							
Kit Type H = Includes Hose connection and support with bolts.							

1300S-2-en_A_TA

1300 Vortex SERIES ACCESSORIES

TYPE ELECTRIC PUMP	VERSION	PUMP TYPE			INSTALLATION KIT TYPE		
		W	T	X	W	T	H
1305H-50T.251.V92...	~1	-	●	-	-	-	-
1305H-50W.251.V92...		●	-	-	FL7903820	-	-
1305H-50T.253.V92...	~3	-	●	-	-	-	-
1305H-50T.253.V90...		-	●	-	-	-	-
1305H-50W.253.V92...		●	-	-	FL7903820	-	-
1305H-50W.253.V90...		●	-	-	FL7903820	-	-
1310H-50T.251.V94...	~1	-	●	-	-	-	-
1310H-50T.251.V92...		-	●	-	-	-	-
1310H-50T.251.V90...		-	●	-	-	-	-
1310H-50W.251.V94...		●	-	-	FL7903820	-	-
1310H-50W.251.V92...		●	-	-	FL7903820	-	-
1310H-50W.251.V90...		●	-	-	FL7903820	-	-
1310M-65X.251.V89...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-65X.251.V87...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-65X.251.V85...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-80X.251.V89...		-	-	●	FL7903822	FL7903818	FL7903814
1310M-80X.251.V87...		-	-	●	FL7903822	FL7903818	FL7903814
1310M-80X.251.V85...		-	-	●	FL7903822	FL7903818	FL7903814
1310H-50T.253.V94...	~3	-	●	-	-	-	-
1310H-50T.253.V92...		-	●	-	-	-	-
1310H-50T.253.V90...		-	●	-	-	-	-
1310H-50W.253.V94...		●	-	-	FL7903820	-	-
1310H-50W.253.V92...		●	-	-	FL7903820	-	-
1310H-50W.253.V90...		●	-	-	FL7903820	-	-
1310M-65X.253.V89...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-65X.253.V87...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-65X.253.V85...		-	-	●	FL7903821	FL7903806	FL7903801
1310M-80X.253.V89...		-	-	●	FL7903822	FL7903818	FL7903814
1310M-80X.253.V87...		-	-	●	FL7903822	FL7903818	FL7903814
1310M-80X.253.V85...		-	-	●	FL7903822	FL7903818	FL7903814
1310L-65-80X.453.V84...		-	-	●	FL7903821	FL7903815	FL7903811
1310L-65-80X.453.V83...		-	-	●	FL7903821	FL7903815	FL7903811
1310L-65-80X.453.V82...		-	-	●	FL7903821	FL7903815	FL7903811
1310L-65-80X.453.V81...		-	-	●	FL7903821	FL7903815	FL7903811
1310L-65-80X.453.V80...		-	-	●	FL7903821	FL7903815	FL7903811
1310L-65-80X.453.V84...		-	-	●	FL7903822	FL7903817	FL7903813
1310L-65-80X.453.V83...		-	-	●	FL7903822	FL7903817	FL7903813
1310L-65-80X.453.V82...		-	-	●	FL7903822	FL7903817	FL7903813
1310L-65-80X.453.V81...	-	-	●	FL7903822	FL7903817	FL7903813	
1310L-65-80X.453.V80...	-	-	●	FL7903822	FL7903817	FL7903813	
LEGEND							
Pump Type W = Wet well version.							
Pump Type T = Threaded version with integrated support foot in the pump body.							
Pump Type X = Basic version to be completed with installation kit.							
Kit Type W = Includes coupling feet, counterflange guide, upper bracket guide and bolts.							
Kit Type T = Includes threaded connection and support with bolts.							
Kit Type H = Includes Hose connection and support with bolts.							

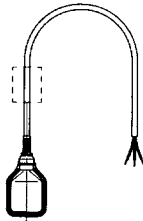
1300 Vortex SERIES ACCESSORIES

TYPE ELECTRIC PUMP	VERSION	PUMP TYPE			INSTALLATION KIT TYPE		
		W	T	X	W	T	H
1315H-65X.253.V94...	~3	-	-	•	FL7903821	FL7903816	FL7903812
1315H-65X.253.V93...		-	-	•	FL7903821	FL7903816	FL7903812
1315H-65X.253.V91...		-	-	•	FL7903821	FL7903816	FL7903812
1315H-80X.253.V94...		-	-	•	FL7903822	FL7903807	FL7903802
1315H-80X.253.V93...		-	-	•	FL7903822	FL7903807	FL7903802
1315H-80X.253.V91...		-	-	•	FL7903822	FL7903807	FL7903802
1315M-100X.453.V83...		-	-	•	FL7903823	FL7903808	FL7903803
1315M-100X.453.V82...		-	-	•	FL7903823	FL7903808	FL7903803
1315M-100X.453.V81...		-	-	•	FL7903823	FL7903808	FL7903803
1320H-80X.253.V94...	~3	-	-	•	FL7903822	FL7903806	FL7903802
1320H-80X.253.V93...		-	-	•	FL7903822	FL7903806	FL7903802
1320H-80X.253.V92...		-	-	•	FL7903822	FL7903806	FL7903802
1320H-80X.253.V91...		-	-	•	FL7903822	FL7903806	FL7903802
1320M-100X.453.V84...		-	-	•	FL7903823	FL7903809	FL7903804
1320M-100X.453.V83...		-	-	•	FL7903823	FL7903809	FL7903804
1320M-100X.453.V81...		-	-	•	FL7903823	FL7903809	FL7903804
LEGEND							
Pump Type W = Wet well version.							
Pump Type T = Threaded version with integrated support foot in the pump body.							
Pump Type X = Basic version to be completed with installation kit.							
Kit Type W = Includes coupling feet, counterflange guide, upper bracket guide and bolts.							
Kit Type T = Includes threaded connection and support with bolts.							
Kit Type H = Includes Hose connection and support with bolts.							

1300V-2-en_A_TA

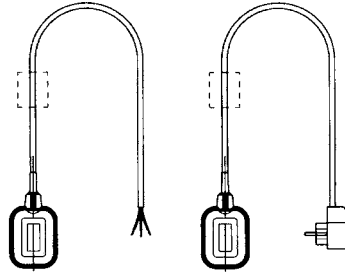
LEVEL REGULATORS

SMALL MODEL
(floating)



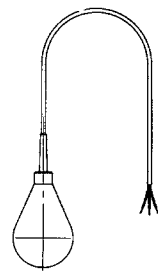
For single function (draining)
cable length 1.5, 5, 10 m.
Counterweight available on request for
version with 5, 10 m cable.

KEY MODEL
(floating)



For dual function (draining/filling)
Cable lengths: 1.5, 5, 10, 20 m.
Counterweight available on request for
version with 5, 10 m cable.
Version with plug and socket for
single-phase pumps up to 1 kW.

RDN-10 MODEL
(tilting)



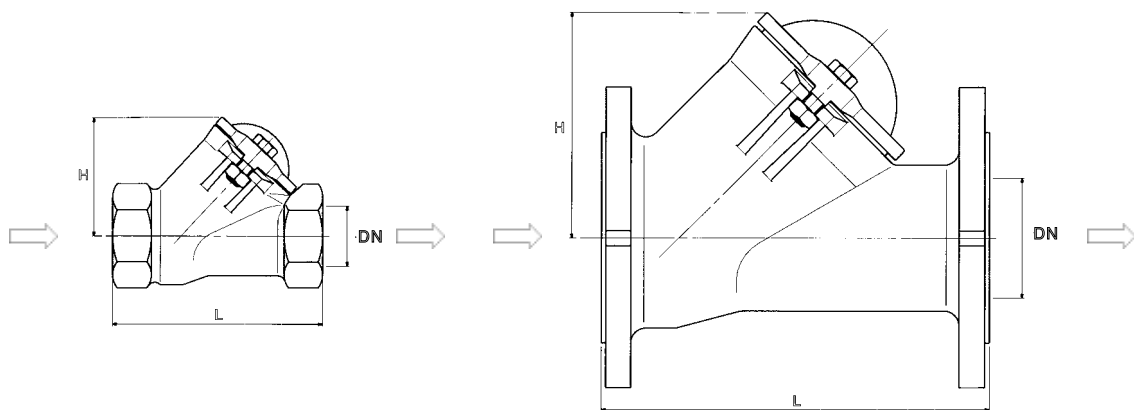
For solids-laden water.
Cable lengths:
10, 13, 15, 20, 30, 50 m. (PVC)

BALL CHECK VALVES FOR WASTEWATER

No-clog, maximum reliability, low flow resistance.
Maximum operating pressure: 10 bar.
Maximum temperature: 85°C.
Horizontal or vertical operating position.

MODEL	DIMENSIONS (mm)			WEIGHT kg
	Ø BALL	L	H	
Rp 1 1/4	48	140	80	2
Rp 1 1/2	50	140	80	4
Rp 2	60	200	98	5,5
DN 65	95	230	148	12
DN 80	95	260	148	13
DN 100	120	300	182	18
DN 150	175	400	251	37,5
DN 200	240	500	333	70
DN 250	300	600	406	128

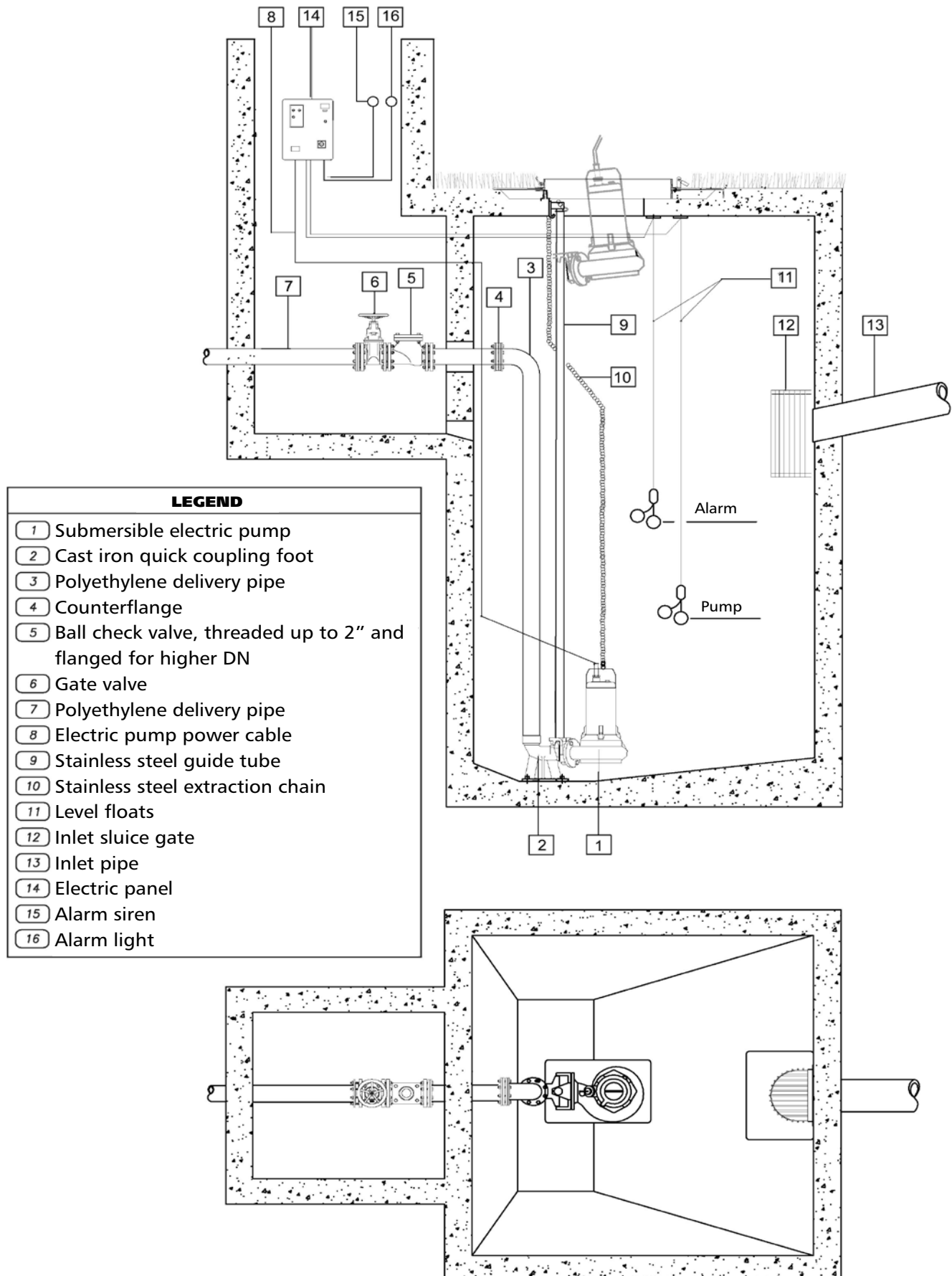
Valv-palla-en_a_td



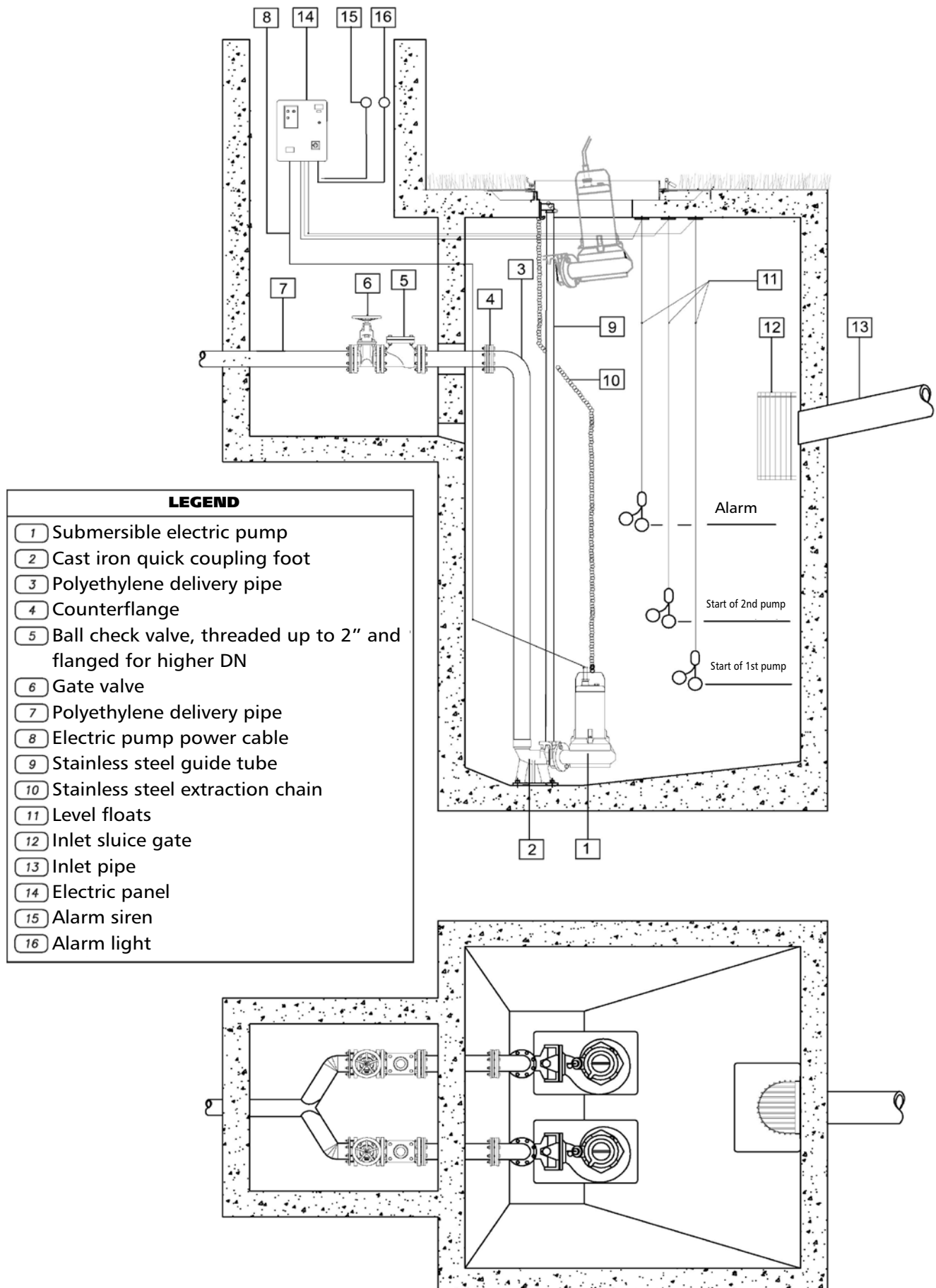
Rp 1 1/4 - 1 1/2 - 2 MODEL

65 - 80 - 100 - 150 - 200 - 250 MODEL

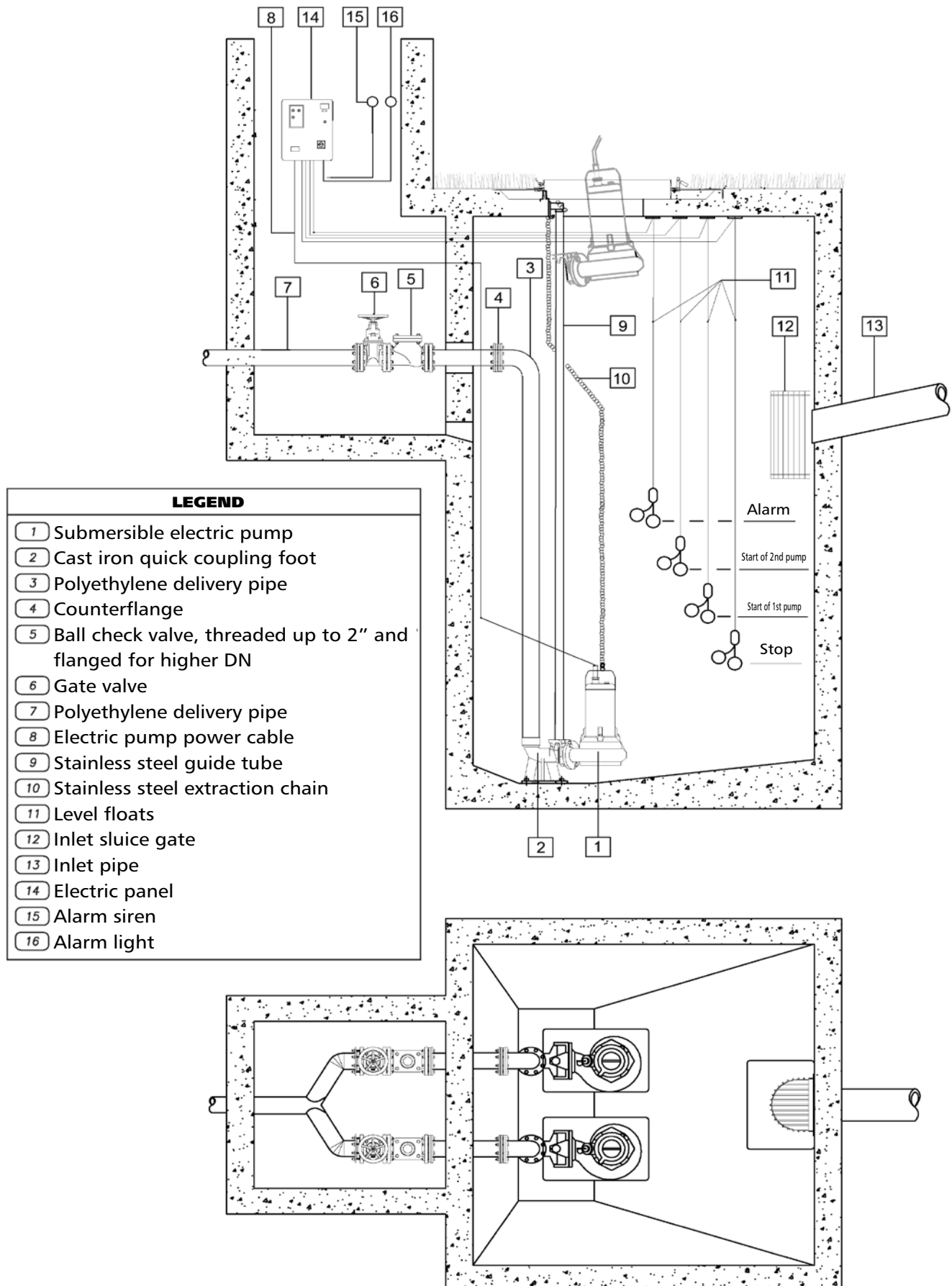
EXAMPLE OF INSTALLATION SINGLE-PUMP SYSTEM



EXAMPLE OF INSTALLATION TWO-PUMPS SYSTEM WITH THREE LEVEL REGULATORS



EXAMPLE OF INSTALLATION TWO-PUMPS SYSTEM WITH FOUR LEVEL REGULATORS



TECHNICAL APPENDIX

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

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	-	-	-	0,2	0,2	0,2	0,4	0,4	0,6	0,9	1,1	1,3
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_a_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 ₂ O	Millimetre of mercury mm Hg
1,0000	0,0010	1 x 10 ⁻⁵	1,45 x 10 ⁻⁴	1,02 x 10 ⁻⁴	0,0075
1 000,0000	1,0000	0,0100	0,1450	0,1020	7,5006
1 x 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

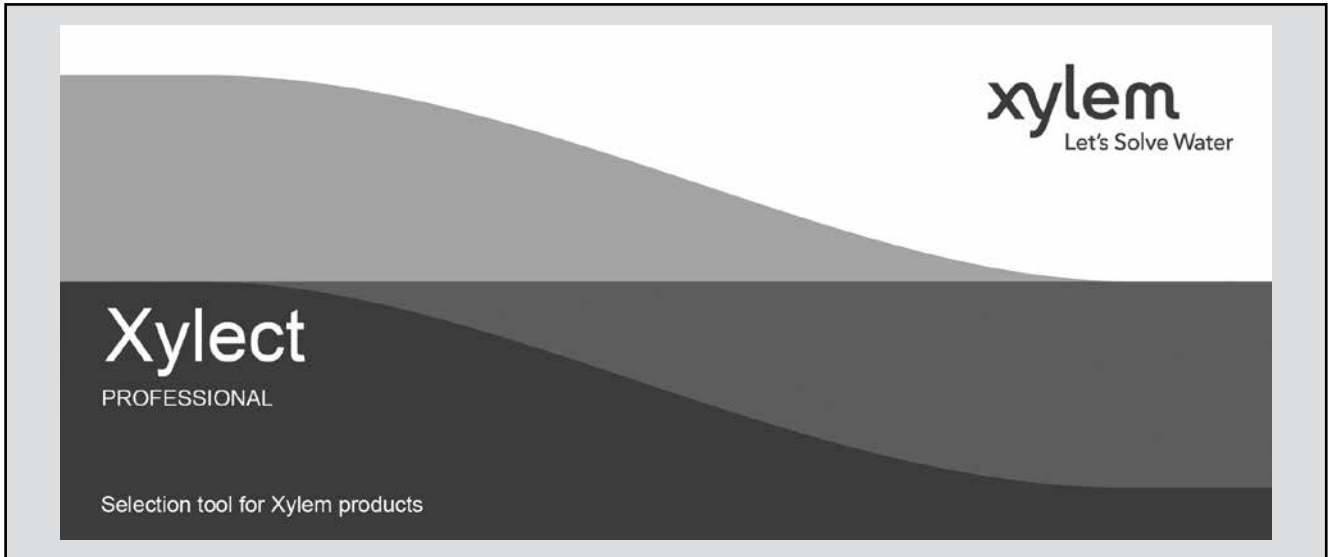
Cubic metre m ³	Litre L	Millilitre ml	Imperial gallon imp. gal.	U.S. gallon US gal.	Cubic foot ft ³
1,0000	1 000,0000	1 x 10 ⁶	219,9694	264,1720	35,3147
0,0010	1,0000	1 000,0000	0,2200	0,2642	0,0353
1 x 10 ⁻⁶	0,0010	1,0000	2,2 x 10 ⁻⁴	2,642 x 10 ⁻⁴	3,53 x 10 ⁻⁵
0,0045	4,5461	4 546,0870	1,0000	1,2009	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	$^{\circ}\text{F} = ^{\circ}\text{C} \times \frac{9}{5} + 32$ $^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times \frac{5}{9}$
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.

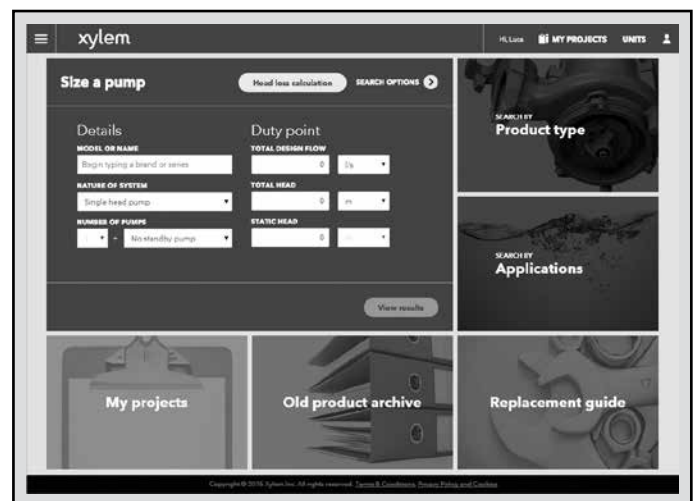
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara products.

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™



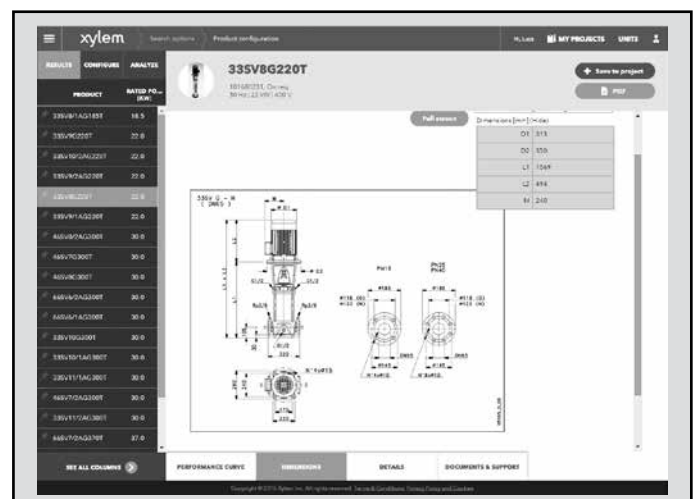
The detailed output makes it easy to select the optimal pump from the given alternatives.

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 user has a My Xylect 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, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. 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 information and technical support



info@lennotech.com Tel. +31-152-610-900
www.lennotech.com Fax. +31-152-616-289