

50 Hz



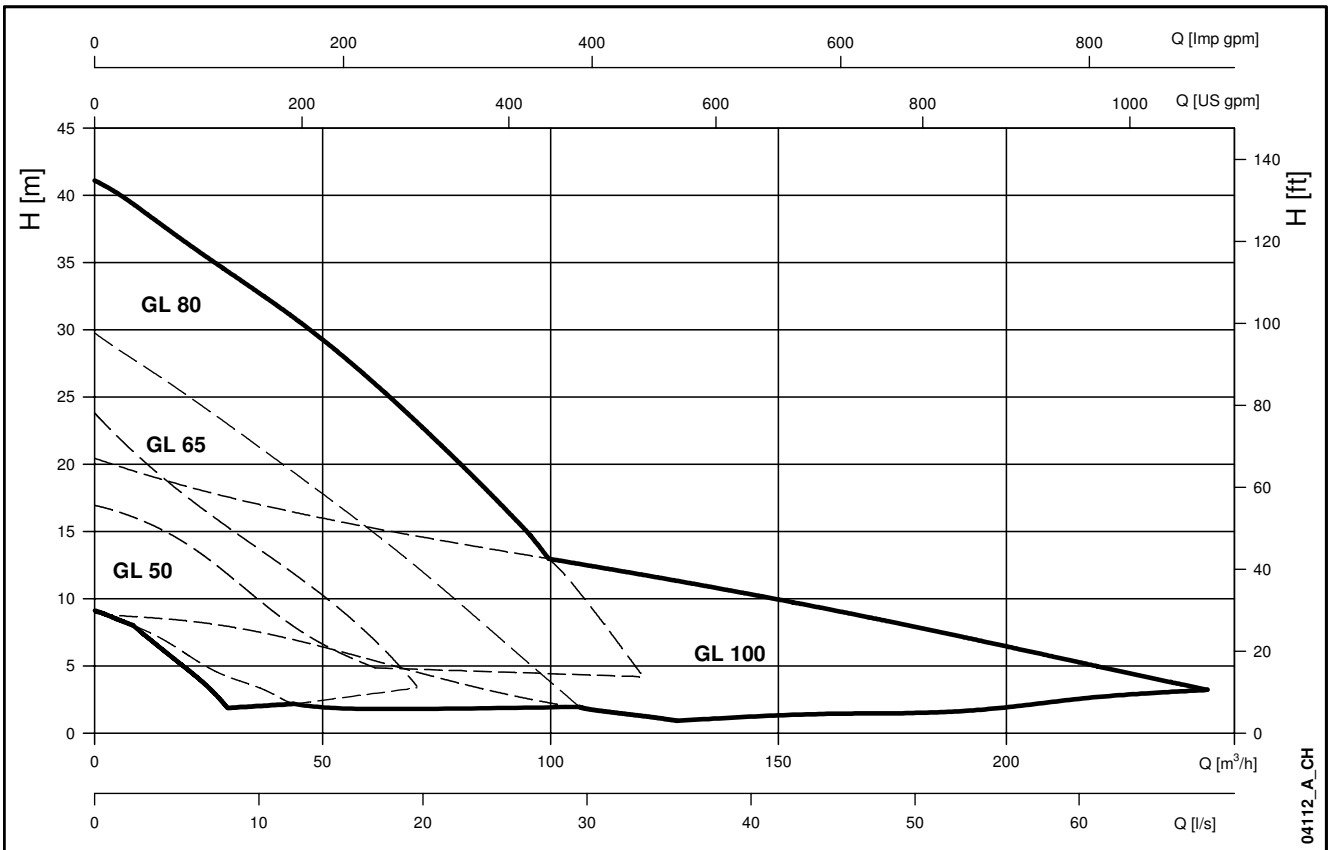
GLS - GLV Series

SUBMERSIBLE WASTEWATER
PUMPS

Cod. 191004511 Rev.A Ed.12/2011

 **LOWARA**
a xylem brand

**GLS - GLV SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz**



CONTENTS

GLS series specifications	5
GLS series electrical data table	7
GLS series hydraulic performance range at 50 Hz	8
GLS series operating characteristics at 50 Hz	10
GLS series dimensions and weights	17
GLV series specifications	25
GLV series electrical data table	27
GLV series hydraulic performance range at 50 Hz	28
GLV series operating characteristics at 50 Hz	30
GLV series dimensions and weights	37
DLG series specifications	45
DLG series electrical data table	47
DLG series hydraulic performance range at 50 Hz	48
DLG series operating characteristics at 50 Hz	50
DLG series dimensions and weights	55
Accessories	58
Technical appendix	79

SELECTION GUIDE

The GLS, GLV, and DLG 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.

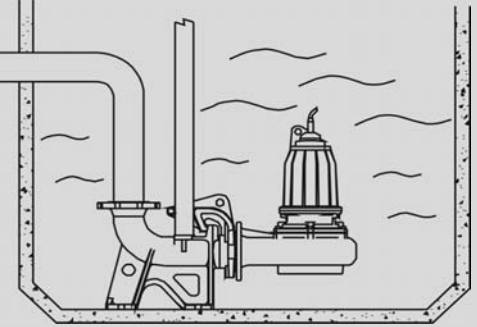
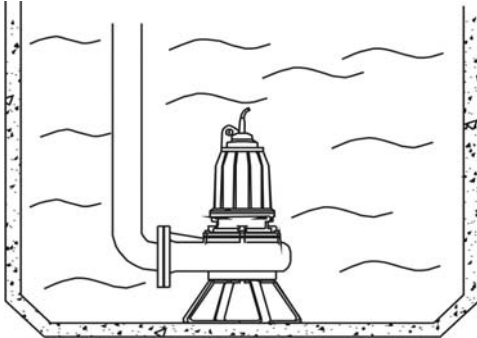
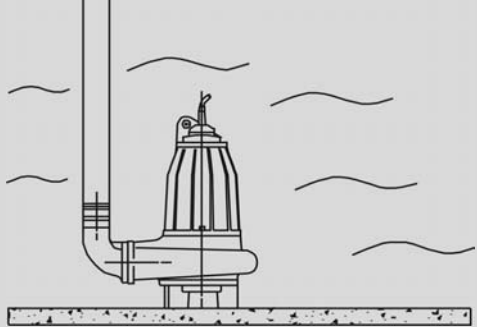
In order to optimise the pump's performances and reduce energy consumption, it is very important to select the "correct" electric pump for intended application.

TYPICAL APPLICATIONS

APPLICATIONS	PUMP TYPE		
	GLS	GLV	DLG
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	✓	✓	

GL-en_a_sc

INSTALLATION

LOWERING SYSTEM		<p>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.</p>
PUMP STAND		<p>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.</p>
DELIVERY CONNECTION		<p>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.</p>

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.

GLS Series



SPECIFICATIONS

- **Delivery:** up to 244 m³/h.
- **Head:** up to 41 m.
- **Free passage:** 48 mm (see hydraulic data table).
- **Discharge connection:** DN 50 - 65 - 80 - 100 mm.
- **Motor power:** up to 7,4 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 H insulation (180°C).
- **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.

CONSTRUCTION CHARACTERISTICS

- Sturdy cast iron construction.
- Self-Cleaning or single-channel **impeller.**
- **Double seal:** Tungsten Carbide/Ceramic on pump side, Tungsten Carbide/Ceramic or Carbon/Ceramic on motor side, with interposed oil chamber.
- **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.

OPTIONAL FEATURES

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

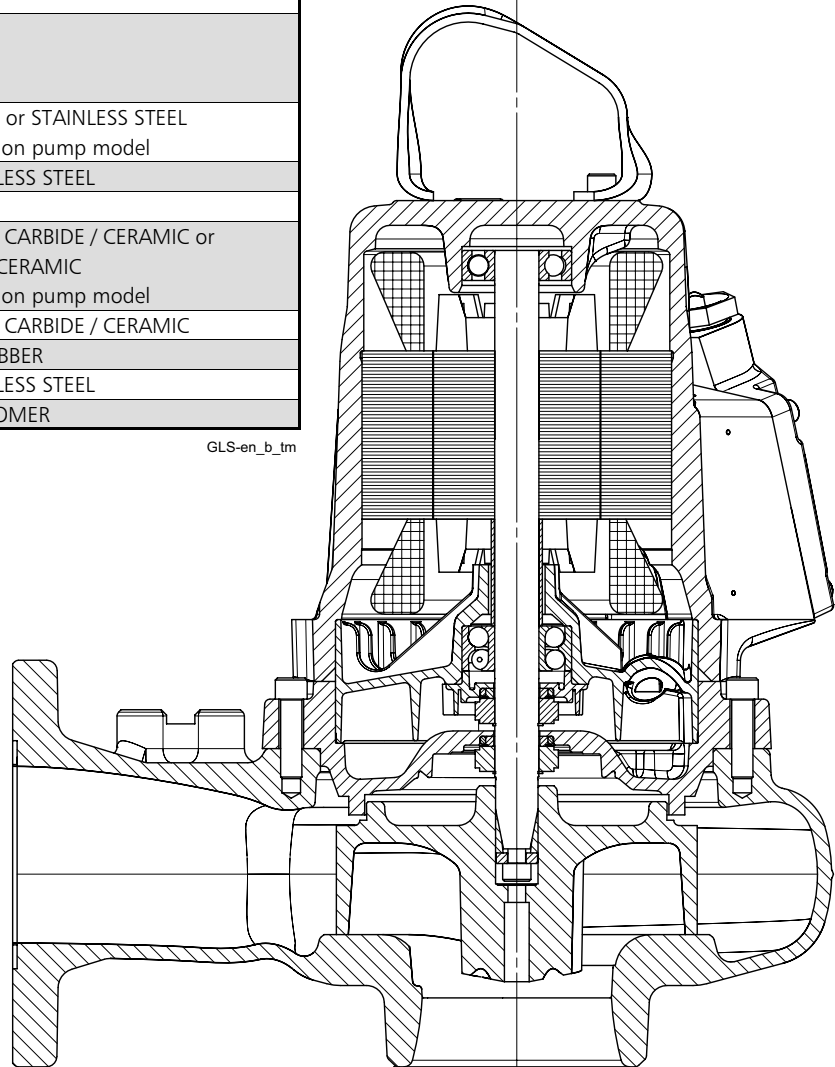
ACCESSORIES / INSTALLATION

- Lowering device.
- 90° delivery connection with hose connector.
- Threaded 90° delivery connection.
- Pump stand.
- Ball check valve.
- Wastewater level regulators.
- Command and control panels.
- Lifting chains.

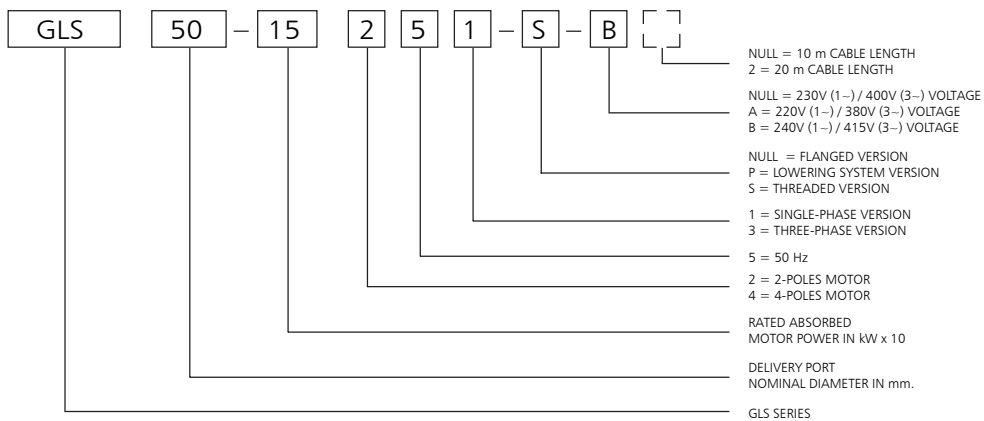
GLS SERIES PUMP SECTION AND TABLE OF MATERIALS

PART	MATERIAL
Motor casing	
Seal oil chamber	GREY IRON
Pump body	
Impeller	GREY IRON or STAINLESS STEEL depending on pump model
Shaft	431 STAINLESS STEEL
Bearings	BALL TYPE
Motor-side seal	TUNGSTEN CARBIDE / CERAMIC or CARBON / CERAMIC depending on pump model
Pump-side seal	TUNGSTEN CARBIDE / CERAMIC
Gaskets	NITRILE RUBBER
Bolts and screws	304 STAINLESS STEEL
Power cord	CPE ELASTOMER

GLS-en_b_tm



IDENTIFICATION CODE



EXAMPLE : GLS 50-15 251-S-B

GLS series electric pump, 50 mm nominal delivery port, 1,5 kW rated absorbed motor power, 2-poles version, 50 Hz, single-phase, threaded version, 415 V of voltage, 10 m cable length.

GLS 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
					ABSORBED I _{abs} (A)	INRUSH I _{sp} (A)				
GLS 50-15-251-S	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLS 50-15-251-P	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLS 50-16-253-S	2900	1,9	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLS 50-16-253-P	2900	1,9	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLS 50-20-253-S	2900	2,4	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLS 50-20-253-P	2900	2,4	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLS 50-24-253-S	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLS 50-24-253-P	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLS 65-15-251	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLS 65-16-253	2900	1,9	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLS 65-20-253	2900	2,4	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLS 65-24-253	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLS 65-32-253	2900	3,9	3,2	400/3	6,1	52	YD	7G2,5 + 2x1,5	-	-
GLS 65-42-253	2900	5,3	4,2	400/3	8,2	52	YD	7G2,5 + 2x1,5	-	-
GLS 80-32-253	2900	3,9	3,2	400/3	6,1	52	YD	7G2,5 + 2x1,5	-	-
GLS 80-42-253	2900	5,3	4,2	400/3	8,2	52	YD	7G2,5 + 2x1,5	-	-
GLS 80-59-253	2900	6,9	5,9	400/3	11	114	YD	7G2,5 + 2x1,5	-	-
GLS 80-74-253	2900	8,7	7,4	400/3	14	114	YD	7G2,5 + 2x1,5	-	-
GLS 100-24-453	1450	2,8	2,4	400/3	5,5	38	YD	7G2,5 + 2x1,5	-	-
GLS 100-31-453	1450	3,7	3,1	400/3	6,7	38	YD	7G2,5 + 2x1,5	-	-
GLS 100-45-453	1450	5,3	4,5	400/3	9,7	77	YD	7G2,5 + 2x1,5	-	-
GLS 100-59-453	1450	7	5,9	400/3	12	77	YD	7G2,5 + 2x1,5	-	-

Stator thermal protection included in all models.

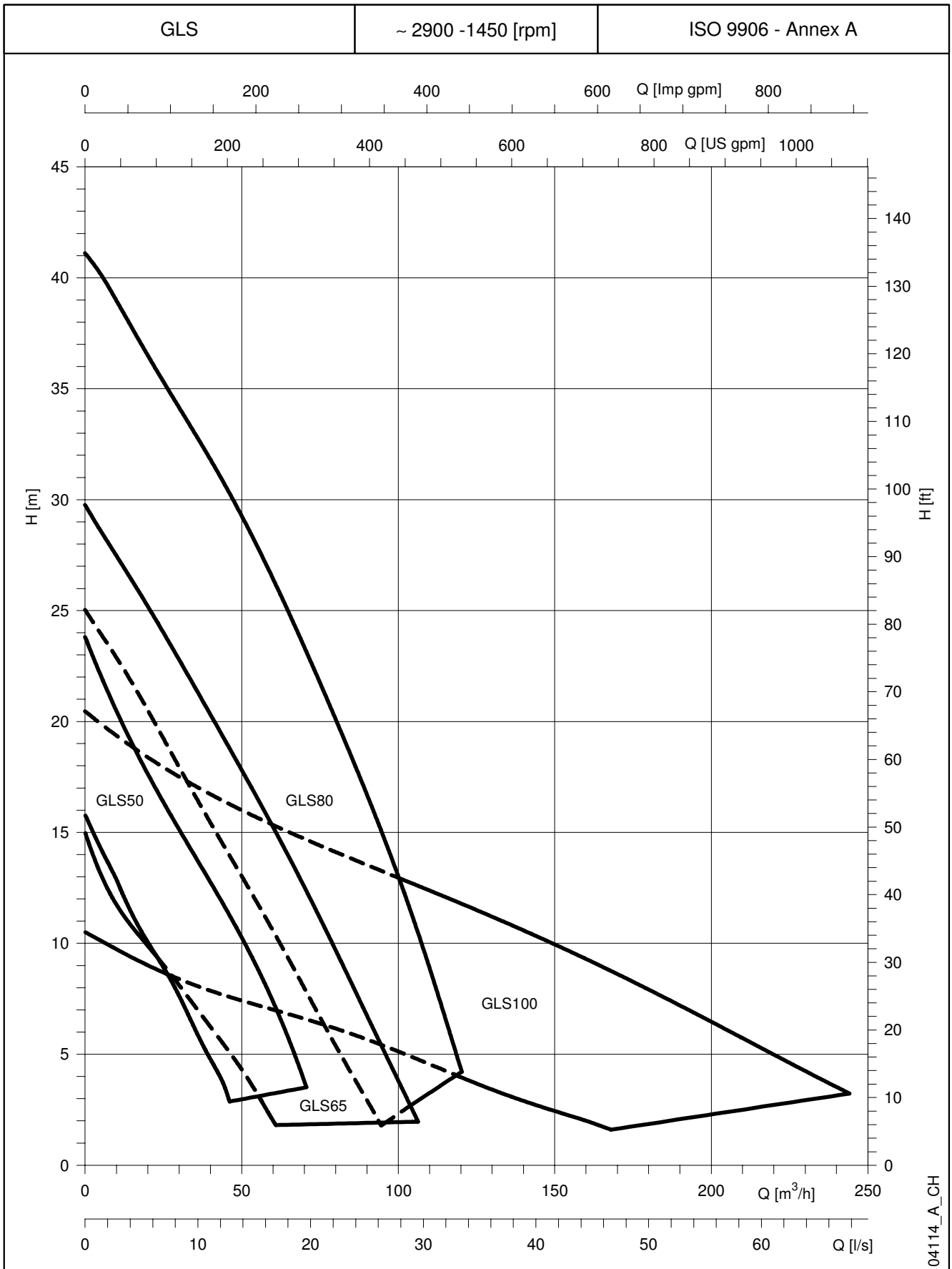
GLS-en_B_te

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

** P2 = Rated shaft power.

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

**GLS SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES**



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

GLS SERIES HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs (P1) kW *	Prated (P2) kW **	D Impeller mm	n min ⁻¹	Q = DELIVERY																Imp. / Seal ***	Passes solids up to (mm)
					Q=0	2	4	6	8	10	15	20	25	30	40	45	50	60	67,8			
					l/s	2	4	6	8	10	15	20	25	30	40	45	50	60	67,8			
H = TOTAL HEAD METRES COLUMN OF WATER																						
GLS 50-15-251-S	2	1,5	104	2900	17,0	13,8	11,5	9,7	8,0	5,9									A	48		
GLS 50-15-251-P	2	1,5	104	2900	15,8	13,7	11,8	10,3	8,8	7,4	3,5								A	48		
GLS 50-16-253-S	1,9	1,6	104	2900	17,2	14,0	11,7	9,9	8,2	6,1									A	48		
GLS 50-16-253-P	1,9	1,6	104	2900	16,0	13,8	12,0	10,5	9,1	7,7	3,8								A	48		
GLS 50-20-253-S	2,4	2	112	2900	19,0	16,8	14,3	12,0	10,1	8,2									A	48		
GLS 50-20-253-P	2,4	2	112	2900	19,0	16,8	14,9	13,2	11,6	10,2	6,3								A	48		
GLS 50-24-253-S	3,2	2,4	122	2900	24,0	21,3	19,4	17,1	14,6	12,3	6,3								A	48		
GLS 50-24-253-P	3,2	2,4	122	2900	23,8	21,3	19,2	17,2	15,4	13,7	9,2								A	48		
GLS 65-15-251	2	1,5	104	2900	15,0	12,4	10,9	9,6	8,3	7,0	3,4								A	48		
GLS 65-16-253	1,9	1,6	104	2900	15,1	12,7	11,0	9,7	8,5	7,3	3,6								A	48		
GLS 65-20-253	2,4	2	112	2900	17,4	15,2	13,4	11,9	10,5	9,2	5,6								A	48		
GLS 65-24-253	3,2	2,4	122	2900	20,9	18,9	17,1	15,5	14,0	12,5	8,4								A	48		
GLS 65-32-253	3,9	3,2	142	2900	25,0	23,5	21,9	20,1	18,3	16,4	12,1	7,5	2,9						B	26		
GLS 65-42-253	5,3	4,2	154	2900	29,8	28,1	26,5	24,8	23,1	21,3	16,8	12,0	6,7						B	26		
GLS 80-32-253	3,9	3,2	142	2900	25,0	23,5	21,9	20,1	18,3	16,4	12,1	7,5	2,9						B	26		
GLS 80-42-253	5,3	4,2	154	2900	29,8	28,1	26,5	24,8	23,1	21,3	16,8	12,0	6,7						B	26		
GLS 80-59-253	6,9	5,9	165	2900	35,6	33,9	32,3	30,6	28,9	27,1	22,5	17,4	11,5	5,0					B	26		
GLS 80-74-253	8,7	7,4	177	2900	41,1	39,7	37,9	36,1	34,4	32,8	28,2	22,7	16,7	9,8					B	26		
GLS 100-24-453	2,8	2,4	179	1450	10,5	9,9	9,4	8,9	8,5	8,1	7,2	6,5	5,7	4,7	2,7	1,9			B	39		
GLS 100-31-453	3,7	3,1	198	1450	13,8	13,0	12,4	11,8	11,3	10,8	9,9	9,0	8,2	7,2	5,1	3,9	2,9		B	39		
GLS 100-45-453	5,3	4,5	216	1450	17,2	16,5	15,8	15,2	14,6	14,1	12,9	11,9	10,9	9,9	7,8	6,7	5,5	3,0	B	38		
GLS 100-59-453	7	5,9	233	1450	20,5	19,6	18,9	18,2	17,6	17,0	15,7	14,6	13,5	12,5	10,3	9,2	7,9	5,3	3,2	B	38	

Performances according to ISO Standard 9906 –Annex A.

GLS-50-en_c_th

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

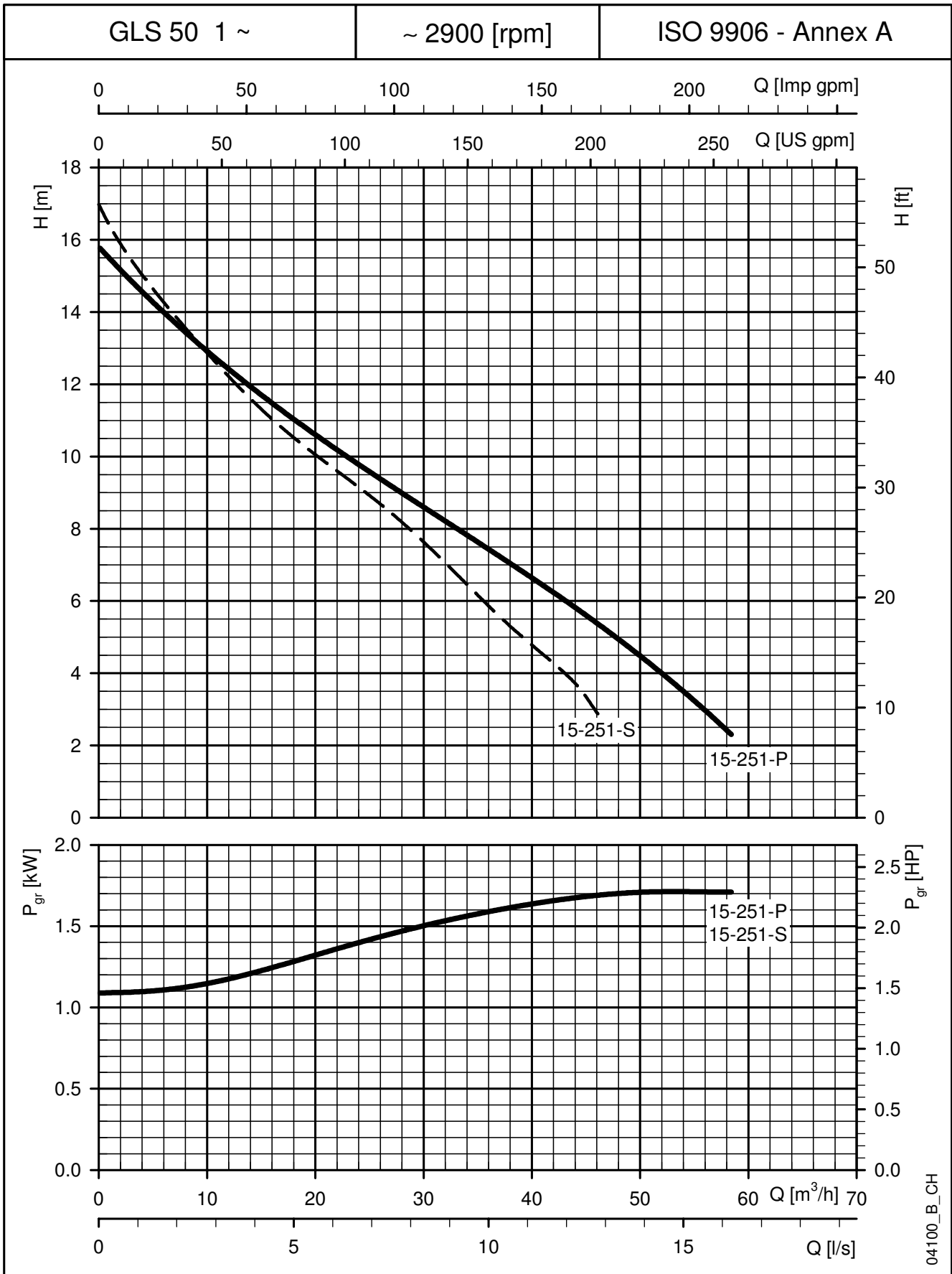
* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

*** Impeller / Seal = A = Single-channel impeller, Carbon / Ceramic motor-side mechanical seal

B = Open self-cleaning impeller, Tungsten Carbide / Ceramic motor-side mechanical seal

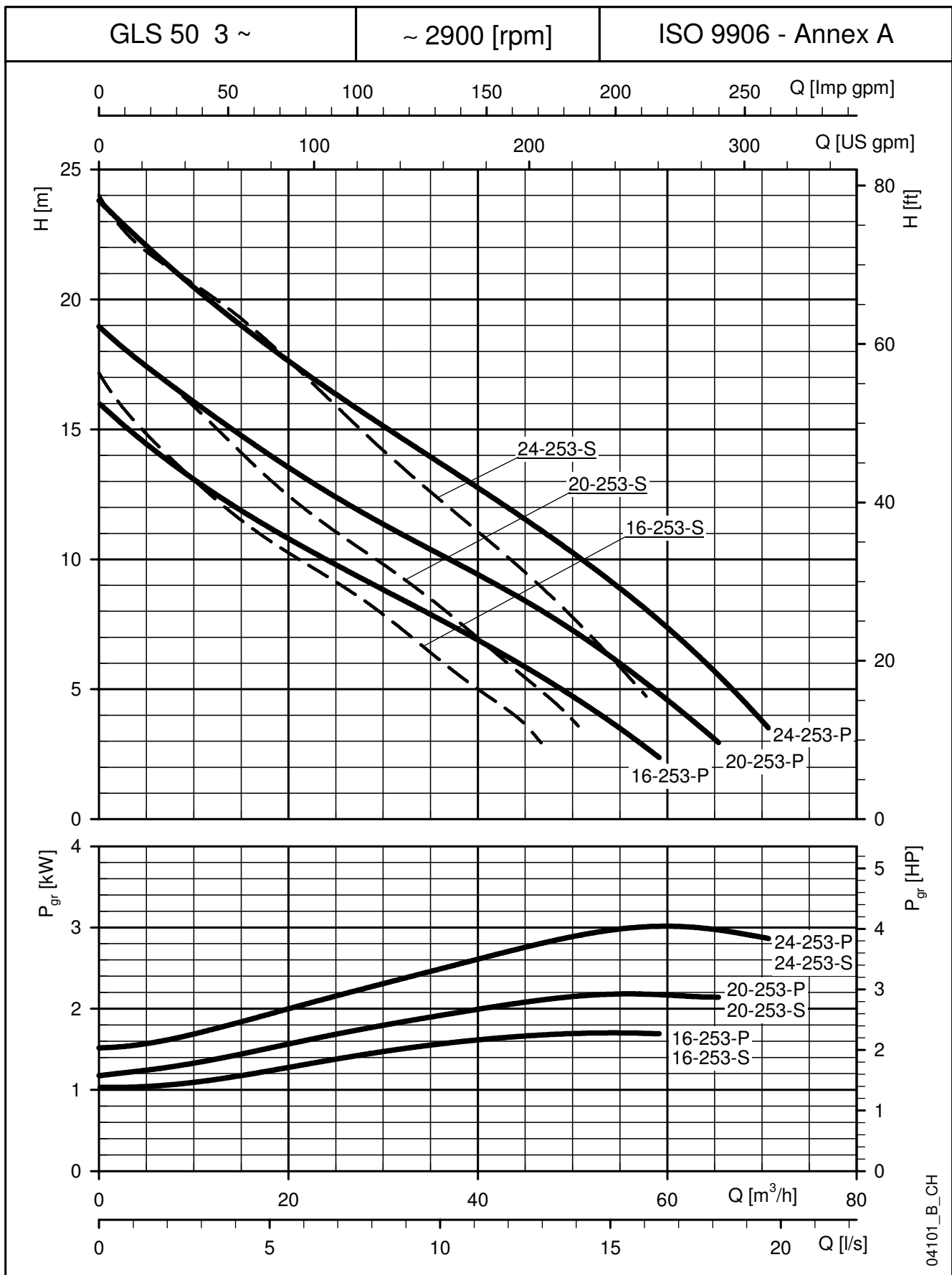
**GLS 50 SERIES (SINGLE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



04100_B_CH

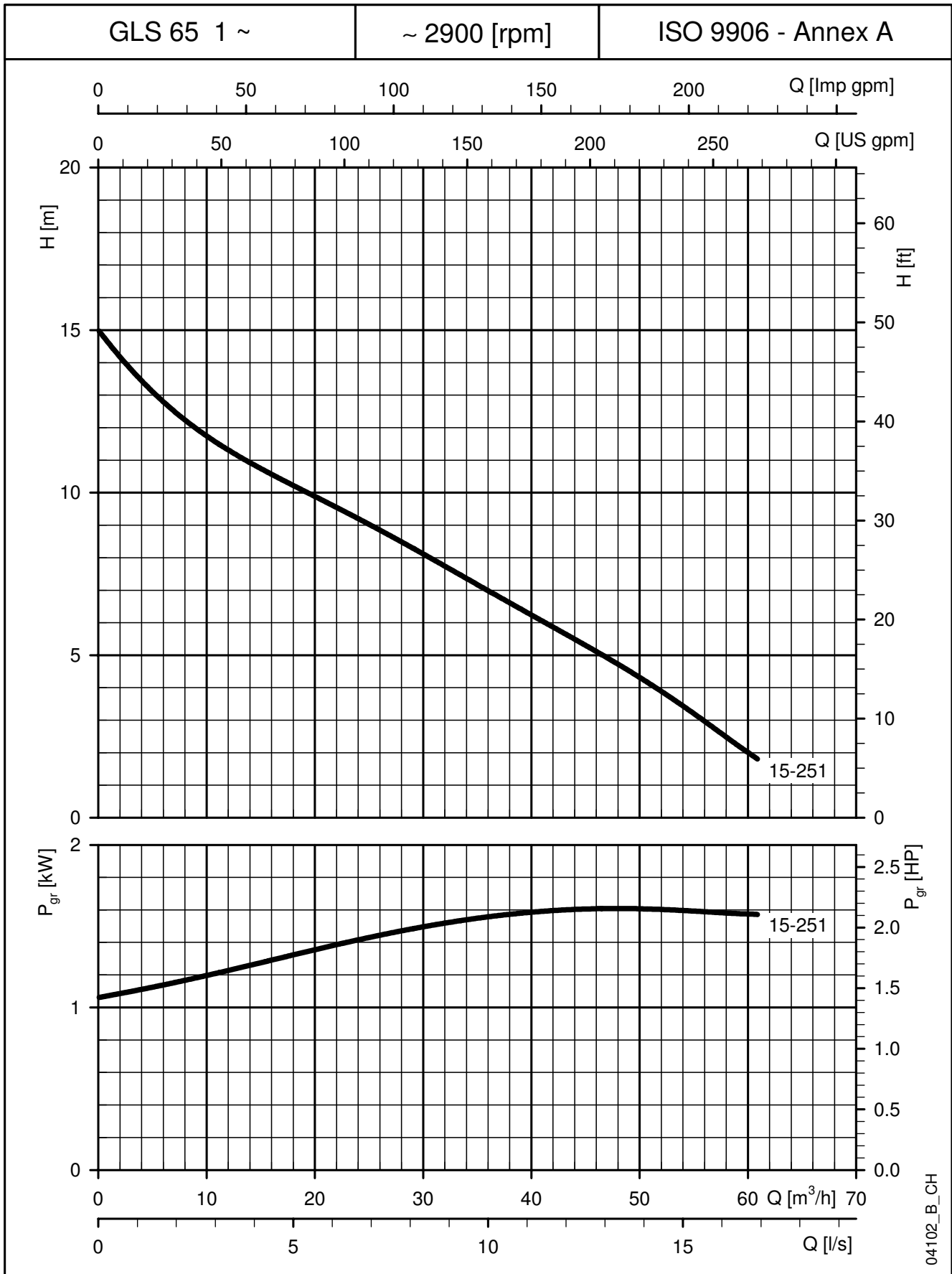
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLS 50 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



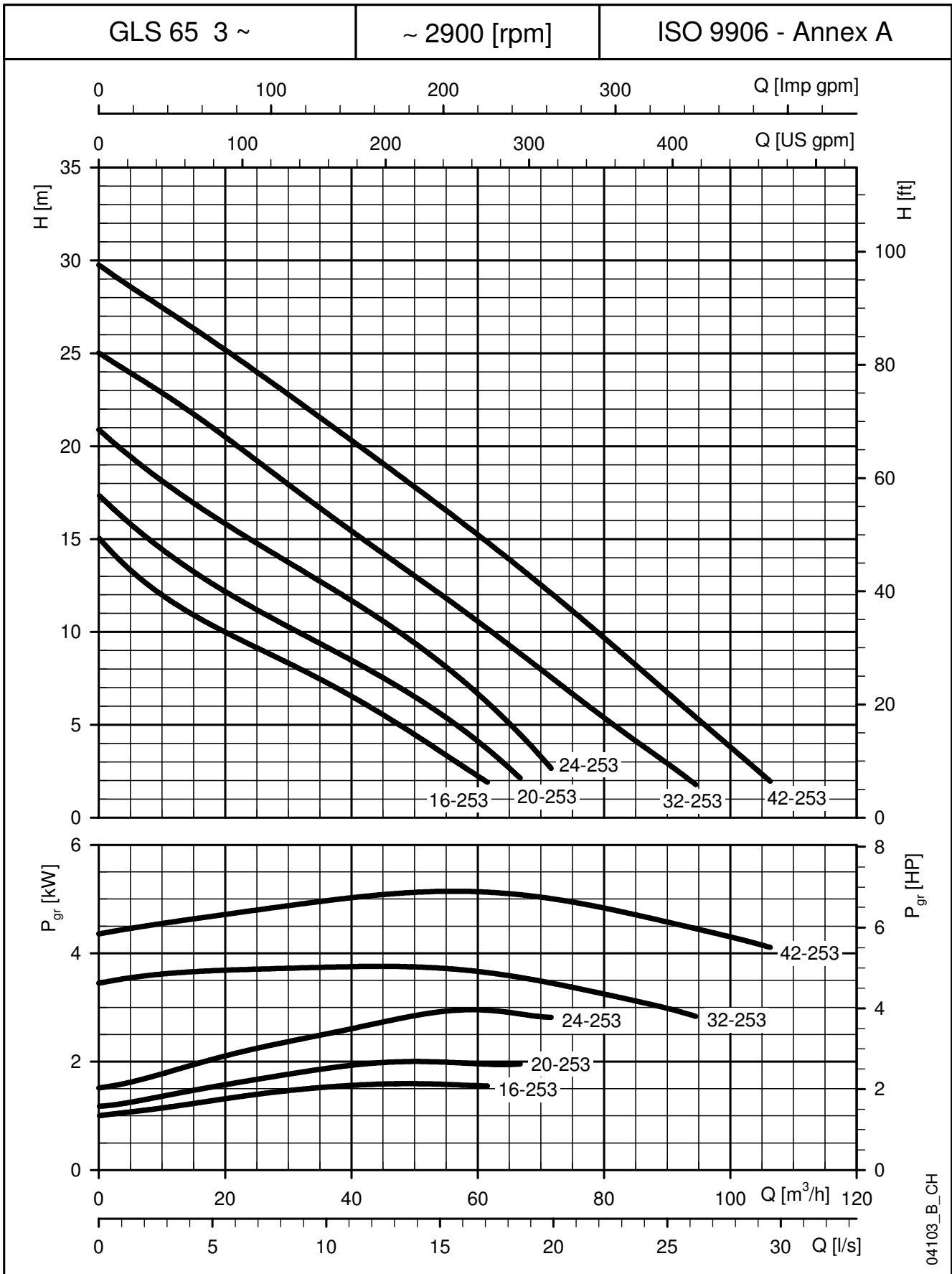
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLS 65 SERIES (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 $\nu = 1 \text{ mm}^2/\text{sec}$.

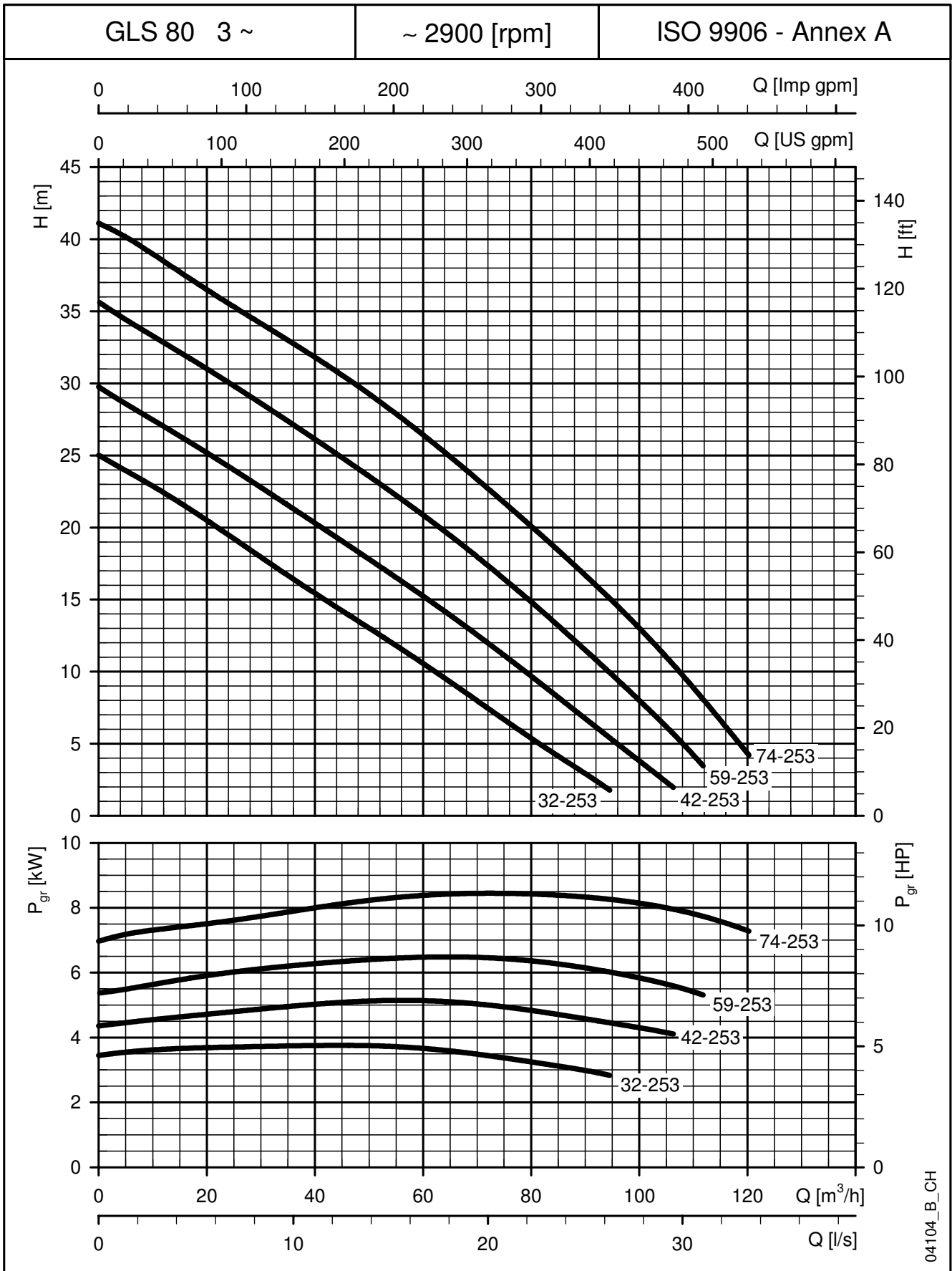
**GLS 65 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



04103_B_CH

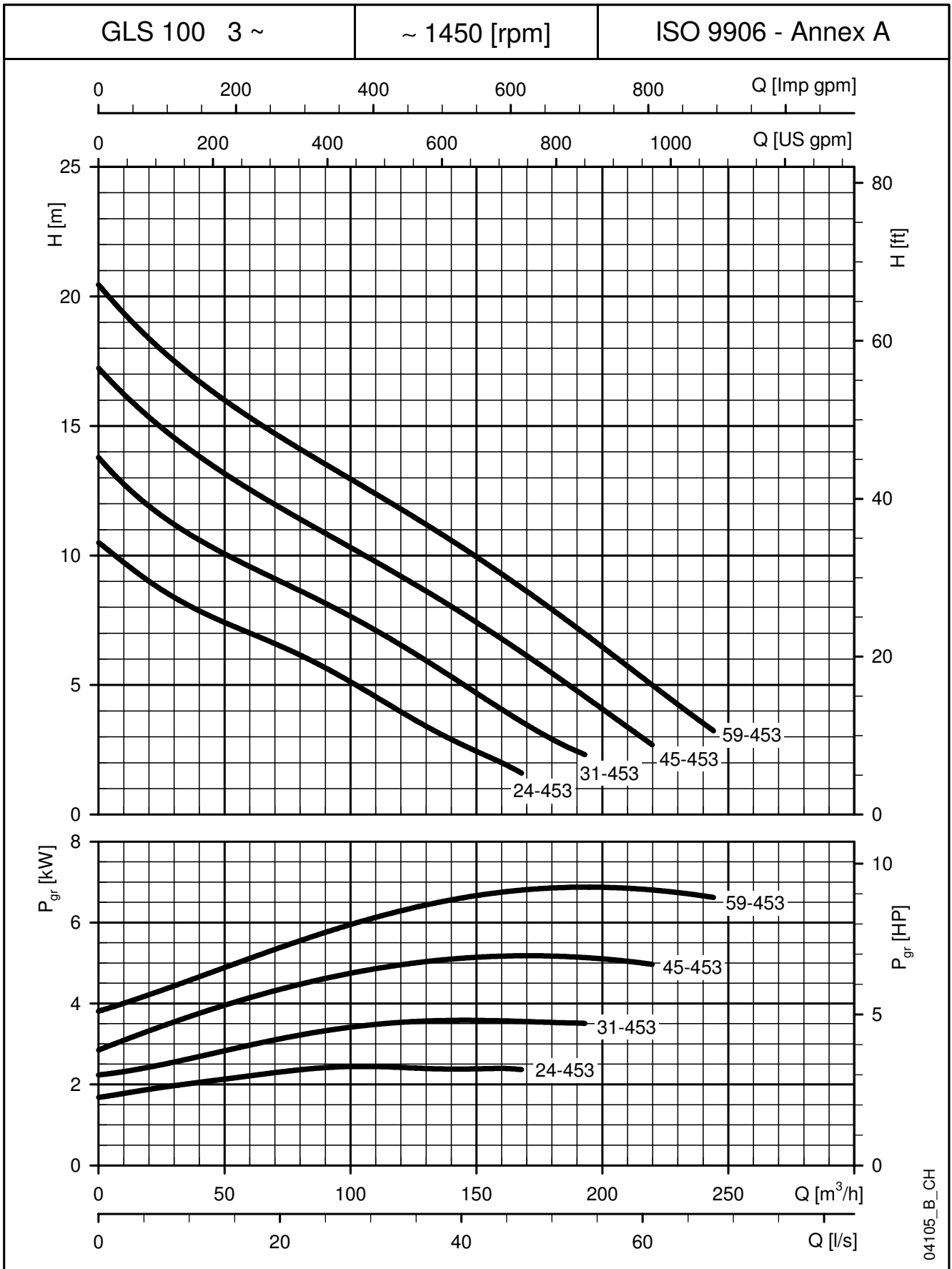
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLS 80 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



04104_B_CH

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

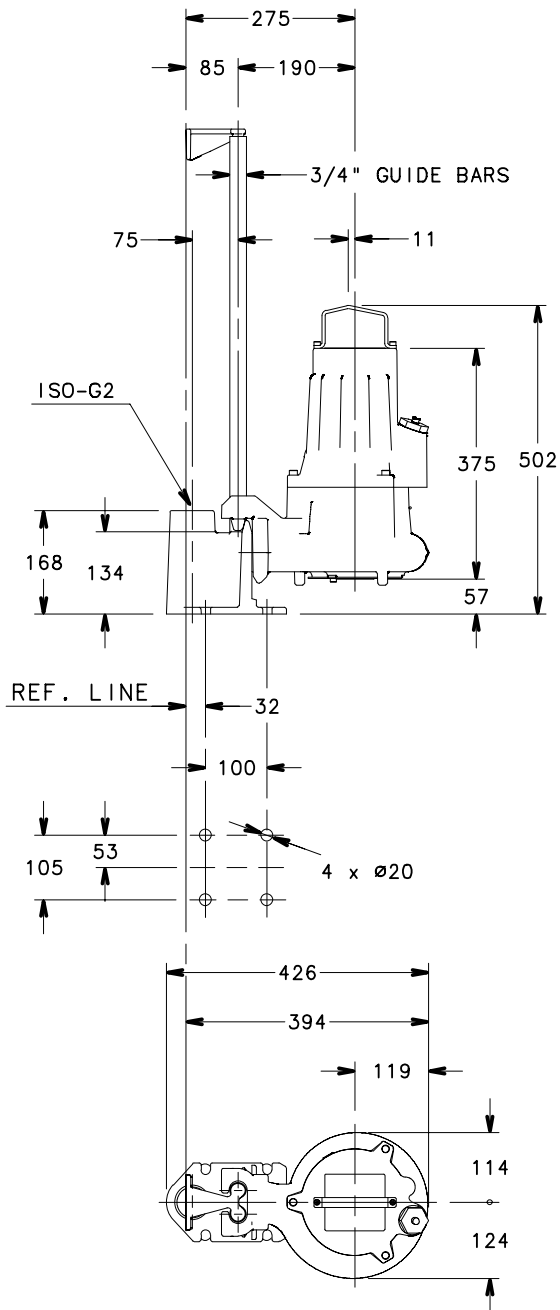
**GLS 100 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**


04105_B_CH

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

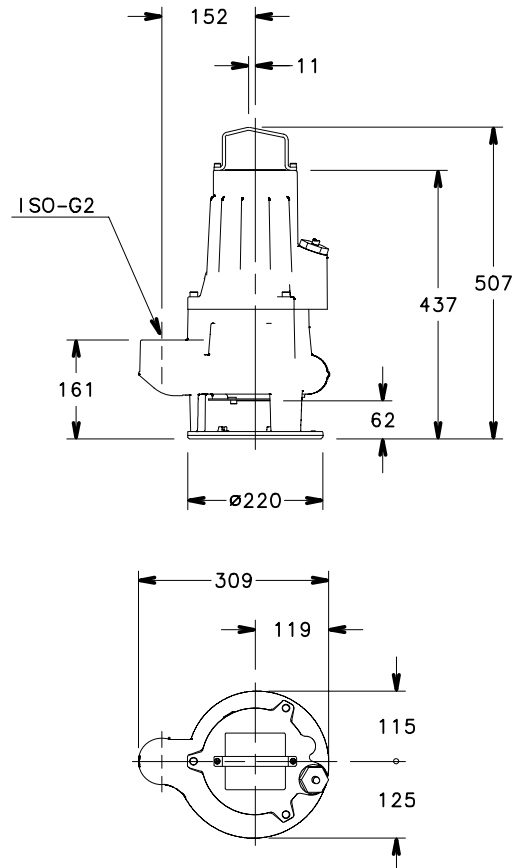
GLS SERIES DIMENSIONS AND WEIGHTS

**GLS 50 SERIES (DN50)
DIMENSIONS AND WEIGHTS**



PUMP TYPE	WEIGHT kg
GLS 50-15-251-P	35
GLS 50-16-253-P	35
GLS 50-20-253-P	35
GLS 50-24-253-P	35

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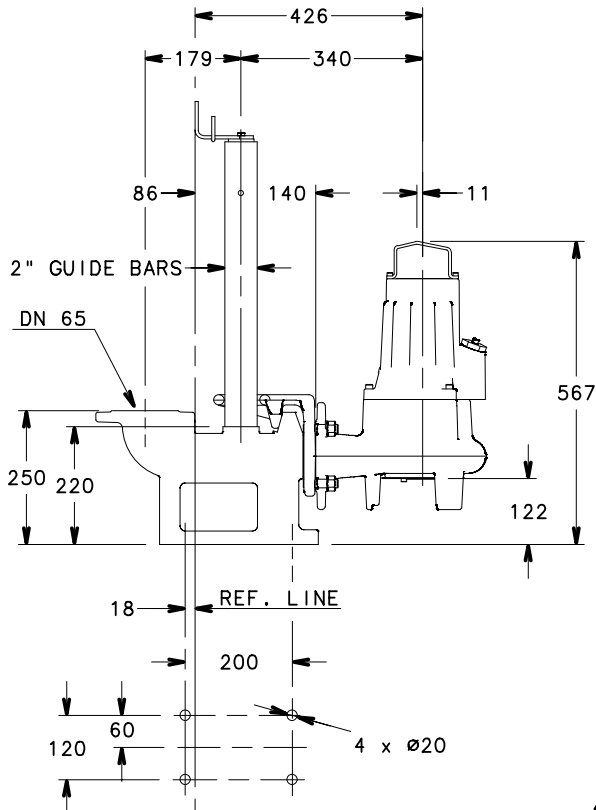


PUMP TYPE	WEIGHT kg
GLS 50-15-251-S	35
GLS 50-16-253-S	35
GLS 50-20-253-S	35
GLS 50-24-253-S	35

gls50-s-2p50-en_b_td

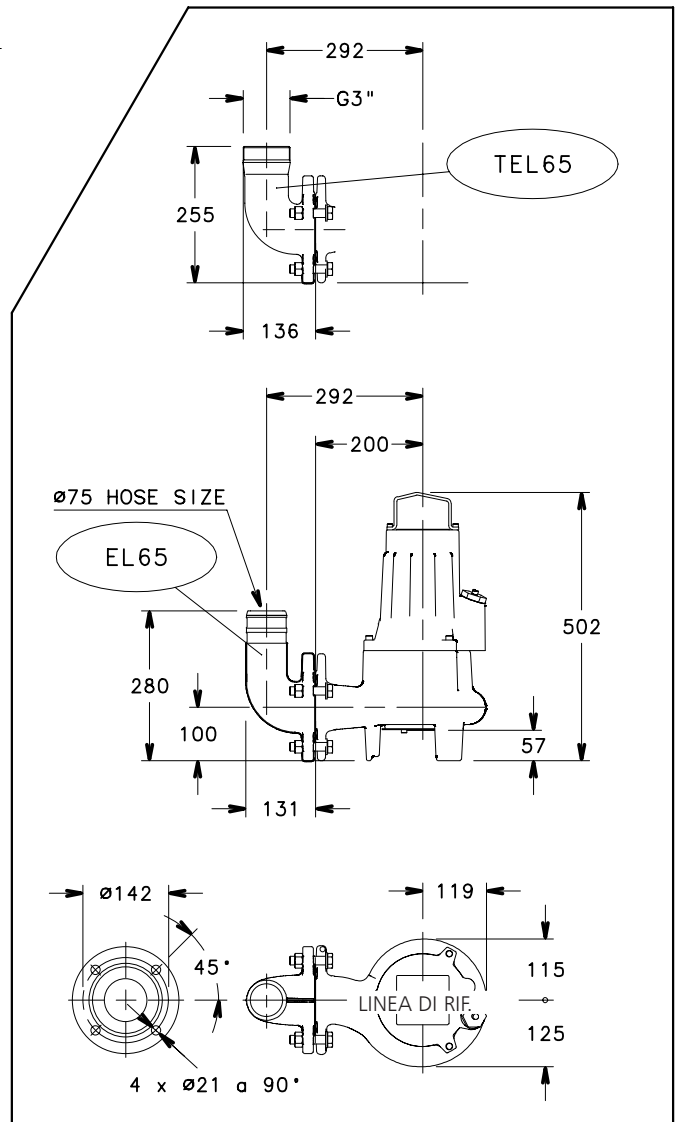
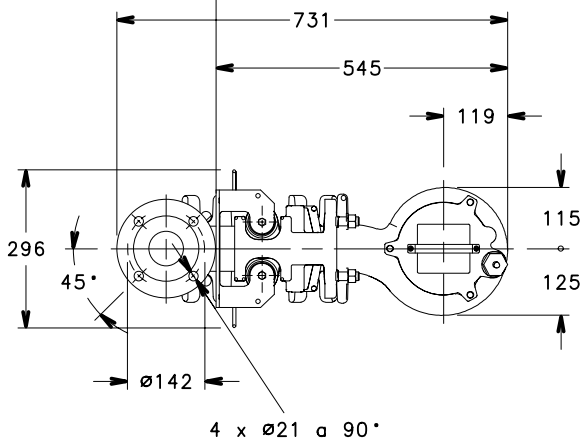
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**GLS 65 SERIES (DN65)
DIMENSIONS AND WEIGHTS**



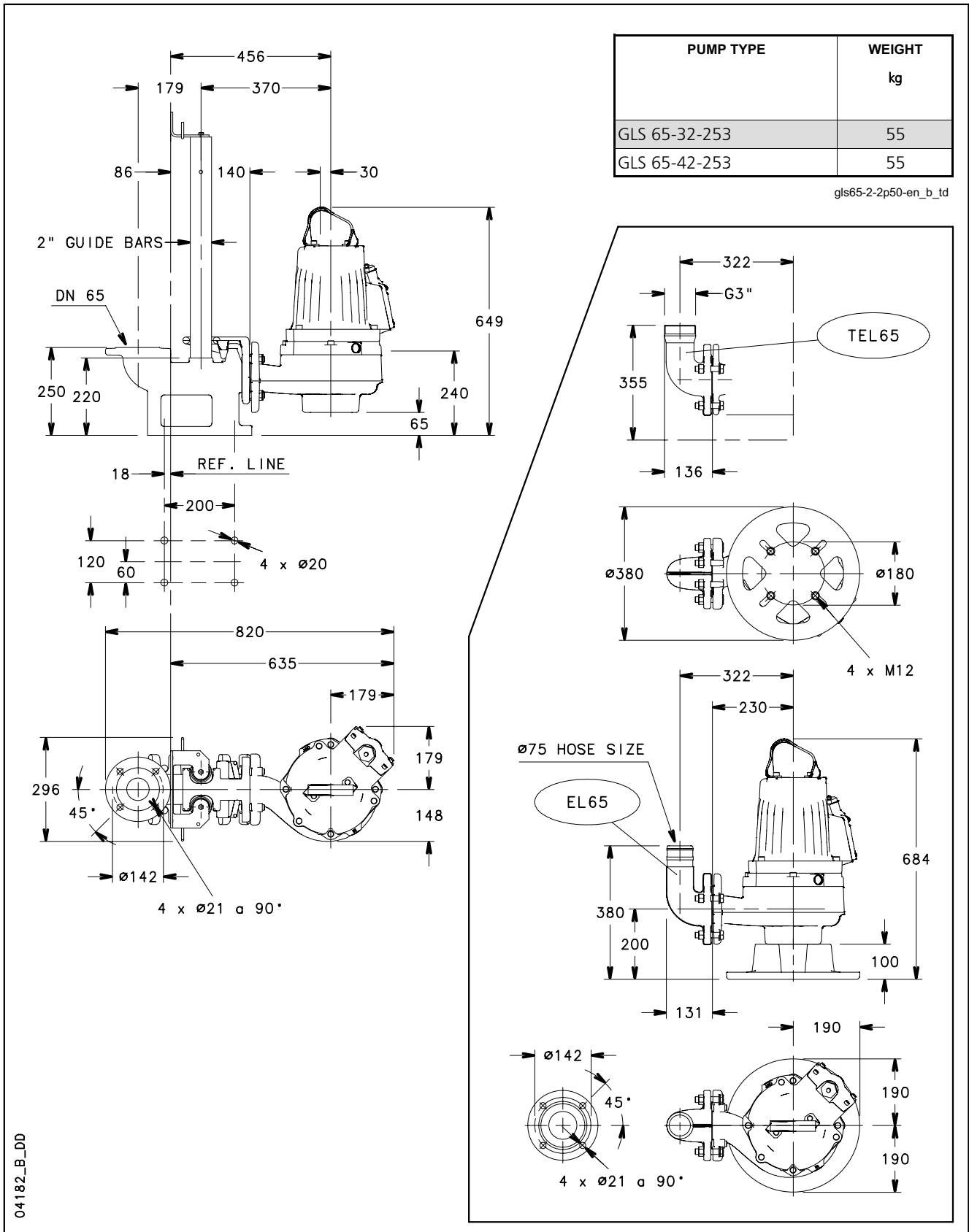
PUMP TYPE	WEIGHT kg
GLS 65-15-251	40
GLS 65-16-253	40
GLS 65-20-253	40
GLS 65-24-253	40

gls65-1-2p50-en_b_td

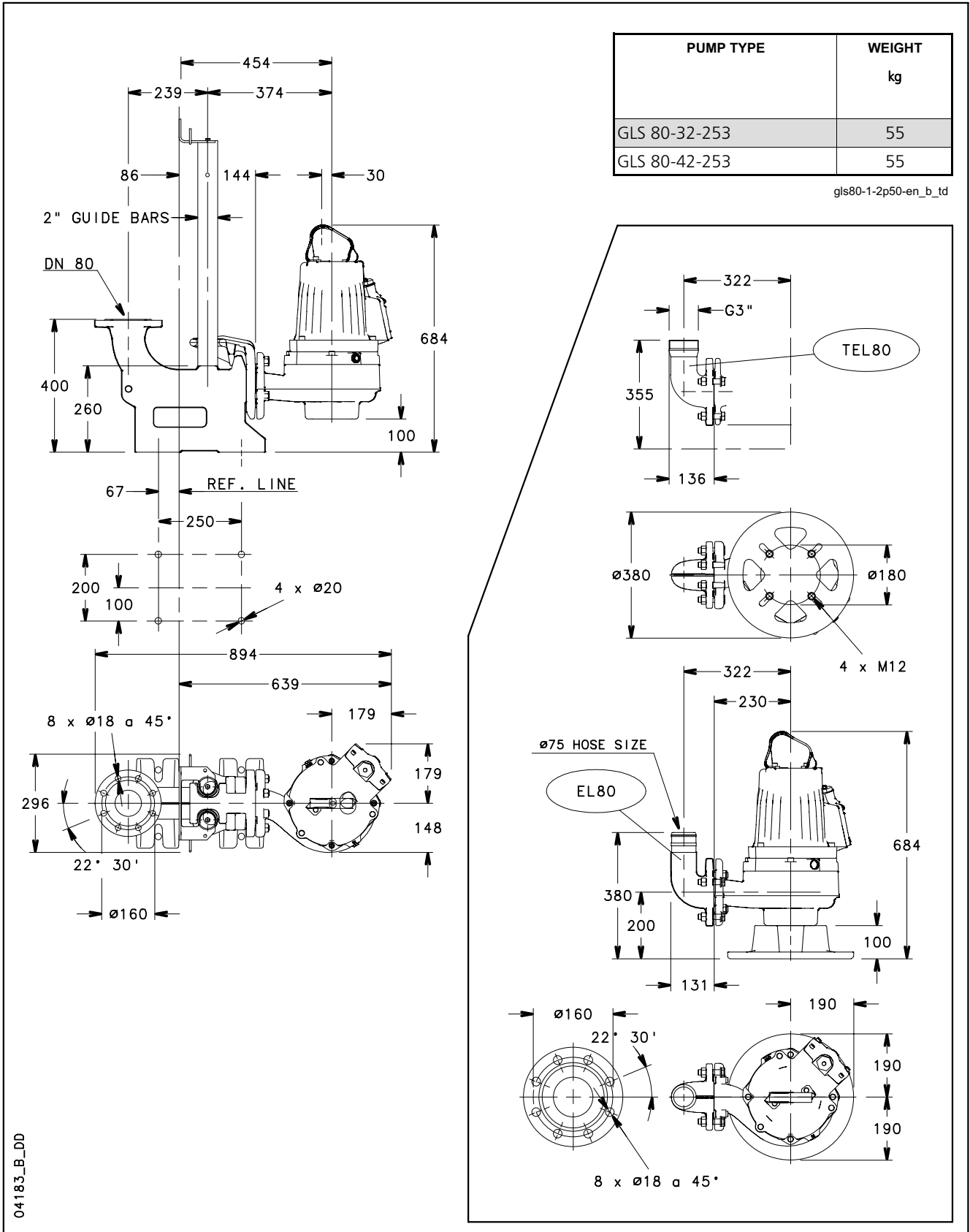


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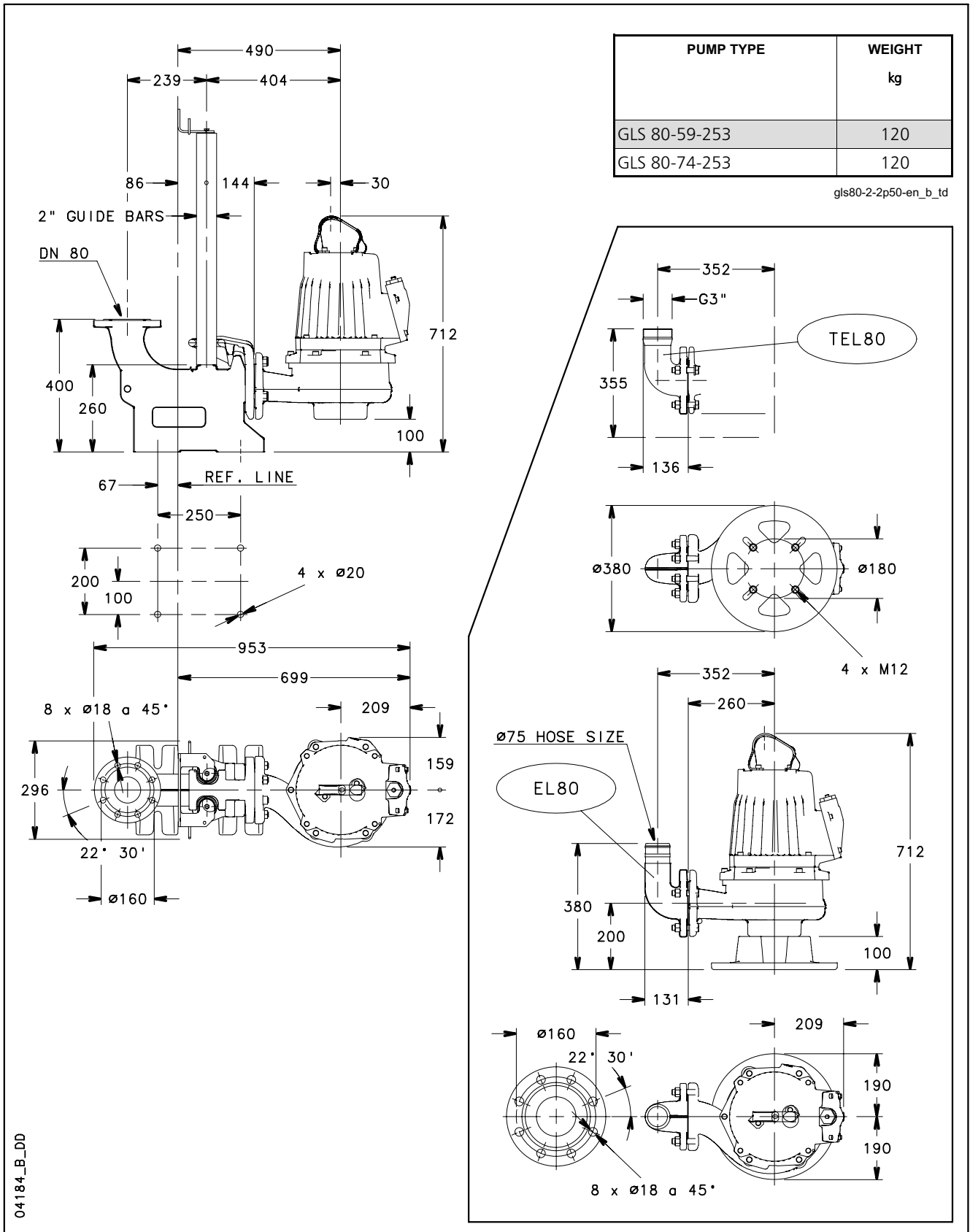
**GLS 65 SERIES (DN65)
DIMENSIONS AND WEIGHTS**



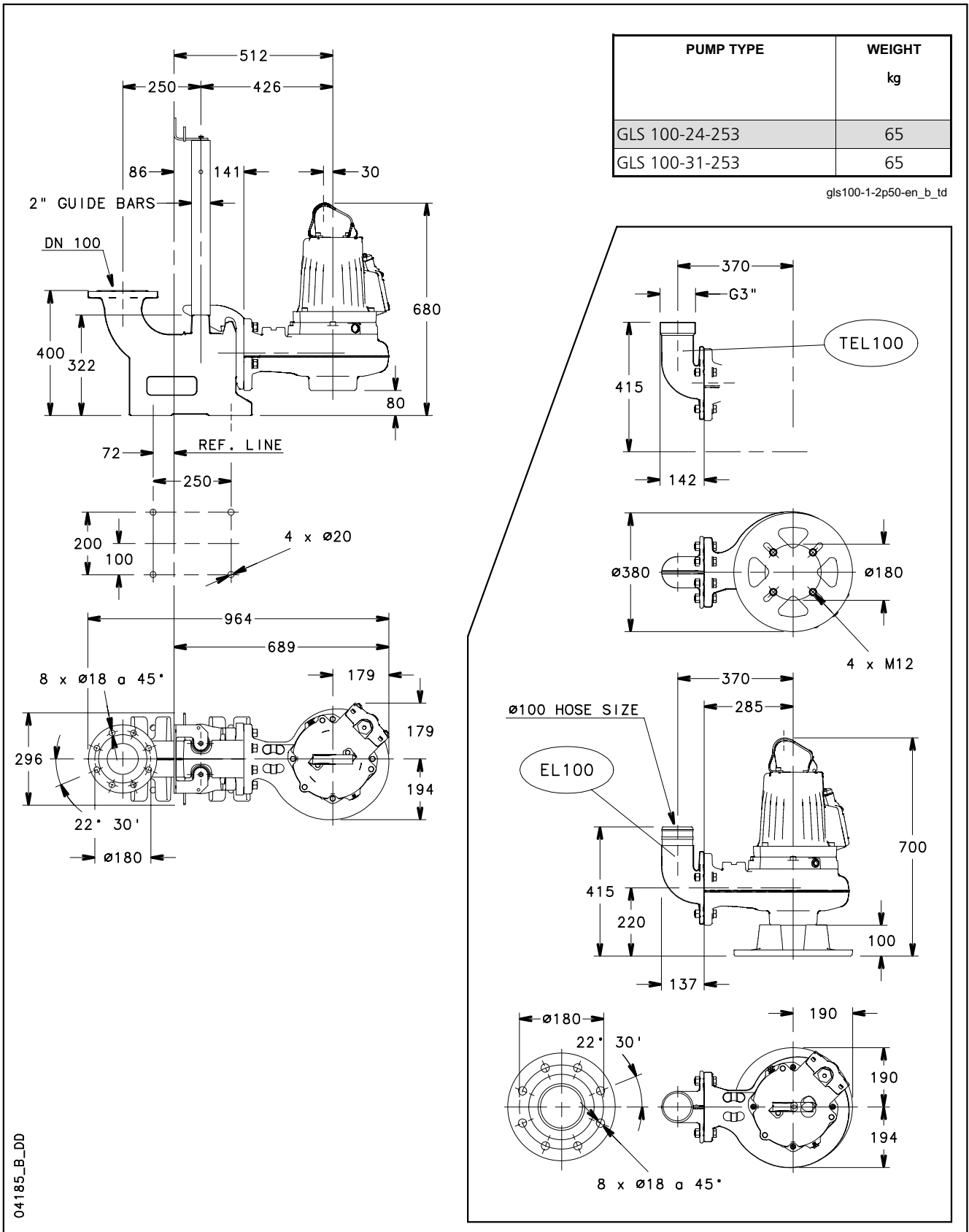
GLS 80 SERIES (DN80) DIMENSIONS AND WEIGHTS



GLS 80 SERIES (DN80) DIMENSIONS AND WEIGHTS

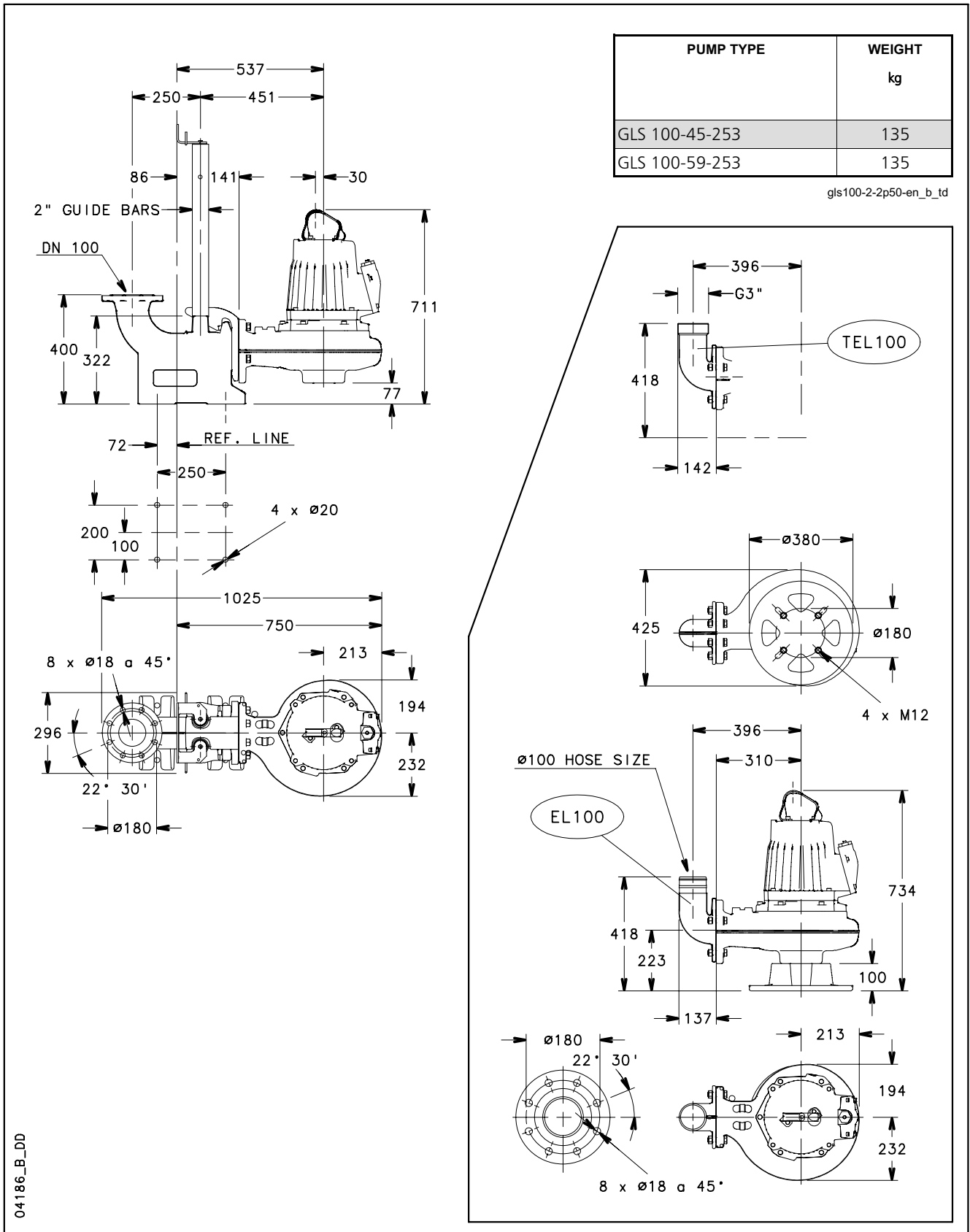


GLS 100 SERIES (DN100) DIMENSIONS AND WEIGHTS



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GLS 100 SERIES (DN100) DIMENSIONS AND WEIGHTS



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 in low volume, high head applications and in media which contain sand and other abrasive solids.

GLV Series



SPECIFICATIONS

- **Delivery:** up to 200 m³/h.
- **Head:** up to 29 m.
- **Free passage:** up to 100 mm (see hydraulic data table).
- **Discharge connection:** DN 50 - 65 - 80 - 100 mm.
- **Motor power:** up to 7,4 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 H insulation(180°C).
- **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.

CONSTRUCTION CHARACTERISTICS

- Sturdy cast iron construction.
- Vortex-type open **impeller**.
- **Double seal:** Tungsten Carbide/Ceramic on pump side, Tungsten Carbide/Ceramic or Carbon/Ceramic on motor side, with interposed oil chamber.
- **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.

OPTIONAL FEATURES

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

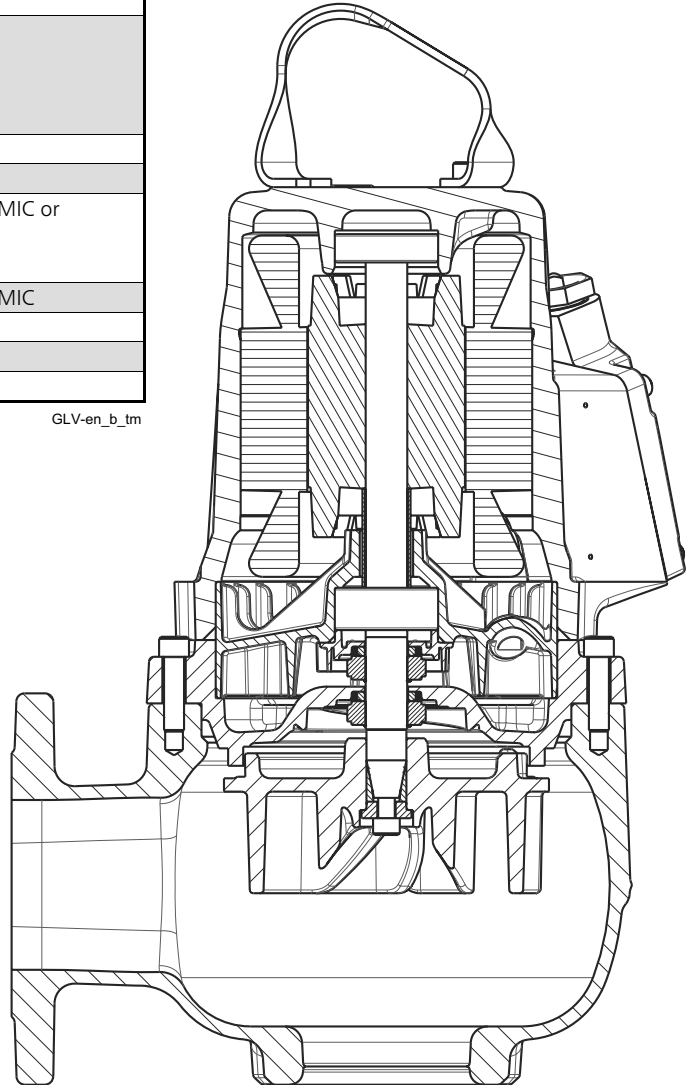
ACCESSORIES / INSTALLATION

- Lowering device.
- 90° delivery connection with hose connector.
- Threaded 90° delivery connection.
- Pump stand.
- Ball check valve.
- Wastewater level regulators.
- Command and control panels.
- Lifting chains.

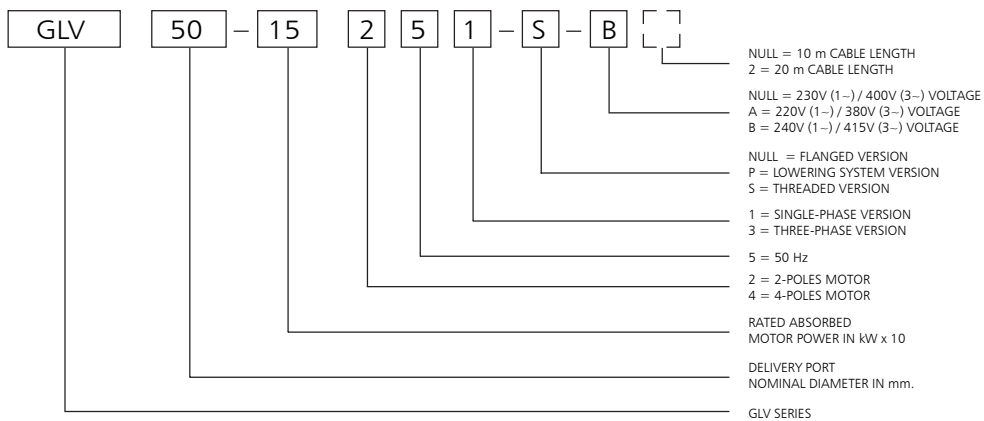
**GLV SERIES
PUMP SECTION AND TABLE OF MATERIALS**

PART	MATERIAL
Motor casing	GREY IRON
Seal oil chamber	
Pump body	
Impeller	
Shaft	431 STAINLESS STEEL
Bearings	BALL TYPE
Motor-side seal	TUNGSTEN CARBIDE / CERAMIC or CARBON / CERAMIC depending on pump model
Pump-side seal	TUNGSTEN CARBIDE / CERAMIC
Gaskets	NITRILE RUBBER
Bolts and screws	304 STAINLESS STEEL
Power cord	CPE ELASTOMER

GLV-en_b_tm



IDENTIFICATION CODE



EXAMPLE : GLV 50-15 251-S-B
GLV series electric pump, 50 mm nominal delivery port, 1,5 kW rated absorbed motor power, 2-poles version, 50 Hz, single-phase, threaded version, 415 V of voltage, 10 m cable length.

GLV 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
					ABSORBED I _{abs} (A)	INRUSH I _{sp} (A)				
GLV 50-12-251-S	2900	1,5	1,2	230/1	6,7	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLV 50-12-251-P	2900	1,5	1,2	230/1	6,7	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLV 50-15-251-S	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLV 50-15-251-P	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLV 50-16-253-S	2900	1,9	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLV 50-16-253-P	2900	1,9	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLV 50-20-253-S	2900	2,6	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLV 50-20-253-P	2900	2,6	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLV 50-24-253-S	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLV 50-24-253-P	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLV 65-15-251	2900	2	1,5	230/1	8,4	32	DOL	4G1,5 + 2x1,5	35/400	100/330
GLV 65-16-253	2900	2	1,6	400/3	3,6	27	DOL	4G1,5 + 2x1,5	-	-
GLV 65-20-253	2900	2,5	2	400/3	4,3	27	DOL	4G1,5 + 2x1,5	-	-
GLV 65-24-253	2900	3,2	2,4	400/3	5,1	27	DOL	4G1,5 + 2x1,5	-	-
GLV 65-32-253	2900	3,8	3,2	400/3	6,1	52	YD	7G2,5 + 2x1,5	-	-
GLV 65-42-253	2900	5,3	4,2	400/3	8,2	52	YD	7G2,5 + 2x1,5	-	-
GLV 80-32-253	2900	3,8	3,2	400/3	6,1	52	YD	7G2,5 + 2x1,5	-	-
GLV 80-42-253	2900	5,3	4,2	400/3	8,2	52	YD	7G2,5 + 2x1,5	-	-
GLV 80-59-253	2900	6,9	5,9	400/3	11	114	YD	7G2,5 + 2x1,5	-	-
GLV 80-74-253	2900	8,7	7,4	400/3	14	114	YD	7G2,5 + 2x1,5	-	-
GLV 100-24-453	1450	2,8	2,4	400/3	5,5	38	YD	7G2,5 + 2x1,5	-	-
GLV 100-31-453	1450	3,7	3,1	400/3	6,7	38	YD	7G2,5 + 2x1,5	-	-
GLV 100-45-453	1450	5,3	4,5	400/3	9,7	77	YD	7G2,5 + 2x1,5	-	-
GLV 100-59-453	1450	7	5,9	400/3	12	77	YD	7G2,5 + 2x1,5	-	-

Stator thermal protection included in all models.

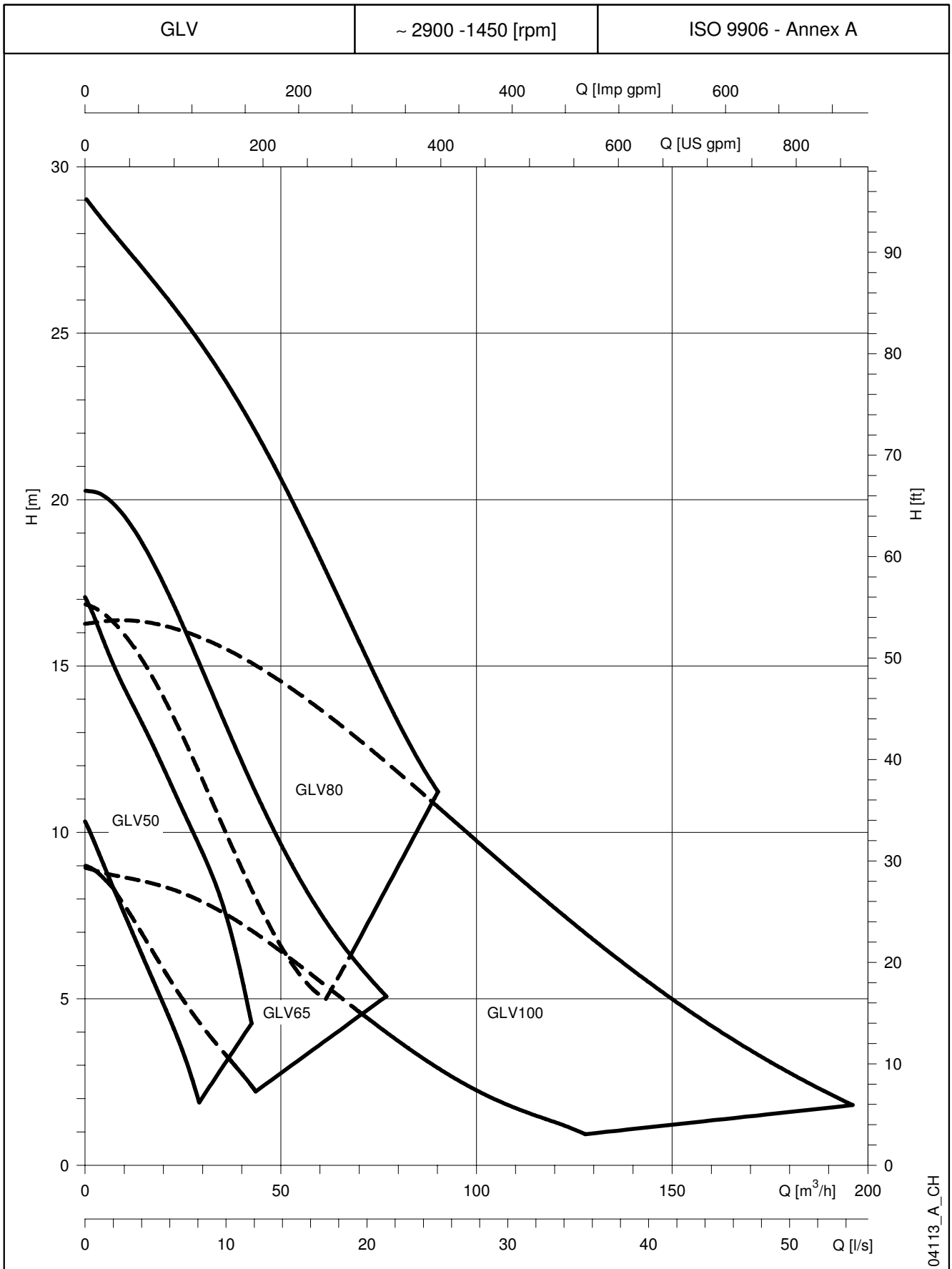
GLV-en_C_te

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

** P2 = Rated shaft power.

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

**GLV SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES**



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

GLV SERIES HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pabs (P1) kW *	Prated (P2) kW **	D Impeller mm	n min ⁻¹	Q = DELIVERY															Seal ***	Passes solids up to (mm)	
					1/2	2	4	6	8	10	12,5	15	20	25	30	35	40	45	54			
					l/s m ³ /h	0	7,2	14,4	21,6	28,8	36	45	54	72	90	108	126	144	162			196
H = TOTAL HEAD METRES COLUMN OF WATER																	***					
GLV 50-12-251-S	1,5	1,2	104	2900	10,3	8,2	6,1	4,0	1,5												A	48
GLV 50-12-251-P	1,5	1,2	104	2900	10,3	8,3	6,4	4,4	2,0												A	48
GLV 50-15-251-S	2	1,5	118	2900	14,1	11,8	9,8	7,5	4,7												A	48
GLV 50-15-251-P	2	1,5	118	2900	13,4	11,7	9,9	7,9	5,4												A	48
GLV 50-16-253-S	1,9	1,6	104	2900	10,4	8,3	6,2	4,1	1,6												A	48
GLV 50-16-253-P	1,9	1,6	104	2900	10,4	8,4	6,5	4,5	2,2												A	48
GLV 50-20-253-S	2,6	2	118	2900	14,2	12,0	10,0	7,7	5,0												A	48
GLV 50-20-253-P	2,6	2	118	2900	13,6	11,8	10,2	8,2	5,6												A	48
GLV 50-24-253-S	3,2	2,4	128	2900	17,5	15,1	13,0	10,8	8,5	5,8											A	48
GLV 50-24-253-P	3,2	2,4	128	2900	17,1	15,0	13,3	11,5	9,7	7,5											A	48
GLV 65-15-251	2	1,5	105	2900	9,0	8,3	7,0	5,6	4,3	3,3											A	65
GLV 65-16-253	2	1,6	105	2900	9,1	8,4	7,1	5,7	4,5	3,4											A	65
GLV 65-20-253	2,5	2	117	2900	11,7	10,9	9,5	8,0	6,4	5,1	3,5										A	65
GLV 65-24-253	3,2	2,4	129	2900	14,6	13,6	12,2	10,7	9,1	7,6	5,7	3,6									A	65
GLV 65-32-253	3,8	3,2	138	2900	16,9	16,3	15,2	13,7	11,9	10,0	7,7	5,9									B	65
GLV 65-42-253	5,3	4,2	155	2900	20,3	19,9	18,7	17,1	15,2	13,2	10,8	8,8	5,7								B	65
GLV 80-32-253	3,8	3,2	138	2900	16,9	16,3	15,2	13,7	11,9	10,0	7,7	5,9									B	65
GLV 80-42-253	5,3	4,2	155	2900	20,3	19,9	18,7	17,1	15,2	13,2	10,8	8,8	5,7								B	65
GLV 80-59-253	6,9	5,9	159	2900	24,4	23,4	22,4	21,5	20,3	19,0	17,1	14,8	10,2								B	65
GLV 80-74-253	8,7	7,4	168	2900	29,1	28,0	27,0	26,0	24,8	23,5	21,7	19,7	15,2	11,2							B	65
GLV 100-24-453	2,8	2,4	175	1450	8,9	8,7	8,5	8,3	8,0	7,5	6,9	6,1	4,4	2,9	1,8	1,0					B	80
GLV 100-31-453	3,7	3,1	193	1450	11,1	10,9	10,7	10,4	10,1	9,7	9,2	8,6	7,1	5,6	4,1	2,8	1,9				B	80
GLV 100-45-453	5,3	4,5	204	1450	13,2	13,2	13,2	13,0	12,7	12,3	11,7	11,0	9,5	7,9	6,2	4,8	3,4	2,3			B	100
GLV 100-59-453	7	5,9	223	1450	16,3	16,4	16,3	16,2	15,9	15,5	14,9	14,2	12,6	10,8	8,9	7,1	5,5	4,0	1,8		B	100

Performances according to ISO Standard 9906 –Annex A.

GLV-50-en_c_th

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

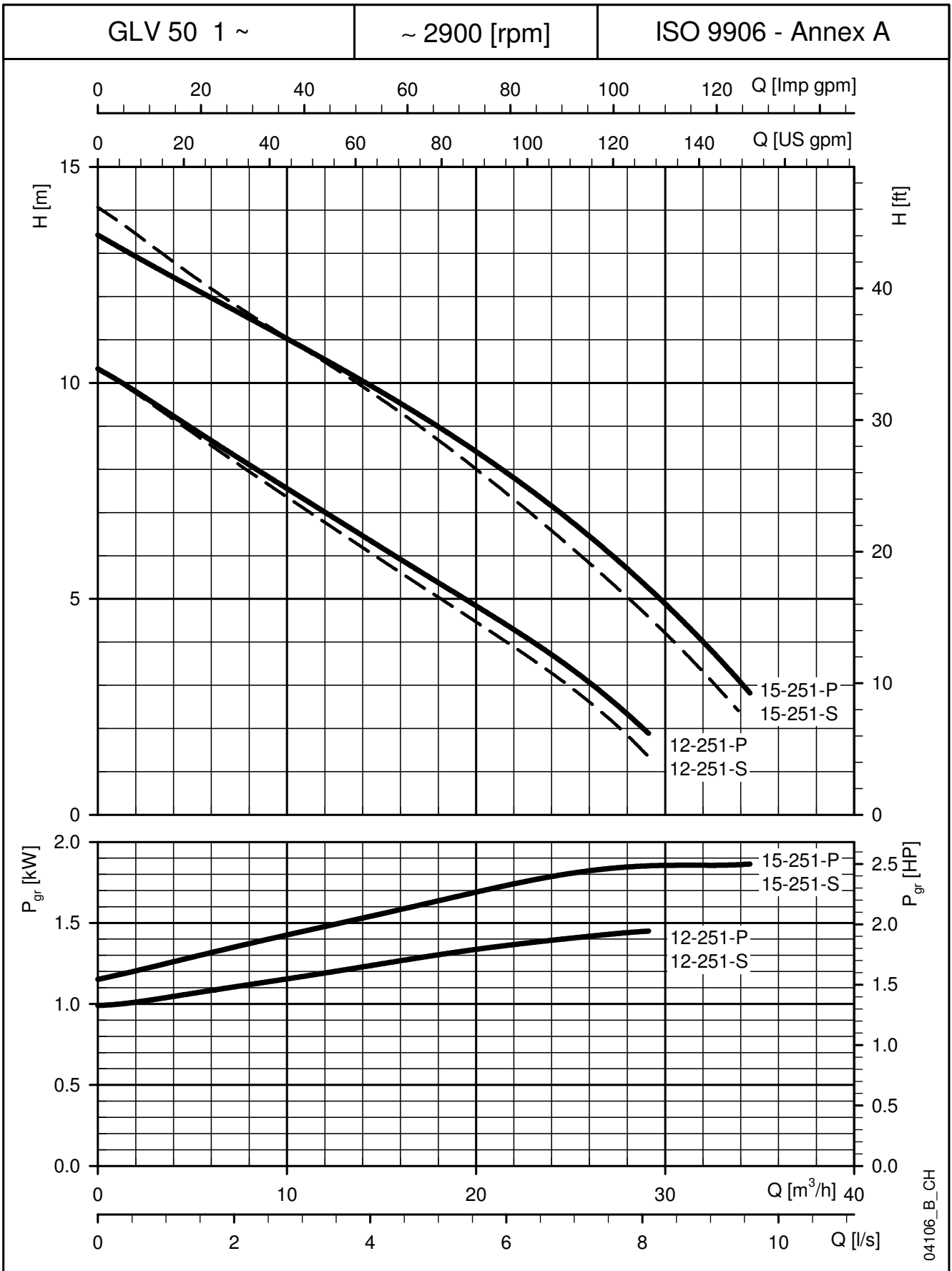
* Maximum value of absorbed motor power within the operating range.

** P2 = Rated shaft power.

*** Seal = A = Carbon / Ceramic motor-side mechanical seal

B = Tungsten Carbide / Ceramic motor-side mechanical seal

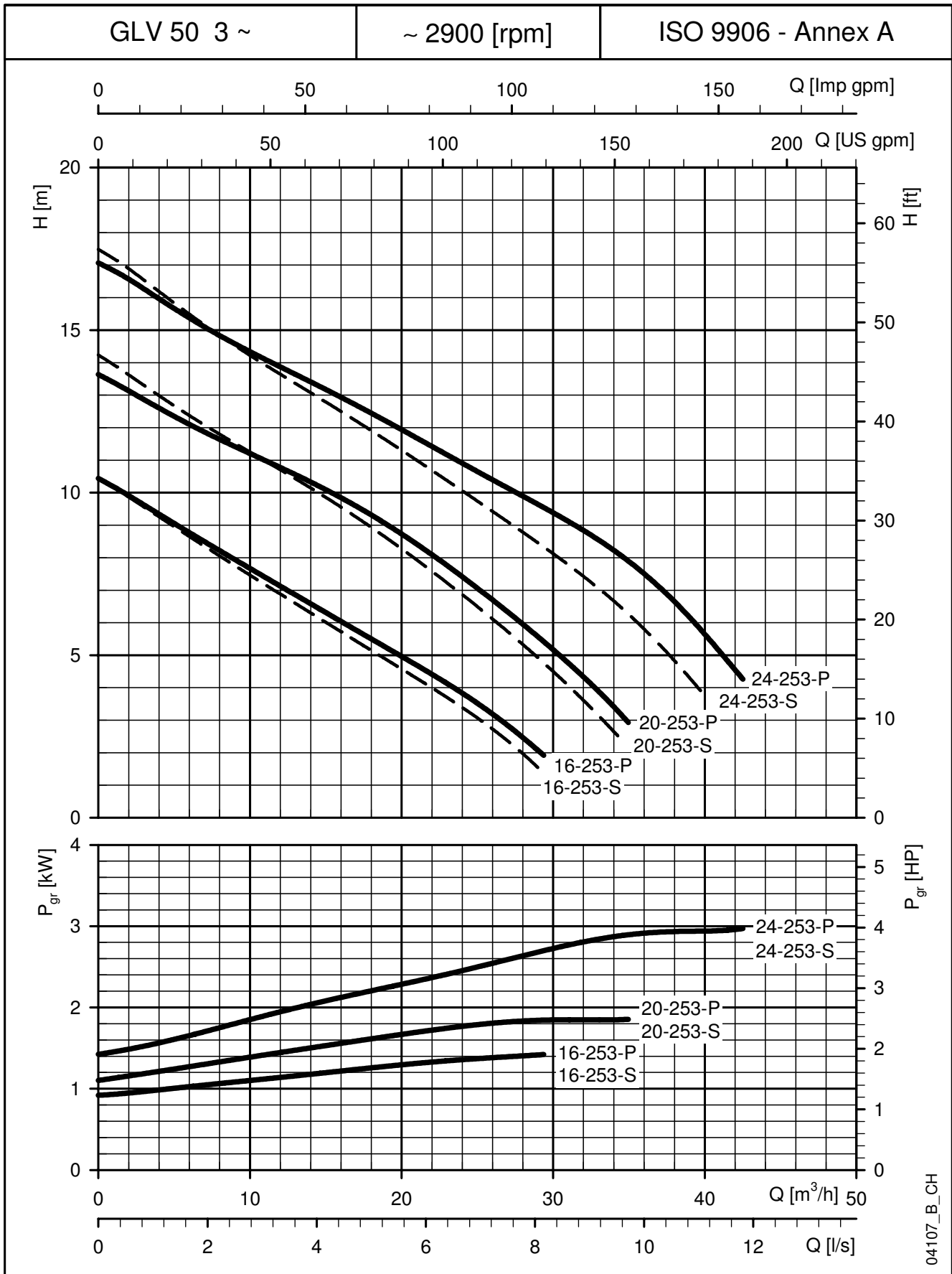
**GLV 50 SERIES (SINGLE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



04106_B_CH

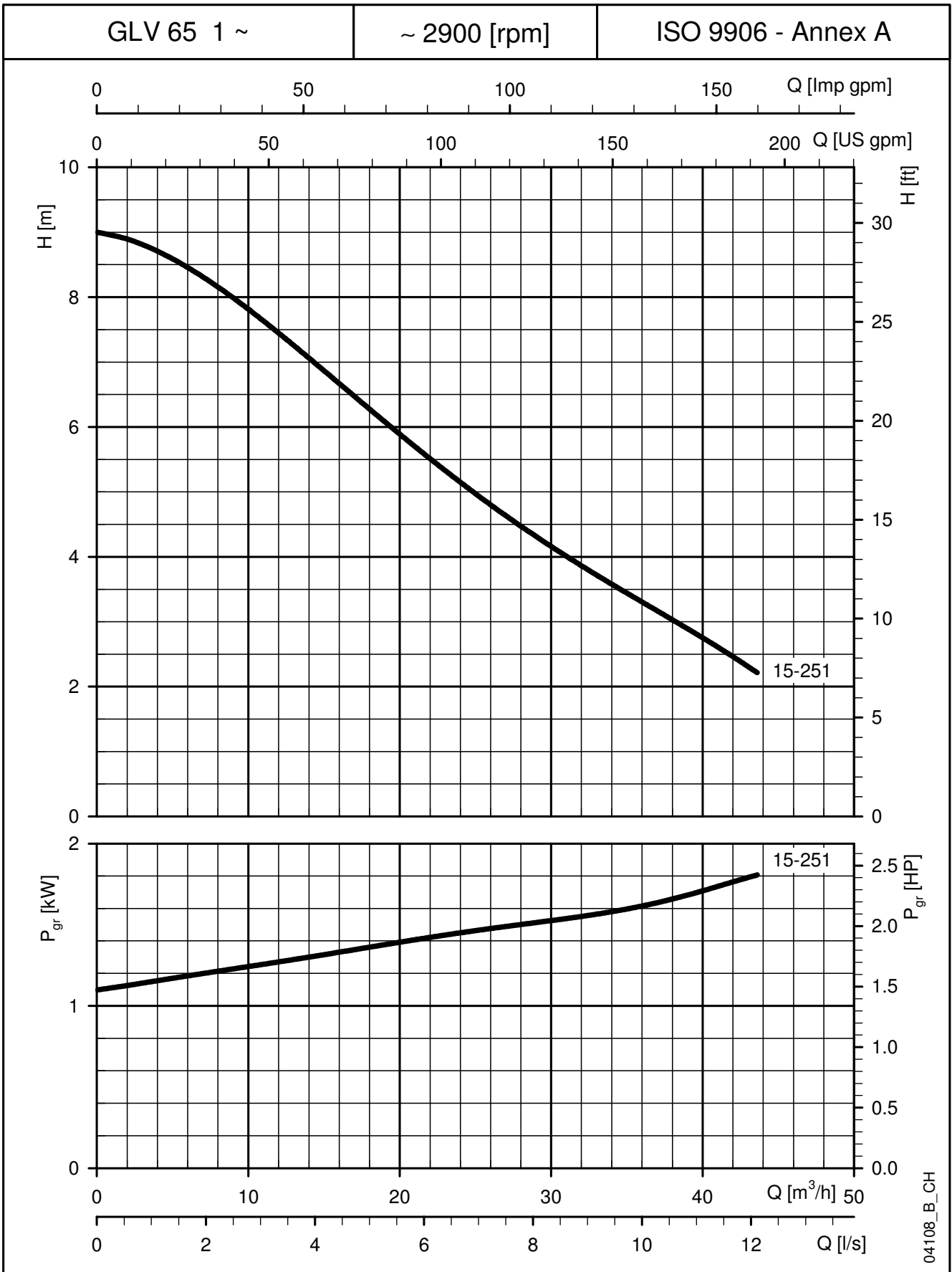
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLV 50 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



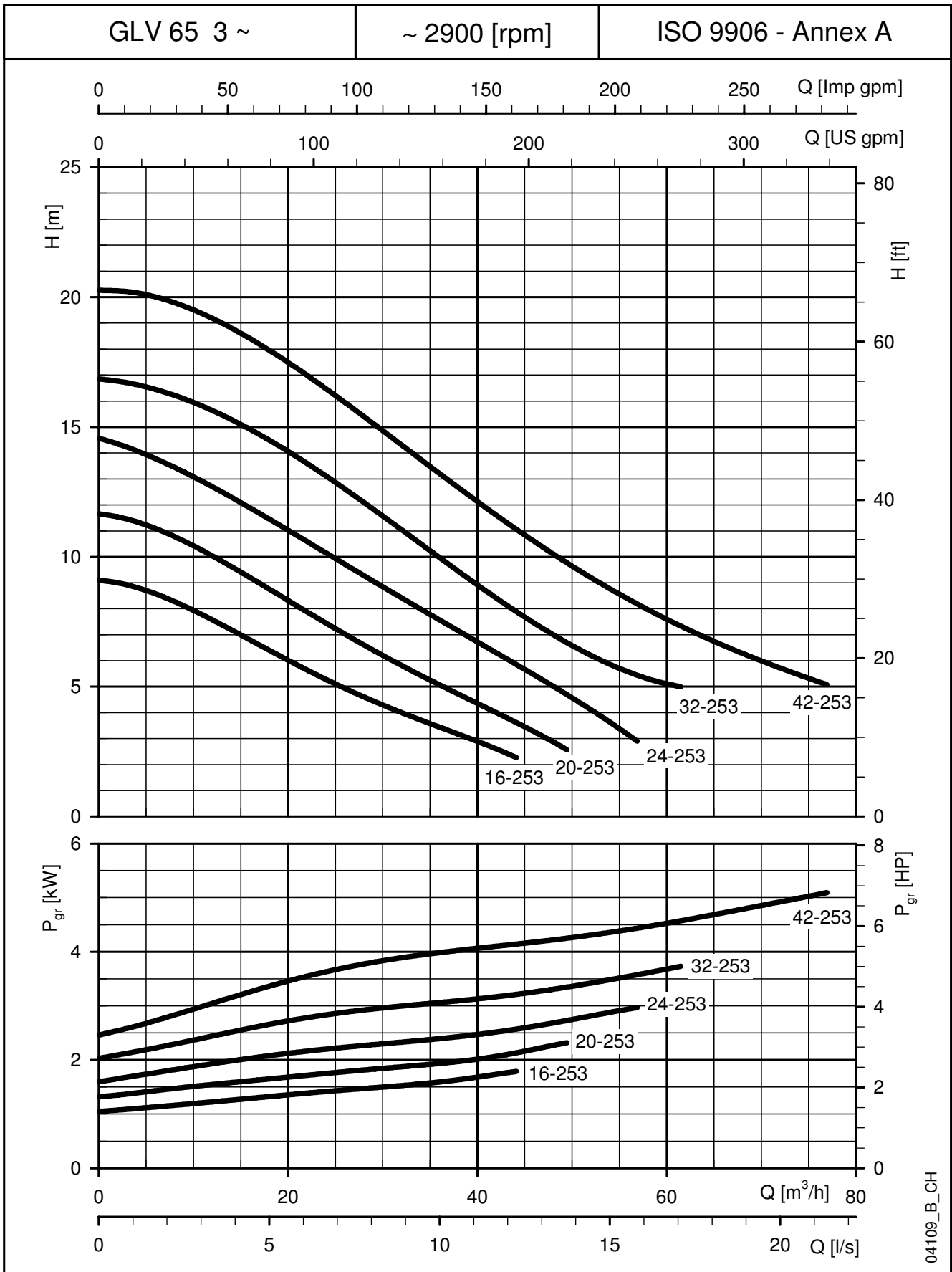
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLV 65 SERIES (SINGLE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



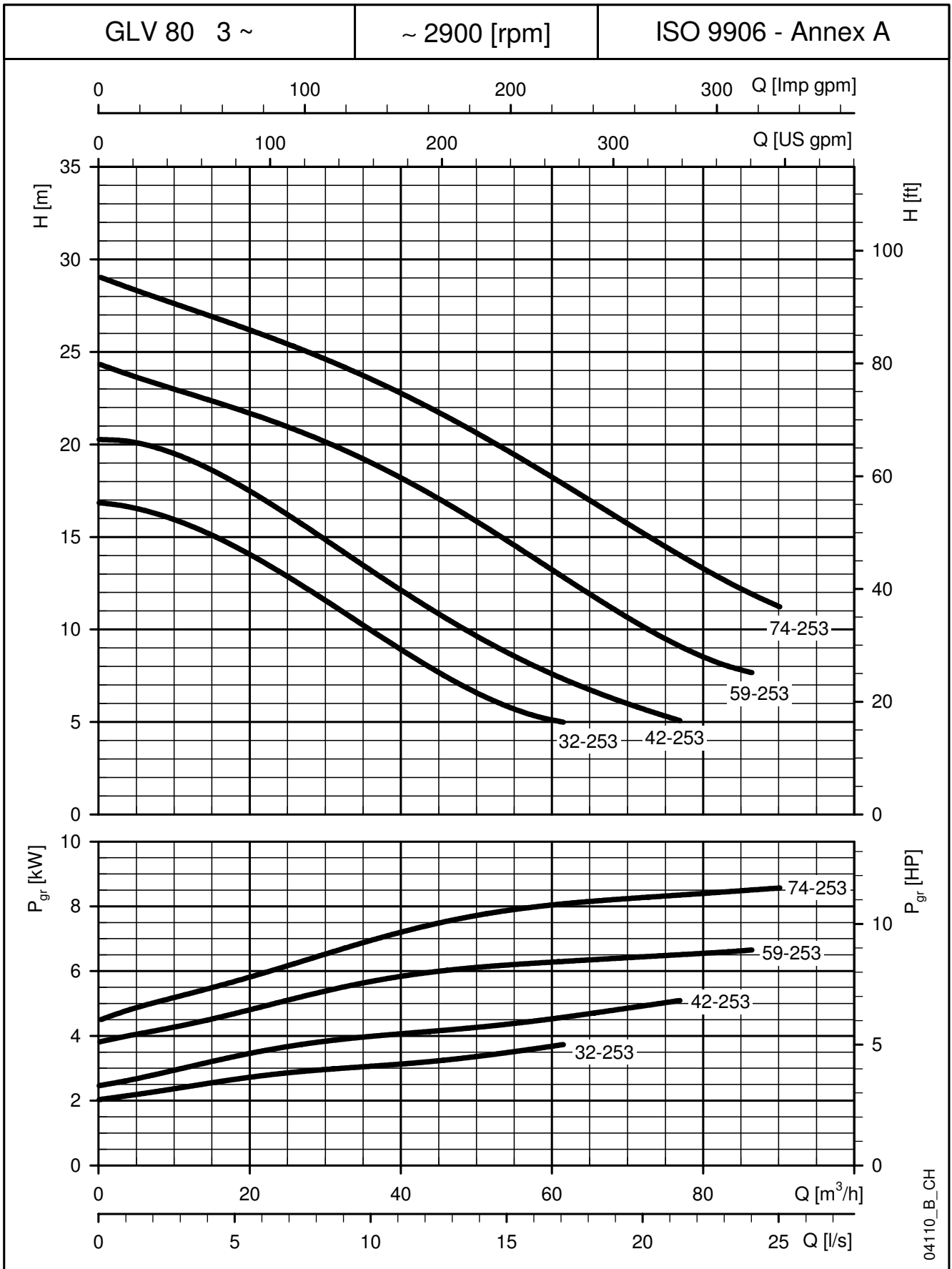
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLV 65 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



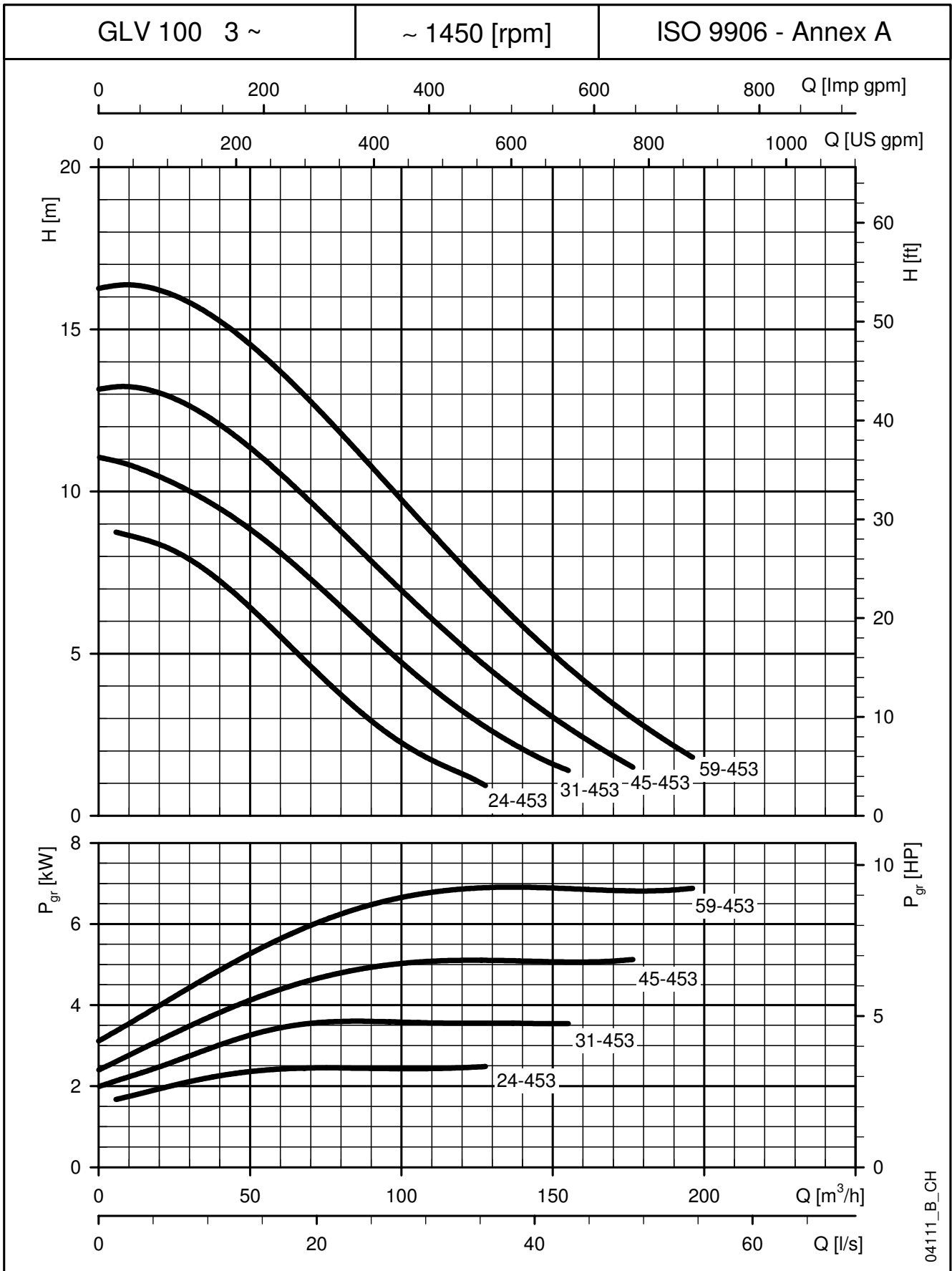
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GLV 80 SERIES (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 $\nu = 1 \text{ mm}^2/\text{sec}$.

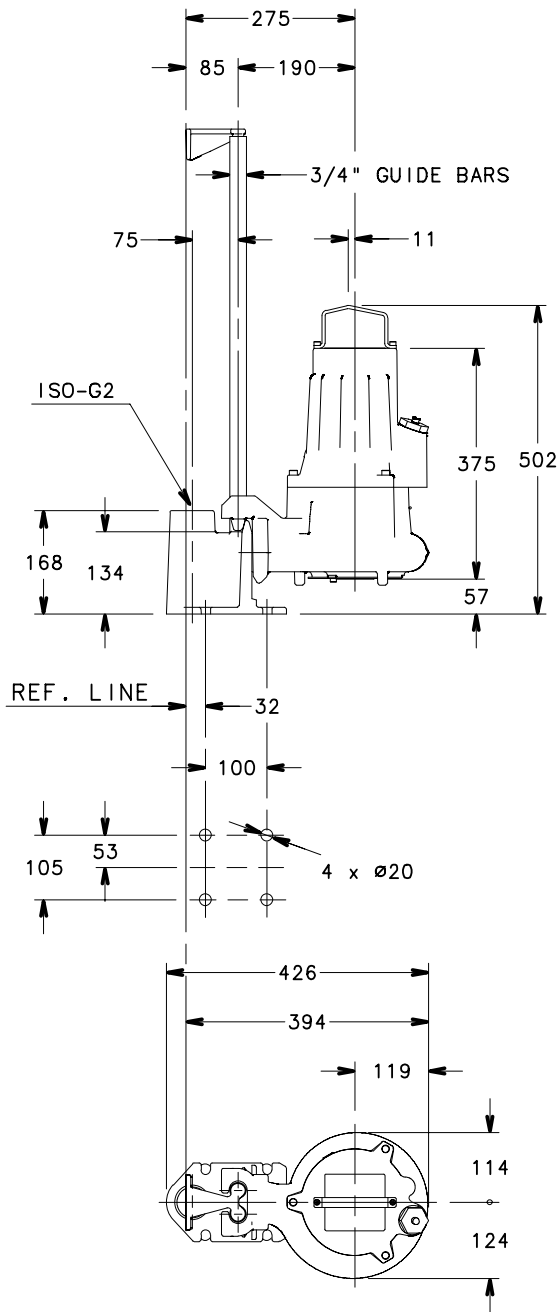
**GLV 100 SERIES (THREE-PHASE)
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



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

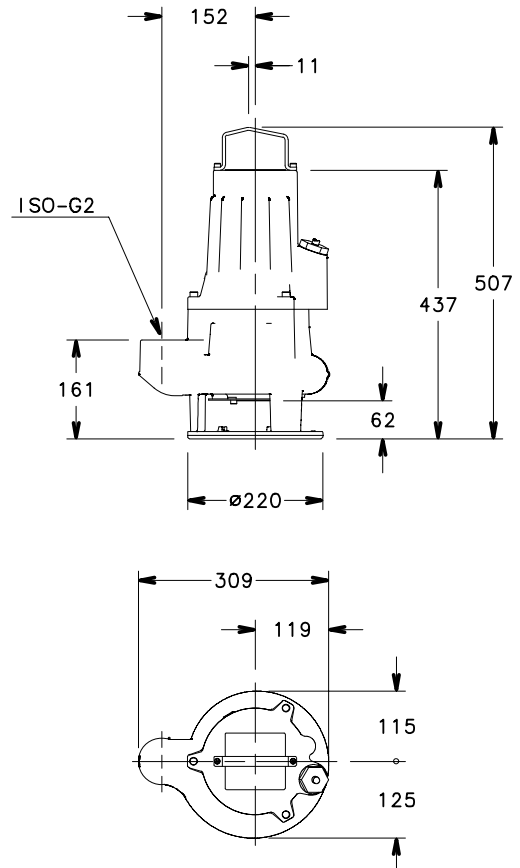
GLV SERIES DIMENSIONS AND WEIGHTS

GLV 50 SERIES (DN50) DIMENSIONS AND WEIGHTS



PUMP TYPE	WEIGHT kg
GLV 50-12-251-P	35
GLV 50-15-251-P	35
GLV 50-16-253-P	35
GLV 50-20-253-P	35
GLV 50-24-253-P	35

glv50-p-2p50-en_b_td

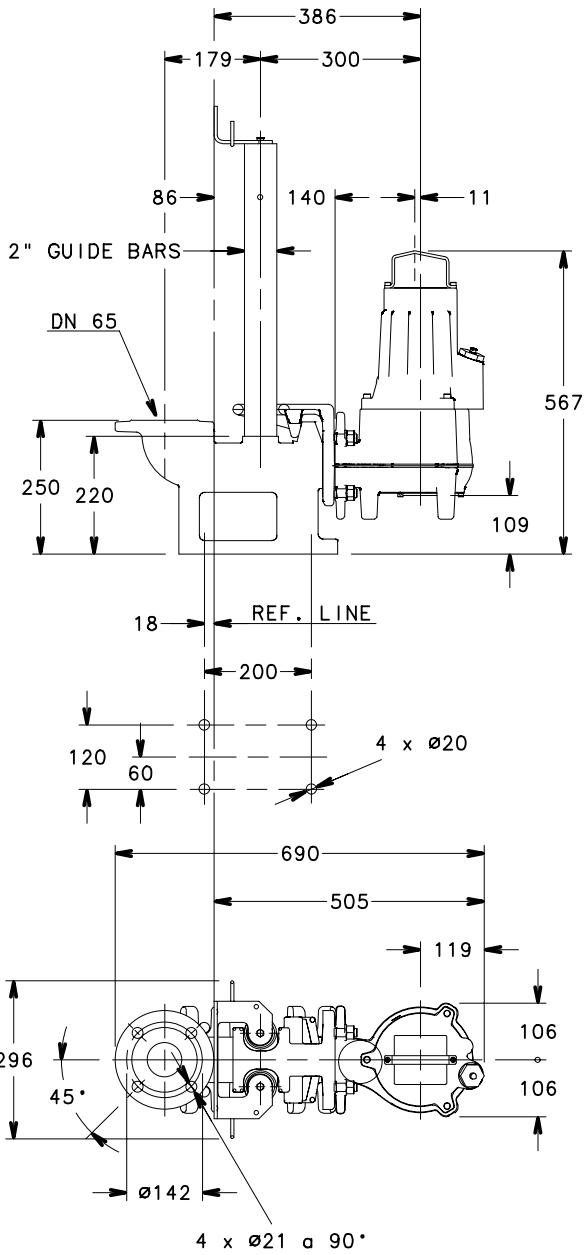


PUMP TYPE	WEIGHT kg
GLV 50-12-251-S	35
GLV 50-15-251-S	35
GLV 50-16-253-S	35
GLV 50-20-253-S	35
GLV 50-24-253-S	35

glv50-s-2p50-en_b_td

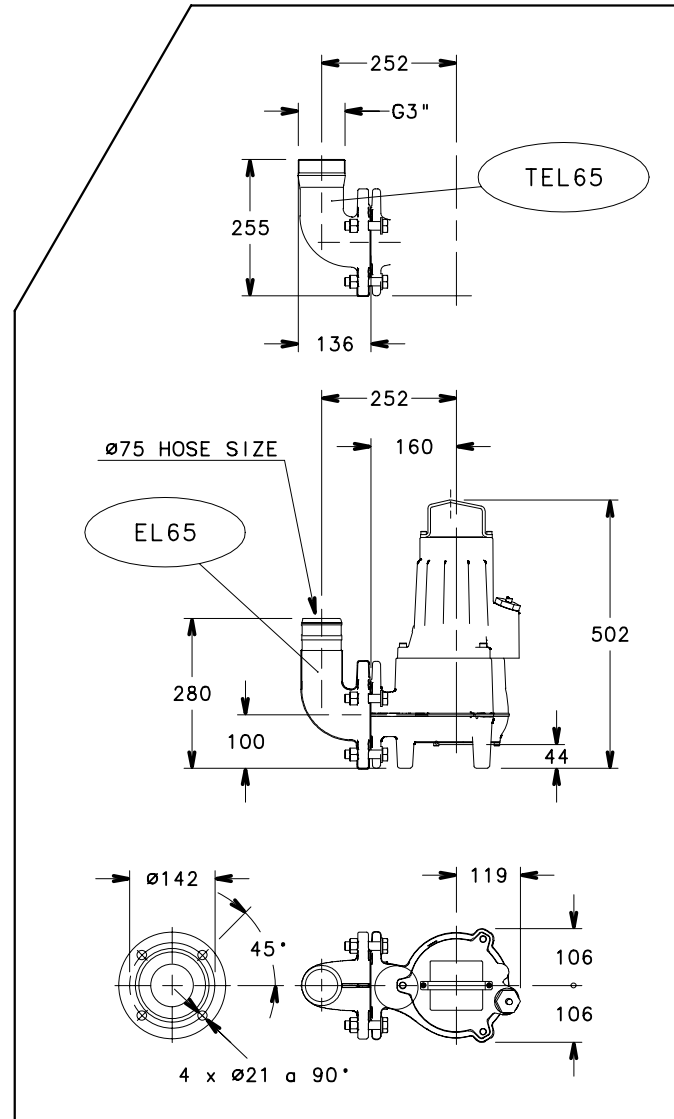
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GLV 65 SERIES (DN65) DIMENSIONS AND WEIGHTS



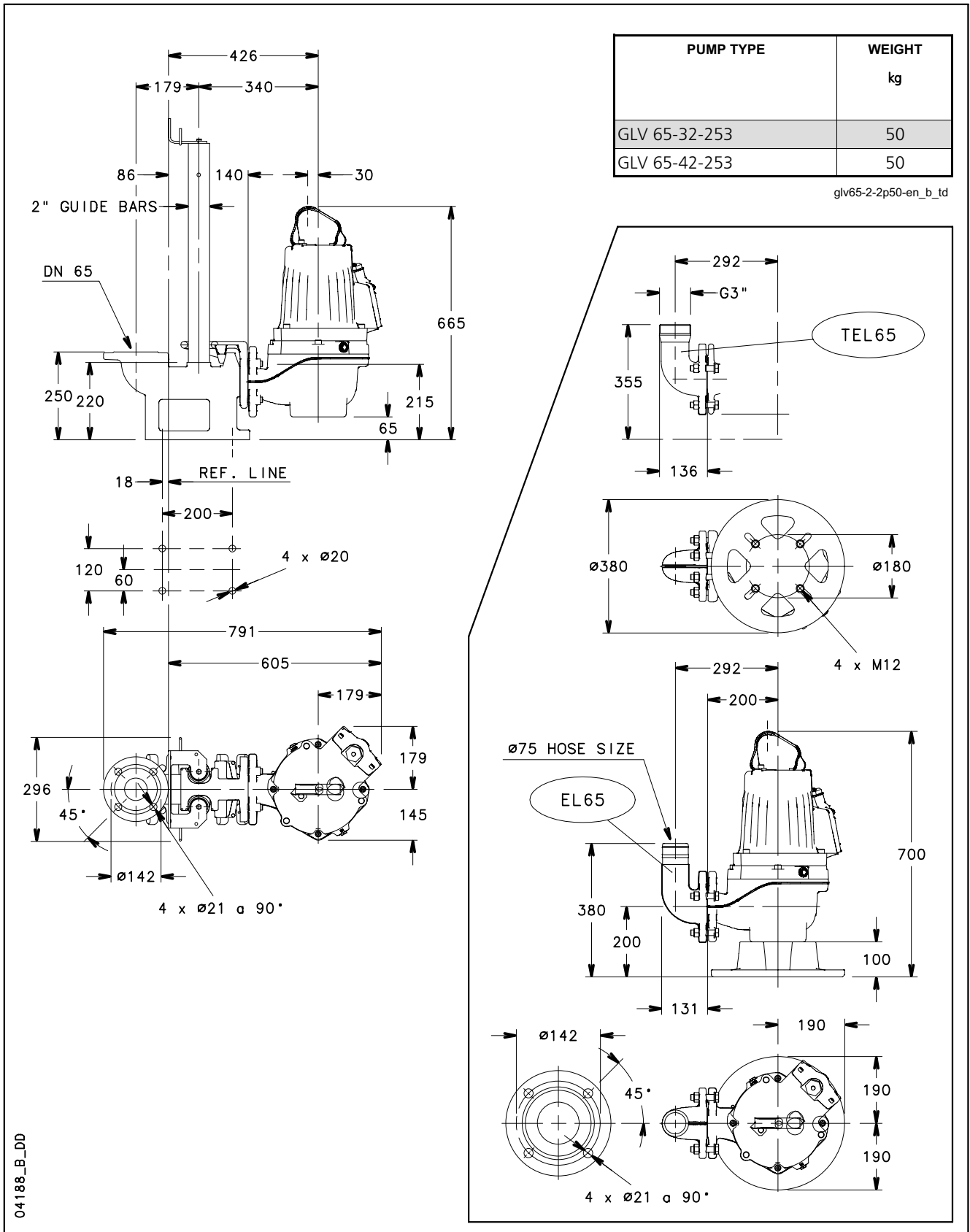
PUMP TYPE	WEIGHT kg
GLV 65-15-251	40
GLV 65-16-253	40
GLV 65-20-253	40
GLV 65-24-253	40

glv65-1-2p50-en_b_td

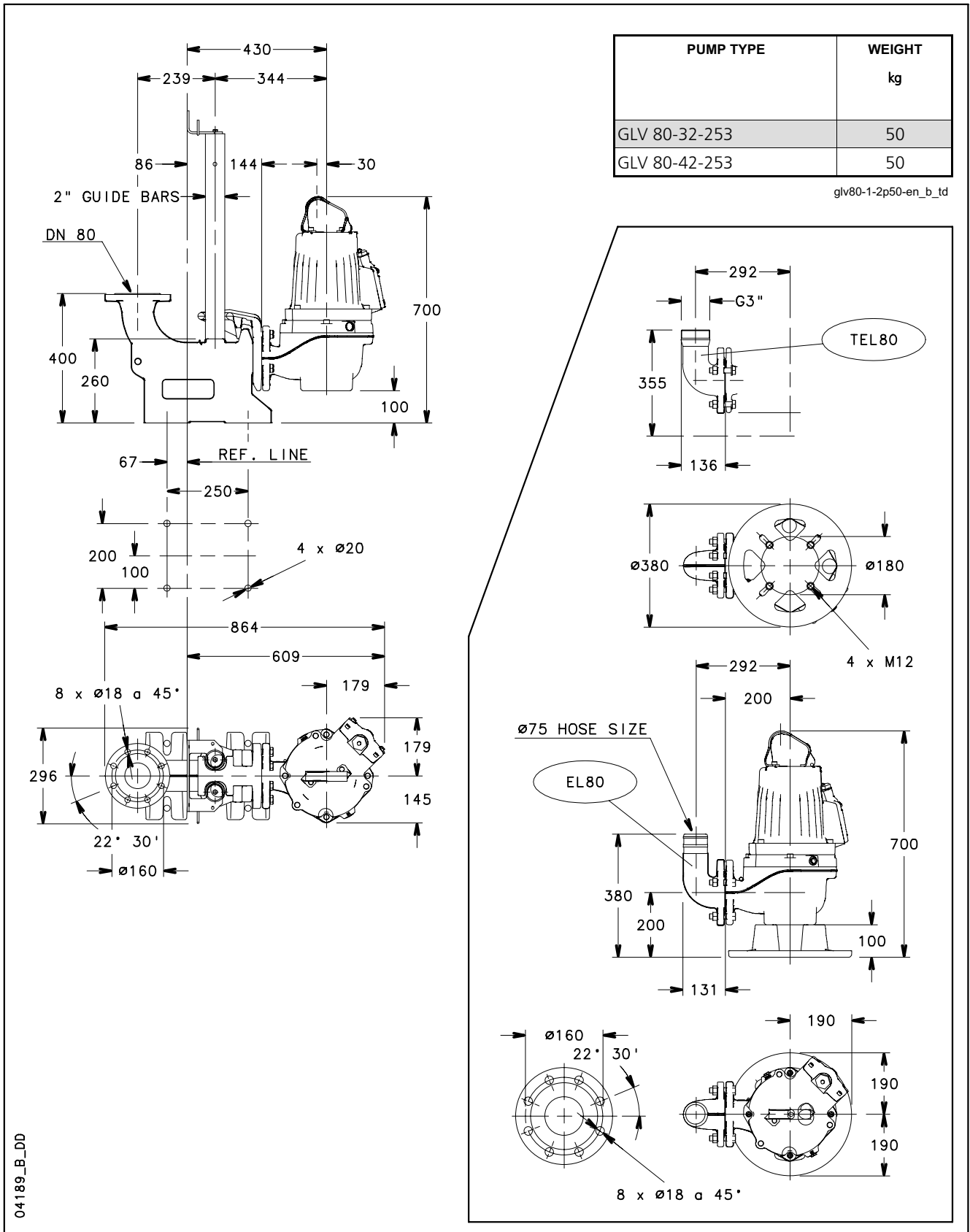


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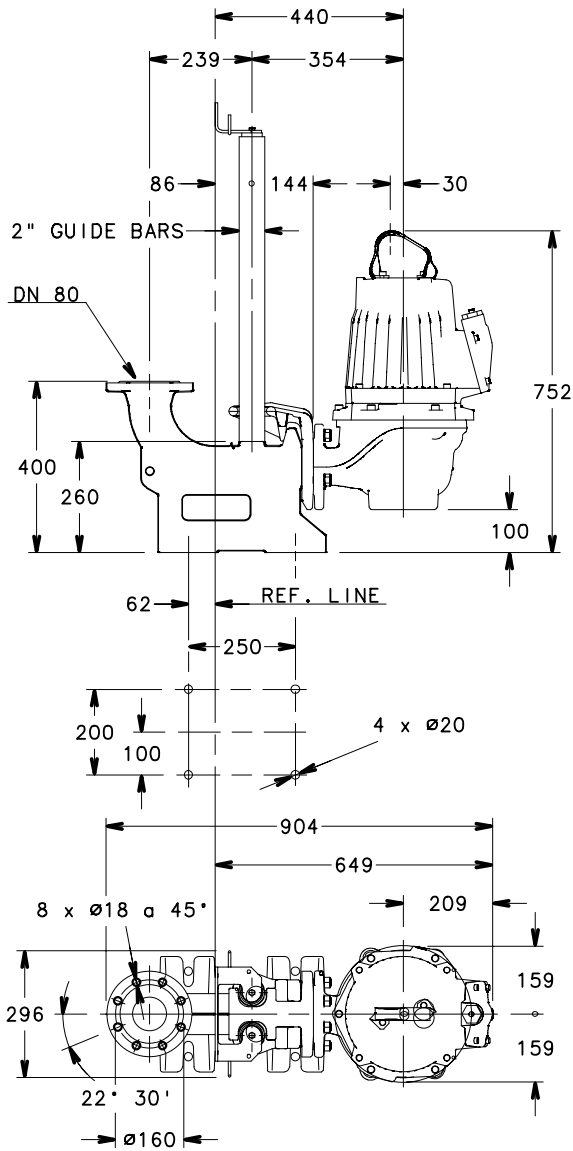
GLV 65 SERIES (DN65) DIMENSIONS AND WEIGHTS



GLV 80 SERIES (DN80) DIMENSIONS AND WEIGHTS

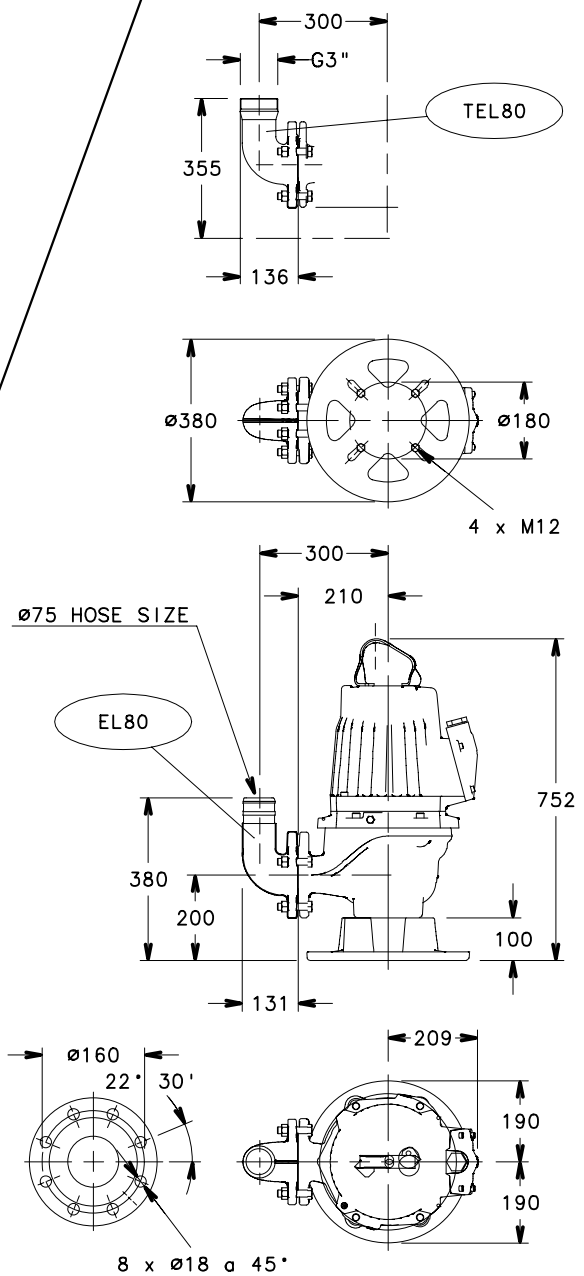


GLV 80 SERIES (DN80) DIMENSIONS AND WEIGHTS



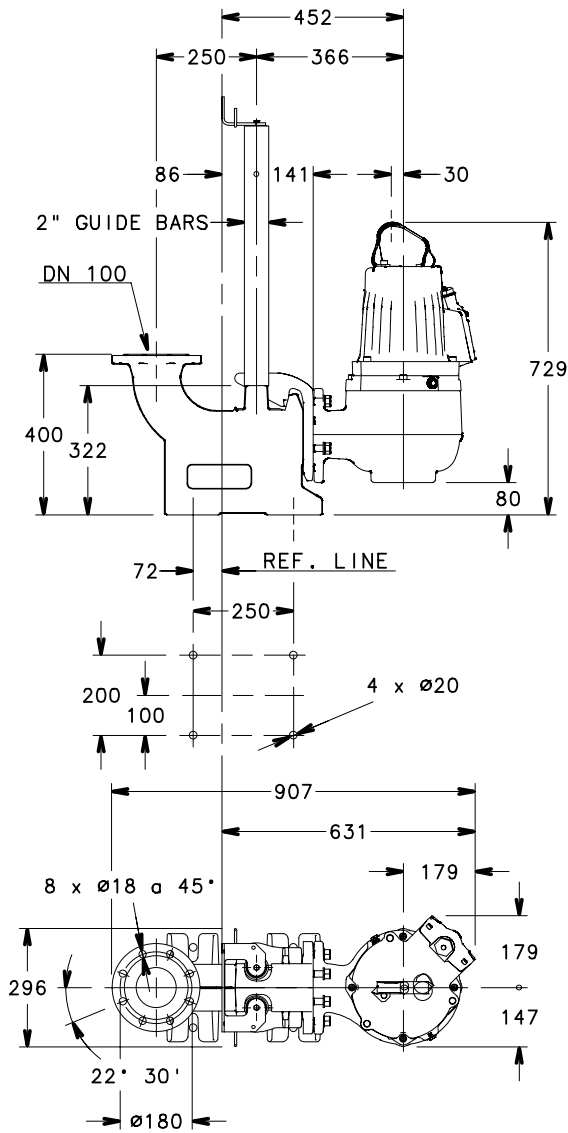
PUMP TYPE	WEIGHT kg
GLV 80-59-253	110
GLV 80-74-253	110

glv80-2-2p50-en_b_td



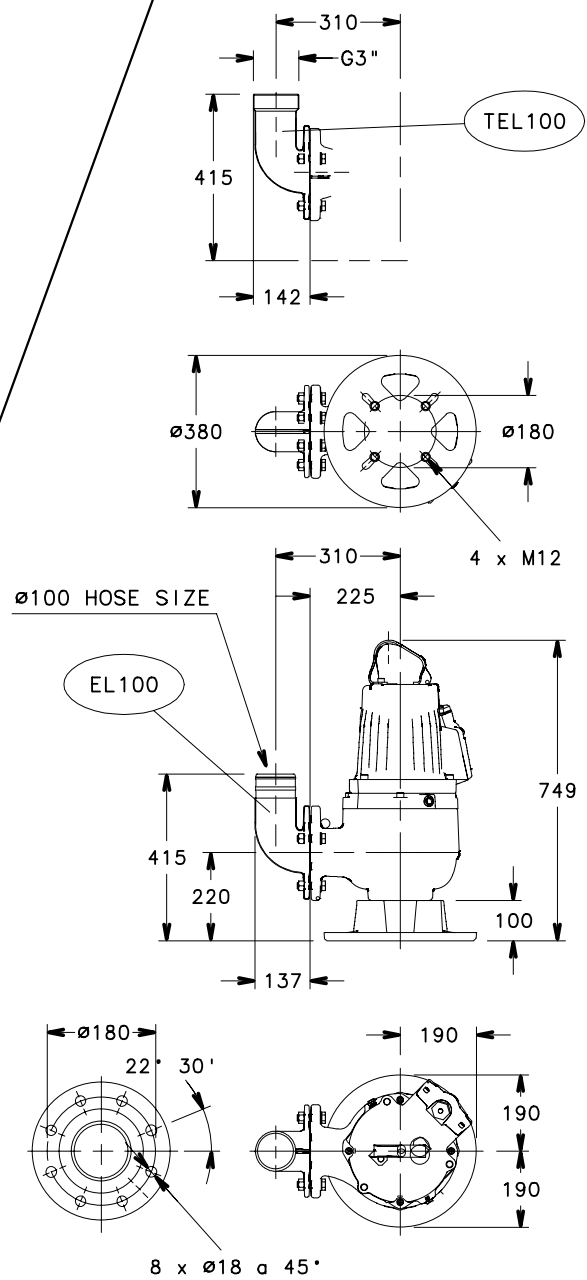
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GLV 100 SERIES (DN100) DIMENSIONS AND WEIGHTS



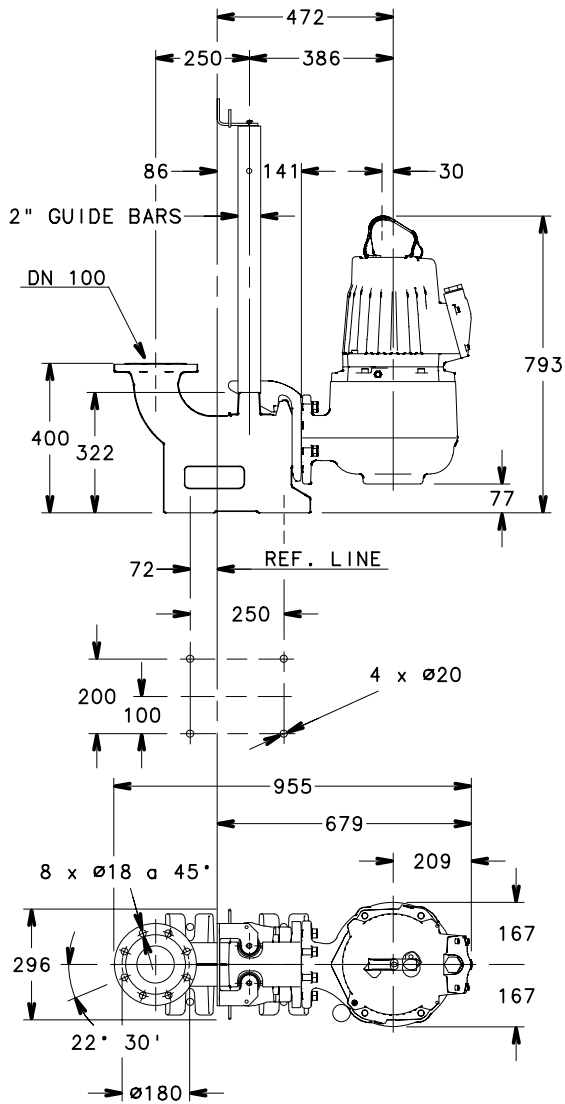
PUMP TYPE	WEIGHT kg
GLV 100-24-253	55
GLV 100-31-253	55

glv100-1-2p50-en_b_td



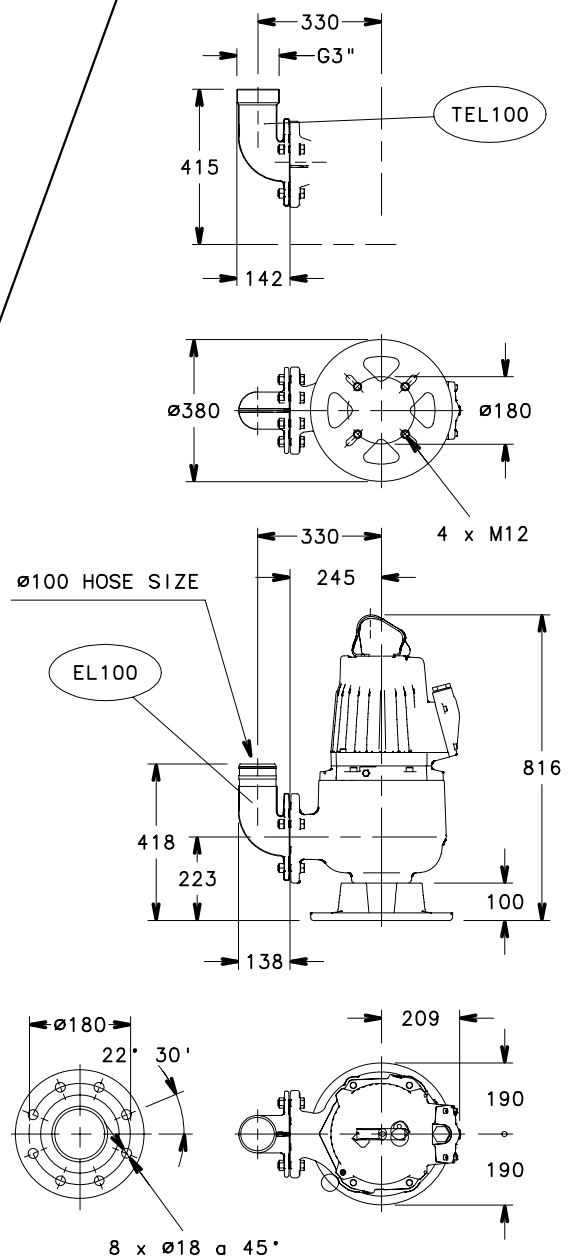
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GLV 100 SERIES (DN100) DIMENSIONS AND WEIGHTS



PUMP TYPE	WEIGHT kg
GLV 100-45-253	125
GLV 100-59-253	125

glv100-2-2p50-en_b_td



04192_B_DD

Submersible Electric Pumps

MARKET SECTORS

RESIDENTIAL AND COMMERCIAL BUILDINGS, INDUSTRIES.

APPLICATIONS

- Handling of sewage, liquids, wastewater and industrial sludge, draining of flooded excavations and marshy ground.

DLG Series



SPECIFICATIONS

- **Delivery:** up to 15 m³/h.
- **Head:** up to 52 m.
- Maximum liquid **temperature:** 40 °C.
- Maximum immersion depth: 20 m.
- **Passes solids** up to 6 mm. in diameter.
- DN 50.
- Motor with IP68 **protection** and class H insulation (180°C).
- **Power supply:** 230V single-phase, 400V three-phase, 50 Hz.
- **Motor power:** up to 5,1 kW.
- Maximum number of starts per hour: 20.

- Oversized motor bearings.
- 10-metre power supply cable with neoprene sheath (H07RN-F).
- Control panel for the single-phase versions without motor thermal protection.

OPTIONAL FEATURES

- Moisture sensor in oil chamber (see electric data table).
- Motor thermal protection (see electric data table).

CONSTRUCTION CHARACTERISTICS

- Sturdy cast iron construction.
- Open **impeller** with grinder assembly.
- Integrated stand.
- Double seal: Silicon Carbide / Silicon Carbide seal on pump side, Ceramic / Carbon on motor side, with interposed oil chamber.
- Adjustable volute bottom cover to compensate for impeller wear and ensure stable long-lasting hydraulic performances.

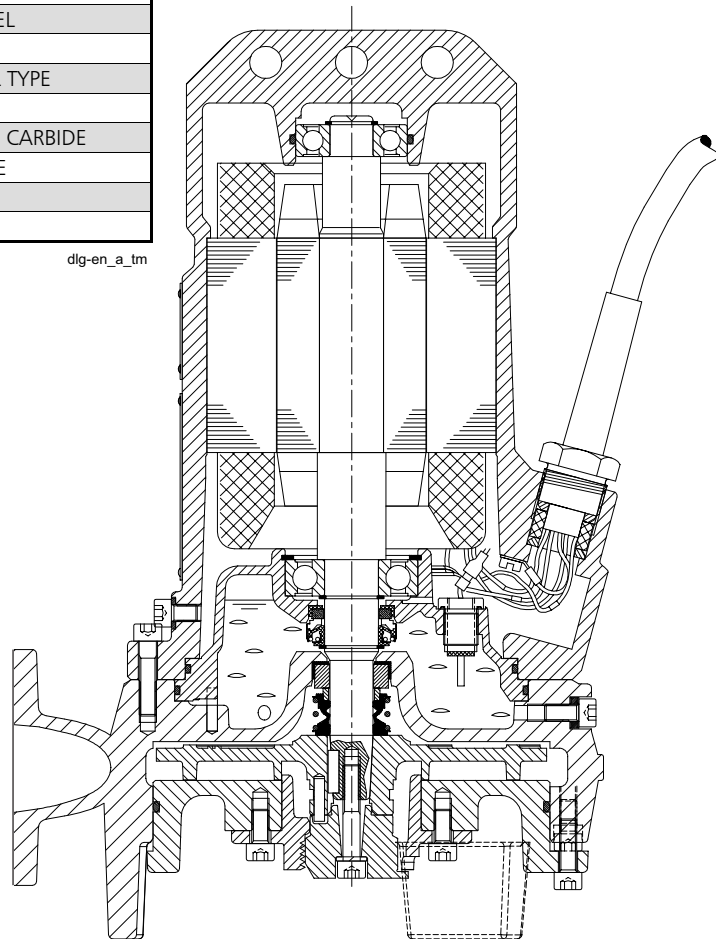
ACCESSORIES / INSTALLATION

- Lowering device.
- 90° delivery connection with hose connector.
- Threaded 90° delivery connection.
- Threaded flange for delivery port.
- Metal sheath for protection of electrical cable (up to 15 kW).
- Ball check valve.
- Wastewater level regulators
- Command and control panels.
- Lifting chains.

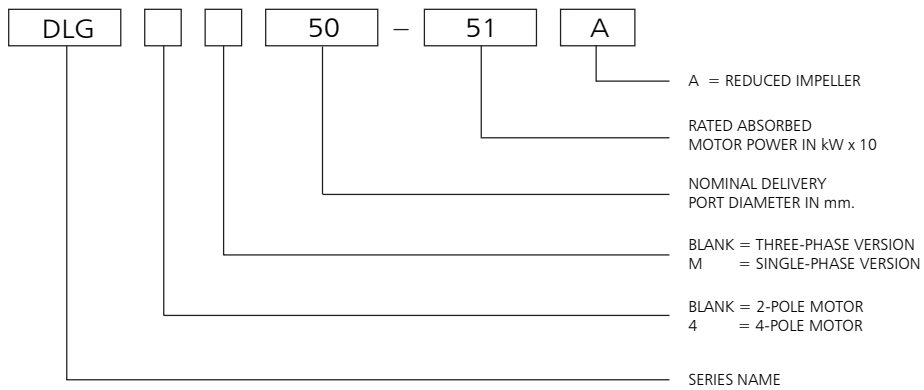
DLG SERIES PUMP SECTION AND TABLE OF MATERIALS

PART	MATERIAL
Motor casing	GREY IRON
Seal oil chamber	
Pump body	
Impeller	SPHEROIDAL GRAPHITE CAST IRON
Grinder	HARDENED STAINLESS STEEL
Shaft	431 STAINLESS STEEL
Bearings	LIFETIME LUBRICATED BALL TYPE
Motor-side seal	CERAMIC / CARBON
Pump-side seal	SILICON CARBIDE / SILICON CARBIDE
Gaskets	NITRILE RUBBER; NEOPRENE
Bolts and screws	304 STAINLESS STEEL
Power cord	NEOPRENE

dlg-en_a_tm



IDENTIFICATION CODE



EXAMPLE : DLG 50-51 A
DLG series electric pump, 2-pole version, three-phase, 50 mm nominal delivery port, 5,1 kW rated absorbed motor power, A reduced impeller.

DLG SERIES ELECTRICAL DATA TABLE AT 50 Hz

PUMP TYPE	min ⁻¹	Pgr (P1) kW *	(P2) Nom kW ***	VOLTAGE / PHASES	CURRENT			START	ELECTRICAL CABLE TYPE	CAPACITOR 450V RUN / START μF	STATOR THERMAL PROTECT. **	WATER SENSOR IN OIL CHAMBER **
					NOMINAL I _n (A)	INRUSH I _{sp} (A)	ABSORBED I _{abs} (A)					
DLGM 50-15 A	2900	1,2	1,1	230V/1	8,5	-	6,9	-	4G1.5	35/60	✓	✓
DLGM 50-15	2900	1,7	1,1	230V/1	8,5	-	8,5	-	4G1.5	35/60	✓	✓
DLGM 50-21 A	2900	2	1,4	230V/1	10,7	-	9,8	-	4G1.5	35/60	✓	✓
DLGM 50-21	2900	2,3	1,4	230V/1	10,7	-	10,7	-	4G1.5	35/60	✓	✓
DLG 50-15 A	2900	1,1	1,1	400V/3	2,5	17,3	2,4	DOL	4G1.5	-	✓	✓
DLG 50-15	2900	1,5	1,1	400V/3	2,5	17,3	2,5	DOL	4G1.5	-	✓	✓
DLG 50-21 A	2900	1,8	1,5	400V/3	3,4	16,6	2,9	DOL	4G1.5	-	✓	✓
DLG 50-21	2900	2,1	1,5	400V/3	3,4	16,6	3,4	DOL	4G1.5	-	✓	✓
DLG 50-28	2900	2,6	2,2	400V/3	4,5	24	4,5	DOL	4G1.5	-	✓	✓
DLG 50-35 A	2900	3	2,6	400V/3	5,6	25,6	4,8	DOL	4G1.5	-	✓	✓
DLG 50-35	2900	3,5	2,6	400V/3	5,6	25,6	5,6	DOL	4G1.5	-	✓	✓
DLG 50-51 A	2900	4,1	4	400V/3	8,5	53	6,9	YD	7G1.5	-	✓	✓
DLG 50-51	2900	4,7	4	400V/3	8,5	53	8,5	YD	7G1.5	-	✓	✓
DLG4M 50-09	1450	0,95	0,65	230V/1	4,3	-	4,3	-	4G1.5	20/40	✓	✓
DLG4 50-09	1450	0,95	0,65	400V/3	1,7	6,4	1,7	DOL	4G1.5	-	✓	✓

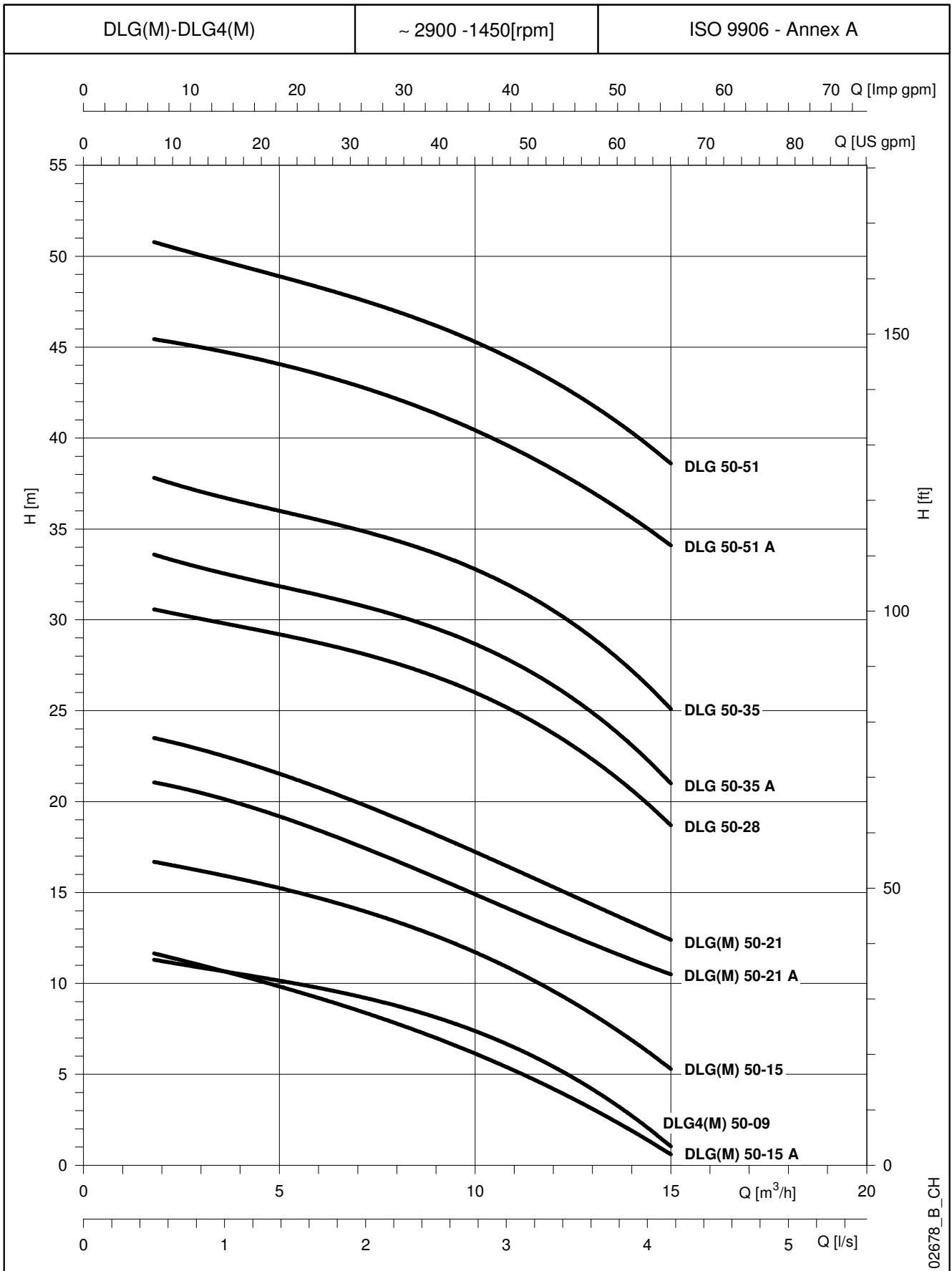
* Maximum value of absorbed motor power within the operating range.

DLG-en_C_te

** ✓ Option available on request.

*** P2 = Rated shaft power.

**DLG - DLG4 SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES**



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

DLG SERIES HYDRAULIC PERFORMANCE TABLE AT 50 Hz

PUMP TYPE	Pgr (P1) kW *	(P2) Nom kW **	D Impeller mm		Q = DELIVERY																Passes solids up to (mm)	
					∕s 0	0,28	0,50	0,55	0,83	1,12	1,38	1,67	1,95	2,22	2,50	2,78	3,05	3,33	3,62	3,88		4,17
					m ³ /h 0	1	1,8	2	3	4	5	6	7	8,0	9	10	11	12	13	14		15
					H = TOTAL HEAD METRES COLUMN OF WATER																	
DLGM 50-15 A	1,1	1,1	101	2900	12,6		11,7	11,6	11,0	10,4	9,8	9,2	8,5	7,8	7,0	6,1	5,2	4,2	3,1	1,9	0,6	6
DLGM 50-15	1,5	1,1	114	2900	17,4		16,7	16,6	16,2	15,7	15,3	14,7	14,1	13,4	12,6	11,7	10,7	9,6	8,3	6,9	5,3	6
DLGM 50-21 A	1,9	1,4	123	2900	21,6		21,1	21,0	20,5	19,9	19,2	18,4	17,6	16,7	15,8	14,9	14,0	13,1	12,1	11,3	10,5	6
DLGM 50-21	2,1	1,4	130	2900	24,2		23,5	23,4	22,9	22,2	21,5	20,8	19,9	19,1	18,2	17,2	16,3	15,3	14,3	13,4	12,4	6
DLG 50-15 A	1,1	1,1	101	2900	12,6		11,7	11,6	11,0	10,4	9,8	9,2	8,5	7,8	7,0	6,1	5,2	4,2	3,1	1,9	0,6	6
DLG 50-15	1,5	1,1	114	2900	17,4		16,7	16,6	16,2	15,7	15,3	14,7	14,1	13,4	12,6	11,7	10,7	9,6	8,3	6,9	5,3	6
DLG 50-21 A	1,8	1,5	123	2900	21,6		21,1	21,0	20,5	19,9	19,2	18,4	17,6	16,7	15,8	14,9	14,0	13,1	12,1	11,3	10,5	6
DLG 50-21	2,1	1,5	130	2900	24,2		23,5	23,4	22,9	22,2	21,5	20,8	19,9	19,1	18,2	17,2	16,3	15,3	14,3	13,4	12,4	6
DLG 50-28	2,6	2,2	146	2900	31,5		30,6	30,5	30,0	29,6	29,2	28,7	28,2	27,6	26,9	26,0	25,0	23,8	22,3	20,7	18,7	6
DLG 50-35 A	3	2,6	156	2900	35,0		33,6	33,5	32,9	32,3	31,9	31,4	30,8	30,2	29,5	28,6	27,7	26,4	24,9	23,1	21,0	6
DLG 50-35	3,5	2,6	160	2900	39,3		37,8	37,7	37,1	36,5	36,0	35,5	34,9	34,4	33,6	32,8	31,8	30,5	29,0	27,3	25,1	6
DLG 50-51 A	4,1	4	176	2900	46,0		45,4	45,4	45,0	44,6	44,1	43,5	42,9	42,2	41,3	40,4	39,4	38,3	37,0	35,7	34,1	6
DLG 50-51	4,7	4	182	2900	52,0		50,8	50,7	50,1	49,5	48,9	48,3	47,7	47,0	46,2	45,3	44,3	43,1	41,8	40,3	38,6	6
DLG4M 50-09	0,95	0,65	182	1450	12,1		11,3	11,2	10,9	10,5	10,2	9,8	9,3	8,8	8,1	7,4	6,5	5,4	4,2	2,8	1,0	6
DLG4 50-09	0,95	0,65	180	1450	12,1		11,3	11,2	10,9	10,5	10,2	9,8	9,3	8,8	8,1	7,4	6,5	5,4	4,2	2,8	1,0	6

Performances according to ISO Standard 9906 –Annex A.

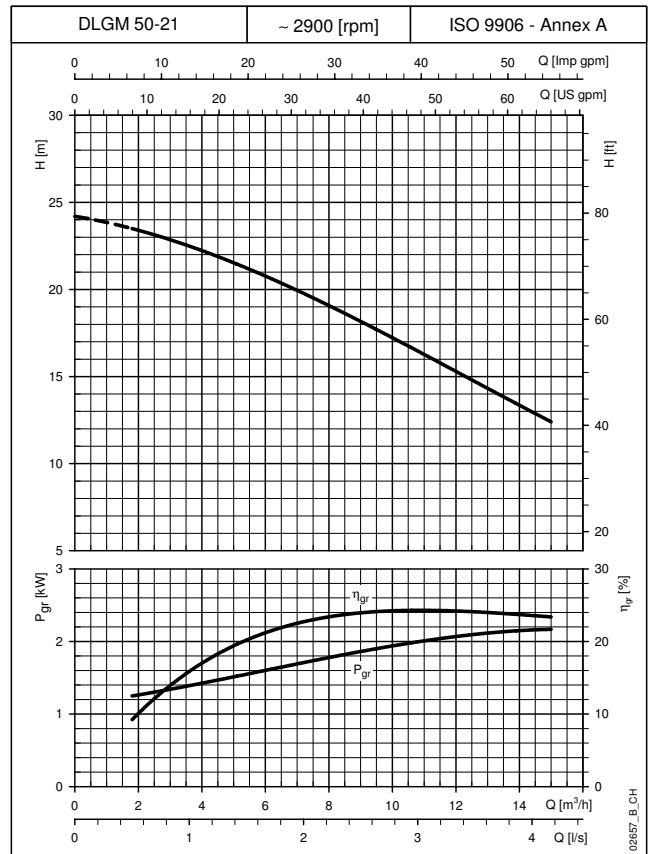
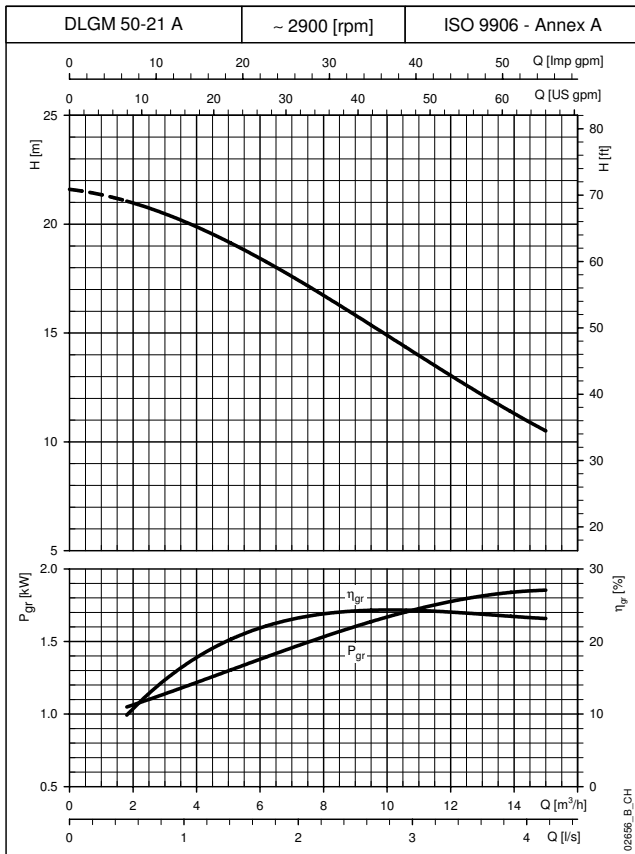
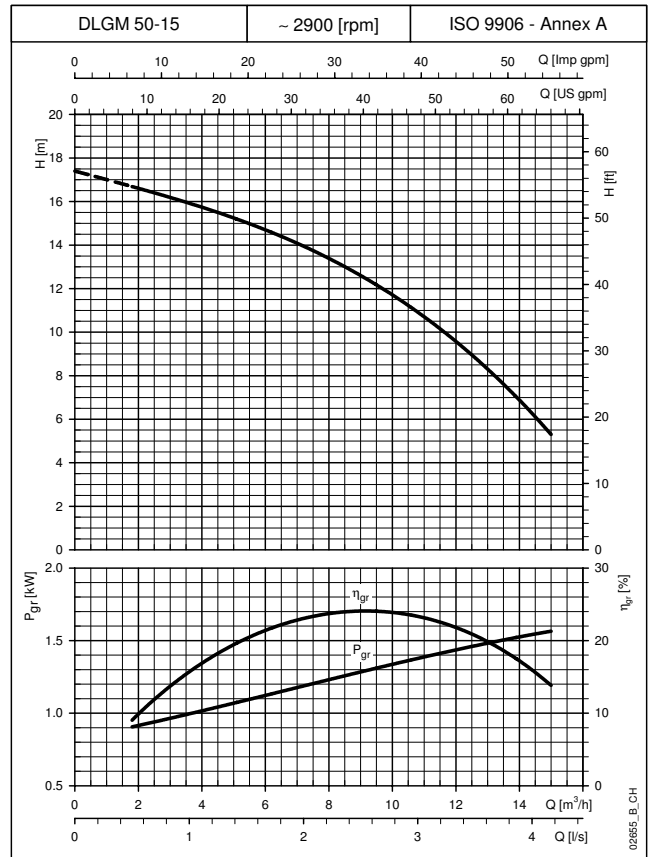
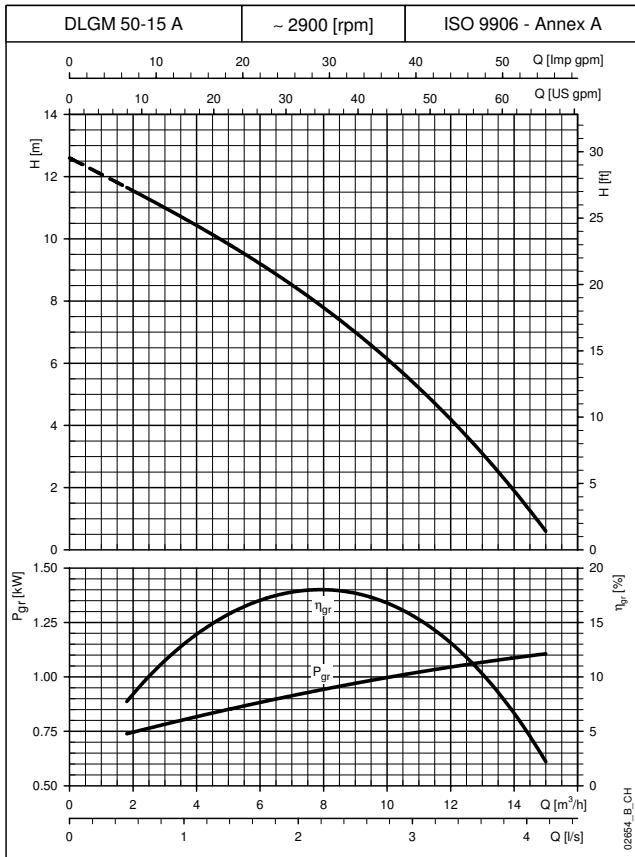
dlg_50_c_th

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

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

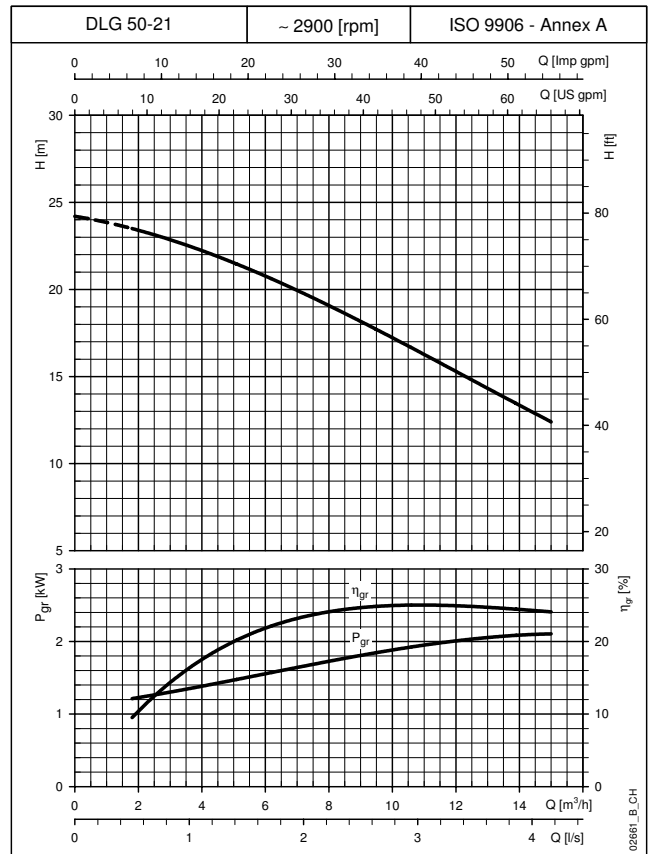
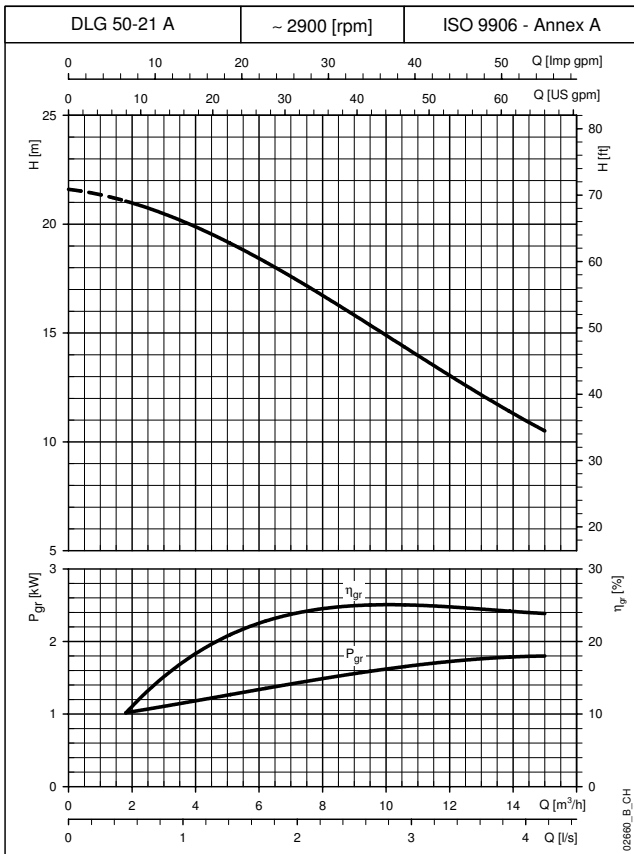
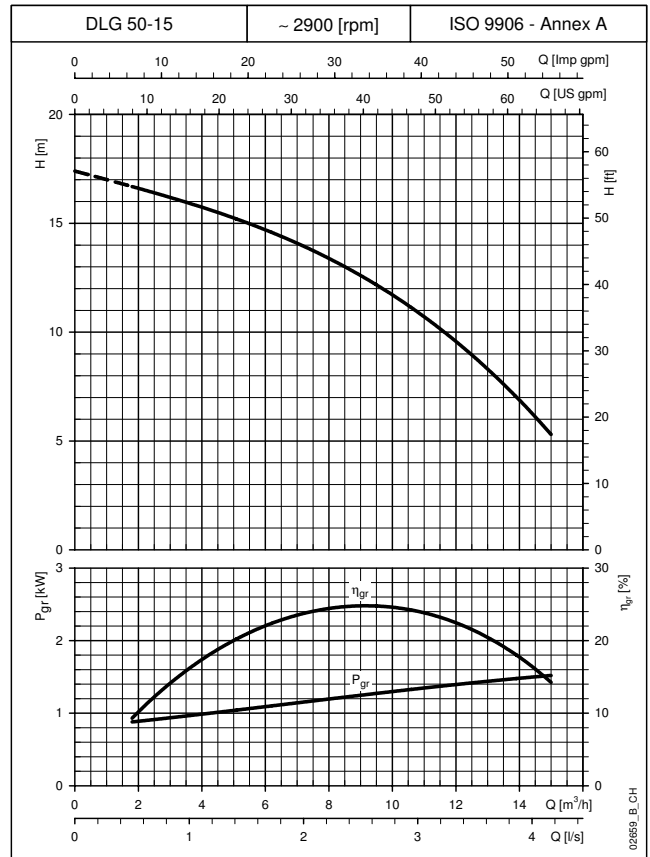
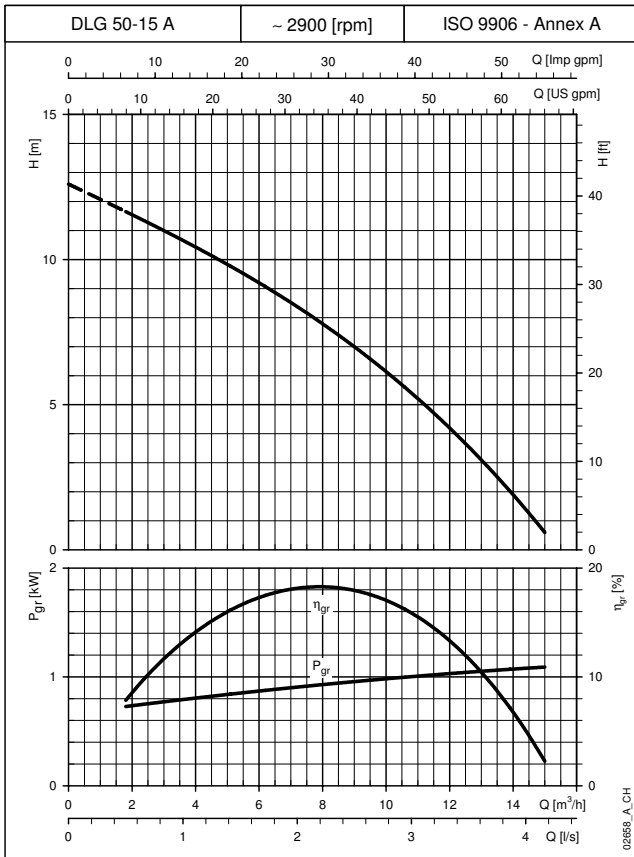
** P2 = Rated shaft power.

DLG SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



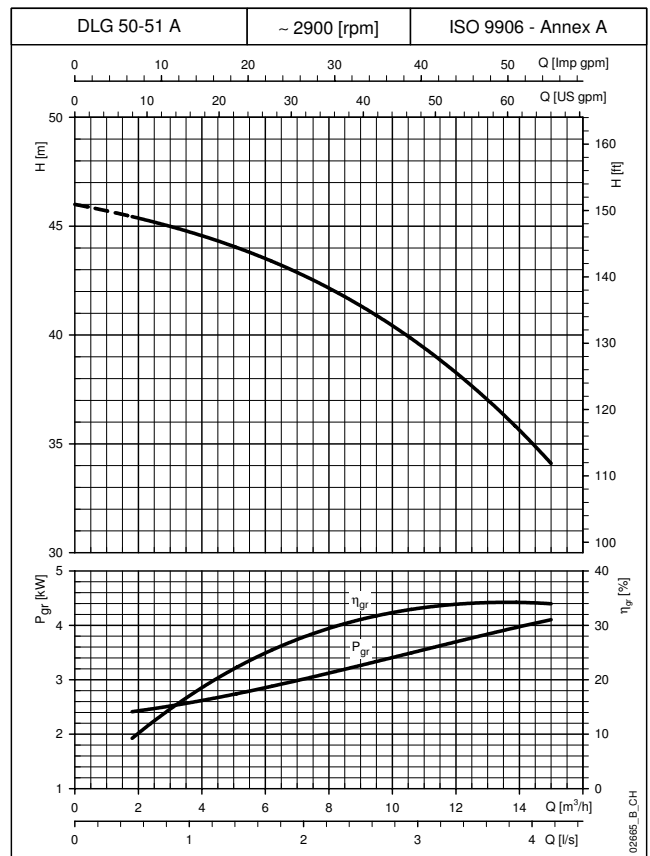
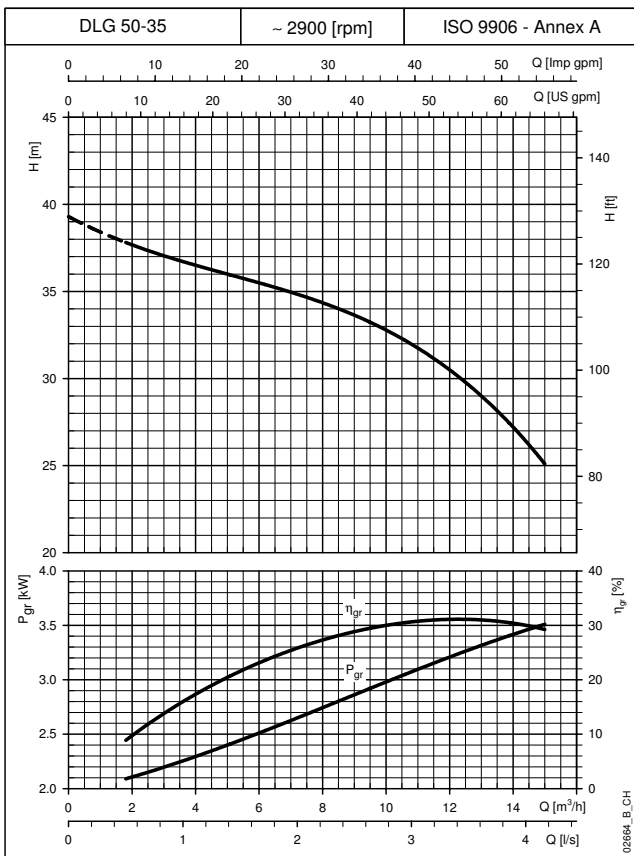
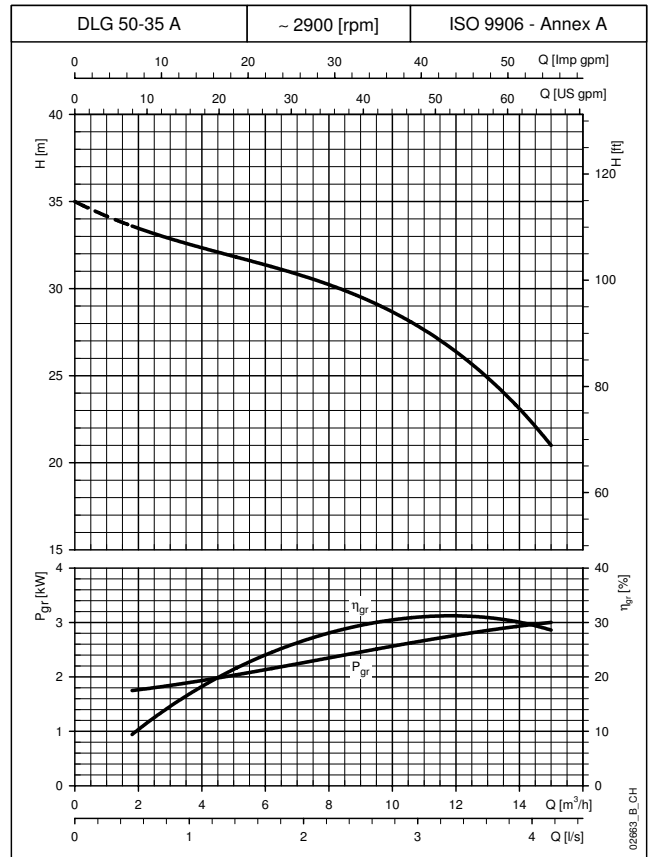
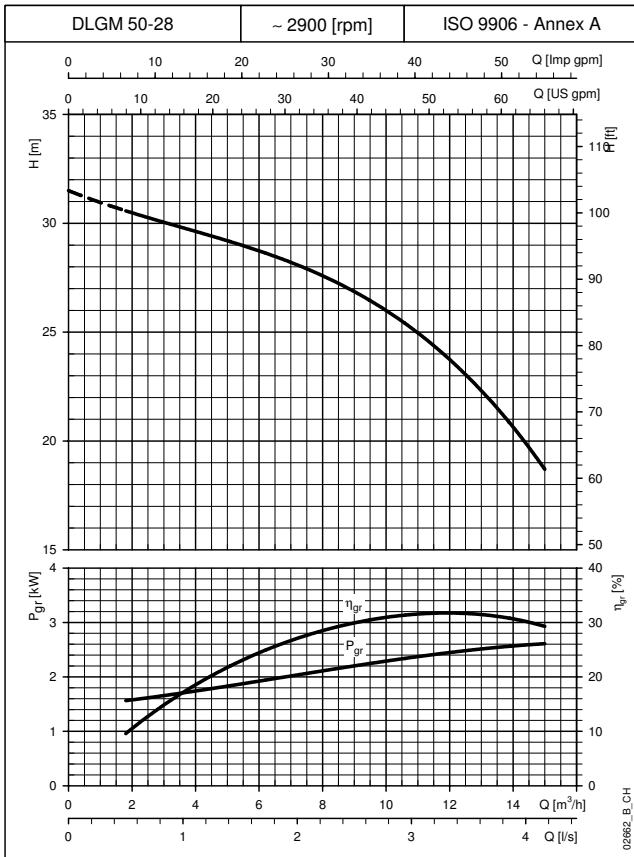
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

DLG SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



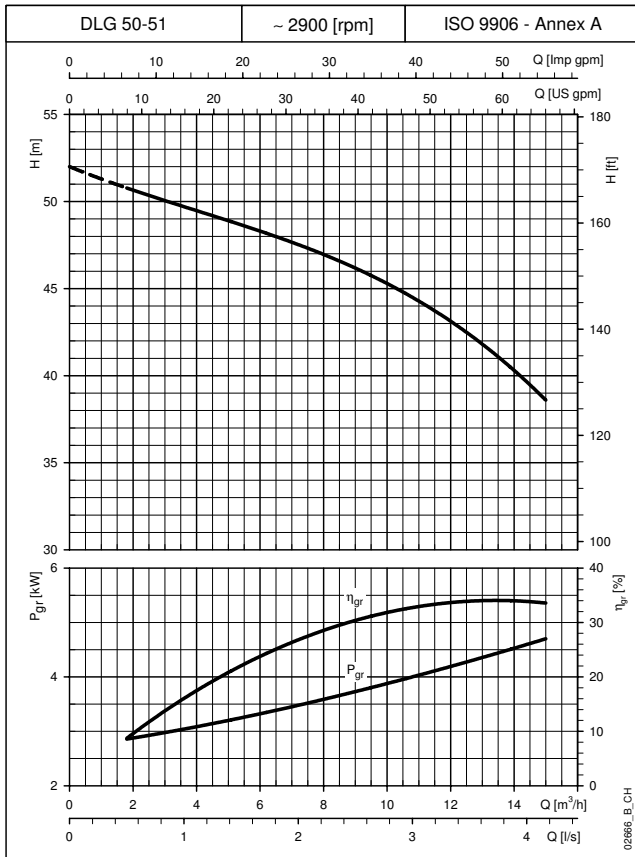
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

DLG SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



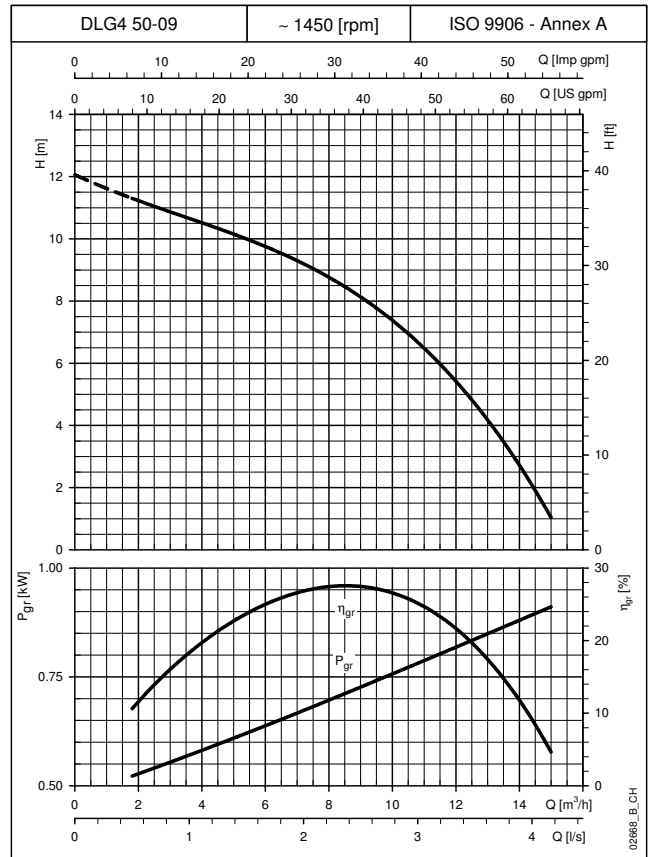
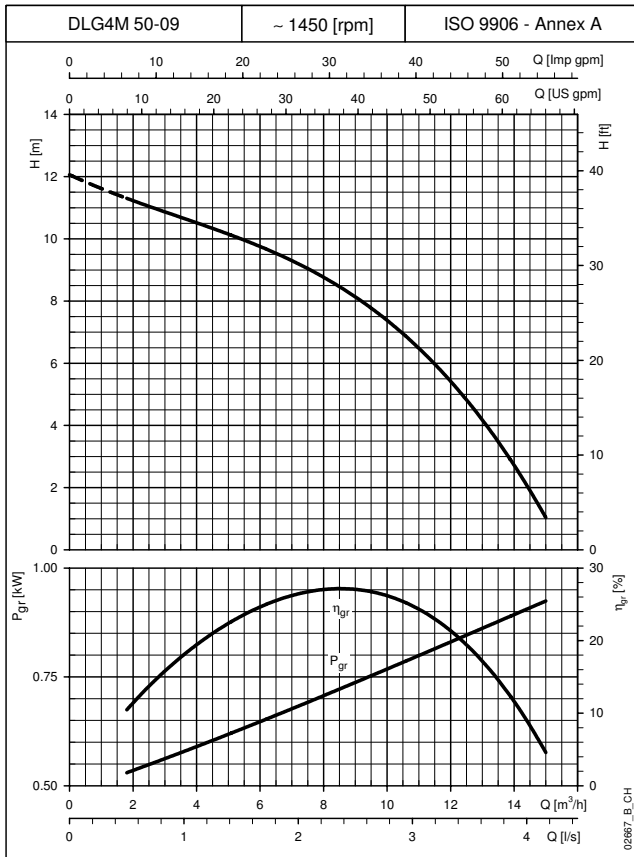
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**DLG SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



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

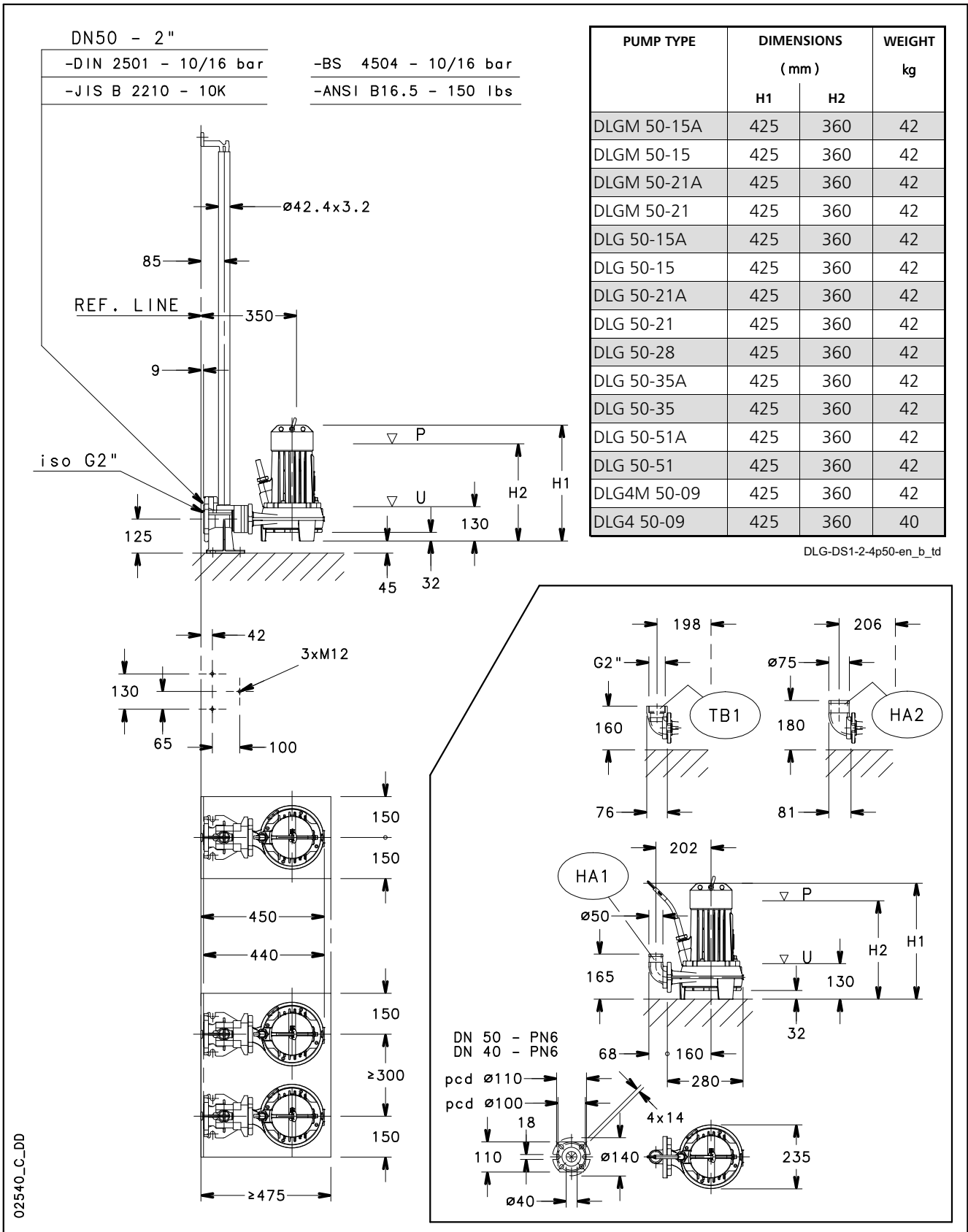
DLG4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



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

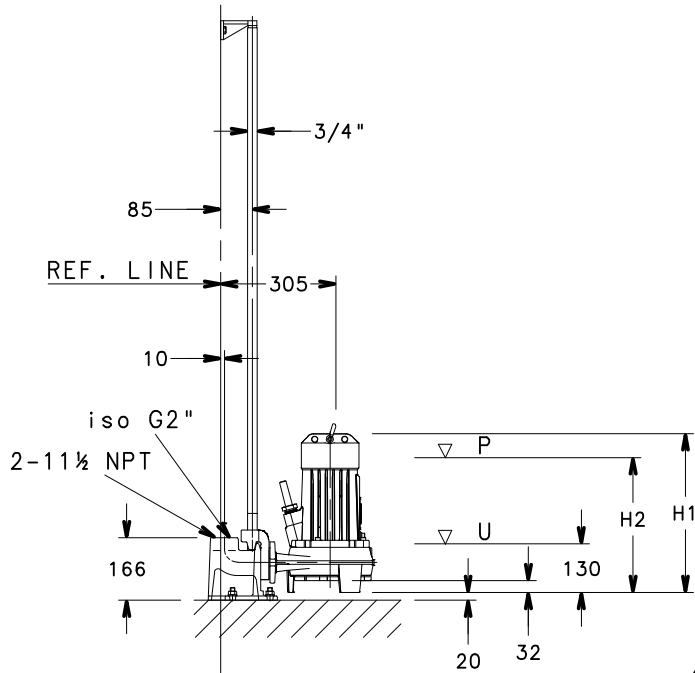
DLG SERIES DIMENSIONS AND WEIGHTS

DLG 50 SERIES (DN50) DS1 DIMENSIONS AND WEIGHTS



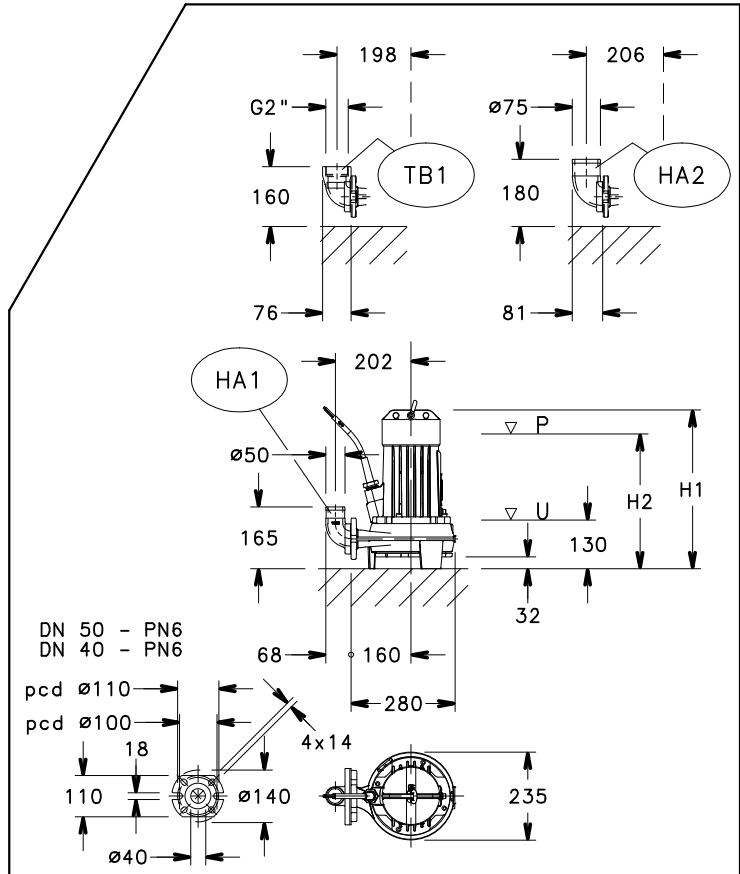
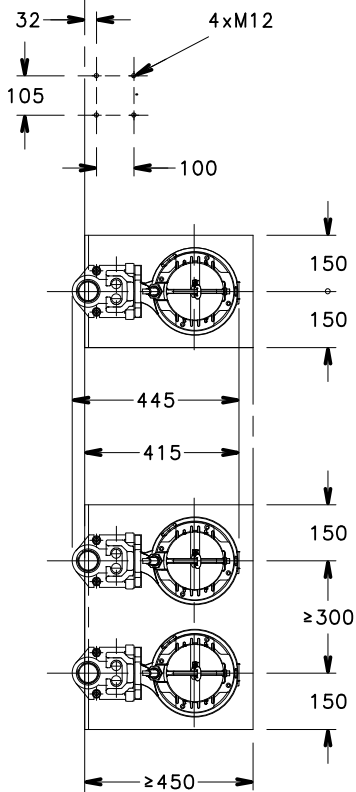
P = Minimum liquid level for continuous operation.
 U = Minimum operating level to prevent air entrance into pump.

DLG 50 SERIES (DN50) DS2A DIMENSIONS AND WEIGHTS



PUMP TYPE	DIMENSIONS (mm)		WEIGHT kg
	H1	H2	
DLGM 50-15A	425	360	42
DLGM 50-15	425	360	42
DLGM 50-21A	425	360	42
DLGM 50-21	425	360	42
DLG 50-15A	425	360	42
DLG 50-15	425	360	42
DLG 50-21A	425	360	42
DLG 50-21	425	360	42
DLG 50-28	425	360	42
DLG 50-35A	425	360	42
DLG 50-35	425	360	42
DLG 50-51A	425	360	42
DLG 50-51	425	360	42
DLG4M 50-09	425	360	42
DLG4 50-09	425	360	40

DLG-DS2-2-4p50-en_b_td



02542_C_DD

P = Minimum liquid level for continuous operation.
U = Minimum operating level to prevent air entrance into pump.

ACCESSORIES

Electrical panels	59
Combination table - Control panels	69
Accessories	72
Installation example	75

Electrical panel for drainage pumps

QDRM Series single-phase



APPLICATIONS

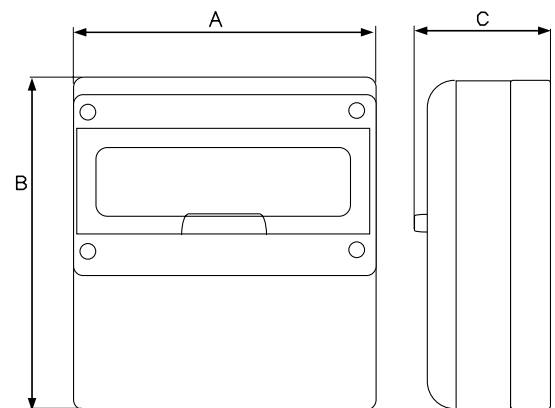
- Protection and control of one single-phase drainage pump.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,25 to 2,2 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 and high level alarm indicator LED's.
- Alarm silencing button.

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.
- VR1 single-phase module (for QDRM) for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
QDRM/02	1 x 230 V \pm 10 %	0,25	0,33	1 \div 1,6	280	220	160	2,2
QDRM/03	1 x 230 V \pm 10 %	0,37	0,5	1,6 \div 2,5	280	220	160	2,2
QDRM/05	1 x 230 V \pm 10 %	0,55	0,75	2,5 \div 4	280	220	160	2,2
QDRM/07	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	280	220	160	2,2
QDRM/15	1 x 230 V \pm 10 %	1,1 \div 1,5	1,5 \div 2	6,3 \div 10	280	220	160	2,2
QDRM/22	1 x 230 V \pm 10 %	2,2	3	10 \div 16	280	370	160	4,1

CB-QDRM-en_c_te

Electrical panel for drainage pumps

QDRMC Series single-phase



APPLICATIONS

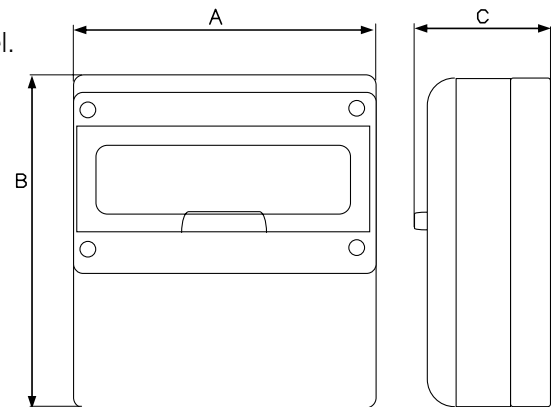
- Protection and control of one single-phase drainage pump with external capacitor.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,75 to 2,2 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, thermal probe (versions /TS and /WD) and water in oil chamber (version /WD) indicator LED's.
- Alarm silencing button.
- Start and run capacitor incorporated in the control panel.
- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.
- /TS/GL versions for electropumps GLS/GLV 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.
- VR1 single-phase module (for QDRM) for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	C uF	Cs uF
		kW	HP		A mm	B mm	C mm			
QDRMC/07	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	280	370	160	3,1	20	40
QDRMC/15	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	280	370	160	3,1	35	60
QDRMC/22	1 x 230 V \pm 10 %	2,2	3	10 \div 16	280	370	160	3,1	35	60
QDRMC/07/TS	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	280	370	160	3,5	20	40
QDRMC/15/TS	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	280	370	160	3,5	35	60
QDRMC/22/TS	1 x 230 V \pm 10 %	2,2	3	10 \div 16	280	370	160	3,5	35	60
QDRMC/07/WD	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	280	370	160	4	20	40
QDRMC/15/WD	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	280	370	160	4	35	60
QDRMC/22/WD	1 x 230 V \pm 10 %	2,2	3	10 \div 16	280	370	160	4	35	60
QDRMC/15/TS/GL	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	280	370	160	4	35	100

C= Run capacitor; Cs= Start capacitor

CB-QDRMC-en_e_te

Electrical panel for drainage pumps

QDRM2 Series single-phase



APPLICATIONS

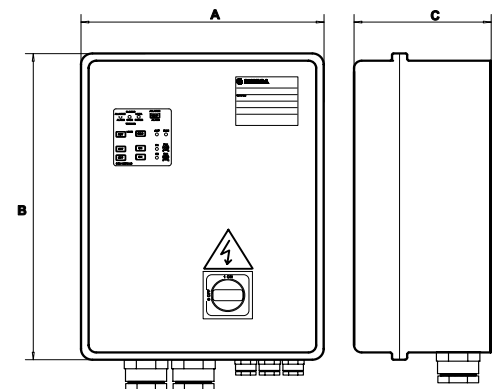
- Protection and control of two single-phase drainage pumps.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,25 to 2,2 kW.
- Direct motor start.
- Protection class: IP54.
- 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.
- Metal enclosure.
- Electronic board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Alarm silencing button.

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.
 - VR1 single-phase module for overvoltage protection (lightning protector).
 - Signal relay board kit (power, auto/man, start/stop, thermal overload, high level).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
QDRM2/02	1 x 230 V \pm 10 %	0,25	0,33	1 \div 1,6	260	380	150	9,4
QDRM2/03	1 x 230 V \pm 10 %	0,37	0,5	1,6 \div 2,5	260	380	150	9,4
QDRM2/05	1 x 230 V \pm 10 %	0,55	0,75	2,5 \div 4	260	380	150	9,4
QDRM2/07	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	260	380	150	9,4
QDRM2/15	1 x 230 V \pm 10 %	1,1 \div 1,5	1,5 \div 2	6,3 \div 10	260	380	150	9,4
QDRM2/22	1 x 230 V \pm 10 %	2,2	3	10 \div 16	260	380	150	9,4

CB-QDRM2-en_a_te

Electrical panel for drainage pumps

QDRMC2 Series single-phase



APPLICATIONS

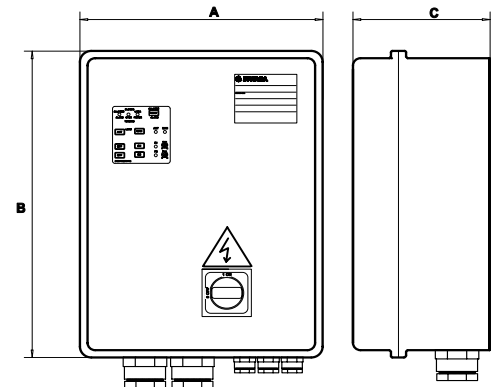
- Protection and control of two single-phase drainage pumps with external capacitor.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 1 x 230 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,75 to 2,2 kW.
- Direct motor start.
- Protection class: IP54.
- 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 board with power, thermal overload, high level alarm, pump start/stop indicator LEDs.
- Start and run capacitor incorporated in the control panel.
- /TS version equipped with stator thermal protection circuit.
- /WD version equipped with oil chamber water sensor control circuit and stator thermal protection.
- /TS/GL versions for electropumps GLS/GLV 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.
 - VR1 single-phase module for overvoltage protection (lightning protector).
 - Signal relay board kit (power, auto/man, start/stop, thermal overload, high level).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	C uF	Cs uF
		kW	HP		A	B	C			
QDRMC2/07	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	390	470	130	8,5	20	40
QDRMC2/15	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	390	470	130	8,5	35	60
QDRMC2/22	1 x 230 V \pm 10 %	2,2	3	10 \div 16	390	470	130	8,5	35	60
QDRMC2/07/TS	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	390	470	130	9	20	40
QDRMC2/15/TS	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	390	470	130	9	35	60
QDRMC2/22/TS	1 x 230 V \pm 10 %	2,2	3	10 \div 16	390	470	130	9	35	60
QDRMC2/07/WD	1 x 230 V \pm 10 %	0,75	1	4 \div 6,3	390	470	130	10	20	40
QDRMC2/15/WD	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	390	470	130	10	35	60
QDRMC2/22/WD	1 x 230 V \pm 10 %	2,2	3	10 \div 16	390	470	130	10	35	60
QDRMC2/15/TS/GL	1 x 230 V \pm 10 %	1,5	2	6,3 \div 10	390	470	130	10	35	100

C = Run capacitor; Cs = Start capacitor.

CB-QDRMC2-en_d_te

Electrical panel for drainage pumps

QDR Series three-phase



APPLICATIONS

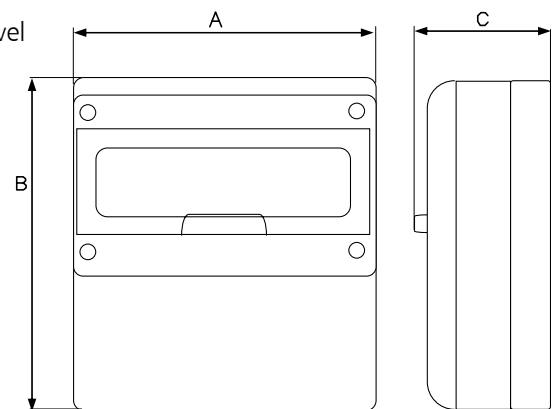
- Protection and control of one three-phase drainage pump.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,37 to 9,2 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.
- Power, thermal overload, high level indicator lights.
- 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.
- VR3 three-phase module (for QDR) for overvoltage protection (lightning protector).



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

The /WD option also includes the /TS option.

CB-QDR-en_c_te

Electrical panel for drainage pumps

QYR Series three-phase



APPLICATIONS

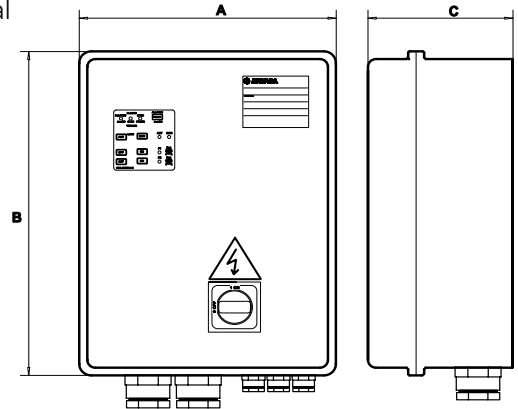
- Protection and control of one three-phase drainage pump with star-delta start.

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 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- 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.
 - VR3 three-phase module (for QDR) for overvoltage protection (lightning protector).
 - Signal relay board kit (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 mm	B mm	C mm	
QYR/40	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	400	500	200	25
QYR/75	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	400	500	200	25
QYR/92	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	400	500	200	25
QYR/110	3 x 400 V ± 10 %	11	15	20 ÷ 25	400	500	200	25
QYR/150	3 x 400 V ± 10 %	15	20	22 ÷ 32	400	600	200	27
QYR/185	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	400	600	200	27
QYR/220	3 x 400 V ± 10 %	22	30	36 ÷ 50	500	700	200	32
QYR/300	3 x 400 V ± 10 %	30	40	45 ÷ 63	500	700	200	32
QYR/370	3 x 400 V ± 10 %	37	50	57 ÷ 75	600	800	250	32
QYR/450	3 x 400 V ± 10 %	45	60	70 ÷ 90	600	800	250	32
QYR/550	3 x 400 V ± 10 %	55	75	80 ÷ 108	600	900	250	37
QYR/750	3 x 400 V ± 10 %	75	100	105 ÷ 138	600p	1300p	300p	70
QYR/22/TS	3 x 400 V ± 10 %	2,2	3	4 ÷ 6,3	400	500	200	25
QYR/40/TS	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	400	500	200	26
QYR/75/TS	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	400	500	200	26
QYR/92/TS	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	400	500	200	26
QYR/110/TS	3 x 400 V ± 10 %	11	15	20 ÷ 25	400	500	200	26
QYR/150/TS	3 x 400 V ± 10 %	15	20	22 ÷ 32	400	600	200	27
QYR/185/TS	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	400	600	200	27
QYR/220/TS	3 x 400 V ± 10 %	22	30	36 ÷ 50	500	700	200	32
QYR/300/TS	3 x 400 V ± 10 %	30	40	45 ÷ 63	500	700	200	32
QYR/370/TS	3 x 400 V ± 10 %	37	50	57 ÷ 75	600	800	250	33
QYR/450/TS	3 x 400 V ± 10 %	45	60	70 ÷ 90	600	800	250	33
QYR/550/TS	3 x 400 V ± 10 %	55	75	80 ÷ 108	600	900	250	37
QYR/750/TS	3 x 400 V ± 10 %	75	100	105 ÷ 138	600p	1300p	300p	70
QYR/40/WD	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	400	500	200	26
QYR/75/WD	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	400	500	200	26
QYR/92/WD	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	400	500	200	26
QYR/110/WD	3 x 400 V ± 10 %	11	15	20 ÷ 25	400	500	200	26
QYR/150/WD	3 x 400 V ± 10 %	15	20	22 ÷ 32	400	600	200	28
QYR/185/WD	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	400	600	200	28
QYR/220/WD	3 x 400 V ± 10 %	22	30	36 ÷ 50	500	700	200	33
QYR/300/WD	3 x 400 V ± 10 %	30	40	45 ÷ 63	500	700	200	33
QYR/370/WD	3 x 400 V ± 10 %	37	50	57 ÷ 75	600	800	250	33
QYR/450/WD	3 x 400 V ± 10 %	45	60	70 ÷ 90	600	800	250	33
QYR/550/WD	3 x 400 V ± 10 %	55	75	80 ÷ 108	600	900	250	38
QYR/750/WD	3 x 400 V ± 10 %	75	100	105 ÷ 138	600p	1300p	300p	71

Dimensions: p = floor-standing cabinet.

CB-QYR-en_e_te

Electrical panel for drainage pumps

QYR2 Series three-phase



APPLICATIONS

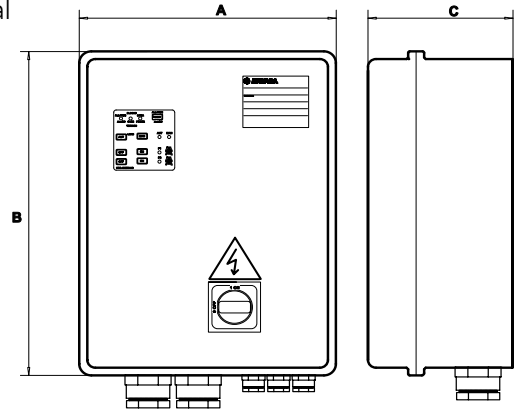
- Protection and control of two three-phase drainage pumps with star-delta start.

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 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- 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.
 - VR3 three-phase module for overvoltage protection (lightning protector).
 - Signal relay board kit (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 mm	B mm	C mm	
QYR2/40	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	500	700	200	55
QYR2/75	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	500	700	200	55
QYR2/92	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	500	700	200	55
QYR2/110	3 x 400 V ± 10 %	11	15	20 ÷ 25	500	700	200	55
QYR2/150	3 x 400 V ± 10 %	15	20	22 ÷ 32	600	800	250	68
QYR2/185	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	600	800	250	68
QYR2/220	3 x 400 V ± 10 %	22	30	36 ÷ 50	600	900	250	75
QYR2/300	3 x 400 V ± 10 %	30	40	45 ÷ 63	600	900	250	75
QYR2/370	3 x 400 V ± 10 %	37	50	57 ÷ 75	600p	1300p	300p	92
QYR2/450	3 x 400 V ± 10 %	45	60	70 ÷ 90	800p	1700p	300p	125
QYR2/550	3 x 400 V ± 10 %	55	75	80 ÷ 108	800p	1700p	300p	125
QYR2/750	3 x 400 V ± 10 %	75	100	105 ÷ 138	800p	1900p	300p	148
QYR2/22/TS	3 x 400 V ± 10 %	2,2	3	4 ÷ 6,3	500	700	200	55
QYR2/40/TS	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	500	700	200	55
QYR2/75/TS	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	500	700	200	55
QYR2/92/TS	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	500	700	200	55
QYR2/110/TS	3 x 400 V ± 10 %	11	15	20 ÷ 25	500	700	200	55
QYR2/150/TS	3 x 400 V ± 10 %	15	20	22 ÷ 32	600	800	250	68
QYR2/185/TS	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	600	800	250	68
QYR2/220/TS	3 x 400 V ± 10 %	22	30	36 ÷ 50	600	900	250	75
QYR2/300/TS	3 x 400 V ± 10 %	30	40	45 ÷ 63	600	900	250	75
QYR2/370/TS	3 x 400 V ± 10 %	37	50	57 ÷ 75	600p	1300p	300p	92
QYR2/450/TS	3 x 400 V ± 10 %	45	60	70 ÷ 90	800p	1700p	300p	125
QYR2/550/TS	3 x 400 V ± 10 %	55	75	80 ÷ 108	800p	1700p	300p	125
QYR2/750/TS	3 x 400 V ± 10 %	75	100	105 ÷ 138	800p	1900p	300p	148
QYR2/40/WD	3 x 400 V ± 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	500	700	200	55
QYR2/75/WD	3 x 400 V ± 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	500	700	200	55
QYR2/92/WD	3 x 400 V ± 10 %	9,2	12,5	16 ÷ 20	500	700	200	55
QYR2/110/WD	3 x 400 V ± 10 %	11	15	20 ÷ 25	500	700	200	55
QYR2/150/WD	3 x 400 V ± 10 %	15	20	22 ÷ 32	600	800	250	68
QYR2/185/WD	3 x 400 V ± 10 %	18,5	25	28 ÷ 40	600	800	250	68
QYR2/220/WD	3 x 400 V ± 10 %	22	30	36 ÷ 50	600	900	250	75
QYR2/300/WD	3 x 400 V ± 10 %	30	40	45 ÷ 63	600	900	250	75
QYR2/370/WD	3 x 400 V ± 10 %	37	50	57 ÷ 75	600p	1300p	300p	92
QYR2/450/WD	3 x 400 V ± 10 %	45	60	70 ÷ 90	800p	1700p	300p	125
QYR2/550/WD	3 x 400 V ± 10 %	55	75	80 ÷ 108	800p	1700p	300p	125
QYR2/750/WD	3 x 400 V ± 10 %	75	100	105 ÷ 138	800p	1900p	300p	148

Dimensions: p = floor-standing cabinet.

CB-QYR2-en_b_te

Electrical panel for drainage pumps

QDR2 Series three-phase



APPLICATIONS

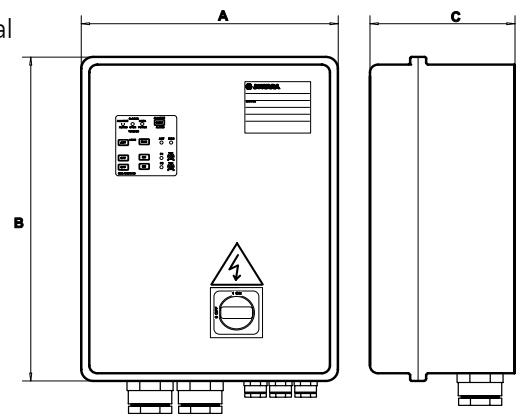
- Protection and control of two three-phase drainage pumps.

SPECIFICATIONS

- Automatic control through electromechanical floats.
- Power supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,37 to 9,2 kW.
- Direct motor start.
- Protection class: IP54.
- 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.
- 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.
 - VR3 three-phase module for overvoltage protection (lightning protector).
 - Signal relay board kit (power, auto/man, start/stop, thermal overload, high level).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
QDR2/03	3 x 400 V \pm 10 %	0,37	0,5	0,63 ÷ 1	260	380	150	9,4
QDR2/05	3 x 400 V \pm 10 %	0,55	0,75	1 ÷ 1,6	260	380	150	9,4
QDR2/07	3 x 400 V \pm 10 %	0,75	1	1,6 ÷ 2,5	260	380	150	9,4
QDR2/15	3 x 400 V \pm 10 %	1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4	260	380	150	9,4
QDR2/22	3 x 400 V \pm 10 %	2,2	3	4 ÷ 6,3	260	380	150	9,4
QDR2/40	3 x 400 V \pm 10 %	3 ÷ 4	4 ÷ 5,5	6,3 ÷ 10	260	380	150	9,4
QDR2/75	3 x 400 V \pm 10 %	5,5 ÷ 7,5	7,5 ÷ 10	10 ÷ 16	260	380	150	9,4
QDR2/92	3 x 400 V \pm 10 %	9,2	12,5	16 ÷ 20	300	400	180	11
QDR2/07/TS	3 x 400 V \pm 10 %	0,75	1	1,6 ÷ 2,5	400	400	200	14
QDR2/15/TS	3 x 400 V \pm 10 %	1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4	400	400	200	14
QDR2/22/TS	3 x 400 V \pm 10 %	2,2	3	4 ÷ 6,3	400	400	200	14
QDR2/07/WD	3 x 400 V \pm 10 %	0,75	1	1,6 ÷ 2,5	400	500	200	18
QDR2/15/WD	3 x 400 V \pm 10 %	1,1 ÷ 1,5	1,5 ÷ 2	2,5 ÷ 4	400	500	200	18
QDR2/22/WD	3 x 400 V \pm 10 %	2,2	3	4 ÷ 6,3	400	500	200	18

The /WD option also includes the /TS option.

CB-QDR2-en_b_te

GLS SERIES CONTROL PANELS - COMBINATION TABLE

TYPE ELECTRIC PUMP	STANDARD VERSION		PANEL RATED CURRENT (A)
	1 PUMP	2 PUMPS	
GLS 50-15-251-S	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLS 50-15-251-P	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLS 50-16-253-S	QDR/15/TS	QDR2/15/TS	2,5-4A
GLS 50-16-253-P	QDR/15/TS	QDR2/15/TS	2,5-4A
GLS 50-20-253-S	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 50-20-253-P	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 50-24-253-S	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 50-24-253-P	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 65-15-251	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLS 65-16-253	QDR/15/TS	QDR2/15/TS	2,5-4A
GLS 65-20-253	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 65-24-253	QDR/22/TS	QDR2/22/TS	4-6,3A
GLS 65-32-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 65-42-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 80-32-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 80-42-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 80-59-253	QYR/75/TS	QYR2/75/TS	10-16A
GLS 80-74-253	QYR/75/TS	QYR2/75/TS	10-16A
GLS 100-24-453	QYR/22/TS	QYR2/22/TS	4-6,3A
GLS 100-31-453	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 100-45-453	QYR/40/TS	QYR2/40/TS	6,3-10A
GLS 100-59-453	QYR/75/TS	QYR2/75/TS	10-16A

GLS-en_A_TQ

GLV SERIES CONTROL PANELS - COMBINATION TABLE

TYPE ELECTRIC PUMP	STANDARD VERSION		PANEL RATED CURRENT (A)
	1 PUMP	2 PUMPS	
GLV 50-12-251-S	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLV 50-12-251-P	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLV 50-15-251-S	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLV 50-15-251-P	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLV 50-16-253-S	QDR/15/TS	QDR2/15/TS	2,5-4A
GLV 50-16-253-P	QDR/15/TS	QDR2/15/TS	2,5-4A
GLV 50-20-253-S	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 50-20-253-P	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 50-24-253-S	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 50-24-253-P	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 65-15-251	QDRMC/15/TS/GL	QDRMC2/15/TS/GL	6,3-10A
GLV 65-16-253	QDR/15/TS	QDR2/15/TS	2,5-4A
GLV 65-20-253	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 65-24-253	QDR/22/TS	QDR2/22/TS	4-6,3A
GLV 65-32-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 65-42-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 80-32-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 80-42-253	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 80-59-253	QYR/75/TS	QYR2/75/TS	10-16A
GLV 80-74-253	QYR/75/TS	QYR2/75/TS	10-16A
GLV 100-24-453	QYR/22/TS	QYR2/22/TS	4-6,3A
GLV 100-31-453	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 100-45-453	QYR/40/TS	QYR2/40/TS	6,3-10A
GLV 100-59-453	QYR/75/TS	QYR2/75/TS	10-16A

GLV-en_B_TQ

DLG SERIES CONTROL PANELS - COMBINATION TABLE

TYPE ELECTRIC PUMP	STANDARD VERSION		/TS VERSION		/WD VERSION		PANEL RATED CURRENT (A)
	1 PUMP	2 PUMPS	1 PUMP	2 PUMPS	1 PUMP	2 PUMPS	
DLGM 50-15 A	-	QDRMC2/15	QDRMC/15/TS	QDRMC2/15/TS	QDRMC/15/WD	QDRMC2/15/WD	6,3-10A
DLGM 50-15	-	QDRMC2/15	QDRMC/15/TS	QDRMC2/15/TS	QDRMC/15/WD	QDRMC2/15/WD	6,3-10A
DLGM 50-21 A	-	QDRMC2/22	QDRMC/22/TS	QDRMC2/22/TS	QDRMC/22/WD	QDRMC2/22/WD	10-16A
DLGM 50-21	-	QDRMC2/22	QDRMC/22/TS	QDRMC2/22/TS	QDRMC/22/WD	QDRMC2/22/WD	10-16A
DLG 50-15 A	QDR/15	QDR2/15	QDR/15/TS	QDR2/15/TS	QDR/15/WD	QDR2/15/WD	2,5-4A
DLG 50-15	QDR/15	QDR2/15	QDR/15/TS	QDR2/15/TS	QDR/15/WD	QDR2/15/WD	2,5-4A
DLG 50-21 A	QDR/15	QDR2/15	QDR/15/TS	QDR2/15/TS	QDR/15/WD	QDR2/15/WD	2,5-4A
DLG 50-21	QDR/15	QDR2/15	QDR/15/TS	QDR2/15/TS	QDR/15/WD	QDR2/15/WD	2,5-4A
DLG 50-28	QDR/22	QDR2/22	QDR/22/TS	QDR2/22/TS	QDR/22/WD	QDR2/22/WD	4-6,3A
DLG 50-35 A	QDR/22	QDR2/22	QDR/22/TS	QDR2/22/TS	QDR/22/WD	QDR2/22/WD	4-6,3A
DLG 50-35	QDR/22	QDR2/22	QDR/22/TS	QDR2/22/TS	QDR/22/WD	QDR2/22/WD	4-6,3A
DLG 50-51 A	QYR/40	QYR2/40	QYR/40/TS	QYR2/40/TS	QYR/40/WD	QYR2/40/WD	6,3-10A
DLG 50-51	QYR/40	QYR2/40	QYR/40/TS	QYR2/40/TS	QYR/40/WD	QYR2/40/WD	6,3-10A
DLG4M 50-09	-	QDRMC2/07	QDRMC/07/TS	QDRMC2/07/TS	QDRMC/07/WD	QDRMC2/07/WD	4- 6,3A
DLG4 50-09	QDR/07	QDR2/07	QDR/07/TS	QDR2/07/TS	QDR/07/WD	QDR2/07/WD	1,6-2,5A

Single-phase DLG pumps come with control panel. For two-pump applications use pump version without panel.

DLG-en_D_TQ

GLS SERIES ACCESSORIES

ELECTRIC PUMP TYPE	LOWERING DEVICE				90° DELIVERY CONNECTION WITH HOSE CONNECTOR KIT	THREADED 90° DELIVERY CONNECTION KIT	STAND KIT
	BASEPLATE	UPPER GUIDE RAIL HOLDER	FIXING KIT	GUIDECLAW KIT			
GLS 50-15-251-S	BP50	UG50	FK50	-	-	-	integrated
GLS 50-15-251-P	BP50	UG50	FK50	integrated	-	-	-
GLS 50-16-253-S	BP50	UG50	FK50	-	-	-	integrated
GLS 50-16-253-P	BP50	UG50	FK50	integrated	-	-	-
GLS 50-20-253-S	BP50	UG50	FK50	-	-	-	integrated
GLS 50-20-253-P	BP50	UG50	FK50	integrated	-	-	-
GLS 50-24-253-S	BP50	UG50	FK50	-	-	-	integrated
GLS 50-24-253-P	BP50	UG50	FK50	integrated	-	-	-
GLS 65-15-251	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLS 65-16-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLS 65-20-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLS 65-24-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLS 65-32-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	ST65/80/100
GLS 65-42-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	ST65/80/100
GLS 80-32-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLS 80-42-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLS 80-59-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLS 80-74-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLS 100-24-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLS 100-31-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLS 100-45-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLS 100-59-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
LEGEND							
BP50 = DN50 Baseplate				GC65 = DN65 Guideclaw kit			
BP65 = DN65 Baseplate				GC80 = DN80 Guideclaw kit			
BP80 = DN80 Baseplate				GC100 = DN100 Guideclaw kit			
BP100 = DN100 Baseplate				EL65 = DN65 90° Delivery connection kit (75mm hose connector)			
UG50 = DN50 Upper guide rail holder				EL80 = DN80 90° Delivery connection kit (75mm hose connector)			
UG65/80/100 = DN65/80/100 Upper guide rail holder				EL100 = DN100 90° Delivery connection kit (100mm hose connector)			
FK50 = DN50 Fixing kit				TEL65 = DN65 90° Delivery connection kit (ISO G3" threaded)			
FK65/80/100 = DN65/80/100 Fixing kit				TEL80 = DN80 90° Delivery connection kit (ISO G3" threaded)			
				TEL100 = DN100 90° Delivery connection kit (ISO G4" threaded)			
				ST65/80/100 = DN65/80/100 Stand kit			

GLS-en_C_TA

GLV SERIES ACCESSORIES

ELECTRIC PUMP TYPE	LOWERING DEVICE				90° DELIVERY CONNECTION WITH HOSE CONNECTOR KIT	THREADED 90° DELIVERY CONNECTION KIT	STAND KIT
	BASEPLATE	UPPER GUIDE RAIL HOLDER	FIXING KIT	GUIDECLAW KIT			
GLV 50-12-251-S	BP50	UG50	FK50	-	-	-	integrated
GLV 50-12-251-P	BP50	UG50	FK50	integrated	-	-	-
GLV 50-15-251-S	BP50	UG50	FK50	-	-	-	integrated
GLV 50-15-251-P	BP50	UG50	FK50	integrated	-	-	-
GLV 50-16-253-S	BP50	UG50	FK50	-	-	-	integrated
GLV 50-16-253-P	BP50	UG50	FK50	integrated	-	-	-
GLV 50-20-253-S	BP50	UG50	FK50	-	-	-	integrated
GLV 50-20-253-P	BP50	UG50	FK50	integrated	-	-	-
GLV 50-24-253-S	BP50	UG50	FK50	-	-	-	integrated
GLV 50-24-253-P	BP50	UG50	FK50	integrated	-	-	-
GLV 65-15-251	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLV 65-16-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLV 65-20-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLV 65-24-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	integrated
GLV 65-32-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	ST65/80/100
GLV 65-42-253	BP65	UG65/80/100	FK65/80/100	GC65	EL65	TEL65	ST65/80/100
GLV 80-32-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLV 80-42-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLV 80-59-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLV 80-74-253	BP80	UG65/80/100	FK65/80/100	GC80	EL80	TEL80	ST65/80/100
GLV 100-24-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLV 100-31-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLV 100-45-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
GLV 100-59-453	BP100	UG65/80/100	FK65/80/100	GC100	EL100	TEL100	ST65/80/100
LEGEND							
BP50 = DN50 Baseplate				GC65 = DN65 Guideclaw kit			
BP65 = DN65 Baseplate				GC80 = DN80 Guideclaw kit			
BP80 = DN80 Baseplate				GC100 = DN100 Guideclaw kit			
BP100 = DN100 Baseplate				EL65 = DN65 90° Delivery connection kit (75mm hose connector)			
UG50 = DN50 Upper guide rail holder				EL80 = DN80 90° Delivery connection kit (75mm hose connector)			
UG65/80/100 = DN65/80/100 Upper guide rail holder				EL100 = DN100 90° Delivery connection kit (100mm hose connector)			
FK50 = DN50 Fixing kit				TEL65 = DN65 90° Delivery connection kit (ISO G3" threaded)			
FK65/80/100 = DN65/80/100 Fixing kit				TEL80 = DN80 90° Delivery connection kit (ISO G3" threaded)			
				TEL100 = DN100 90° Delivery connection kit (ISO G4" threaded)			
				ST65/80/100 = DN65/80/100 Stand kit			

GLV-en_C_TA

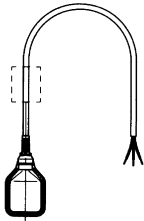
DLG SERIES ACCESSORIES

ELECTRIC PUMP TYPE	LOWERING DEVICE		90° DELIVERY CONNECTION WITH HOSE CONNECTOR KIT		THREADED 90° DELIVERY CONNECTION KIT	THREADED FLANGE FOR DELI- VERY PORT	STAND
	TYPE 1	TYPE 2	TYPE 1	TYPE 2			
DLGM 50-15 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLGM 50-15	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLGM 50-21 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLGM 50-21	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-15 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-15	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-21 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-21	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-28	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-35 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-35	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-51 A	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG 50-51	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG4M 50-09	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
DLG4 50-09	DS1	DS2A	HA1	HA2	TB1	TF3	integrated
LEGEND							
DS1 = DS1 lowering device DN 50-65/C				HA1 = Delivery connection (50mm hose connector)			
DS2A = DS2A lowering device DN 50-65 2R/C				HA2 = Delivery connection (75 mm hose connector)			
TB1 = Threaded 90° delivery connection (2" female threaded)				TF3 = Threaded flange for delivery port (2" female threaded)			

DLG-en_D_TA

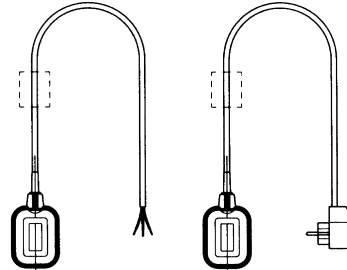
LEVEL REGULATORS

SMALL MODEL
(floating)



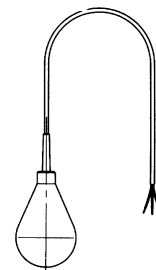
For single function (draining)
cable length 1.5, 5, 10 m.
Counterweight available on request for
version with 5, 10 m cable.

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)



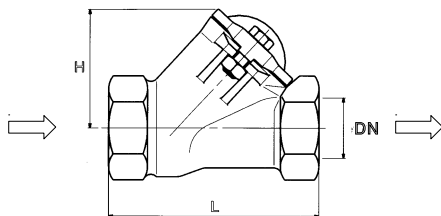
For solids-laden water.
Cable lengths:
10, 13, 15, 20, 30, 50 m. (PVC)

BALL CHECK VALVES FOR WASTEWATER

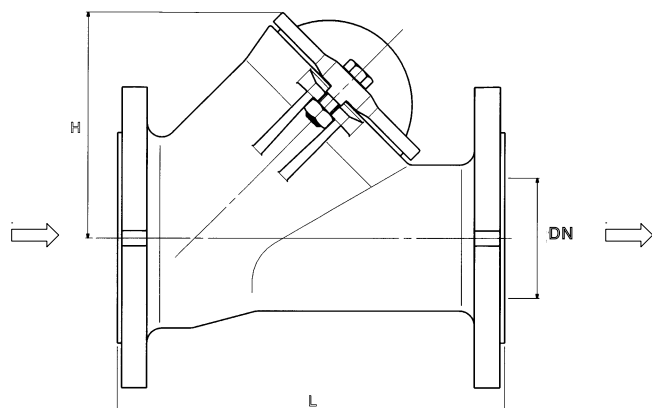
No-clog, maximum reliability, low flow resistance.
Maximum operating pressure: 10 bar.
Maximum temperature: 85°C.
Horizontal or vertical operating position.

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

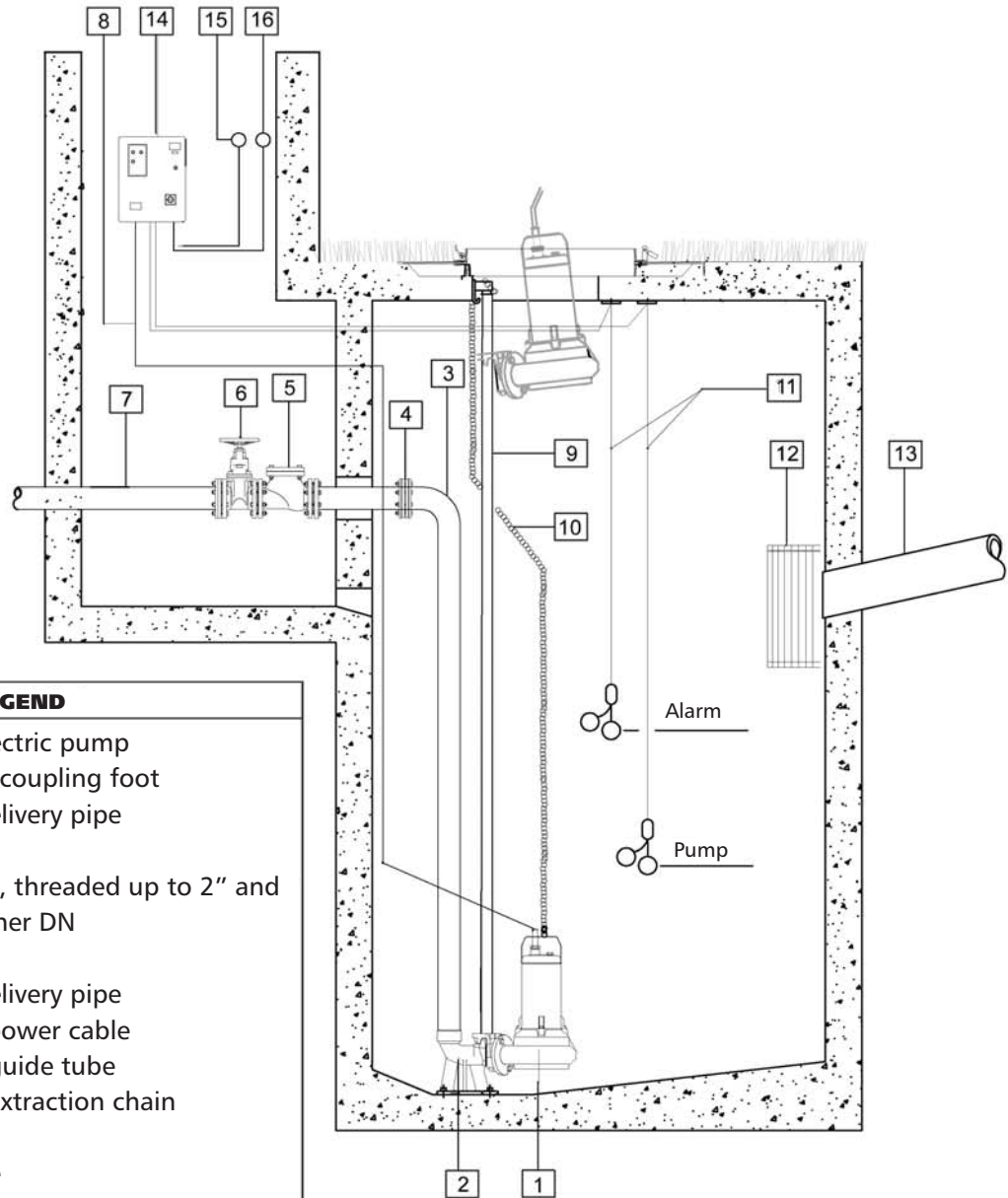


Rp 1 1/4 - 1 1/2 - 2 MODEL

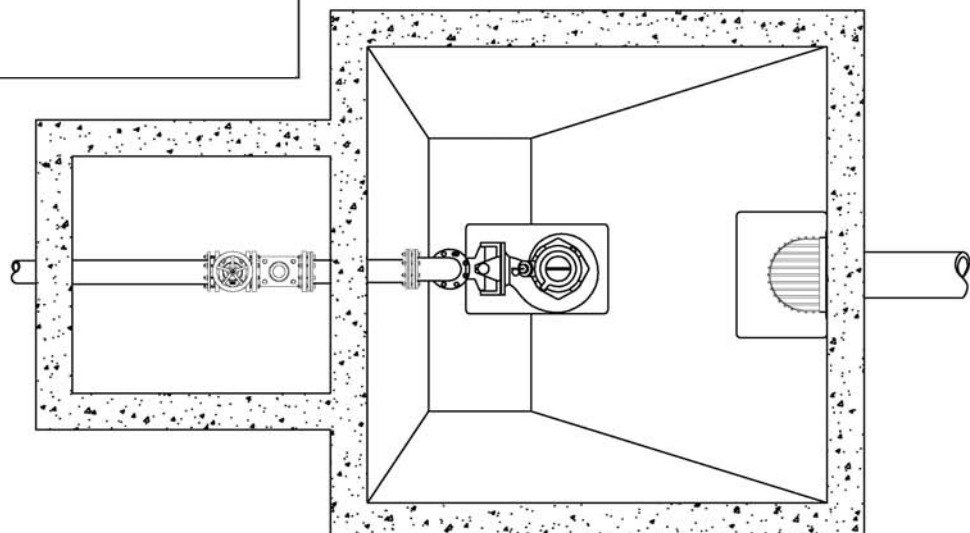


65 - 80 - 100 - 150 - 200 - 250 MODEL

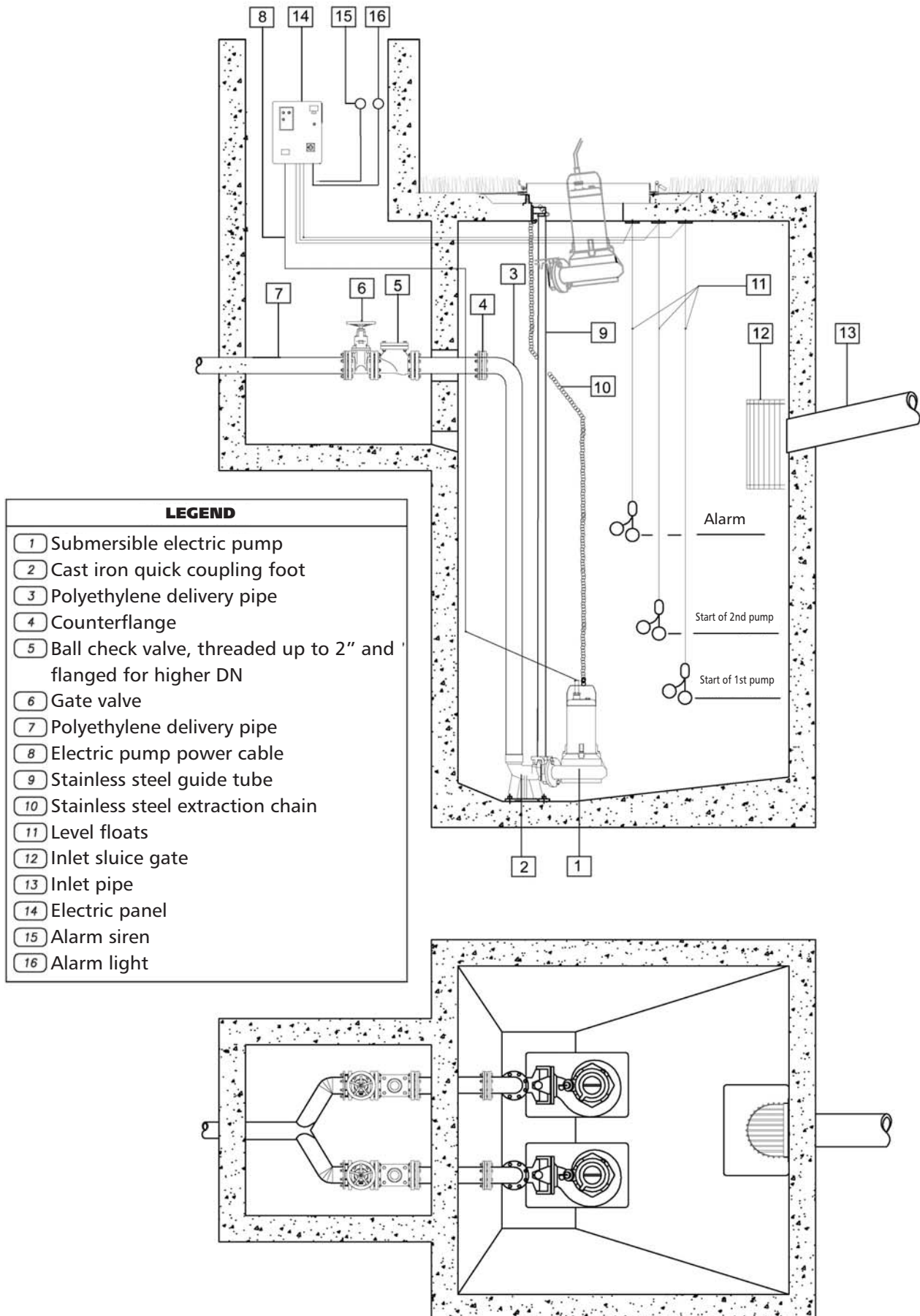
EXAMPLE OF INSTALLATION OF SINGLE-PUMP SYSTEM



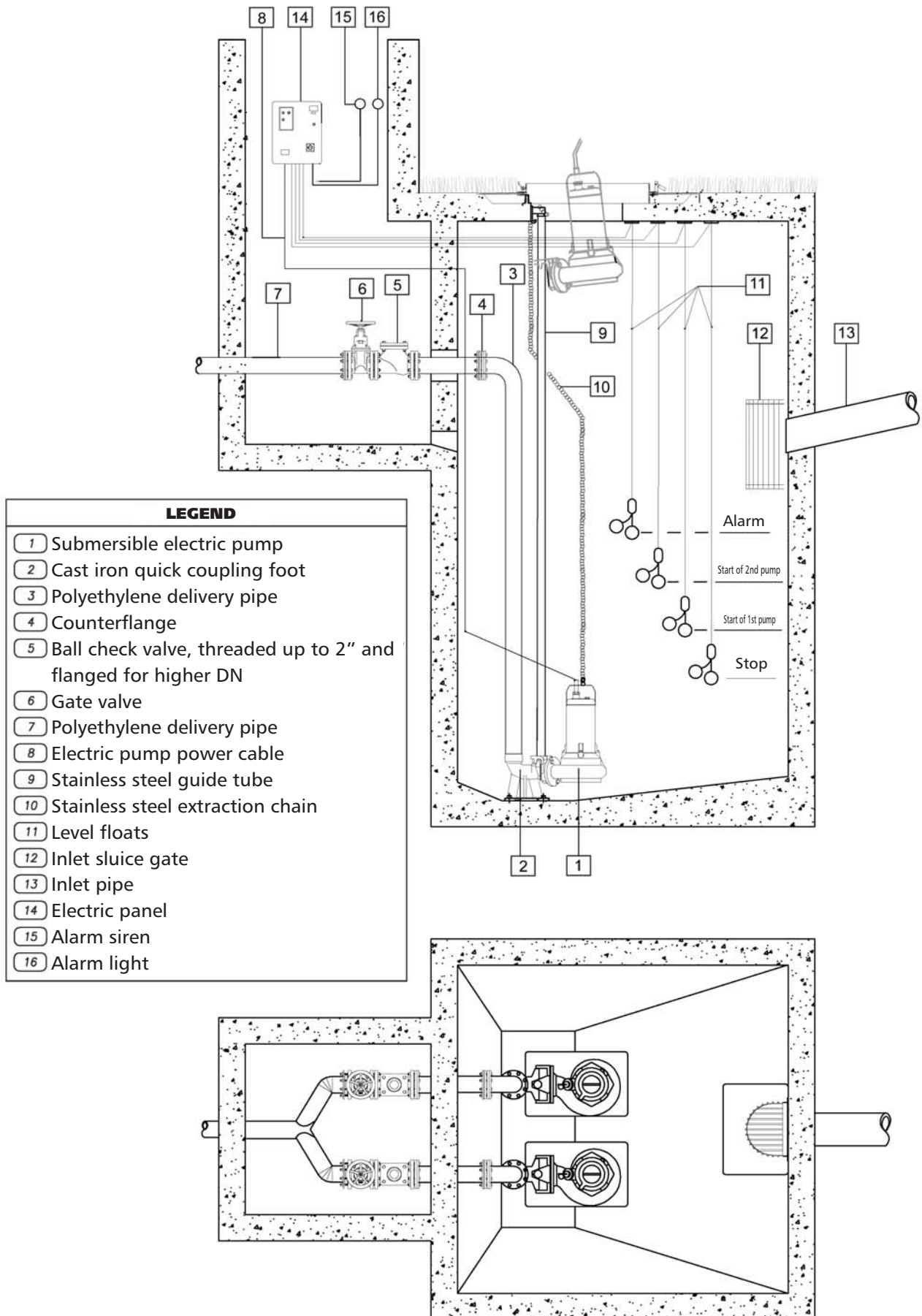
LEGEND	
1	Submersible electric pump
2	Cast iron quick coupling foot
3	Polyethylene delivery pipe
4	Counterflange
5	Ball check valve, threaded up to 2" and flanged for higher DN
6	Gate valve
7	Polyethylene delivery pipe
8	Electric pump power cable
9	Stainless steel guide tube
10	Stainless steel extraction chain
11	Level floats
12	Inlet sluice gate
13	Inlet pipe
14	Electric panel
15	Alarm siren
16	Alarm light



EXAMPLE OF INSTALLATION OF TWO-PUMPS SYSTEM WITH THREE LEVEL REGULATORS



EXAMPLE OF INSTALLATION OF TWO-PUMPS SYSTEM WITH FOUR LEVEL REGULATORS



TECHNICAL APPENDIX

FLOW RESISTANCE

TABLE OF FLOW RESISTANCE IN 100 m OF A NEW AND STRAIGHT CAST IRON PIPELINE



FLOW RATE		NOMINAL DIAMETER IN mm AND INCHES																		
m ³ /h	l/min.	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	175 7"	200 8"	250 10"	300 12"	350 14"	400 16"		
0,6	10	V hr	0,94 11,8	0,53 2,82	0,34 1	0,21 0,25														
0,9	15	V hr	1,42 25,1	0,8 6,04	0,51 2,16	0,31 0,55														
1,2	20	V hr	1,89 43,1	1,06 10,4	0,68 3,72	0,41 0,95	0,27 0,31													
1,5	25	V hr	2,36 64,5	1,33 15,8	0,85 5,68	0,52 1,47	0,33 0,47													
1,8	30	V hr	2,83 92	1,59 22,3	1,02 8	0,62 2,09	0,4 0,66													
2,1	35	V hr	3,3 123	1,86 29,8	1,19 10,8	0,73 2,81	0,46 0,89	0,3 0,31												
2,4	40	V hr	3,77 164	2,12 38,2	1,36 13,8	0,83 2,65	0,53 1,15	0,34 0,4												
3	50	V hr	4,72 246	2,65 58,2	1,7 21,5	1,04 5,6	0,66 1,75	0,42 0,61												
3,6	60	V hr		3,18 82	2,04 30	1,24 8	0,8 2,48	0,51 0,86												
4,2	70	V hr		3,72 110	2,38 40	1,45 10,8	0,93 3,33	0,59 1,14												
4,8	80	V hr		4,25 141	2,72 51,5	1,66 13,9	1,06 4,3	0,68 1,46												
5,4	90	V hr			3,06 64	1,87 17,5	1,19 5,4	0,76 1,82	0,45 0,46											
6	100	V hr			3,4 79	2,07 21,4	1,33 6,6	0,85 2,22	0,5 0,56											
7,5	125	V hr			4,25 120	2,59 33	1,66 10	1,06 3,4	0,63 0,86											
9	150	V hr				3,11 47	1,99 14,2	1,27 4,74	0,75 1,21	0,5 0,43										
10,5	175	V hr				3,63 63	2,32 19	1,49 6,3	0,88 1,63	0,58 0,57										
12	200	V hr				4,15 82	2,65 24,5	1,7 8,1	1,01 2,1	0,66 0,74										
15	250	V hr				5,18 126	3,32 37,5	2,12 12,3	1,26 3,2	0,83 1,12	0,53 0,36									
18	300	V hr				3,98 53	2,55 17,3	1,51 4,5	1 1,58	0,64 0,51										
24	400	V hr				5,31 92	3,4 29,5	2,01 7,8	1,33 2,7	0,85 0,89										
30	500	V hr				6,63 140	4,25 44,8	2,51 12	1,66 4,13	1,06 1,36	0,68 0,48									
36	600	V hr						5,1 63	3,02 16,9	1,99 5,8	1,27 0,68									
42	700	V hr						5,94 84	3,52 22,6	2,32 7,8	1,49 2,6	0,95 0,9								
48	800	V hr						6,79 108	4,02 29	2,65 10	1,70 3,35	1,09 1,16	0,75 0,43							
54	900	V hr						7,64 134	4,52 36	2,99 12,5	1,91 4,2	1,22 1,45	0,85 0,54							
60	1000	V hr						5,03 44,5	3,32 15,2	2,12 5,14	1,36 1,76	0,94 0,66								
75	1250	V hr						6,28 68	4,15 23	2,65 7,9	1,70 2,68	1,18 1	0,87 0,48							
90	1500	V hr						7,54 96	4,98 32,6	3,18 11,2	2,04 3,77	1,42 1,42	1,04 0,68							
105	1750	V hr						8,79 129	5,81 43,5	3,72 15	2,38 5,04	1,65 1,9	1,21 0,91	0,93 0,45						
120	2000	V hr						6,63 56	4,25 19,4	2,72 6,5	1,89 2,43	1,39 1,18	1,06 0,58	0,68 0,16						
150	2500	V hr						8,29 85	5,31 30	3,40 9,8	2,36 3,75	1,73 1,79	1,33 0,89	0,85 0,25						
180	3000	V hr						9,95 120	6,37 42	4,08 13,8	2,83 5,3	2,08 2,53	1,59 1,25	1,02 0,35	0,71 0,15					
300	5000	V hr							10,62 124,9	6,79 41,3	4,72 16,74	3,47 7,81	2,65 4,03	1,70 1,34	1,18 0,54	0,87 0,25	0,66 0,13			
600	10000	V hr								13,59 161	9,44 65	6,93 30,2	5,31 15,6	3,4 5,16	2,36 2,09	1,73 0,97	1,33 0,5	0,85 0,5		
1200	20000	V hr												6,79 20,1	4,72 8,13	3,47 3,8	2,65 3,8	1,70 1,95	1,18 1,95	0,87 2,65
1800	30000	V hr													7,7 18,07	5,2 8,39	4,0 4,32			
3000	50000	V hr													11,8 49,5	8,67 23	6,63 11,8			
4500	75000	V hr													17,7 110,5	13 51,3	9,9 26,4			
6000	100000	V hr														17,33 90,6	13,27 46,6			

THE FLOW RESISTANCE MUST BE MULTIPLIED BY:

- 0.8 for stainless steel pipes
- 1.25 for slightly rusted steel pipes
- 1.7 for pipes with deposits that reduce the flow section
- 0.7 for aluminium pipes
- 1.3 for fibre-cement pipes

Hr = FLOW RESISTANCE (m/100 m OF PIPELINE)
V = WATER SPEED (m/sec)

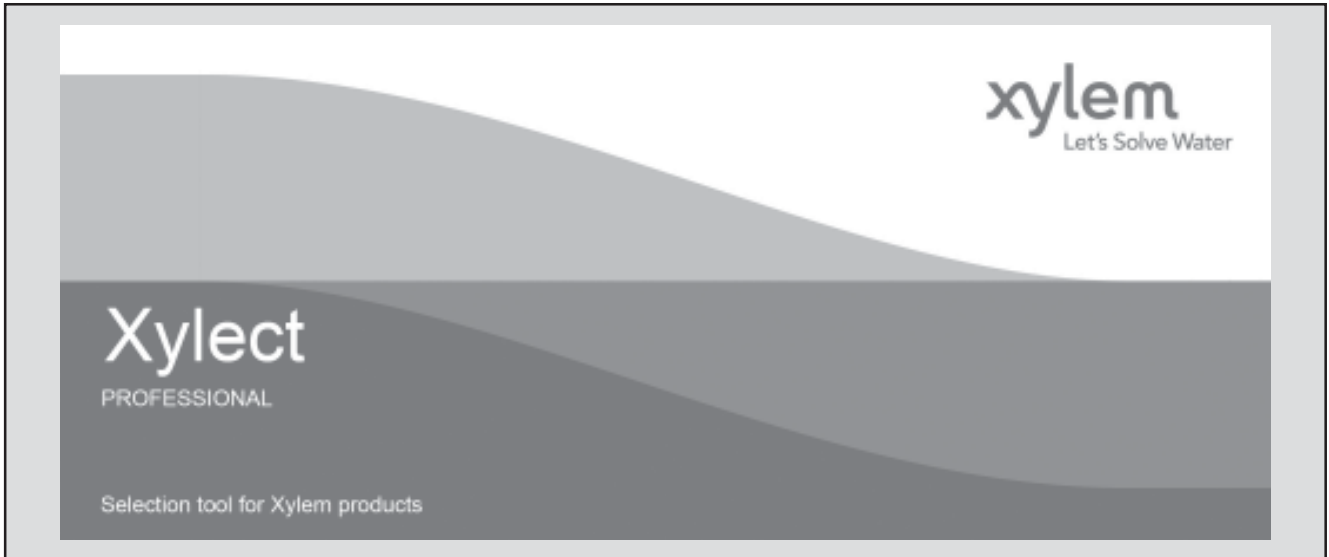
FLOW RESISTANCE IN BENDS, VALVES AND GATES IN cm OF COLUMN OF WATER

WATER SPEED m/ ec	SHARP BENDS 					SMOOTH BENDS 					STANDARD GATE VALVES	FOOT VALVES	CHECK VALVES
	a = 30°	a = 40°	a = 60°	a = 80°	a = 90°	$\frac{d}{R} = 0,4$	$\frac{d}{R} = 0,6$	$\frac{d}{R} = 0,8$	$\frac{d}{R} = 1$	$\frac{d}{R} = 1,5$			
0,10	0,03	0,04	0,05	0,07	0,08	0,007	0,008	0,01	0,0155	0,027	0,030	30	30
0,15	0,06	0,07	0,10	0,14	0,17	0,016	0,019	0,024	0,033	0,06	0,033	31	31
0,2	0,11	0,13	0,18	0,26	0,31	0,028	0,033	0,04	0,058	0,11	0,058	31	31
0,25	0,17	0,21	0,28	0,4	0,48	0,044	0,052	0,063	0,091	0,17	0,090	31	31
0,3	0,25	0,30	0,41	0,6	0,7	0,063	0,074	0,09	0,13	0,25	0,13	31	31
0,35	0,33	0,40	0,54	0,8	0,93	0,085	0,10	0,12	0,18	0,33	0,18	31	31
0,4	0,43	0,52	0,71	1,0	1,2	0,11	0,13	0,16	0,23	0,43	0,23	32	31
0,5	0,67	0,81	1,1	1,6	1,9	0,18	0,21	0,26	0,37	0,67	0,37	33	32
0,6	0,97	1,2	1,6	2,3	2,8	0,25	0,29	0,36	0,52	0,97	0,52	34	32
0,7	1,35	1,65	2,2	3,2	3,9	0,34	0,40	0,48	0,70	1,35	0,70	35	32
0,8	1,7	2,1	2,8	4,0	4,8	0,45	0,53	0,64	0,93	1,7	0,95	36	33
0,9	2,2	2,7	3,6	5,2	6,2	0,57	0,67	0,82	1,18	2,2	1,20	37	34
1,0	2,7	3,3	4,5	6,4	7,6	0,7	0,82	1,0	1,45	2,7	1,45	38	35
1,5	6,0	7,3	10	14	17	1,6	1,9	2,3	3,3	6	3,3	47	40
2,0	11	14	18	26	31	2,8	3,3	4,0	5,8	11	5,8	61	48
2,5	17	21	28	40	48	4,4	5,2	6,3	9,1	17	9,1	78	58
3,0	25	30	41	60	70	6,3	7,4	9	13	25	13	100	71
3,5	33	40	55	78	93	8,5	10	12	18	33	18	123	85
4,0	43	52	70	100	120	11	13	16	23	42	23	150	100
4,5	55	67	90	130	160	14	21	26	37	55	37	190	120
5,0	67	82	110	160	190	18	29	36	52	67	52	220	140

- 1) Flow resistance in bends is due to the contraction of the liquid threads resulting from the change of direction: the development of the bends must therefore be included in the length of the pipeline.
- 2) Flow resistance in valves and gates was determined on the basis of practical tests.

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect



Xylect is pump solution selection software with an extensive online database of product information across the entire Lowara, and Vogel 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.

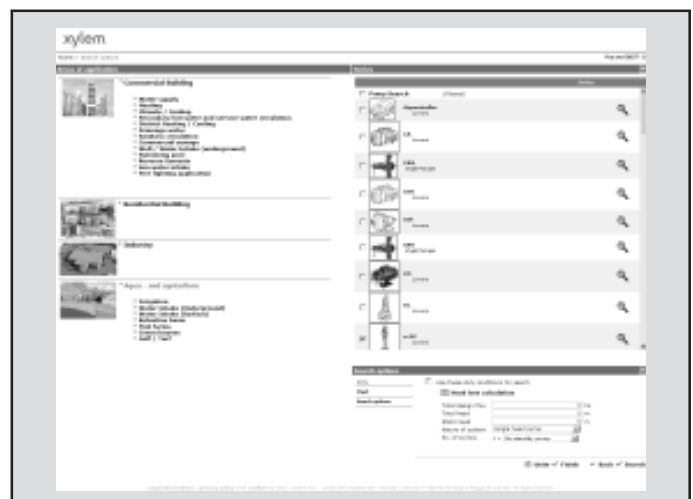
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara and Vogel products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect gives a detailed output:

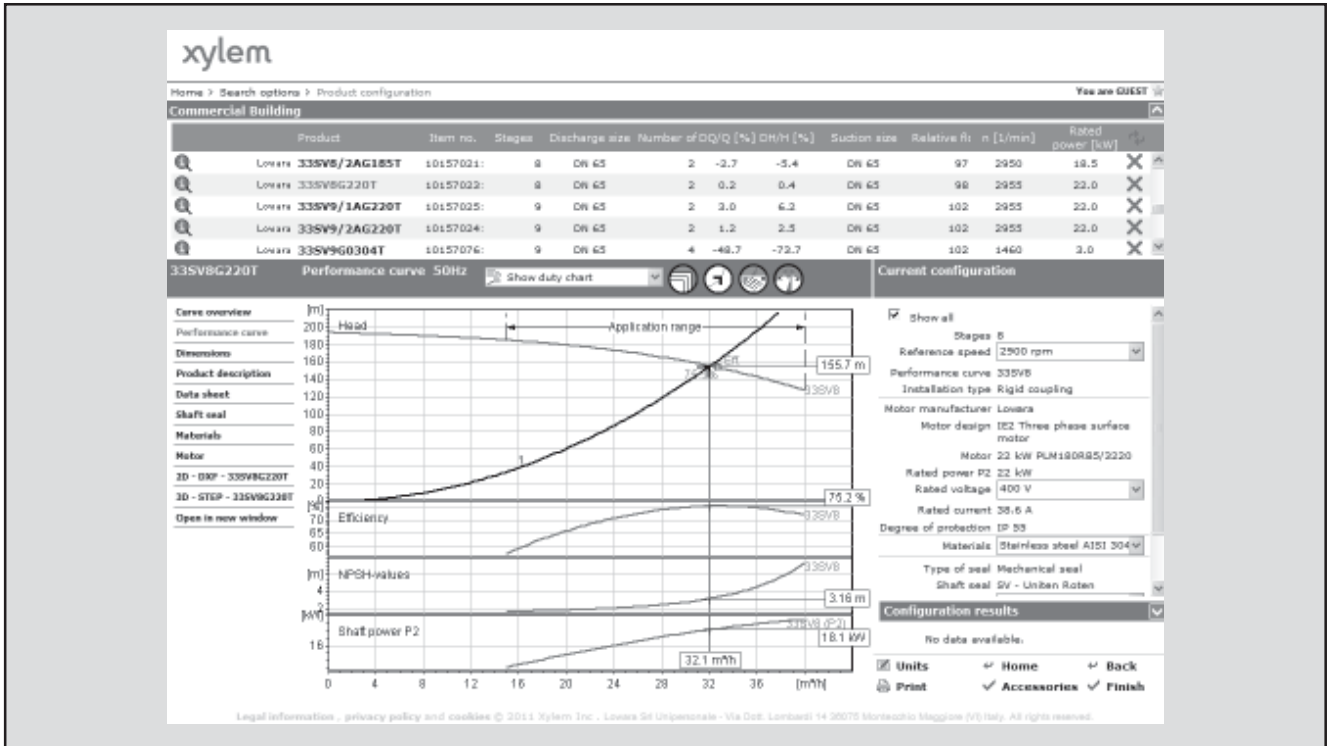
- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



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

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect



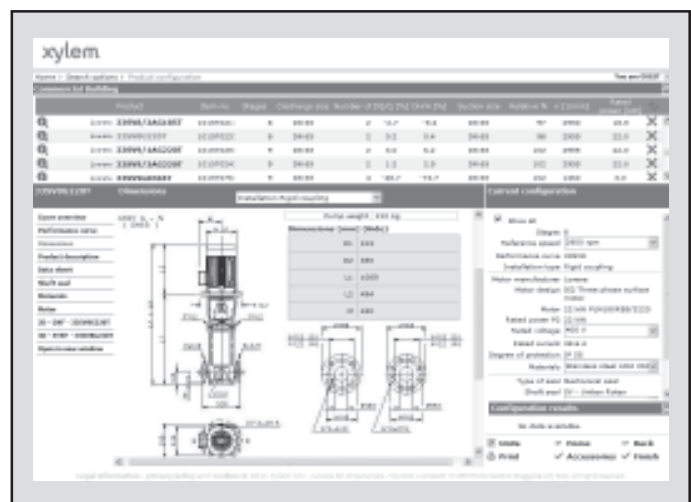
The detailed output makes it easy to select the optimal pump from the given alternatives.

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 12,000 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. 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, backed by a legacy of innovation.

For more information on how Xylem can help you, go to xylem.com.



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