

# Unolift, Duolift

Lifting stations



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# 1. Product introduction



## Product overview

### Unilift, single-pump lifting station

Unilift 270	Description	Technical data	Pump options	Controller options
	Lifting station for single-family houses and light commercial applications	Tank volume: 270 litres Number of inlets: 3 Inlet levels: 180, 520, 700 mm Dimensions: 700 x 700 x 600 mm	Grey wastewater: Unilift CC Unilift KP Unilift APB	 LC 220 basic controller
			Black wastewater: Unilift APB* SEG	 LC 221 advanced controller

### Duolift, two-pump lifting station

Duolift 270	Description	Technical data	Pump options	Controller options
	Lifting station for multifamily houses and light commercial applications	Tank volume: 270 litres Number of inlets: 3 Inlet levels: 180, 520, 700 mm Dimensions: 700 x 700 x 600 mm	Grey wastewater: Unilift CC Unilift KP Unilift APB	 LC 221 advanced controller
			Black wastewater: Unilift APB* SEG	

Duolift 540	Description	Technical data	Pump options	Controller options
	Lifting station for commercial buildings	Tank volume: 540 litres Number of inlets: 4 Inlet levels: 180, 540, 700 mm Dimensions: 700 x 700 x 1200 mm	Grey wastewater: Unilift APB	 LC 221 advanced controller
			Black wastewater: Unilift APB* SEG	

\* Unilift AP50B may be used for black wastewater, that is domestic wastewater with toilet discharge, in countries allowing outlet pipes of DN 50 for black wastewater without using a grinder pump. According to EN 12050-1, outlet pipes of DN 80 must be used when pumping black wastewater with a pump without a grinder system. Unilift AP50B has a 50 mm free passage and no grinder system.

## Applications

Unolift and Duolift are designed for pumping grey wastewater and black wastewater, that is domestic wastewater with toilet discharge. They are to be installed indoor, typically in a basement, directly on the floor or in a sump. Depending on the model, Unolift and Duolift can be used in applications from single-family houses to large buildings.

Unolift and Duolift can be used for the following purposes.

### Lifting wastewater up

Unolift and Duolift can collect wastewater from below sewer level and lift it up to sewer level. In other words, these lifting stations are very useful in applications where draining by gravity is not possible or can only be achieved at great expense.



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### Transporting wastewater across buildings

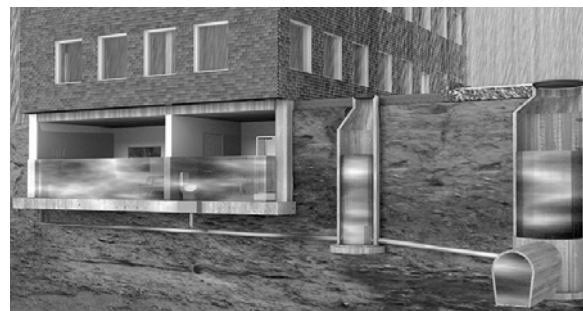
In a refurbishment project, Unolift and Duolift can be very practical to separate distant appliances and transport wastewater from one side of the building to the other.



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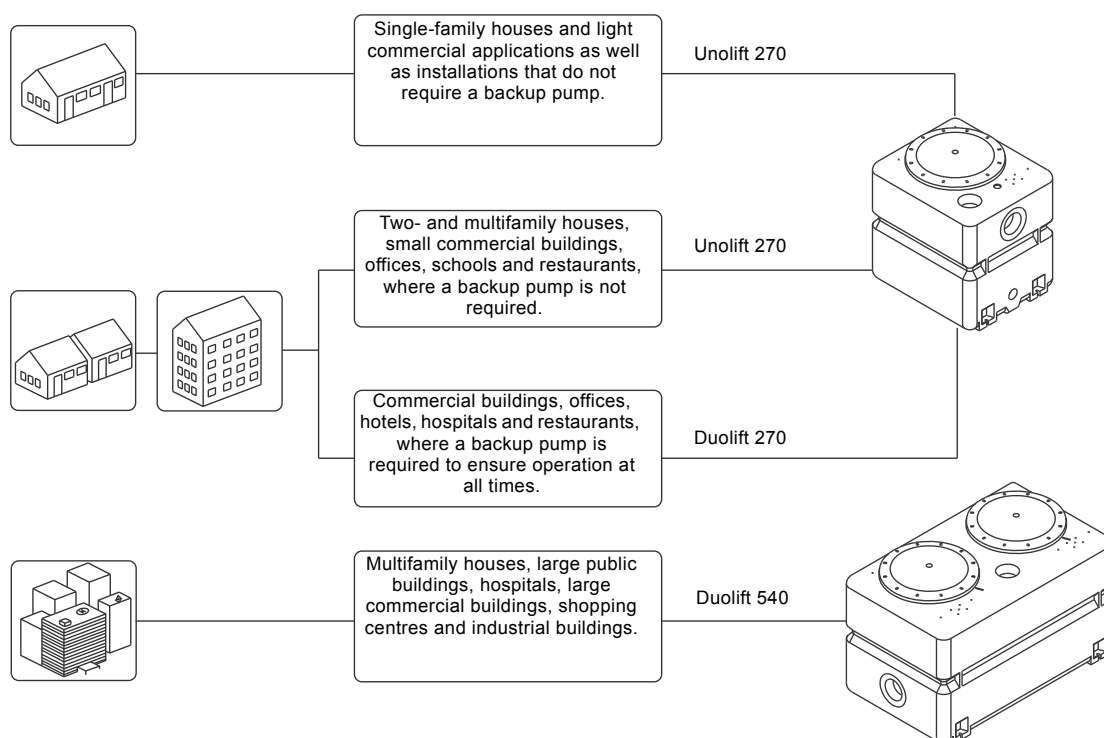
### Backflow protection

The lifting stations are suitable in areas with a high risk of flooding. Together with our outlet pipes with non-return valves, Unolift and Duolift prevent backflow from the sewer, even in case of heavy rainfall.



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## Application overview



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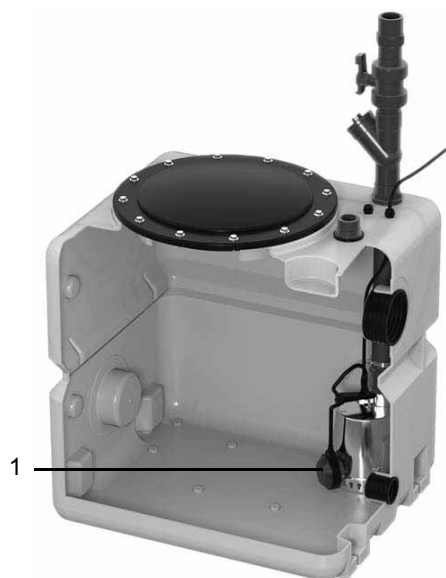
## Operation

The lifting station is designed to operate automatically according to the liquid level in the tank. This can be achieved in two ways:

- with float switches
- with a controller and level sensor.

### With float switches

Pumps with float switches start and stop according to the start and stop levels set via the float switches.



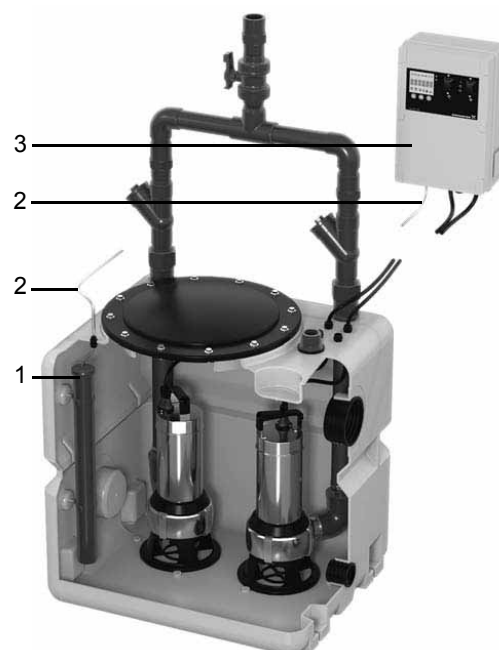
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**Fig. 1** Unolift KP operated by float switches

Pos.	Designation
1	Float switch

### With a controller and level sensor

A pressure tube can be fitted in the tank and connected to a piezoresistive pressure sensor in an external controller. The pumps, connected to the controller, start and stop according to the start and stop levels set via the controller.



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**Fig. 2** Unolift APB operated by an LC 221 controller

Pos.	Designation
1	Level sensor tube
2	Level sensor hose
3	Controller with integrated piezoresistive pressure sensor

## Operating conditions

Ambient temperature	0-40 °C
Liquid temperature	0-40 °C Maximum 60 °C for 5 minutes
Maximum system pressure	6 bar

## Approvals and marks



European conformity



LGA, notified body

The tank is approved and monitored by the LGA. The 270-litre tank is approved for both grey and black wastewater. The 540-litre tank is approved for grey wastewater.

Tank volume	270 litres	540 litres
Standard	EN 12050-1	EN 12050-2

## Performance range

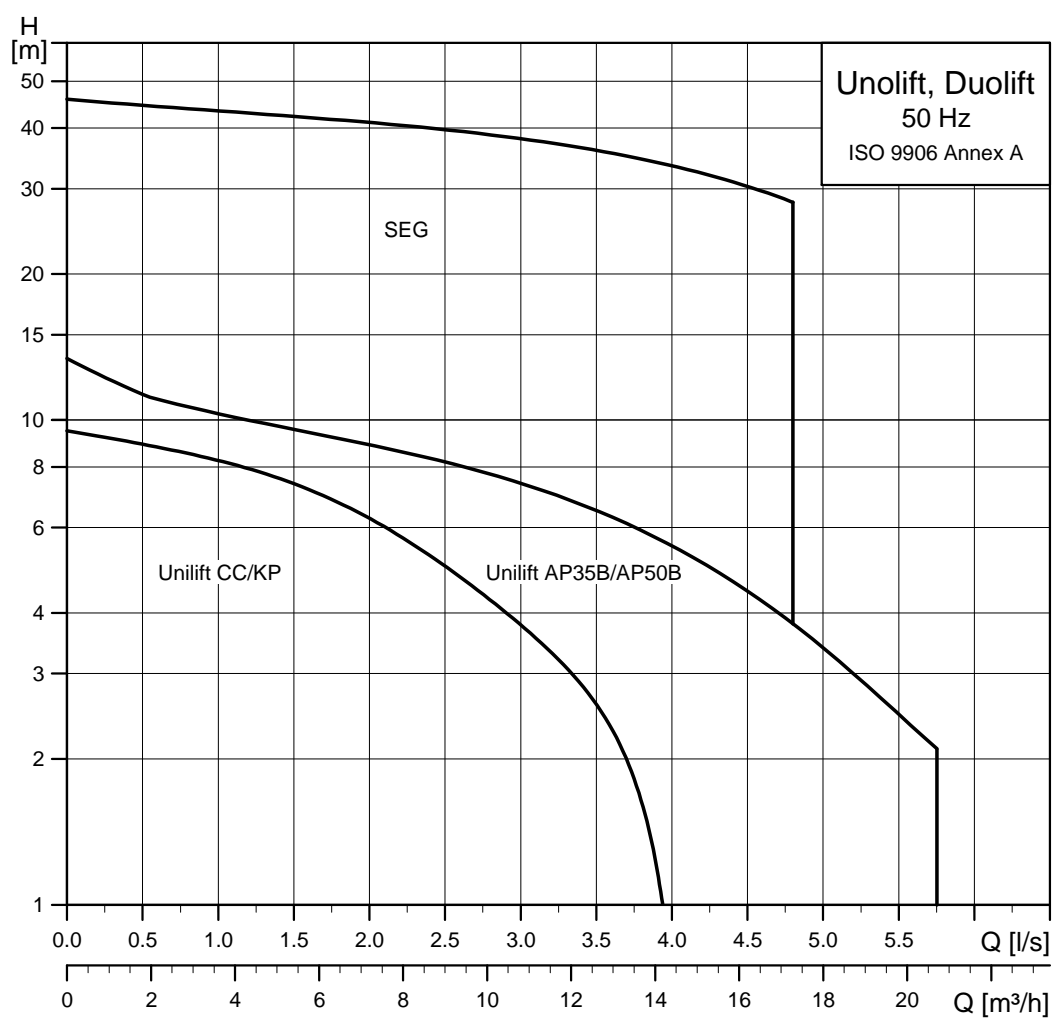


Fig. 3 Performance range, Unilift CC, KP, APB and SEG

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## 2. Installation

### Mechanical installation

#### General guidelines

The guidelines for correct mechanical installation of lifting station are according to EN 12056-4.

- If the lifting station is installed in a basement with recurrent penetration of groundwater, we recommend that you install a drainage pump in a separate pump sump below floor level. In some countries the drainage pump is mandatory. If there is only a risk of penetrating groundwater, we recommend that you install a float switch outside the lifting station and connect it to a controller which indicates high-level alarm in case of flooding.
- Fix the tank to the floor.
- We recommend that you connect a diaphragm pump to the tank to be able to empty the tank manually, for example during a power cut or before service.
- All outlet pipes from the lifting station, diaphragm pump and drainage pump must have a backflow loop, that is a bend above the local backflow level. Commonly, the highest point of the bend must be above street level. See fig. 6.
- Surface water must not be discharged into the lifting station inside the building. Collect and discharge surface water outside the building.
- Install a non-return valve at the outlet of the lifting station to prevent backflow.
- Fit isolating valves at the inlet and outlet of the lifting station.
- The volume of the outlet pipe above the non-return valve up to the backflow loop must be smaller than the effective tank volume. See pos. 7 in figs 5 and 6.
- In general, a lifting station for black wastewater must be vented above roof level. The vent pipe of the lifting station must be led into the main building ventilation system. Place special vent valves outside the building.
- If the wastewater is discharged into a collecting line, the collecting line must have a filling ratio of at least  $h/d = 0.7$ . The collecting line must be at least one nominal diameter bigger after the outlet pipe connection.
- Use 45 ° bends to avoid deposits in the pipes.



Fig. 4 Unolift installed in a sump below floor level

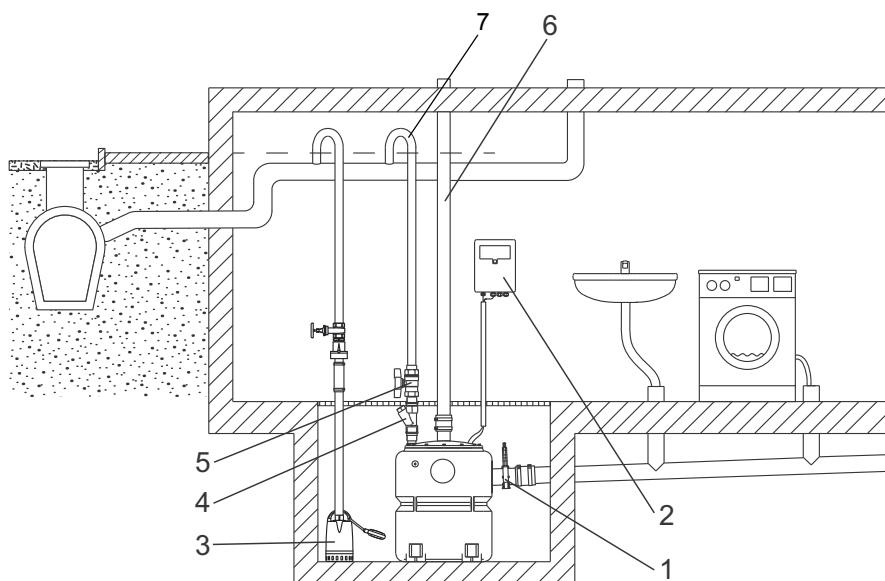
#### Location

The lifting station must be installed in a properly lit and vented room with 60 cm free space around all parts to be serviced and operated.

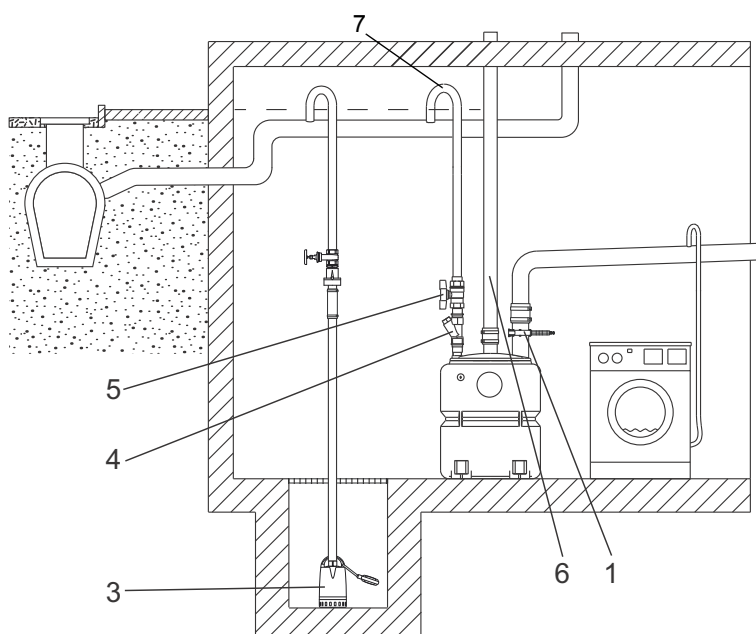
The tank must not be exposed to direct sunlight. UV light can affect the properties of its composite material, resulting in a shorter life.

The product is designed for indoor operation. If installed outside, the lifting station must be placed in a closed pit.

The tank can be flooded and may be installed in a basement with risk of penetrating groundwater.



**Fig. 5** Installation example with a tank in a sump and with a controller. The diaphragm pump is not shown



**Fig. 6** Installation example with a tank on the basement floor. The diaphragm pump is not shown

Pos.	Designation	Pos.	Designation
1	Isolating valve	5	Isolating valve
2	Controller	6	Vent pipe
3	Drainage pump with float switch	7	Backflow loop
4	Non-return valve		

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## Inlet height and start level

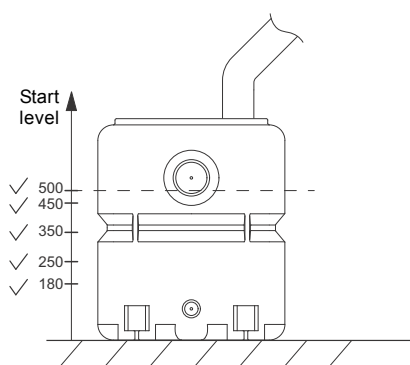
The optimum start level is closely related to the chosen inlet height and pipe configuration. The start level must be as high as possible to increase the effective tank volume and reduce the number of starts of the pumps. A too high start level, however, may increase the backflow in the inlet pipe and thus increase the risk of deposits in the inlet pipe.

With black wastewater, the start level must not be above the inlet height, in order to avoid backflow and deposits in the inlet pipe.

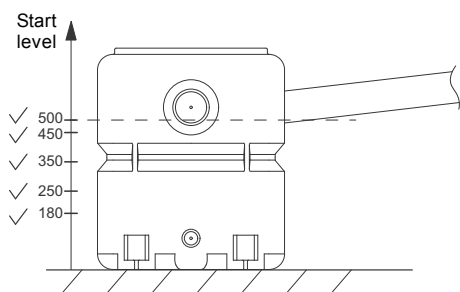
With grey wastewater, the start level can be set above the inlet height, if the inlet pipe has a slope of at least 45 ° before the tank inlet. See fig. 8.

The figures below show the recommended start levels in relation to the inlet height and pipe configuration.

All the indicated values can be selected with the LC 221 controller. With LC 220, only the lowest or highest value can be selected.

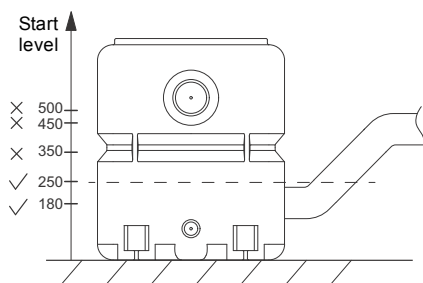


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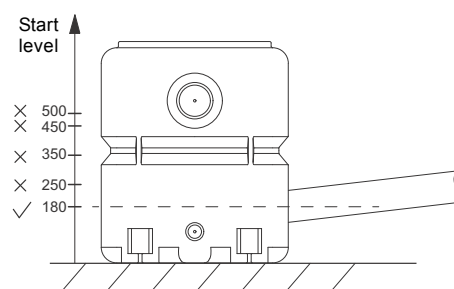
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**Fig. 7** Start levels with top inlets



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**Fig. 8** Start levels allowed with a 45 ° slope to the bottom inlet, grey wastewater



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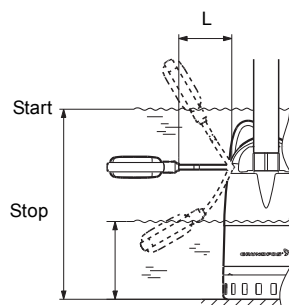
**Fig. 9** Start level with bottom inlet, black wastewater

You can set the start levels in different ways, depending on the operating mode:

- with float switches on the pumps
- with a controller.

### With float switches

You can set the start and stop levels by adjusting the free cable length, L.



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**Fig. 10** Example of start and stop levels for Unilift CC

Pump type	Cable length, L min. 100 mm		Cable length, L max. 200 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
Unilift CC 5	350	115	400	55
Unilift CC 7	350	115	400	55
Unilift CC 9	385	150	435	90

Pump type	Cable length, L min. 70 mm		Cable length, L max. 150 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
Unilift KP 150	290	140	335	100
Unilift KP 250	290	140	335	100
Unilift KP 350	300	150	345	110

Pump type	Cable length, L min. 100 mm		Cable length, L max. 400 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
Unilift AP35B	430	320	460	140
Unilift AP50B	430	320	460	140

### With a controller

The start and stop levels can be set with the controller.

Start level [mm]	180	250	350	450	500
Stop level [mm]	100	100	100	100	100
LC 220 basic controller	•	-	-	-	•
LC 221 advanced controller	•	•	•	•	•



## 3. Construction

### Mechanical construction

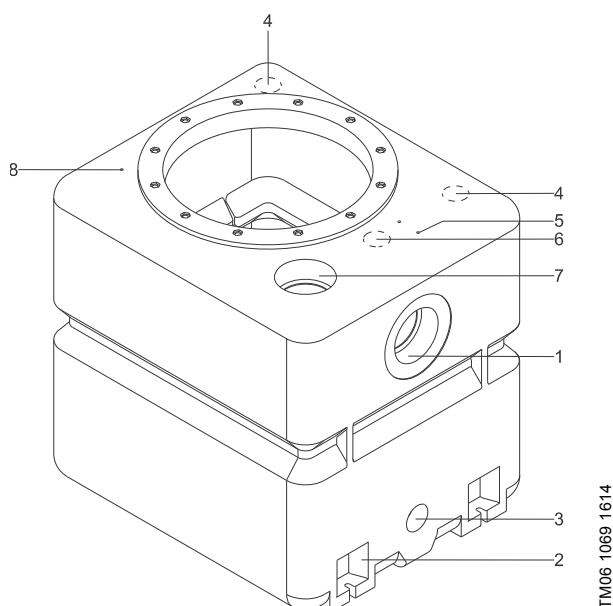


Fig. 11 Unolift 270, Duolift 270

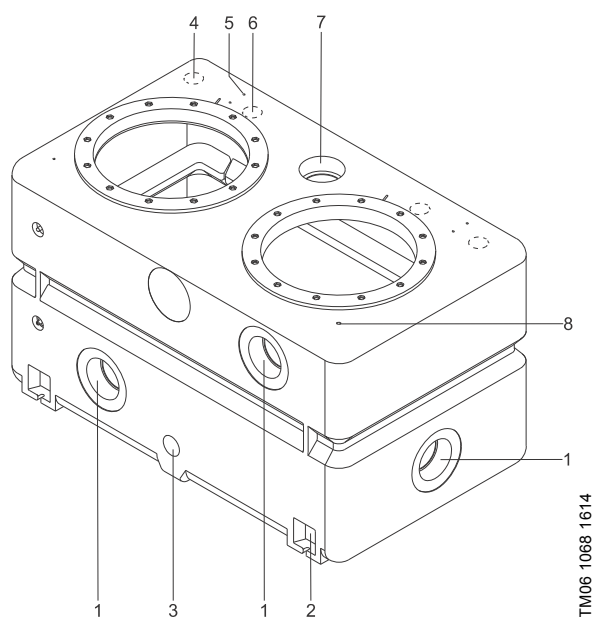


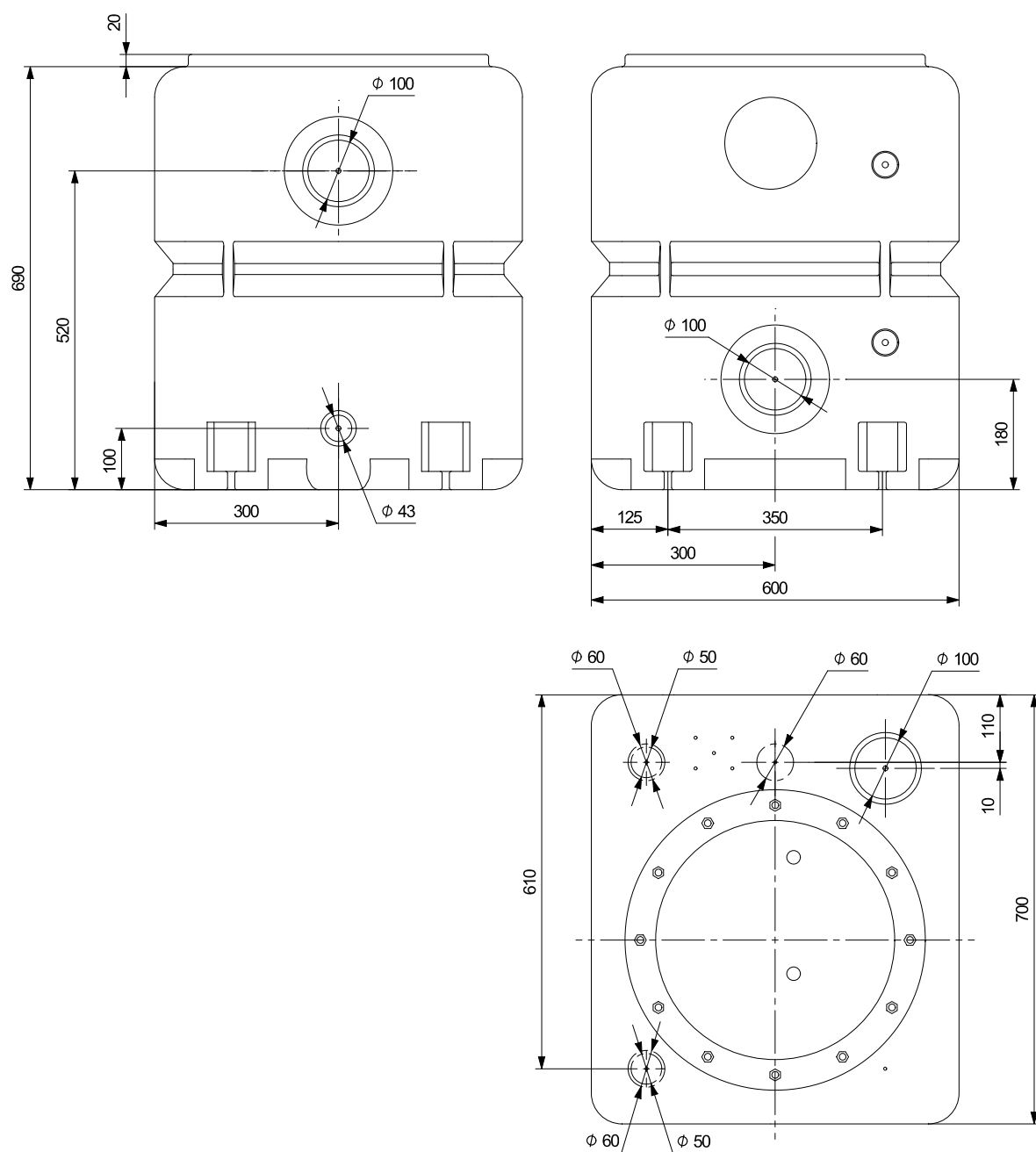
Fig. 12 Duolift 540

Pos.	Description
1	Horizontal inlets, DN 100
2	Mounting brackets
3	Connection, DN 40, for optional diaphragm pump
4	Pump outlet
5	Holes for cable glands
6	Outlet for vent pipe, Ø60
7	Vertical inlet, DN 100
8	Hole for level sensor hose

### Dimensions

	Volume [l]	Weight* [kg]
Small tank	270	19.5
Big tank	540	29.5
Tank cover	-	2.2

\* Weight of the tank alone, without pumps, pipes or any other accessories.



**Fig. 13** Unolift 270, Duolift 270

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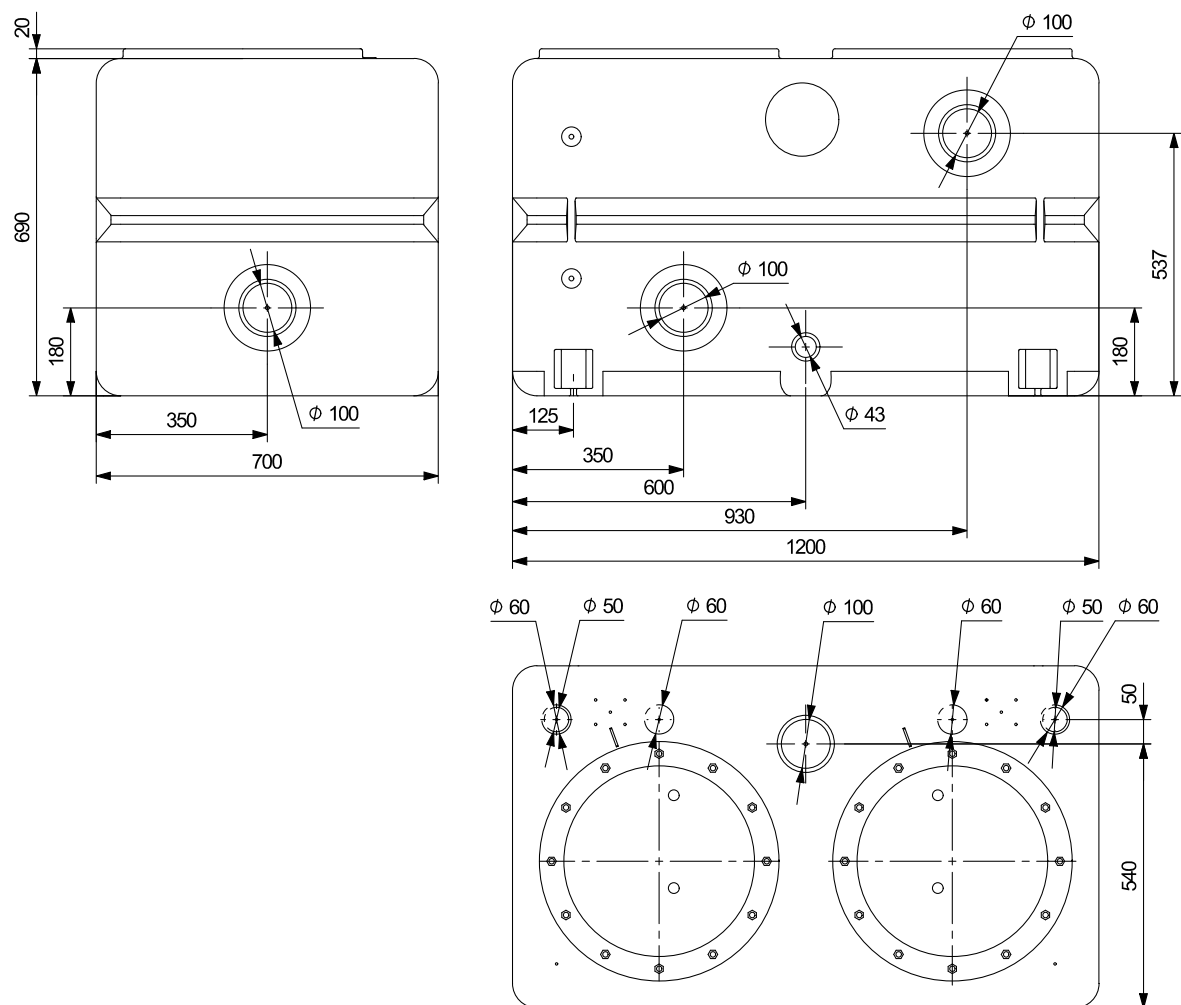


Fig. 14 Duolift 540

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## 4. Selection

### General operating information

The flow of wastewater is uneven when seen over a period of time, for instance an hour or a day. See fig. 15.

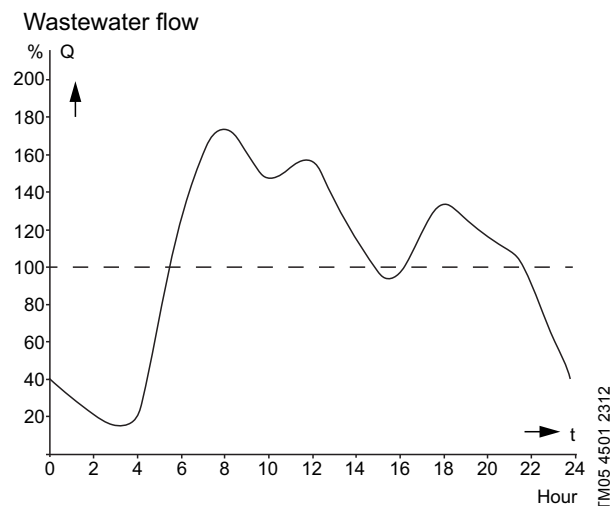


Fig. 15 Uneven wastewater inflow

The above diagram shows the typical wastewater flow from a building over a day.

In the morning, around lunch time and in the evening, the water consumption and accordingly the wastewater flow is higher than average.

The pump(s) must be able to handle the peak flow for a certain, rather short, period when several sanitary appliances are used at the same time.

To be able to select the right tank size, it is important to know the wastewater flow from all connected sanitary appliances over one hour [l/h].

Intermittent operation of the unit and the pump(s) caused by the uneven inflow and the motor design must be taken into consideration.

The pumps used for Unolift and Duolift lifting stations are designed for intermittent duty. Depending on the model, they can start 40 or 60 times per hour, meaning that one pump can empty the lifting station tank up to 40 or 60 times per hour.

This, and not the performance of the individual pump, determines the total draining capacity of a lifting station. See the tables below.

### Selecting the tank and pumps

Sizing of a Unolift or Duolift is done in two steps:

1. Determine the required pump performance to make sure the pump can handle the peak flow when several appliances connected are used at the same time and drained into the lifting station. Knowledge of the required pump performance enables selection of the correct pump size making it possible to select a lifting station tailored to the specific need of the customer or application.
2. Determine the required tank size.  
Unolift is available with a 270-litre tank, Duolift with a 270- or 540-litre tank. As appears from the tables below, the tank size with related effective tank volume determines how much wastewater can be handled in one hour.

For both sizing steps it is essential to know which and how many sanitary appliances are connected to the lifting station and if perhaps further devices, as for instance a grease separator, are also connected.

The calculation of the inflow parameters must take the different regulations and standards in each country into consideration.

The maximum draining capacity over one hour depends on the effective tank volume and the selected start level.

## Effective tank volume and draining capacity

### Unilift and Duolift with controller, type LC 221

Tank volume	Number of pumps	Pump type	Maximum number of starts per hour	Peak flow performance [l/s]		Effective tank volume [l]					Maximum draining capacity [l/h]				
				Outlet pipe		Start level					Start level				
				DN 40 (1 1/2")	DN 50 (2")	180 mm	250 mm	350 mm	450 mm	500 mm	180 mm	250 mm	350 mm	450 mm	500 mm
270	1	Unilift CC	40	0.9 - 3.7	1.4 - 3.7	31	60	98	132	152	1240	2400	3920	5280	6080
		Unilift KP	40	0.9 - 3.7	1.4 - 3.7	31	60	98	132	152	1240	2400	3920	5280	6080
		Unilift AP35B	40	-	1.4 - 5.8	31	60	98	132	152	1240	2400	3920	5280	6080
		Unilift AP50B	40	-	1.4 - 8.0	31	60	98	132	152	1240	2400	3920	5280	6080
		SEG	40	0.9 - 4.5	-	31	60	98	132	152	1240	2400	3920	5280	6080
	2	Unilift CC	60	0.9 - 3.7	1.4 - 3.7	31	60	98	132	152	1860	3600	5880	7920	9120
		Unilift KP	60	0.9 - 3.7	1.4 - 3.7	31	60	98	132	152	1860	3600	5880	7920	9120
		Unilift AP35B	60	-	1.4 - 5.8	31	60	98	132	152	1860	3600	5880	7920	9120
		Unilift AP50B	60	-	1.4 - 8.0	31	60	98	132	152	1860	3600	5880	7920	9120
		SEG	60	0.9 - 4.5	-	31	60	98	132	152	1860	3600	5880	7920	9120
540	2	Unilift AP35B	60	-	1.4 - 5.8	64	120	200	274	314	3840	7200	12000	16440	18840
		Unilift AP50B	60	-	1.4 - 8.0	64	120	200	274	314	3840	7200	12000	16440	18840
		SEG	60	0.9 - 4.5	-	64	120	200	274	314	3840	7200	12000	16440	18840

### Unilift and Duolift with float switches

Tank volume	Number of pumps	Pump type	Maximum number of starts per hour	Peak flow performance [l/s]		Effective tank volume [l]			Maximum draining capacity [l/h]		
				Outlet pipe		Start level			Start level		
				DN 40 (1 1/2")	DN 50 (2")	100 mm	200 mm	400 mm	100 mm	200 mm	400 mm
270	1	Unilift CC	40	0.9 - 3.7	1.4 - 3.7	59	98	-	2360	3920	-
		Unilift KP	40	0.9 - 3.7	1.4 - 3.7	51	90	-	3060	5400	-
		Unilift AP35B	40	-	1.4 - 5.8	43	83	126	1720	3320	5040
		Unilift AP50B	40	-	1.4 - 8.0	43	83	126	1720	3320	5040

### Unilift and Duolift with lever arms

Tank volume	Number of pumps	Pump type	Maximum number of starts per hour	Peak flow performance [l/s]		Effective tank volume [l]	Maximum draining capacity [l/h]
				Outlet pipe			
				DN 40 (1 1/2")	DN 50 (2")		
The effective tank volume and draining capacity do not depend on the start levels selected with the lever arm.							
270	1	Unilift CC	40	0.9 - 3.7	1.4 - 3.7	51	2040
		Unilift KP	40	0.9 - 3.7	1.4 - 3.7	79	4740
		Unilift AP35B	40	-	1.4 - 5.8	47	1880
		Unilift AP50B	40	-	1.4 - 8.0	47	1880

The effective tank volume and draining capacity do not depend on the start levels selected with the lever arm.



## Quick selection

You can use the table below for a quick selection. However, we recommend that you verify that the inflow of your application corresponds to the selection.

Then use the tables in the following pages to select the specific type of pump you need and find the product numbers.

When selecting the pump you have to choose whether you need a float switch or not. If you order a controller, choose a pump without a float switch.

Applications	Pumped liquid	Maximum head [m]	Free passage [mm]	Pump material	Your product selection	Page
Family houses	Grey wastewater	9	Ø10	Stainless steel	Unolift 270 KP	<a href="#">16</a>
				Composite	Unolift 270 CC	<a href="#">16</a>
		13	Ø35	Stainless steel	Unolift 270 AP35B	<a href="#">20</a>
		17	Ø50	Stainless steel	Unolift 270 AP50B	<a href="#">20</a>
	Black wastewater	17	Ø50	Stainless steel	Unolift 270 AP50B*	<a href="#">20</a>
		45	Grinder pump	Cast iron	Unolift 270 SEG	<a href="#">23</a>
Multifamily houses and small commercial buildings	Grey wastewater	9	Ø10	Stainless steel	Duolift 270 KP	<a href="#">28</a>
				Composite	Duolift 270 CC	<a href="#">26</a>
		13	Ø35	Stainless steel	Duolift 270 AP35B	<a href="#">30</a>
		17	Ø50	Stainless steel	Duolift 270 AP50B	<a href="#">30</a>
	Black wastewater	17	Ø50	Stainless steel	Duolift 270 AP50B*	<a href="#">30</a>
		45	Grinder pump	Cast iron	Duolift 270 SEG	<a href="#">33</a>
Commercial buildings	Grey wastewater	13	Ø35	Stainless steel	Duolift 540 AP35B	<a href="#">36</a>
		17	Ø50	Stainless steel	Duolift 540 AP50B	<a href="#">36</a>
	Black wastewater	17	Ø50	Stainless steel	Duolift 540 AP50B*	<a href="#">36</a>
		45	Grinder pump	Cast iron	Duolift 540 SEG	<a href="#">39</a>

\* Unilift AP50B may be used for black wastewater, that is domestic wastewater with toilet discharge, in countries allowing outlet pipes of DN 50 for black wastewater without using a grinder pump. According to EN 12050-1, outlet pipes of DN 80 must be used when pumping black wastewater with a pump without grinder. Unilift AP50B has a 50 mm free passage and no grinder system.

## 5. Product data

### Unolift 270 CC

#### Introduction

Unolift 270 CC is a 270-litre collecting tank for one Grundfos Unilift CC pump. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2.



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#### Features and benefits

- Three inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Long pump life thanks to the stainless-steel motor with three shaft seals.
- Non-return valve at the pump outlet.
- Reliable start even after air intake in the pump thanks to the self-venting pump.

#### Applications

Unolift 270 CC is designed for pumping grey wastewater from the following:

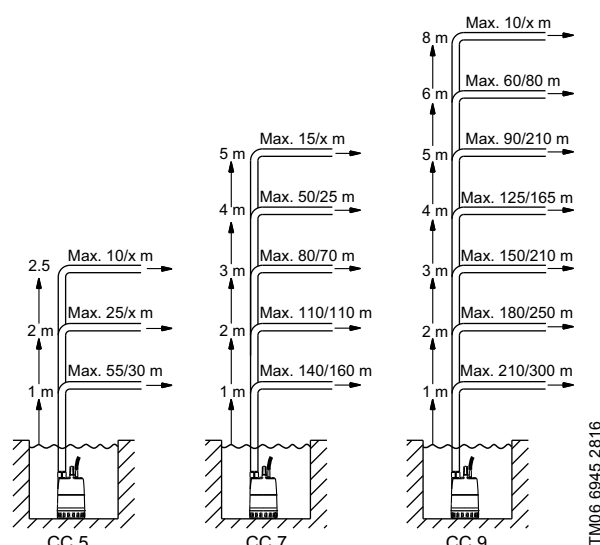
- Domestic appliances such as washing machines, showers, bath tubs and drain gullies
- Commercial or industrial appliances where it is not critical to have a backup pump.

#### Technical data

Free passage	$\varnothing 10$
Pump housing material	Composite
Maximum number of starts per hour	40
Pumped liquid	Grey wastewater
Operating conditions	Normal: 0–40 °C Maximum 70 °C for 2 minutes every 30 minutes

#### Performance

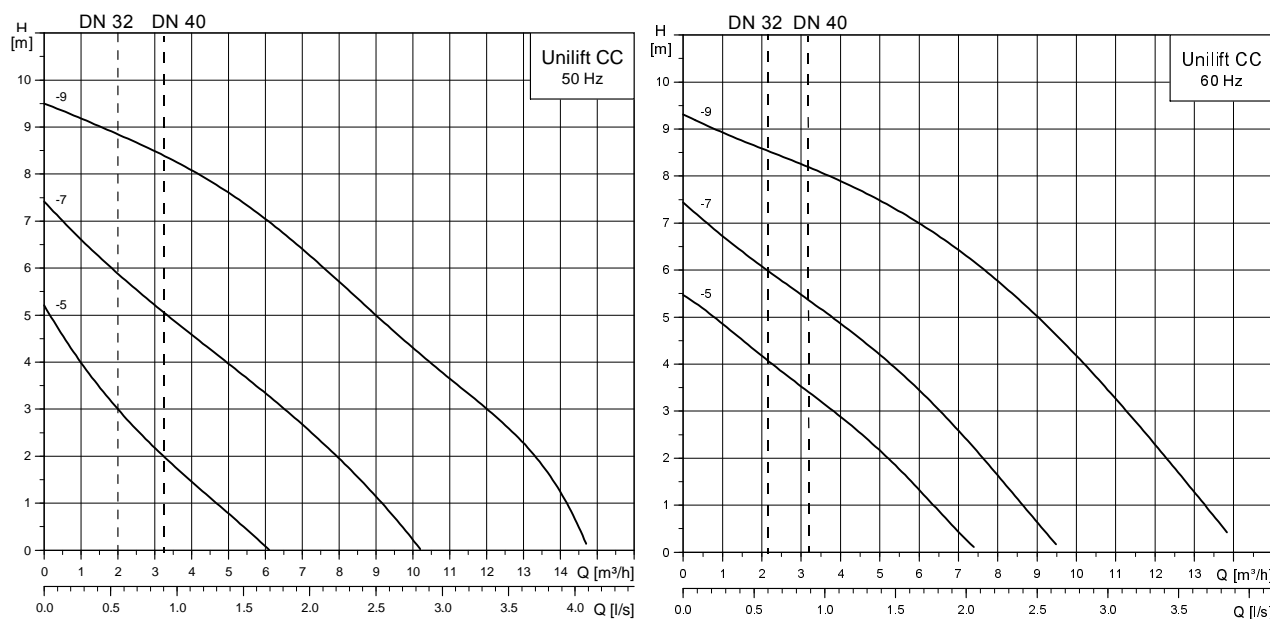
The overview below shows the maximum lengths of combined vertical and horizontal DN 32 and DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



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**Fig. 16** Maximum pipe lengths DN 32 or DN 40  
x: The self-cleaning velocity of 0.7 m/s cannot be reached

## Performance curves







TM03 1346 1805 - TM04 5662 3709

## Product numbers





Use the product numbers below to order your product. The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank. Outlet pipes and valves are available as accessory, see section [7. Accessories](#).

## Unilift 270 CC with pump operated by float switch

		Option for high-level alarm			
		Unilift CC pump	270-litre tank	LC A1 alarm device	MS 2 high-level switch
Frequency [Hz]	Voltage [V]				
50	1 x 230	Unilift CC 5	96280978	91071287	91427146
	1 x 230	Unilift CC 7	96280980		
	1 x 230	Unilift CC 9	96280982		
60	1 x 230	Unilift CC 5	97530824	-	-
	1 x 230	Unilift CC 7	97530826		
	1 x 230	Unilift CC 9	97530828		

## Unilift 270 CC with pump operated by controller

Select the pump, the tank and one of the controllers.

		Unilift CC pump	270-litre tank	LC 220 basic controller	LC 221 advanced controller
Frequency [Hz]	Voltage [V]				
50	1 x 230	Unilift CC 5	96280977	98996775	98996778
	1 x 230	Unilift CC 7	96280979		
	1 x 230	Unilift CC 9	96280981		
60	1 x 230	Unilift CC 5	97530823	98996775	98996778
	1 x 230	Unilift CC 7	97530825		
	1 x 230	Unilift CC 9	97530827		

## Unolift 270 KP

### Introduction

Unolift 270 KP is a 270-litre collecting tank for one Grundfos Unilift KP pump. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2.



TM06 6352 1216

### Features and benefits

- Three inlets Ø100 at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Long pump life thanks to its stainless-steel motor with three shaft seals.
- Wet-runner pump for high reliability. The pump continues to operate even if a shaft seal is leaking.
- Non-return valve at the pump outlet.

### Applications

Unolift 270 KP is designed for pumping grey wastewater from the following:

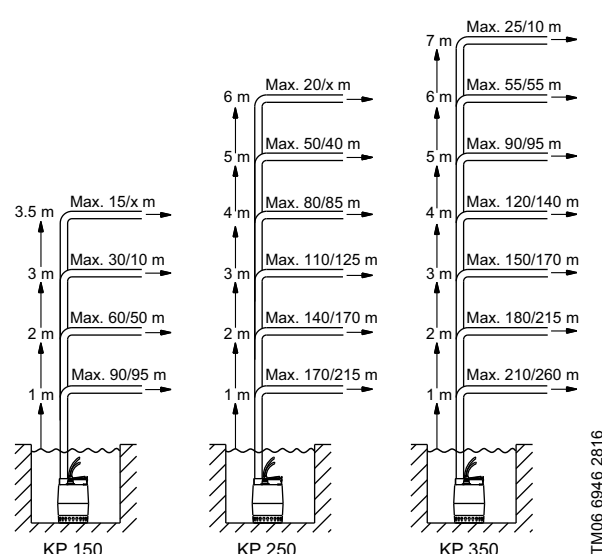
- Domestic appliances such as washing machines, showers, bath tubs and drain gullies.
- Commercial or industrial appliances where it is not critical to have a backup pump.

### Technical data

Free passage	Ø10
Pump housing material	Stainless steel
Maximum number of starts per hour	60
Pumped liquid	Grey wastewater
Operating conditions	Normal: 0-50 °C Maximum 70 °C for 2 minutes every 30 minutes

### Performance

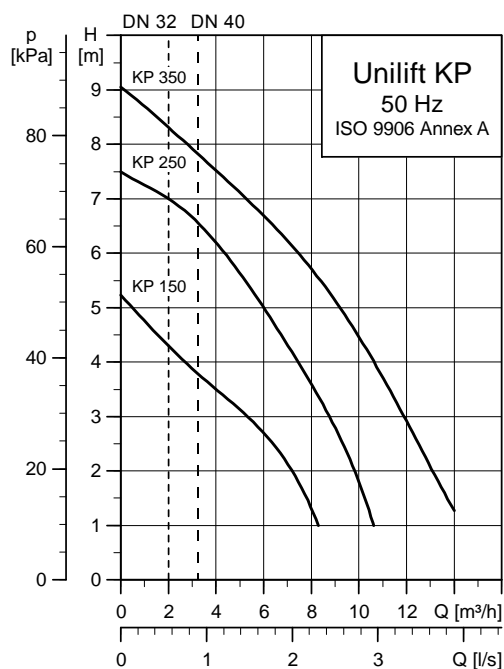
The overview below shows the maximum lengths of combined vertical and horizontal DN 32 and DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



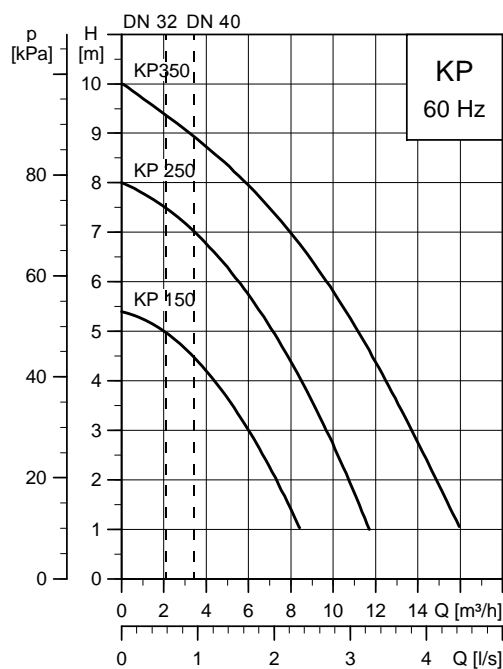
TM06 6946 2816

**Fig. 17** Maximum pipe lengths DN 32 or DN 40  
x: The self-cleaning velocity of 0.7 m/s cannot be reached

## Performance curves



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.







TM03 1593 2505 - TM01 7717 4799

## Product numbers

Use the product numbers below to order your product. The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

## Unilift 270 KP with pump operated by float switch

		Unilift KP pump	270-litre tank	Option for high-level alarm	
Frequency [Hz]	Voltage [V]			LC A1 alarm device 	MS 2 high-level switch 
50	1 x 230	Unilift KP 150	011H6800	91071287	91427146
		Unilift KP 250	012H6800		
		Unilift KP 350	013N6800		
60	1 x 230	Unilift KP 250	012G6800	-	-
		Unilift KP 350	013G6800		

## Unilift 270 KP with pump operated by controller

Select the pump, the tank and one of the controllers.

		Unilift KP pump	270-litre tank	LC 220 basic controller	LC 221 advanced controller
Frequency [Hz]	Voltage [V]				
50	1 x 220-240	Unilift KP 150	011H6300	98996775	98996778
		Unilift KP 250	012H6300		
		Unilift KP 350	011N6300		
	3 x 380-415	Unilift KP 250	012M6300	98996774	98996779
		Unilift KP 350	013M6300		
60	1 x 220-230	Unilift KP 250	012G6300	98996775	98996778
		Unilift KP 350	96Z01143		



## Unilift 270 APB

### Introduction

Unilift 270 APB is a 270-litre collecting tank for one Grundfos Unilift APB pump. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2 with Unilift AP35B or EN 12050-1 with Unilift AP50B.



TM06 6345 1216

### Features and benefits

- Three inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Reduced service time thanks to a pump design enabling easy access to hydraulic parts.
- Stainless-steel design for high resistance.
- Mechanical shaft seal for long life.
- Cable connection with plug for easy maintenance and replacement.

### Applications

Unilift 270 APB is designed for pumping grey wastewater. With a Unilift AP50B pump, it can also be used for pumping black wastewater in countries allowing outlet pipes of DN 50 without a grinder pump.

Unilift 270 APB is typically used for pumping greater discharge volumes from the following:

- Washing machines from single-family houses.
- Backwash of swimming pool filters from family houses.
- Commercial or industrial appliances where it is not critical to have a backup pump.
- Office buildings, hotels or restaurants, including toilets, in countries where legislation allows it, and only with Unilift AP50B.

### Technical data

Free passage	AP35B: $\varnothing 35$ AP50B: $\varnothing 50$
Pump housing material	Stainless steel
Maximum number of starts per hour	40
Pumped liquid	Grey and black wastewater*
Operating conditions	Normal: 0–40 °C

\* Unilift AP50B may be used for black wastewater in countries allowing outlet pipes of DN 50 for black wastewater without using a grinder pump.

### Performance

The overview below shows the maximum lengths of combined vertical and horizontal DN 50 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.

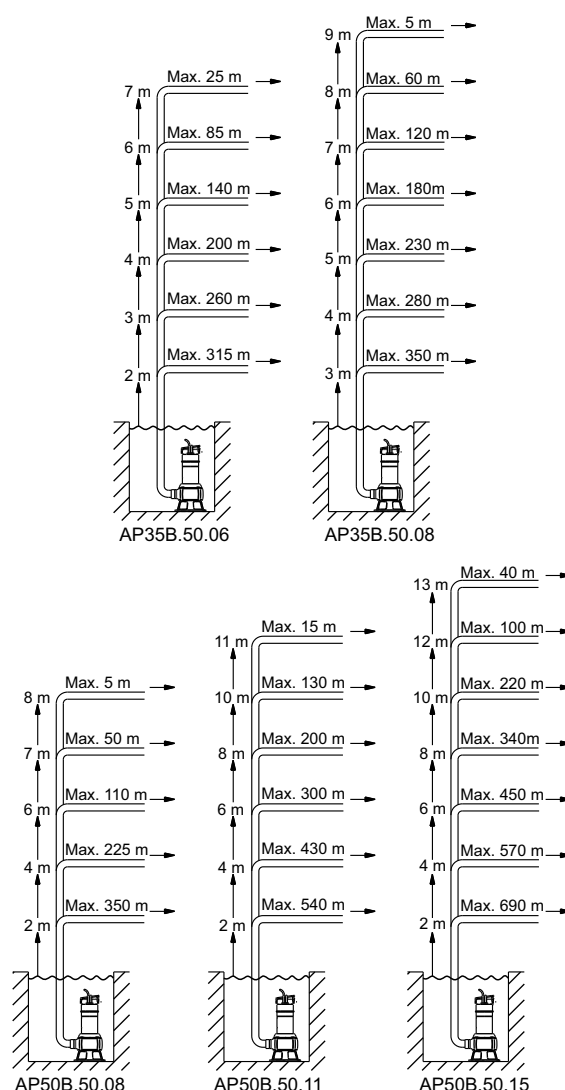
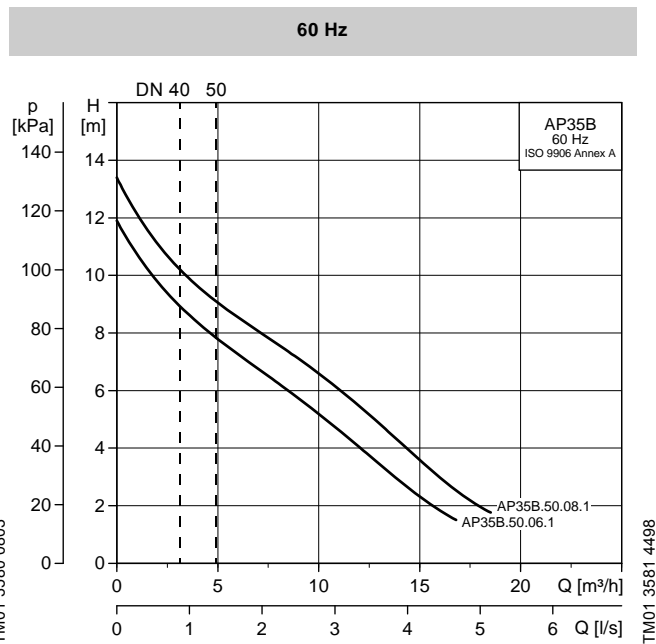
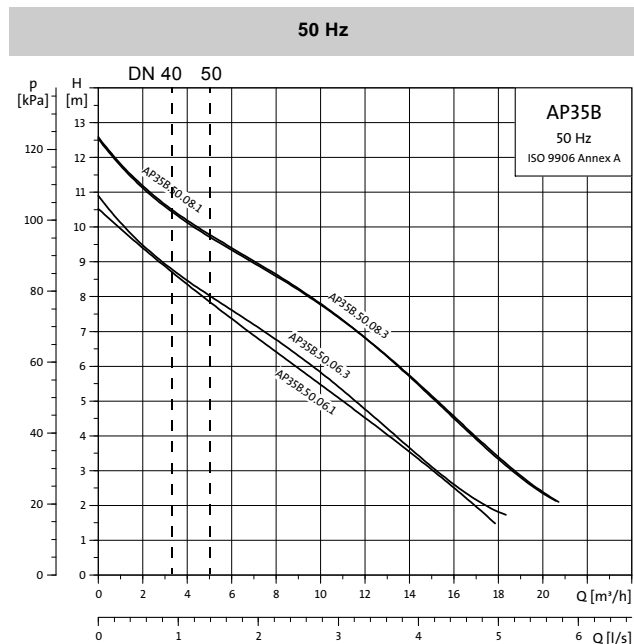
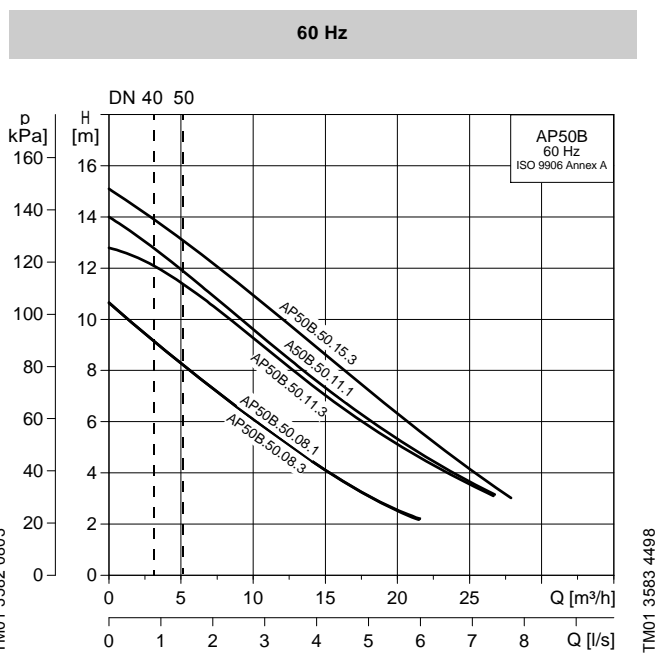
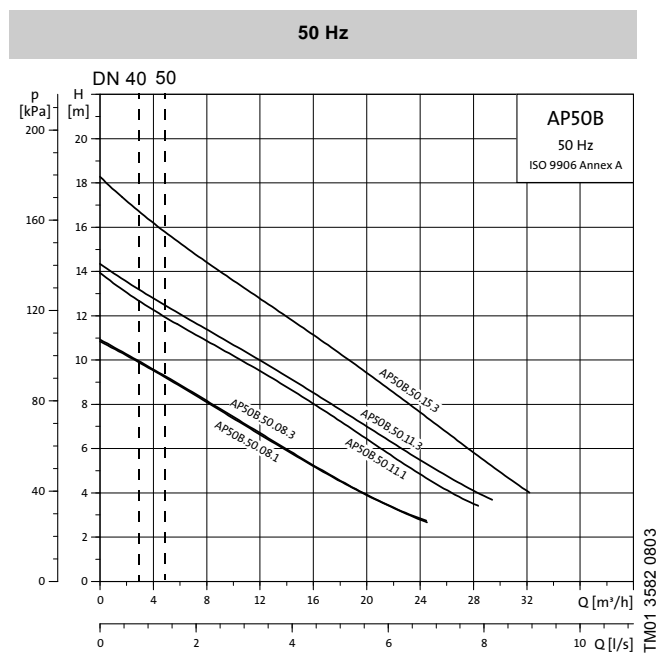


Fig. 18 Maximum pipe lengths

## Performance curves, AP35B



## Performance curves, AP50B







The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 40 and DN 50.

## Product numbers





Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Unolift 270 APB with pump operated by float switch

		Option for high-level alarm				
		Unilift APB pump	270-litre tank	LC A1 alarm device	MS 2 high-level switch	
Frequency [Hz]	Voltage [V]		+			
					+	
50	1 x 230	AP35B.50.06 96468356	97642387	91071287	91427146	
		AP35B.50.08 96468355				
		AP50B.50.08 96468354				
		AP50B.50.11 96468352				
60	1 x 230	AP35B.50.06* 96004568	97642387	91071287	91427146	
		AP35B.50.08* 96004583				
		AP50B.50.08* 96004592				
		AP50B.50.11* 96004604				

### Unolift 270 APB with pump operated by controller

Select the pump, the tank and one of the controllers.

		Unilift APB pump	270-litre tank	LC 220 basic controller	LC 221 advanced controller
Frequency [Hz]	Voltage [V]				
50	1 x 230	AP35B.50.06 96004563	97642387	98996775	98996778
		AP35B.50.08 96004575			
		AP50B.50.08 96004587			
		AP50B.50.11 96004599			
	3 x 400	AP35B.50.06 96468190	97642387	98996774	98996779
		AP35B.50.08 96468193			
		AP50B.50.08 96468194			
		AP50B.50.11 96468195			
60	1 x 230	AP50B.50.15 96468196	97642387	98996775	98996778
		AP35B.50.06 96004569			
		AP35B.50.08 96004581			
		AP50B.50.08 96004593			
	3 x 200-220	AP50B.50.11 96004605	97642387	-	99168385
		AP35B.50.06 96004571			
		AP35B.50.08 96004583			
		AP50B.50.08 96004595			
		AP50B.50.11 96004607			
		AP50B.50.15 96004611			

\* The power supply cable of the pump is 5 m long.

## Unolift 270 SEG

### Introduction

Unolift 270 SEG is a 270-litre collecting tank for one Grundfos SEG pump. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-1.



TM06 6351 1216

### Features and benefits

- Three inlets Ø100 at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.

- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- SmartTrim system enabling quick and easy impeller clearance adjustment in order to maintain peak performance.
- Patented grinder system ensuring extremely high efficiency and reliable operation.
- Heavy-duty bearings greased for life.
- Clamps connection between motor and pump for quick check and service.
- Thermal protection.
- Cartridge mechanical shaft seal for long life and safe service.
- Cable connection via plug for easy maintenance and replacement.

### Applications

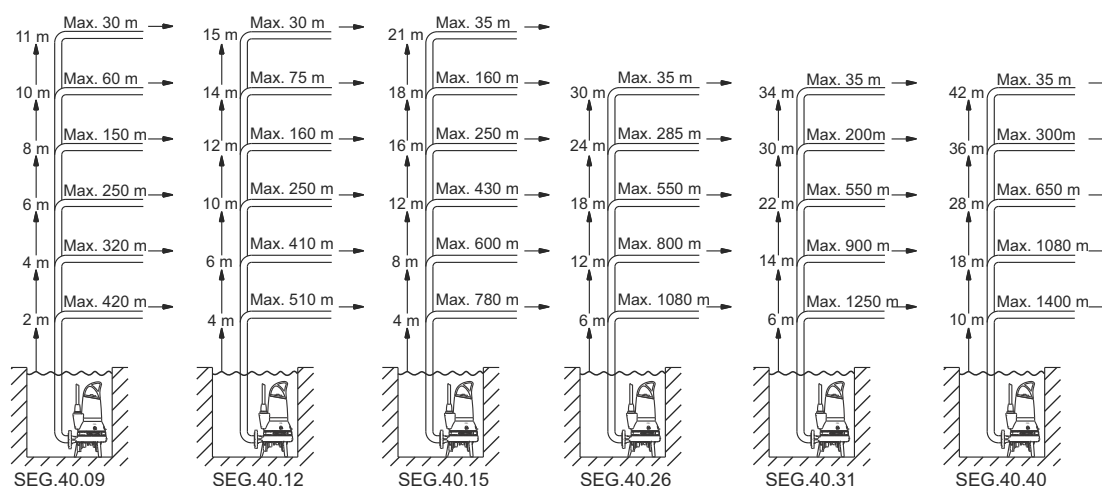
Unolift 270 SEG is typically used for pumping black wastewater from single-family houses or small commercial buildings.

### Technical data

Pump housing material	Stainless steel
Maximum number of starts per hour	40
Pumped liquid	Grey and black wastewater
Operating conditions	Normal: 0-40 °C Maximum 60 °C for 3 minutes every 30 minutes

### Performance

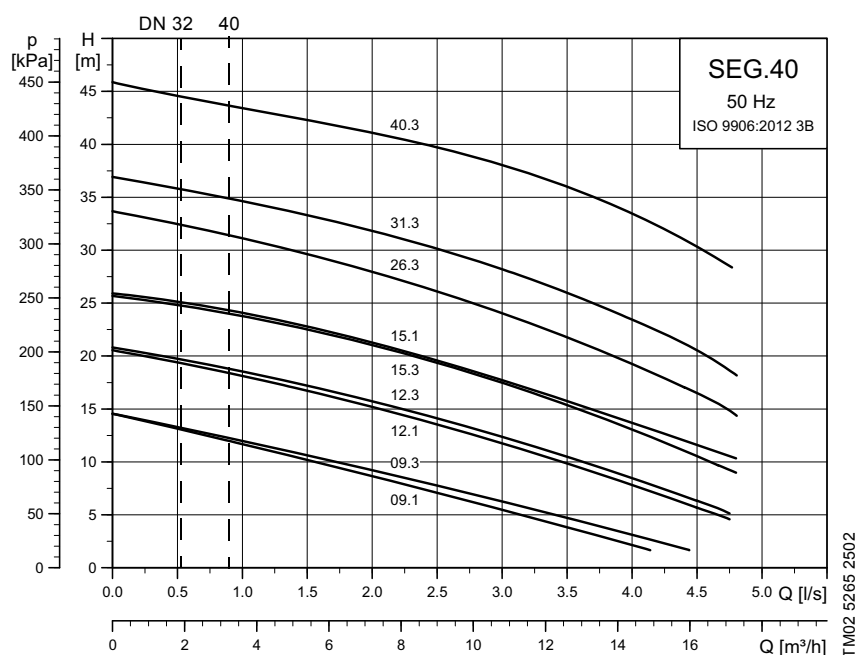
The overview below shows the maximum lengths of combined vertical and horizontal DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



TM06 6591 1916

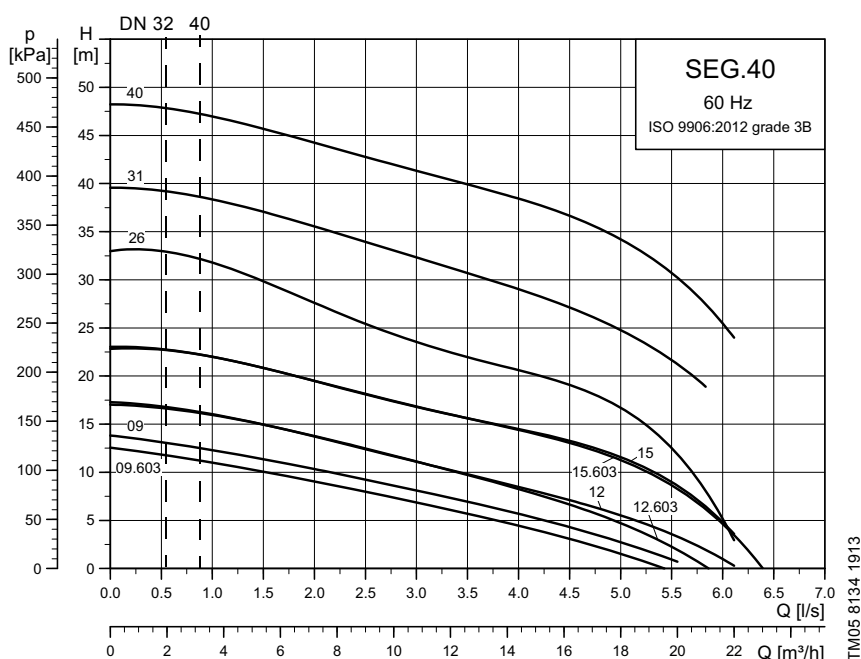
Fig. 19 Maximum pipe lengths

## Performance curves, 50 Hz



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

## Performance curves, 60 Hz



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

Designation	Curve number
SEG.40.09.2.1.502	09.1
SEG.40.09.2.50B/C	09.3
SEG.40.12.2.1.502	12.1
SEG.40.12.2.50B/C	12.3
SEG.40.15.2.1.502	15.1
SEG.40.15.2.50B/C	15.3
SEG.40.26.2.50B/C	26.3
SEG.40.31.2.50B/C	31.3
SEG.40.40.2.50B/C	40.3



Designation	Curve number
SEG.40.09.(EX).2.1.603	09.603
SEG.40.09.(EX).2.60G/H/M	09
SEG.40.12.(EX).2.1.603	12.603
SEG.40.12.(EX).2.60G/H/M	12
SEG.40.15.(EX).2.1.603	15.603
SEG.40.15.(EX).2.60G/H/M	15
SEG.40.26.(EX).2.60G/H/M	26
SEG.40.31.(EX).2.60G/H/M	31
SEG.40.40.(EX).2.60G/H/M	40



## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Unolift 270 SEG with pump operated by controller

Frequency [Hz]	Voltage [V]	SEG pump		+	270-litre tank	+	LC 221 advanced controller
							
50	1 x 230	SEG.40.09.2.1.502	96075893		97642371		98996776
		SEG.40.12.2.1.502	96075901				
	3 x 230-240	SEG.40.09.2.50C	96075919		97642371		99168360
		SEG.40.12.2.50C	96075920				
		SEG.40.15.2.50C	96075921				
		SEG.40.26.2.50C	96075922				
		SEG.40.31.2.50C	96075923				
		SEG.40.40.2.50C	96075924				
	3 x 400-415	SEG.40.09.2.50B	96075897		97642371		98996780
		SEG.40.12.2.50B	96075905				
		SEG.40.15.2.50B	96075909				
		SEG.40.26.2.50B	96075913				
		SEG.40.31.2.50B	96075915				
		SEG.40.40.2.50B	96075917				
60	1 x 230	SEG.40.09.2.1.603	98280831		97642371		98996776
		SEG.40.12.2.1.603	98280833				
		SEG.40.15.2.1.603	98280835				
	3 x 200-230	SEG.40.09.2.60M	98280729		97642371		99168360
		SEG.40.12.2.60M	98280748				
		SEG.40.15.2.60M	98280750				
		SEG.40.26.2.60M	98280803				
		SEG.40.31.2.60M	98280805				
	3 x 380	SEG.40.40.2.60M	98280808		97642371		99168361
		SEG.40.09.2.60G	98280814				
		SEG.40.12.2.60G	98280816				
		SEG.40.15.2.60G	98280819				
		SEG.40.26.2.60G	98280821				
		SEG.40.31.2.60G	98280823				
		SEG.40.40.2.60G	98280825				

## Duolift 270 CC

### Introduction

Duolift 270 CC is a 270-litre collecting tank for two Grundfos Unilift CC pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2.



TM06 6346 1216

### Features and benefits

- Three inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Long pump life thanks to the stainless-steel motor with three shaft seals.
- Non-return valve at the pump outlet.
- Reliable start even after air intake in the pump thanks to the self-venting pump.

### Applications

Duolift 270 CC is designed for pumping grey wastewater from the following:

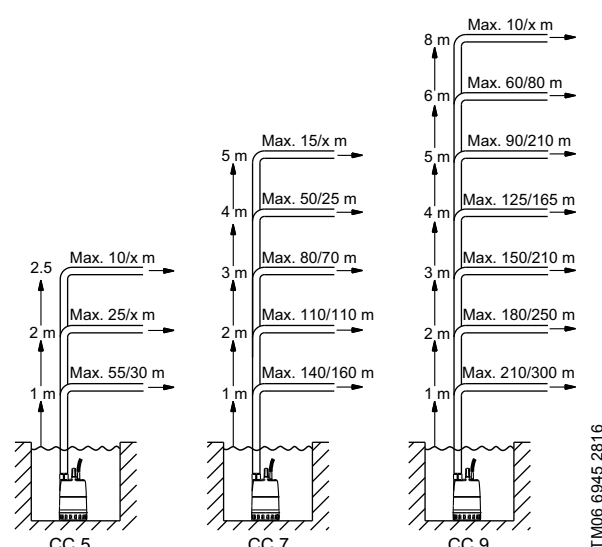
- Multifamily houses with several washing machines.
- Backwash of swimming pool filters from family houses.
- Commercial or industrial appliances where it is not critical to have a backup pump.

### Technical data

Free passage	$\varnothing 10$
Pump housing material	Composite
Maximum number of starts per hour	60
Pumped liquid	Grey wastewater
Operating conditions	Normal: 0–40 °C Maximum 70 °C for 2 minutes every 30 minutes

### Performance

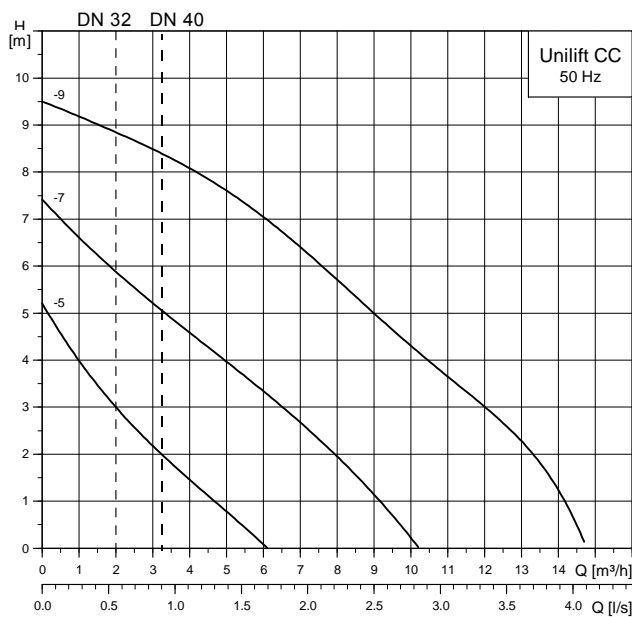
The overview below shows the maximum lengths of combined vertical and horizontal DN 32 and DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



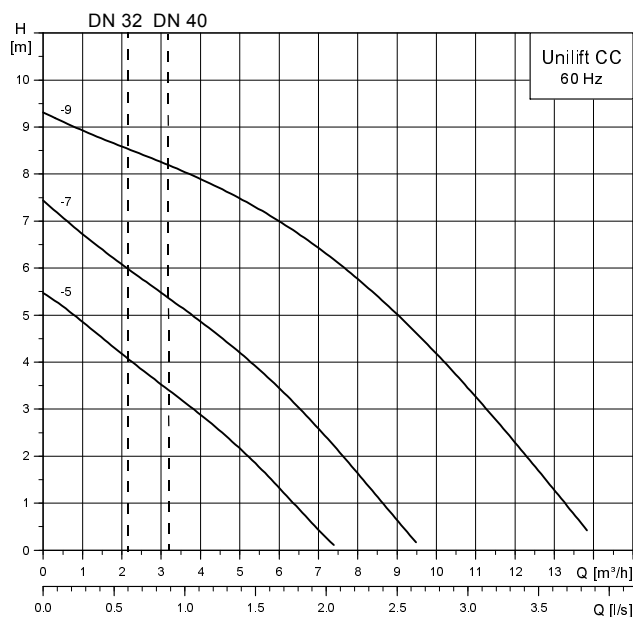
TM06 6945 2816

**Fig. 20** Maximum pipe lengths DN 32 or DN 40  
x: The self-cleaning velocity of 0.7 m/s cannot be reached

## Performance curves



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.






TM03 1346 1805 - TM04 5662 3709

## Product numbers

Use the product numbers below to order your product. The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Duolift 270 CC with pump operated by controller

		Unilift CC pump		270-litre tank	LC 221 advanced controller		
Frequency [Hz]	Voltage [V]		+		+		
50	1 x 230	Unilift CC 5	96280977	97642386	98996793		
		Unilift CC 7	96280979				
		Unilift CC 9	96280981				
60		Unilift CC 5	97530823				
		Unilift CC 7	97530825				
		Unilift CC 9	97530827				

## Duolift 270 KP

### Introduction

Duolift 270 KP is a 270-litre collecting tank for two Grundfos Unilift KP pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2.



TM06 6419 1416

### Features and benefits

- Three inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Long pump life thanks to its stainless-steel motor with three shaft seals.
- Wet-runner pump for high reliability. The pump continues to operate even if a shaft seal is leaking.
- Non-return valve at the pump outlet.

### Applications

Unilift 270 KP is designed for pumping grey wastewater from the following:

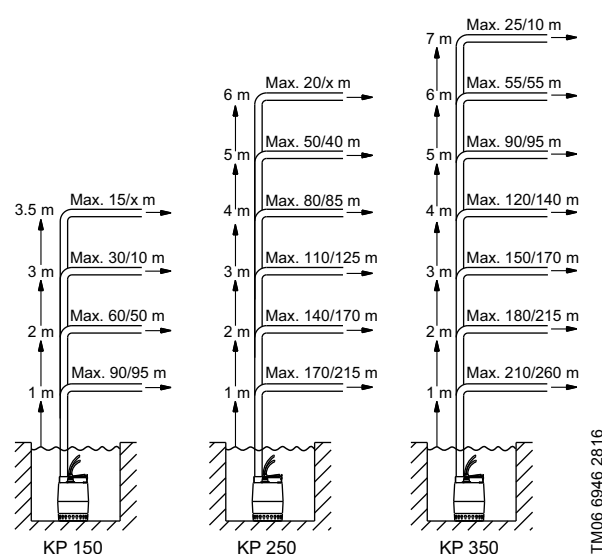
- Multifamily houses with several washing machines.
- Backwash of swimming pool filters from family houses.
- Commercial or industrial appliances where it is not critical to have a backup pump.

### Technical data

Free passage	$\varnothing 10$
Pump housing material	Stainless steel
Maximum number of starts per hour	60
Pumped liquid	Grey wastewater
Operating conditions	Normal: 0-50 °C Maximum 70 °C for 2 minutes every 30 minutes

### Performance

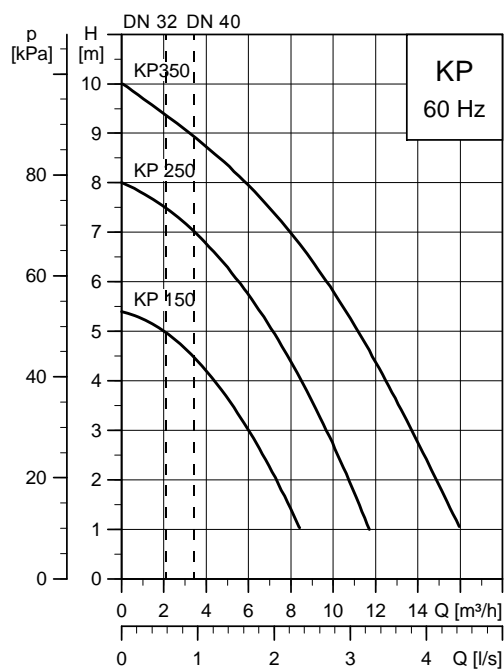
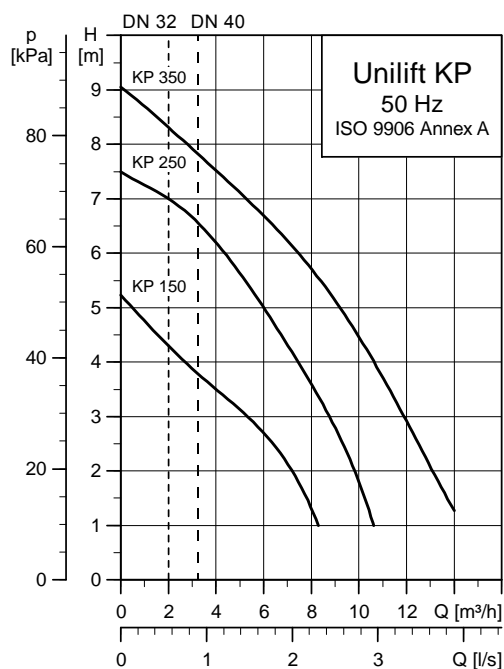
The overview below shows the maximum lengths of combined vertical and horizontal outlet pipes of DN 32 and DN 40. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



TM06 6946 2816

**Fig. 21** Maximum pipe lengths DN 32 or DN 40  
x: The self-cleaning velocity of 0.7 m/s cannot be reached

## Performance curves






The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

TM03 1593 2505 - TM01 7717 4799

## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

## Duolift 270 KP with pumps operated by controller

Frequency [Hz]	Voltage [V]	Unilift KP pump		+	270-litre tank	+	LC 221 advanced controller
							
50	1 x 220-240	Unilift KP 150	011H6300				
		Unilift KP 250	012H6300				
		Unilift KP 350	011N6300				
	3 x 380-415	Unilift KP 250	012M6300		97642386		98996794
		Unilift KP 350	013M6300				
		Unilift KP 250	012G6300				
60	1 x 220-230	Unilift KP 250	012G6300		97642386		98996793
		Unilift KP 350	96Z01143				

## Duolift 270 APB

### Introduction

Duolift 270 APB is a 270-litre collecting tank for two Grundfos Unilift APB pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2 with Unilift AP35B or EN 12050-1 with Unilift AP50B.



TM06 6347 1216

### Features and benefits

- Three inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Reduced service time thanks to a pump design enabling easy access to hydraulic parts.
- Stainless-steel design for high resistance.
- Mechanical shaft seal for long life.
- Cable connection via plug for easy maintenance and replacement.

### Applications

Duolift 270 APB is designed for pumping grey wastewater. With a Unilift AP50B pump, it can also be used for pumping black wastewater in countries allowing outlet pipes of DN 50 without a grinder pump. Duolift 270 APB is typically used for pumping greater discharge volumes from the following:

- Hotels or hospitals with commercial washing machines.
- Canteens and commercial kitchens, if placed behind a grease separator.
- Commercial or industrial appliances.
- Office buildings, hotels or restaurants, including toilets, in countries where legislation allows it, and only with Unilift AP50B.

### Technical data

Free passage	AP35B: $\varnothing 35$ AP50B: $\varnothing 50$
Pump housing material	Stainless steel
Maximum number of starts per hour	40
Pumped liquid	Grey and black wastewater*
Operating conditions	Normal: 0–40 °C

\* Unilift AP50B may be used for black wastewater in countries allowing outlet pipes of DN 50 for black wastewater without using a grinder pump.

### Performance

The overview below shows the maximum lengths of combined vertical and horizontal DN 50 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.

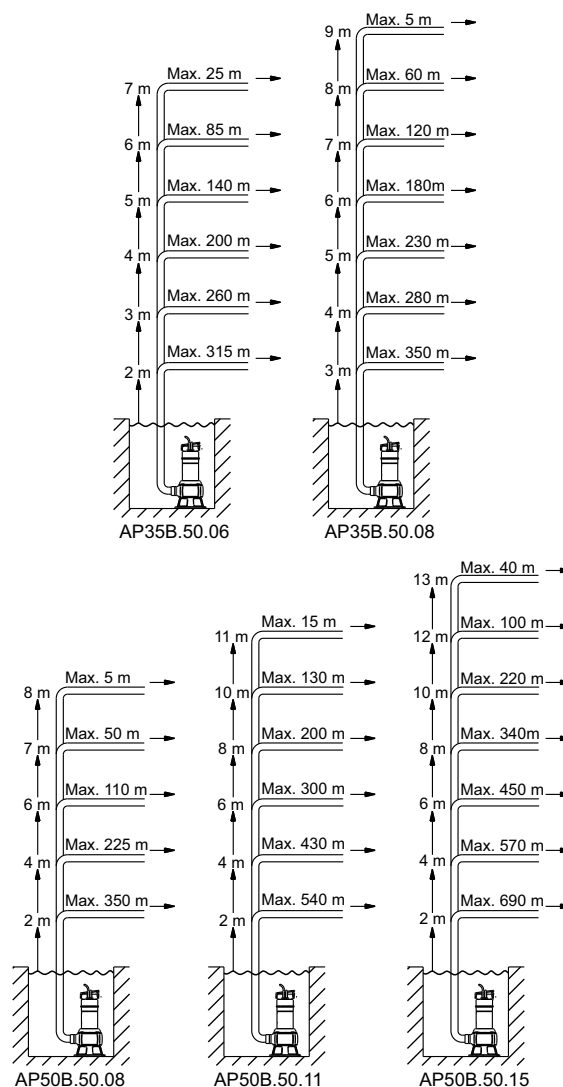
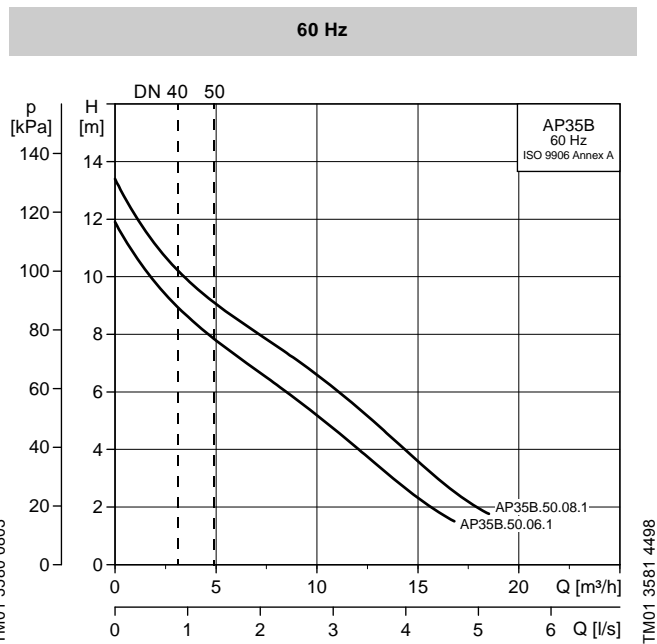
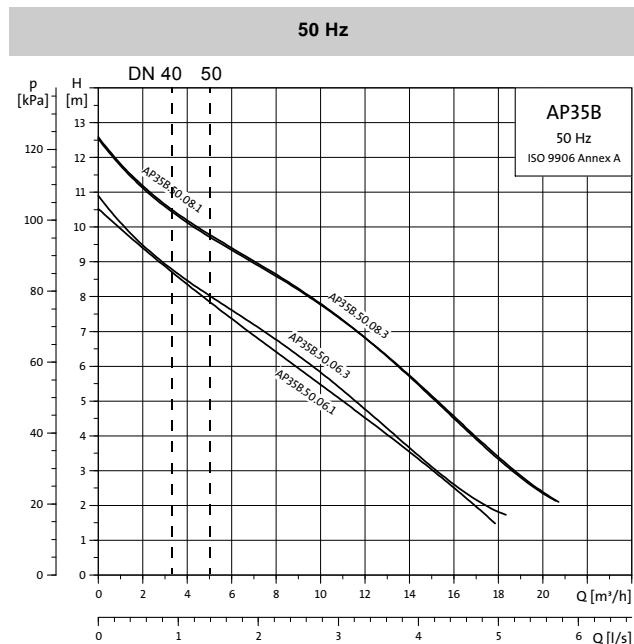
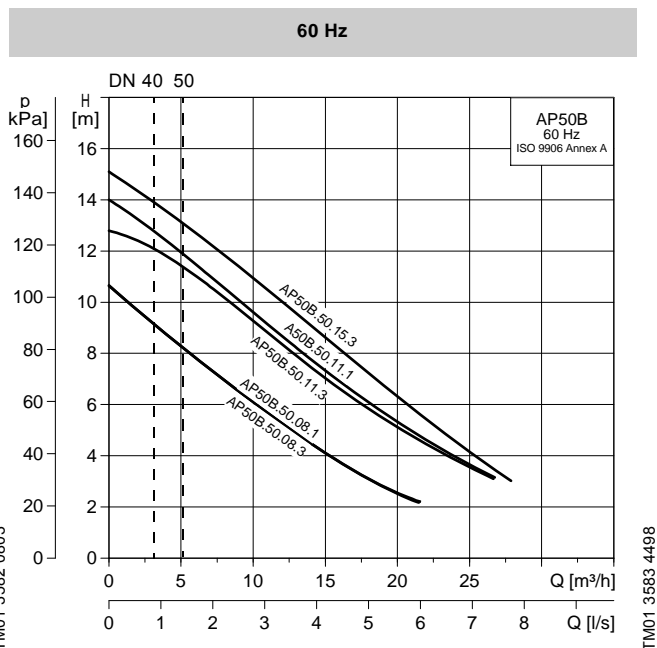
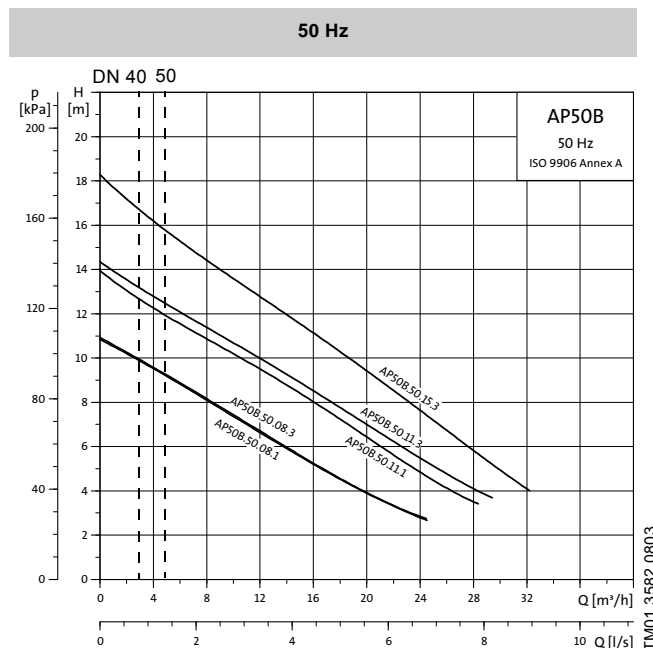


Fig. 22 Maximum pipe lengths

## Performance curves, AP35B



## Performance curves, AP50B





The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 40 and DN 50.

## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Duolift 270 APB with pumps operated by controller

Frequency [Hz]	Voltage [V]	Unilift APB pump		270-litre tank	+	LC 221 advanced controller
						
50	1 x 230	AP35B.50.06	96004563	97642388	+	98996793
		AP35B.50.08	96004575			
		AP50B.50.08	96004587			
		AP50B.50.11	96004599			
	3 x 400	AP35B.50.06	96468190	97642388	+	98996794
		AP35B.50.08	96468193			
		AP50B.50.08	96468194			
		AP50B.50.11	96468195			
60	1 x 230	AP50B.50.15	96004609	97642388	+	98996793
		AP35B.50.06	96004569			
		AP35B.50.08	96004581			
		AP50B.50.08	96004593			
	3 x 200-220	AP50B.50.11	96004605	97642388	+	99168362
		AP35B.50.06	96004571			
		AP35B.50.08	96004583			
		AP50B.50.08	96004595			
		AP50B.50.11	96004607			
		AP50B.50.15	96468196			



## Duolift 270 SEG

### Introduction

Duolift 270 SEG is a 270-litre collecting tank for two Grundfos SEG pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-1.



TM06 6348 1216

### Features and benefits

- Three inlets Ø100 at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.

- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet
- SmartTrim system enabling quick and easy impeller clearance adjustment in order to maintain peak performance.
- Patented grinder system ensuring extremely high efficiency and reliable operation.
- Heavy-duty bearings greased for life.
- Clamps connection between motor and pump for quick check and service.
- Thermal protection.
- Cartridge mechanical shaft seal for long life and safe service.
- Cable connection via plug for easy maintenance and replacement

### Applications

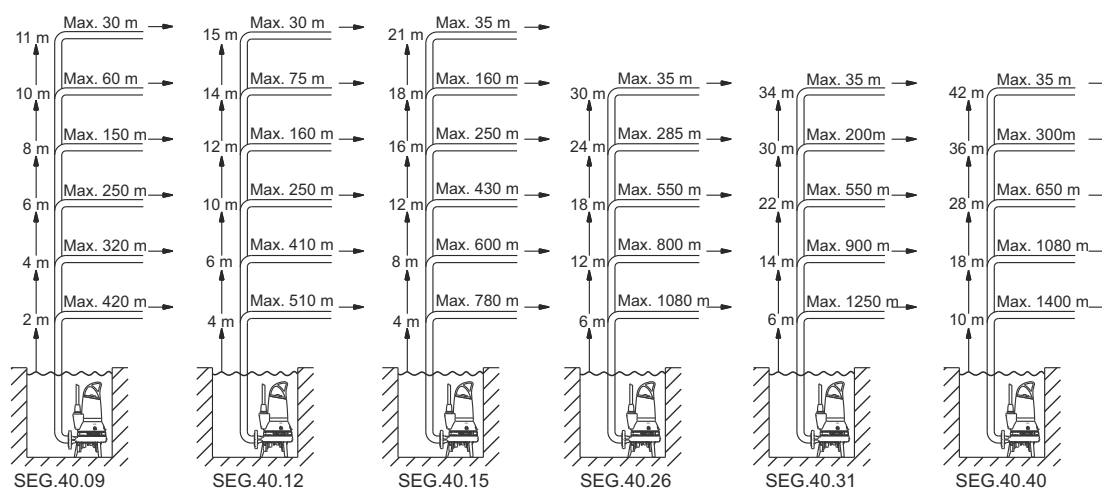
Duolift 270 SEG is typically used for pumping black wastewater from commercial buildings like restaurants, schools, office buildings with toilets including urinals.

### Technical data

Pump housing material	Stainless steel
Maximum number of starts per hour	60
Pumped liquid	Grey and black wastewater
Operating conditions	Normal: 0-40 °C Maximum 60 °C for 3 minutes every 30 minutes

### Performance

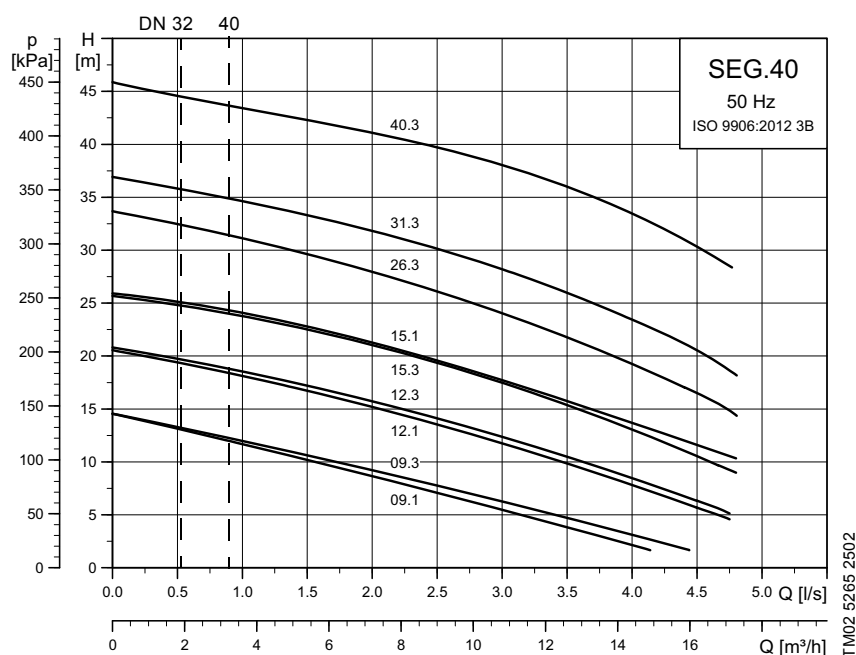
The overview below shows the maximum lengths of combined vertical and horizontal DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.



TM06 6591 1916

Fig. 23 Maximum pipe lengths

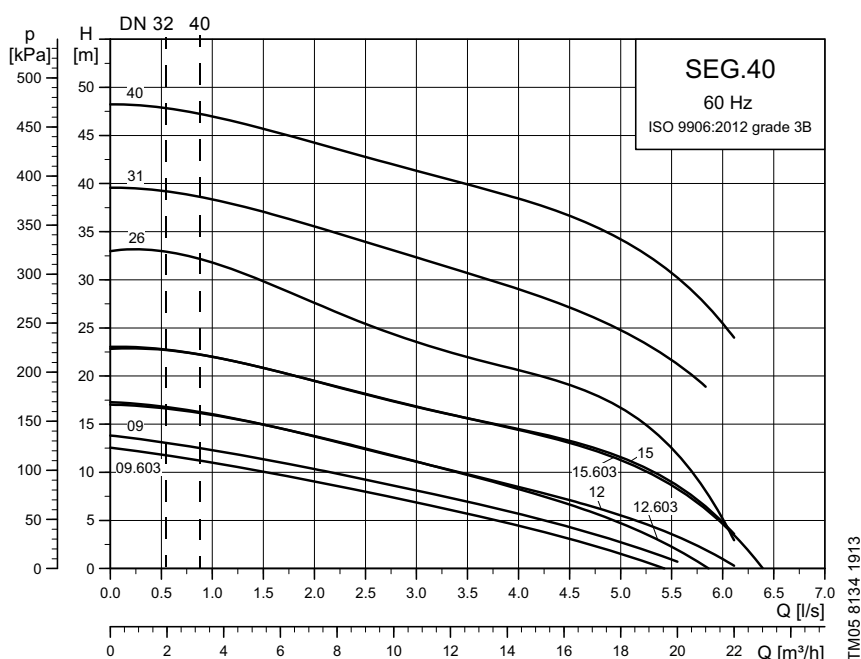
## Performance curves, 50 Hz



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

Designation	Curve number
SEG.40.09.2.1.502	09.1
SEG.40.09.2.50B/C	09.3
SEG.40.12.2.1.502	12.1
SEG.40.12.2.50B/C	12.3
SEG.40.15.2.1.502	15.1
SEG.40.15.2.50B/C	15.3
SEG.40.26.2.50B/C	26.3
SEG.40.31.2.50B/C	31.3
SEG.40.40.2.50B/C	40.3

## Performance curves, 60 Hz






The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

Designation	Curve number
SEG.40.09.(EX).2.1.603	09.603
SEG.40.09.(EX).2.60G/H/M	09
SEG.40.12.(EX).2.1.603	12.603
SEG.40.12.(EX).2.60G/H/M	12
SEG.40.15.(EX).2.1.603	15.603
SEG.40.15.(EX).2.60G/H/M	15
SEG.40.26.(EX).2.60G/H/M	26
SEG.40.31.(EX).2.60G/H/M	31
SEG.40.40.(EX).2.60G/H/M	40

## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Duolift 270 SEG with pumps operated by controller

Frequency [Hz]	Voltage [V]	SEG pump		270- litre tank	LC 221 advanced controller
					
50	1 x 230	SEG.40.09.2.1.502	96075893	97642372	-
		SEG.40.12.2.1.502	96075901		
	3 x 230-240	SEG.40.09.2.50C	96075919	97642372	99168373
		SEG.40.12.2.50C	96075920		
		SEG.40.15.2.50C	96075921		
		SEG.40.26.2.50C	96075922	97642372	99168374
		SEG.40.31.2.50C	96075923		
		SEG.40.40.2.50C	96075924		
	3 x 400-415	SEG.40.09.2.50B	96075897	97642372	98996795
		SEG.40.12.2.50B	96075905		
		SEG.40.15.2.50B	96075909		
		SEG.40.26.2.50B	96075913	97642372	98996796
		SEG.40.31.2.50B	96075915		
		SEG.40.40.2.50B	96075917		
60	1 x 230	SEG.40.09.2.1.603	98280831	97642372	-
		SEG.40.12.2.1.603	98280833		
		SEG.40.15.2.1.603	98280835		
	3 x 200-230	SEG.40.09.2.60M	98280729	97642372	99168373
		SEG.40.12.2.60M	98280748		
		SEG.40.15.2.60M	98280750		
		SEG.40.26.2.60M	98280803	97642372	99168374
		SEG.40.31.2.60M	98280805		
		SEG.40.40.2.60M	98280808		
	3 x 380	SEG.40.09.2.60G	98280814	97642372	98996795
		SEG.40.12.2.60G	98280816		
		SEG.40.15.2.60G	98280819		
		SEG.40.26.2.60G	98280821	97642372	98996796
		SEG.40.31.2.60G	98280823		
		SEG.40.40.2.60G	98280825		

## Duolift 540 APB

### Introduction

Duolift 540 APB is a 540-litre collecting tank for two Grundfos Unilift APB pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-2 with Unilift AP35B or EN 12050-1 with Unilift AP50B.



TM06 6420 1416

### Features and benefits

- Large tank volume, ensuring reliable operation, for example in case of power cut off.
- Four inlets  $\varnothing 100$  at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.
- Reduced service time thanks to a pump design enabling easy access to hydraulic parts.
- Stainless-steel design for high resistance.
- Mechanical shaft seal for long life.
- Cable connection via plug for easy maintenance and replacement.

### Applications

Duolift 270 APB is designed for pumping grey wastewater. With a Unilift AB50B pump, it can also be used for pumping black wastewater in countries allowing outlet pipes of DN 50 without a grinder pump. Duolift 270 APB is typically used for pumping greater discharge volumes from the following:

- Hotels or hospitals with commercial washing machines.
- Canteens and commercial kitchens, if the lifting station is placed behind a grease separator.
- Commercial or industrial appliances where it is not critical to have a backup pump.
- Basements of office buildings, hotels or restaurant, including toilets in countries where legislation allows it and only with Unilift AP50B.

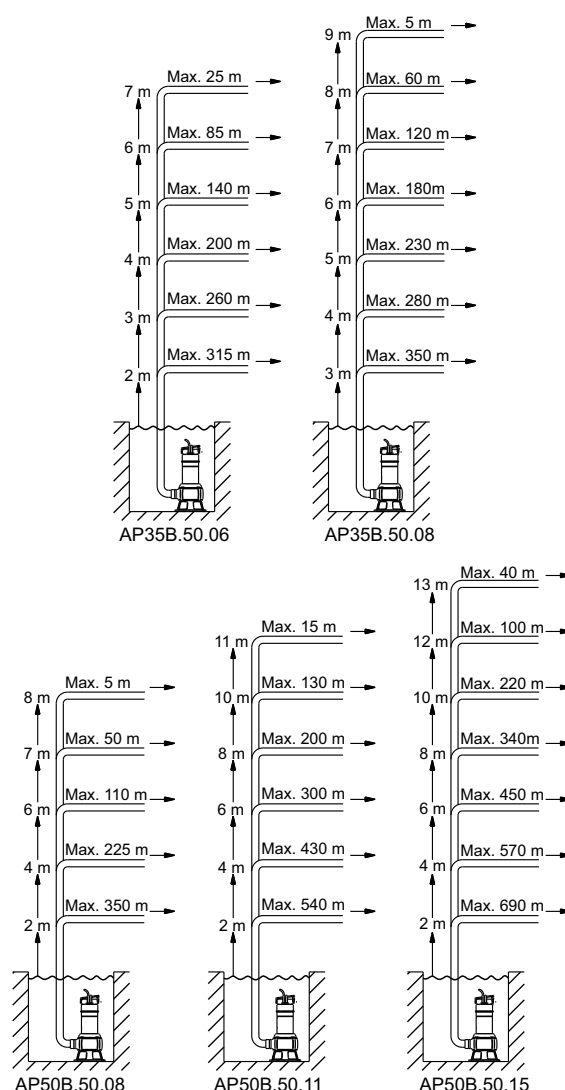
### Technical data

Free passage	AP35B: $\varnothing 35$ AP50B: $\varnothing 50$
Pump housing material	Stainless steel
Maximum number of starts per hour	40
Pumped liquid	Grey and black wastewater*
Operating conditions	Normal: 0–40 °C

\* Unilift AP50B may be used for black wastewater in countries allowing outlet pipes of DN 50 for black wastewater without using a grinder pump.

### Performance

The overview below shows the maximum lengths of combined vertical and horizontal DN 50 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.

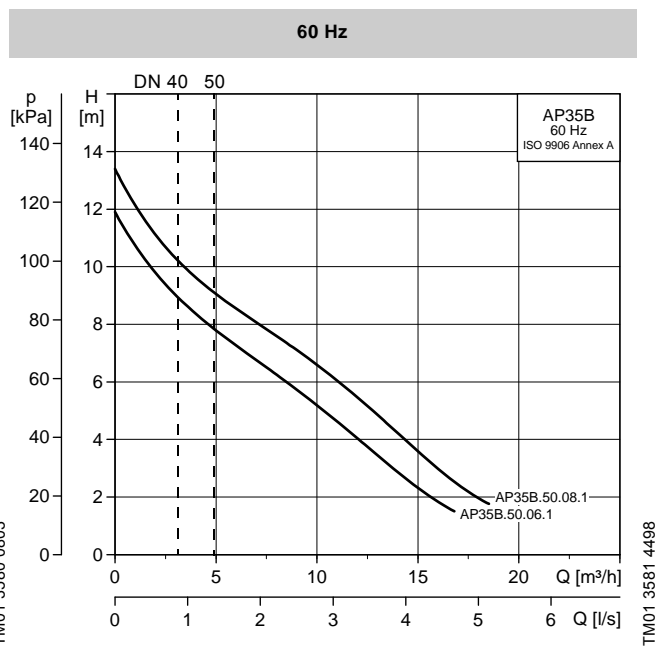
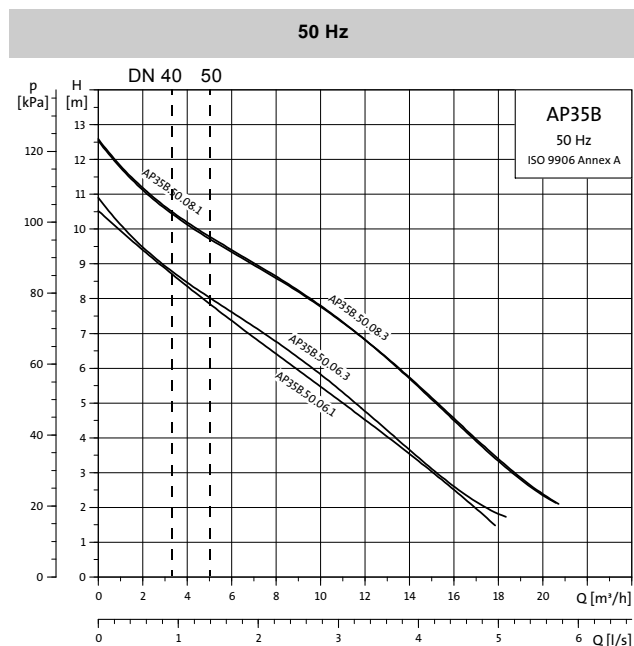


TM06 6589 1916

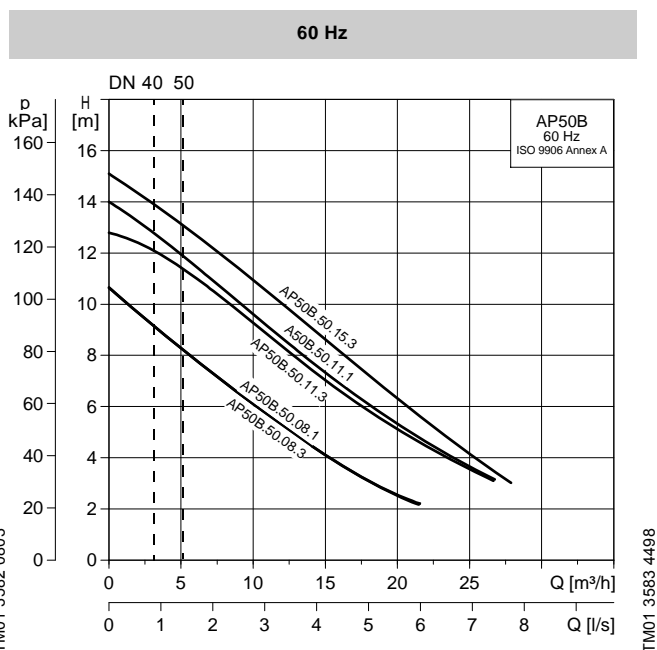
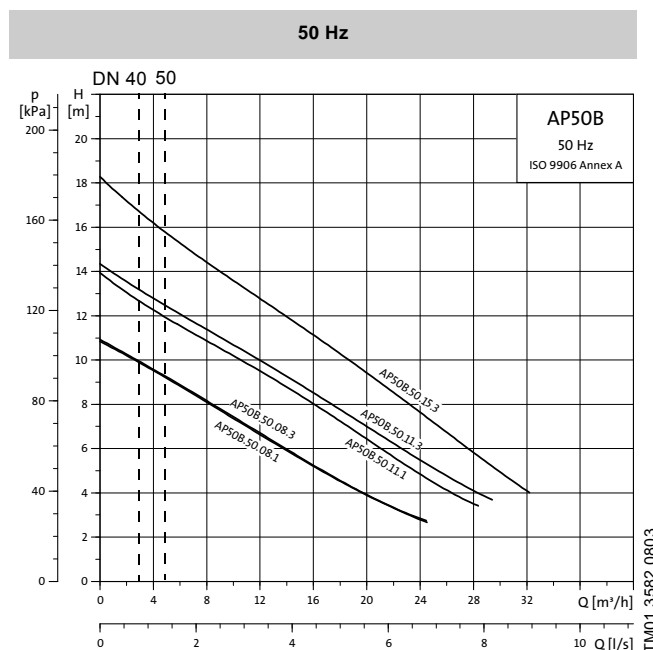
TM06 6590 1916

Fig. 24 Maximum pipe lengths

## Performance curves, AP35B



## Performance curves, AP50B






The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 40 and DN 50.

## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Duolift 540 APB with pumps operated by controller

		Unilift APB pump		540-litre tank		LC 221 advanced controller	
Frequency [Hz]	Voltage [V]		+		+		
50	1 x 230	AP35B.50.06	96004563	99017735		98996793	
		AP35B.50.08	96004575				
		AP50B.50.08	96004587				
		AP50B.50.11	96004599				
	3 x 400	AP35B.50.06	96468190	99017735		98996794	
		AP35B.50.08	96468193				
		AP50B.50.08	96468194				
		AP50B.50.11	96468195				
60	1 x 230	AP50B.50.15	96004609	99017735		98996793	
		AP35B.50.06	96004569				
		AP35B.50.08	96004581				
		AP50B.50.08	96004593				
	3 x 200-220	AP50B.50.11	96004605	99017735		99168362	
		AP35B.50.06	96004571				
		AP35B.50.08	96004583				
		AP50B.50.08	96004595				
		AP50B.50.11	96004607				
		AP50B.50.15	96468196				

## Duolift 540 SEG

### Introduction

Duolift 540 SEG is a 540-litre collecting tank for two Grundfos SEG pumps. It is delivered with all the necessary inner pipe connections.

Together with our controller, which includes a piezoresistive pressure sensor, and our outlet pipes available as accessory, the complete installation is according to EN 12050-1.



TM06 6350 1216

### Features and benefits

- Three inlets Ø100 at different heights and sides of the tank.
- Quick and easy installation thanks to the connecting pipes.
- Thermal protection.
- Low vibration and sound levels thanks to the inlet seals and the flexible connection between the pump and tank outlet.

### Performance

The overview below shows the maximum lengths of combined vertical and horizontal DN 40 outlet pipes. The overview is only intended as a guide. Measure the vertical height of the outlet pipe from the pump stop level.

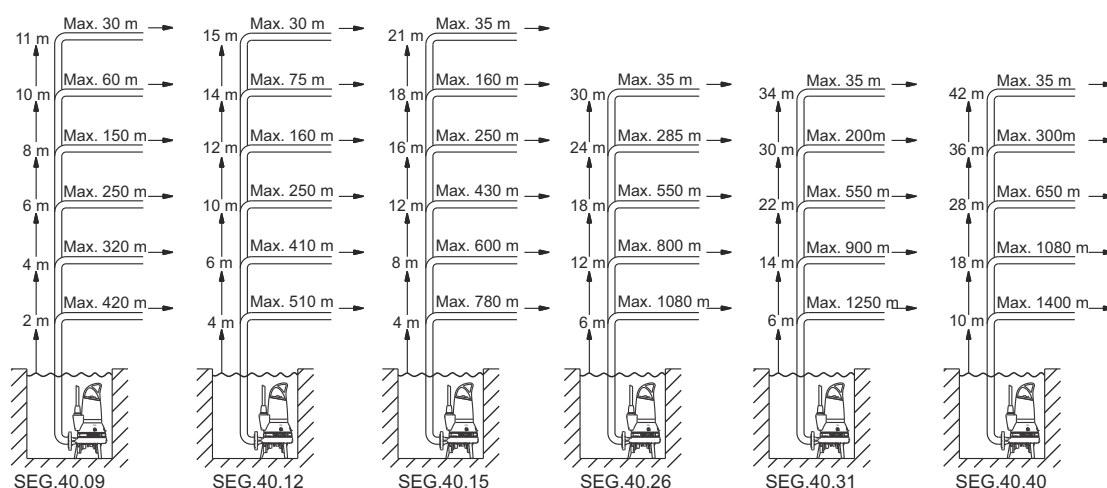
- SmartTrim system enabling quick and easy impeller clearance adjustment in order to maintain peak performance.
- Patented grinder system ensuring extremely high efficiency and reliable operation.
- Heavy-duty bearings greased for life.
- Clamps connection between motor and pump for quick check and service.
- Thermal protection.
- Cartridge mechanical shaft seal for long life and safe service.
- Cable connection via plug for easy maintenance and replacement

### Applications

Duolift 540 SEG is typically used for pumping black wastewater from commercial buildings like restaurants, schools and shopping centres.

### Technical data

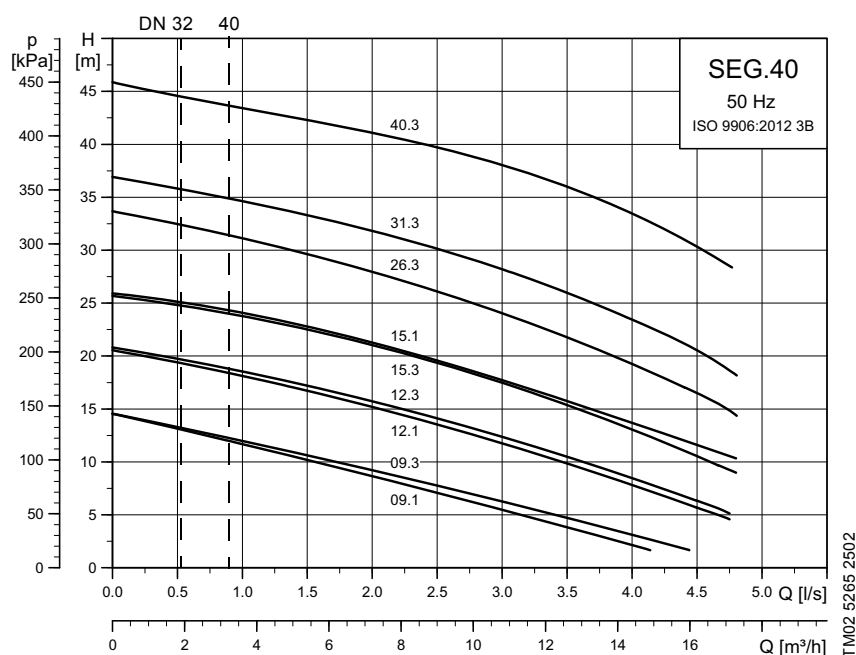
Pump housing material	Stainless steel
Maximum number of starts per hour	60
Pumped liquid	Grey and black wastewater
Operating conditions	Normal: 0-40 °C Maximum 60 °C for 3 minutes every 30 minutes



TM06 6591 1916

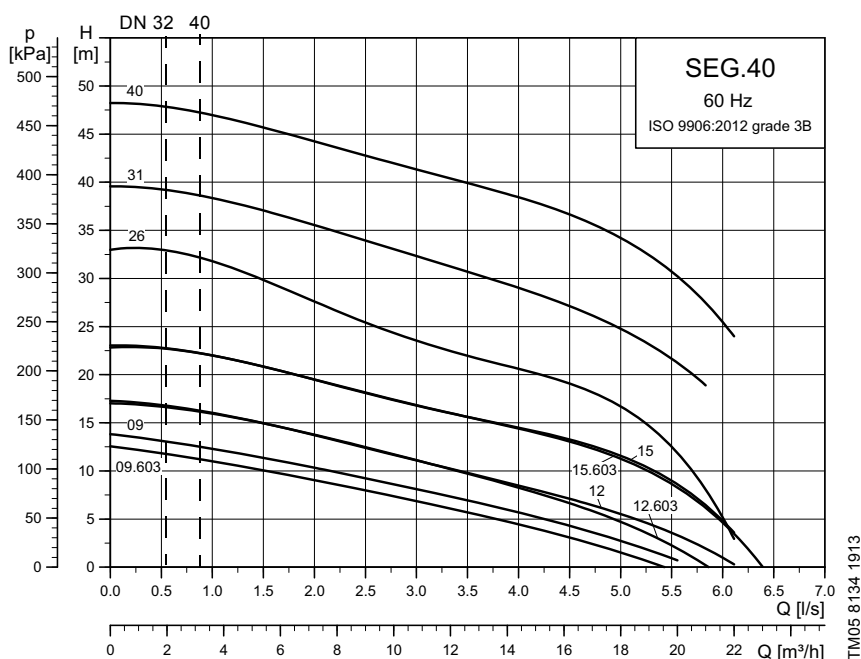
Fig. 25 Maximum pipe lengths

## Performance curves, 50 Hz



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

## Performance curves, 60 Hz



The broken lines represent the minimum self-cleaning velocity of 0.7 m/s with outlet pipes of DN 32 and DN 40.

Designation	Curve number
SEG.40.09.2.1.502	09.1
SEG.40.09.2.50B/C	09.3
SEG.40.12.2.1.502	12.1
SEG.40.12.2.50B/C	12.3
SEG.40.15.2.1.502	15.1
SEG.40.15.2.50B/C	15.3
SEG.40.26.2.50B/C	26.3
SEG.40.31.2.50B/C	31.3
SEG.40.40.2.50B/C	40.3


Designation	Curve number
SEG.40.09.(EX).2.1.603	09.603
SEG.40.09.(EX).2.60G/H/M	09
SEG.40.12.(EX).2.1.603	12.603
SEG.40.12.(EX).2.60G/H/M	12
SEG.40.15.(EX).2.1.603	15.603
SEG.40.15.(EX).2.60G/H/M	15
SEG.40.26.(EX).2.60G/H/M	26
SEG.40.31.(EX).2.60G/H/M	31
SEG.40.40.(EX).2.60G/H/M	40



## Product numbers

Use the product numbers below to order your product.  
The tank package contains all the necessary inner pipe connections. The controller package contains the pressure tube to be fitted in the tank.

### Duolift 540 SEG with pumps operated by controller

Frequency [Hz]	Voltage [V]	SEG pump		+	540-litre tank	+	LC 221 advanced controller
							
50	1 x 230	SEG.40.09.2.1.502	96075893		99017729		-
		SEG.40.12.2.1.502	96075901				
	3 x 230-240	SEG.40.09.2.50C	96075919		99017729		99168373
		SEG.40.12.2.50C	96075920				
		SEG.40.15.2.50C	96075921				
		SEG.40.26.2.50C	96075922		99017729		99168374
		SEG.40.31.2.50C	96075923				
		SEG.40.40.2.50C	96075924				
	3 x 400-415	SEG.40.09.2.50B	96075897		99017729		98996795
		SEG.40.12.2.50B	96075905				
		SEG.40.15.2.50B	96075909				
		SEG.40.26.2.50B	96075913		99017729		98996796
		SEG.40.31.2.50B	96075915				
		SEG.40.40.2.50B	96075917				
60	1 x 230	SEG.40.09.2.1.603	98280831		99017729		-
		SEG.40.12.2.1.603	98280833				
		SEG.40.15.2.1.603	98280835				
	3 x 200-230	SEG.40.09.2.60M	98280729		99017729		99168373
		SEG.40.12.2.60M	98280748				
		SEG.40.15.2.60M	98280750				
		SEG.40.26.2.60M	98280803		99017729		99168374
		SEG.40.31.2.60M	98280805				
		SEG.40.40.2.60M	98280808				
	3 x 380	SEG.40.09.2.60G	98280814		99017729		98996795
		SEG.40.12.2.60G	98280816				
		SEG.40.15.2.60G	98280819				
		SEG.40.26.2.60G	98280821		99017729		98996796
		SEG.40.31.2.60G	98280823				
		SEG.40.40.2.60G	98280825				

## 6. Controllers

### LC 220, basic single-pump controller

The controller switches the pump on and off according to the liquid level measured by the piezoresistive pressure sensor. The piezoresistive sensor in the cabinet is connected to the level sensor tube in the tank via the level sensor hose.



TM05 1276 2511

Fig. 26 LC 220

The LC 220 controller has one alarm signal output for common alarm and one additional signal input to connect for instance a level switch for flood detection outside the lifting station. Lifting stations are often installed in a sump in the basement - the lowest point in the building. In case of for instance groundwater inflow or water pipe burst, an alarm is indicated by the controller if a level switch is connected to the additional signal input. Furthermore, the controller incorporates a buzzer to make the alarm indication audible.

The settings, including start level, can be set via the DIP switches in the cabinet.

The alarm and stop levels corresponding to each start level are preset during production. They can be changed via PC Tool.

#### Features and benefits

- On/off control of one pump based on a continuous signal from a piezoresistive sensor
- Automatic test runs for two seconds 24 hours after last operation
- Selection of automatic alarm resetting
- Selection between two start levels
- Operating indication:
  - power on
  - pump running
  - reminder of service/maintenance.
- Alarm indication:
  - high-level alarm
  - phase-sequence fault (for three-phase pumps)
  - level-measurement failure
  - external level alarm.

An optional battery can be installed in the controller in order to activate the buzzer in case of power supply failure.

#### Technical data

Dimensions	250 x 195 x 110 mm
Material	ABS (acrylonitrile butadienestyrene)
Enclosure class	IP55

## LC 221, advanced single- and two-pumps controller

The controller switches the pump on and off according to the liquid level measured by the piezoresistive pressure sensor. The piezoresistive sensor in the cabinet is connected via a hose to the level sensor tube in the tank.

LC 221 comes in two versions, one for single-pump lifting stations and one for two-pump stations.

For two-pump lifting stations, starts alternate between the two pumps. In case of pump failure in one pump, the other pump takes over.



TM05 1859 3811

Fig. 27 LC 221

### Features and benefits

- On/off control of one or two pumps based on a continuous signal from a piezoresistive sensor.
- Alternating operation between two pumps and automatic changeover in case of pump failure.
- Motor-protective circuit breaker and/or current measurement as well as connection of thermal switches.
- Motor protection via operating-time limitation with subsequent emergency operation.
- Automatic test runs for two seconds 24 hours after last operation.
- Start delay up to 45 seconds after returning from power cut-off to mains operation in order to even out the mains load when several appliances are started at the same time.

- Setting of delay:
  - Stop delay, that is the time from when the stop level is reached until the pump is stopped; reduces water hammer if the pipes are long.
  - Start delay, that is the time from the start level is reached till the pump is started.
  - Alarm delay, that is the time from a fault appears until an alarm is indicated. This prevents short-time high-level alarm in case of temporary high inflow to the tank.
- Automatic current measurement for alarm indications, for instance dry running and blockage.
- Setting of current values:
  - overcurrent (preset)
  - rated current (preset)
  - dry-running current (preset).
- Operating indication:
  - operating mode (auto, manual)
  - operating hours
  - number of starts
  - highest measured motor current.
- Alarm indication:
  - pump status (running, fault)
  - phase-sequence failure and missing phase
  - thermal-switch failure
  - high-water alarm
  - service or maintenance.
- Selection of automatic alarm resetting.
- Fault log of up to 20 alarms.
- Selection of start levels.
- Selection of maintenance interval (0, 3, 6 or 12 months).

LC 221 has six potential-free NO/NC contacts:

- pump running (pump 1, pump 2)
- pump failure (pump 1, pump 2)
- high-level alarm
- common fault.

Digital inputs:

- additional float switch in the tank
- external level switch to be used for flood detection outside the lifting station.
- connecting an external alarm reset
- connecting the thermal switch of the motor.

The controller can be fitted with an optional battery to activate the buzzer in case of power supply failure.

In case of sectional power failure, the common alarm output which is a potential-free changeover contact can be used to forward the alarm signal to a control room by means of an external power source.

### Technical data

Dimensions	390 x 262 x 142 mm
Material	Steel sheet
Enclosure class	IP55

## LC A1 alarm device



TM05 1392 2611

**Fig. 28** LC A1 alarm device

The alarm device is to be connected to an additional level switch in Unolift tank. The level switch is available as an accessory. In case of high level, the switch activates the alarm device, which sounds an alarm.

The device consists of a plug housing with integrated socket. The socket can be used as a power supply for the pump in the tank or other appliances. The device then works as an ON/OFF switch according to the liquid level. For example, a washing machine connected to Unolift and LC A1 can be stopped if the liquid level in the tank is too high.

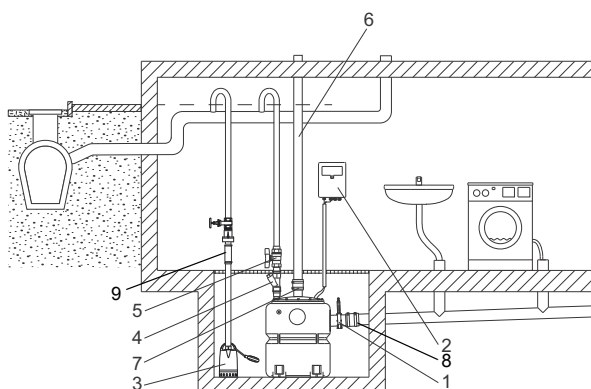
The unit is mains-powered by means of a short-circuit-proof safety isolating transformer. The voltage for the control relay (normally open contact) is below 24 V.

LC A1 has a potential-free signal output.





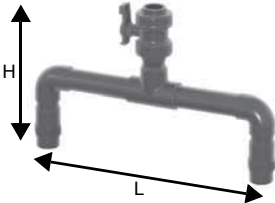
### Technical data

Power supply	230 V, 50 Hz
Dimensions	140 x 60 x 90 mm
Acoustic alarm	Piezoelectric buzzer with a tone sequence signal of 97 dB/1 m
Material	Flame-retardant polystyrene according to UL 94 V-0 or 94 V-2




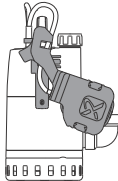
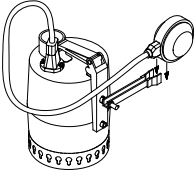
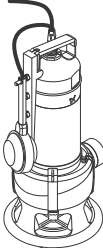
## 7. Accessories



TM06 6455 1416

Pos.	Illustration	Description	Technical data	Product number
1		Isolating valve with connection pieces	DN 100 Installation length: 130 mm Height: 375 mm Material: PVC Connection pieces: Ø110	96615831
Not shown	N/A	Isolating valve	DN 32 Rp 1 1/4 Length: 76 mm Material: brass	00ID0918
5		Isolating valve for Unolift and Duolift CC, KP and SEG outlet	Rp 1 1/2 Height: 156 mm Material: PVC	96023846
		Isolating valve for Unolift and Duolift APB	Rp 2 Height: 186 mm Material: PVC	96023847
4		Non-return ball valve EN 12050-4	Rp 1 1/2 Height: 154 mm Material: PVC	96023843
			Rp 2 Height: 179 mm Material: PVC	96023844
Not shown	N/A	Non-return flap valve	Rp 1 1/4 Height: 90 mm Length: 90 mm Material: composite	96005308
4, 5		Outlet pipe for Unolift 270 SEG. Includes an isolating valve and a non-return valve. Delivered disassembled.	Connection: Rp 1 1/2 Height: 350 mm Material: PVC	98997216
		Outlet pipe for Unolift 270 APB. Includes an isolating valve and a non-return valve. Delivered disassembled.	Connection: Rp 2 Height: 400 mm Material: PVC	98997239
Not shown		Breeches pipe for Duolift 270 CC/KP. Includes an isolating valve. Delivered disassembled.	Connection: Rp 1 1/2 Height: 400 mm Length: 500 mm Material: PVC	99045618

Pos.	Illustration	Description	Technical data	Product number
Not shown		Breeches pipe for Duolift 270 APB. Includes an isolating valve and two non-return valves. Delivered disassembled.	Connection: Rp 2 Height: 650 mm Length: 500 mm Material: PVC	98997262
		Breeches pipe for Duolift 270 SEG. Includes an isolating valve and two non-return valves. Delivered disassembled.	Connection: Rp 1 1/2 Height: 550 mm Length: 500 mm Material: PVC	98997240
		Breeches pipe for Duolift 540 APB. Includes an isolating valve and two non-return valves. Delivered disassembled.	Connection: Rp 2 Height: 650 mm Length: 680 mm Material: PVC	98997262
		Breeches pipe for Duolift 540 SEG. Includes an isolating valve and two non-return valves. Delivered disassembled.	Connection: Rp 1 1/2 Height: 550 mm Length: 680 mm Material: PVC	98997240
9		Flexible connection for drainage pump	DN 32 Length: 150 mm Internal diameter: 42 mm	91071645
Not shown		Flexible connection for diaphragm pump	DN 40 Length: 150 mm Internal diameter: 48 mm	91071646
7		Flexible connection for vent pipe	DN 75 Length: 150 mm Internal diameter: 75 mm	96075423
8		Flexible connection for isolating valve	DN100 Length: 150 mm Internal diameter: 110 mm	96075422
Not shown		Socket seals for inlets	DN 100 Internal diameter: 110 mm	97726942
Not shown		Manually operated diaphragm pump	Installation length: 423 mm Width: 215 mm Connection: Rp 1 1/2"	96003721
3		Drainage pump	Download Grundfos drainage pump data booklet <a href="http://net.grundfos.com/qr/i/96604141">http://net.grundfos.com/qr/i/96604141</a>	
Not shown		Backup battery for alarm in case of mains failure. The battery is not included. Replace the battery once a year	Use an ordinary 9.6 V battery	98079684
Not shown		Signal lamp for wall mounting	1 x 230 V, 50 Hz	91077209
Not shown		Signal horn	Indoors, 1 x 230 V, 50 Hz	62500021
			Outdoors, 1 x 230 V, 50 Hz	62500022
Not shown		LC A1 alarm device for Unolift. Connect a pump and an additional float switch to the device to obtain a high-level alarm.	Schuko plug Backup battery 9 V, not included	91071287
Not shown		External main switch for supply cable	Up to 25 A	96002511
Not shown	N/A	Vent valve with filter for applications where venting over the rooftop is not possible.	DN 70, 80, 100	98059596

Pos.	Illustration	Description	Technical data	Product number
Not shown		Filter kit for vent valve	DN 70, 80, 100	98059594
Not shown		Wall installation box for vent valve	204 x 204 x 130 mm	98059598
Not shown		PC Tool link USB		96705378
Not shown		Guide arm for float switch on a Unilift CC		98709179
Not shown		Lever arm for float switch on a Unilift KP		96007161
Not shown		Lever arm for float switch on a Unilift APB		96003993

## 8. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

<http://product-selection.grundfos.com>



"SIZING" enables you to size a pump based on entered data and selection choices.

"REPLACEMENT" enables you to find a replacement product. Search results will include information on the following:

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.

The screenshot shows the Grundfos Product Center website. At the top, there's a navigation bar with the Grundfos logo and 'PRODUCT CENTER'. Below it, a menu bar includes 'HOME', 'FIND PRODUCT', 'COMPARE', 'YOUR PROJECTS', 'SAVED ITEMS', and 'HELP'. The main section is titled 'FIND PRODUCTS AND SOLUTIONS' and features a search bar with a 'SEARCH' button. Below the search bar are four main categories: 'SIZING' (with a subtext 'Enter pump sizing'), 'CATALOGUE' (with a subtext 'Products and services'), 'REPLACEMENT' (with a subtext 'Replace an old pump with a new'), and 'LIQUIDS' (with a subtext 'Find pump by liquid'). The 'SIZING' section is expanded, showing a 'QUICK SIZING' form. This form has two input fields for 'Enter duty point': 'Flow (Q)\*' with units 'm³/h' and 'Head (H)\*' with units 'm'. To the right, there's a 'Select what to size by' section with three radio button options: 'Size by application', 'Size by pump design', and 'Size by pump family'. A 'START SIZING' button is located to the right of these options. At the bottom of the 'QUICK SIZING' section, there's an 'ADVANCED SIZING' section with two toggle switches: 'Advanced sizing by application' and 'Guided selection'. Annotations with lines point from the text blocks to specific parts of the interface: from the 'SIZING' text to the 'SIZING' category button, from the 'REPLACEMENT' text to the 'REPLACEMENT' category button, from the 'CATALOGUE' text to the 'CATALOGUE' category button, and from the 'LIQUIDS' text to the 'LIQUIDS' category button.

www.grundfos.com

GRUNDFOS | PRODUCT CENTER

Product range: United Kingdom | 50 Hz | Language: English  
Change settings

HOME FIND PRODUCT COMPARE YOUR PROJECTS SAVED ITEMS HELP 1.4.23

**FIND PRODUCTS AND SOLUTIONS**

Input product number or a whole or partial product name

**SIZING**  
Enter pump sizing

**CATALOGUE**  
Products and services

**REPLACEMENT**  
Replace an old pump with a new

**LIQUIDS**  
Find pump by liquid

**QUICK SIZING**

Enter duty point:

Flow (Q)\*  m³/h

Head (H)\*  m

Select what to size by:

☐ Size by application

☐ Size by pump design

☐ Size by pump family

**START SIZING**

ADVANCED SIZING: ☐ Advanced sizing by application ☐ Guided selection

"CATALOGUE" gives you access to the Grundfos product catalogue.

"LIQUIDS" enables you to find pumps designed for aggressive, flammable or other special liquids.

### All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

### Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc. in PDF format.

Subject to alterations.





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