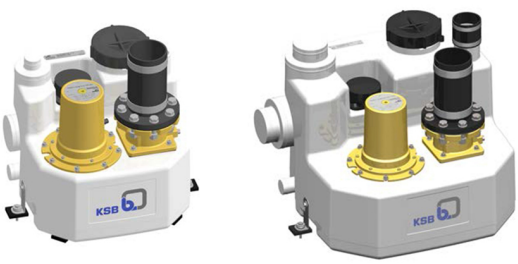
Floodable Sewage Lifting Unit

# mini-Compacta

## Type Series Booklet







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Type Series Booklet mini-Compacta

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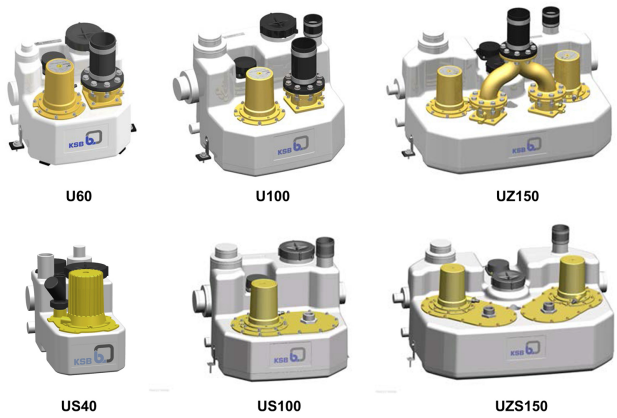
# Building Services: Drainage

## Lifting Units

# mini-Compacta




### Main applications

- Disposal of waste water occurring below the flood level
- Waste water management

Single-pump unit US (40 litres)/ U (60 litres)/ U (100 litres):

- Unit for single-family house

Dual-pump unit UZ (150 litres):

- Unit for uninterrupted waste water drainage

### Fluids handled

Standard design:

- Waste water with faeces
- Waste water without faeces
- Grey water

Variant C:

- Aggressive fluids

### Operating data

Operating properties

| Characteristic | | Value |
|---|---|---|
| Flow rate | Q [m³/h] | ≤ 36 |
| | Q [l/s] | ≤ 10 |
| Head | H [m] | ≤ 25 |
| Fluid temperature | T [°C] | ≤ +40 (continuous duty) |
| | | ≤ +65 (short-time operation ≤ 5 Minuten) |

### Duty cycles

Permissible duty cycle

| Operation | Type |
|---|---|
| Intermittent periodic duty | S3 50 % to VDE |

### Design details

### Design

- Floodable sewage lifting unit[1)] to EN 12050-1
- Gas-tight and water-tight plastic collecting tank, pump unit, sensors and control unit
- Ready-to-connect sewage lifting unit

### Drive

- Surface-cooled
- AC motor / three-phase asynchronous motor
- Thermal overload protection
- To VDE 0530, Part 1/IEC 34-1
- Enclosure IP68 (permanently submerged) to EN 60529 / IEC 529
- Thermal class F
- Electrical voltage 400 V (three-phase asynchronous motor) / 230 V (AC motor)
- Frequency 50 Hz
- DOL starting

### Impeller type

- Free-flow impeller
- Cutter

### Bearings

- Grease-packed, maintenance-free rolling element bearings

### Shaft seal

mini-Compacta US (40 litres) / U (60 litres) / U (100 litres) / UZ (150 litres):

- Impeller end: shaft seal ring
- Drive end: 1 shaft seal ring
- A grease fill is provided between the impeller-end and drive-end shaft seals.

mini-Compacta US (100 litres) / UZS (150 litres) / variant C:

- Impeller end: mechanical seal
- Drive end: 1 shaft seal ring
- An oil reservoir, which is supplied filled with ecologically acceptable white oil, is fitted between the impeller-end and drive-end shaft seals.

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

## Designation

### Example: mini-Compacta UZS X 1.150 D/C

Designation key

| Code | Description | |
|---|---|---|
| mini-Compacta | Type series | |
| UZ | Design | |
| | U | Single-pump lifting unit with free-flow impeller |
| | US | Single-pump lifting unit with cutter |
| | UZ | Dual-pump lifting unit with free-flow impeller |
| | UZS | Dual-pump lifting unit with cutter |
| X | Special design | |
| 1 | Hydraulics code | |
| | 1, 2 | |
| 150 | Total volume of collecting tank [litres] | |
| | 40, 60, 100, 150 | |
| D | Motor | |
| | D | Three-phase asynchronous motor |
| | E | Single-phase AC motor |
| C | Material | |
| | C | Variant for aggressive fluids |
| | -[2)] | Standard design for domestic waste water and faeces |

## 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.

2) Blank

## Materials

Overview of available materials

| Component | Standard variant | | | | | | Variant C | | |
|---|---|---|---|---|---|---|---|---|---|
| | U | | UZ | US | | UZS | U | | UZ |
| | 60 | 100 | 150 | 40 | 100 | 150 | 60 | 100 | 150 |
| Collecting tank | Polyethylene | | | | | | | | |
| Pump casing | Polyethylene | | | Grey cast iron | | | Polyethylene | | |
| Impeller | PBT-GF | | | | Grey cast iron | | PBT-GF | | |
| 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 | | | PVC | | - | Stainless steel (1.4408) | | |
| Float | Polypropylene | | | | | | | | |
| Screws, bolts and nuts | Stainless steel (A4) | | | | | | | | |

## Product benefits

- Safe and reliable operation ensured by control system (LevelControl Basic 1 / LevelControl Basic 2)
- 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
- Ready-to-connect, easy installation and commissioning
- Low noise level

## Certification

Overview

| Label | Effective in: | Comment |
|---|---|---|
| | Germany | U1.60 |
| | Europe | All sizes |

## Selection information

### Requirements on installation at site (to EN 12056-4 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.

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 line 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 line 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 line 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.

### Geodetic head

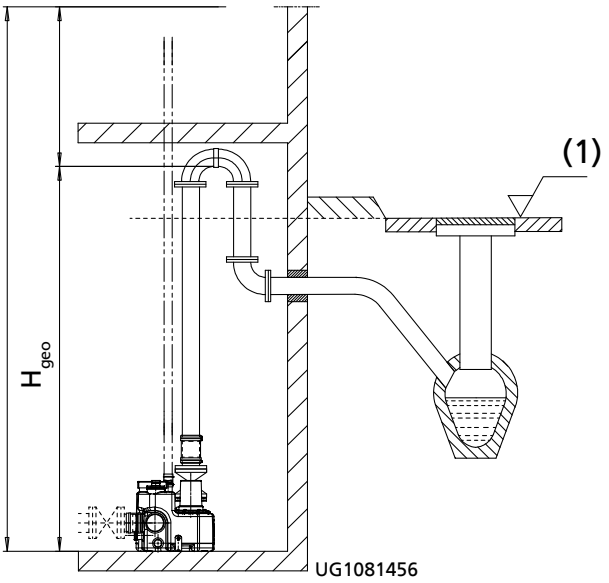



**Fig. 1:** Geodetic head $H_{geo}$ if installed correctly

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

Calculation of head:

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

### 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 starts: 60/hour
- For continuous discharge or repeated discharge over longer periods of time the maximum permissible frequency of starts must be observed!

## Overview of product features

Overview of product features of single-pump units

| | mini-Compacta U60 |
|---|---|
| ▪ Hydraulics code 1<br>▪ $H_{max.}$ 11.9 m<br>▪ $Q_{max.}$ 26.5 m³/h<br>▪ 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. |

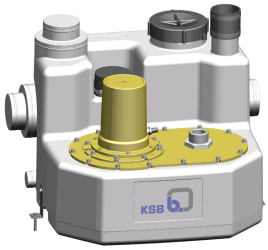
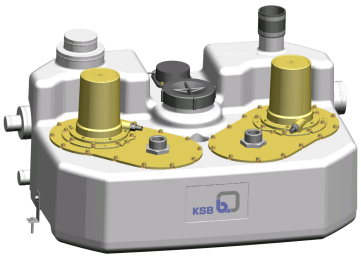
Overview of product features of single-pump and dual-pump units

| | Single-pump unit | Dual-pump unit |
|---|---|---|
| | mini-Compacta U100 | mini-Compacta UZ150 |
| ▪ Hydraulics codes 1 and 2<br>▪ $H_{max.}$ 16 m<br>▪ $Q_{max.}$ 36 m³/h<br>▪ 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 with cutter

| | With cutter |
|---|---|
| | mini-Compacta US40 |
| ▪ Hydraulics code S1<br>▪ $H_{max.}$ 18 m<br>▪ $Q_{max.}$ 14.2 m³/h |  |
| Tank volume | 40 l |
| Installation examples | Single-family houses, toilets, wash-basins and showers, secondary toilets and party rooms in the basement, refurbished buildings, weekend houses, houseboats, mobile sanitary facilities |
| Design | Small plug-in lifting unit in compact design, fully floodable, with gas and water-proof plastic collecting tank, centrifugal pump with cutter for automatic operation via electronic control unit |

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

| | With cutter | |
|---|---|---|
| | Single-pump unit | Dual-pump unit |
| | mini-Compacta US100 | mini-Compacta UZS150 |
| ▪ Hydraulics codes S1 and S2<br>▪ $H_{max.}$ 25 m<br>▪ $Q_{max.}$ 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 lines 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. |

## Technical data

### mini-Compacta: Single-pump unit - standard design for domestic waste water, with free-flow impeller

D = three-phase asynchronous motor

E = single-phase AC motor

U = single-pump unit with free-flow impeller

50 Hz

| mini-Compacta Single-pump unit | Discharge-side connection | Free passage | Total volume | Effective volume[3] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| n = 2800 rpm | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| U 1.60 D[4] | 80/100 | 40 | 60 | 20 | - | 30 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131500 | 45 |
| U 1.60 E[4] | 80/100 | 40 | 60 | 20 | - | 30 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131501 | 45 |
| U 1,100 D[4] | 80/100 | 40 | 100 | 30 | 44 | 62 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131504 | 54 |
| U 1.100 E[4] | 80/100 | 40 | 100 | 30 | 44 | 62 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131505 | 54 |
| U 2.100 D[4] | 80/100 | 40 | 100 | 30 | 44 | 62 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131506 | 54 |
| U 2.100 E[4] | 80/100 | 40 | 100 | 30 | 44 | 62 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131507 | 54 |

### mini-Compacta: dual-pump unit – standard design for domestic waste water and faeces, with free-flow impeller

D = three-phase asynchronous motor

E = single-phase AC motor

UZ = dual-pump station with free-flow impeller

50 Hz

| mini-Compacta Dual-pump unit | Discharge-side connection | Free passage | Total volume | Effective volume[5] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| n = 2800 rpm | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| UZ 1.150 D[6] | 80/100 | 40 | 150 | 57 | 83 | 91 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131630 | 110 |
| UZ 1.150 E[6] | 80/100 | 40 | 150 | 57 | 83 | 91 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131631 | 110 |
| UZ 2.150 D[6] | 80/100 | 40 | 150 | 57 | 83 | 91 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131632 | 110 |
| UZ 2.150 E[6] | 80/100 | 40 | 150 | 57 | 83 | 91 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131633 | 110 |

3) Effective volume as a function of inlet nozzle level H [mm]
4) Design with integrated check valve
5) Effective volume as a function of inlet nozzle level H [mm]
6) Design with integrated check valve, with Y-pipe

## mini-Compacta: Single-pump unit - standard design for domestic waste water and faeces, with cutter

D = three-phase asynchronous motor

E = single-phase AC motor

US = single-pump unit with cutter

50 Hz

| mini-Compacta Single-pump unit | Discharge-side connection | Free passage | Total volume | Effective volume[7] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| n = 2800 rpm | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| US 1.40 D | 50 | 40 | 40 | 10 | - | 17 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29134802 | 31 |
| US 1.40 E | 50 | 40 | 40 | 10 | - | 17 | 2,30 | 1,65 | 10,0 | - | 4+1 | 29134801 | 33 |
| US 1.100 D | 50 | 40 | 100 | 33 | 46 | 64 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131508 | 49 |
| US 1.100 E | 50 | 40 | 100 | 33 | 46 | 64 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131724 | 80 |
| US 2.100 D | 50 | 40 | 100 | 33 | 46 | 64 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131510 | 49 |
| US 2.100 E | 50 | 40 | 100 | 33 | 46 | 64 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131725 | 80 |

## mini-Compacta: dual-pump unit – standard design for domestic waste water and faeces, with cutter

D = three-phase asynchronous motor

E = single-phase AC motor

UZS = dual-pump station with cutter

50 Hz

| mini-Compacta Dual-pump unit | Discharge-side connection | Free passage | Total volume | Effective volume[8] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| n = 2800 rpm | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| UZS 1.150 D | 2× 50 | 40 | 150 | - | 85 | 95 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131634 | 121,6 |
| UZS 1.150 E | 2× 50 | 40 | 150 | - | 85 | 95 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131726 | 121,6 |
| UZS 2.150 D | 2× 50 | 40 | 150 | - | 85 | 95 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131636 | 121,6 |
| UZS 2.150 E | 2× 50 | 40 | 150 | - | 85 | 95 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131727 | 121,6 |

7) Effective volume as a function of inlet nozzle level H [mm]
8) Effective volume as a function of inlet nozzle level H [mm]

## mini-Compacta: Single-pump unit - C variant for aggressive fluids

C = variant for aggressive fluids

D = three-phase asynchronous motor

E = single-phase AC motor

U = single-pump unit with free-flow impeller

mini-Compacta single-pump unit, n = 2800 rpm, 50 Hz

| Size | Discharge-side connection | Free passage | Total volume | Effective volume[9] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| U 1.60 D/C[10] | 80/100 | 40 | 60 | 20 | - | 30 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131512 | 45 |
| U 1.60 E/C[10] | 80/100 | 40 | 60 | 20 | - | 30 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131513 | 45 |
| U 1.100 D/C[10] | 80/100 | 40 | 100 | 30 | 44 | 62 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131516 | 54 |
| U 1.100 E/C[10] | 80/100 | 40 | 100 | 30 | 44 | 62 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131517 | 54 |
| U 2.100 D/C[10] | 80/100 | 40 | 100 | 30 | 44 | 62 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131518 | 54 |
| U 2.100 E/C[10] | 80/100 | 40 | 100 | 30 | 44 | 62 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131519 | 54 |

## mini-Compacta: dual-pump unit – variant C for aggressive fluids

C = variant for aggressive fluids

D = three-phase asynchronous motor

E = single-phase AC motor

UZ = dual-pump station with free-flow impeller

50 Hz

| mini-Compacta Dual-pump unit | Discharge-side connection | Free passage | Total volume | Effective volume[11] | | | $P_1$ | $P_N$ | $I_N$ | | Cable length | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H = 180 mm | H = 250 mm | Vertical inlet | | | 1~230 V | 3~400 V | | | |
| n = 2800 rpm | DN | [mm] | [l] | [l] | [l] | [l] | [kW] | [kW] | [A] | [A] | [m] | | |
| UZ 1.150 D/C[12] | 80/100 | 40 | 150 | 57 | 83 | 91 | 0,93 | 0,75 | - | 1,7 | 4+1 | 29131638 | 110 |
| UZ 1.150 E/C[12] | 80/100 | 40 | 150 | 57 | 83 | 91 | 1,01 | 0,75 | 4,5 | - | 4+1 | 29131639 | 110 |
| UZ 2.150 D/C[12] | 80/100 | 40 | 150 | 57 | 83 | 91 | 1,75 | 1,50 | - | 3,0 | 4+1 | 29131640 | 110 |
| UZ 2.150 E/C[12] | 80/100 | 40 | 150 | 57 | 83 | 91 | 2,00 | 1,50 | 8,7 | - | 4+1 | 29131641 | 110 |

### Special design on request

- Systems for improved fire protection / halogen-free cables

9) Effective volume depending on inlet nozzle level H [mm]
10) Version with integrated check valve
11) Effective volume as a function of inlet nozzle level H [mm]
12) Design with integrated check valve

## Selection aid for drainage applications

The table below for your guidance is based on KSB's long-standing experience. The data are reference values and are not to be considered binding recommendations. They shall not be the basis for warranty claims.
Further consultation is available through the KSB sales houses or KSB specialist departments.

Selection aid for drainage applications

| Fluid handled | mini-Compacta | |
|---|---|---|
| | Standard | Variant C |
| **Domestic waste water and faeces**<br>from bathtubs, showers, washbasins, bidets, toilets, urinals, sinks, floor drains, dishwashers and washing machines | ✗ | - |
| **Waste water from commercial premises**<br>produced in kitchens, shower and toilet facilities, hospitals, hotels, sports facilities and swimming pools | ✗ | ✗ |
| **Condensate from heat recovery applications**<br>(DIN 1986-3) | - | ✗ |
| **Waste water from kitchens**<br>For discharge of greasy waste water, a grease separator must be fitted. (DIN 4040-1). | ✗ | ✗ |
| **Waste water from laboratories**<br>(Permission under water and waterways legislation or discharge permit required, DIN 1986-3) | - | 13) |
| **Flushing water containing salt**<br>(seawater < 15 °C) | - | ✗ |
| **Swimming pool water containing chlorine**<br>(DIN 19643) | - | ✗ |
| **Aggressive waste water**<br>in low concentrations, pH 5 to 12, cleaning agents, disinfectants, dishwashing agents and laundry agents (DIN 1986-3) | - | ✗ |
| **Waste water from garages, containing road salt** | - | ✗ |
| **Fully desalinated water (ultra-pure water)**<br>with a conductivity < 30 µS | - | ✗ |

13) Contact KSB with the relevant analysis, temperature and duty cycle.

## Characteristic curves

### mini-Compacta U1/UZ1, U2/UZ2; n = 2800 rpm

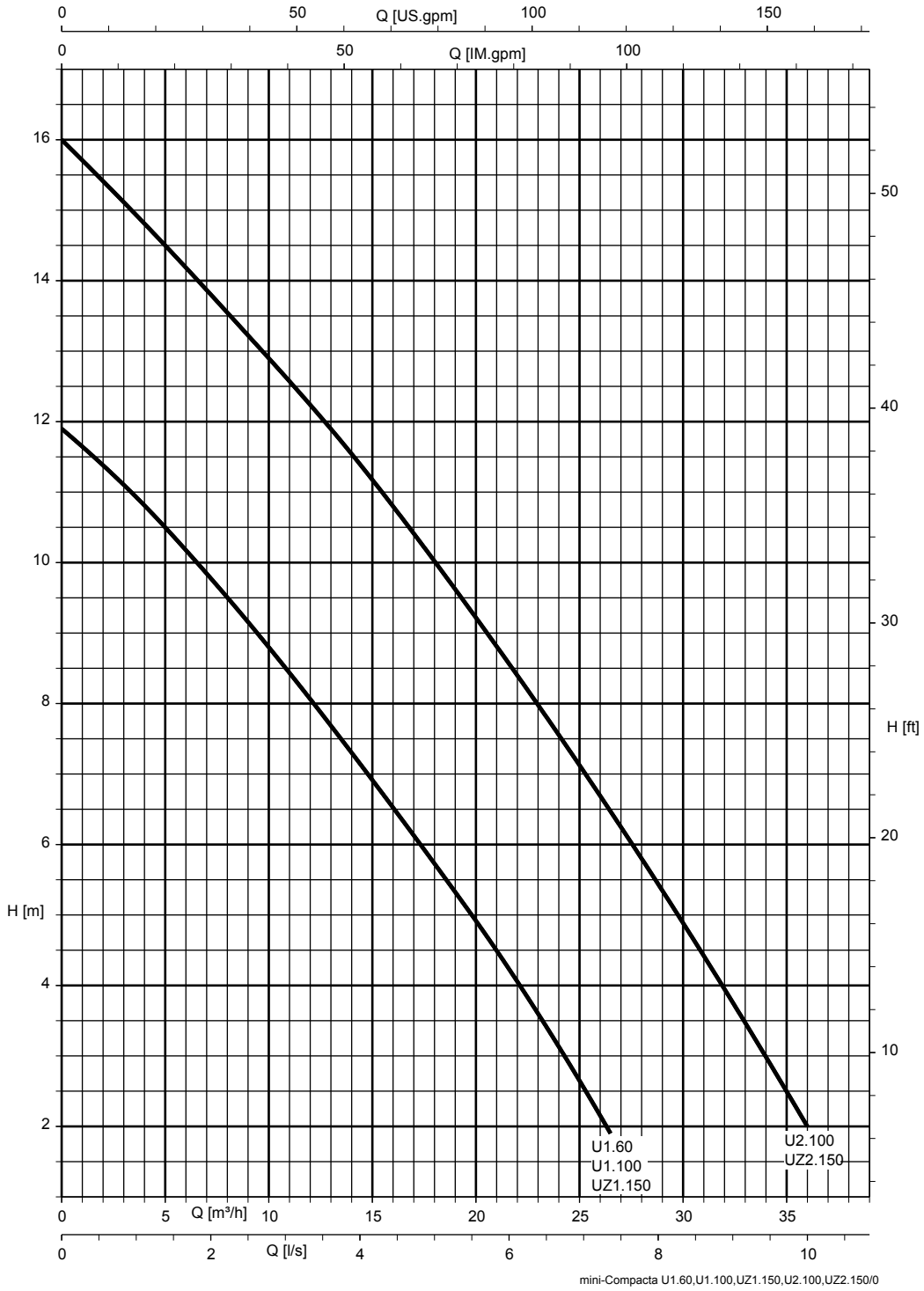



**Fig. 2:** A lifting unit can be selected on the basis of the selection charts for sewage quantities led to the lifting unit from the usual sanitary installations of a building. For lifting units with higher ratings please refer to type series booklet Compacta (reference No. 2317.55).

**mini-Compacta US1/UZS1, US2/UZS2; n = 2800 rpm**

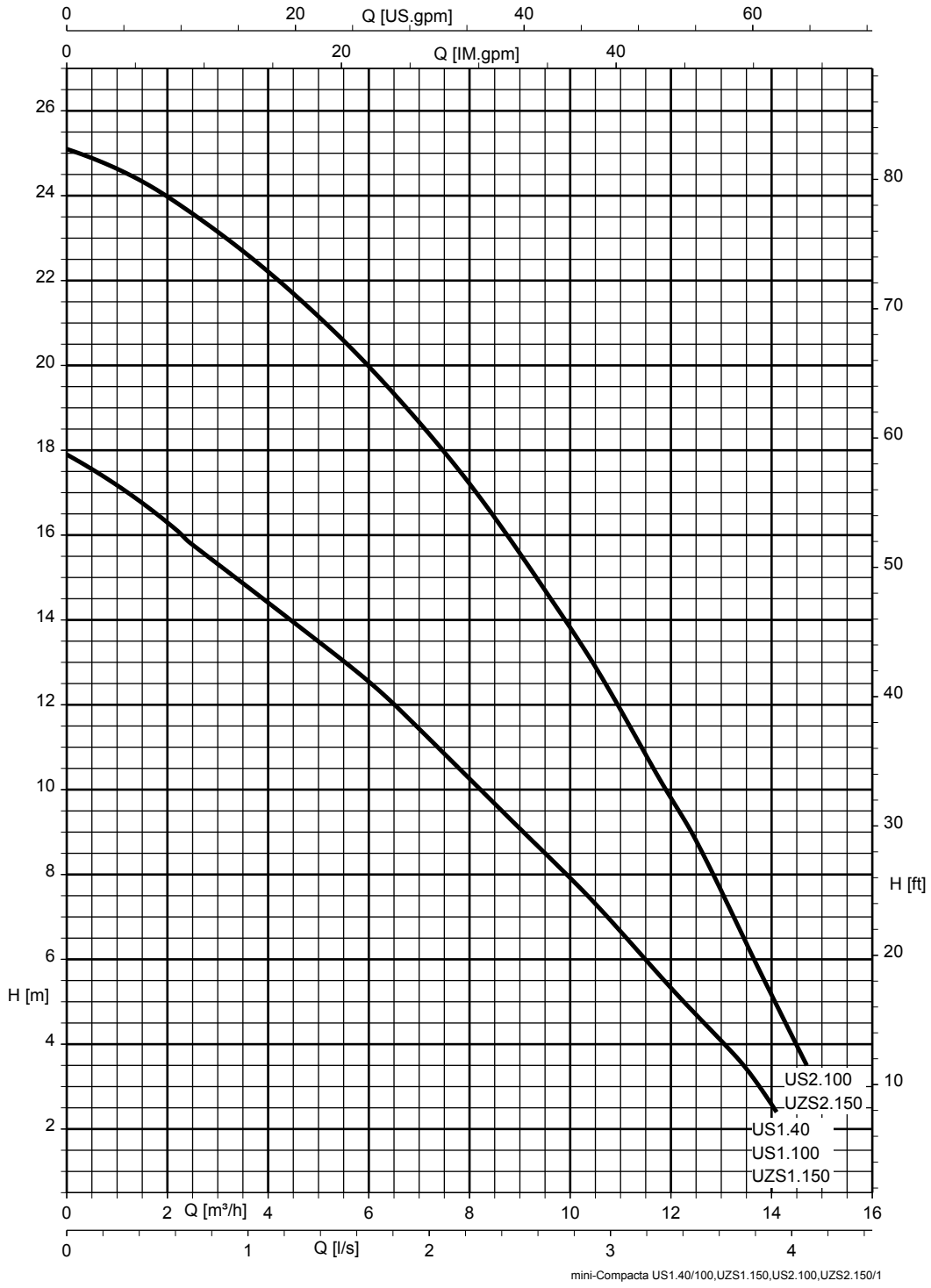



**Fig. 3:** A lifting unit can be selected on the basis of the selection charts for sewage quantities led to the lifting unit from the usual sanitary installations of a building. For lifting units with higher ratings please refer to type series booklet Compacta (reference No. 2317.55).

## Dimensions and connections

### mini-Compacta US (40 litres)

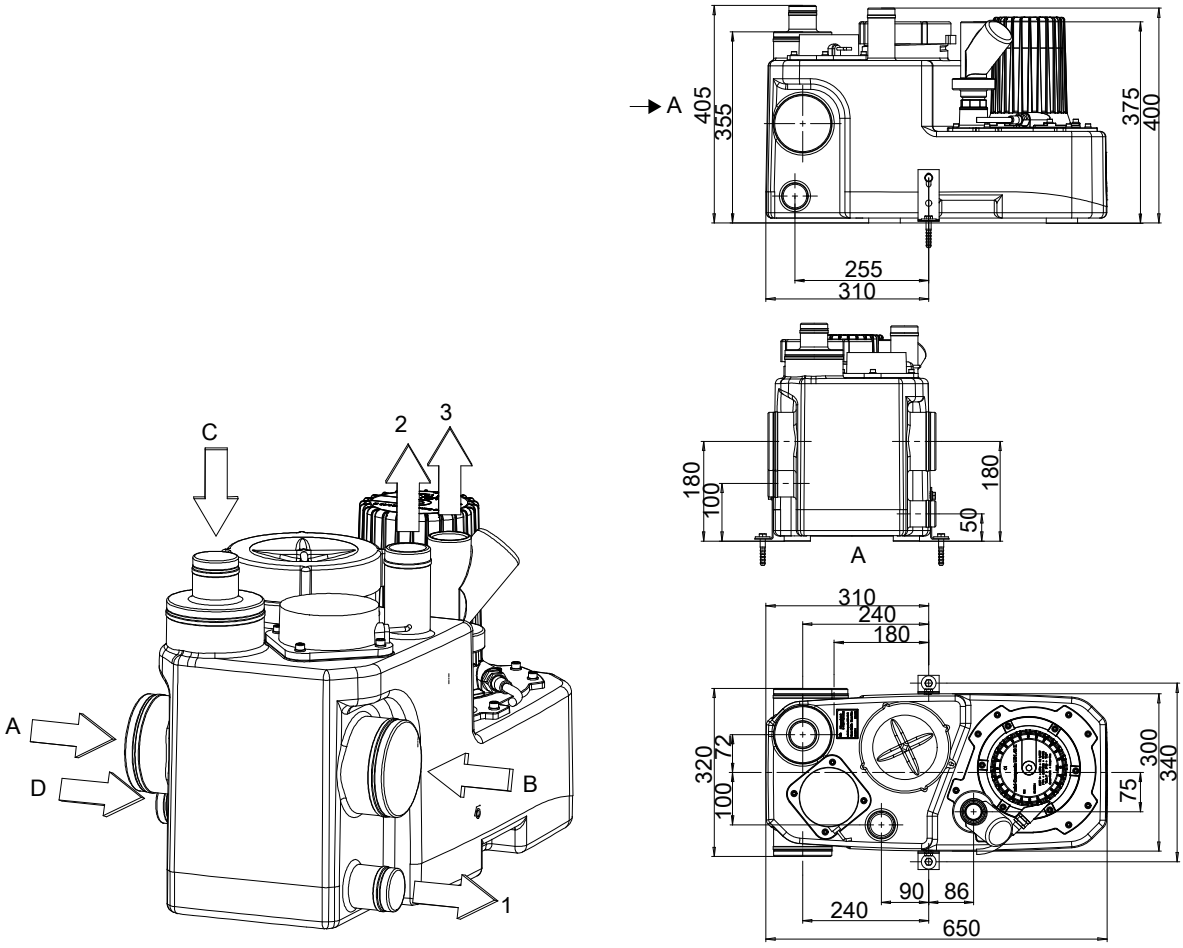



**Fig. 4:** mini-Compacta US (40 litres) connections and dimensions

| | |
|---|---|
| A | Inlet DN 100 |
| B | Inlet DN 100 |
| C | Inlet DN 100/50 |
| D | Inlet DN 50[14)] |
| 1 | Drain DN 40 |
| 2 | Vent DN 50 |
| 3 | Discharge line G 1 1/4 |

14) 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 U (60 litres)**

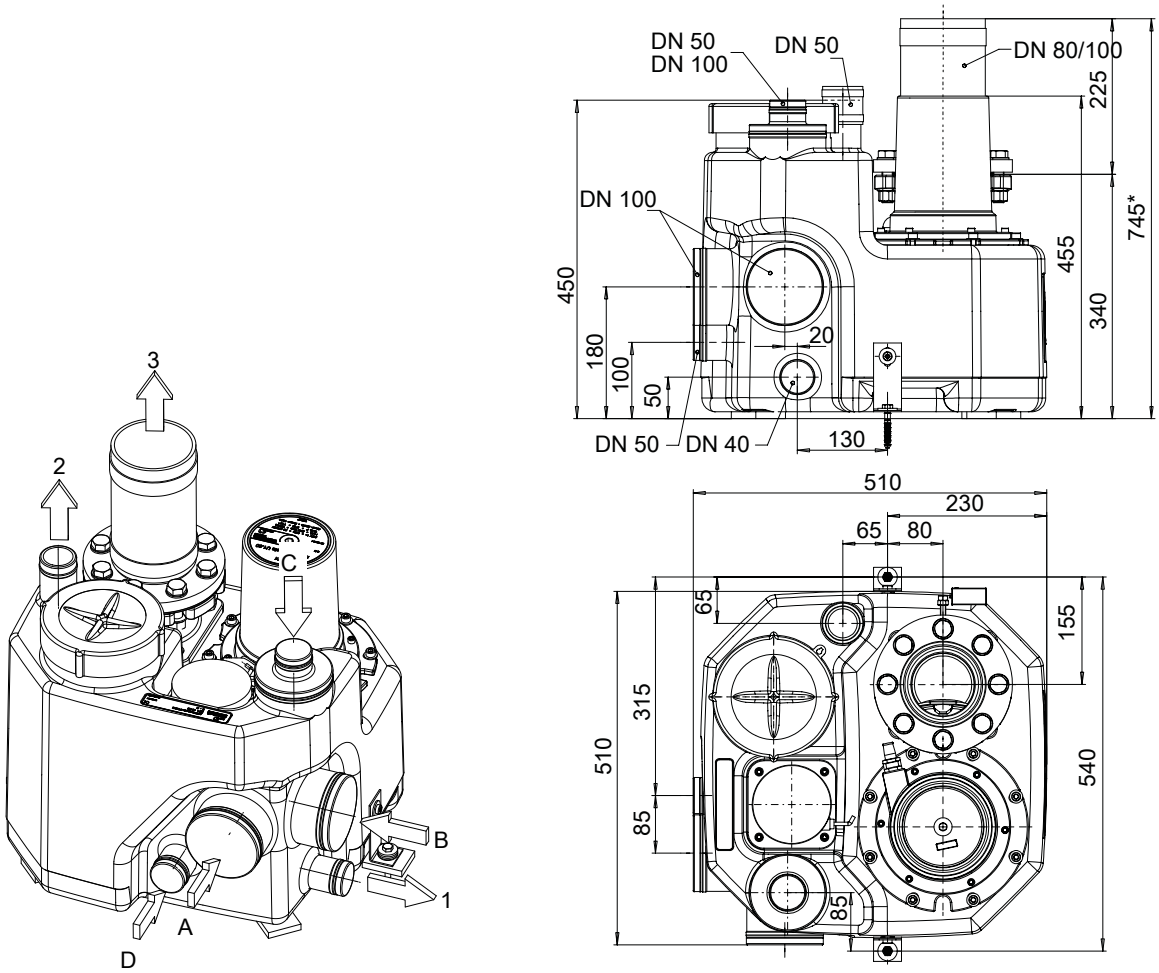



**Fig. 5:** mini-Compacta U (60 litres) connections and dimensions

| | |
|---|---|
| A | Inlet DN 100 |
| B | Inlet DN 100 |
| C | Inlet DN 100/50 |
| D | Inlet DN 50[15)] |
| 1 | Drain DN 40 |
| 2 | Vent DN 50 |
| 3 | Discharge line DN 80/100 |
| * | Length including gate valve |

15) 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 U (100 litres)**

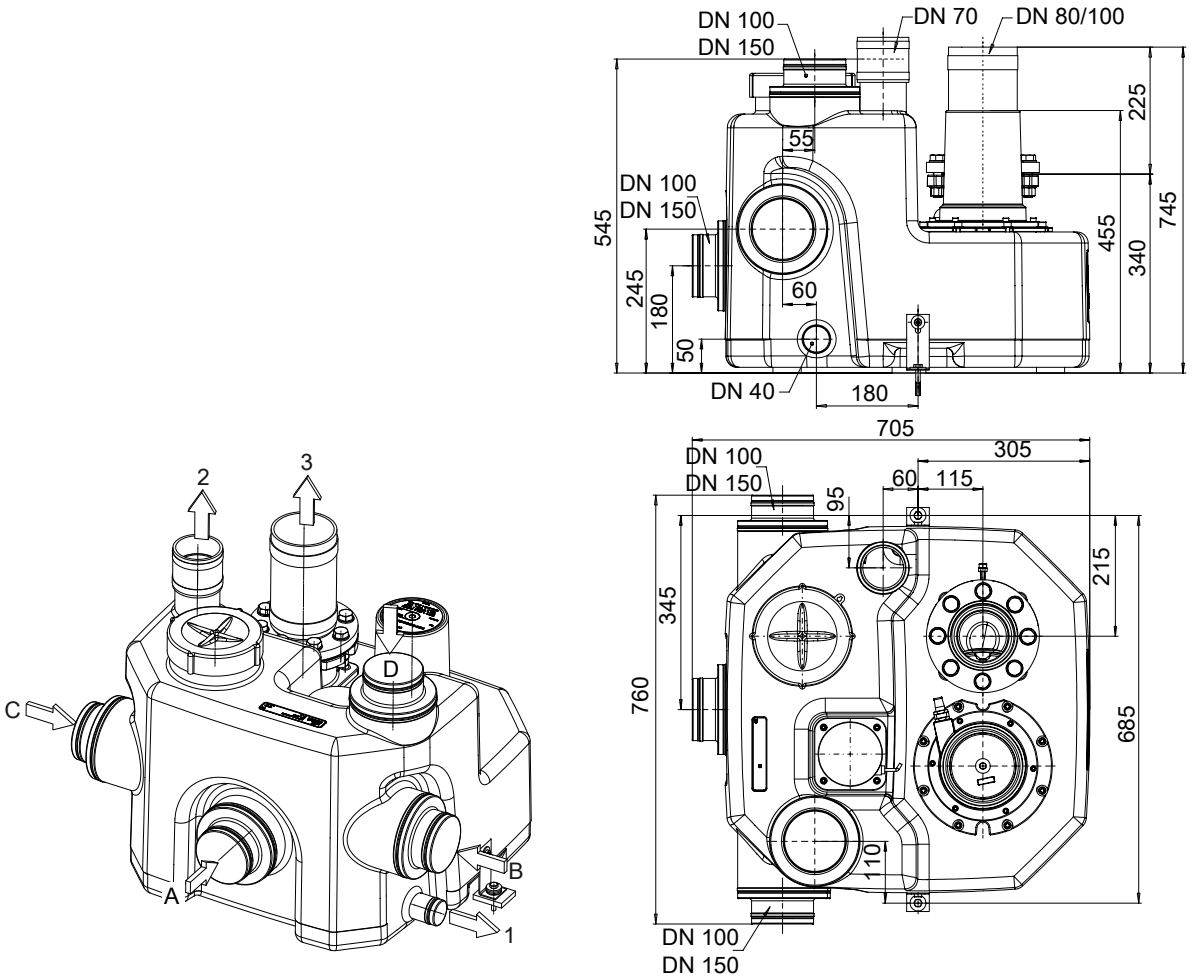



**Fig. 6:** mini-Compacta U (100 litres) connections and dimensions

| | |
|---|---|
| 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 line DN 80/100 |
| * | Length including gate valve |

**mini-Compacta US (100 litres)**

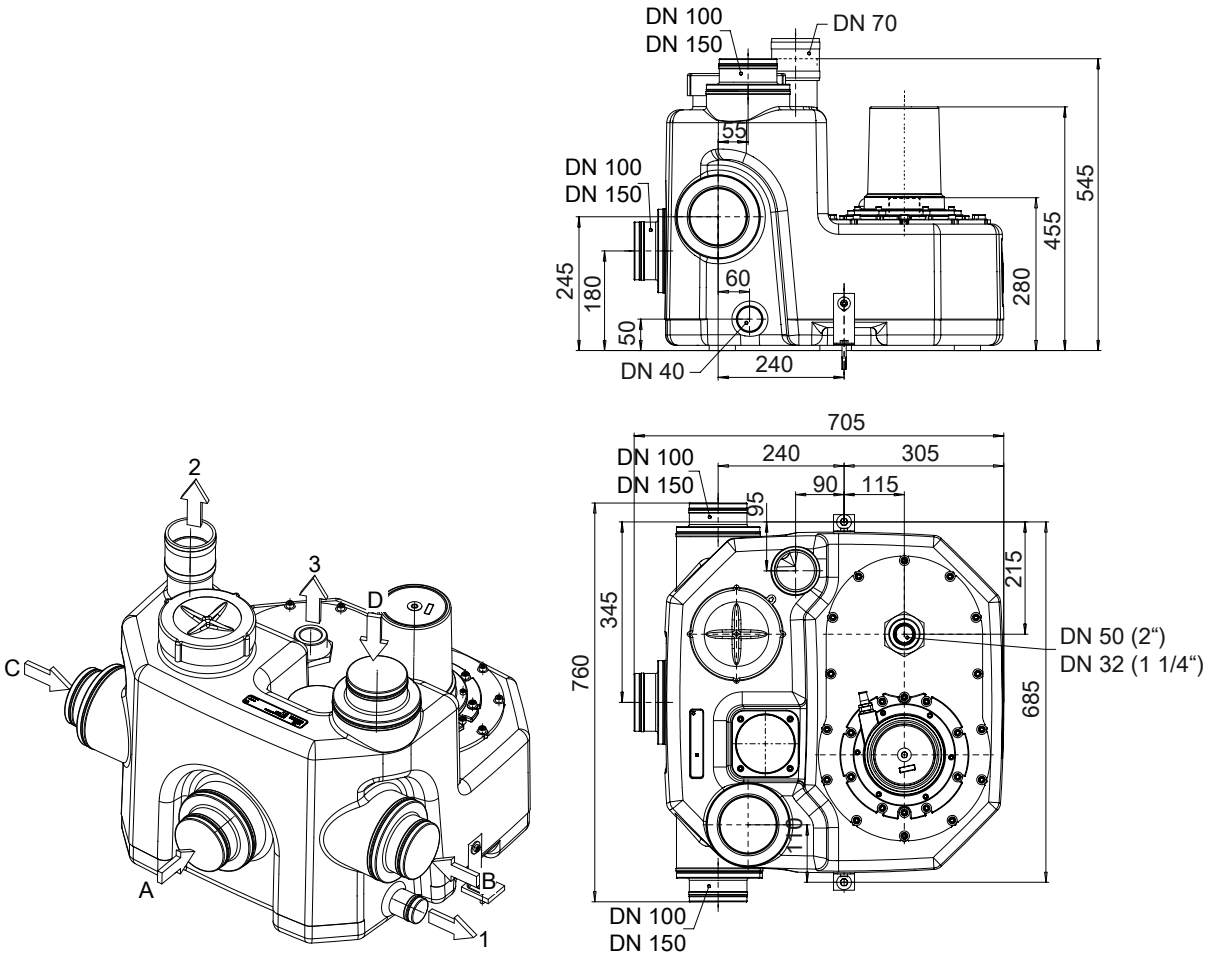



**Fig. 7:** mini-Compacta US (100 litres) connections and dimensions

| | |
|---|---|
| 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 line DN 50 (DN 32) |

**mini-Compacta UZ (150 litres)**

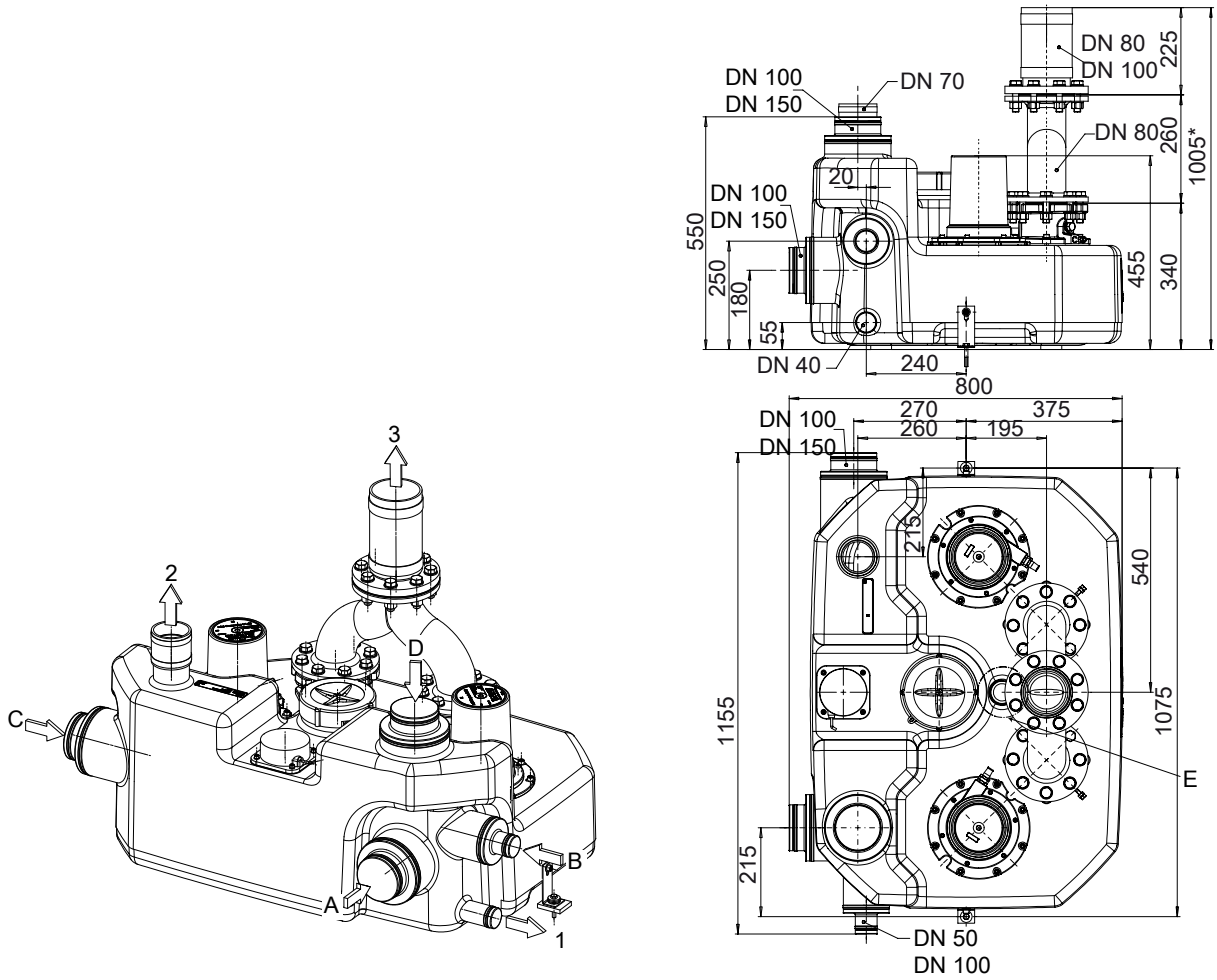



**Fig. 8:** mini-Compacta UZ (150 litres) connections and dimensions

| | |
|---|---|
| A | Inlet DN 150/100 |
| B | Inlet DN 100/50 |
| C | Inlet DN 150/100 |
| D | Inlet DN 150/100 |
| E | Dome for stabilising the tank, no connection |
| 1 | Drain DN 40 |
| 2 | Vent DN 70 |
| 3 | Discharge line DN 80/100 |
| * | Length including gate valve |

**mini-Compacta UZS (150 litres)**

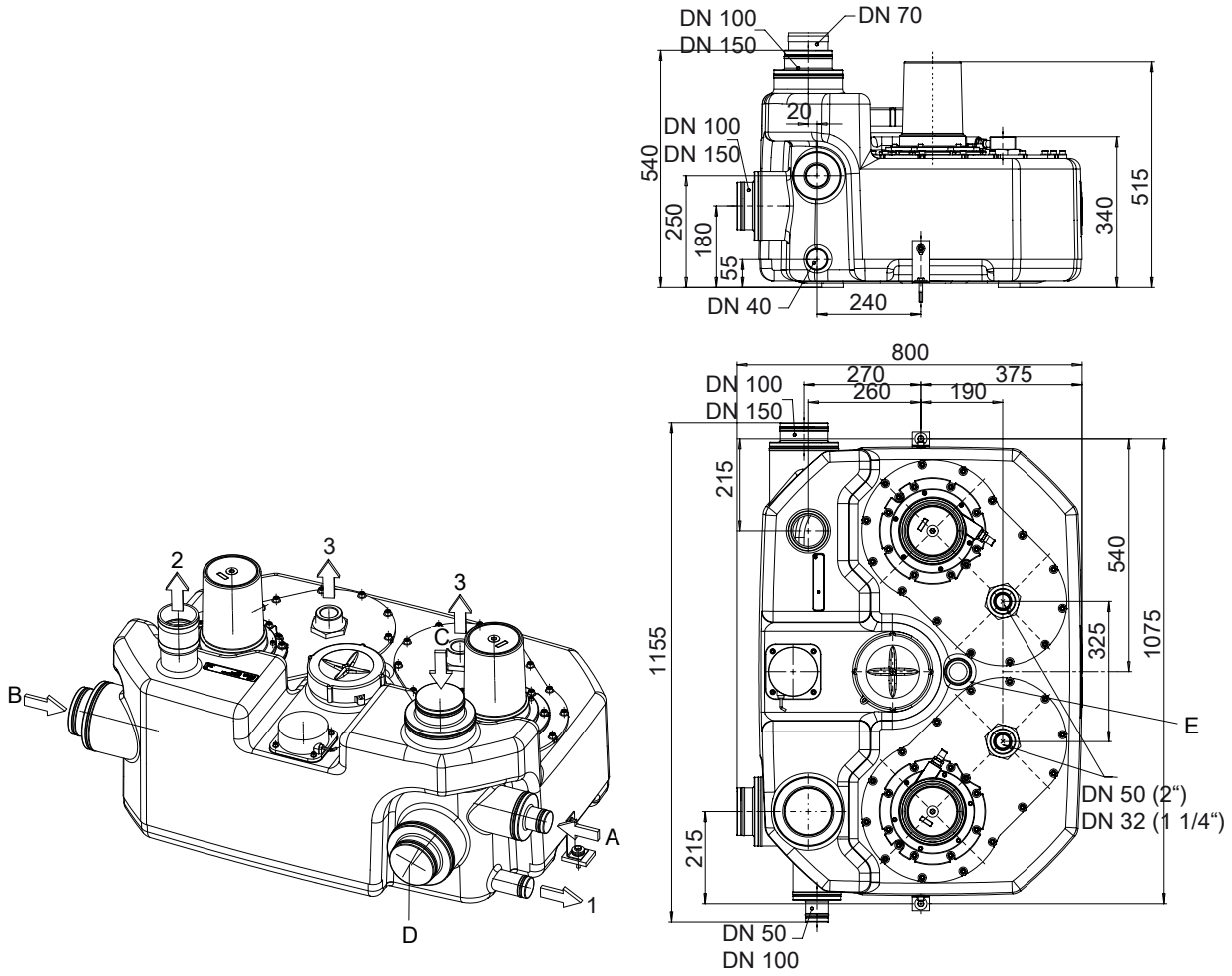



**Fig. 9:** mini-Compacta UZS (150 litres) connections and dimensions

| | |
|---|---|
| A | Inlet DN 100/50 |
| B | Inlet DN 150/100 |
| C | Inlet DN 150/100 |
| D | Inlet cannot be used |
| E | Dome for stabilising the tank, no connection |
| 1 | Drain DN 40 |
| 2 | Vent DN 70 |
| 3 | Discharge line 2 × DN 50 (DN 32) |

## Installation information

### mini-Compacta US (40 litres) and U (60 litres)

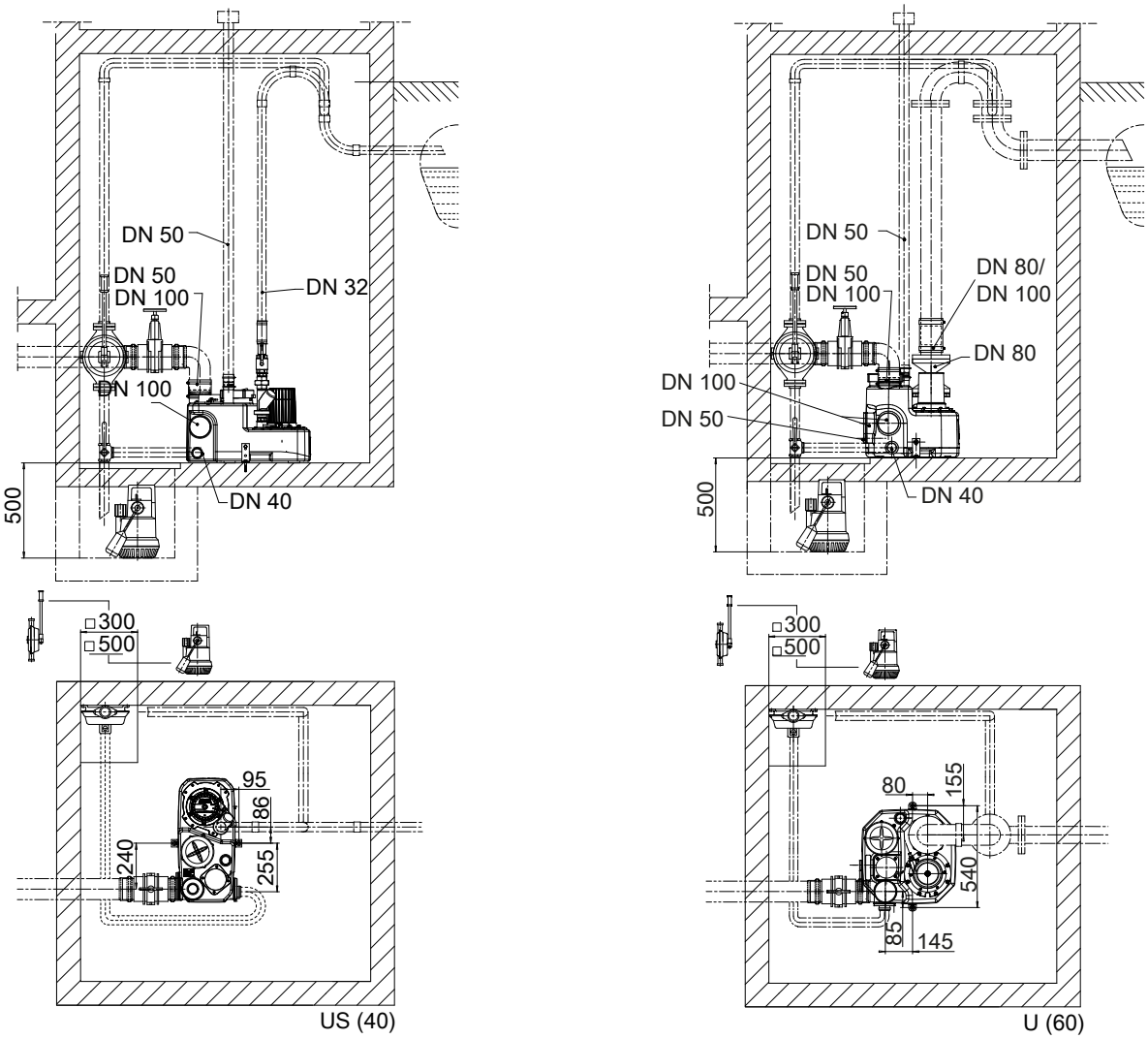



**Fig. 10:** Installation information for mini-Compacta US (40 litres) and U (60 litres)

For lifting units a working area of at least 600 mm width and height must be provided around and above all parts to be operated and serviced.

**mini-Compacta U/US (100 litres) and UZ/UZS (150 litres)**

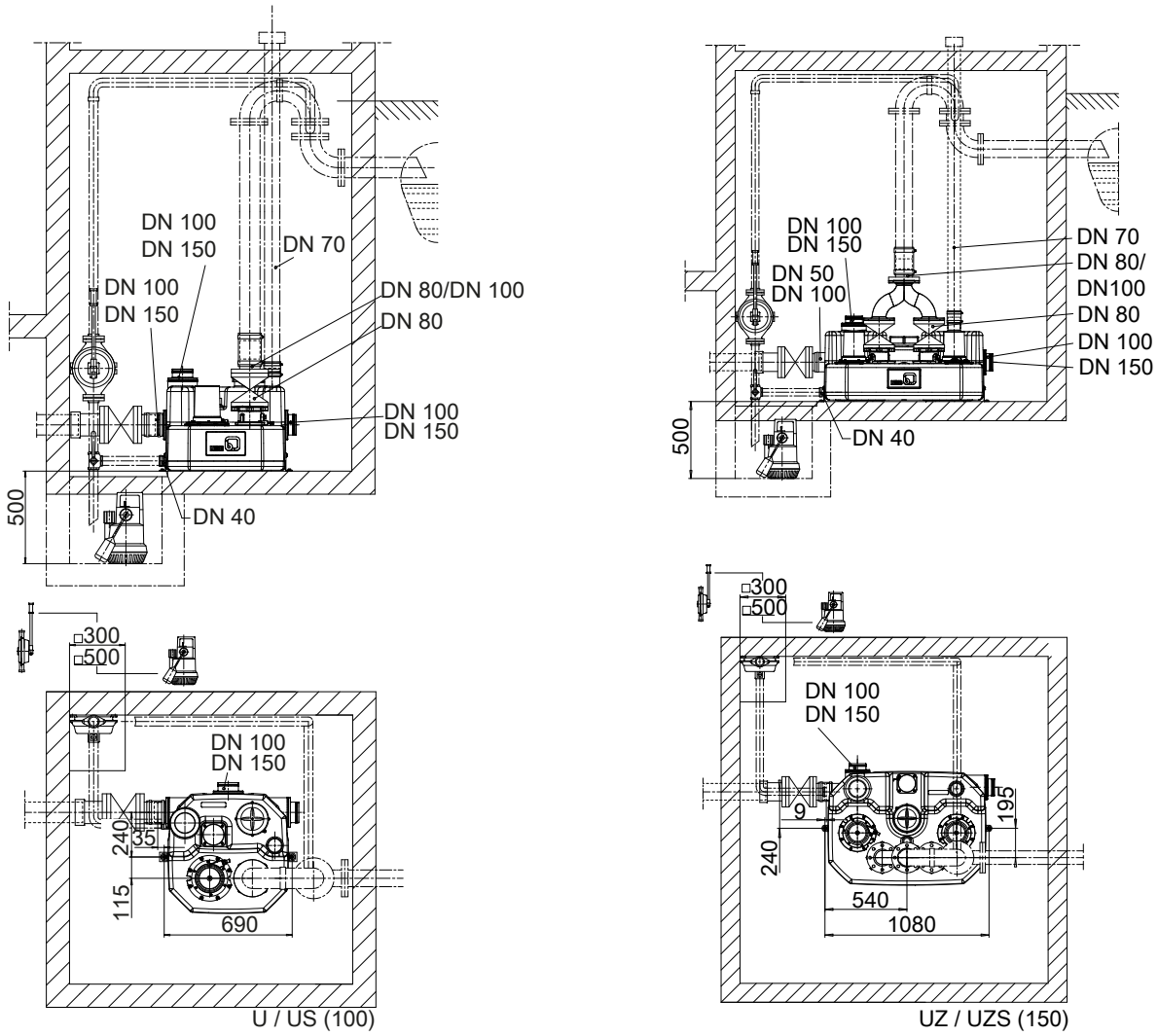



**Fig. 11:** Installation information for mini-Compacta U/US (100 litres) and UZ/UZS (150 litres)

For lifting units a working area of at least 600 mm width and height must be provided around and above all parts to be operated and serviced.

### Direct connection to a wall-mounted toilet bowl

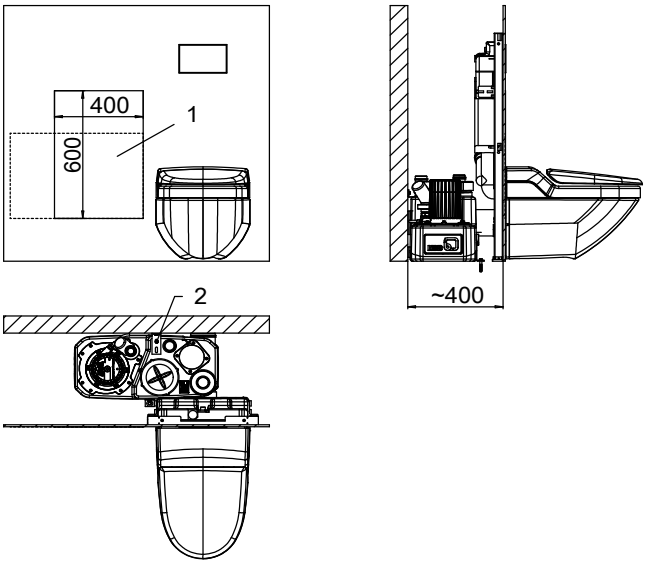



**Fig. 12:** Installation information for direct connection of a mini-Compacta US40 (concealed in a suitable pre-wall system) to a wall-mounted toilet bowl

| | |
|---|---|
| 1 | To enable maintenance work, provide an access opening of at least 400 x 600 mm in the pre-wall. |
| 2 | Attach the lug to the wall to prevent uplift. |

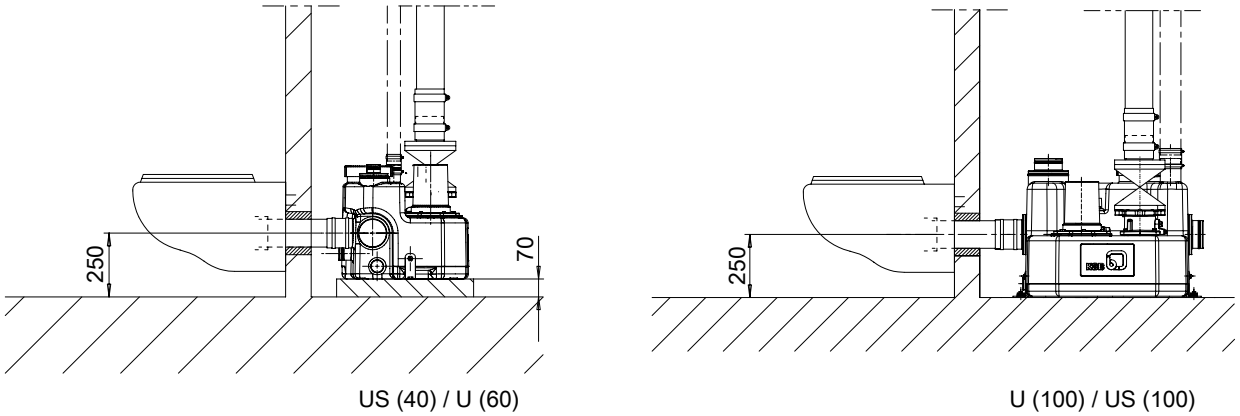



**Fig. 13:** Installation information for direct connection of a mini-Compacta US40 / U60 / U100 / US100 to a wall-mounted toilet bowl

### Direct connection to a floor-mounted toilet bowl

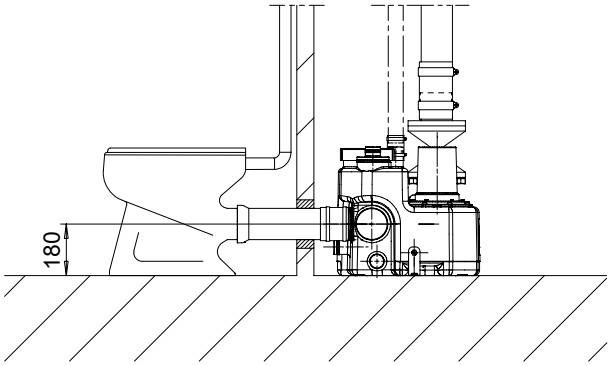



**Fig. 14:** Installation information for direct connection of a mini-Compacta US40 / U60 / U100 / US100 to a floor-mounted toilet bowl

### Pit installation

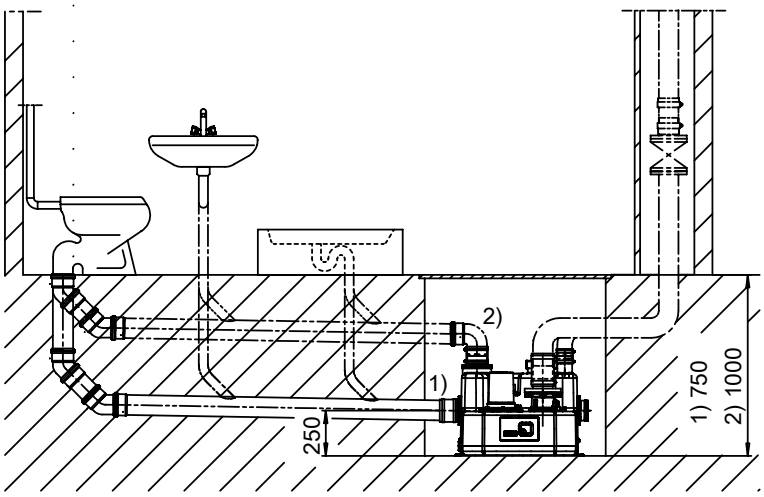



**Fig. 15:** Installation information for installing a mini-Compacta US40 / U60 / U10 / US in a pit

| | |
|---|---|
| 1 | Minimum installation depth when using the horizontal inlet at a height of 250 mm |
| 2 | Minimum installation depth when using the vertical inlet |

### Connection nozzles

Connection nozzles by model

| Size | Inlet side | Discharge side | Vent | Connection<br>Hand diaphragm pump |
|---|---|---|---|---|
| U60 | Horizontal: 2 × DN 100, arranged at an angle of 90°<br>Inlet nozzle level 180 mm<br>1 × DN 50<br>Vertical: 1 × DN 100/50, graded | DN 80/100<br>DN 80/80 (optional) | DN 50 | DN 40 (Rp 1 $^1/_2$) |
| U100 | Horizontal: 1 × DN 150/100, graded<br>Inlet nozzle level 180 mm<br>2 × DN 150/100, graded<br>Inlet nozzle level 250 mm<br>Vertical: 1 × DN 150/100, graded | DN 80/100<br>DN 80/80 (optional) | DN 70 | DN 40 (Rp 1 $^1/_2$) |
| UZ150 | Horizontal: 1 × DN 150/100, graded<br>Inlet nozzle level 180 mm<br>1 × DN 100/50, graded<br>Inlet nozzle level 250 mm<br>1 × DN 150/100, graded<br>Inlet nozzle level 250 mm<br>Vertical: 1 × DN 150/100, graded | DN 80/100<br>(discharge line downstream of Y-pipe DN 100)<br>DN 80/80 (optional) | DN 70 | DN 40 (Rp 1 $^1/_2$) |
| US40 | Horizontal: 2 x DN 100, arranged on the sides opposite to each other<br>Inlet nozzle level 180 mm<br>Vertical: 1 × DN 100/50, graded | DN 32 | DN 50 | DN 40 (Rp 1 $^1/_2$) |
| US100 | Horizontal: 1 × DN 150/100, graded<br>Inlet nozzle level 180 mm<br>2 × DN 150/100, graded<br>Inlet nozzle level 250 mm<br>Vertical: 1 × DN 150/100, graded | DN 50<br>(DN 32 possible) | DN 70 | DN 40 (Rp 1 $^1/_2$) |
| UZS150 | Horizontal: 1 × DN 150/50, graded<br>1 × DN 150/100, graded<br>Inlet nozzle level 250 mm<br>Vertical: 1 × DN 150/100, graded | 2 × DN 50<br>(DN 32 possible) | DN 70 | DN 40 (Rp 1 $^1/_2$) |

## Scope of supply

### mini-Compacta US (40 litres)

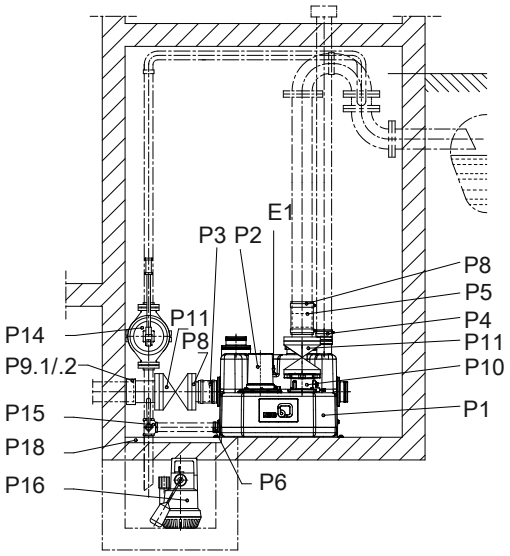



**Fig. 16:** Schematic of a mini-Compacta US (40 litres)

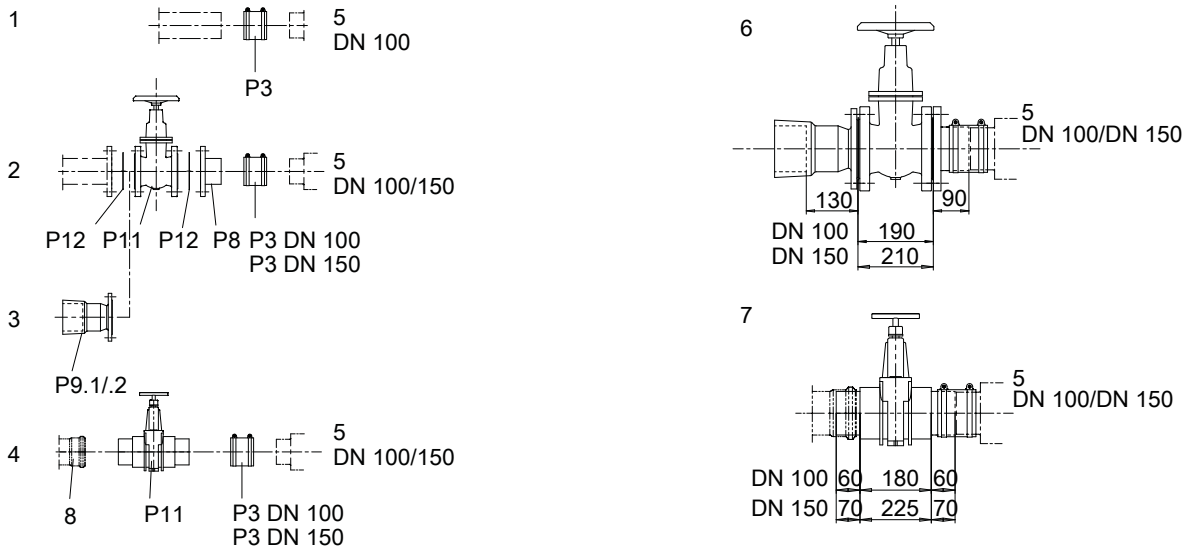



**Fig. 17:** Inlet line of a mini-Compacta US (40 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

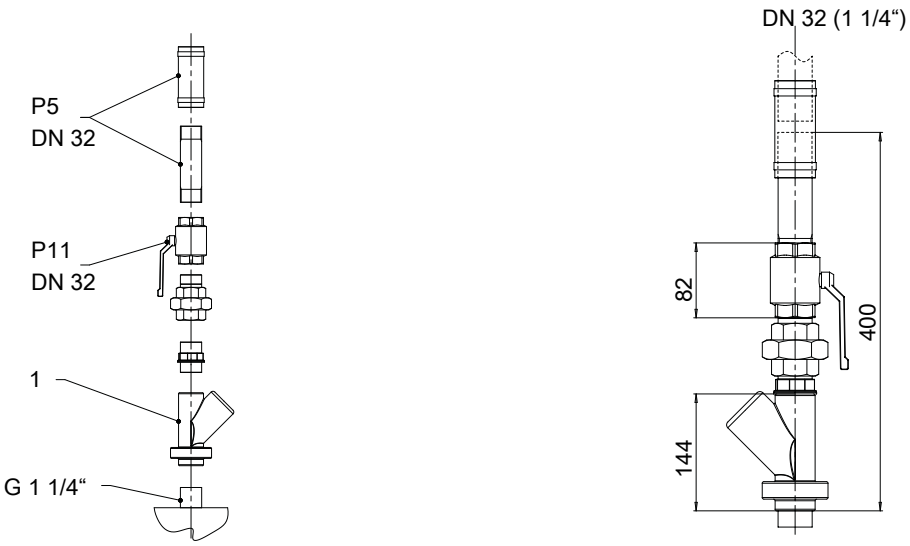



**Fig. 18:** Discharge line of a mini-Compacta US (40 litres)

| | |
|---|---|
| 1 | Part of the unit |

Items included in the scope of supply of mini-Compacta US (40 litres)

| | Item | Description |
|---|---|---|
| - | P1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P2 | Fully floodable submersible motor pump |
|  | P3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P4 | Flexible hose connection and hose clips (venting) |
| - | P6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | P10 | Check valve with full port and lifting screw |
| - | E1 | Analog level sensor for pump and alarm buzzer |
| - | E3[16)] | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta US (40 litres)

| | Item | Description |
|---|---|---|
|  | P3 | Flexible hose connection and hose clips DN 50 |
| - | P5 | Flexible hose connection for discharge line, consisting of rubber hose, hexagon nipple and hose clips |
| - | P8 | Stub flange |
|  | P9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm |
|  | P9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm |
| - | P11 | Gate valve |
|  | P12 | Set of installation accessories |
|  | P14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |
| - | P18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |
| - | E50[16)] | AS 0 alarm switchgear |
| - | E51[16)] | AS 2 alarm switchgear |

16) Not shown in drawing

| | Item | Description |
|---|---|---|
| - | E52[16)] | AS 4 alarm switchgear |
| - | E53[16)] | AS 5 alarm switchgear |
| - | E64[16)] | F1 leakage sensor |

### mini-Compacta U (60 litres)

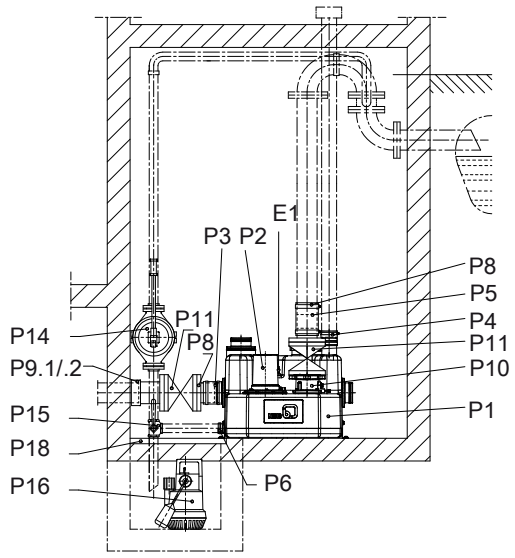



**Fig. 19:** mini-Compacta U (60 litres)

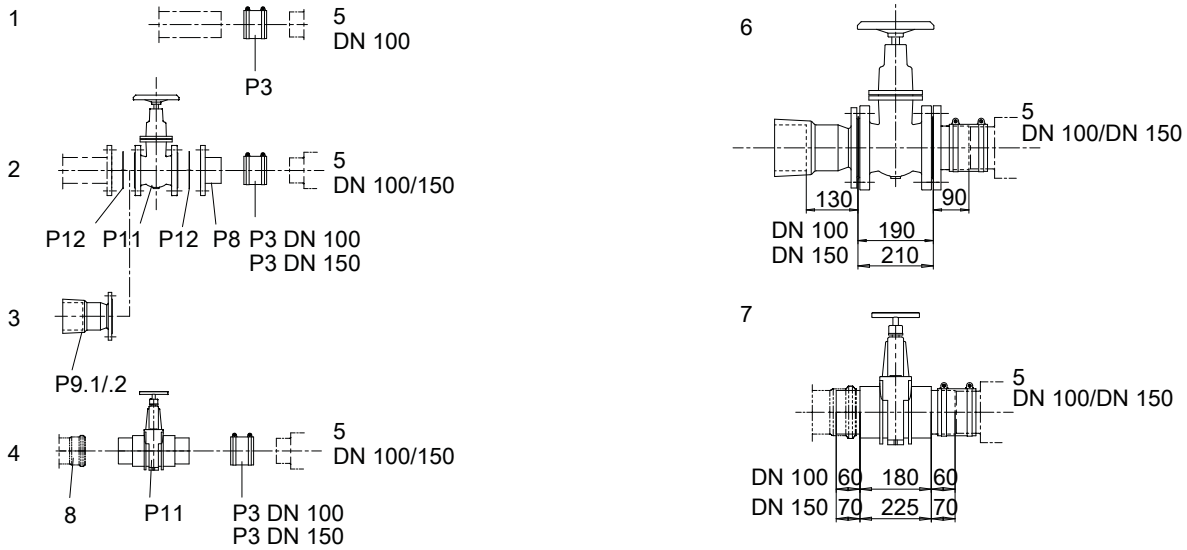



**Fig. 20:** Inlet line of mini-Compacta U (60 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

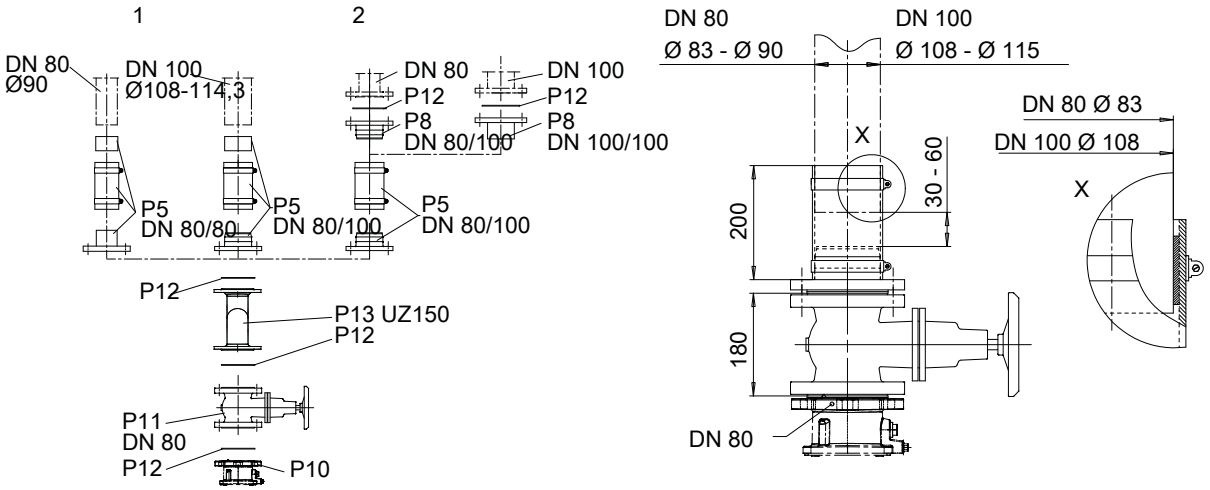



**Fig. 21:** Discharge line of mini-Compacta U (60 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |

Items included in the scope of supply of mini-Compacta U (60 litres)

| | Item | Description |
|---|---|---|
| - | P1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P2 | Fully floodable submersible motor pump |
|  | P3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P4 | Flexible hose connection and hose clips (venting) |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 100 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 108 - 114.3 mm |
| - | P6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | P10 | Check valve with full port and lifting screw |
| - | E1 | Analog level sensor for pump and alarm buzzer |
| - | E3 | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta U (60 litres)

| | Item | Description |
|---|---|---|
| - | P3 | Flexible hose connection and hose clips DN 50 |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 80 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 83 - 90 mm |
| - | P8 | Stub flange |
|  | P9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm |
|  | P9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm |
| - | P11 | Gate valve |
|  | P12 | Set of installation accessories |
|  | P14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |
| - | P18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |
| - | E50 | AS 0 alarm switchgear |
| - | E51 | AS 2 alarm switchgear |

| | Item | Description |
|---|---|---|
| - | E52 | AS 4 alarm switchgear |
| - | E53 | AS 5 alarm switchgear |
| - | E64 | F1 leakage sensor |

### mini-Compacta U (100 litres)

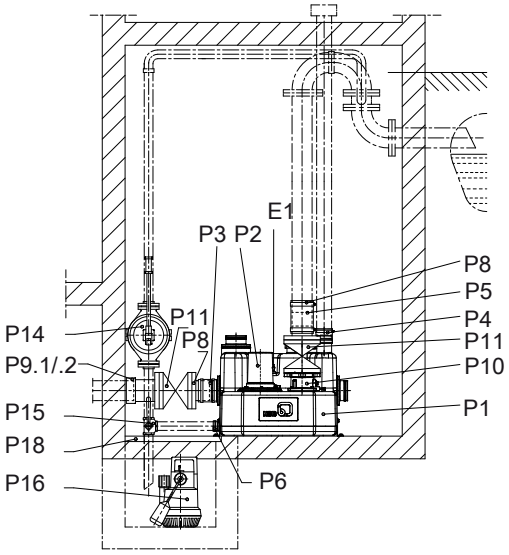



**Fig. 22:** mini-Compacta U (100 litres)

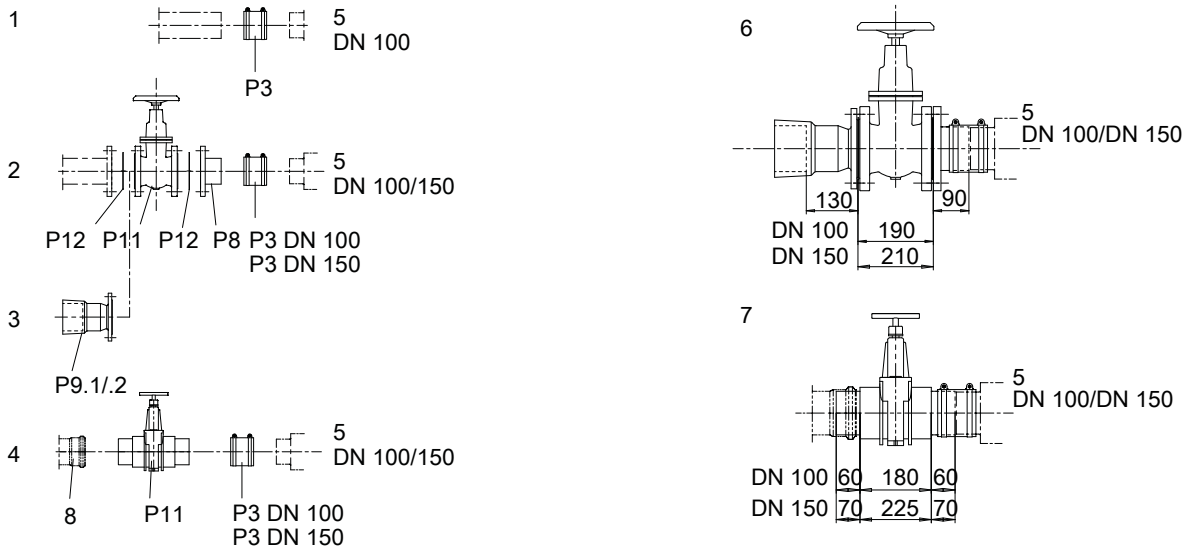



**Fig. 23:** Inlet line of mini-Compacta U (100 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

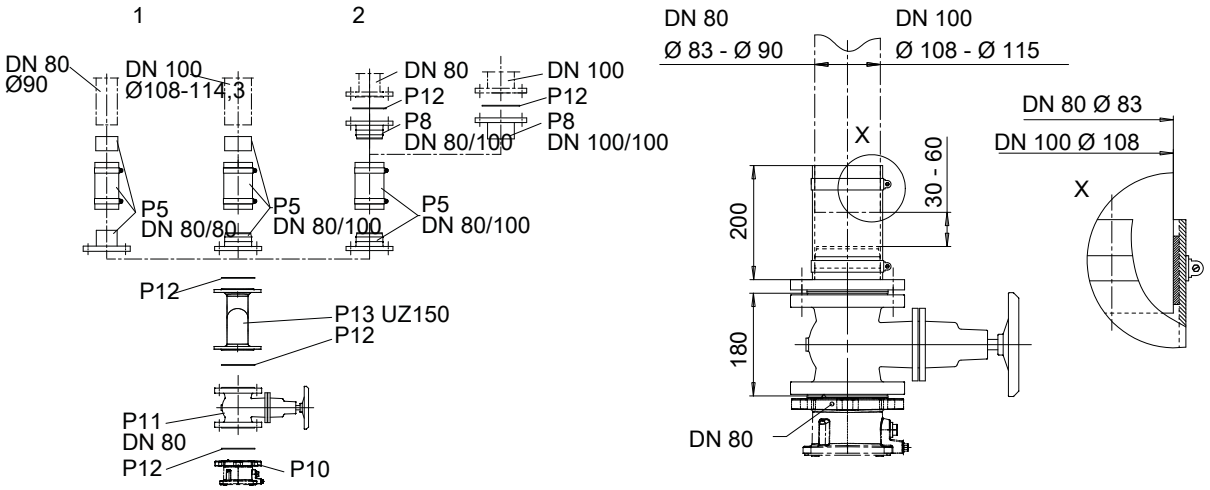



**Fig. 24:** Discharge line of mini-Compacta U (100 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |

Items included in the scope of supply of mini-Compacta U (100 litres)

| | Item | Description |
|---|---|---|
| - | P1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P2 | Fully floodable submersible motor pump |
|  | P3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P4 | Flexible hose connection and hose clips (venting) |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 100 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 108 - 114.3 mm |
| - | P6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | P10 | Check valve with full port and lifting screw |
| - | E1 | Analog level sensor for pump and alarm buzzer |
| - | E3[17)] | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta U (100 litres)

| | Item | Description |
|---|---|---|
| - | P3 | Flexible hose connection and hose clips DN 50 |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 80 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 83 - 90 mm |
| - | P8 | Stub flange |
|  | P9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm |
|  | P9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm |
| - | P11 | Gate valve |
|  | P12 | Set of installation accessories |
|  | P14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |
| - | P18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |

17) Not shown in drawing

| | Item | Description |
|---|---|---|
| - | E50[17)] | AS 0 alarm switchgear |
| - | E51[17)] | AS 2 alarm switchgear |
| - | E52[17)] | AS 4 alarm switchgear |
| - | E53[17)] | AS 5 alarm switchgear |
| - | E64[17)] | F1 leakage sensor |

### mini-Compacta US (100 litres)

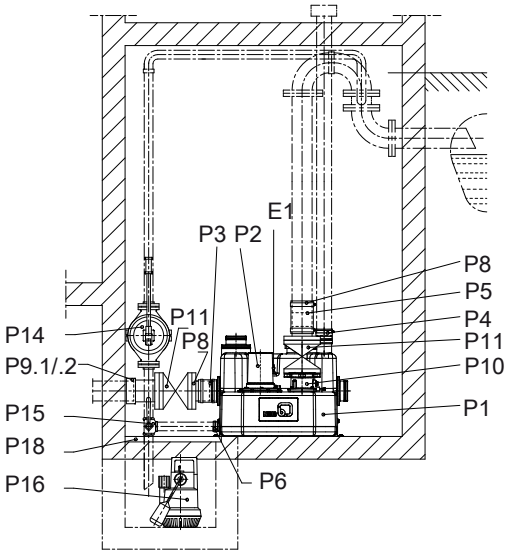



**Fig. 25:** Schematic of a mini-Compacta US (100 litres)

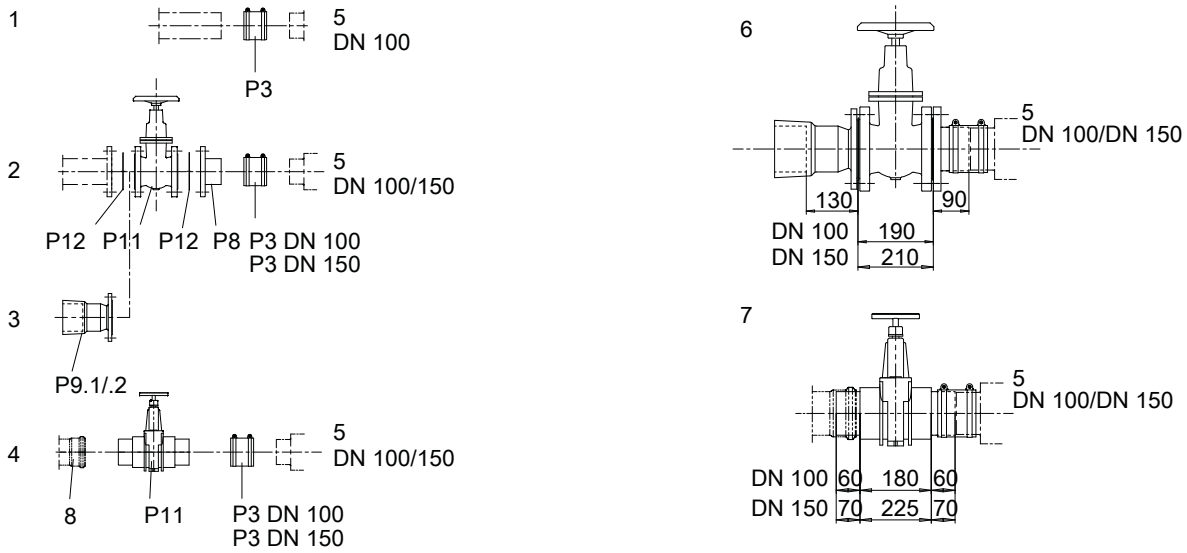



**Fig. 26:** Inlet line of a mini-Compacta US (100 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

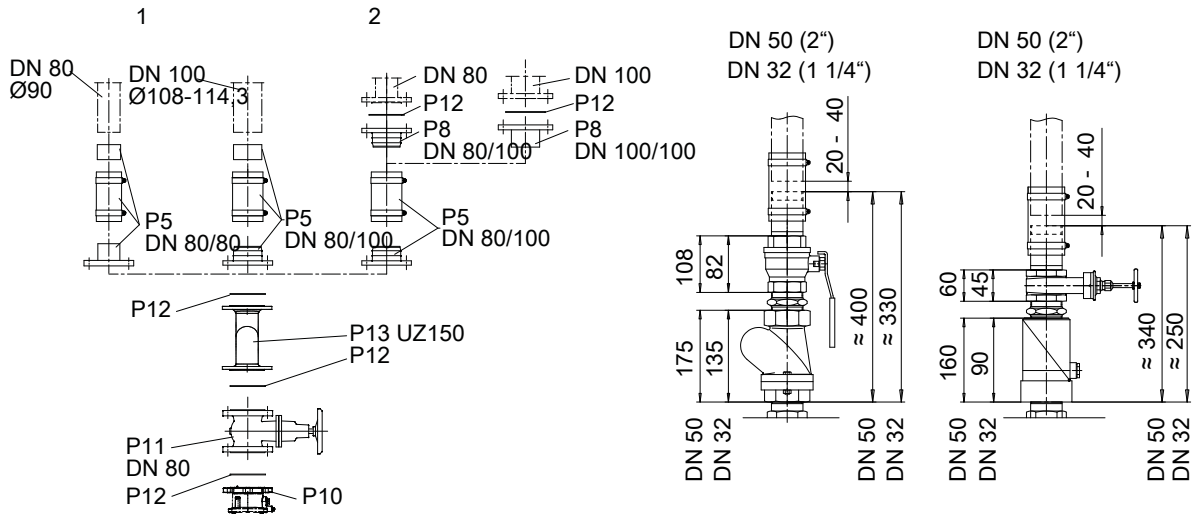



**Fig. 27:** Discharge line of a mini-Compacta US (100 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |

Items included in the scope of supply of mini-Compacta US (100 litres)

| | Item | Description |
|---|---|---|
| - | P1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P2 | Fully floodable submersible motor pump |
|  | P3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P4 | Flexible hose connection and hose clips (venting) |
| - | P6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | P10 | Check valve with full port and lifting screw |
| - | E1 | Analog level sensor for pump and alarm buzzer |
| - | E3[18)] | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta US (100 litres)

| | Item | Description |
|---|---|---|
| - | P3 | Flexible hose connection and hose clips DN 50 |
| - | P5 | Flexible hose connection for discharge line, consisting of rubber hose, hexagon nipple and hose clips |
| - | P8 | Stub flange |
|  | P9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm |
|  | P9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm |
| - | P11 | Gate valve |
|  | P12 | Set of installation accessories |
|  | P14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |
| - | P18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |
| - | E50[18)] | AS 0 alarm switchgear |
| - | E51[18)] | AS 2 alarm switchgear |

18) Not shown in drawing

| | Item | Description |
|---|---|---|
| - | E52[18)] | AS 4 alarm switchgear |
| - | E53[18)] | AS 5 alarm switchgear |
| - | E64[18)] | F1 leakage sensor |

### mini-Compacta UZ (150 litres)

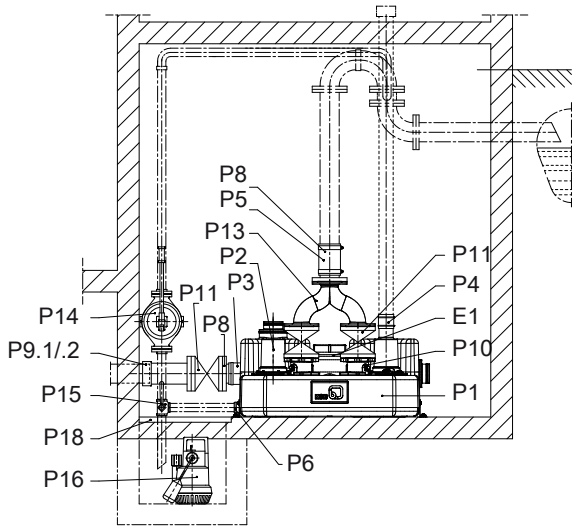



**Fig. 28:** mini-Compacta UZ (150 litres)

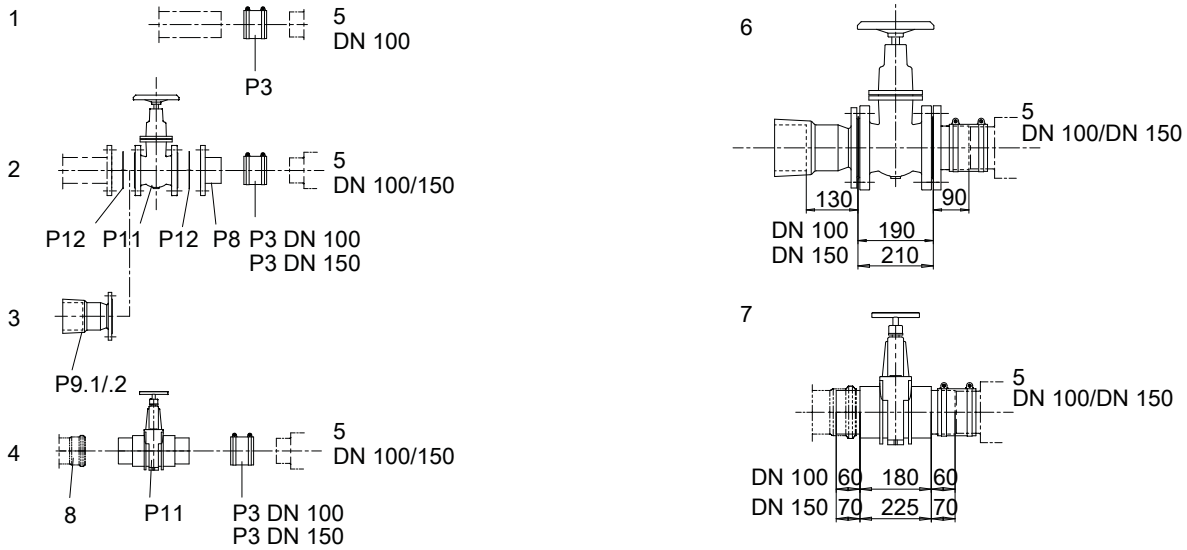



**Fig. 29:** Inlet line of mini-Compacta UZ (150 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

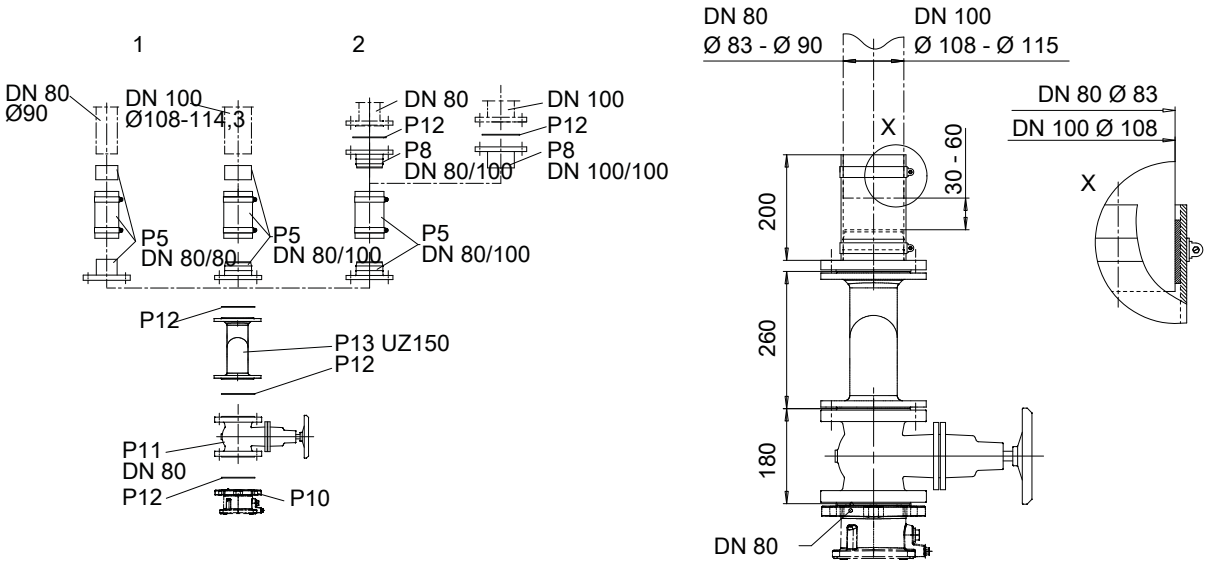



**Fig. 30:** Discharge line of mini-Compacta UZ (150 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |

Items included in the scope of supply of mini-Compacta UZ (150 litres)

| | Item | Description |
|---|---|---|
| - | P1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P2 | Fully floodable submersible motor pump |
|  | P3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P4 | Flexible hose connection and hose clips (venting) |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 100 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 108 - 114.3 mm |
| - | P6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | P10 | Check valve with full port and lifting screw |
| - | E1 | Analog level sensor for pump and alarm buzzer |
| - | E3[19)] | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta UZ (150 litres)

| | Item | Description |
|---|---|---|
|  | P3 | Flexible hose connection and hose clips DN 50 |
| - | P5 | Flexible hose connection and hose clips for discharge line, consisting of DN 80 stub flange with DN 80 hosetail, fabric-reinforced rubber hose and adapter hose for outside pipe diameter of 83 - 90 mm |
| - | P8 | Stub flange |
|  | P9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm |
|  | P9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm |
| - | P11 | Gate valve |
|  | P12 | Set of installation accessories |
|  | P14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |

19) Not shown in drawing

| | Item | Description |
|---|---|---|
| - | P18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |
| - | E50[19)] | AS 0 alarm switchgear |
| - | E51[19)] | AS 2 alarm switchgear |
| - | E52[19)] | AS 4 alarm switchgear |
| - | E53[19)] | AS 5 alarm switchgear |
| - | E64[19)] | F1 leakage sensor |

### mini-Compacta UZS (150 litres)

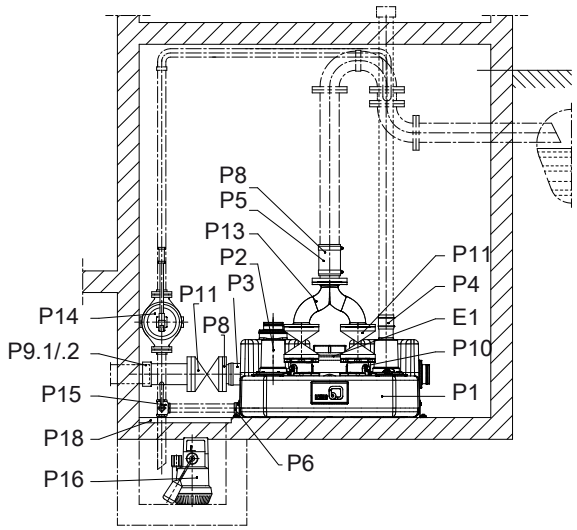



**Fig. 31:** Schematic of a mini-Compacta UZS (150 litres)

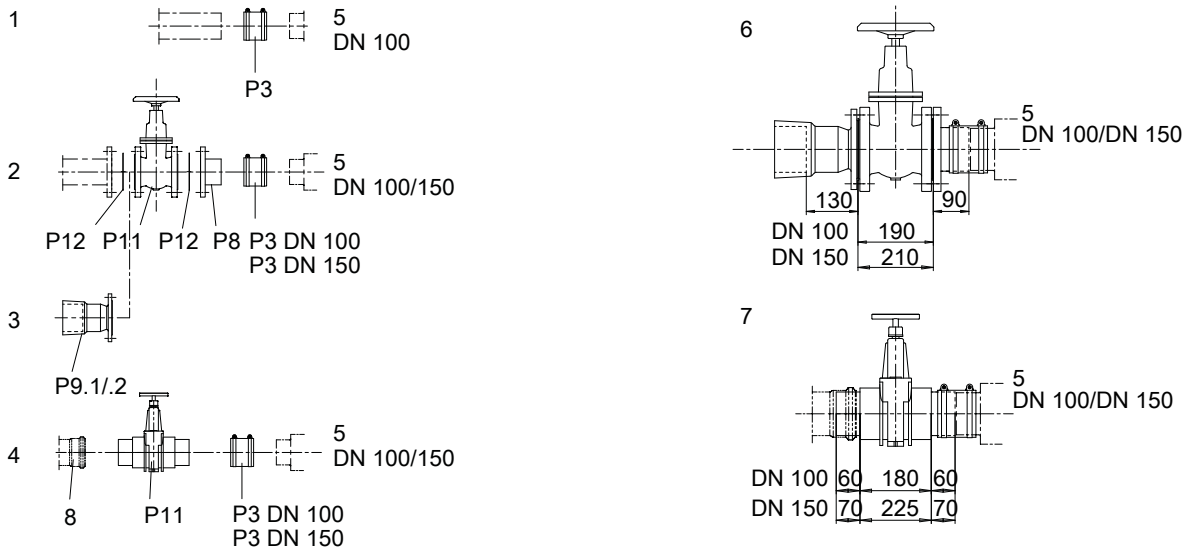



**Fig. 32:** Inlet line of a mini-Compacta UZS (150 litres)

| | |
|---|---|
| 1 | Pipe union |
| 2 | Flanged connection |
| 3 | Connection with flanged socket or flange adapter |
| 4 | Waste water pipe connection |
| 5 | Tank connection |
| 6 | Gate valve made of grey cast iron |
| 7 | Gate valve made of PVC |
| 8 | Supplied by operator |

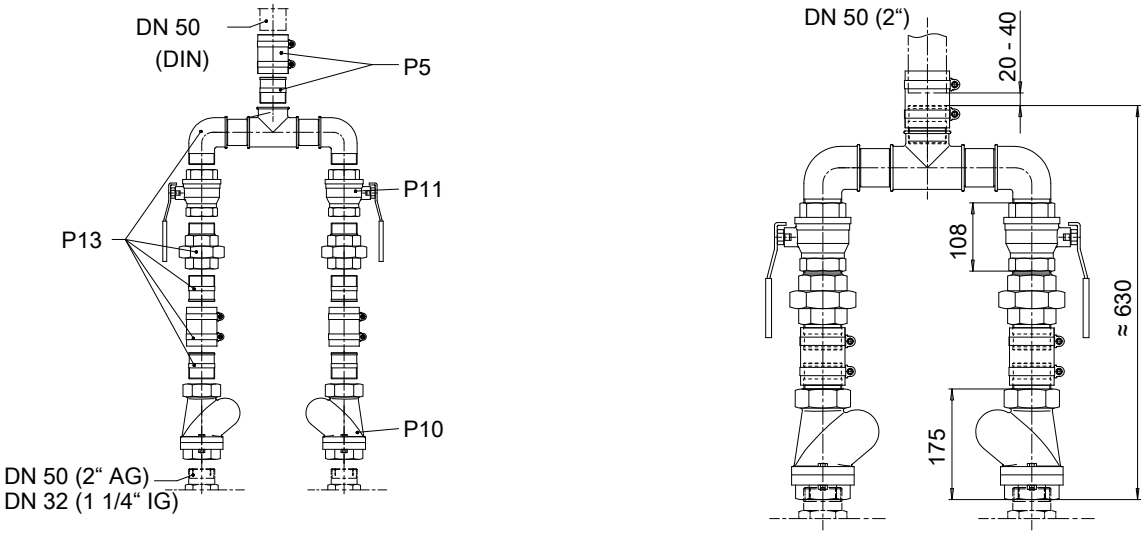



**Fig. 33:** Discharge line of a mini-Compacta UZS (150 litres)

Items included in the scope of supply of mini-Compacta UZS (150 litres)

| | Item | Description |
|---|---|---|
| - | P 1 | Gas-tight, odour-tight, water-tight collecting tank made of impact-resistant plastic |
| - | P 2 | Fully floodable submersible motor pump |
|  | P 3 | Flexible hose connection and hose clips DN 100 (inlet) |
| - | P 4 | Flexible hose connection and hose clips (venting) |
| - | P 6 | Flexible hose connection and hose clips (hand diaphragm pump) |
| - | E 1 | Analog level sensor for pump 1, pump 2 and alarm buzzer; stand-by pump automatically starts up during peak loads |
| - | E 3 | Electronic control unit with integrated alarm circuit and charging circuit, with high-quality rechargeable battery and alarm buzzer |

Accessories for mini-Compacta UZS (150 litres)

| | Item | Description |
|---|---|---|
|  | P 3 | Flexible hose connection and hose clips DN 50<br>Flexible hose connection and hose clips DN 150 |
|  | P 5 | Flexible hose connection for discharge line, consisting of rubber hose, hexagon nipple and hose clips |
| - | P 8 | Stub flange |
|  | P 9.1 | Flanged socket (for connecting pipes made of ductile cast iron)<br>DN 100 for outside pipe diameter of 118 mm<br>DN 150 for outside pipe diameter of 170 mm |
|  | P 9.2 | Flange adapter (for connecting pipes of different materials)<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L 105 mm<br>DN 150 for outside pipe diameter of 158.2 - 181.6 mm, L 105 mm |
| - | P 10 | Check valve |
| - | P 11 | Gate valve |
|  | P 12 | Set of installation accessories |
| - | P 13 | Y-pipe DN 50 |
|  | P 14 | Hand diaphragm pump ISO 7/I-Rp 1 1/2 |
|  | P 15 | Three-way plug valve ISO 7/I-Rp 1 1/2 |
|  | P 16 | Fully automatic Ama-Drainer (SE/SD) drainage pump with swing check valve |
| - | P 18 | Cover plate, 560 × 560 mm, for 500 × 500 mm pits, for Ama-Drainer |
| - | E 50 | AS 0 alarm switchgear |

| | Item | Description |
|---|---|---|
| - | E 51 | AS 2 alarm switchgear |
| - | E 52 | AS 4 alarm switchgear |
| - | E 53 | AS 5 alarm switchgear |
| - | E 64 | F1 leakage sensor |

## 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 IP54 and must be installed in a well-ventilated, flood-proof room.

### LevelControl Basic 1 product description


**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 “in operation” 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


BS

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 “in operation” message
- Even distribution of pump operating hours due to automatic pump changeover
- Parameterisable service intervals
- Diagnostic function and signalling/message function
- Straightforward system configuration using parameterisation assistant (Wizard)
- Numerous additional functions (monitoring of supply voltage, measuring effective power, determining the power factor, intelligent system monitoring, and many more)

## Combinations of lifting and control units

LevelControl Basic 1 / LevelControl Basic 2 per model

| Size | Control unit | Dimensions H × W × D [mm] |
|---|---|---|
| **Single-pump units** | | |
| US 1.40 E | LevelControl Basic 1 E70 | 135 × 170 × 110 |
| US 1.40 D | LevelControl Basic 1 D | 135 × 170 × 110 |
| U 1.60 D | LevelControl Basic 1 D | 135 × 170 × 110 |
| U 1.100 D, U 2.100 D, US 1.100 D, US 2.100 D | LevelControl Basic 1 D | 135 × 170 × 110 |
| U 1.60 E | LevelControl Basic 1 E25 | 135 × 170 × 110 |
| U 1.100 E | LevelControl Basic 1 E25 | 135 × 170 × 110 |
| U 2.100 E | LevelControl Basic 1 E40 | 135 × 170 × 110 |
| US 1.100 E, US 2.100 E | LevelControl Basic 2 ES | 400 × 281 × 135 |
| **Dual-pump units** | | |
| UZ 1.150 D, UZ 2.150 D, UZS 1.150 D, UZS 2.150 D | LevelControl Basic 2 ZD | 400 × 281 × 135 |
| UZ 1.150 E | LevelControl Basic 2 ZE25 | 400 × 281 × 135 |
| UZ 2.150 E | LevelControl Basic 2 ZE40 | 400 × 281 × 135 |
| UZS 1.150 E, UZS 2.150 E | LevelControl Basic 2 ZES | 600 × 400 × 200 |

Variant-specific special features of LevelControl Basic 1

| Control unit | Description |
|---|---|
| LevelControl Basic 1 D<br>(CU 1 10 V T45 1 0 0 A D)<br>(CU 1 10 V T45 1 0 0 M D) | ▪ Standard single-pump control unit for three-phase motor<br>▪ Three-phase connection |
| LevelControl Basic 1 E25<br>(CU 1 10 V SC2 1 0 0 A 1) | ▪ Integrated run capacitor (C = 25 µF) for operating an AC motor with a power rating of 0.75 kW<br>▪ Single-phase mains connection |
| LevelControl Basic 1 E40<br>(CU 1 10 V SC4 1 0 0 A 1) | ▪ Integrated run capacitor (C = 40 µF) for operating an AC motor with a power rating of 1.5 kW<br>▪ Single-phase mains connection |
| LevelControl Basic 1 E70<br>(CU 1 10 V SC7 1 0 0 M 1) | ▪ Integrated run capacitor (C = 70 µF) for operating an AC motor with a power rating of 1.65 kW<br>▪ Single-phase mains connection |

Variant-specific special features of LevelControl Basic 2

| Control unit | Description |
|---|---|
| LevelControl Basic 2 ZD<br>(BC2 400 DVNA 100 B0) | ▪ Standard dual-pump control unit<br>▪ Three-phase connection |
| LevelControl Basic 2 ZE25<br>(BC2 230 XVNA 040 A0) | ▪ Dual-pump control unit with integrated run capacitors (C = 25 µF) for operating two AC motors with a power rating of 0.75 kW each<br>▪ Single-phase mains connection |
| LevelControl Basic 2 ZE40<br>(BC2 230 YVNA 063 A0) | ▪ Dual-pump control unit with integrated run capacitors (C = 40 µF) for operating two AC motors with a power rating of 1.5 kW each<br>▪ Single-phase mains connection |
| LevelControl Basic 2 ES<br>(BC1 230 ZVNA 100 A0) | ▪ Single-pump control unit with integrated run capacitors (C = 40 µF) for operating an AC motor with a power rating of 1.5 kW<br>▪ Additional load-dependent cut-in / cut-out of a start capacitor (C = 66 µF)<br>▪ Volt-free individual messages Pump Fault and High Water as standard<br>▪ Single-phase connection |
| LevelControl Basic 2 ZES<br>(BS2 230 ZVNA 100 A0) | ▪ Dual-pump control unit with integrated run capacitors (C = 40 µF) for operating two AC motors with a power rating of 1.5 kW each<br>▪ Additional load-dependent cut-in / cut-out of a start capacitor (C = 66 µF) per pump<br>▪ Volt-free individual messages Pump 1 Fault, Pump 2 Fault and High Water as standard<br>▪ Single-phase connection |

## Accessories

### Lifting unit accessories

| | Item | Description | Connect-ion | mini-Compacta | | | | | | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | U60 | U100 | UZ150 | US40 | US100 | UZS150 | | |
|  | P3 | Flexible hose connection (inlet)<br>For inlet line, with fabric-reinforced hose and two hose clips<br>(DN 100 included in the scope of supply) | DN 50 | ✗ | - | ✗ | ✗ | - | ✗ | 18040370 | 0,2 |
| | | | DN 100 | - | - | - | - | - | - | 18040203 | 0,4 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 18040338 | 0,7 |
|  | P5 | Flexible hose connection (discharge side)<br>For discharge line, with fabric-reinforced hose, hose clips and hexagon nipple | DN 32 | - | - | - | ✗ | ✗ | ✗ | 18040329 | 0,6 |
| | | | DN 50 | - | - | - | - | ✗ | ✗ | 18040330 | 0,6 |
|  | | Flexible hose connection (discharge side)<br>For discharge line, comprises fabric-reinforced hose, reducing nipple, connecting pipe, threaded flange DN 80 and hose clips | DN 80/65 | ✗ | ✗ | ✗ | - | - | - | 19074057[20)] | 4,8 |
|  | | Flexible hose connection (discharge side)<br>For discharge line, with fabric-reinforced hose, adapter hose, stub flange made of steel, and hose clips | DN 80/80 | ✗ | ✗ | ✗ | - | - | - | 19070679 | 5,2 |
|  | P8 | Stub flange<br>With hosetail, flanges drilled to PN 10/16, to EN 1092-1/2, plastic with spacer discs (DN 80/100), steel (DN 65/65, DN 100/100, DN 150/150) | DN 65/65 | ✗ | ✗ | ✗ | - | - | - | 19074058[20)] | 3,8 |
|  | | | DN 80/100 | ✗ | ✗ | ✗ | - | - | - | 18040303 | 0,4 |
|  | | | DN 100/100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 19075270 | 4,5 |
| | | | DN 150/150 | - | ✗ | ✗ | - | ✗ | ✗ | 19075269 | 9,1 |
|  | P9.1 | Flanged socket<br>DIN 28 622, grey cast iron, flange drilled to PN 10/16, to EN 1092-1/2 for connecting pipes made of ductile cast iron<br>DN 100 for outside pipe diameter of 118 mm<br>DN 150 for outside pipe diameter of 170 mm | DN 100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 00262135 | 9,5 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 01020844 | 14,5 |
|  | P9.2 | Flange adapter<br>Grey cast iron, for connecting pipes made of different materials<br>DN 100 for outside pipe diameter of 107.2 - 127.8 mm, L = 105 mm | DN 100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 01070642 | 4,45 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 01070641 | 7,5 |
|  | P10 | RK swing check valve, PN 4<br>Material: Plastic, EN 12 050-4, with internal thread ISO 7/1, with full port and drain plug | Rp 1 1/4 | - | - | - | - | ✗ | ✗ | 01009771 | 0,1 |
| | | | Rp 2 | - | - | - | - | ✗ | ✗ | 01009773 | 0,5 |
|  | P10 | Ball non-return valve, PN 10<br>Material: grey cast iron, EN 12 050-4, with full port | G 1 1/4 | - | - | - | - | ✗ | ✗ | 01120610 | 0,9 |
| | | | G 2 | - | - | - | - | ✗ | ✗ | 01036090 | 2,835 |
|  | P11 | Socket gate valve<br>Material: CuZn PN 16, with internal thread, with full port | Rp 1 1/4 | - | - | - | ✗ | ✗ | ✗ | 01014219 | 0,627 |
| | | | Rp 2 | - | - | - | - | ✗ | ✗ | 00411503 | 1,287 |

20) For the UK only

| | Item | Description | Connect-ion | mini-Compacta | | | | | | Mat. No. | [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | U60 | U100 | UZ150 | US40 | US100 | UZS150 | | |
|  | P11 | Ball valve<br>Material: CuZn PN 16 | Rp 1 1/4 | - | - | - | ✗ | ✗ | ✗ | 01120607 | 0,572 |
| | | | Rp 2 | - | - | - | - | ✗ | ✗ | 01050382 | 1,238 |
|  | P11 [21] | Flanged ball valve<br>Material: stainless steel 1.4408 | DN 80 | ✗ | ✗ | ✗ | - | - | - | 01723156 | 18,8 |
| | | | DN 100 | ✗ | ✗ | ✗ | - | - | - | 01723239 | 35 |
|  | P11 | Gate valve, PN 1<br>Material: PVC, for inlet line, with connection nozzle | DN 100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 01121715 | 3,5 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 01121714 | 9,2 |
|  | | Gate valve to KSB's choice, PN 10<br>Material: grey cast iron, flanges drilled to PN 10/16, to EN 1092-1/2 | DN 80 | ✗ | ✗ | ✗ | - | - | - | 01056708 | 18,9 |
| | | | DN 100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 01056709 | 22,5 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 01056710 | 42,7 |
|  | P12 | Set of installation accessories<br>for one flange connection made of steel or grey cast iron, with 8 hexagon head bolts with nuts and 1 gasket | DN 80 | ✗ | ✗ | ✗ | - | - | - | 18072644 | 1 |
| | | | DN 100 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 18060163 | 1,4 |
| | | | DN 150 | - | ✗ | ✗ | - | ✗ | ✗ | 18076348 | 2 |
|  | P13 | Y-pipe<br>Material: Galvanised steel, with union nuts | DN 50 | - | - | - | - | - | ✗ | 01121711 | 8,5 |
|  | | Y-pipe<br>Material: grey cast iron with high-quality coating (Rilsan®), 16 hexagon head bolts, nuts and 2 sealing elements | DN 80 | - | - | ✗[21] | - | - | - | 18041115 | 8 |
|  | P14 | Hand diaphragm pump | Rp 1 1/2 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 00520485 | 12 |
|  | P15 | Three-way plug valve<br>Material: Brass, with wrench WAF 22 | Rp 1 1/2 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | 19053063 | 1,5 |
| - | P16 / P18 | For pump sump drainage refer to KSB's Ama-Drainer pump series. | | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | - | - |
|  | P20 | Blind flange<br>Material: steel, for closing the tank when the pump assembly has been removed | | ✗ | ✗ | ✗ | - | - | - | 18040964 | 3,8 |
| | | Blind flange<br>Material: Plastic, for closing the tank when the rotating assembly has been removed | | - | - | - | ✗ | - | - | 18041731 | 3,8 |
| | | Blind flange<br>Material: Steel, for closing the pump casing when the rotating assembly has been removed | | - | - | - | - | ✗ | ✗ | 18040965 | 3,8 |
| - | - | Package offer for any spare parts required during 10 years' operation of mini-Compacta U40, U60, U100 and US100<br>For standard variant only<br>US1.40 D/E, U1.60 D/E, U1.100 D/E, US1.100 D/E, U2.100 D/E, US2.100 D/E | | ✗ | ✗ | - | ✗ | ✗ | - | 18040943 | - |

21) Only for material variant C

## Alarm switchgears for pumps, non-ATEX-compliant

AS 0/AS 1/AS 2/AS 4/AS 5

| | Item | Description | Mat. No. | [kg] |
|---|---|---|---|---|
|  | E50 | Alarm switchgearAS 0<br><br>with circuit breaker, acoustic signal transmitter with 85 dB(A), green equipment-on lamp<br><br>Plastic housing, IP20, H × W × D = 140 × 80 × 57 [mm]. Use float switch, F1 leakage sensor (item E64), M1 alarm contactor or signal relay of control unit as contactor. | 29128401 | 0,5 |
|  | E51 | Alarm switchgearAS 2<br><br>With circuit breaker, acoustic signal transmitter with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station<br><br>Plastic housing, IP20, H × W × D = 140 × 80 × 57 [mm]. Use float switch, F1 leakage sensor (item E64) or signal relay of control unit as contactor. | 29128422 | 0,5 |
|  | E52 | Alarm switchgearAS 4<br><br>With circuit breaker, acoustic signal transmitter with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station, self-charging power supply unit for 5 hours of operation in the event of a power failure<br><br>Plastic housing, IP20, H × W × D = 140 × 80 × 57 [mm]. Use float switch (E60), F1 leakage sensor (item E64) or signal relay of control unit as contactor. | 29128442 | 0,5 |
|  | E53 | Alarm switchgearAS 5<br><br>Mains-independent, with self-charging power supply unit for 10 hours of operation in the event of a power failure, mains pilot LED, fault indicator light, horn-off pushbutton, volt-free contact for hook-up to a control station, ready for connection with 1.8 m connection cable and plug.<br><br>ISO housing, IP41, H × W × D = 190 × 165 × 75 [mm]. Use float switch (E60) or signal relay of control unit as contactor. | 00530561 | 1,7 |
|  | E55 | Alarm switchgearAS 1<br><br>In IP30 ISO plug housing, mains-independent, with self-charging power supply unit for 5 hours of operation in the event of a power failure, acoustic signal transmitter 70 dB(A) with circuit breaker and integrated signal transmitter with 3-metre connection cable, max. 60 °C, not suitable for steam and condensate.<br><br>1. High water alert by suspending the sensor in a (pump) sump above the pump start-up point.<br><br>2. Water alarm signal at a water level of only 1 mm (!), by placing the sensor on the floor in areas with a leakage risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom. | 00533740 | 0,9 |

22) In combination with alarm switchgears AS 0, AS 2, AS 4 or LevelControl
23) In combination with AS 5 or Level Control Basic 2

## Control unit/switchgear accessories

| | Item | Description | Mat. No. | [kg] |
|---|---|---|---|---|
|  | E64 | F1 leakage sensor[22)]<br>Contactor for alarm switchgears AS 0, AS 2, AS 4 or as alarm transmitter for LevelControl<br>Possible applications for alarm transmission:<br>High water alert by suspending the sensor in a (pump) sump above the pump start-up point.<br>Warning at a water level of 1 mm in areas with a leakage risk (e.g. in the cellar or next to the washing machine in the kitchen or bathroom)<br>Dimensions [mm]: 52 × 21 × 20 (H × W × D) | 19072366 | 0,2 |
|  | E70 | Horn, 12 V DC, 105 dB, 150 mA, IP54[23)]<br>Suitable for indoor installation and outdoor installation. Protect against moisture. | 01086547 | 0,1 |
|  | E71 | Alarm combination (yellow alarm strobe light and piezo buzzer 92 dB), 12 V DC, 120 mA, IP65[23)] | 01139930 | 0,1 |
|  | E72 | Yellow alarm strobe light, 12 V DC, 195 mA, IP65[23)] | 01056355 | 0,3 |
|  | O45 | Plastic housing (IP65) for easier installation of alarm strobe light, for wall mounting | 01061067 | 0,2 |
|  | E73 | KSB ServiceTool<br>CD-ROM with instructions, dongle for authorisation, RS 232 parameterisation cable and USB/RS 232 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 |
|  | E300 | Master switch, 32 A, external<br>Plastic housing, IP65, H × W × D = 90 × 90 × 145 [mm] for LevelControl | 01118354 | 0,4 |
| | E301 | Master switch, 16 A, external | 01212348 | 0,4 |
|  | O200 | Signalling module for type BC | 19075182 | 0,2 |
| | O203 | Signalling module for LevelControl Basic 2, type BS | 19075185 | 1,1 |

**The control units LevelControl Basic 1 and LevelControl Basic 2 are fitted with a mains-independent acoustic alarm (buzzer) and a volt-free signalling contact for transmitting alarm signals in the case of a fault (e.g. to the control room).** 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).

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