Submersible drainage pumps US 75 - 155
50 mm free passage

Application

The US 75 - 155 series submersible drainage pumps are used for all applications where particularly dirty wastewater with large particle sizes of up to 50 mm need to be pumped. These pumps, with a free passage of 50 mm, pump solids and fibres quickly, reliably and, most importantly, without blockages!

For applications in deep sumps we recommend a guide rail system, which allows the pumps to be pulled out of the sump without difficulty for servicing or visual inspections. A controllable oil chamber and a wear-resistant mechanical seal ensure that the pumps have a long service life. The winding thermostats built in to the pumps protect the motor from overloading.

You can also use a seal leak control unit to monitor the oil chamber automatically.

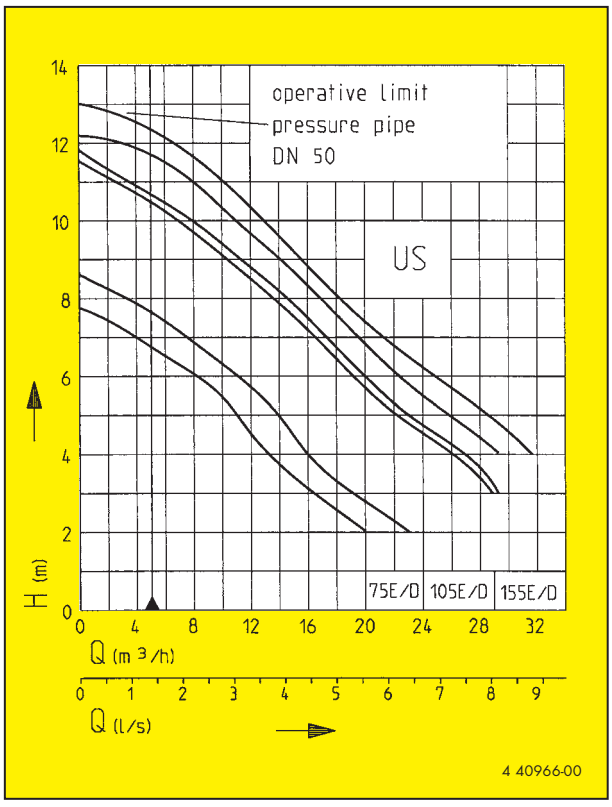
The mains cable is 10 m long. The US 155 DS three-phase pump with float switch has a CEE motor protection plug with an integrated phase inverter.

The wastewater pumps comply with the relevant principles of construction and testing.



US 105

The minimum flow velocity in the pressure pipe must be 0.7 m/s according to EN 12056. This requirement is shown in the Q/H performance diagram as the limiting value for application.



Subject to design changes Pump performance is subject to ISO 9906 tolerances

- **Safe to run dry**
- **Maintenance friendly due to guide rail system**
- **50 mm free passage**
- **Controllable oil chamber**
- **SiC mechanical seal, independent of rotation direction**
- **Moisture-sealed cable inlet**

Submersible drainage pumps US 75–155

Type	Height x Width x Depth (max.)	Discharge branch	Free passage	Cable quality H07RN-F-	Cable length	Weight approx.	**Code No.**
US 75 E	395 x 200 x 230 mm	2″	50 mm	3G1,0	10 m	13,0 kg	**09406**
US 75 D	395 x 200 x 230 mm	2″	50 mm	4G1,0	10 m	13,0 kg	**09404**
US 105 E	425 x 200 x 230 mm	2″	50 mm	3G1,0	10 m	14,5 kg	**09410**
US 105 D	425 x 200 x 230 mm	2″	50 mm	4G1,0	10 m	15,0 kg	**09408**
US 155 E*	450 x 200 x 230 mm	2″	50 mm	3G1,0	10 m	16,0 kg	**09388**
US 155 D*	450 x 200 x 230 mm	2″	50 mm	4G1,0	10 m	16,5 kg	**09390**
US 75 ES	395 x 240 x 335 mm	2″	50 mm	3G1,0	10 m	13,0 kg	**09407**
US 75 DS	395 x 240 x 335 mm	2″	50 mm	4G1,0	10 m	13,5 kg	**09405**
US 105 ES	425 x 238 x 335 mm	2″	50 mm	3G1,0	10 m	15,0 kg	**09411**
US 105 DS	425 x 238 x 335 mm	2″	50 mm	4G1,0	10 m	15,5 kg	**09409**
US 155 ES	450 x 240 x 335 mm	2″	50 mm	3G1,0	10 m	16,5 kg	**09389**
US 155 DS**	450 x 240 x 335 mm	2″	50 mm	4G1,0	10 m	17,5 kg	**09391**

*without plug **CEE motor protection plug with phase inverter

Performance

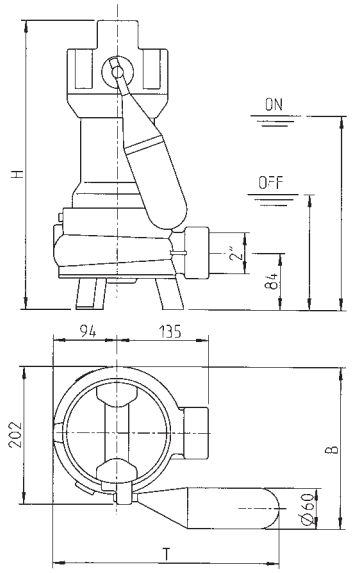
Type	Delivery head H [m]	2	3	4	5	6	7	8	9	10	11	12
US 75 E/ES	Flow rate Q [m^3/h]	20	16	13	10	7	4					
US 75 D/DS		23	19	16	12	10	7	3				
US 105 E/ES			28	25	22	19	16	13	10	7	3	
US 105 D/DS			29	26	23	20	17	14	11	8	4	
US 155 E/ES				29	26	22	20	16	14	11	8	2
US 155 D/DS				31	28	25	21	19	16	13	10	6

Electrical data

Type	Type of current	Voltage Volt	Motor rating kW P_1	P_2	RPM min^{-1}	Current Ampere	Motor protection	Plug
US 75 E/ES	1-phase	1/N/PE~230	0,83	0,50	2510	3,9	in motor	safety-
US 75 D/DS	3-phase	3/PE~400	0,85	0,60	2800	1,4	in motor	CEE-
US 105 E/ES	1-phase	1/N/PE~230	1,37	0,98	2700	6,0	in motor	safety-
US 105 D/DS	3-phase	3/PE~400	1,36	1,06	2740	2,4	in motor	CEE-
US 155 E	1-phase	1/N/PE~230	1,60	1,21	2814	7,5	in motor*	–
US 155 ES	1-phase	1/N/PE~230	1,60	1,21	2814	7,5	in motor and plug	safety-
US 155 D	3-phase	3/PE~400	1,70	1,41	2815	3,1	in motor*	–
US 155 DS	3-phase	3/PE~400	1,70	1,41	2815	3,1	in motor and plug	CEE-

*Additional requirements, see technical data

Dimensions US 75 to US 155 (mm)

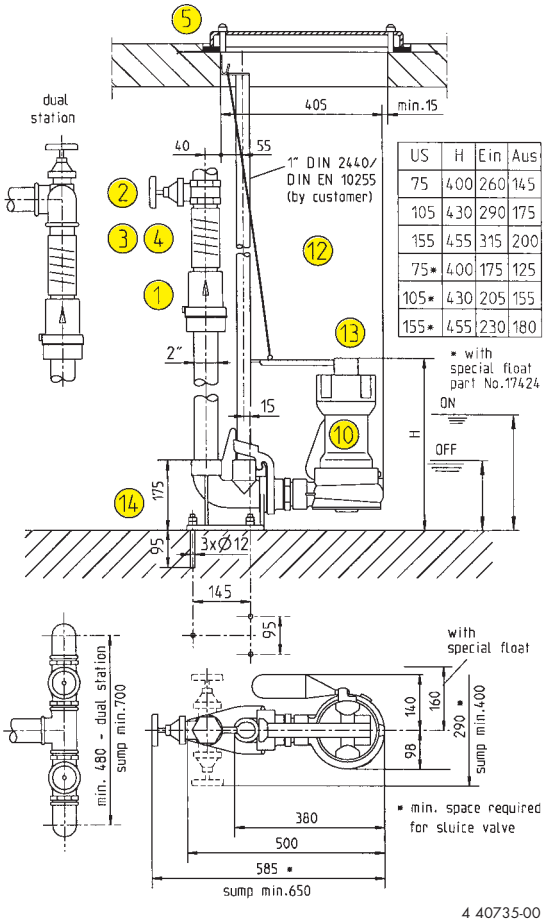


US	H	B	T	ON	OFF
75	395	238	335	255	140
105	425	238	335	285	170
155	450	238	335	310	195
75*	395	263	290	170	120
105*	425	263	290	200	150
155*	450	263	290	225	175

* with low level float part no.17424

4 40734-00

Dimensions US 75 to US 155 (mm) with GR 50 S

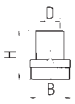
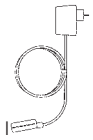
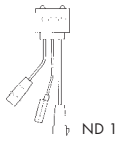
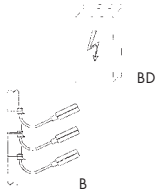


US	H	Ein	Aus
75	400	260	145
105	430	290	175
155	455	315	200
75*	400	175	125
105*	430	205	155
155*	455	230	180

* with special float part No.17424

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Accessories

		Code No.	75 E	75 ES	75 D	75 DS
Pump without plug (for connection to duplex controls)						
	① **Swing-type check valve** 2″ (DN 50), PN 4 — H 150, B 120, D 2″ DIN EN 12050-4	**00326**	●	●	●	●
	Ball check valve 2″ (DN 50), PN 6 — H 185, B 155, D 2″ DIN EN 12050-4	**09857**	●	●	●	●
	② **Stop valve** 2″ (DN 50), PN 16 — H 140, L max. 67, D 2″	**11838**	●	●	●	●
	③ **Elastic connection** 2″ (DN 50), PN 4 — H 150, D 63	**17194**	●	●	●	●
	④ **Hose band clamp** 2″	**03572**	●	●	●	●
	⑤ **Blind plate*** with frame and seal LW 420	**00322**	●	●	●	●
	⑥ **Elbow** 2″	**14230**	●	●	●	●
	⑦ **Alarm system,** with submersible ball contact switch, separate, mains dependent, with potential-free contact and 3 m cable	**16723**		●		●
	Alarm system, with 9.5 m cable	**24434**		●		●
	Alarm system AW 3 for washing machines, ditto with submersible ball contact switch, separate, mains dependent and 3 m cable	**25090**	●	●	●	●
	Alarm system AW 10 for washing machines, ditto with 9.5 m cable	**25091**	●	●	●	●
	⑧ **Separate level controls for single units**					
	NE 1 (3-phase) with submersible ball switch 3.0 m	**16710**	●			
	NE 2 (3-phase) with submersible ball switch 9.5 m	**16711**	●			
	ND 1 (1-phase) with submersible ball switch 3.0 m	**16712**			●	
	ND 3 (1-phase) with submersible ball switch 9.5 m	**16713**			●	
	NE 1A (3-phase) with subm. ball switch 3.0 m and alarm	**16714**	●			
	NE 2A (3-phase) with subm. ball switch 9.5 m and alarm	**16715**	●			
	ND 1A (1-phase) with subm. ball switch 3.0 m and alarm	**16716**			●	
	ND 3A (1-phase) with subm. ball switch 9.5 m and alarm	**16717**			●	
	Counterweight (1 no.)	**17541**	●		●	
	**Duplex control unit**					
	BD 00 E (3-phase)	**00482**	●			
	BD 00 (1-phase)	**00299**			●	
	BD 25 (1-phase)	**00302**				
	Submersible switch package B with 3 submersible ball contact switches 9.5 m and cable holder	**16725**	●		●	
	BmG with 3 submersible ball contact switches 9.5 m and counterweight	**16726**	●		●	
	Motor protection plug – 8 A, 230 V (without level control)	**40770**				
	Motor protection plug – 2.5 - 4 A, 400 V (without level control)	**40773**				
	⑨ **Rechargeable battery** for mains-independent alarm	**07562**	●	●	●	●
	⑩ **Seal leak control** DKG	**00252**	●	●	●	●
	⑪ **Special float** for low switching points	**17424**		●		●
	Switching points: without GR — US 75 ON /OFF 170/120 mm; US 105 ON /OFF 200/150 mm; US 155 ON /OFF 225/175 mm					
	Switching points: with GR — US 75 ON /OFF 175/125 mm; US 105 ON /OFF 205/155 mm; US 155 ON /OFF 230/180 mm					
	⑫ **Chain** with 2 rings DIN 766, 2.5 m, 320 kg	**19189**	●	●	●	●
	Stainless steel chain with 5 rings, 1 shackle NG 10, DIN 766, 2.5 m, 200 kg	**23986**	●	●	●	●
	⑬ **Shackle** A 0,6	**13402**	●	●	●	●
	⑭ **Guide rail system** GR 50 S	**40740**	●	●	●	●
	Foot straines, 10 mm free passage	**25135**	●	●	●	●
	Pump base, stainless steel Niro, 50 mm free passage	**40632**	●	●	●	●

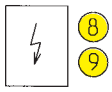
* for single units ■ only use in connection with motor protection plug

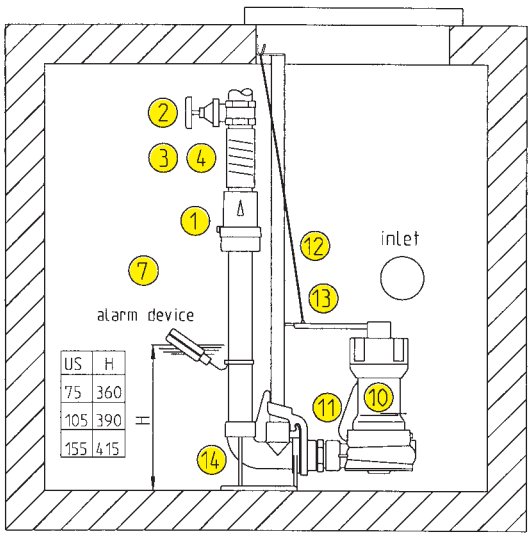
105 E	105 ES	105 D	105 DS	155 E	155 ES	155 D	155 DS
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Single pump installation

US 75-155 sump with GR 50 S, min. 40 x 65 cm
US 75-155 sump without GR, min. 40 x 50 cm (no ill.)

If a cover plate is used, ventilation must be provided.



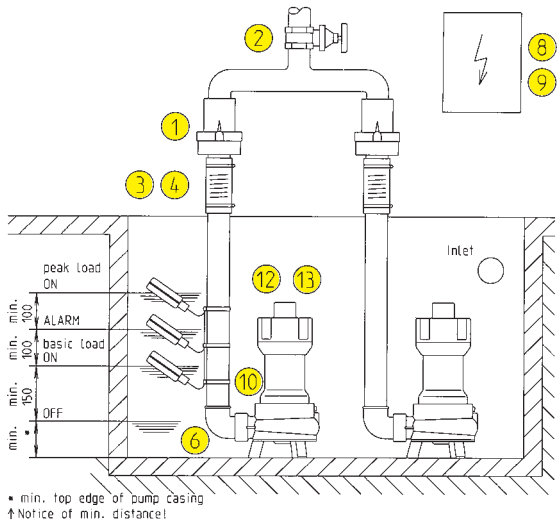


If installed beneath the backpressure level, the pressure pipe must be connected flexibly and taken in a loop over the local backup level in acc. with EN 12056. In addition, a swing-type check valve is required, checked in acc. with EN 12050-4. We also recommend an alarm system for monitoring purposes. 4 40737-00

Duplex pump installation

US 75-155 sump without GR, min. 70 x 50 cm
US 75-155 sump with GR 50 S, min. 70 x 65 cm (no ill.)

Suspend control unit in a dry room.



3 40736-00

In accordance with EN 12056-4 paragraph 5.1, an automatic reserve pump or a duplex system must be installed for situations in which the wastewater discharge may not be interrupted.

Technical Data

Pump
Vertical, single-stage, submersible, vortex impeller, volute casing with free inlet. 50 mm free passage, horizontal discharge branch with 2" female thread.

Bearings
Common shaft for pump and motor, mounted on ball bearings and grease lubricated for life, deep groove ball bearing system with grease chamber.

Seal
Silicon carbide mechanical seal, oil chamber and duplex rotary shaft seal at the motor end, safe to run dry, a seal leak control can be connected.

Motor
Submersible, type of enclosure IP 68, insulation class B, winding thermostat protects the motor from overheating, switch on via plug, automatically via mounted circuit or submersible ball contact switches.
To protect the motor, a motor protection switch must be installed in the controls by the customer on site. This must correspond to the rated current of the pump.

Materials
Volute casing made of GG grey cast iron, power supply through rubber insulated flexible cable. Terminal board, impeller and wear plate made of GRP, shaft made of encapsulated C 45 steel.

Installation
Pump can be installed free standing or using guide rail system GR 50 S.

Supply
Pump in acc. with EN 12050, ready for connection, with 10 m cable. GRP pump base included.
US 155: pumps without control, with free lead ends.
Pumps with built-in level control, CEE motor protection plug and phase inverter (1-phase) or safety plug (3-phase).