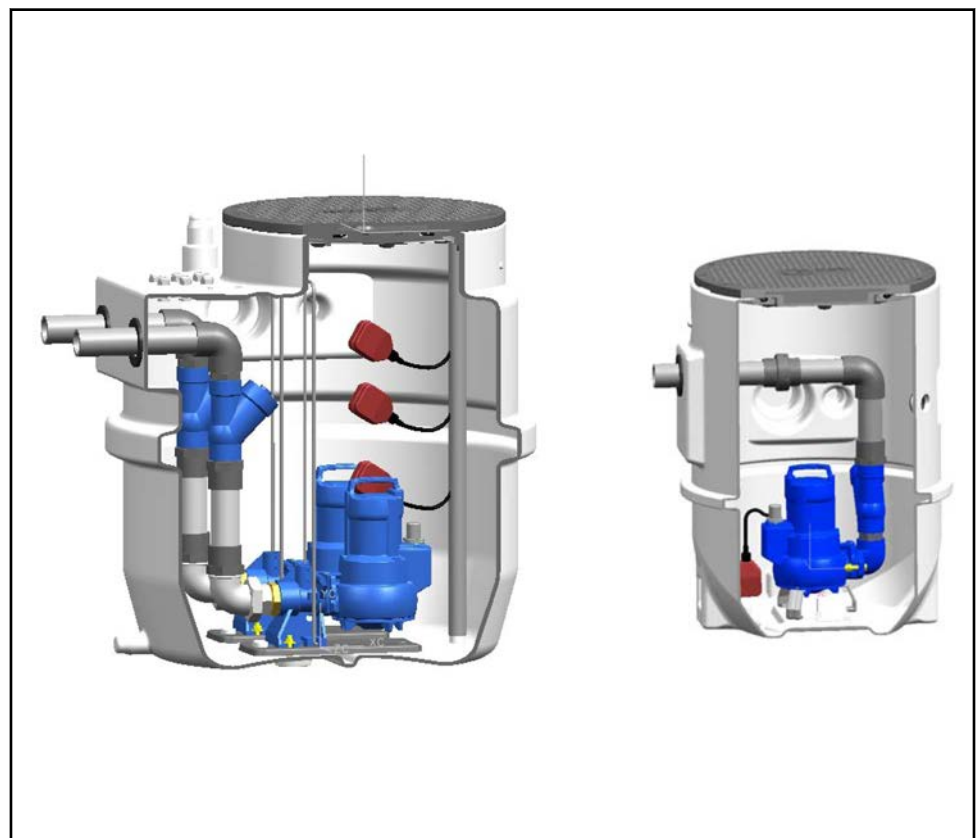


Automatic Waste Water Pump Station

Evamatic-Box N

Type Series Booklet



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Type Series Booklet Evamatic-Box N

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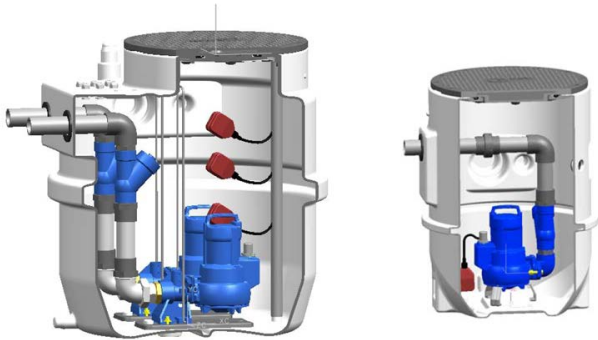
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Waste Water Pump Station

Pump Station for Domestic Waste Water

Evamatic-Box N



Main applications

- Waste water disposal
- Automatic drainage of buildings and premises below the flood level
- Drainage systems
- Rainwater harvesting

i The pump is not approved for use in countries stipulating explosion-proof units for handling waste water containing faeces.

Fluids handled

- Waste water with faeces
- Waste water containing solids (free passage: 45 to 60 mm)
- Slightly contaminated water
- Grey water

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 40 m ³ /h, 11.0 l/s
Head	H	Up to 21 m
Fluid temperature	t	Up to 40 °C max. in continuous operation
		Up to 70 °C max. (3 - 5 minutes max.)

Designation

Example: Evamatic-Box N 2 501 E P M

Key to the designation

Code	Description	
Evamatic-Box N	Type series	
2	Number of pumps	
	1	One pump
	2	Two pumps
501	Pump type	
	32	Amarex NS 32
	501	Ama-Porter
E	Motor version	
	E	Single-phase AC motor
	D	Three-phase motor
P	Installation type	
	P	Transportable, mounted on three feet
	S	Stationary, mounted on flanged bend
M	As-delivered condition	
	M	Collecting tank fully assembled
	K	Collecting tank as assembly kit

Design details

Design

- Single-pump or dual-pump unit
- Tank volume: 200 or 500 litres
- To DIN EN 12050-1¹⁾
- Tank made of impact-resistant plastic, for above-floor/ underfloor installation
- Optional tank extension for underfloor installation, height: 300 mm
- Closed with odour-proof cover
- Lift check valve integrated in the supplied piping

Installation types

Evamatic-Box N 200 I

- Stationary installation
- Transportable models

Evamatic-Box N 500 I

- Stationary installation

Drive

- Single-phase AC motor (230 V - 50 Hz) with integrated temperature switch
- Three-phase asynchronous motor (400 V - 50 Hz), DOL starting, enclosure IP 68 (permanently submerged), thermal class F to EN 60529 / IEC 529

Shaft seal

Drive end

- Shaft seal ring


Pump end

¹⁾ The tanks are absolutely odour-proof. They have successfully been leak-tested at a test pressure of 0.5 bar (to DIN EN 12050-1).


- Bi-directional mechanical seal with oil reservoir filled with environmentally friendly oil

Impeller type

F impeller (free-flow impeller)

	Free-flow impeller (impeller type F)	Suitable for the following fluids: fluids containing solids and stringy material as well as fluids with entrapped air or gas
---	--------------------------------------	--

S impeller (cutter)

	Impeller with cutter (impeller type S)	Suitable for the following fluids: fluids containing coarse substances and/or long fibres
---	--	---

Bearings

- Grease-lubricated bearings sealed for life

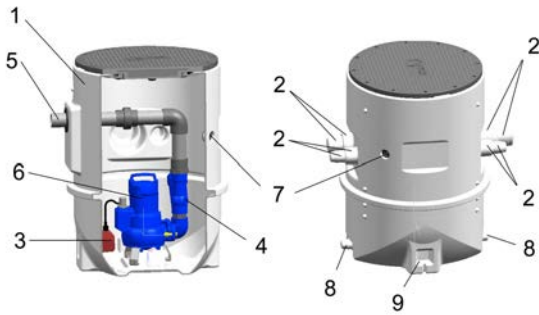
Automation

KSB recommends to use the LevelControl Basic 2 control unit. (Electrical accessories optionally available.)

Connections

- Inlet side: DN 50 / DN 70 / DN 100 / DN 150 for cutting open
- Discharge outlet: DN 50 / DN 65 for cutting open if supplied as an assembly kit
- Drain: DN 40 for cutting open

Configuration and function
Evamatic-Box N 200 I



Sectional drawing

1	Collecting tank	2	Nozzles for inlet or venting
3	Float switch	4	Ball check valve
5	Discharge line	6	Submersible motor pump
7	Cable entry for power cable	8	Drainage nozzles
9	Floor mount		

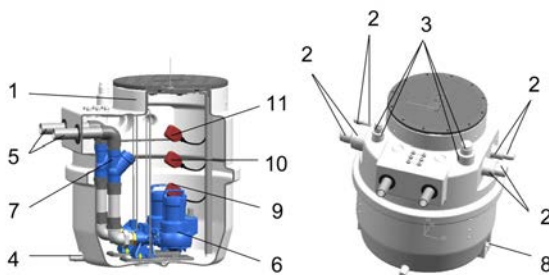
Design

The pump station consists of a stable collecting tank (1) with integrated submersible motor pump (6), an inlet nozzle (2) and a vent nozzle (2) (8 options available for selection) as well as a discharge line (5).

Function

The fluid handled flows into the pump station through the inlet nozzle (2) and is collected in a gas-, odour- and water-tight tank (1) made of polyethylene. As soon as the float switch (3) detects a defined fill level, the submersible motor pump (6) is started up automatically. The fluid handled is pumped off through the discharge line to a level above the flood level and into the public sewer. As soon as the float switch (3) detects a defined minimum fill level, the submersible motor pump (6) is stopped automatically.

Evamatic-Box N 500 I



Sectional drawing

1	Collecting tank	2	Horizontal nozzles for inlet or venting
3	Vertical nozzles for inlet or venting	4	Drainage nozzle
5	Discharge lines	6	Submersible motor pumps
7	Ball check valves	8	Floor mount
9	Float switch pump 1 ON, and pump 1 and 2 OFF	10	Float switch pump 2 ON
11	Float switch for alarm		

Design

The pump station consists of a stable collecting tank (1) with two integrated submersible motor pumps (6), a horizontal (2) or vertical (3) inlet nozzle, a horizontal (2) or vertical (3) vent nozzle (12 options available for selection) as well as two discharge lines (5).

Function

The fluid handled flows into the pump station through the inlet nozzle (2) or (3) and is collected in a gas-, odour- and water-tight tank (1) made of polyethylene. As soon as the float switch (9) detects a defined fill level, the first submersible motor pump (6) is started up automatically. The fluid handled is pumped off through the discharge line to a level above the flood level and into the public sewer. If the float switch (10) detects a rising fill level while one pump is in operation, the second submersible motor pump (6) is started up automatically. As soon as the float switch (9) detects a defined minimum fill level, both pumps (6) are stopped automatically. The alarm float switch (11) needs to be connected to an alarm switchgear for acoustic or visual alarm (optional alarm switchgear can be supplied by KSB).

Materials

- Single-piece water-proof tank made of polyethylene
- Pipe made of PVC

Product benefits

- Control unit enables automatic pump operation
- Easy to install either directly on the floor or in underfloor position
- Pump can easily be lifted out of and lowered into the tank through the generously sized access opening.
- Numerous connection options provide a high degree of flexibility.
- Easy access to float switches fastened to a removable rod (Evamatic-Box N 500 I), patented system
- Non-clogging hydraulic system due to free-flow impeller/cutter

Technical data

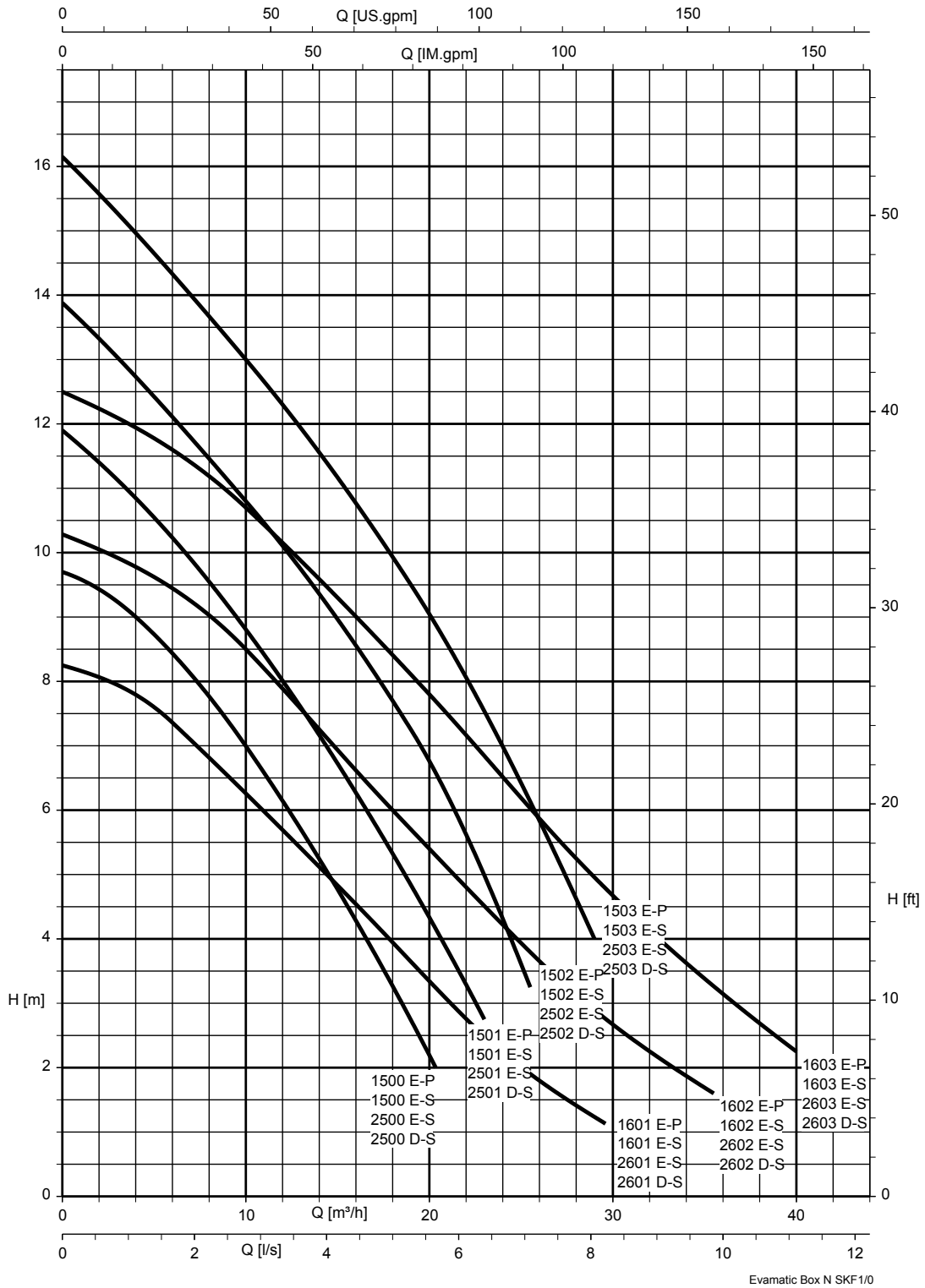
Evamatic-Box N

Designation	F impeller	S impeller	Free passage	P	1~ 230 V	3~ 400 V	Mat. No.	[kg]
			[mm]	[kW]	[A]	[A]		
Transportable version (Evamatic-Box N 200 I, as assembly kit)								
1500 E-P	X	-	45	0,55	5,0	-	39023380	54
1501 E-P	X	-	45	0,75	6,0	-	39023381	54
1502 E-P	X	-	45	1,10	8,2	-	39023382	54
1503 E-P	X	-	45	1,10	8,2	-	39023383	54
1601 E-P	X	-	60	0,75	6,0	-	39023384	64
1602 E-P	X	-	60	1,10	8,2	-	39023385	64
1603 E-P	X	-	60	1,10	8,2	-	39023386	64
1545 EB-P	-	X	-	1,10	8,2	-	39023387	57
Stationary installation (Evamatic-Box N 200 I, as assembly kit)								
1500 E-S-K	X	-	45	0,55	5,0	-	39023388	70
1501 E-S-K	X	-	45	0,75	6,0	-	39023389	70
1502 E-S-K	X	-	45	1,10	8,2	-	39023390	70
1503 E-S-K	X	-	45	1,10	8,2	-	39023391	70
1601 E-S-K	X	-	60	0,75	6,0	-	39023392	83
1602 E-S-K	X	-	60	1,10	8,2	-	39023393	83
1603 E-S-K	X	-	60	1,10	8,2	-	39023394	83
1545 EB-S-K	-	X	-	1,10	8,2	-	39023395	73
Stationary installation (Evamatic-Box N 200 I, fully assembled)								
1500 E-S-M	X	-	45	0,55	5,0	-	39023561	70
1501 E-S-M	X	-	45	0,75	6,0	-	39023541	70
1502 E-S-M	X	-	45	1,1	8,2	-	39023542	70
1503 E-S-M	X	-	45	1,1	8,2	-	39023632	70
1601 E-S-M	X	-	60	0,75	6,0	-	39023598	83
1602 E-S-M	X	-	60	1,1	8,2	-	39023633	83
1603 E-S-M	X	-	60	1,1	8,2	-	39023634	83
1545 EB-S-M	-	X	-	1,1	8,2	-	39023635	73
132U D-S-M	-	X	6	1,5	-	3,4	39023840	70
Stationary installation (Evamatic-Box N 500 I, as assembly kit)								
2500 E-S-K	X	-	45	0,55	5,0	-	39023396	110
2501 E-S-K	X	-	45	0,75	6,0	-	39023397	110
2502 E-S-K	X	-	45	1,10	8,2	-	39023398	110
2503 E-S-K	X	-	45	1,10	8,2	-	39023399	110
2601 E-S-K	X	-	60	0,75	6,0	-	39023400	122
2602 E-S-K	X	-	60	1,10	8,2	-	39023401	122
2603 E-S-K	X	-	60	1,10	8,2	-	39023402	122
2500 D-S-K	X	-	45	0,55	-	2,3	39023404	110
2501 D-S-K	X	-	45	0,75	-	2,8	39023405	110
2502 D-S-K	X	-	45	1,10	-	3,0	39023406	110
2503 D-S-K	X	-	60	1,50	-	3,5	39023407	110
2601 D-S-K	X	-	60	0,75	-	2,8	39023408	122
2602 D-S-K	X	-	60	1,10	-	3,0	39023409	122
2603 D-S-K	X	-	60	1,50	-	3,5	39023410	122
2545 EB-S-K	-	X	-	1,10	8,2	-	39023403	117
2545 D-S-K	-	X	-	1,50	-	3,5	39023411	114
Stationary installation (Evamatic-Box N 500 I, fully assembled)								
2500 E-S-M	X	-	45	0,55	5,0	-	39023595	110
2501 E-S-M	X	-	45	0,75	6,0	-	39023544	110
2502 E-S-M	X	-	45	1,1	8,2	-	39023545	110
2503 E-S-M	X	-	45	1,1	8,2	-	39023636	110
2601 E-S-M	X	-	60	0,75	6,0	-	39023600	122
2602 E-S-M	X	-	60	1,1	8,2	-	39023637	122
2603 E-S-M	X	-	60	1,1	8,2	-	39023638	122
2500 D-S-M	X	-	45	0,55	-	2,3	39023596	110
2501 D-S-M	X	-	45	0,75	-	2,8	39023546	110
2502 D-S-M	X	-	45	1,1	-	3	39023547	110
2503 D-S-M	X	-	45	1,5	-	3,5	39023639	110
2601 D-S-M	X	-	60	0,75	-	2,8	39023601	122
2602 D-S-M	X	-	60	1,1	-	3	39023642	122
2603 D-S-M	X	-	60	1,5	-	3,5	39023643	122

Designation	F impeller	S impeller	Free passage	P	1~ 230 V	3~ 400 V	Mat. No.	[kg]
			[mm]	[kW]	[A]	[A]		
2545 EB-S-M	-	X	-	1,1	8,2	-	39023640	117
2545 D-S-M	-	X	-	1,5	-	3,5	39023641	114

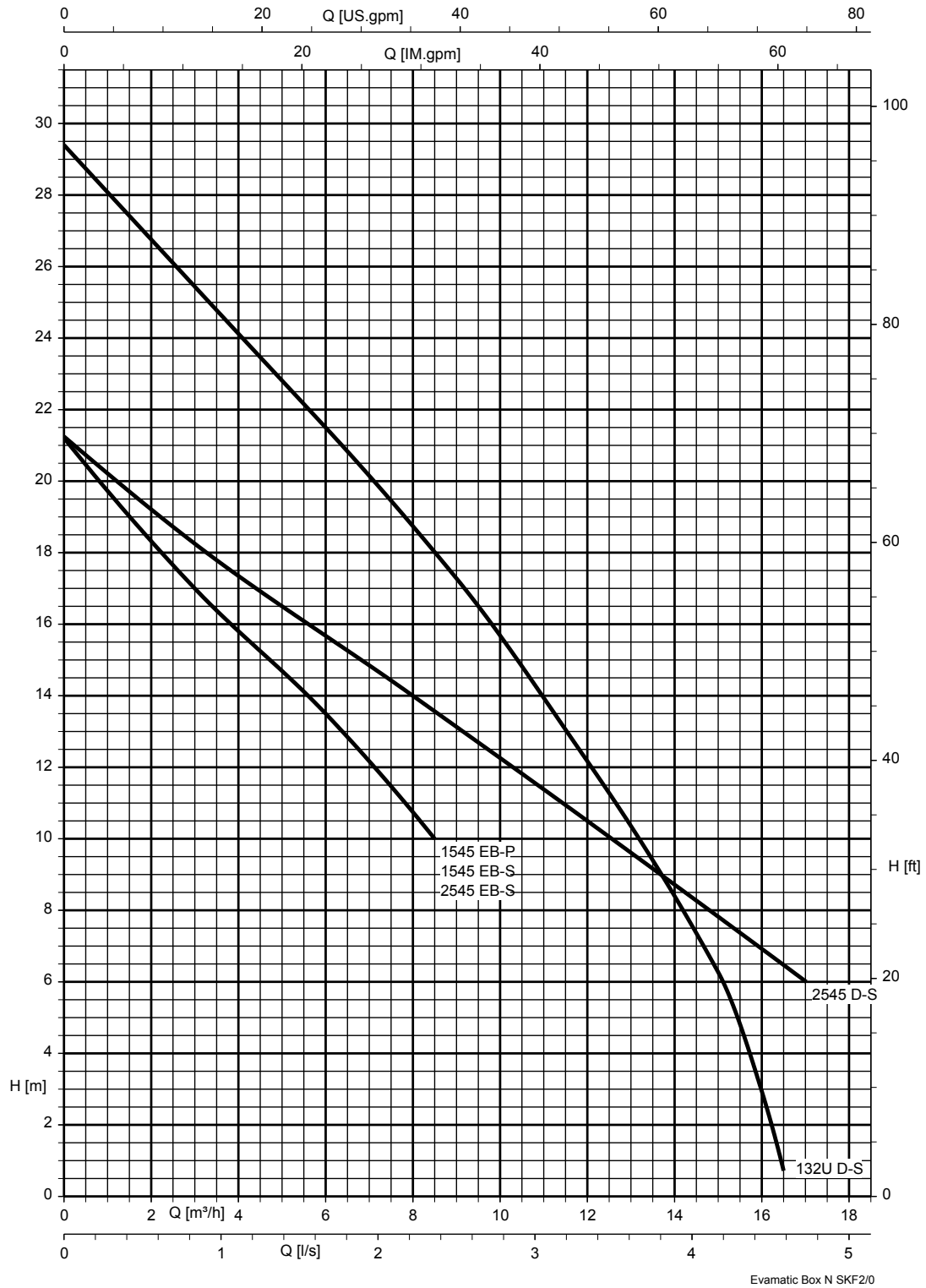
Characteristic curves

Evamatic-Box N; n = 2900 rpm; F impeller



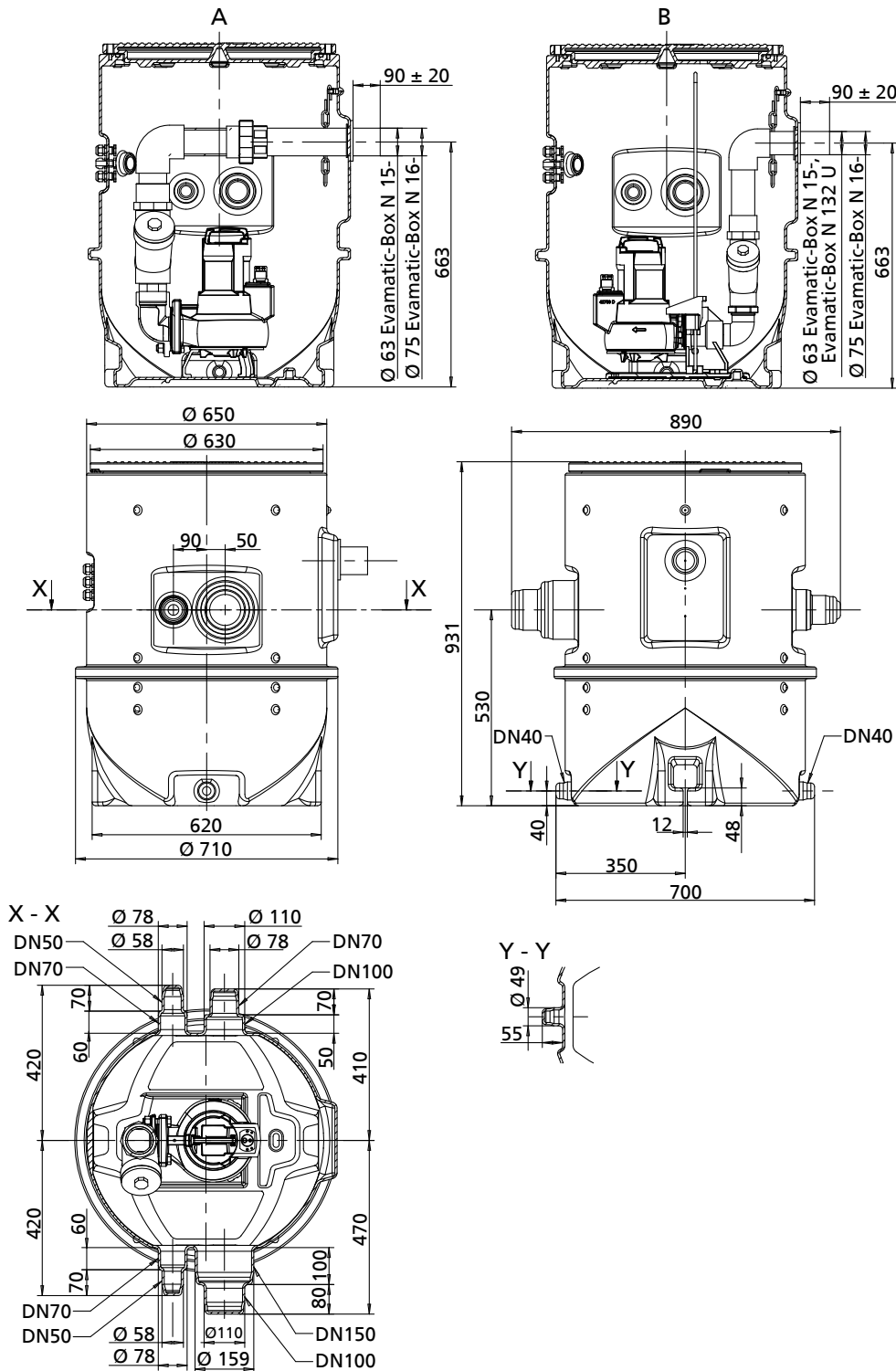
Evamatic Box N SKF1/0

Evamatic-Box N; n = 2900 rpm; S impeller



Dimensions

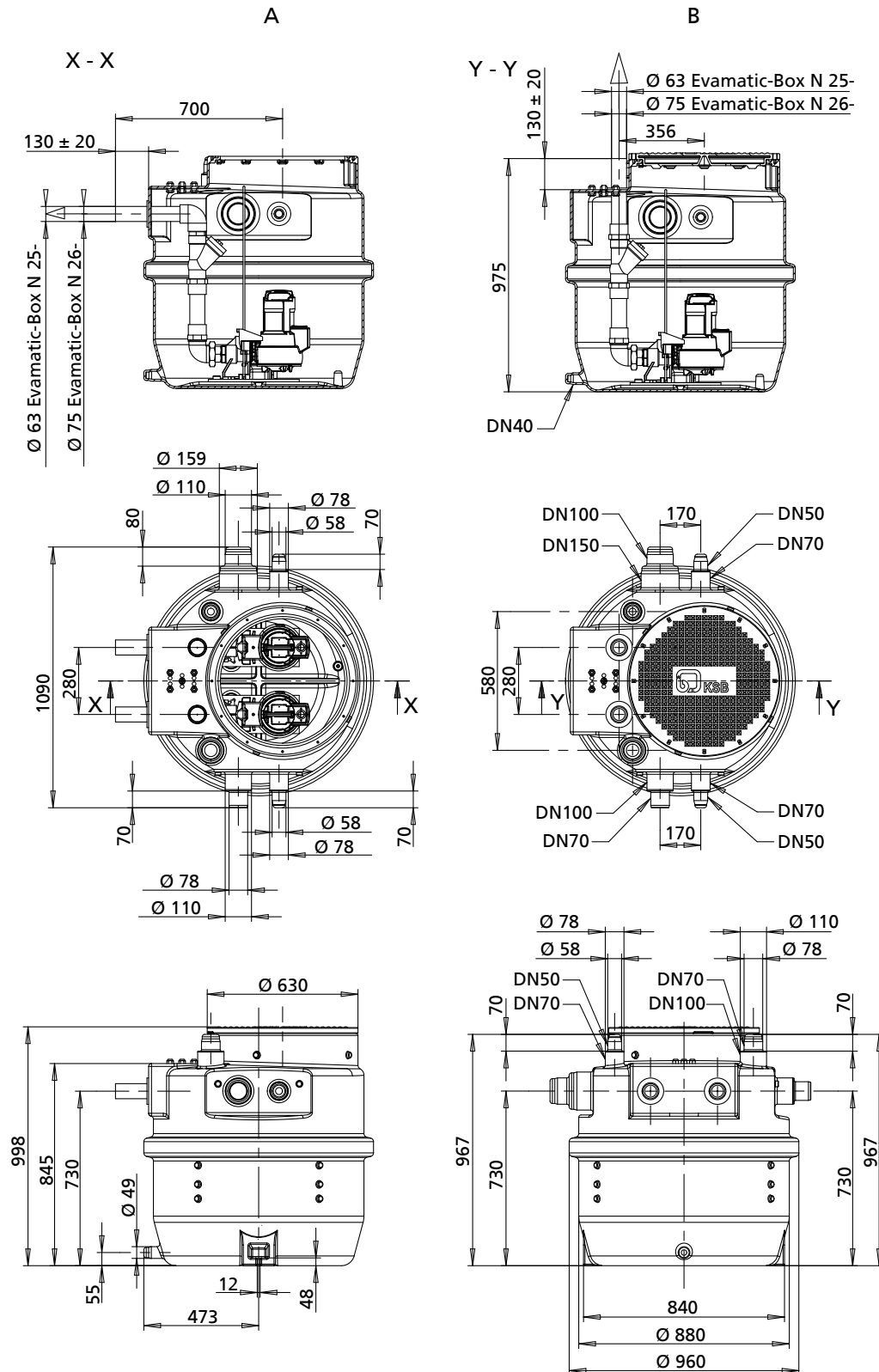
Evamatic-Box N 200 I



Outline drawing of Evamatic-Box N 200 I

A	Transportable version	B	Stationary version
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Evamatic-Box N 500 I



Outline drawing Evamatic-Box N 500 I, stationary installation

A	Discharge line outlet, horizontal	B	Discharge line outlet, vertical
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Scope of supply

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

Evamatic-Box N 200 I with transportable pump version (supplied as assembly kit)

- 200-litre tank, access cover with screws and sealing element
- Complete discharge line with ball check valve and sealing element
- Ama-Porter submersible motor pump with single-phase motor and float switch
- Lifting chain made of stainless steel 1.4401
- Cable entry for power cable
- With hook made of stainless steel 1.4571

Evamatic-Box N 200 I with stationary pump version (supplied as assembly kit)

- 200-litre tank, access cover with screws and sealing element
- Complete foot with cast iron baseplate, pump claw, guide hoop and bolts/screws
- Complete horizontal discharge line, DN 50/DN 65, with ball check valve and sealing element
- Ama-Porter submersible motor pump with single-phase motor and float switch
- Lifting chain made of stainless steel 1.4401
- Cable entry for power cable
- With hook made of stainless steel 1.4571

Evamatic-Box N 200 I with stationary pump version (supplied fully assembled)

- Baseplate with foot, guide hoop and discharge line, fully assembled
- Ama-Porter pump with single-phase motor and float switch, or Amarex N S 32 pump with three-phase motor and float switch, foot-mounted
- Power cable
- Cable grommet or cable gland
- Lifting chain made of stainless steel 1.4401
- The cover is mounted and temporarily fastened with 2 screws; the remaining 10 screws are supplied in a bag inside the tank.
- 8 nozzle options for inlet and venting, from DN 50 to DN 150, for cutting open
- 1 DN 40 drain nozzle, for cutting open

Evamatic-Box N 500 I with horizontal or vertical discharge outlet and stationary pump versions (supplied as assembly kit)

- 500-litre tank, access cover with screws and sealing element
- Two complete feet with cast iron baseplates, pump claws, guide hoops and bolts/screws
- Two complete discharge lines with ball check valve and sealing element (the discharge line supplied is suitable for horizontal or vertical discharge)
- Two Ama-Porter submersible motor pumps with single-phase or three-phase motors
- Two lifting chains made of stainless steel 1.4401
- Five PG cable glands for routing the two power cables of the pumps and the three float switch cables through the tank wall

- Three float switches fastened to a removable rod for installation in the tank. The float switches have been arranged at the factory.
- One hook made of stainless steel 1.4571 (per pump)

Evamatic-Box N 500 I with horizontal discharge outlet and stationary pump versions (supplied fully assembled)

- Baseplates with feet, guide hoops and horizontal discharge lines, fully assembled
- Pumps mounted on feet
- Power cables
- Rod for float switches
- Cable clips
- PG cable glands
- Lifting chains
- The cover is mounted and temporarily fastened with 2 screws; the remaining 10 screws are supplied in a bag inside the tank.
- 12 nozzle options for inlet and venting, from DN 50 to DN 150, for cutting open
- 1 DN 40 drain nozzle, for cutting open

Accessories





Further required accessories can be purchased from our distributors.

- Level-adjusting piece, height: 300 mm
- Gate valve DN 50 and 65 made of cast iron or PVC
- Cable connectors for connecting the cables inside the tank
- Control unit for Evamatic-Box N 200 I, only for a pump station with one Amarex N S32 with three-phase motor
- Control unit for Evamatic-Box N 500 I
- Alarm float switch for Evamatic-Box N 200 I (for connection to an alarm switchgear)
- Alarm switchgear for Evamatic-Box N 200 I
- Noise reduction pads
- Adapters (increasing or reducing adapters)

Accessories

Control units and switchgear

200 l

	Item	Description	1~		Mat. No.	[kg]
			1500 E 1501 E 1601 E	1502 E 1503 E 1602 E 1603 E 1545 EB		
	E50	AS 0 Buzzer/switching input	X	X	29128401	0.5
	E51	AS 2 Buzzer/switching input, Mains-dependent with volt-free signalling contact	X	X	29128422	0.5
	E52	AS 4 Buzzer/switching input, Mains-independent (battery-backed) with volt-free signalling contact and self-charging power supply unit (for 5 hours' operation in the event of power failure)	X	X	29128442	0.5
	E 60	Float switch with free cable end (NO contact) 10 m	X	X	39023446	1.5
		8 noise reduction pads made of natural rubber self-adhesive for fitting on the tank floor	X	X	18078943	0.02
		Pipe adapter, EPDM/stainless steel, PN 05 for connecting inlet and vent lines of different outside diameters				
	P9	DN 70 for outside pipe diameter 53 - 63 mm	X	X	01313530	0.263
		DN 100 for outside pipe diameter 53 - 63 mm	X	X	39023452	0.5
		DN 100 for outside pipe diameter 75 - 89 mm	X	X	39023453	0.5

Control units and switchgear

 **Only valid for France!** Evamatic-Box N 132 U-D

Item	Description	400 V	Type	I [A]	3~	Mat. No.	[kg]
E30 E31	LevelControl Basic 2 control unit for single-pump station, IP 54 In compliance with NF C 15-100 DOL starting With manual-0-automatic selector switch Indicator lamps and control panel High water alert Integrated alarm buzzer, 85 dB(A) Operating hours counter/ start-stop cycle counter per pump Voltage measurement, phase monitoring Volt-free contact for general fault message Optional mains-independent alarm via rechargeable battery For float switch or 4...20 mA sensor, with master switch, 400 x 278 x 120 mm	X	BC1 400 DFNO 040 02	2,5 - 4,0	X	19073878	4.5

Control units and switchgear

500 l

Valid for all countries except France

	Item	Description	230 V	400 V	Type	I [A]	1~		3~		Mat. No.	[kg]
							2500 E 2501 E 2601 E	2502 E 2503 E 2602 E 2603 E 2545 EB	2500 D	2501 D 2502 D 2503 D 2601 D 2602 D 2603 D 2545 D		
	E30	LevelControl Basic 2 control unit for dual-pump station, IP 54 For float switch or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm	X	-	BC2 230 ^{DFNO} 100	Up to 10	X	X	-	-	19073774	4.7
			-	X	BC2 400 ^{DFNO} 025	1,6 - 2,5	-	-	X	-	19073776	4.7
			-	X	BC2 400 ^{DFNO} 040	2,5 - 4,0	-	-	-	X	19073777	4.7

Control units and switchgear




500 l

Only valid for France!

	Item	Description	230 V	400 V	Type	I [A]	1~		3~		Mat. No.	[kg]
							2500 E 2501 E 2601 E	2502 E 2503 E 2602 E 2603 E 2545 EB	2500 D	2501 D 2502 D 2503 D 2601 D 2602 D 2603 D 2545 D		
	E 30	LevelControl Basic 2 control unit for dual-pump station, IP 54 In compliance with NF C 15-100 Peak load operation function DOL starting With manual-0-automatic selector switch Indicator lamps and control panel High water alert Integrated alarm buzzer, 85 dB(A) Operating hours counter / counter for start-stop cycles per pump Voltage measurement, phase monitoring Volt-free contact for general fault message. Optional mains-independent alarm via rechargeable battery Master switch 400 x 278 x 120 mm For float switch or 4...20	X	-	BC2 230 ^{DFNM} 063 02	4,0 - 6,3	X	-	-	-	19073884	4.7
			X	-	BC2 230 ^{DFNM} 100 02	6,0 - 10,0	-	X	-	-	19073885	4.7

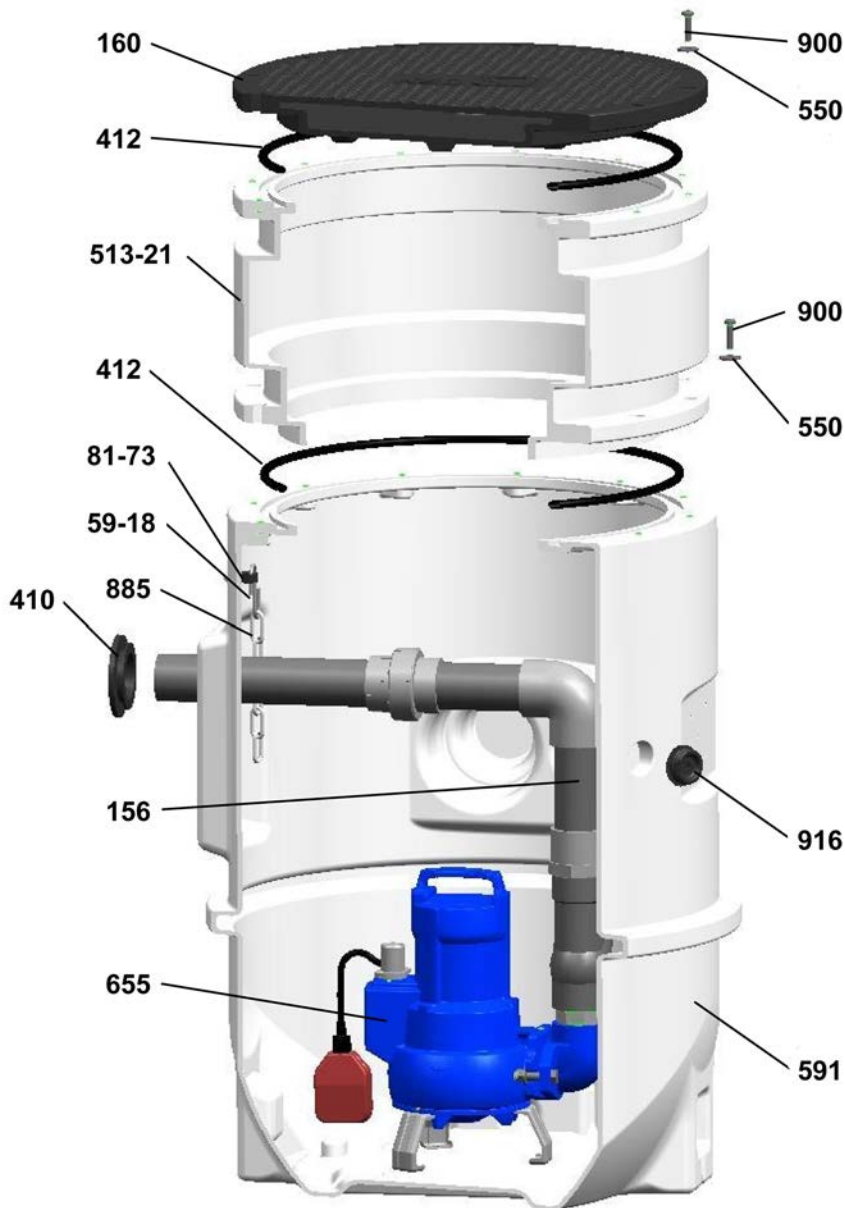
	Item	Description			Type	I [A]	1~		3~		Mat. No.	[kg]
							2500 E 2501 E 2601 E	2502 E 2503 E 2602 E 2603 E 2545 EB	2500 D	2501 D 2502 D 2503 D 2601 D 2602 D 2603 D 2545 D		
		mA sensor, optional master switch, 400 x 278 x 120 mm	-	X	BC2 400 ^{DFNO} 025 02	1,6 - 2,5	-	-	X	-	19073887	4.7
			-	X	BC2 400 ^{DFNO} 040 02	2,5 - 4,0	-	-	-	X	19073888	4.7

Pump accessories

	Item	Description	Connection	Mat. No.	[kg]	
	P14	Hand diaphragm pump LA, grey cast iron	Rp 1 1/2	00520485	12	
		Socket gate valve PVC	DN 50	39017886	0	
			DN 65	39018149	2.1	
		Cable connector, IP 68, for fastening at the cover, for connecting the pumps/float switches inside the tank 1 cable connector per cable				
		For Ama-Porter F with single-phase AC motor for float switches		39023444	0.052	
		For Ama-Porter S with single-phase AC motor/Ama-Porter with three-phase motor		39023445	0.08	
		Level-adjusting piece	300 mm	39023481	5.751	

Exploded views with lists of components

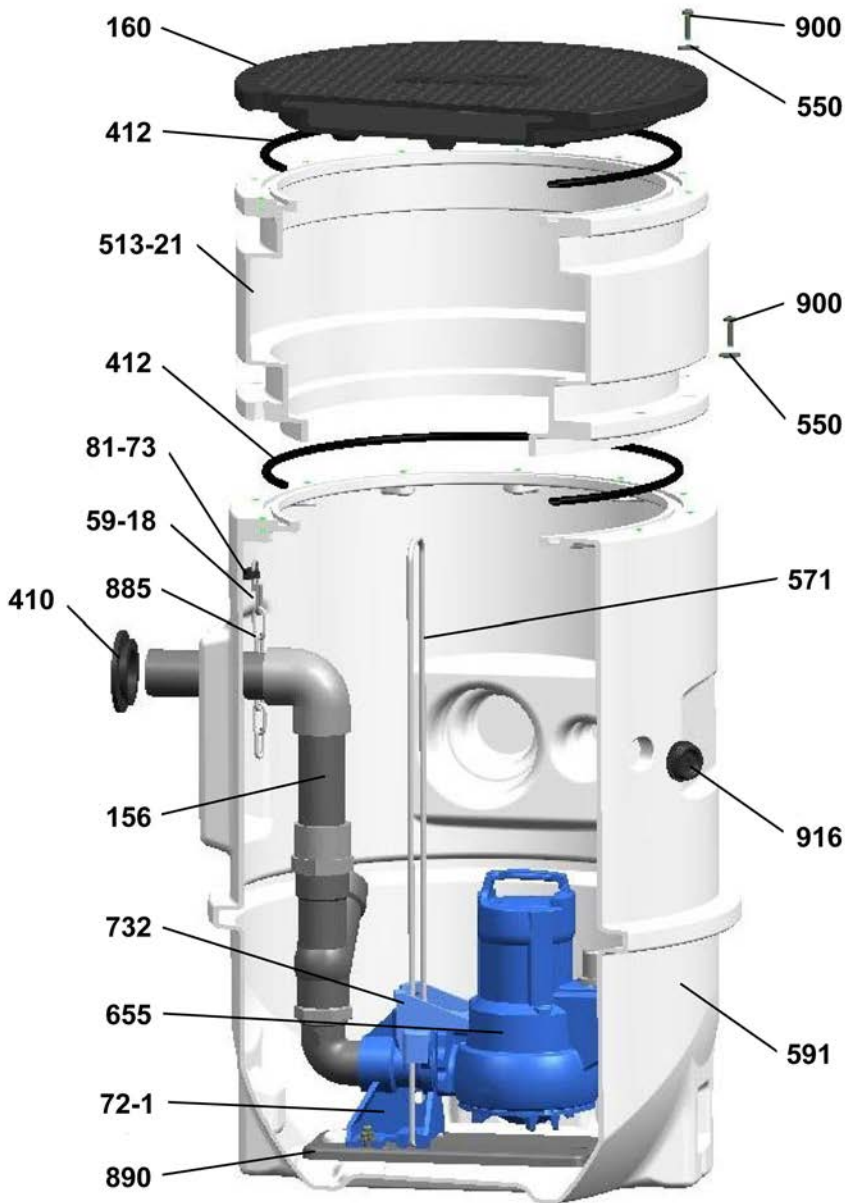
Evamatic-Box N 200 I - transportable version, with Ama-Porter



Exploded view of transportable version

156	Discharge nozzle	591	Tank
160	Cover	655	Pump
410	Profile seal	81-73	Cable support
412	O-ring	885	Chain
513-21	Level-adjusting piece + 1 O-ring 412 (optional)	900	Screw
550	Disc	916	Cable grommet
59-18	Hook		

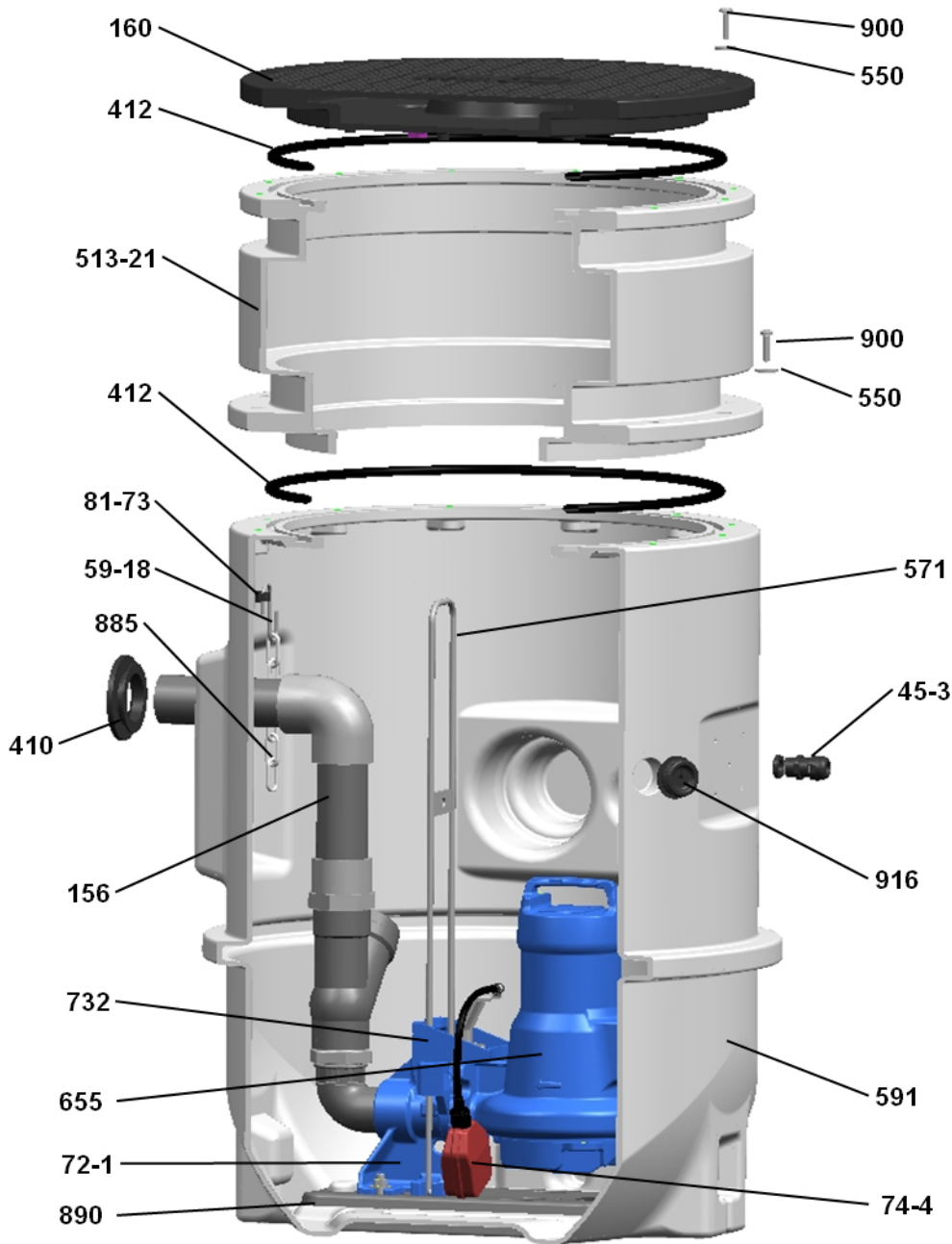
Evamatic-Box N 200 I - stationary version, with Ama-Porter



Exploded view of stationary version

156	Discharge nozzle	591	Tank
160	Cover	655	Pump
410	Profile seal	72-1	Flanged bend
412	O-ring	81-73	Cable support
513-21	Level-adjusting piece + 1 O-ring 412 (optional)	885	Chain
550	Disc	890	Baseplate
571	Guide hoop	900	Screw
59-18	Hook	916	Cable grommet

Evamatic-Box N 200 I - stationary version, with Amarex N S 32

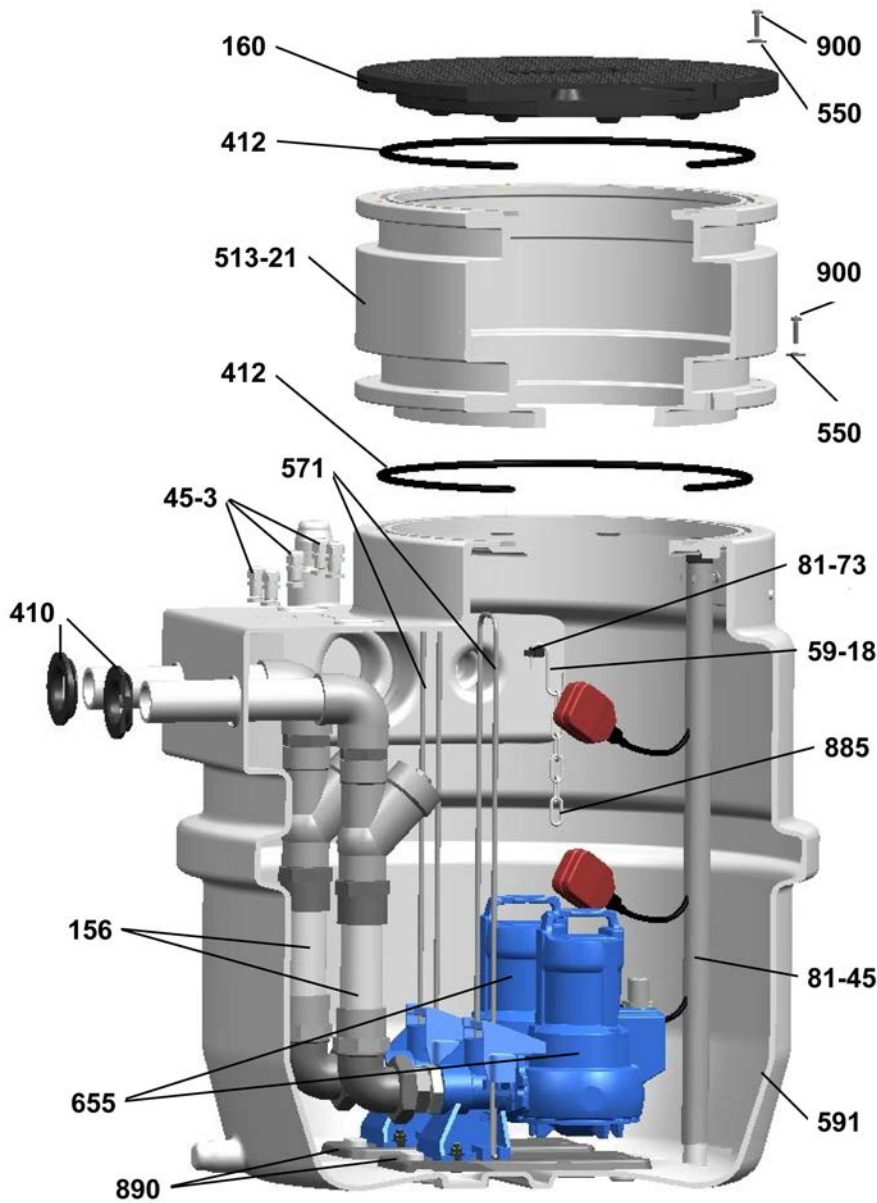


Exploded view of stationary version

156	Discharge nozzle	591	Tank
160	Cover	655	Pump
45-3	Wall stuffing box	72-1	Flanged bend
410	Profile seal	74-4	Float
412	O-ring	81-73	Cable support
513-21	Level-adjusting piece + 1 O-ring 412 (optional)	885	Chain
550	Disc	890	Baseplate
571	Guide hoop	900	Screw
59-18	Hook	916	Cable grommet

Evamatic-Box N 500 I

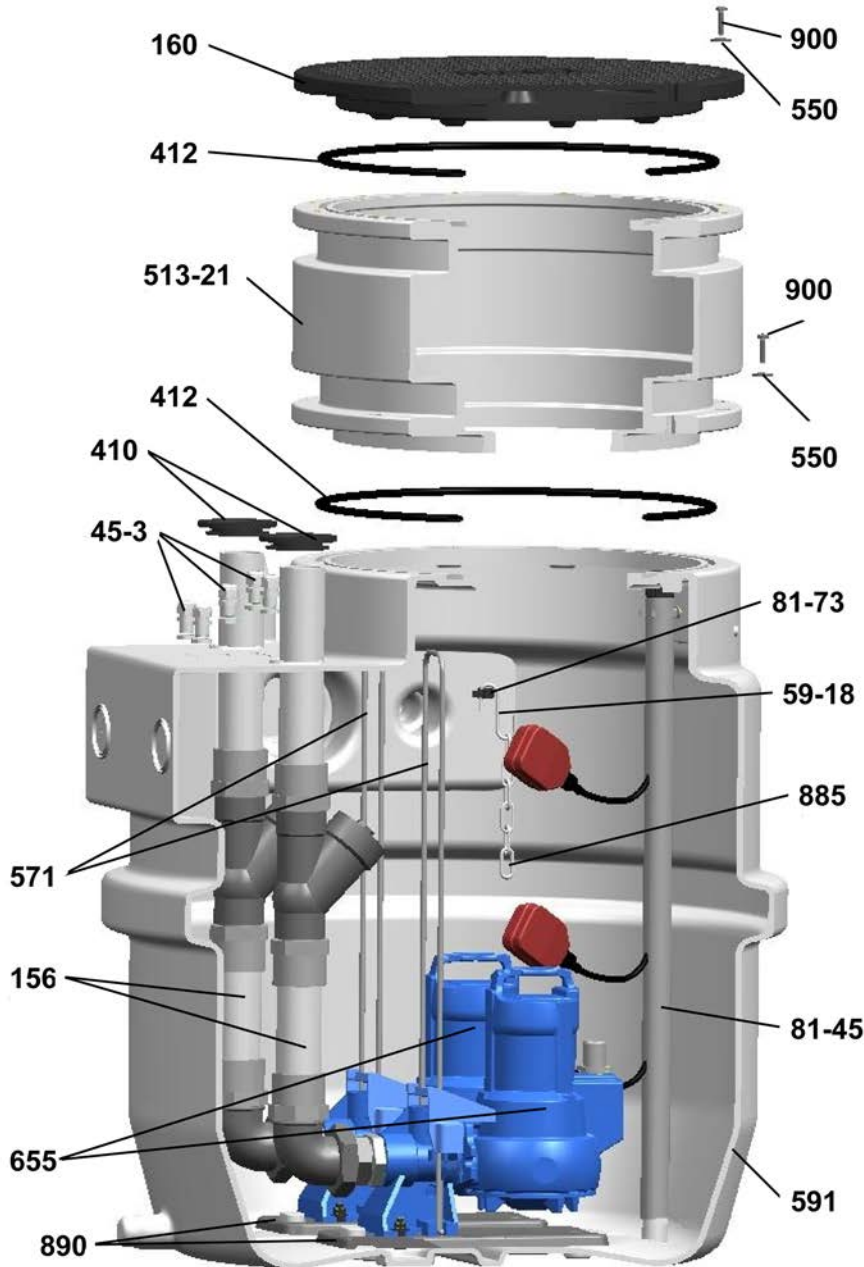
Horizontal discharge outlet



Exploded view of version with horizontal discharge outlet

156	Discharge nozzle	591	Tank
160	Cover	655	Pump
410	Profile seal	72-1	Flanged bend
412	O-ring	81-45	Float switch
45-3	Wall stuffing box	81-73	Cable support
513-21	Level-adjusting piece + 1 O-ring 412 (optional)	885	Chain
550	Disc	890	Baseplate
571	Guide hoop	900	Screw
59-18	Hook		

Vertical discharge outlet



Exploded view of version with vertical discharge outlet

156	Discharge nozzle	591	Tank
160	Cover	655	Pump
410	Profile seal	72-1	Flanged bend
412	O-ring	81-45	Float switch
45-3	Wall stuffing box	81-73	Cable support
513-21	Level-adjusting piece + 1 O-ring 412 (optional)	885	Chain
550	Disc	890	Baseplate
571	Guide hoop	900	Screw
59-18	Hook		



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