

Submersible Grey Water Pump

AmaDrainer 3

60 Hz

Type Series Booklet



Legal information/Copyright

Type Series Booklet AmaDrainer 3

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Building Services: Drainage

Drainage Pumps / Waste Water Pumps

AmaDrainer 3



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 322¹⁾:
 - Solid particles with a particle size of up to 18 mm
- Size 354²⁾:
 - Solid particles with a particle size of up to 35 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)³⁾

- 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 7)

Operating data

Table 1: Operating properties

Characteristic		Value
Flow rate	Q [m³/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
- Sizes 301, 303, 322⁴⁾:
 - Integrated swing check valve
- Size 322⁴⁾:
 - Integrated pump sump cleaning option

Installation

- Vertical installation
- Wet-installed transportable model

Drive

- Jacket-cooled single-phase AC motor
- 220 V / 240 V, 60 Hz
- Frequency of starts ≤ 30 starts/hour
- Integrated temperature switch
- Enclosure IP68 (permanently submerged) to EN 60529 / IEC 529
- Power cable incl. shockproof plug

¹ Not available in Brazil

² Not available in the UK and Brazil

³ UK and Brazil: on request

⁴ Not available in Brazil

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

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
	5	35 mm
1	Characteristic curve	
	1	Characteristic curve 301
	2	Characteristic curve 322
	3	Characteristic curve 303
	4	Characteristic curve 354
C	Material variant	
	C	Variant for aggressive fluids
	.. ⁵⁾	Standard variant

Materials

Table 3: Overview of available materials

Part No. (⇒ Page 19)	Description	Material variant A		Material variant C	
		301, 303	322, 354	301, 303	322, 354
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	

⁵ Blank

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 fluids⁶⁾
- Sizes 301, 303:
 - Integrated low water level intake option for residual water level as low as 2 mm
- Sizes 301, 303, 322⁷⁾:
 - Integrated swing check valve
- Size 322⁷⁾:
 - 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/> .

⁶⁾ UK and Brazil: on request

⁷⁾ Not available in Brazil

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	-
Water		
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	-	X
Cooling water	X	-
Seawater	-	X ⁸⁾
Raw water	X	-
Swimming pool water (DIN 19643)	-	X
Salt water	-	X ⁸⁾
Partly desalinated water	X	-
Fully desalinated water	-	X

⁸ Fluid temperature ≤ 20 °C

Technical data

AmaDrainer 3

Table 6: Technical data – 220 V / 240 V, 60 Hz

Size	Discharge-side connection	Free passage	P ₁	P _N	I _N 1~220 V / 1~240 V	Power cable		Mat. No.	[kg]
						H05RN8-F			
		[mm]	[kW]	[kW]	[A]	[m]	[mm ²]		
Material variant A (standard variant)									
301 ⁹⁾	Rp 1 1/4	10	0,43	0,25	2,00	10	3 × 0,75	48267557	4
303	Rp 1 1/4	10	0,90	0,60	4,00	10	3 × 0,75	48267558	5,5
322	Rp 1 1/4	18	0,70	0,40	3,60	10	3 × 0,75	48267559	5,5
354 ¹⁰⁾	G 1 1/2	35	0,90	0,60	4,00	10	3 × 0,75	48267560	5,6
Material variant C (for aggressive fluids)									
301 C ⁹⁾	Rp 1 1/4	10	0,43	0,25	2,00	10	3 × 0,75	48267561	4,2
303 C	Rp 1 1/4	10	0,90	0,60	4,00	10	3 × 0,75	48267562	5,4
322 C	Rp 1 1/4	18	0,70	0,40	3,60	10	3 × 0,75	48267563	5,4
354 C ¹⁰⁾	G 1 1/2	35	0,90	0,60	4,00	10	3 × 0,75	48267564	5,6

Table 7: Technical data – 220 V / 240 V, 60 Hz (for the UK)

Size	Discharge-side connection	Free passage	P ₁	P _N	I _N 1~220 V / 1~240 V	Power cable		Mat. No.	[kg]
						H05RN8-F			
		[mm]	[kW]	[kW]	[A]	[m]	[mm²]		
Material variant A (standard variant)									
301	Rp 1 1/4	10	0,43	0,25	2,00	10	3 × 0,75	48242507	4,2
303	Rp 1 1/4	10	0,90	0,60	4,00	10	3 × 0,75	48242508	5,4
322	Rp 1 1/4	18	0,70	0,40	3,60	10	3 × 0,75	48242509	5,5
 Material variant C on request									

Table 8: Technical data – 220 V / 240 V, 60 Hz (for Brazil)

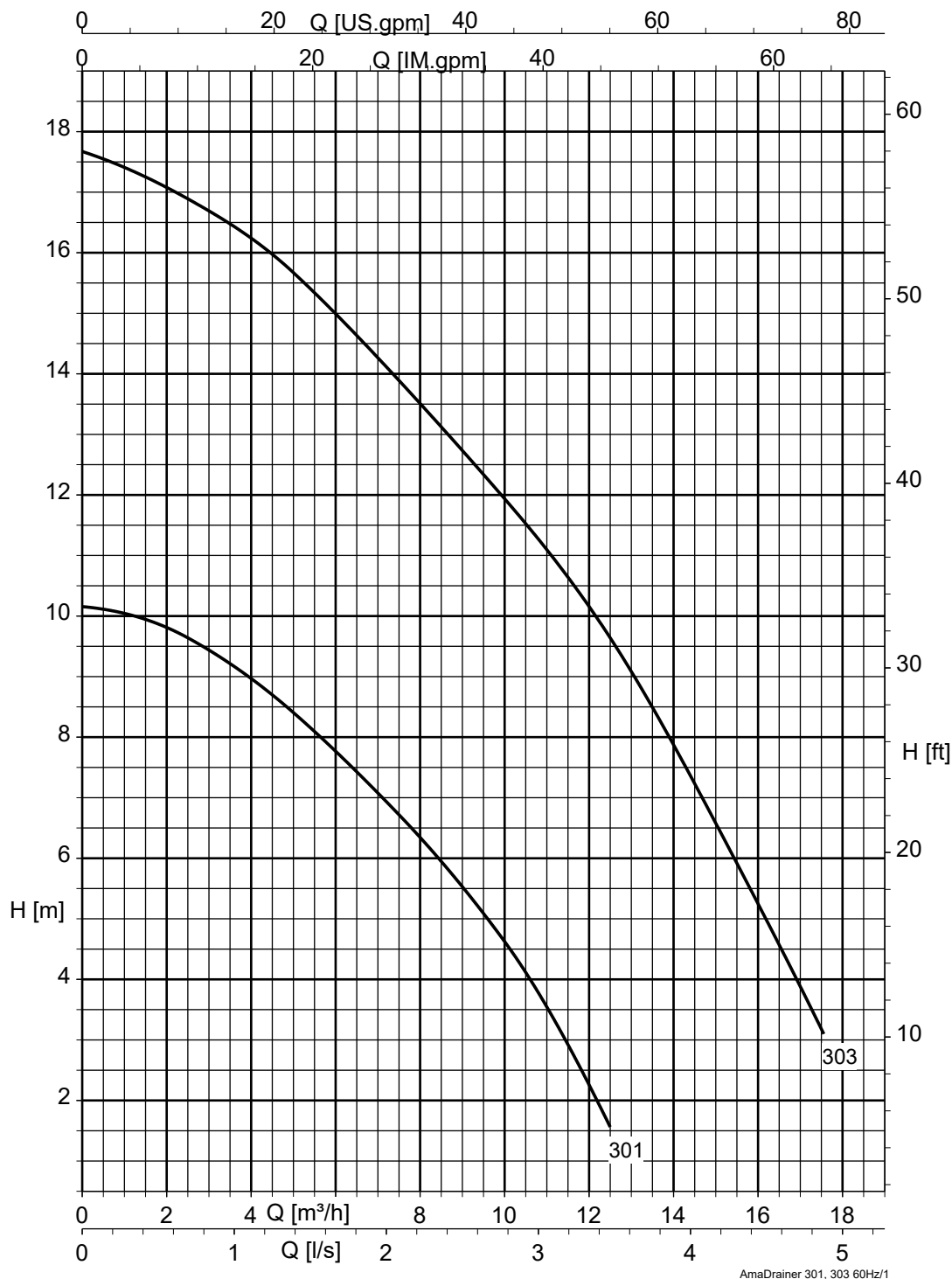
Size	Discharge-side connection	Free passage	P ₁	P _N	I _N 1~220 V / 1~240 V	Power cable		Mat. No.	[kg]
						H05RN8-F			
		[mm]	[kW]	[kW]	[A]	[m]	[mm ²]		
Material variant A (standard variant)									
301	Rp 1 1/4	10	0,43	0,25	2,00	3	3 × 0,75	48267565	4,2
303	Rp 1 1/4	10	0,90	0,60	4,00	3	3 × 0,75	48267566	5,4
 Material variant C on request									

⁹⁾ Discharge-side adapter, graded (Rp 1 1/4 to Rp 3/4 connection, DN 25 or DN 32), included in the scope of supply

¹⁰⁾ 90° bend (cross-section 1 1/2 inches) for vertical discharge included in the scope of supply

Characteristic curves

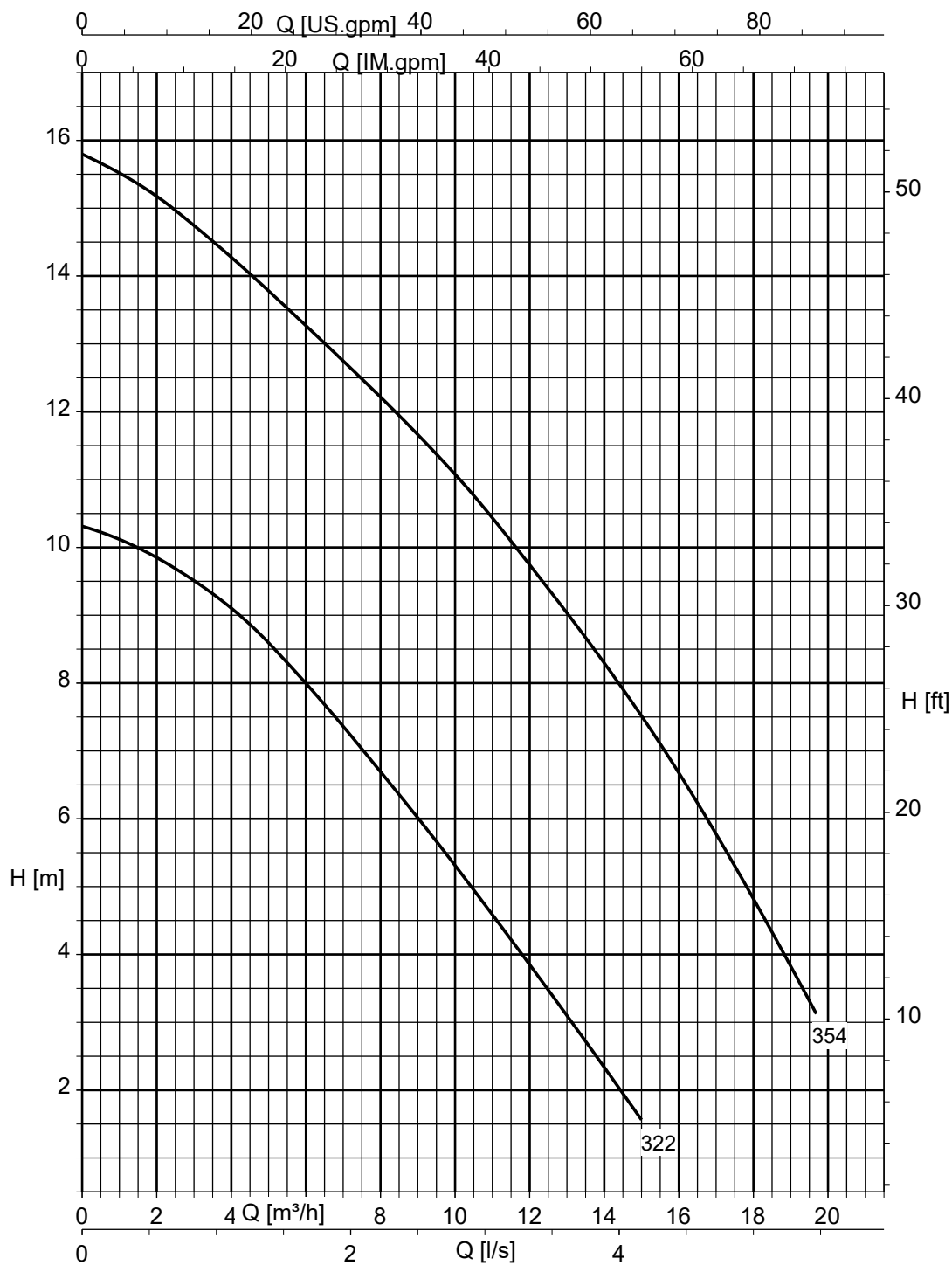
Ama-Drainer 301, 303, n = 3500 rpm



Sizes 301, 303: free passage = 10 mm

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

Ama-Drainer 322, 354, n = 3500 rpm



AmaDrainer 322, 354 60Hz/1

Size 322: free passage = 18 mm

Size 354: free passage = 35 mm

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

Dimensions and connections

AmaDrainer 3

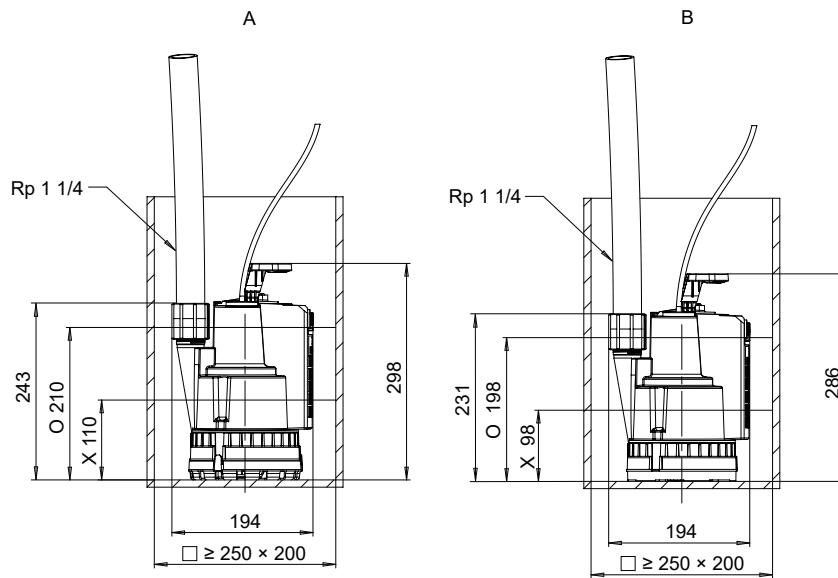


Fig. 1: Dimensions of AmaDrainer 301 [mm]

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 ¹¹⁾

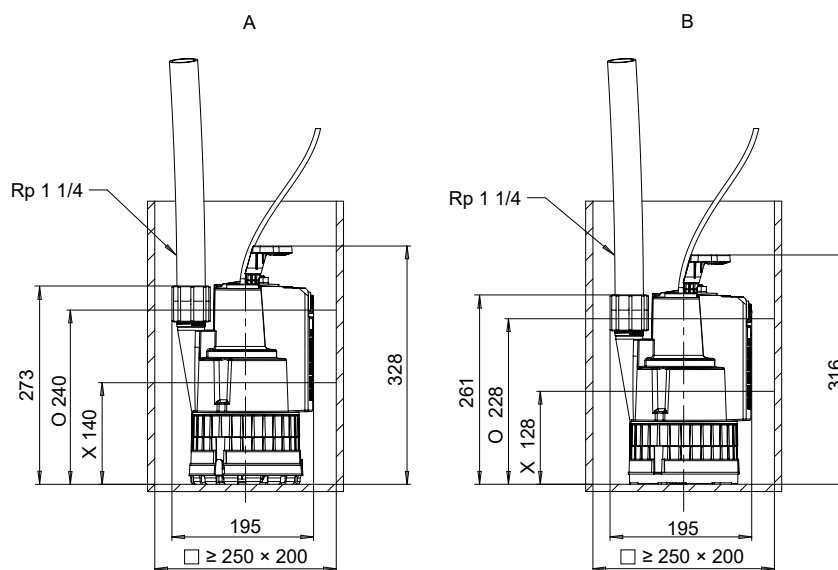


Fig. 2: Dimensions of AmaDrainer 303 [mm]

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 ¹¹⁾

¹¹⁾ 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.

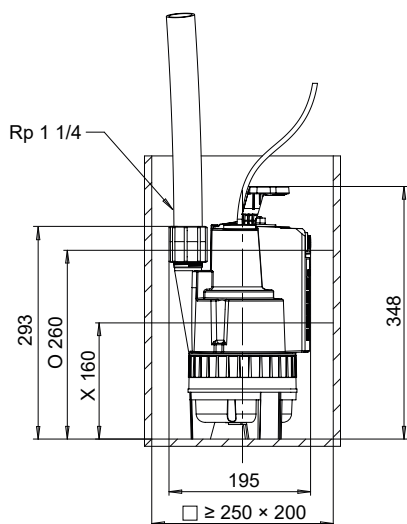


Fig. 3: Dimensions of AmaDrainer 322 [mm]

O	Switching point ON
X	Switching point OFF
□	Minimum floor area required for installation in a tank or sump ¹¹⁾

i AmaDrainer 322¹²⁾: 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).

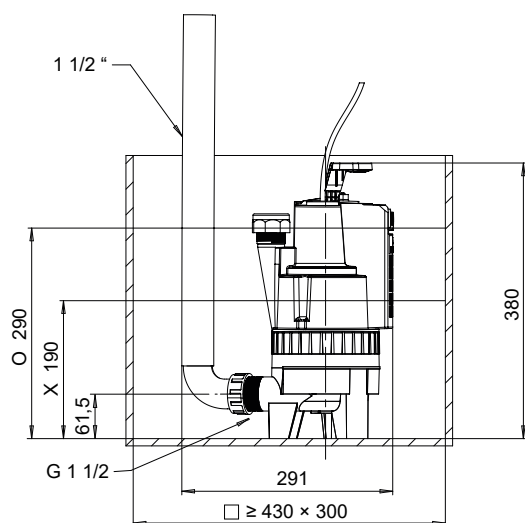


Fig. 4: Dimensions of AmaDrainer 354 [mm]

O	Switching point ON
X	Switching point OFF
□	Minimum floor area required for installation in a tank or sump ¹¹⁾

¹²⁾ Not available in Brazil

Installation example of a dual-pump station

The inlet is positioned above the highest float switch.

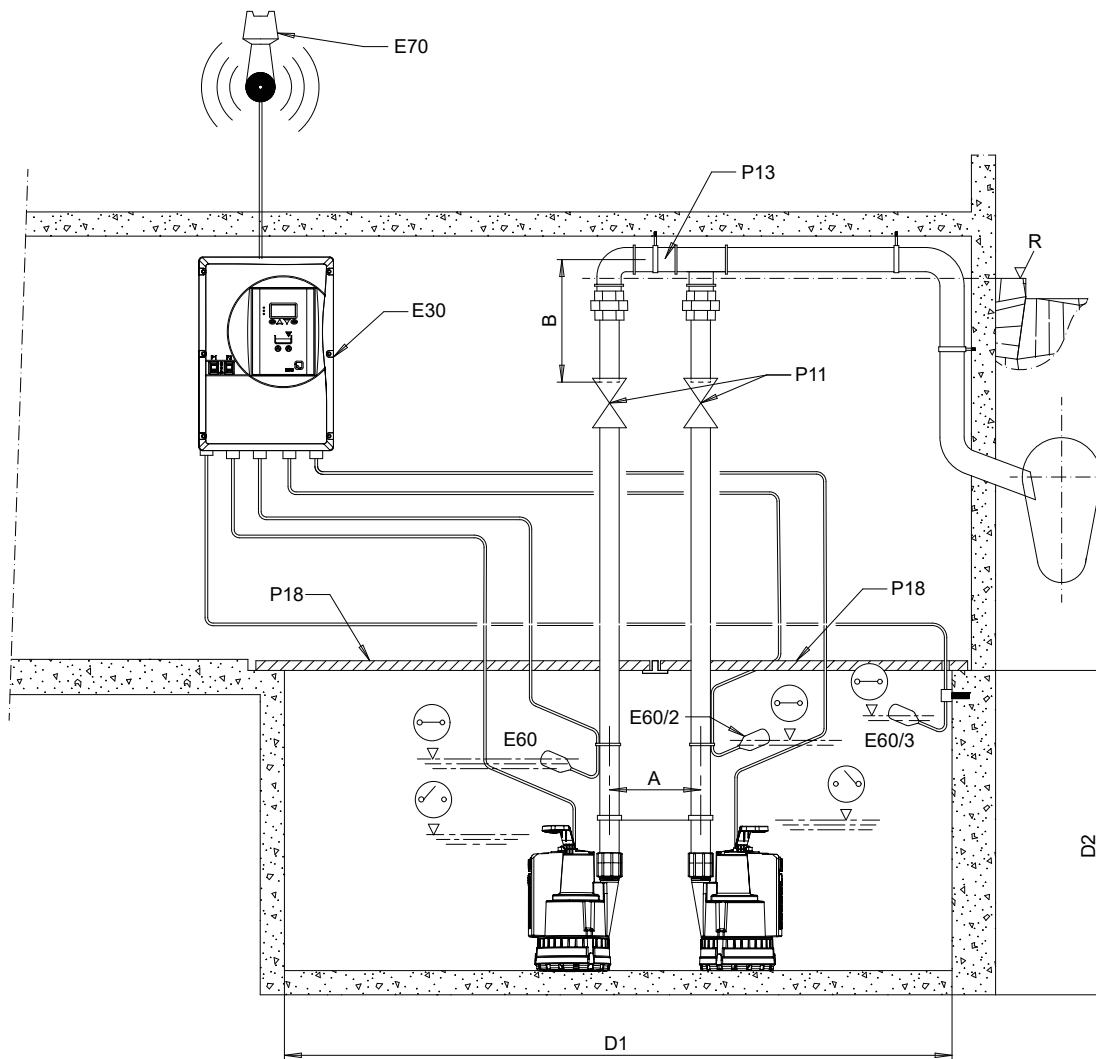


Fig. 5: Installation example of an AmaDrainer 301, 303, 322 dual-pump station

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 9: 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

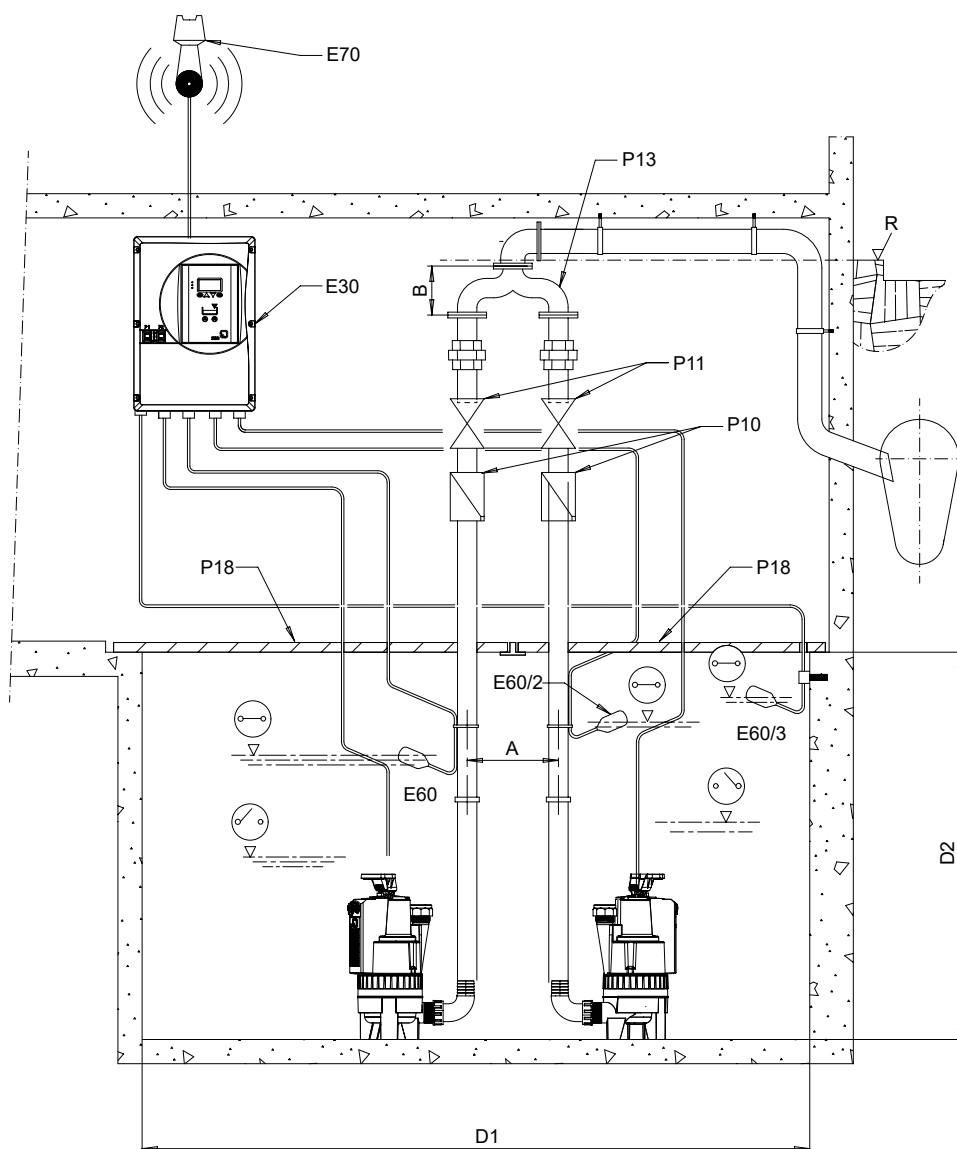


Fig. 6: Installation example of an AmaDrainer 354 dual-pump station

E30	Control unit
E60	Float switch, base load
E60/2	Float switch, peak load
E60/3	Float switch, high water alert
E70	Horn
P10	Lift check valve
P11	Shut-off valve
P13	Y-pipe
P18	Cover plate
R	Flood level

Table 10: Dimensions of an AmaDrainer 354 dual-pump station

Size	A	B	D1	D2
	[mm]	[mm]	[mm]	[mm]
354	275	180	1060 x 500	500

Spare parts

Table 11: Overview of spare parts

Part No.	Description	AmaDrainer				Mat. No.	[kg]
		301	303	322	354		
79-1 	Repair set for automatic switchgear	X	X	X	X	01833946	0,16
576 	Handle	X	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
- Size 354:
 - 90° bend (cross-section 1 1/2 inches) for vertical discharge

Accessories

Pump accessories

Table 12: Pump accessories

Item	Description	Connection	AmaDrainer				Mat. No.	[kg]
			301	303	322	354		
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	- ¹³⁾	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 Rp 1 1/2	X -	X -	X -	- X	01009771 01009772	0,1 0,25
P10 	Lift check valve, stainless steel (1.4401)	Rp 1 1/4 Rp 1 1/2	X -	X -	X -	- X	01084936 01084935	2,1 2,2
P11 	Socket gate valve Material: CuZn, PN 16, with internal thread, with full port	Rp 1 1/4 Rp 1 1/2	X -	X -	X -	- X	01014219 00411502	0,627 0,8
P13 	Y-pipe For dual-pump sets, with external thread, galvanised steel	Rp 1 1/4	X	X	X	-	18040311	4,1
P13 	Y-pipe For dual-pump sets, grey cast iron, with hexagon head bolts, nuts and gaskets; flanges drilled to DIN 2501	DN 40	-	-	-	X	40000688	10,6
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	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	X	01002463	0,3
P26 	Storz hose coupling Required counterpart see P24	C 52 (DIN 14321)	X	X	X	-	00524551	0,3
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	X	01062592	1,7
		C 42-10 m	X	X	X	X	01062593	2,8
		C 42-20 m	X	X	X	X	01062594	5

¹³⁾ Included in the scope of supply

Item	Description	Connection	AmaDrainer				Mat. No.	[kg]
			301	303	322	354		
 P28	Plastic hose DN 50, DIN 14811, with integrated C couplings Required pipe part see P32 Can be combined with P24	C 52-5 m	X	X	X	X	00522262	2,3
		C 52-10 m	X	X	X	X	00522263	4,2
		C 52-20 m	X	X	X	X	00522264	5,7
 P29	Threaded flange for Y-pipe (P13), internal thread	DN 40 / Rp 1 1/2	-	-	-	X	00260478	1,8
 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
 P36	Replacement kit for AmaDrainer-Box Mini For replacing an Ama-Drainer N installed in AmaDrainer-Box Mini by an AmaDrainer 3 Comprising: installation parts and discharge line	-	X ¹⁴⁾	-	-	-	19066504	0,4

Control units and switchgear

 Control units and switchgear on request

¹⁴ Order the replacement kit in addition to the required AmaDrainer 3.

Exploded view and list of components

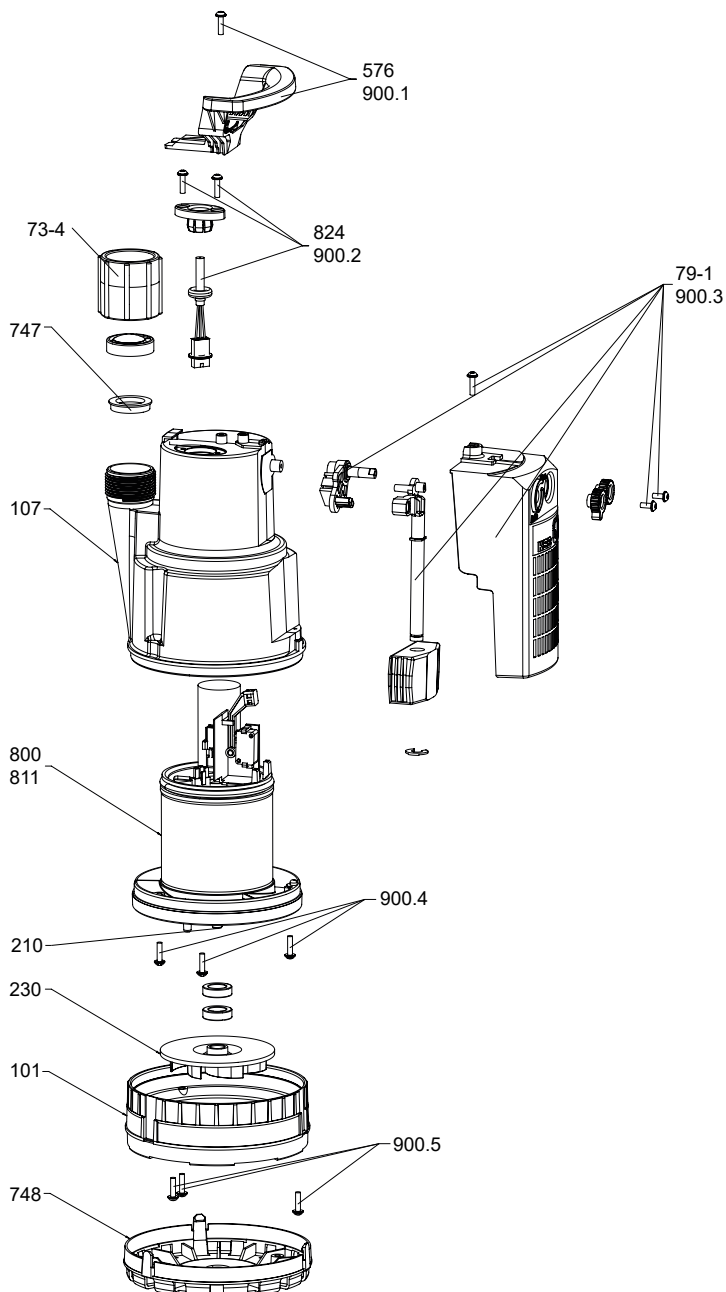


Fig. 7: Exploded view of AmaDrainer 301, 303

Table 13: 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
74-3	Barrel nipple	900.1/.2/.3/.4/.5	Bolt/screw
79-1	Automatic switchgear, external		

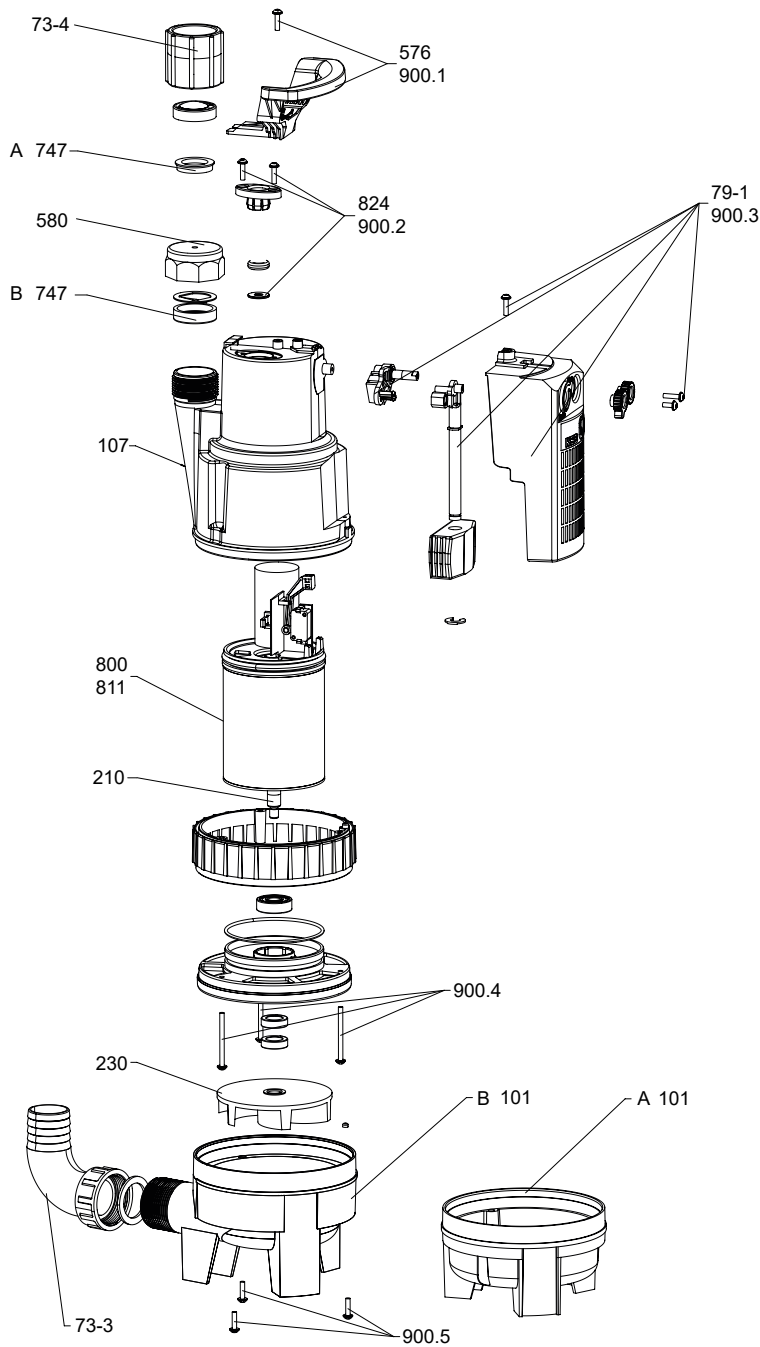


Fig. 8: Exploded view of AmaDrainer 322, 354

A	AmaDrainer 322	B	AmaDrainer 354
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Table 14: List of components of AmaDrainer 322, 354

Part No.	Description	Part No.	Description
101	Pump casing	74-3	Barrel nipple
107	Discharge casing	79-1	Automatic switchgear, external
210	Shaft	74-7	Swing check valve ¹⁵⁾
230	Impeller	800	Motor
576	Handle	811	Motor housing
580	Cap	824	Power cable
73-3	Hose connection (90° bend)	900.1/.2/.3/.4/.5	Bolt/screw

¹⁵ On AmaDrainer 354 the swing check valve is mounted upside down (opening downwards) to enable venting of the pump casing.



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