

Technical Specification

90045201_3.0



6020.182/092

Concertor

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1 Product Description

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1.1 Pump design

The pump is submersible and based on the Dirigo platform, that consists of an integrated control system and a permanent-magnet synchronous motor. For motor data, see [Technical Reference](#) on page 6.

Impeller material

- Hard-Iron™
- Stainless steel

Pressure class and outlet size

LT/150	Low head
MT/100	Medium head
HT/80	High head

Installation types

The pump can be used in the following installations:

- P Semipermanent, wet well arrangement with the pump installed on two guide bars. The connection to the discharge is automatic.
- S Portable semipermanent, wet well arrangement with hose coupling or flange for connection to the discharge pipeline.
- T Vertical permanent, dry well arrangement with flange connection to the suction and discharge piping.
- Z Horizontal permanent, dry well arrangement with flange connection to the suction and discharge piping.

Products included

Product	Approvals
6020.182	Standard
6020.092	Ex-approved

Illustrations

EN

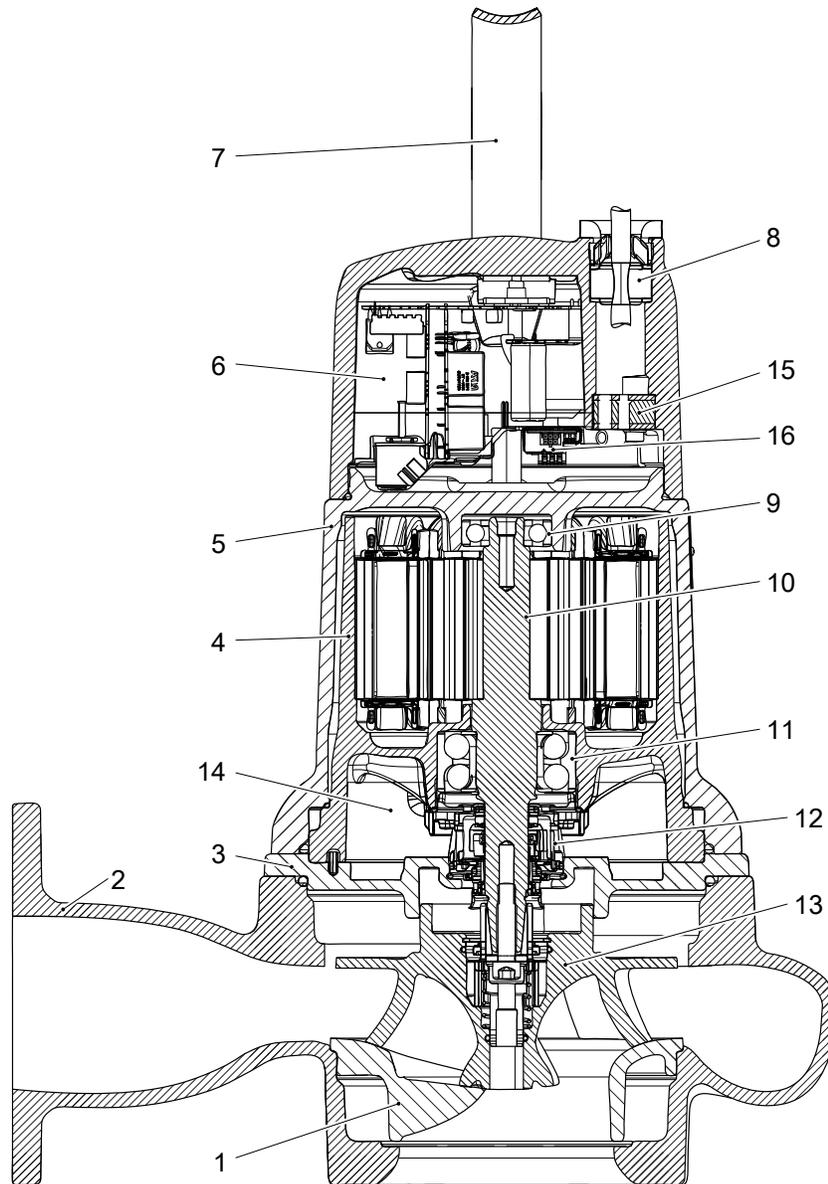
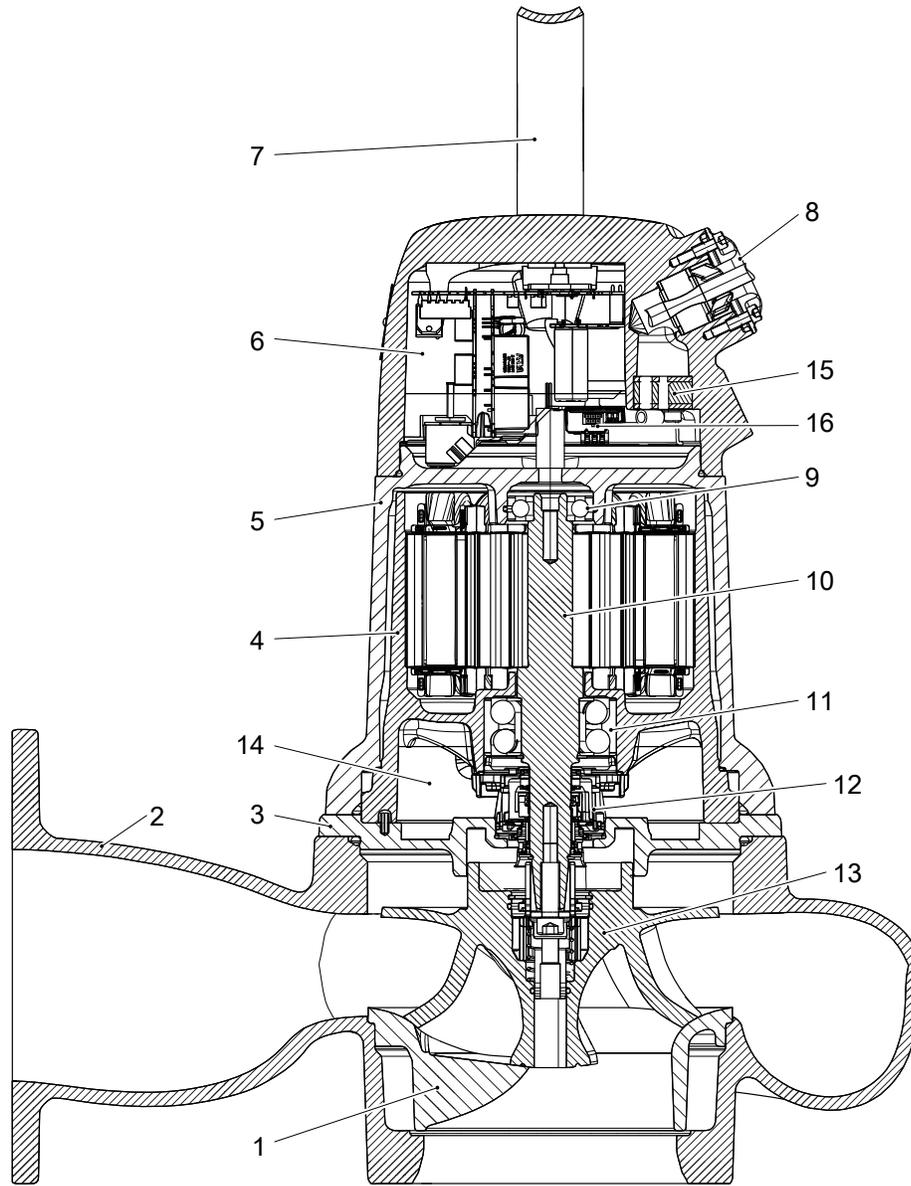


Figure 1: Outer casing of drive unit: Gray iron

W5009987C



W5009767C

Figure 2: Outer casing of drive unit: Aluminum

Parts

Position	Part
1	Insert ring with a guide pin
2	Pump housing, without flush valve connection
3	Seal housing cover
4	Stator housing unit with a leakage sensor
5	Cooling jacket / outer casing
6	Connection housing with integrated control system
7	Lifting handle
8	Cable entry
9	Support bearing
10	Shaft unit with a permanent magnet rotor
11	Main bearing

Position	Part
12	Mechanical seal Plug in seal with active seal design.
13	Adaptive-N impeller
14	Oil
15	Cable leads seal, Water-cut, optional
16	I/O unit

1.2 Cables

Screened Flygt SUBCAB® - a heavy duty 4 screened cores motor power cable with four twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature.

Cable length

Meter, m	Foot, ft
10	30
16	50
20	65
31	100

1.3 Sensors

- Leakage sensor in the stator housing (FLS)
- Overtemperature sensors in the integrated control system

Explosion-proof version: The stator incorporates three thermal contacts connected in series.

1.4 Options

- Surface treatment (Epoxy)
- Zinc anodes

1.5 Accessories

Example of accessories.

Item	Description
Pump controllers	XPC powered by Nexicon, MultiSmart, MyConnect XCU 411 Pump control unit for Concertor DP
HMI	FOP 315, FOP 402, FOP 422, FOP 432
Monitoring relays	Supplied locally
Level sensors	LTU, ENM 10, Level probe
SCADA systems	AquaView, Avensor
Flow meters	MagFlux

Discharge connections, adapters, hose connections, and other mechanical accessories

2 Technical Reference

2.1 Motor data

The drive unit includes a synchronous motor with IE4 equivalent efficiency.

NOTICE:

Do not connect a starter or an external Variable Frequency Drive (VFD) to this unit.

Feature	Description
Input frequency	50–60 Hz
Input supply	3-phase <ul style="list-style-type: none"> • 380–480 V • 200–240 V
Maximum starts for each hour	Pump only: 60 Pump with gateway or controller: 240
Design in applicable parts	According to IEC 60034–1
Voltage variation	<ul style="list-style-type: none"> • Continuously running: Maximum $\pm 5\%$ • Intermittently running: Maximum $\pm 10\%$
Voltage imbalance between the phases	Maximum of 2%
Stator insulation class	In accordance with class H (180°C, 356°F)
Total harmonic distortion (THD) at full load	< 27%

Motor encapsulation

Motor encapsulation is in accordance with IP68.

2.2 Application limits

Data	Description
Liquid temperature	Maximum 40°C (104°F)
Liquid density	1100 kg/m ³ (9.2 lb for each US gal) maximum
pH of the pumped media (liquid)	5.5–14
Depth of immersion	Maximum 20 m (65 ft)

2.3 Materials

Table 1: Major parts except mechanical seals

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	A48 class 35 type B	EN 1561: GJL-250
Cooling jacket, submerged installation	Cast iron, gray	A48 class 35 type B	EN 1561: GJL-250
Cooling jacket, dry installation	Aluminum	H5202-86-AC4A	EN 1706: AC-43100 or EN 1706: AC-43000
Pump housing	Cast iron, gray	A48 class 35 type B	EN 1561: GJL-250
Connection housing, submerged installation	Cast iron, gray	A48 class 35 type B	EN 1561: GJL-250
Connection housing, dry installation	Aluminum	B85 S12A (A413.0)	EN 1706: AC-44300 or EN 1706: AC-44500

Denomination	Material	ASTM	EN
Impeller, alternative 1	Hard-Iron™	ASTM A532 Class III Type A	EN 12513: GJN-HB555 (XCr23)
Impeller, alternative 2	Stainless steel, Duplex	ASTM A890 grade 1B (ACI-ASTM CD4MCuN)	EN 10283: 1.4474 (GX4CrNiMoN26-5-2)
Insert ring	Cast iron, Hard-Iron™	A532 Class III Type A	EN 12513: GJN-HB555(XCr23)
Lifting handle	Stainless steel	ASTM A240 316L (AISI 316L)	EN 10088: 1.4404 (X2CrNiMo17-12-2)
Shaft	Stainless steel	ASTM A276 431 (AISI 431)	EN 10088: 1.4057 - QT800
Screws and nuts	Stainless steel, A4	ASTM A240 316L (AISI 316L)	EN 10088: 1.4404 (X2CrNiMo17-12-2)
O-rings	Nitrile rubber (NBR), 70 IRHD	-	-
Oil	A medical white oil of paraffin type that fulfills FDA 172.878 (a) and viscosity close to VG32.	-	-

Table 2: Mechanical seals

Alternative	Inner seal	Outer seal
1	Corrosion resistant cemented carbide (WCCR)/ Corrosion resistant cemented carbide (WCCR)	Corrosion resistant cemented carbide (WCCR)/ Corrosion resistant cemented carbide (WCCR)
2	Corrosion resistant cemented carbide (WCCR)/ Corrosion resistant cemented carbide (WCCR)	Silicon carbide (RSiC)/ Silicon carbide (RSiC)

2.4 Surface treatment

Priming	Finish
Painted with a primer, see internal standard M0700.00.0003	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

3 Motor Rating and Performance Curves

3.1 Motor rating

Table 3: 380–480 V

Rated power (kW)	Rated power (Hp)	Voltage (V) / Rated current (A)	Voltage (V) / Starting current (A)	Power factor	Installation
7.3	10.0	380/13.1 - 480/10.4	380/13.1 - 480/10.4	0.95	P, S
5.5	7.5	380/10.0 - 480/7.9	380/10.0 - 480/7.9	0.95	P, S, T, Z
4.0	5.5	380/7.5 - 480/5.9	380/7.5 - 480/5.9	0.94	P, S, T, Z
2.2	3.0	380/4.3 - 480/3.4	380/4.3 - 480/3.4	0.91	P, S, T, Z

Table 4: Motor rating, 200–240 V

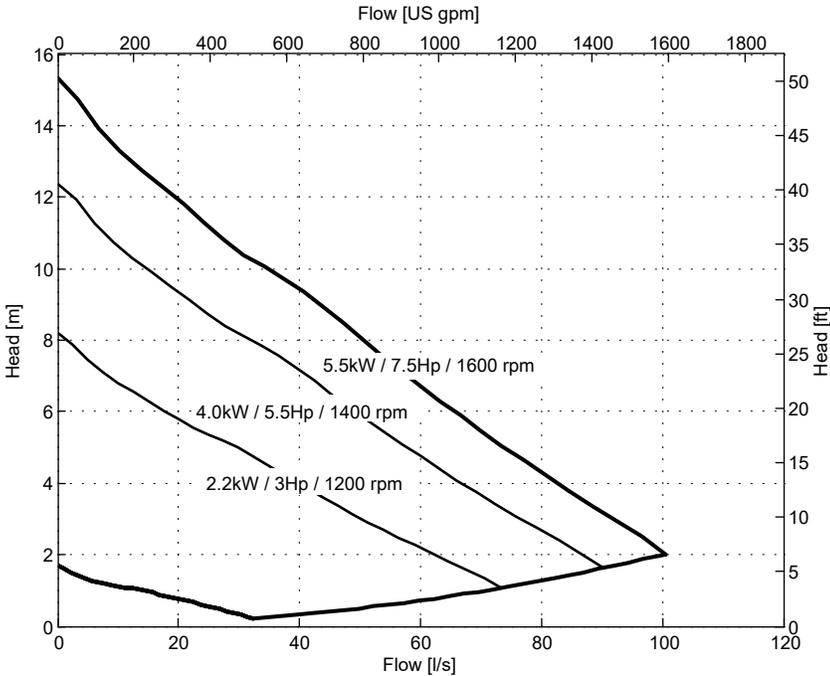
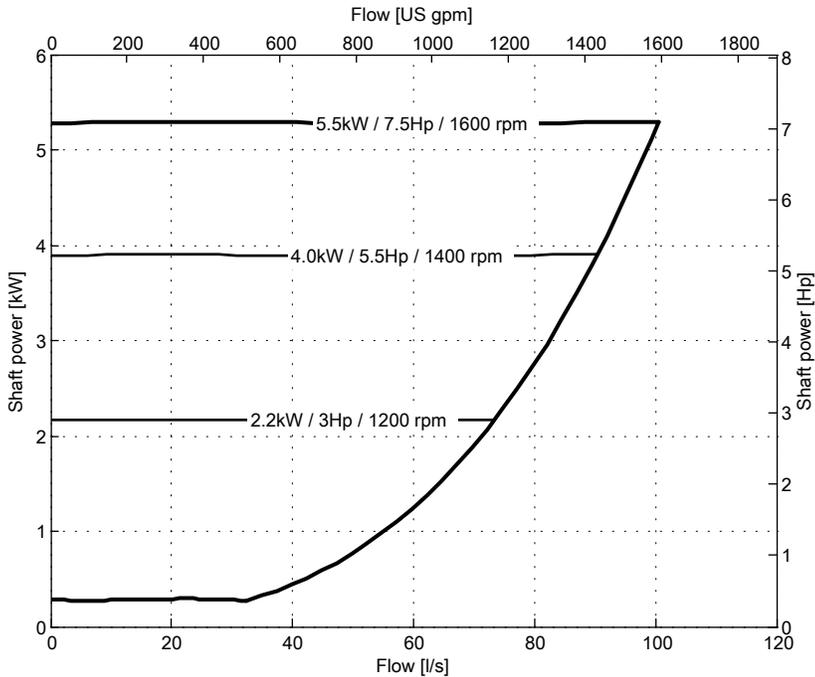
Rated power (kW)	Rated power (Hp)	Voltage (V) / Rated current (A)	Voltage (V) / Starting current (A)	Power factor	Installation
5.5	7.5	200/19 - 240/15.2	200/19 - 240/15.2	0.95	P, S
4.0	5.5	200/13.3 - 240/11.2	200/13.3 - 240/11.2	0.95	P, S, T, Z
2.2	3.0	200/7.6 - 240/6.5	200/7.6 - 240/6.5	0.95	P, S, T, Z

3.2 Performance curves

150 (LT)

The image shows the available field of operation, and maximum revolutions per minute (rpm) for each rated power value.

EN

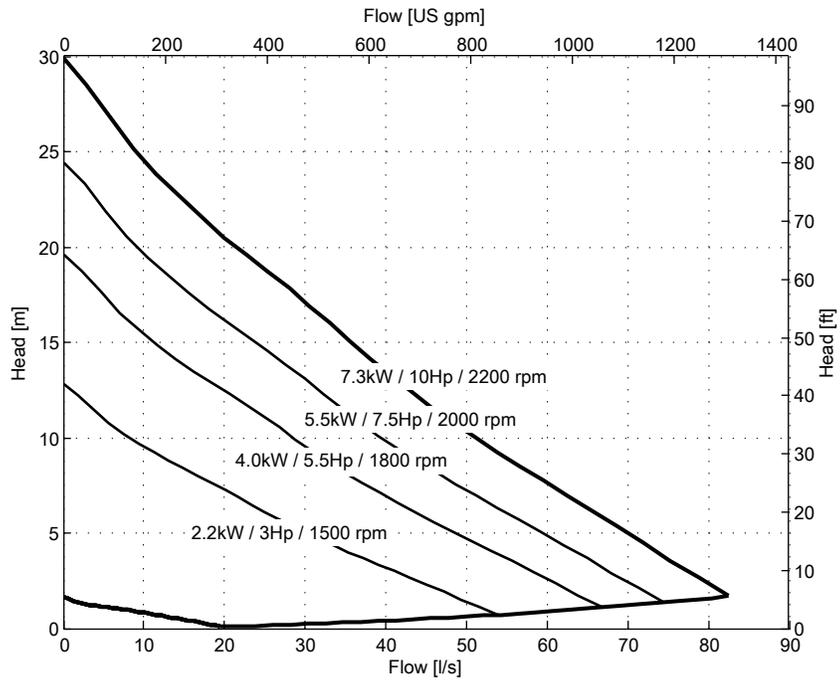
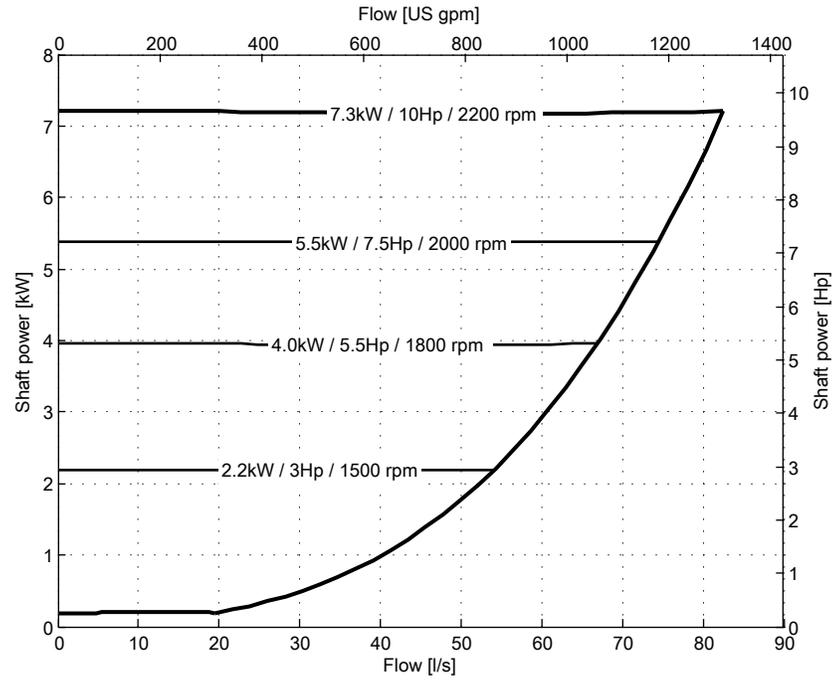


WS010000B

100 (MT)

The image shows the available field of operation, and maximum revolutions per minute (rpm) for each rated power value.

EN

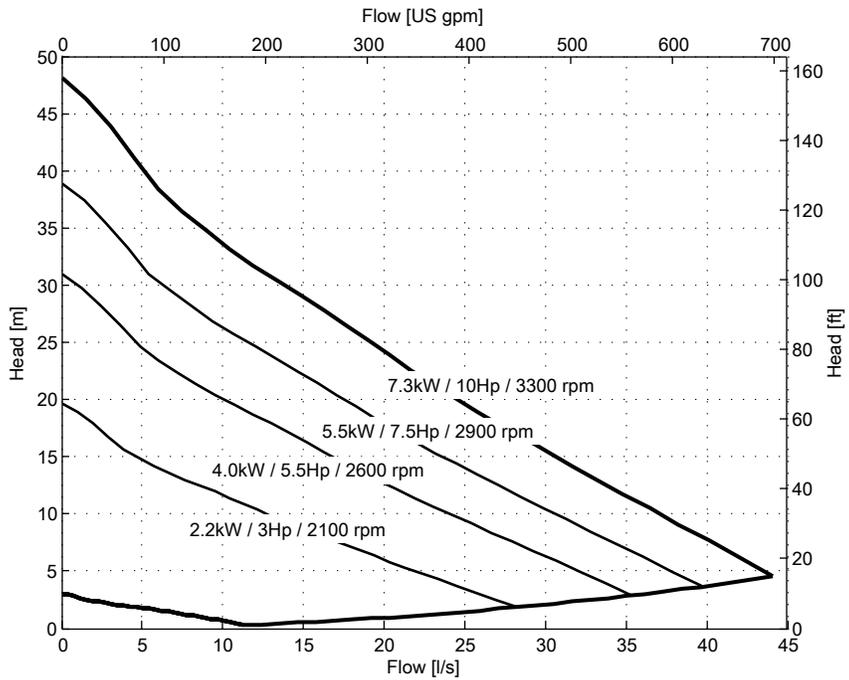
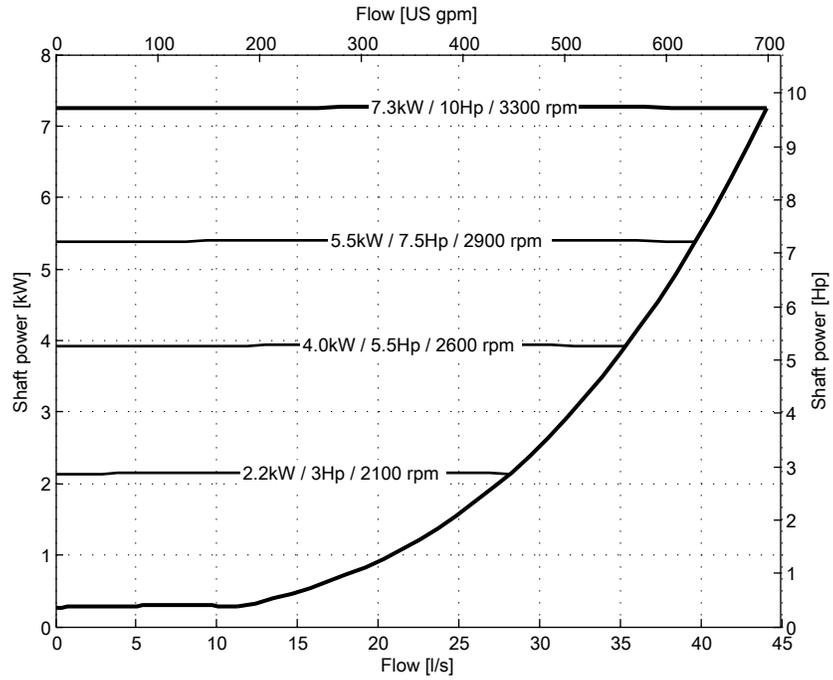


WS010001A

80 (HT)

The image shows the available field of operation, and maximum revolutions per minute (rpm) for each rated power value.

EN



WS010002A

4 Dimensions and Weight

4.1 Drawings

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg). Contact a local sales and service representative for more information.

Drawings are found on Xylect or on TPI.

All dimensions are in mm.

Drawing number	Discharge connection	Installation
803 39 00	80 (HT)	P
803 40 00	150 (LT)	P
803 41 00	100 (MT)	P
803 42 00	80 (HT)	S
803 43 00	80 (HT), threaded	S
803 44 00	150 (LT)	S
803 45 00	150 (LT), threaded	S
803 46 00	100 (MT)	S
803 47 00	100 (MT), threaded	S
814 76 00	100/80 (HT)	X
814 77 00	150/100 (MT)	X
814 78 00	150/150 (LT)	X
813 89 00	80 (HT)	T
813 89 01	80 (HT), adapter	T
813 90 00	100 (MT), inlet 150	T
813 90 01	100 (MT), inlet 150, adapter	T
813 91 00	100 (MT), inlet 200	T
813 91 01	100 (MT), inlet 200, adapter	T
813 92 00	150 (LT), inlet 200	T
813 92 01	150 (LT), inlet 200, adapter	T
813 86 00	80 (HT)	Z
813 86 01	80 (HT), with service cart	Z
813 87 00	100 (MT)	Z
813 87 01	100 (MT), with service cart	Z
813 88 00	150 (LT)	Z
813 88 01	150 (LT), with service cart	Z

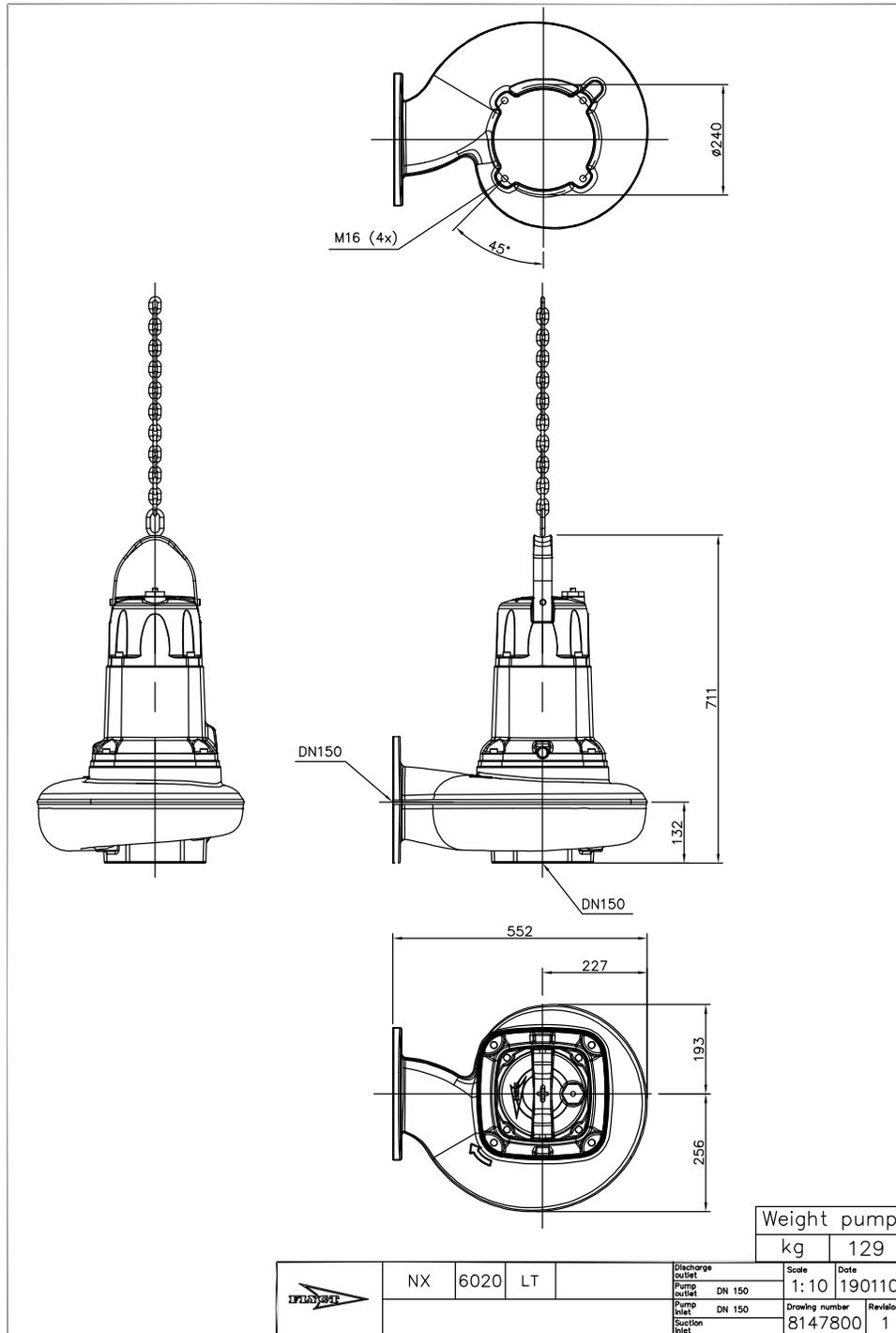


Figure 3: DN 150 (LT)

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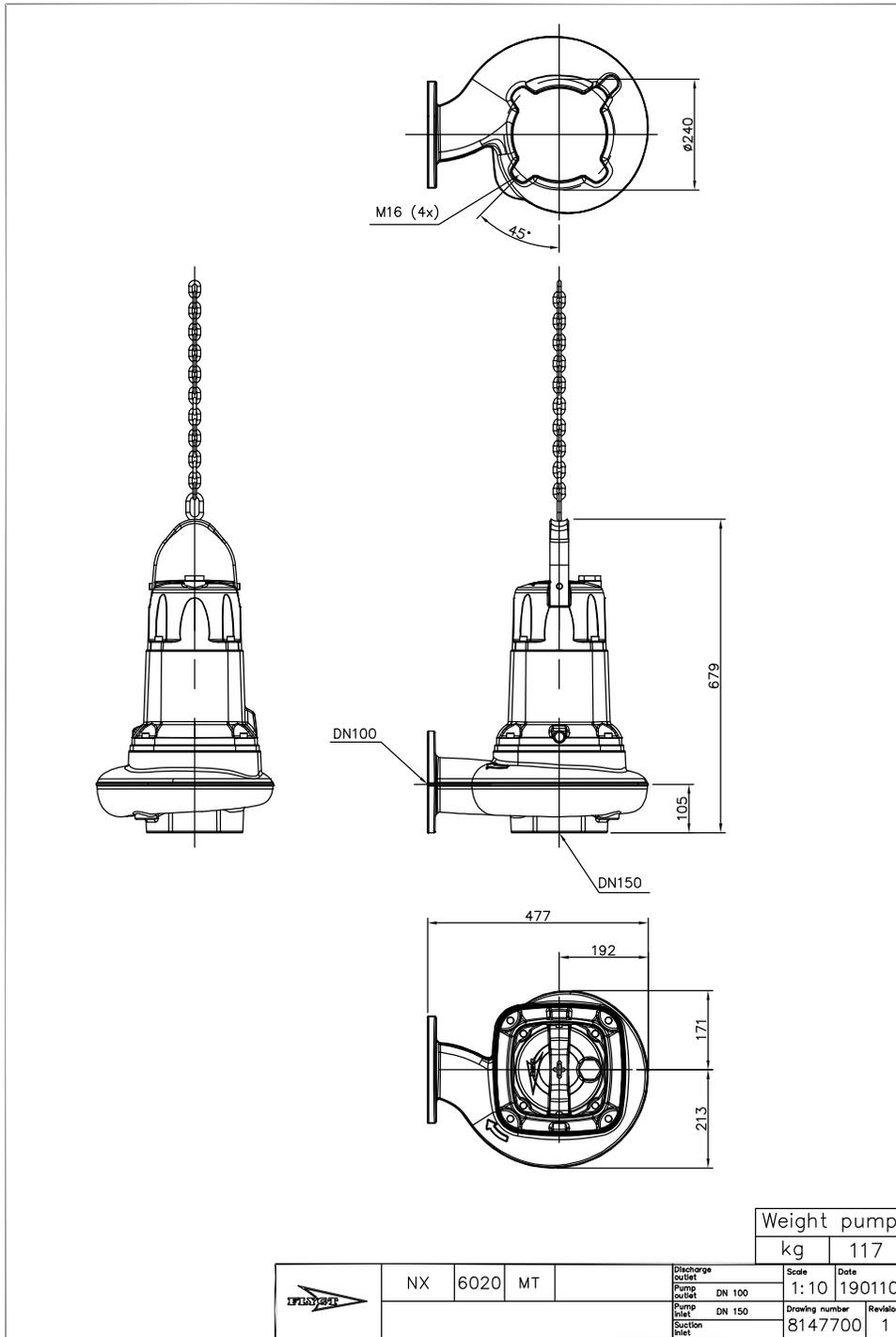


Figure 4: DN 100 (MT)

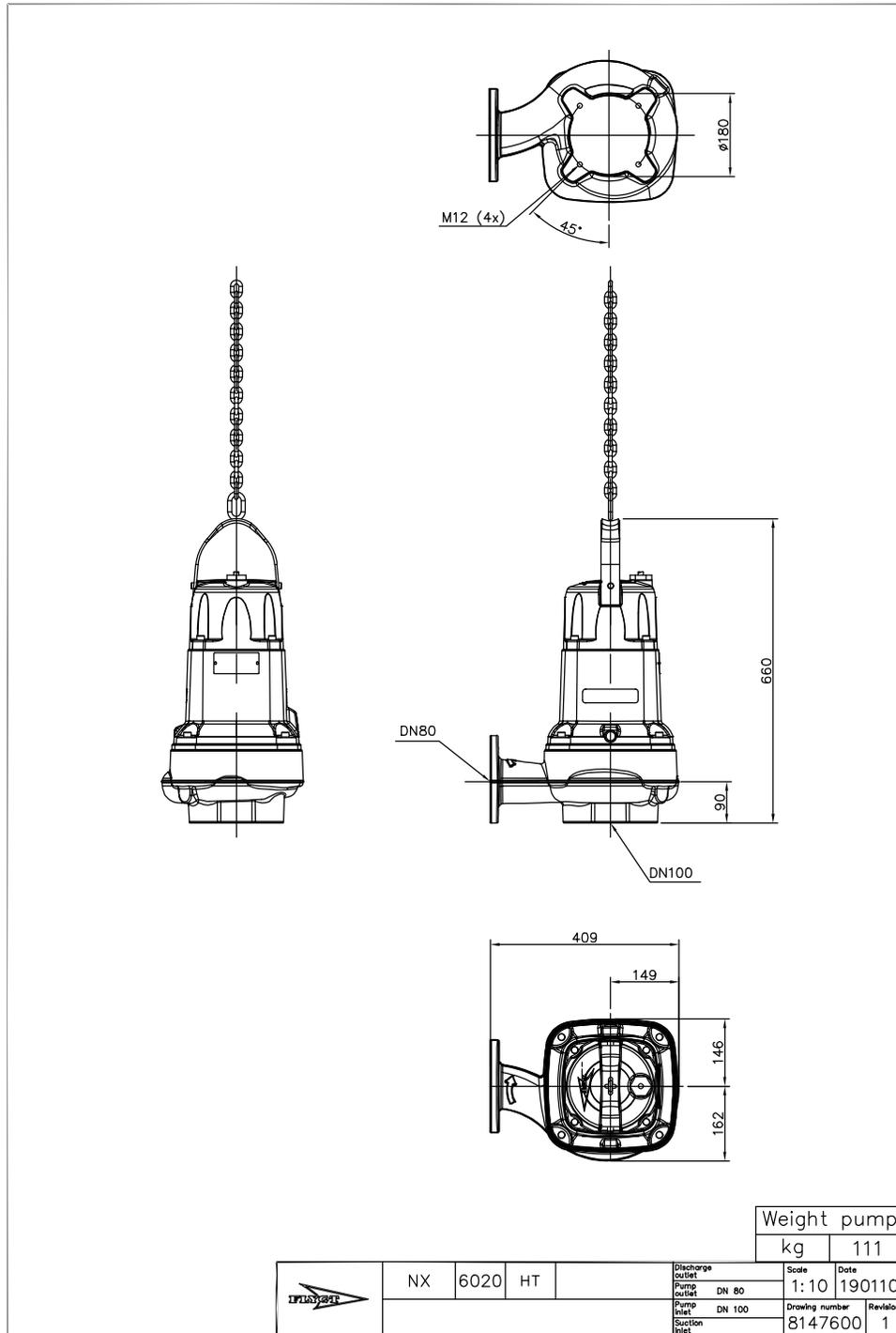


Figure 5: DN 80 (HT)

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

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