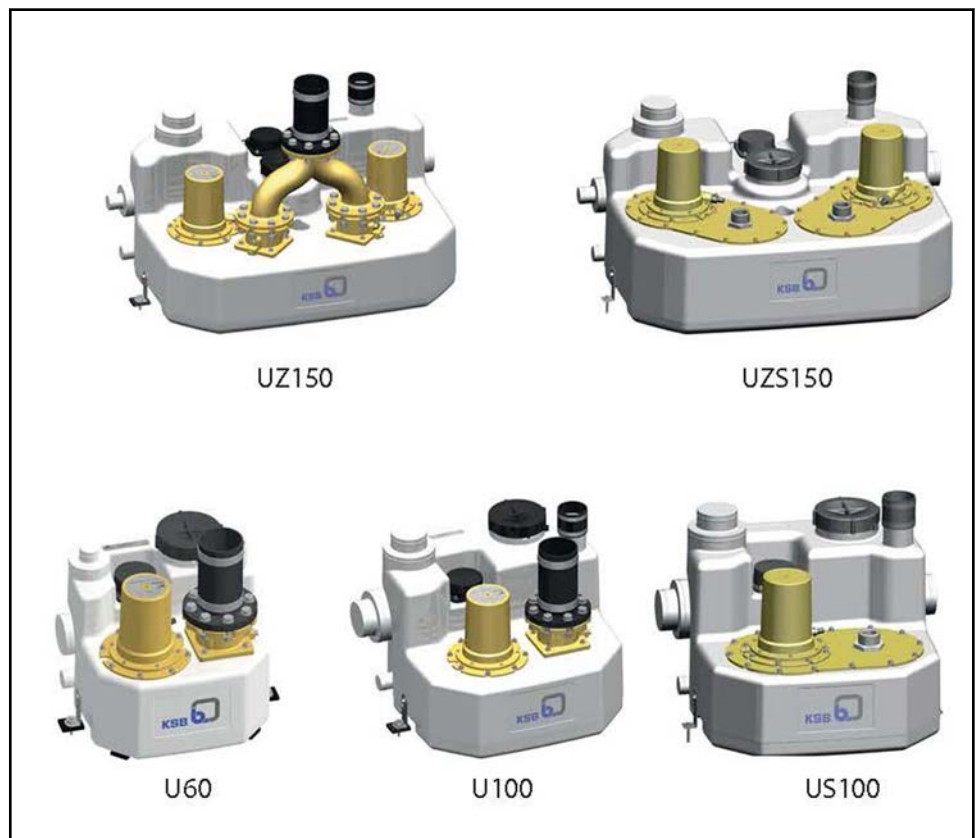


Floodable Sewage Lifting Unit

mini-Compacta

Type Series Booklet



Legal information/Copyright

Type Series Booklet mini-Compacta

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB Aktiengesellschaft, Frankenthal 26.07.2013

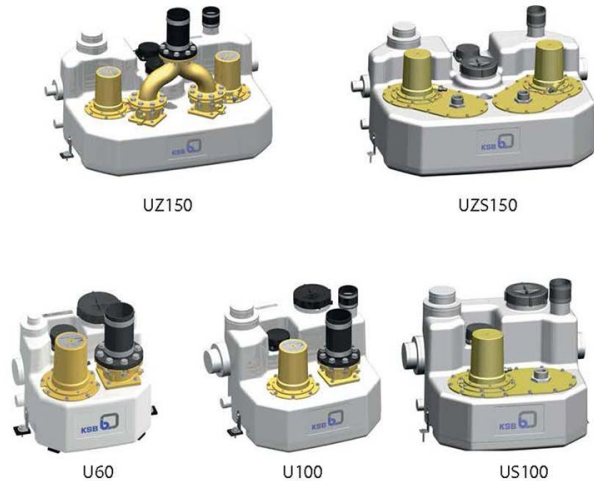
Contents

Building Services: Drainage	4
Lifting Units	4
mini-Compacta	4
Main applications	4
Fluids handled	4
Operating data	4
Mode of operation	4
Designation	4
Design details	4
Configuration and function	5
Materials	6
Product benefits	6
Certifications	6
Overview of product features	7
Selection information	9
Selection aid for drainage applications	10
Special design on request	10
Technical data	11
Selection charts	12
Dimensions and connections	13
Scope of supply of single-pump / dual-pump lifting units	19
Connection nozzles	21
Control units and switchgear	22
LevelControl Basic 1 product description	22
LevelControl Basic 2 product description	22
Combination of lifting and control units	23
Accessories	24

Building Services: Drainage

Lifting Units

mini-Compacta



Main applications

Disposal of waste water from toilets, washing and shower facilities as well as bathrooms in sections of private, commercial, industrial and public buildings which are below the flood level.

Fluids handled

- Domestic waste water with and without faeces
- Grey water
- Aggressive fluids (variant C)
- Clear water

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 36 m ³ /h (10 l/s)
Head	H	Up to 25 m
Fluid temperature	t	Up to 40°C (up 65°C for 5 min max.)

Mode of operation

Operation	Mode
Intermittent operation	S3 50 % to VDE

Designation

Example: mini-Compacta UZS X 1.150 D/C

Key to the designation

Code	Description
mini	Small package unit
Compacta	Type series
UZ	Type of lifting unit
U	= single-pump lifting unit
UZ	= dual-pump lifting unit
US	= single-pump lifting unit with cutter
UZS	= dual-pump lifting unit with cutter
X	Special design
1	Hydraulics code
150	Total volume of collecting tank [litres]
60	
100	
150	
D	D = three-phase motor E = single-phase motor
C	Variant for aggressive fluids

Design details

Design

- Floodable sewage lifting unit ¹⁾ to EN 12050-1
- Lifting units are ready to connect
- Gas and water-proof plastic collecting tank, pump unit, sensors and control unit

Drive

- Surface-cooled
- Single-phase a.c. motor or three-phase motor
- Thermal overload protection
- To VDE 0530, Part 1/IEC 34-1
- Enclosure: IP68 (permanently submerged) to EN 60529 / IEC 529
- Thermal class F
- Voltage 400 V(D) or 230 V (E)
- Frequency 50 Hz
- DOL starting

Impeller types

- With free-flow impeller
- With cutter

Bearings

- Grease-packed, maintenance-free rolling element bearings

Shaft seal

mini-Compacta U, UZ

Impeller end

- Shaft seal ring

¹⁾ Max. flooding height: 2 metres, max. flooding period: 7 days (does not apply to control unit). The lifting unit must be cleaned and serviced after it has been flooded.

Drive end

- Shaft seal ring

A grease fill is provided between the impeller-end and drive-end shaft seals.

mini-Compacta US, UZS and variant C

Impeller end

- Mechanical seal

Drive end

- Shaft seal ring

An oil reservoir is fitted between the impeller-end and drive-end shaft seals which is filled with ecologically acceptable white oil.

Configuration and function



1	Inlet	2	Level sensor
3	Motor with pump	4	Drain connection
5	Transport and float protection	6	Hand hole cover
7	Vent connection	8	Discharge outlet
9	Integrated check valve	10	Tank

Design

The lifting unit is provided with a variety of horizontal/vertical inlet nozzles (1). The hydraulic system (3) pumps the fluid handled into the vertical discharge line (8).

Function

The fluid to be handled flows into the lifting unit through horizontal/vertical inlet nozzles (1) and is collected in a gas, odour and water-tight plastic tank (10). Controlled by a level sensor (2) and control unit, either one or two pumps (3) are started up automatically as soon as the defined fill level is reached. The fluid is pumped off to a level above the flood level, towards the public sewer.

Materials

Overview of available materials

Component	mini-Compacta		
	U60, U100, UZ150	US100, UZS150	U60/C, U100/C, UZ150/C
Tank	Polyethylene		
Pump casing	Polyethylene	Grey cast iron	Polyethylene
Impeller	Ultradur	Grey cast iron	Ultradur
Cutter	-	Norihard	-
Motor shaft	Stainless steel (1.4021)		Stainless steel (1.4462)
Casing cover	Grey cast iron		Stainless steel (1.4408)
Check valve	Grey cast iron	-	Stainless steel (1.4408)
Float	Polypropylene		
Screws, bolts and nuts	Stainless steel (A4)		

Product benefits


- The control system (LevelControl) ensures safe and reliable operation.
- Check valve ensures low-noise pump operation and normal, uninterrupted operation during maintenance work.
- Various positioning options and diameters make it easy to adapt the unit to the most complicated of site conditions.
- Collecting tank with optimum volume/footprint ratio for effective space utilisation
- Integrated, ergonomically designed grips for safe handling during transport and installation

Certifications



Label	Effective in:	Note
 Von Profis. Für Qualität.	Germany	U1.60
	Europe	All pump sizes

Overview of product features



Overview of product features of single-pump units

	mini-Compacta U60
<ul style="list-style-type: none"> Hydraulics code 1 H_{max.} 11.9 m Q_{max.} 26.5 m³/h Free passage of 40 mm 	
Tank volume	60 l
Installation examples	Single-family houses, toilets, wash-basins and showers, secondary toilets and party rooms in the basement, toilets subsequently installed in refurbished buildings
Design	Small plug-in lifting unit in compact design, fully floodable, with gas and water-proof plastic collecting tank with integrated check valve, centrifugal pump with free-flow impeller for automatic operation via electronic control unit

Overview of product features of single-pump and dual-pump units

	Single-pump unit mini-Compacta U100	Dual-pump unit mini-Compacta UZ150
<ul style="list-style-type: none"> Hydraulics codes 1 and 2 H_{max.} 16 m Q_{max.} 36 m³/h Free passage of 40 mm 		
Tank volume	100 l	150 l
Installation examples	Single-family and two-family houses, building extensions, converted cellars, bathroom and sauna facilities for private use	Basement flats, single-family and two-family houses, sanitary facilities in cinemas, theatres, restaurants and bars as well as public swimming pools and sauna facilities
Design	Plug-in single-pump unit, fully floodable, with gas and water-proof plastic collecting tank with integrated check valve, centrifugal pump with free-flow impeller for automatic operation via electronic control unit	Plug-in, micro-processor controlled dual-pump lifting unit, fully floodable, gas- and water-proof plastic collecting tank with two integrated check valves and Y-pipe, two centrifugal pumps with free-flow impeller for automatic alternate, stand-by and peak-load operation

Overview of product features of single-pump and dual-pump units with cutter

	with cutter	
	Single-pump unit mini-Compacta US100	Dual-pump unit mini-Compacta UZS150
<ul style="list-style-type: none"> Hydraulics code S1 and S2 H_{max.} 25 m Q_{max.} 14.5 m³/h 		
Tank volume	100 l	150 l
Installation examples	Refurbished buildings, weekend houses, houseboats, mobile sanitary facilities, for connecting sanitary appliances to a distant sewer	Single-family and two-family houses, outlying houses, sewage disposal from sanitary installations with extraordinarily long discharge pipes or in topographically difficult locations
Design	Plug-in, micro-processor controlled single-pump unit, fully floodable, gas and water-proof plastic collecting tank, centrifugal pump with cutter, for automatic operation	Plug-in, micro-processor controlled dual-pump lifting unit, fully floodable, gas and water-proof plastic collecting tank, two centrifugal pumps with cutter for automatic alternate, stand-by and peak-load operation

Selection information

Requirements on installation at site (to EN 12056-4 and/or EN 12050-1, ...)

- Domestic waste water which occurs below the flood level must be discharged into the public sewer by means of a lifting unit.
- Surface water which occurs below the flood level outside the building must be discharged into the public sewer separately from the domestic waste water by means of a lifting unit which is positioned outside the building.

i If the responsible authorities have not specified a flood level, the flood level is taken to be at least the street level (including footways) at the connection point.

- The flow velocity in the discharge pipe must equal between 0.7 m/s and 2.3 m/s.
- Lifting units must not be installed in outdoor pits.
- Install all electrical connections (e.g. sockets, CEE plugs) and alarm switchgears in dry rooms protected against flooding.
- The effective volume of the lifting unit must be greater than the volumetric content of the discharge pipe up to the backflow loop.
- Installation room:
 - Sufficiently lit
 - Well ventilated
 - The rooms must be dimensioned so as to ensure that there is a working area of at least 60 cm width and height around and above all parts to be operated and serviced.

Installation in suitable installation rooms only; unprotected outdoor installation is impermissible!

- Collecting tank:
 - Not integrated into the structure of the building
 - Separately installed within the building
- Pipe connections and piping layout:
 - Flexible, with sound-proof insulation
 - If changes of direction are unavoidable, the pipe should be laid with a gradient of at least 1:50.
 - Minimum nominal diameter of the vent pipe connection DN 70 (DN 50 permissible up to an effective volume of 20 litres).
 - Install a gate valve on the inlet side as well as on the discharge side downstream of the check valve (see accessories).
 - Lay the discharge pipe with a backflow loop whose invert level is above the flood level.
 - Lead the vent pipe out of the roof.
- Additional requirements on sewage lifting units:
 - If sewage disposal must not be interrupted, install a dual-pump lifting unit.
 - For drainage of rooms provide a pump sump.
 - If a failure of any system functions could lead to flooding damage, additional measures must be taken to prevent any such damage (pump for drainage of rooms, humidity sensor next to the system close to the floor, etc).

Flooding

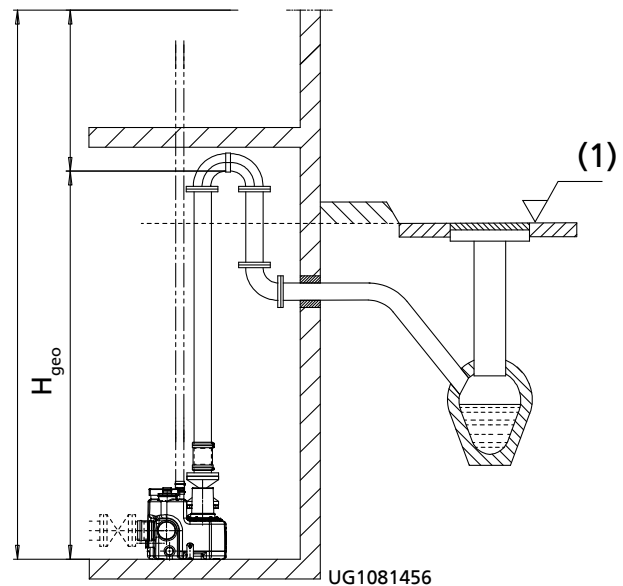
The lifting unit is protected against flooding.

- Max. submersion depth: 2 metres

- Max. flooding period: 7 days

After any flooding, clean and service the lifting unit.

All electrical equipment such as sockets, CEE plugs, control units and alarm switchgears must be installed in dry, flood-proof rooms.



Static head H_{geo} if installed correctly

(1)	Flood level
-----	-------------

Calculation of head:

$$H_{\text{Lifting unit}} = H_{\text{Static}} + H_{\text{Losses (discharge pipe)}}$$

Application limits for S3 operation

The units are designed for S3 operation (intermittent operation). The max. permissible inflow must always be smaller than the capacity of one pump.

- Intermittent operation S3
- 50 % to VDE
- Max. number of start-ups: 60/hour
- For continuous discharge or repeated discharge over longer periods of time the maximum permissible frequency of starts must be observed!

Selection aid for drainage applications

The table below for your guidance is based on KSB's long-standing experience. The data are standard values and are not to be considered as generally binding recommendations. They shall not be the basis for warranty claims. Please contact your nearest KSB sales branch and/or our technical departments for in depth advice.

Selection aid for drainage applications

Fluid handled	mini-Compacta	
	Standard	Variant C
Domestic waste water and faeces from bathtubs, showers, washbasins, bidets, toilets, urinals, sinks, floor drains, dishwashers and washing machines	X	
Waste water from commercial premises produced in kitchens, shower and toilet facilities, hospitals, hotels, sports facilities and swimming pools	X	X
Condensate from condensing boiler equipment (DIN 1986-3)		X
Waste water from kitchens For drainage of greasy water, a grease separator must be fitted. (DIN 4040-1)	X	X
Waste water from laboratories (Permission under water and waterways legislation or discharge permit required, DIN 1986-3)		2)
Flushing water containing salt (seawater <15 °C)		X
Swimming pool water containing chlorine (DIN 19643)		X
Aggressive waste water in low concentrations, pH 5 to 12, cleaning, disinfecting, washing-up and washing agents (DIN 1986-3)		X
Waste water from garages, containing road salt		X

Special design on request

- Systems for improved fire protection / halogen-free cables

2) Contact KSB with the relevant analysis, temperature and mode of operation.

Technical data
Standard design with integrated check valve, UZ dual-pump units with Y-pipe, free passage of 40 mm

Hydraulics code	Dual-pump units	Single-pump units	Total volume	Effective volume ³⁾			P ₁	P ₂	Speed	50 Hz 1~230 V	50 Hz 3~400 V	Cable length	Mat. No.	[kg]
				H = 180 mm	H = 250 mm	vertical								
No.			[l]	[l]	[l]	[l]	[kW]	[kW]	[rpm]	[A]	[A]	[m]		
1	-	U1.60 D	60	20	-	30	0,93	0,75	2800	-	1,7	4+1	29131500	41
1	-	U1.60 E	60	20	-	30	1,01	0,75	2800	4,5	-	4+1	29131501	42
1	-	U1.100 D	100	30	44	62	0,93	0,75	2800	-	1,7	4+1	29131504	48
1	-	U1.100 E	100	30	44	62	1,01	0,75	2800	4,5	-	4+1	29131505	49
2	-	U2.100 D	100	30	44	62	1,75	1,5	2800	-	3,0	4+1	29131506	49
2	-	U2.100 E	100	30	44	62	2,0	1,5	2800	8,7	-	4+1	29131507	50
1	UZ1.150 D	-	150	57	83	91	0,93	0,75	2800	-	1,7	4+1	29131630	100
1	UZ1.150 E	-	150	57	83	91	1,01	0,75	2800	4,5	-	4+1	29131631	100
2	UZ2.150 D	-	150	57	83	91	1,75	1,5	2800	-	3,0	4+1	29131632	100
2	UZ2.150 E	-	150	57	83	91	2,0	1,5	2800	8,7	-	4+1	29131633	100

Variant with cutter

Hydraulics code	Dual-pump units	Single-pump units	Total volume	Effective volume ³⁾			P ₁	P ₂	Speed	50 Hz 1~230 V	50 Hz 3~400 V	Cable length	Mat. No.	[kg]
				H = 180 mm	H = 250 mm	vertical								
No.			[l]	[l]	[l]	[l]	[kW]	[kW]	[rpm]	[A]	[A]	[m]		
S1	-	US1.100 D	100	33	46	64	1,75	1,5	2800	-	3,0	4+1	29131508	49
S1	-	US1.100 E	100	33	46	64	2,0	1,5	2800	8,7	-	4+1	29131724	80
S2	-	US2.100 D	100	33	46	64	1,75	1,5	2800	-	3,0	4+1	29131510	49
S2	-	US2.100 E	100	33	46	64	2,0	1,5	2800	8,7	-	4+1	29131725	80
S1	UZS1.150 D	-	150	-	85	95	1,75	1,5	2800	-	3,0	4+1	29131634	100
S1	UZS1.150 E	-	150	-	85	95	2,0	1,5	2800	8,7	-	4+1	29131726	120
S2	UZS2.150 D	-	150	-	85	95	1,75	1,5	2800	-	3,0	4+1	29131636	100
S2	UZS2.150 E	-	150	-	85	95	2,0	1,5	2800	8,7	-	4+1	29131727	120

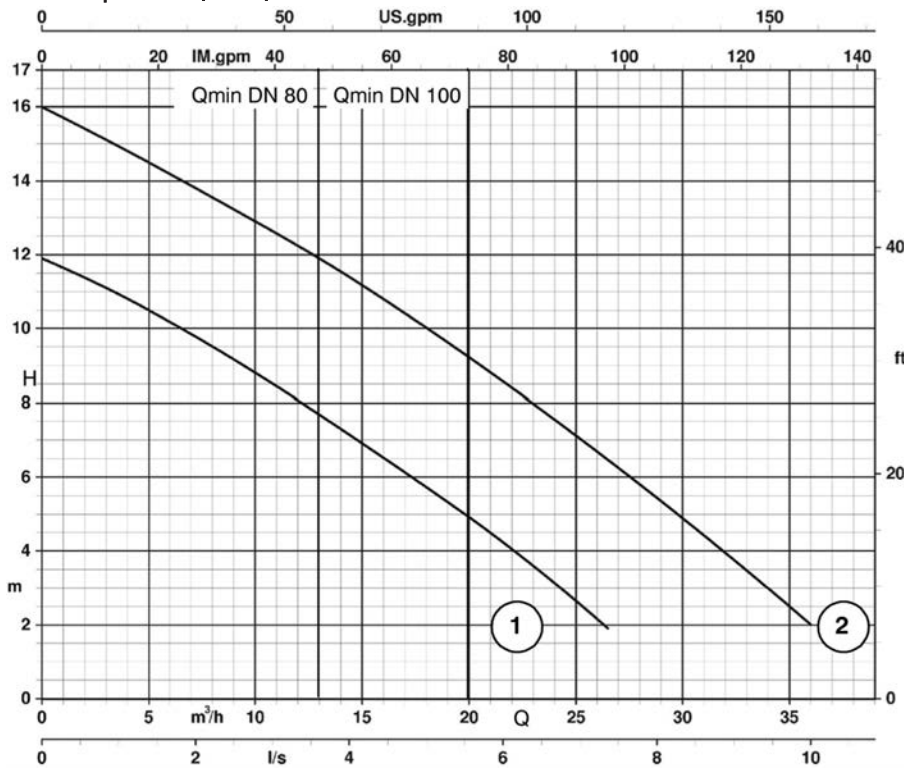
Variant C for aggressive fluids, with integrated check valve, free passage of 40 mm

Hydraulics code	Dual-pump units	Single-pump units	Total volume	Effective volume ³⁾			P ₁	P ₂	Speed	50 Hz 1~230 V	50 Hz 3~400 V	Cable length	Mat. No.	[kg]
				H = 180 mm	H = 250 mm	vertical								
No.			[l]	[l]	[l]	[l]	[kW]	[kW]	[rpm]	[A]	[A]	[m]		
1	-	U1.60 D/C	60	20	-	30	0,93	0,75	2800	-	1,7	4+1	29131512	41
1	-	U1.60 E/C	60	20	-	30	1,01	0,75	2800	4,5	-	4+1	29131513	42
1	-	U1.100 D/C	100	30	44	62	0,93	0,75	2800	-	1,7	4+1	29131516	48
1	-	U1.100 E/C	100	30	44	62	1,01	0,75	2800	4,5	-	4+1	29131517	49
2	-	U2.100 D/C	100	30	44	62	1,75	1,5	2800	-	3,0	4+1	29131518	49
2	-	U2.100 E/C	100	30	44	62	2,0	1,5	2800	8,7	-	4+1	29131519	50
1	UZ1.150 D/C	-	150	57	83	91	0,93	0,75	2800	-	1,7	4+1	29131638	100
1	UZ1.150 E/C	-	150	57	83	91	1,01	0,75	2800	4,5	-	4+1	29131639	100
2	UZ2.150 D/C	-	150	57	83	91	1,75	1,5	2800	-	3,0	4+1	29131640	100
2	UZ2.150 E/C	-	150	57	83	91	2,0	1,5	2800	8,7	-	4+1	29131641	100

3) Effective volume as a function of inlet nozzle level H (mm)

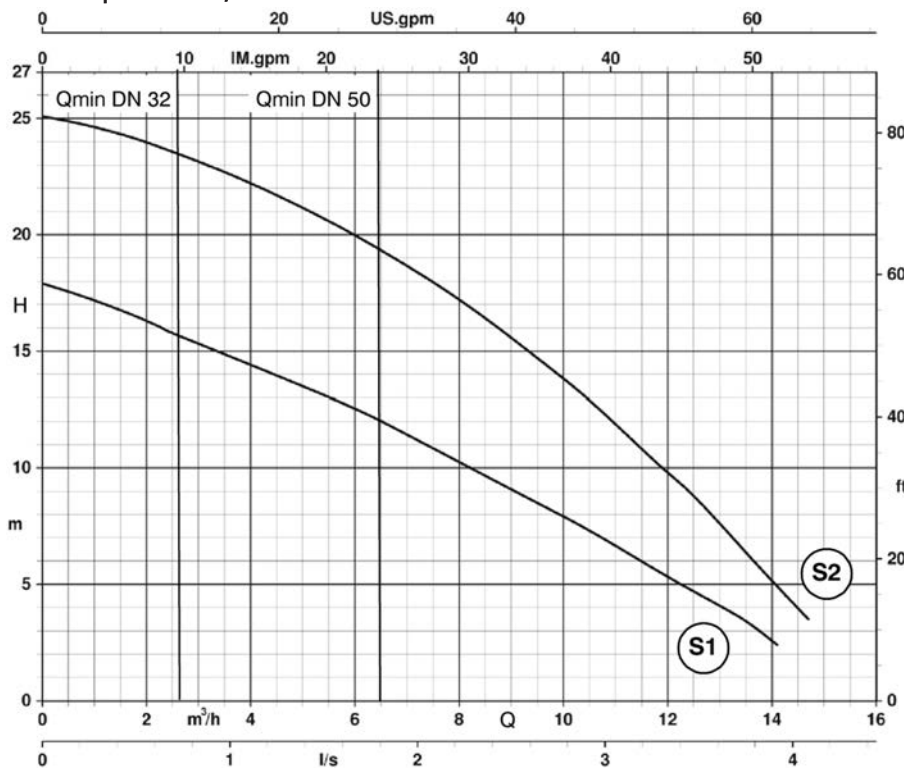
Selection charts

mini-Compacta U60, U100, UZ150⁴⁾



1 mini-Compacta U1.60, U1.100, UZ1.150
2 mini-Compacta U2.100, UZ2.150

mini-Compacta US100, UZS150⁴⁾

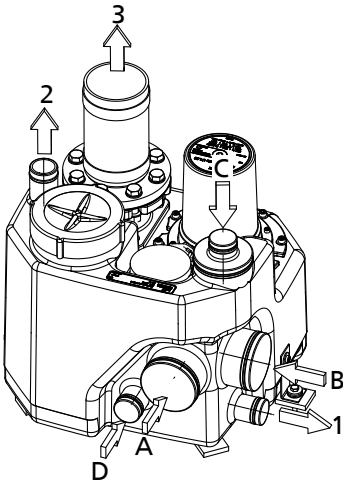


S1 mini-Compacta US1.100, UZS1.150
S2 mini-Compacta US2.100, UZS2.150

⁴⁾ A lifting unit can be selected on the basis of the selection charts for sewage quantities led to the lifting unit from the usual sanitary installations of a building. For lifting units with higher ratings please refer to type series booklet Compacta (reference No. 2317.55).

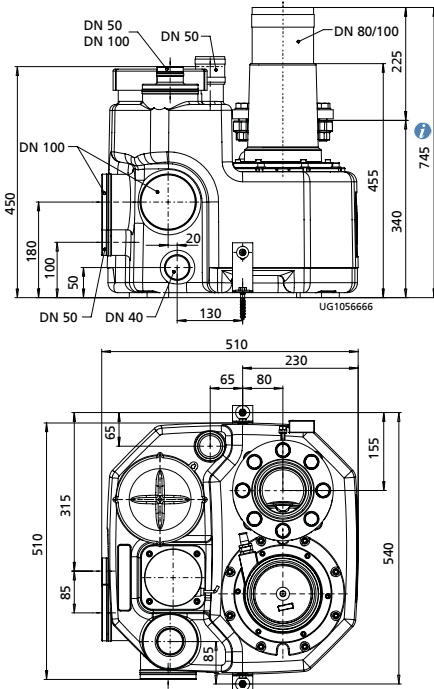
Dimensions and connections

mini-Compacta U60



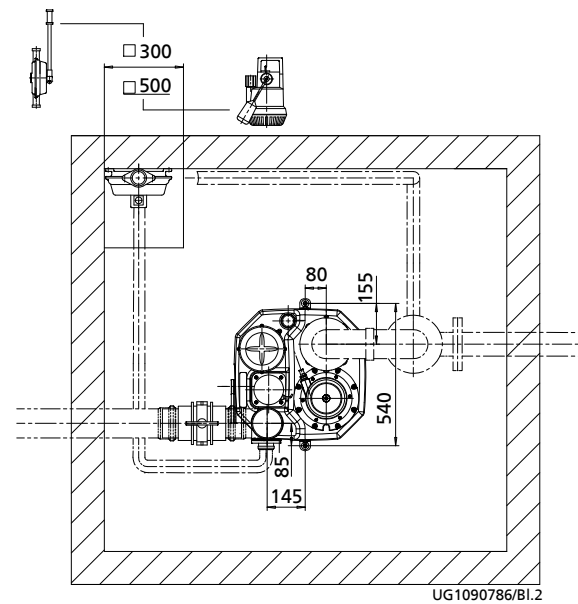
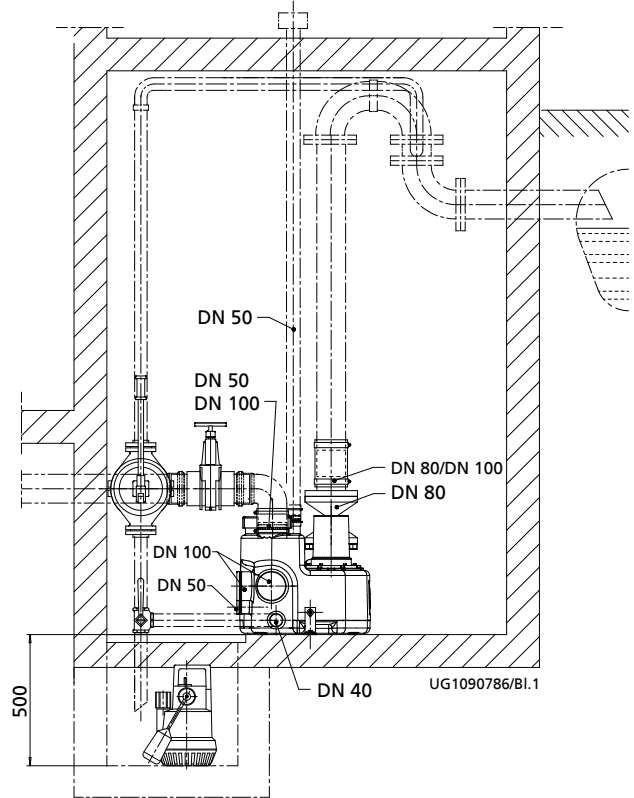
A	Inlet DN 100
B	Inlet DN 100
C	Inlet DN 100/50
D	Inlet DN 50 ⁵⁾
1	Drain DN 40
2	Vent DN 50
3	Discharge pipe DN 80/100

Dimensions of mini-Compacta U60 [mm]



i 745 = length including gate valve [mm]

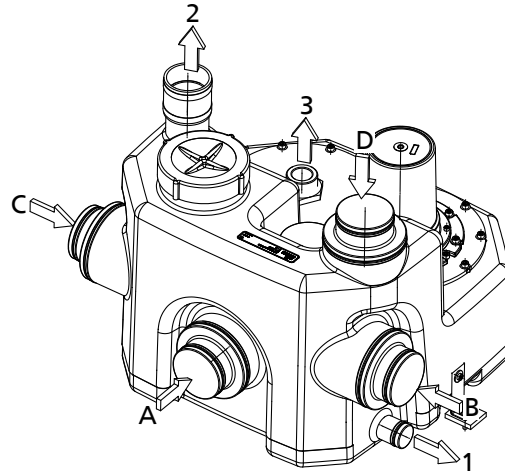
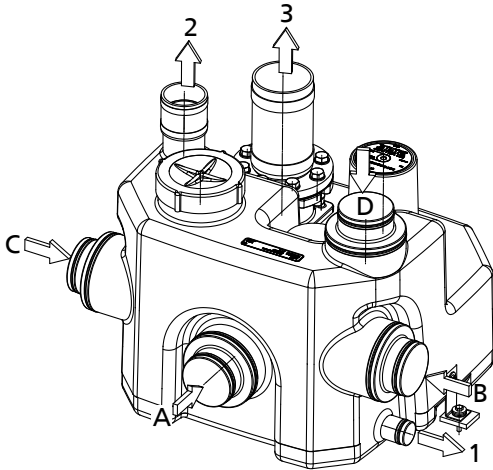
Example of mini-Compacta U60 connections



i Rooms for lifting units must be dimensioned so as to ensure that there is a working area of at least 60 cm width and height around and above all parts to be operated and serviced.

⁵⁾ To prevent backflow, all sanitary appliances must be connected to the lifting unit with their pipe invert at least 180 mm above the tank floor. This connection is not suitable for discharge from shower basins.

mini-Compacta U100 / US100



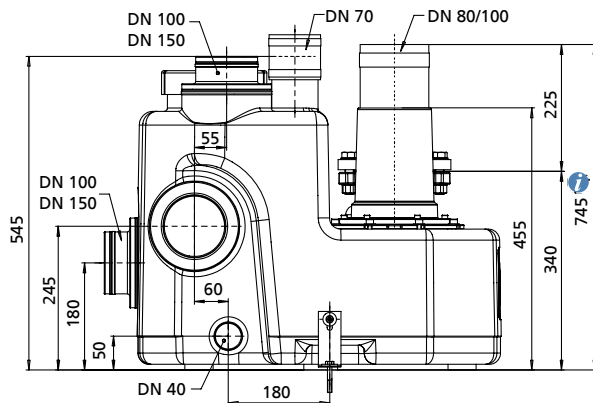
Connections of mini-Compacta U60/U100

A	Inlet DN 150/100
B	Inlet DN 150/100
C	Inlet DN 150/100
D	Inlet DN 150/100
1	Drain DN 40
2	Vent DN 70
3	Discharge pipe DN 80/100

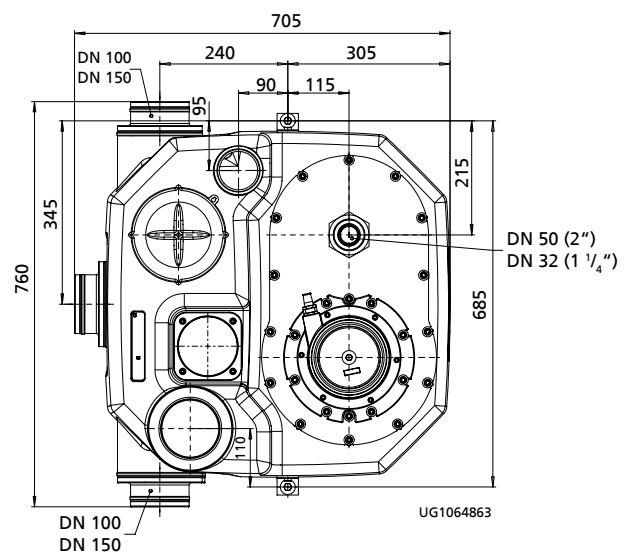
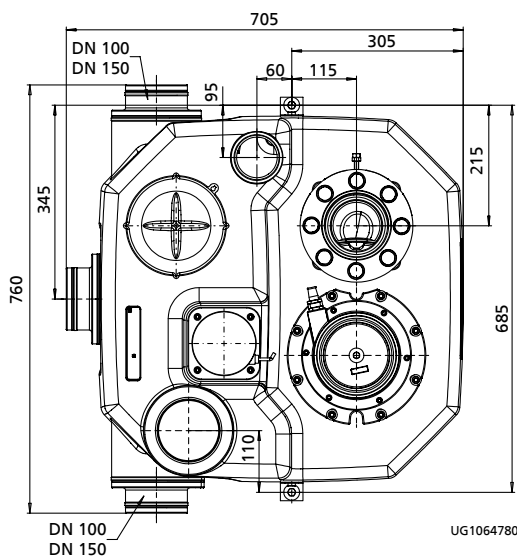
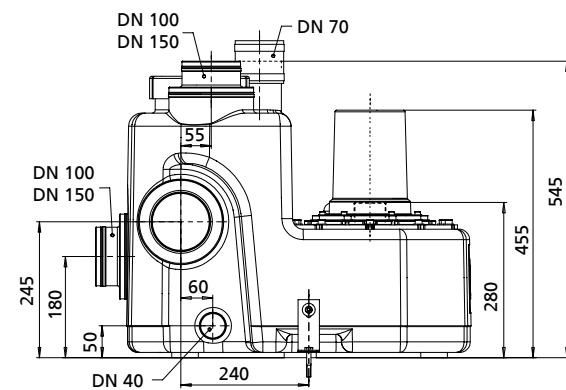
Connections of mini-Compacta US100

A	Inlet DN 150/100
B	Inlet DN 150/100
C	Inlet DN 150/100
D	Inlet DN 150/100
1	Drain DN 40
2	Vent DN 70
3	Discharge pipe DN 50 (DN 32)

Dimensions of mini-Compacta U100 [mm]

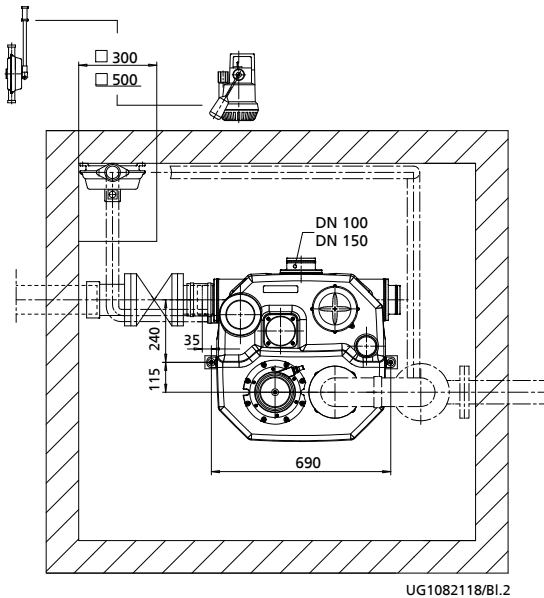
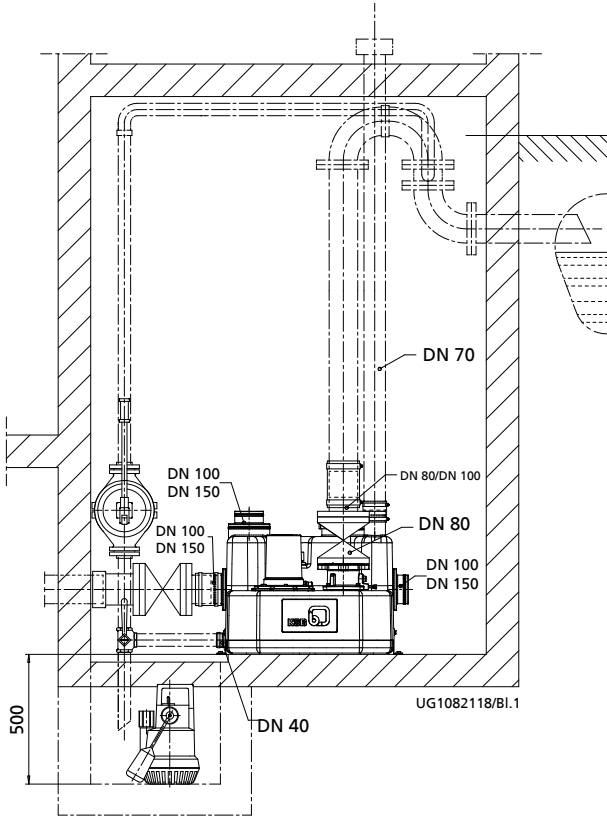


Dimensions of mini-Compacta US100 [mm]



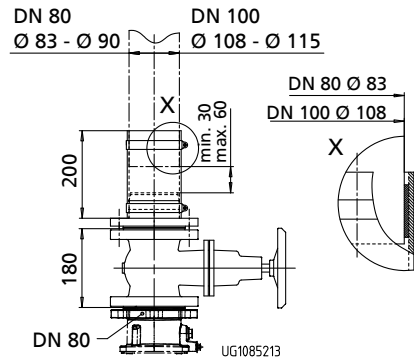
i 745 = length including gate valve [mm]

Example of mini-Compacta U100/US100 connections

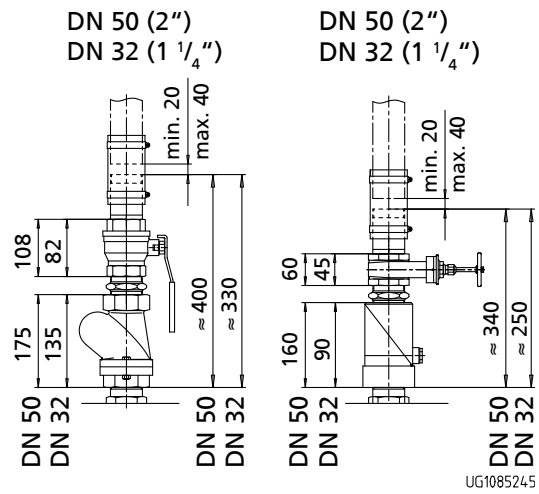


i Rooms for lifting units must be dimensioned so as to ensure that there is a working area of at least 60 cm width and height around and above all parts to be operated and serviced.

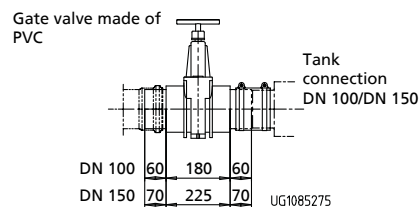
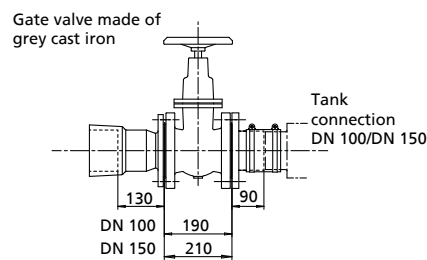
**mini-Compacta U60, U100
Discharge pipe**



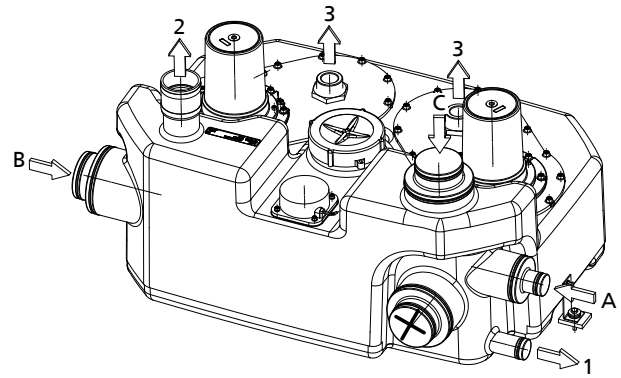
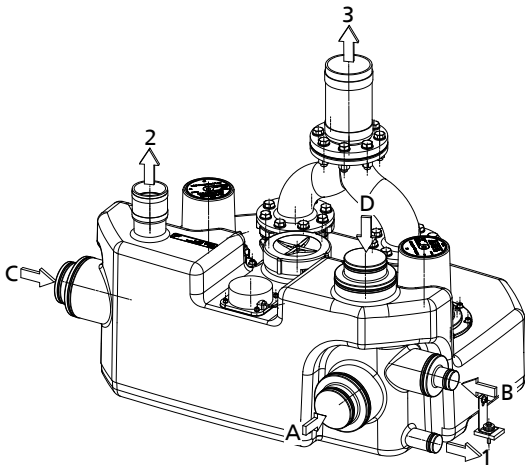
**mini-Compacta US100
Discharge pipe**



**mini-Compacta U60, U100 / US100
Inlet pipe**



mini-Compacta UZ150 / UZS150



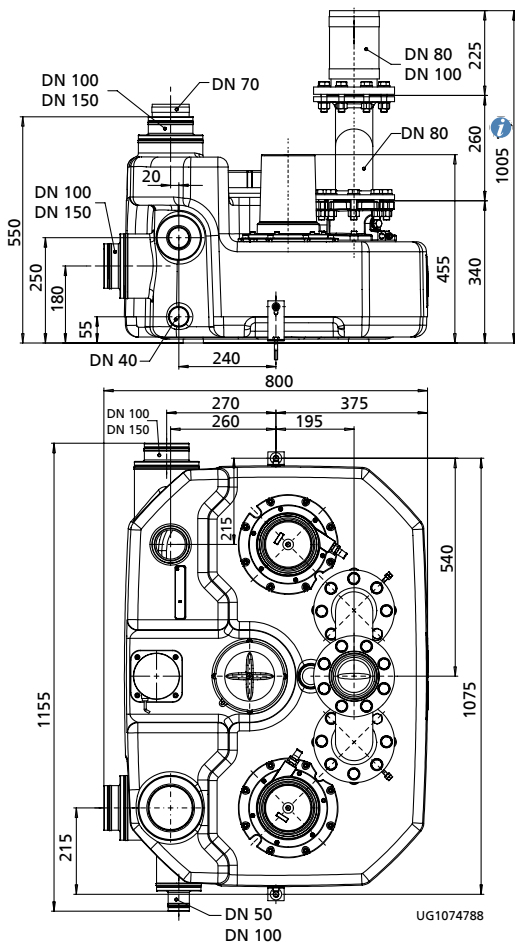
Connections of mini-Compacta UZ150

A	Inlet DN 150/100
B	Inlet DN 100/50
C	Inlet DN 150/100
D	Inlet DN 150/100
1	Drain DN 40
2	Vent DN 70
3	Discharge pipe DN 80/100

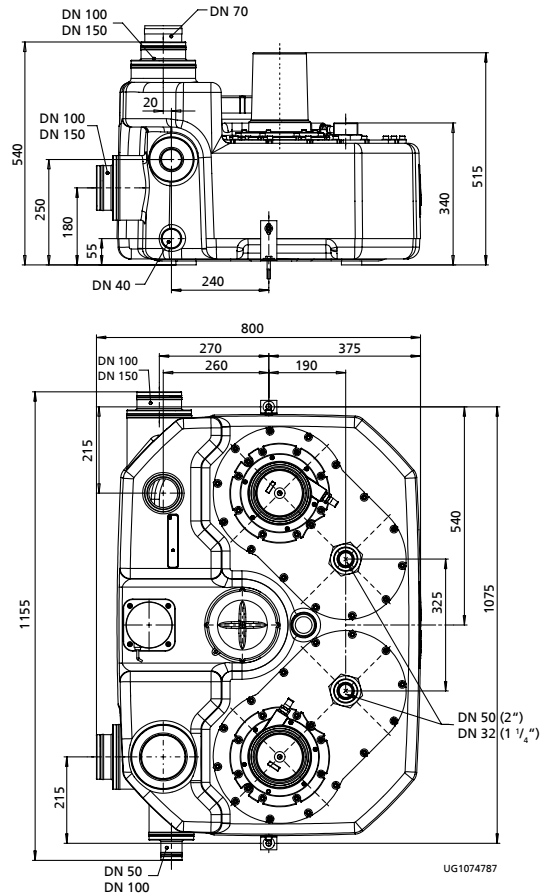
Connections of mini-Compacta UZS150

A	Inlet DN 100/50
B	Inlet DN 150/100
C	Inlet DN 150/100
✳	This inlet cannot be used on "S" models.
1	Drain DN 40
2	Vent DN 70
3	Discharge pipe 2 x DN 50 (DN 32)

Dimensions of mini-Compacta UZ150 [mm]

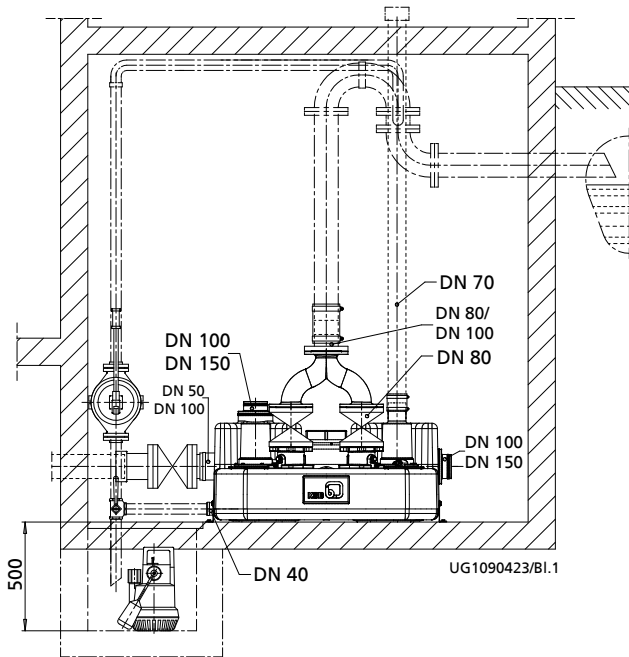


Dimensions of mini-Compacta UZS150 [mm]

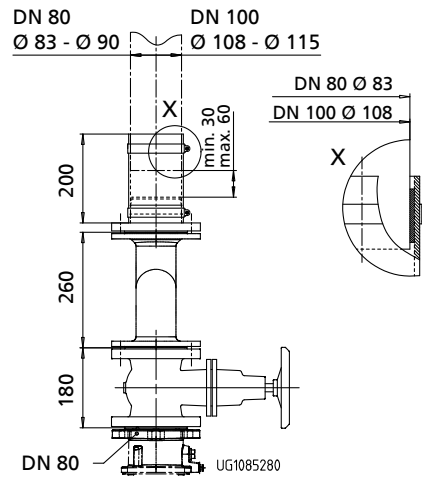


i 1005 = length including gate valve [mm]

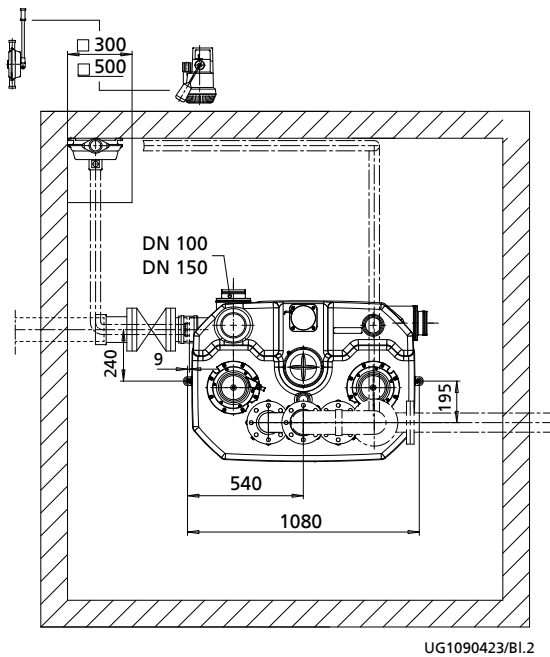
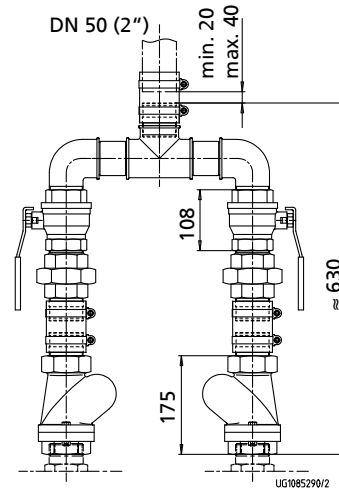
Example of mini-Compacta UZ150 / UZS150 connections



**mini-Compacta UZ150
Discharge pipe**

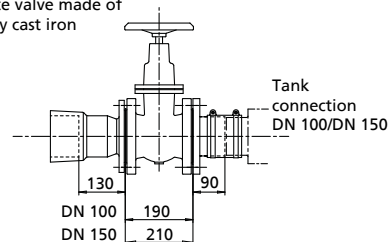


**mini-Compacta UZS150
Discharge pipe**

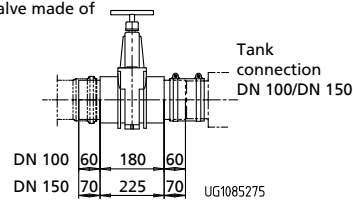


**mini-Compacta UZ150, UZS150
Inlet pipe**

Gate valve made of
grey cast iron



Gate valve made of
PVC

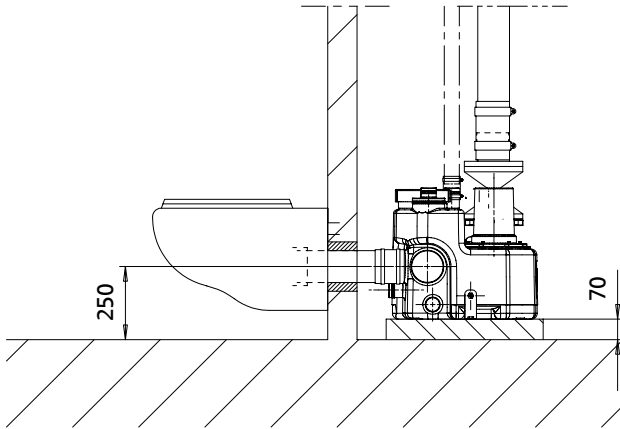


i Rooms for lifting units must be dimensioned so as to ensure that there is a working area of at least 60 cm width and height around and above all parts to be operated and serviced.

Types of connection to a toilet

mini-Compacta U1.60

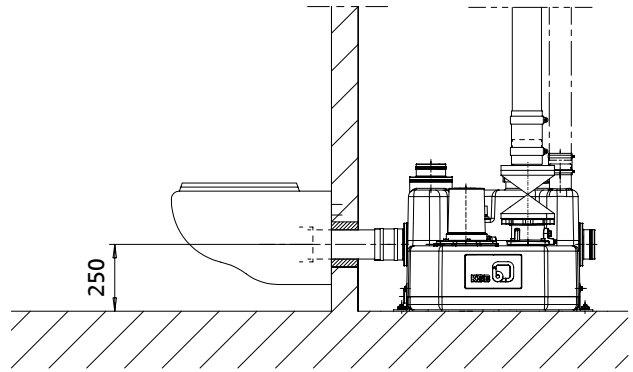
Connection to wall-mounted toilet bowl



UG1081406

mini-Compacta U2.100, U2.100

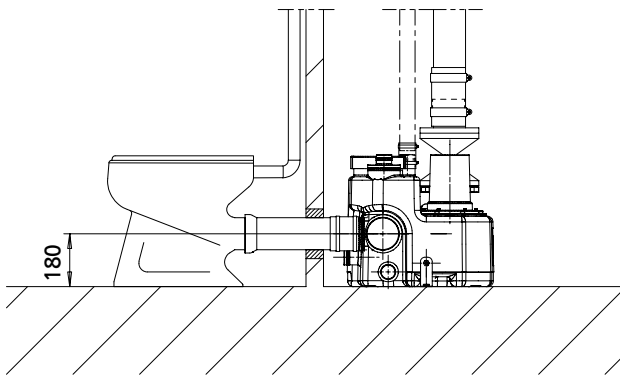
Connection to wall-mounted toilet bowl



UG1081796

mini-Compacta, U1.60, U2.100, U2.100

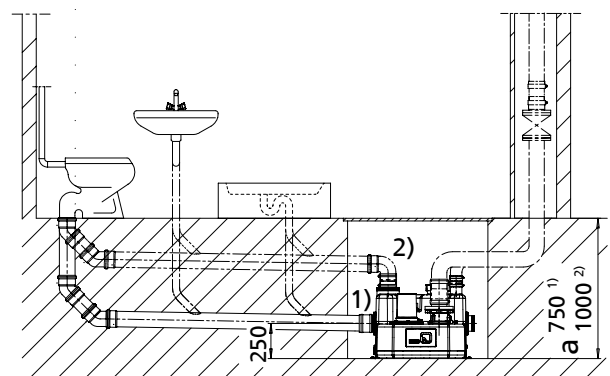
Connection to a floor-mounted toilet



UG1081297

mini-Compacta, U1.60, U2.100, U2.100

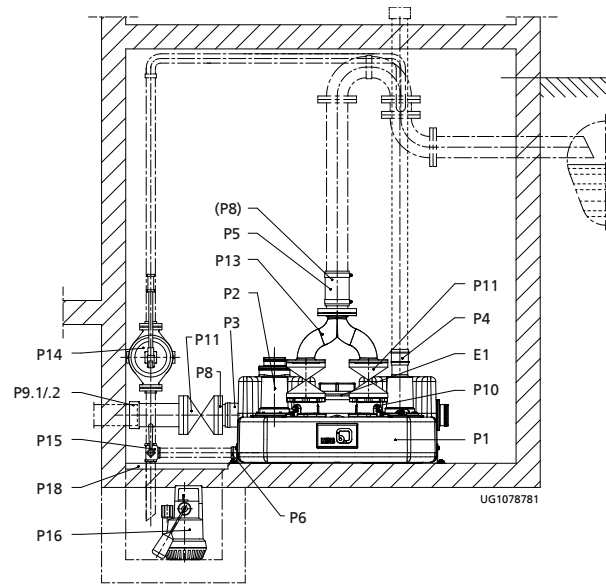
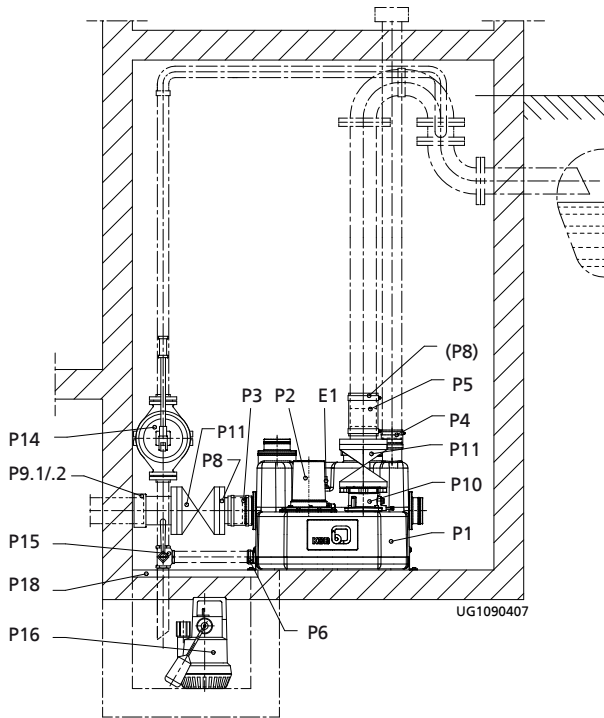
Pit installation



UG1083681

Scope of supply of single-pump / dual-pump lifting units

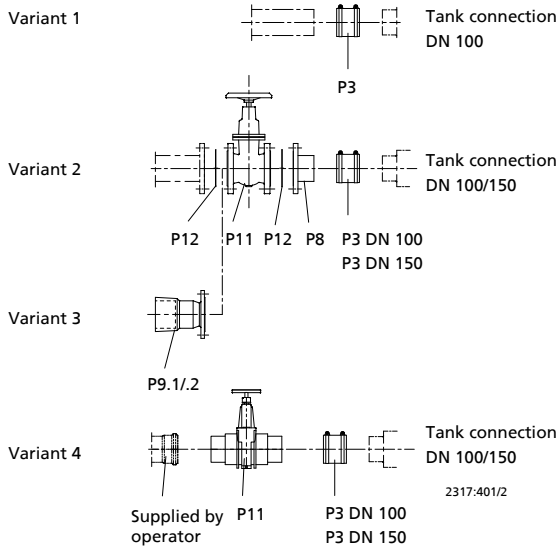
mini-Compacta - example



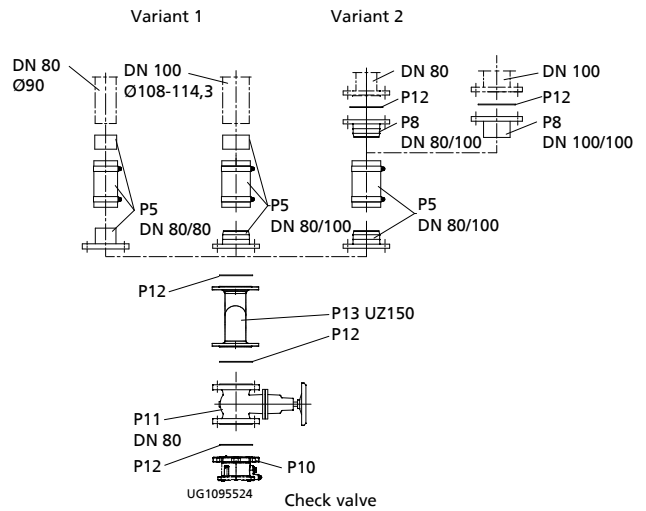
mini-Compacta UZ150

mini-Compacta U60, U100

Inlet pipe



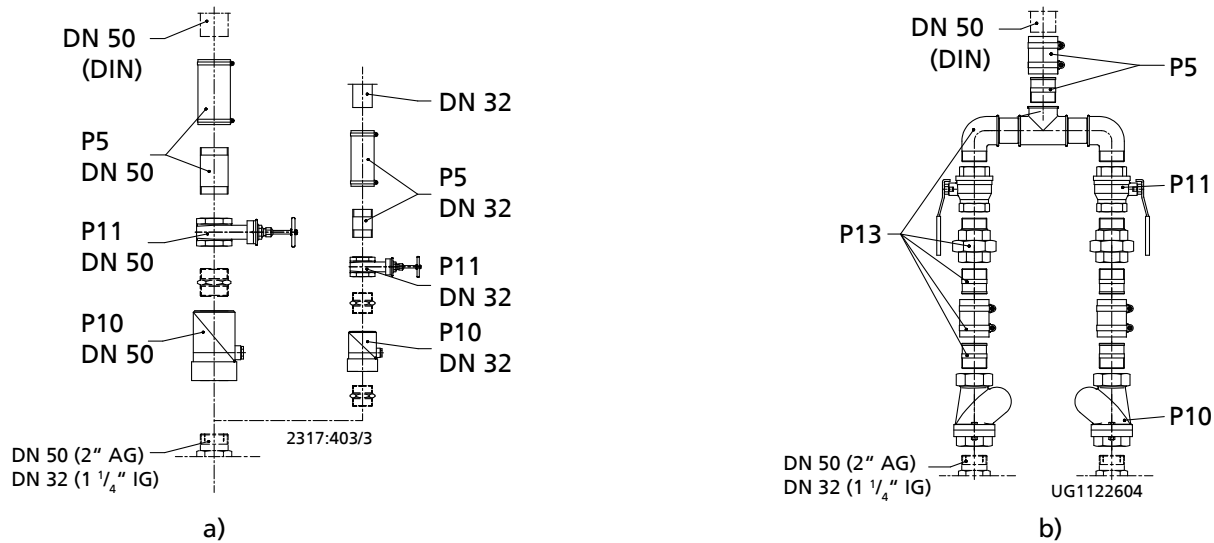
Discharge pipe



Connections of mini-Compacta U60, U100, US100, UZ150, UZS150

Connections of mini-Compacta U60, U100, UZ150

Discharge pipe mini-Compacta US100, UZS150



Discharge pipe connections a) mini-Compacta US 100 - b) mini-Compacta UZS 150

Scope of supply of units

Size					Included in the scope of supply
U60	U100	UZ150	US100	UZS150	
P 1	P 1	P 1	P 1	P 1	Gas, smell and water-proof collecting tank of impact-resistant plastic
P 2	P 2	P 2	P 2	P 2	Fully floodable submersible motor pump
P 3	P 3	P 3	P 3	P 3	Flexible hose connection and hose clips DN 100 (inlet)
P 4	P 4	P 4	P 4	P 4	Flexible hose connection and hose clips (venting)
P 5	P 5	P 5	-	-	Flexible hose connection and hose clips for discharge pipe, consisting of flanged coupling DN 80 with hosetail DN 100, fabric reinforced rubber hose and adapter hose for outside pipe diameter of 108 - 114.3 mm
P 6	P 6	P 6	P 6	P 6	Flexible hose connection and hose clips (hand diaphragm pump)
P 10	P 10	P 10	-	-	Check valve with full port and lifting screw
-	-	P 13 ⁶⁾	-	-	Y-pipe DN 80 with 2 sets of mounting accessories
E 1	E 1	-	E 1	-	Analog level sensor for pump and alarm buzzer
-	-	E 1	-	E 1	Analog level transmitter for pump 1, pump 2 and alarm buzzer; stand-by pump automatically starts up during peak loads
E 3 ⁷⁾	E 3 ⁷⁾	E 3 ⁷⁾	E 3 ⁷⁾	E 3 ⁷⁾	Electronic control unit with integrated alarm and charging circuit, with high-quality rechargeable battery and alarm buzzer

Accessories

Size					Available as accessory
U60	U100	UZ150	US100	UZS150	
P 3	-	P 3	-	P 3	Flexible hose connection and hose clips DN 50
-	P 3	P 3	P 3	P 3	Flexible hose connection and hose clips DN 150
P 5	P 5	P 5	-	-	Flexible hose connection and hose clips for discharge pipe, consisting of flanged coupling DN 80 with hosetail DN 80, fabric reinforced rubber hose and adapter hose for outside pipe diameter of 83 - 90 mm
-	-	-	P 5	P 5	Flexible hose connection for discharge pipe, consisting of rubber hose, hexagon nipple and hose clips
P 8	P 8	P 8	P 8	P 8	Flanged coupling with hosetail
Flanged socket (for connecting pipes made of ductile cast iron)					
P 9.1	P 9.1	P 9.1	P 9.1	P 9.1	DN 100 for outside pipe diameter of 118 mm
-	P 9.1	P 9.1	P 9.1	P 9.1	DN 150 for outside pipe diameter of 170 mm
Flange adapter (for connecting pipes of different materials)					
P 9.2	P 9.2	P 9.2	P 9.2	P 9.2	DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm

6) Not for variant C

7) Not shown in drawing.

Size					Available as accessory
U60	U100	UZ150	US100	UZS150	
-	P 9.2	P 9.2	P 9.2	P 9.2	DN 150 for outside pipe diameter of 158.2 - 181.6 mm, L 105 mm
-	-	-	P 10	P 10	Check valve
P 11	P 11	P 11	P 11	P 11	Gate valve
P 12	P 12	P 12	P 12	P 12	Set of installation accessories
-	-	P 13	-	-	Y-pipe DN 80, material variant C, with 2 sets of mounting accessories
-	-	-	-	P 13	Y-pipe DN 50
P 14	P 14	P 14	P 14	P 14	Hand diaphragm pump ISO 7/I-Rp 1 1/2
P 15	P 15	P 15	P 15	P 15	Three-way plug valve ISO 7/I-Rp 1 1/2
P 16	P 16	P 16	P 16	P 16	Fully automatic drainage pump Ama-Drainer...SE/SD with swing check valve
P 18	P 18	P 18	P 18	P 18	Cover plate A, 560 □ for 500 x 500 mm pits (for Ama-Drainer)
E 50 ⁷⁾	E 50 ⁷⁾	E 50 ⁷⁾	E 50 ⁷⁾	E 50 ⁷⁾	AS 0 alarm switchgear
E 51 ⁷⁾	E 51 ⁷⁾	E 51 ⁷⁾	E 51 ⁷⁾	E 51 ⁷⁾	AS 2 alarm switchgear
E 52 ⁷⁾	E 52 ⁷⁾	E 52 ⁷⁾	E 52 ⁷⁾	E 52 ⁷⁾	AS 4 alarm switchgear
E 53 ⁷⁾	E 53 ⁷⁾	E 53 ⁷⁾	E 53 ⁷⁾	E 53 ⁷⁾	AS 5 alarm switchgear
E 64 ⁷⁾	E 64 ⁷⁾	E 64 ⁷⁾	E 64 ⁷⁾	E 64 ⁷⁾	Moisture sensor F 1

Connection nozzles

Connection nozzles by model

mini-Compacta	Inlet side	Discharge side	Vent	Connection for hand diaphragm pump
U1.60	horizontal: 2 x DN 100, offset by 90°, inlet level 180 mm, 1 x DN 50 vertical: 1 x DN 100/50, graded	DN 80/100 optionally DN 80/80	DN 50	DN 40 (Rp 1 1/2)
U2.100	horizontal: 1 x DN 150/100, graded, inlet level 180 mm, 2 x DN 150/100, graded, inlet level 250 mm vertical: 1 x DN 150/100, graded	DN 80/100 optionally DN 80/80	DN 70	DN 40 (Rp 1 1/2)
UZ1.150	horizontal: 1 x DN 150/100, graded, inlet level 180 mm, 1 x DN 100/50, graded, inlet level 250 mm, 1 x DN 150/100, graded, inlet level 250 mm vertical: 1 x DN 150/100, graded	DN 80/100 (discharge pipe to Y-pipe DN 100) optionally DN 80	DN 70	DN 40 (Rp 1 1/2)
US2.100	horizontal: 1 x DN 150/100, graded, inlet level 180 mm, 2 x DN 150/100, graded, inlet level 250 mm vertical: 1 x DN 150/100, graded	DN 50 (discharge pipe DN 32 possible)	DN 70	DN 40 (Rp 1 1/2)
UZS1.150	horizontal: 1 x DN 150/50, graded, 1 x DN 150/100, graded, inlet level 250 mm vertical: 1 x DN 150/100, graded	2 x DN 50 (discharge pipe DN 32 possible)	DN 70	DN 40 (Rp 1 1/2)

Control units and switchgear

All switchgears and control units required for operation of the unit are included in the scope of supply. They feature an integrated acoustic alarm and volt-free signalling contact for transmitting fault messages to an alarm switchgear or directly to a control room. All switchgears and control units are supplied in enclosure IP 54 and must be installed in a well-ventilated, flood-proof room.

LevelControl Basic 1 product description



LevelControl Basic 1

Description

- Ready to be plugged in, with 1-metre power cable
- Analog level detection with sensor monitoring
- Manual-0-automatic selector switch
- Acknowledgement button
- Indicator lamp for pump status
- Indicator lamp for high water
- Indicator lamp for rotary field (three-phase current only)
- Pump protection by thermal circuit breaker
- Input for external fault message
- General fault message or volt-free "system operational" message
- Integrated alarm buzzer
- Battery-backed mains-independent alarm
- Straightforward parameterisation of inlet nozzle levels via DIL switch during commissioning

LevelControl Basic 2 product description



LevelControl
Basic 2 BS

LevelControl
Basic 2 BC

Description

- Ready to be plugged in, with 1-metre power cable
- Three-phase connection
- Integrated master switch (LevelControl Basic 2 BS only)
- Numerical display with status indication (traffic light) and navigation keys
- Fill level indication
- Indication of operating data
- Analog level detection with sensor monitoring
- Manual-0-automatic selector switch
- Indicator lamps
- Indicator lamp for high water
- Pump protection by thermal circuit breaker
- Integrated alarm buzzer
- Battery-backed mains-independent alarm
- Two inputs for external fault message and remote acknowledgement
- General fault message or volt-free "system operational" message
- Even distribution of pump operating hours due to automatic pump changeover
- Parameterisable service intervals
- Diagnostic and signalling/message functions
- Straightforward system configuration using parameterisation assistant (Wizard)
- Numerous additional functions (e.g. monitoring of supply voltage, measuring effective power, determining the power factor, intelligent system monitoring, and many more)

Combination of lifting and control units

LevelControl Basic 1 and Basic 2 per model

Pump unit	Control unit
Single-pump units	
U1.60 D	LevelControl Basic 1 D
U1.100 D, U2.100 D, US1.100 D, US2.100 D	LevelControl Basic 1 D
U1.60 E	LevelControl Basic 1 E25
U1.100 E	LevelControl Basic 1 E25
U2.100 E	LevelControl Basic 1 E40
US1.100 E, US2.100 E	LevelControl Basic 2 ES
Dual-pump units	
UZ1.150 D, UZ2.150 D, UZS1.150 D, UZS2.150 D	LevelControl Basic 2 ZD
UZ1.150 E	LevelControl Basic 2 ZE25
UZ2.150 E	LevelControl Basic 2 ZE40
UZS1.150 E, UZS2.150 E	LevelControl Basic 2 ZES

Special features of LevelControl Basic 1

Control unit LevelControl	Description
Basic D (CU 1 10 V T45 1 0 0 A D)	<ul style="list-style-type: none"> ▪ Standard single-pump control unit for three-phase motor ▪ Three-phase connection
Basic E25 (CU 1 10 V SC2 1 0 0 A 1)	<ul style="list-style-type: none"> ▪ Integrated run capacitor (C = 25 µF) for operating a single-phase motor with a power rating of 0.75 kW ▪ Single-phase mains connection
Basic E40 (CU 1 10 V SC4 1 0 0 A 1)	<ul style="list-style-type: none"> ▪ Integrated run capacitor (C = 40 µF) for operating a single-phase motor with a power rating of 1.5 kW ▪ Single-phase mains connection









Special features of LevelControl Basic 2

Control unit LevelControl	Description
Basic 2 ZD (BC2 400 DVNA 100 B0)	<ul style="list-style-type: none"> ▪ Standard dual-pump control unit ▪ Three-phase connection
Basic 2 ZE25 (BC2 230 XVNA 040 A0)	<ul style="list-style-type: none"> ▪ Dual-pump control unit with integrated run capacitors (C = 25 µF) for operating two single-phase motors with a power rating of 0.75 kW each ▪ Single-phase mains connection
LevelControl Basic 2 ZE40 (BC2 230 YVNA 063 A0)	<ul style="list-style-type: none"> ▪ Dual-pump control unit with integrated run capacitor (C = 40 µF) for operating two single-phase motors with a power rating of 1.5 kW each ▪ Single-phase mains connection
Basic 2 E5 (BC1 230 ZVNA 100 A0)	<ul style="list-style-type: none"> ▪ Single-pump control unit with integrated run capacitor (C = 40 µF) for operating a single-phase motor with a power rating of 1.5 kW ▪ Additional load-dependent cut-in / cut-out of a start capacitor (C = 66 µF) ▪ Volt-free individual messages Pump Fault and High Water as standard ▪ Single-phase connection
Basic 2 ZES (BS2 230 ZVNA 100 A0)	<ul style="list-style-type: none"> ▪ Dual-pump control unit with integrated run capacitors (C = 40 µF) for operating two single-phase motors with a power rating of 1.5 kW each ▪ Additional load-dependent cut-in / cut-out of a start capacitor (C = 66 µF) per pump ▪ Volt-free individual messages Pump 1 Fault, Pump 2 Fault and High Water as standard ▪ Single-phase connection



Accessories
Lifting unit accessories

	Item	Description	mini-Compacta					Mat. No.	[kg]	
			U60	U100	UZ150	US100	UZS150			
	P3	Flexible hose connection (inlet) For inlet pipe, includes fabric-reinforced hose and two hose clips (DN 100 included in the scope of supply)	DN 50	X	-	X	-	X	18040370	0.2
			DN 100	-	-	-	-	-	18040203	0.4
			DN 150	-	X	X	X	X	18040338	0.7
	P5	Flexible hose connection (discharge side) For discharge pipe, includes fabric-reinforced hose, hose clips and hexagon nipple	DN 32	-	-	-	X	X	18040329	0.6
			DN 50	-	-	-	X	X	18040330	0.6
		Flexible hose connection (discharge side) For discharge pipe, comprises fabric-reinforced hose, reducing nipple, connecting pipe, threaded flange DN 80 and hose clips	DN 80/65	X	X	X	-	-	19074057 ⁸⁾	4.8
		Flexible hose connection For discharge pipe, includes fabric-reinforced hose, adapter hose, flanged coupling with hosetail made of steel, and hose clips	DN 80/80	X	X	X	-	-	19070679	5.2
	P8	Flanged coupling With hosetail, flanges drilled to PN 16, DIN EN 1092-1/2, plastic with spacer discs (DN 80/100), steel (DN 65/65, DN 100/100, DN 150/150)	DN 65/65	X	X	X	-	-	19074058 ⁸⁾	3.8
			DN 80/100	X	X	X	-	-	18040303	0.4
			DN 100/100	X	X	X	X	X	19902512	4.5
			DN 150/150	-	X	X	X	X	19901562	9.1
	P9.1	Flanged socket DIN 28 622, grey cast iron, flange drilled to PN 16, DIN EN 1092-1/2 to connect pipes made of ductile cast iron DN 100 for outside pipe diameter of 118 mm, DN 150 for outside pipe diameter of 170 mm	DN 100	X	X	X	X	X	00262135	9.5
			DN 150	-	X	X	X	X	01020844	14.5
	P9.2	Flange adapter grey cast iron to connect pipes made of different materials DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L = 105 mm; DN 150 for outside pipe diameter of 158.2 - 181.6 mm, L = 105 mm, DN 200 for outside pipe diameter of 189.0 - 212.0 mm, L = 145 mm	DN 100	X	X	X	X	X	01070642	4.8
			DN 150	-	X	X	X	X	01070641	7.5
	P10	RK swing check valve, PN 4 Plastic, EN 12 050-4, with internal/internal thread ISO 7/1, full port and drain plug	Rp 1 1/4	-	-	-	X	X	01009771	0.1
			Rp 2	-	-	-	X	X	01009773	0.5
	P10	Ball non-return valve, PN 10 Grey cast iron, CE 12 050-4 with full port	G 1 1/4	-	-	-	X	X	01120610	0.9
			G 2	-	-	-	X	X	01036090	2.835




⁸⁾ For the UK only

	Item	Description	mini-Compacta					Mat. No.	[kg]	
			U60	U100	UZ150	US100	UZS150			
	P11	Socket gate valve CuZn PN 16 with internal/external thread and full port	Rp 1 1/4	-	-	-	X	X	01014219	0.602
			Rp 2	-	-	-	X	X	00411503	1.1
		Ball valve CuZn PN 16	Rp 1 1/4	-	-	-	X	X	01120607	0.572
			Rp 2	-	-	-	X	X	01050382	1.238
		PVC gate valve PN 1 For inlet pipe with connection nozzle	DN 100	X	X	X	X	X	01121715	3.5
			DN 150	-	X	X	X	X	01121714	9.2
		COBRA T1 gate valve GG 25 Grey cast iron, PN 10, flanges drilled to PN 16, DIN EN 1092-1/2	DN 80	X	X	X	-	-	48829250	17
			DN 100	X	X	X	X	X	48829251	23
			DN 150	-	X	X	X	X	48829252	40
		Gate valve to KSB's choice, PN 16 Grey cast iron, flanges drilled to PN 16, DIN EN 1092-1/2	DN 80	X	X	X	-	-	01056708	18.9
			DN 100	X	X	X	X	X	01056709	22.5
			DN 150	-	X	X	X	X	01056710	42.7
	P12	Set of installation accessories For a flange connection, steel or grey cast iron; includes: 8 hexagon head bolts with nuts and 1 gasket	DN 80	X	X	X	-	-	18072644	1
			DN 100	X	X	X	X	X	18060163	1.4
			DN 150	-	X	X	X	X	18076348	2
	P13	Y-pipe Galvanised steel, with union nuts	DN 50	-	-	-	-	X	01121711	8.5
		Y-pipe Stainless steel (1.4571) with 16 hexagon head bolts, nuts and 2 sealing elements	DN 80	-	-	X ⁹⁾	-	-	18041115	8
	P14	Hand diaphragm pump LA, grey cast iron	Rp 1 1/2	X	X	X	X	X	00520485	12








⁹⁾ Only for material variant C

	Item	Description	mini-Compacta					Mat. No.	[kg]		
			U60	U100	UZ150	US100	UZS150				
	P15	Three-way plug valve Brass, with wrench WAF 22		Rp 1½	X	X	X	X	X	19053063	1.5
	P16/P18	For pumps which can be used in pump sumps please refer to Type Series Booklets Ama-Drainer N (reference number 2337.51) and/or Ama-Drainer.	X	X	X	X	X	-	-		
	P20	Blind flange Steel, for closing the tank when one of the pumps has been removed	X	X	X	-	-	18040964	3.8		
		Blind flange Steel, for closing the pump casing when the rotating assembly has been removed	-	-	-	X	X	18040965	3.8		
		Package offer for any spare parts required during 10 years' operation of mini-Compacta For standard variant only U1.60 D/E, U1.100 D/E, US1.100 D/E, U2.100 D/E, US2.100 D/E	X	X	-	X	-	18040943			

Alarm switchgear

	Item	Description	Mat. No.	[kg]
	E 50	Alarm switchgear AS 0 with circuit breaker, piezoceramic signal transmitter, 85 dB(A) at a distance of 1 m and 4.1 kHz, green equipment-on lamp Plastic housing IP 20, 140 x 80 x 57 mm; use float switch, F 1 moisture sensor (item E 64), M1 alarm contactor, or signal relay of control unit as contactor.	29128401	0.5
	E 51	Alarm switchgear AS 2 with circuit breaker, piezoceramic signal transmitter, 85 dBA at a distance of 1 m and 4.1 kHz, green equipment-on lamp, volt-free contact for hook-up to a control station. Plastic housing IP 20, 140 x 80 x 57 mm; use float switch, F 1 moisture sensor (item E 64) or signal relay of control unit as contactor.	29128422	0.5
	E 52	Alarm switchgear AS 4 with circuit breaker, piezoceramic signal transmitter, 85 dB(A) at a distance of 1 m and 4.1 kHz, green equipment-on lamp, volt-free contact for hook-up to a control station, self-charging power supply unit for 5 hours' operation in the event of power failure Plastic housing IP 20, 140 x 80 x 57 mm; use float switch (E 60), F 1 moisture sensor (item E 64), or signal relay of control unit as contactor.	29128442	0.5
	E 53	Alarm switchgear AS 5 Mains-independent, with self-charging power supply unit for 10 hours' operation in the event of power failure, mains pilot LED, fault indicator light, horn-off push button, volt-free contact for hook-up to a control station, ready for connection with 1.8 m cable and plug. ISO housing IP 41, 190 x 165 x 75 mm, use float switch (E 60) or signal relay of control unit as contactor	00530561	1.7
	E 55	Alarm switchgear AS 1 in ISO plug housing IP 30, mains-independent, with self-charging power supply unit for 5 hours' operation in the event of a power failure, acoustic signal 70 dB(A) with circuit breaker and integrated signal transmitter with 3-metre connection cable, max. 60°C, not suitable for steam and condensate. 1. High-water alert by suspending the moisture sensor in a (pump) sump above the pump start-up level. 2. Water alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms subject to a flooding risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom.	00533740	0.9

Control unit/switchgear accessories

	Item	Description	Mat. No.	[kg]
	E 64	Leakage sensor F 1 ¹⁰⁾ As contactor for AS 0, AS 2 or AS 4 alarm switchgear, with 3-metre connection cable, 40 °C max., not suitable for steam and condensate. 1. High-water alert by suspending the moisture sensor in a (pump) sump above the pump start-up level. 2. Water alert signal at a water level of just 1 mm (!), by placing the contactor on the floor of rooms subject to a flooding risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom.	19072366	0.2
	E70	Horn, 12 V DC, 105 dB(A), 1.2 W ¹¹⁾ For indoor and outdoor installation, to be mounted in a position where it is protected from direct rain, IP 54 enclosure	01086547	0.1
	E71	Alarm combination (alarm strobe light and piezo buzzer), 12 V DC ¹¹⁾ , Enclosure IP65	01139930	0.1
	E72	Alarm strobe light, 12 V DC ¹¹⁾ , Enclosure IP65	01056355	0.3
	E73	PC service tool CD-ROM with instructions, dongle for authorisation, RS232 parameterisation cable and USB/RS232 adapter (for laptops without serial interface) to prevent parameterisation of the equipment by untrained personnel. The service software can also be used without a dongle. However, some parameters will be locked in this case. The dongle can only be used after it has been enabled by KSB. To this effect, follow the instructions included.	47121210	0.2
	E 300	Master switch, 32 A, external Plastic housing IP 65, 90 x 90 x 145 mm for LevelControl	01118354	0.4
	O 200	Signalling module for LevelControl Basic 2, type BC	19075182	0.2
	O 203	Signalling module for LevelControl Basic 2, type BS	19075185	1.1

LevelControl Basic 1 and LevelControl Basic 2 control units are fitted with a mains-independent acoustic alarm (buzzer) and a volt-free signalling contact for transmitting alarm signals (e.g. to the control room) in the case of a fault. For this reason, alarm switchgear is not absolutely necessary, however, it can be used for setting off an acoustic alarm in building parts at a distance from the lifting unit in the case of a fault (e.g. lifting unit in the cellar, additional alarm switchgear in the hallway).

¹⁰⁾ In combination with alarm switchgear AS0, AS2, AS4 or LevelControl

¹¹⁾ In combination with AS 5 or Level Control Basic 2



KSB Aktiengesellschaft

67225 Frankenthal • Johann-Klein-Str. 9 • 67227 Frankenthal (Germany)

Tel. +49 6233 86-0 • Fax +49 6233 86-3401

www.ksb.com

26.07.2013

2317.54/08-EN