

Submersible Grey Water Pump

## AmaDrainer 3

For the UK

### Type Series Booklet



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Type Series Booklet AmaDrainer 3

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## Contents

<b>Building Services: Drainage.....</b>	<b>4</b>
Drainage Pumps / Waste Water Pumps .....	4
AmaDrainer 3 .....	4
Main applications.....	4
Fluids handled .....	4
Operating data.....	4
Design details .....	4
Designation .....	5
Materials.....	5
Product benefits.....	5
Product information .....	5
Overview of product features / selection tables .....	6
Technical data .....	7
Characteristic curves.....	8
Dimensions and connections .....	10
Spare parts.....	13
Scope of supply .....	13
Accessories.....	14
Exploded view and list of components.....	16

## Building Services: Drainage

### Drainage Pumps / Waste Water Pumps

# AmaDrainer 3



301

303

322

354

#### Main applications

- Drainage
- Disposal
- Drainage systems
- Lowering groundwater levels
- Maintaining groundwater levels
- Draining of pits, shafts, etc.
- Surface drainage

#### Fluids handled

- Sizes 301, 303:
  - Solid particles with a particle size of up to 10 mm
- Size 322:
  - Solid particles with a particle size of up to 18 mm

#### Material variant A (standard variant)

- Slightly contaminated grey water (up to 70 °C max.)
- Wash water (up to 90 °C max. for short periods  $t \leq 3$  minutes)
- Waste water without faeces
- Seepage water
- River water, lake water and groundwater

#### Material variant C (for aggressive fluids)<sup>1)</sup>

- Seawater (up to 20 °C max.)
- Brackish water
- Water containing salt (up to 20 °C max.)

#### Further information on fluids handled

Overview of fluids handled (⇒ Page 6)

#### Operating data

Table 1: Operating properties

Characteristic		Value
Flow rate	Q [m <sup>3</sup> /h]	≤ 13,5
	Q [l/s]	≤ 3,75
Head	H [m]	≤ 11,3
Fluid temperature	T [°C]	≤ +70 (continuous duty)
		≤ +90 (short-time duty)

#### Design details

##### Design

- Fully floodable submersible motor pump
- Close-coupled design
- Single-stage
- Wetted parts made of materials coated with anti-corrosive
- Maximum immersion depth: 2 m
- Integrated swing check valve
- Size 322:
  - Integrated pump sump cleaning option

##### Installation

- Vertical installation
- Wet-installed transportable model

##### Drive

- Jacket-cooled single-phase AC motor
- 230 V, 50 Hz
- Frequency of starts ≤ 30 starts/hour
- Integrated temperature switch
- Enclosure IP68 (permanently submerged) to EN 60529 / IEC 529
- Power cable incl. shockproof plug

##### Shaft seal

- Drive end, 1 shaft seal ring
- Pump-end, 1 shaft seal ring
- Grease reservoir between the seals for lubrication
- Grease-packed for life
- Maintenance-free

##### Bearings

- Rolling element bearings
- Grease-packed for life
- Maintenance-free

<sup>1)</sup> On request

### Automation

- Pump controlled via integrated float switch
- Pump controlled by external control unit

### Designation

#### Example: AmaDrainer 301 C

Table 2: Designation key

Code	Description	
AmaDrainer 3	Type series	
0	Free passage [mm]	
	0	10 mm
	2	18 mm
1	Characteristic curve	
	1	Characteristic curve 301
	2	Characteristic curve 322
	3	Characteristic curve 303
C	Material variant	
	C	Variant for aggressive fluids
	_2)	Standard variant

### Materials

Table 3: Overview of available materials

Part No. (⇒ Page 16)	Description	Material variant A		Material variant C	
		301, 303	322	301, 303	322
101	Pump casing	Polypropylene, 30 % glass fibre reinforced			
107	Discharge casing	Polypropylene, 30 % glass fibre reinforced			
161	Casing cover	Polypropylene with 20 % talc (PP-TS 20)			
210	Shaft	AISI 431		Drive end: AISI 431 Pump end: AISI 316L	
230	Impeller	Noryl GNF2	Polyamide	Noryl GNF2	Polyamide
79-1	Automatic switchgear	Polypropylene			
811	Motor housing	AISI 304		AISI 316L	

### Product benefits

- Space-saving design with the smallest possible dimensions
- Ready-to-connect, easy installation and commissioning
- Flexible use with and without external control unit by simply locking the float switch in continuously ON position.
- Maintenance-free with grease-packed bearings sealed for life
- Low-weight, corrosion-resistant, impact-resistant, abrasion-resistant, noise-dampening high-quality plastic housing with robust handle
- All sizes available in material variant for aggressive fluids<sup>3)</sup>
- Sizes 301, 303:
  - Integrated low water level intake option for residual water level as low as 2 mm
- Sizes 301, 303, 322:
  - Integrated swing check valve
- Size 322:
  - Integrated pump sump cleaning option

### Product information

#### Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see <https://www.ksb.com/ksb-en/About-KSB/Corporate-responsibility/reach/>.

<sup>2</sup> Blank

<sup>3</sup> On request

**Overview of product features / selection tables**
**Overview of fluids handled**
**Table 4: Symbols key**

Symbol	Description
X	Standard
-	Version not available / not feasible

The table of fluids handled is a selection aid for different applications. It serves as guidance and is based on long-standing experience. The data are reference values and are not to be considered generally binding recommendations. They shall not be the basis for warranty claims. Please contact your nearest sales branch for in-depth advice.

**Table 5: Table of fluids handled**

Fluids handled	Material variant A	Material variant C
Antifrogen-water mixture	X	-
Cider	X	-
Beer	X	-
Spirits	X	-
Buttermilk	X	-
Calcium acetate	X	-
Calcium hydroxide	X	-
Deionised water	X	-
Peanut oil	X	-
Vinegar	-	X
Ethylene glycol	X	-
Liquid fertiliser	X	-
Antifreeze	X	-
Glycerine	X	-
Grisiron	X	-
Uric acid	X	-
Potassium hydroxide	X	-
Calcium carbonate	X	-
Coconut oil	X	-
Evaporated milk	X	-
Lemonades	X	-
Corn oil	X	-
Milk	X	-
Whey	X	-
Sodium carbonate	X	-
Sodium chloride up to 3 % concentration	-	X
Sodium hydrogen phosphate	X	-
Sodium nitrate	X	-
Sodium perborate	X	-
Sodium sulphate	X	-
Polyglycols	X	-
Rapeseed oil	X	-
Castor oil	X	-
Silicone oil	X	-
Silo leachate	-	X
Soybean oil	X	-
Edible vinegar	-	X
Edible oil	X	-
Trisodium phosphate	X	-
Vaseline	X	-
Washing machine lye	X	-
<b>Water</b>		
Drainage water	X	-
Fire-fighting water	X	-
Heating water	X	-
Lime water	-	X
Boiler water	X	-

Fluids handled	Material variant A	Material variant C
Condensate	-	<b>X</b>
Cooling water	<b>X</b>	-
Seawater	-	<b>X<sup>4)</sup></b>
Raw water	<b>X</b>	-
Swimming pool water (DIN 19643)	-	<b>X</b>
Salt water	-	<b>X<sup>4)</sup></b>
Partly desalinated water	<b>X</b>	-
Fully desalinated water	-	<b>X</b>

## Technical data

### AmaDrainer 3

 Material variant C on request

**Table 6:** Technical data – 230 V, 50 Hz

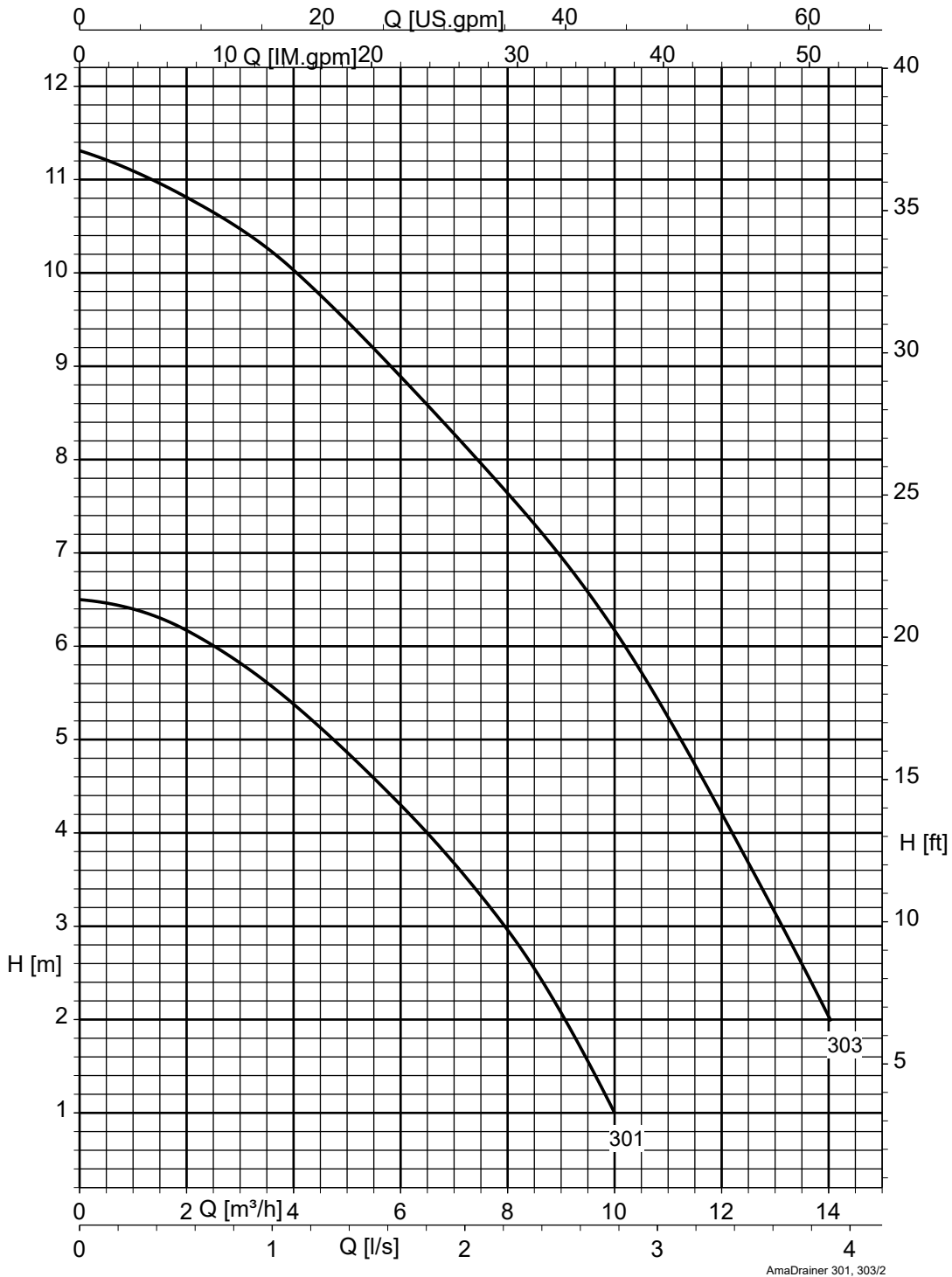
Size	Discharge-side connection	Free passage [mm]	P <sub>1</sub> [kW]	P <sub>N</sub> [kW]	I <sub>N</sub> 1~230 V [A]	Power cable		Mat. No.	[kg]
						H05RN8-F			
						[m]	[mm <sup>2</sup> ]		
<b>Material variant A (standard variant)</b>									
301 <sup>5)</sup>	Rp 1 1/4	10	0,43	0,25	1,90	10	3 × 0,75	48242504	4
303	Rp 1 1/4	10	0,90	0,60	4,00	10	3 × 0,75	48242505	5,5
322	Rp 1 1/4	18	0,70	0,40	3,50	10	3 × 0,75	48242506	5,5

<sup>4</sup> Fluid temperature ≤ 20 °C

<sup>5</sup> Discharge-side adapter, graded (Rp 1 1/4 to Rp 3/4 connection, DN 25 or DN 32), included in the scope of supply

Characteristic curves

AmaDrainer 301, 303, n = 2800 rpm

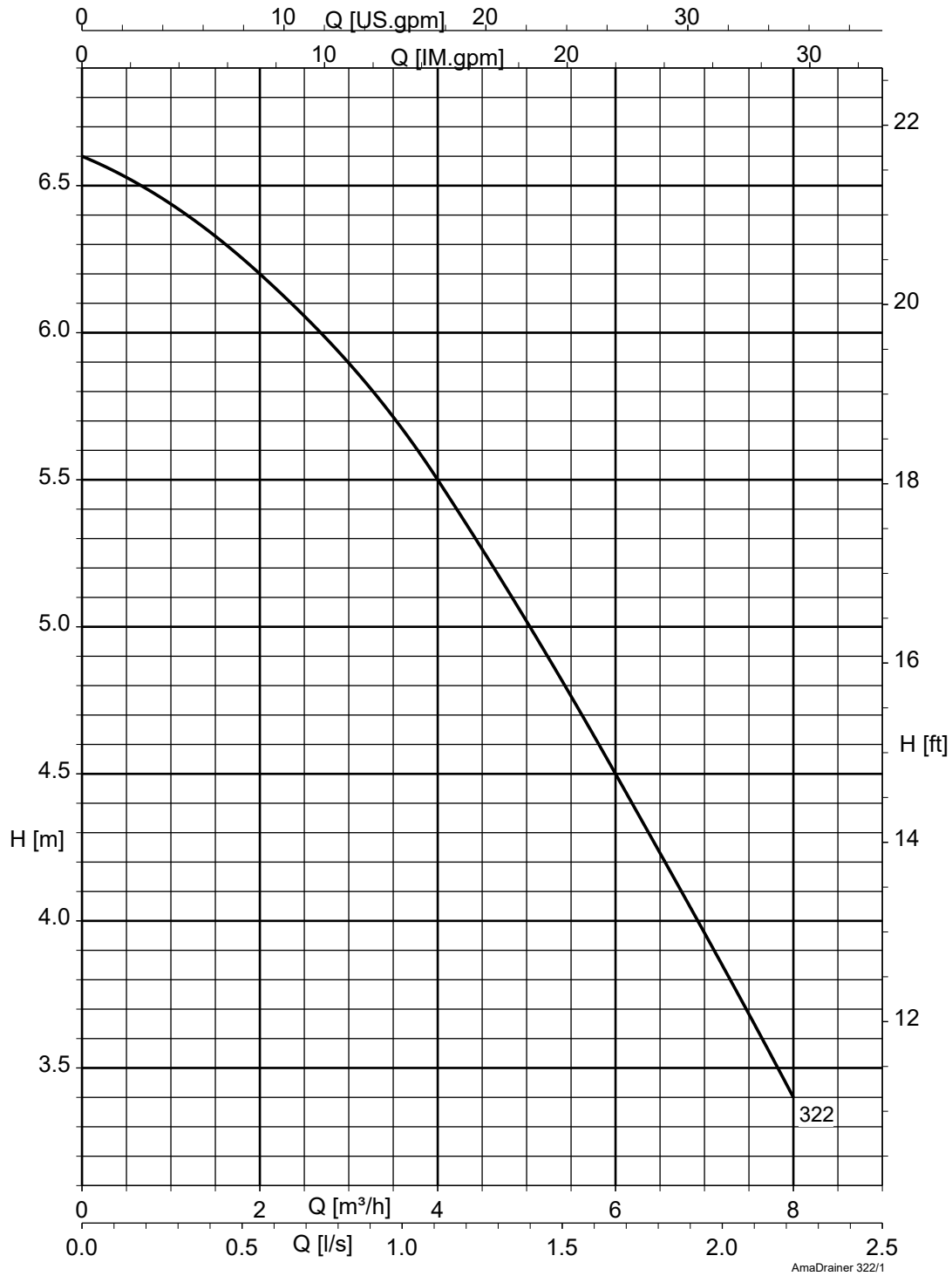


Sizes 301, 303: free passage = 10 mm

Performance tolerance to ISO 9906, Annex A (water under standard conditions)



AmaDrainer 322, n = 2800 rpm



Size 322: free passage = 18 mm  
Performance tolerance to ISO 9906, Annex A (water under standard conditions)

2332.53/03-EN

Dimensions and connections

AmaDrainer 3

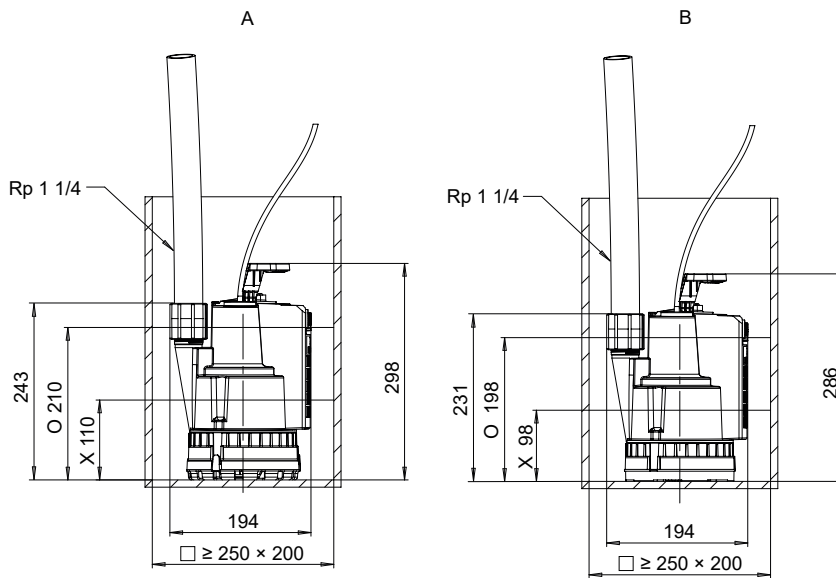


Fig. 1: Dimensions of AmaDrainer 301 [mm]

A	Standard installation
B	Installation for low water level intake, residual water level: 2 mm
O	Switching point ON
X	Switching point OFF
□	Minimum floor area required for installation in a tank or sump <sup>6)</sup>

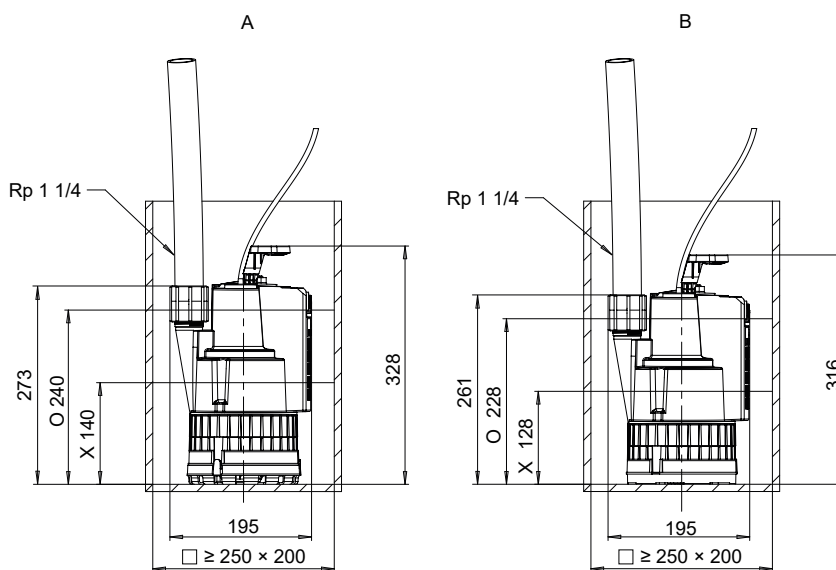


Fig. 2: Dimensions of AmaDrainer 303 [mm]

A	Standard installation
B	Installation for low water level intake, residual water level: 2 mm
O	Switching point ON
X	Switching point OFF
□	Minimum floor area required for installation in a tank or sump <sup>6)</sup>

<sup>6)</sup> When selecting the tank or sump take into account the pump set's maximum frequency of starts. If the frequency of starts would be too high, use a larger tank or sump if necessary.

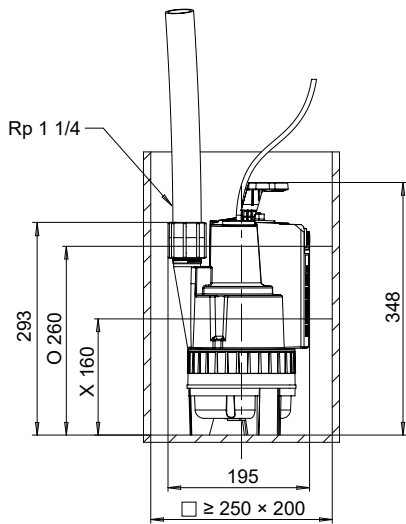


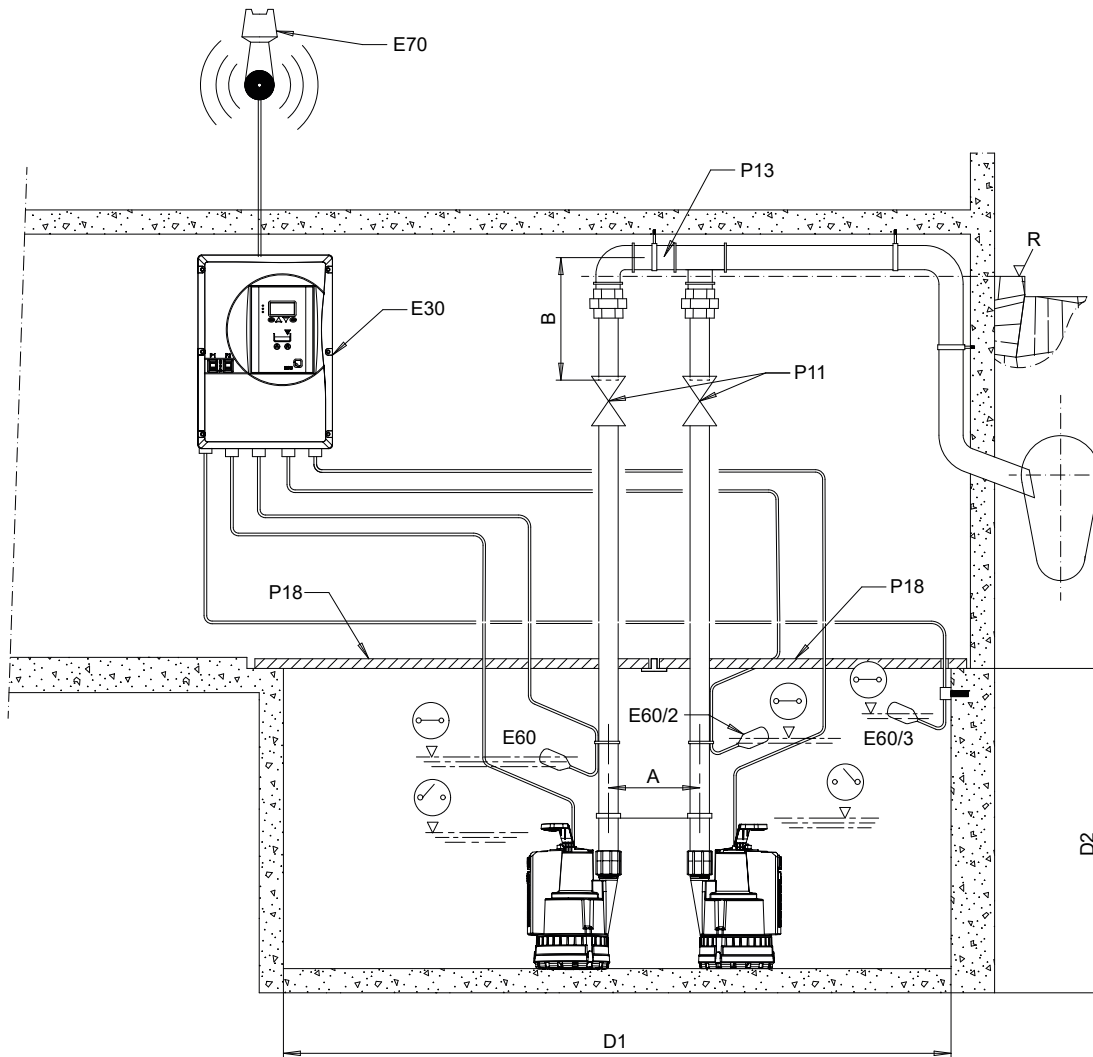
Fig. 3: Dimensions of AmaDrainer 322 [mm]

O	Switching point ON
X	Switching point OFF
□	Minimum floor area required for installation in a tank or sump <sup>6)</sup>

**i** AmaDrainer 322: The pump foot is provided with cleaning openings for cleaning the pump sump. The pump is delivered with the cleaning openings closed. They can be drilled open if required (diameter: 4 mm).

### Installation example of a dual-pump station

**i** The inlet is positioned above the highest float switch.



**Fig. 4:** Installation example of an AmaDrainer 301, 303, 322 dual-pump station




E30	Control unit
E60	Float switch, base load
E60/2	Float switch, peak load
E60/3	Float switch, high water alert
E70	Horn
P11	Shut-off valve
P13	Y-pipe
P18	Cover plate
R	Flood level

**Table 7:** Dimensions of an AmaDrainer 301, 303, 322 dual-pump station

Size	A	B	D1	D2
	[mm]	[mm]	[mm]	[mm]
301	275	320	1060 × 500	420
303	275	320	1060 × 500	450
322	275	320	1060 × 500	470

## Spare parts

Table 8: Overview of spare parts










Part No.	Description	AmaDrainer			Mat. No.	[kg]
		301	303	322		
79-1 	Repair set for automatic switchgear	X	X	X	01833946	0,16
576 	Handle	X	X	X	01834007	0,05
748 	Suction strainer	X	X	-	01834008	0,08

## Scope of supply



Depending on the model, the following items are included in the scope of supply:

- Pump set
- Installation/operating manual
- Size 301:
  - Discharge-side adapter, graded (connection Rp 1 1/4 to Rp 3/4, DN 25 or DN 32)
- Sizes 301, 303:
  - Removable suction strainer enabling low water level intake
- Sizes 301, 303, 322:
  - Integrated swing check valve
  - Barrel nipple with internal thread
- Size 322:
  - Integrated pump sump cleaning option


**Accessories**
**Pump accessories**
**Table 9: Overview of pump accessories**

Item	Description	Connection	AmaDrainer			Mat. No.	[kg]
			301	303	322		
P5 	Discharge-side adapter, graded For connecting various discharge lines (connections Rp 1 1/4 to Rp 3/4, DN 25 or DN 32)	Rp 1 1/4 to Rp 3/4, DN 25 or DN 32	- <sup>7)</sup>	X	X	05086820	0,156
P10 	RK swing check valve Plastic, EN 12 050-4, with internal thread ISO 7/1, with full port and drain plug	Rp 1 1/4	X	X	X	01009771	0,1
P10 	Lift check valve, stainless steel (1.4401)	Rp 1 1/4	X	X	X	01084936	2,1
P11 	Socket gate valve Material: CuZn, PN 16, with internal thread, with full port	Rp 1 1/4	X	X	X	01014219	0,627
P13 	Y-pipe For dual-pump sets, with external thread, galvanised steel	Rp 1 1/4	X	X	X	18040311	4,1
P18 	Cover plate Tread-proof, split, with profile seals and angle iron mounting frame (type A 560) for 500 x 500 mm pits (For dual-pump stations with Y-pipe 2 cover plates are fitted next to each other.)	Rp 1 1/4	X	X	X	18075627	13
P21 	A 25 B drain hose set (see P32) Comprising: rigid coupling with external thread, 6 m plastic hose DN 25, rapid-action hose coupling Rp 1 1/4, (free passage 21 mm)	Rp 1 1/4	X	X	X	18079719	3
P24 	Storz rigid coupling with internal thread to DIN ISO 228/1 Aluminium alloy, required pipe part see P32 Can be combined with P28	C-G 1 1/2	X	X	X	01002463	0,3
P26 	Storz hose coupling Required counterpart see P24	C 52 (DIN 14321)	X	X	X	00524551	0,3

<sup>7</sup> Included in the scope of supply

Item	Description	Connection	AmaDrainer			Mat. No.	[kg]
			301	303	322		
 P28 Plastic hose DN 40, with integrated C couplings, DIN 14811 Required pipe part see P32 Can be combined with P24		C 42-5 m	X	X	X	01062592	1,7
		C 42-10 m	X	X	X	01062593	2,8
		C 42-20 m	X	X	X	01062594	5
		C 52-5 m	X	X	X	00522262	2,3
		C 52-10 m	X	X	X	00522263	4,2
		C 52-20 m	X	X	X	00522264	5,7
 P32 Pipe extension for Storz rigid coupling C (P24) PVC hard, internal/external thread For use without swing check valve and union nut		Internal thread Rp 1 1/4 / external thread R 1 1/2 x 170	X	X	X	11035587	0,2

### Control units and switchgear

 Control units and switchgear on request

Exploded view and list of components

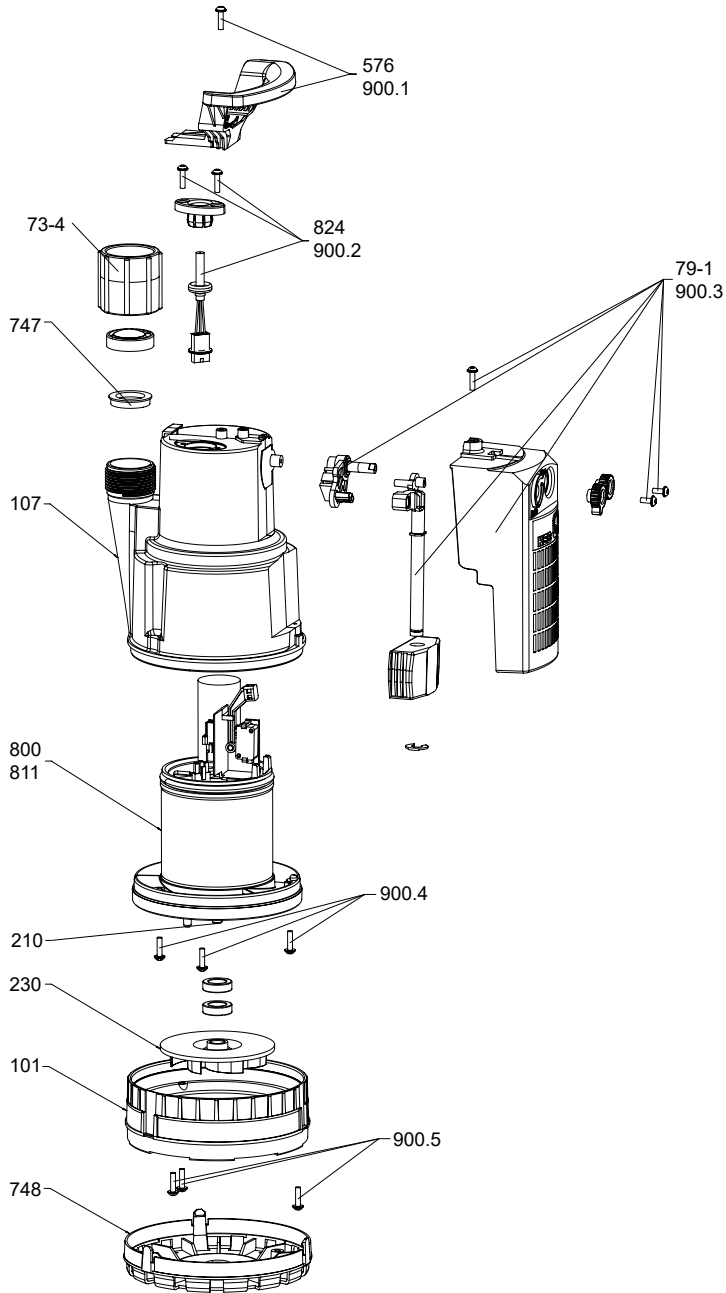


Fig. 5: Exploded view of AmaDrainer 301, 303

Table 10: List of components of AmaDrainer 301, 303

Part No.	Description	Part No.	Description
101	Pump casing	747	Swing check valve
107	Discharge casing	748	Suction strainer
210	Shaft	800	Motor
230	Impeller	811	Motor housing
576	Handle	824	Power cable
79-1	Automatic switchgear, external	900.1/.2/.3/.4/.5	Bolt/screw



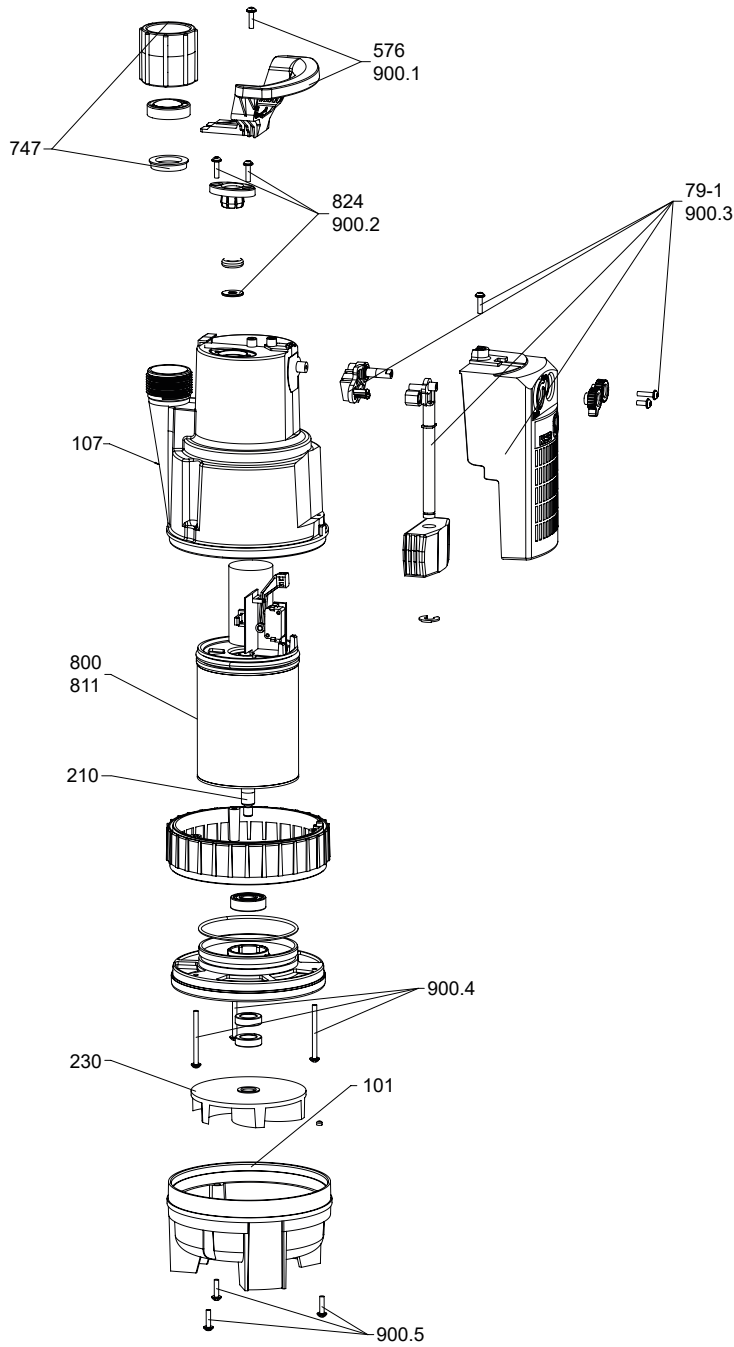


Fig. 6: Exploded view of AmaDrainer 322

Table 11: List of components of AmaDrainer 322

Part No.	Description	Part No.	Description
101	Pump casing	79-1	Automatic switchgear, external
107	Discharge casing	747	Swing check valve
210	Shaft	800	Motor
230	Impeller	811	Motor housing
576	Handle	824	Power cable
73-3	Hose connection (90° bend)	900.1/.2/.3/.4/.5	Bolt/screw







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