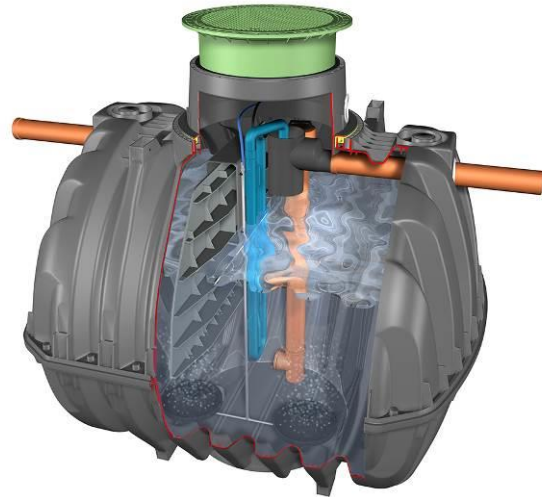


Installation instruction for Graf Eclean wastewater treatment system

EClean20 – version two
EClean20 – version three

Home sewage systems



The points described in these instructions must be observed under all circumstances. All warranty rights are invalid in the event of non-observance. Separate installation instructions and manuals are enclosed in the control cabinet.

Missing instructions must be requested from us immediately. The tank must be checked for any damage prior to installation under all circumstances.

Missing instructions can be downloaded on www.graf.info or can be requested from GRAF AU.

Separate instructions for start-up, operation and maintenance of the system supplied in control cabinet.

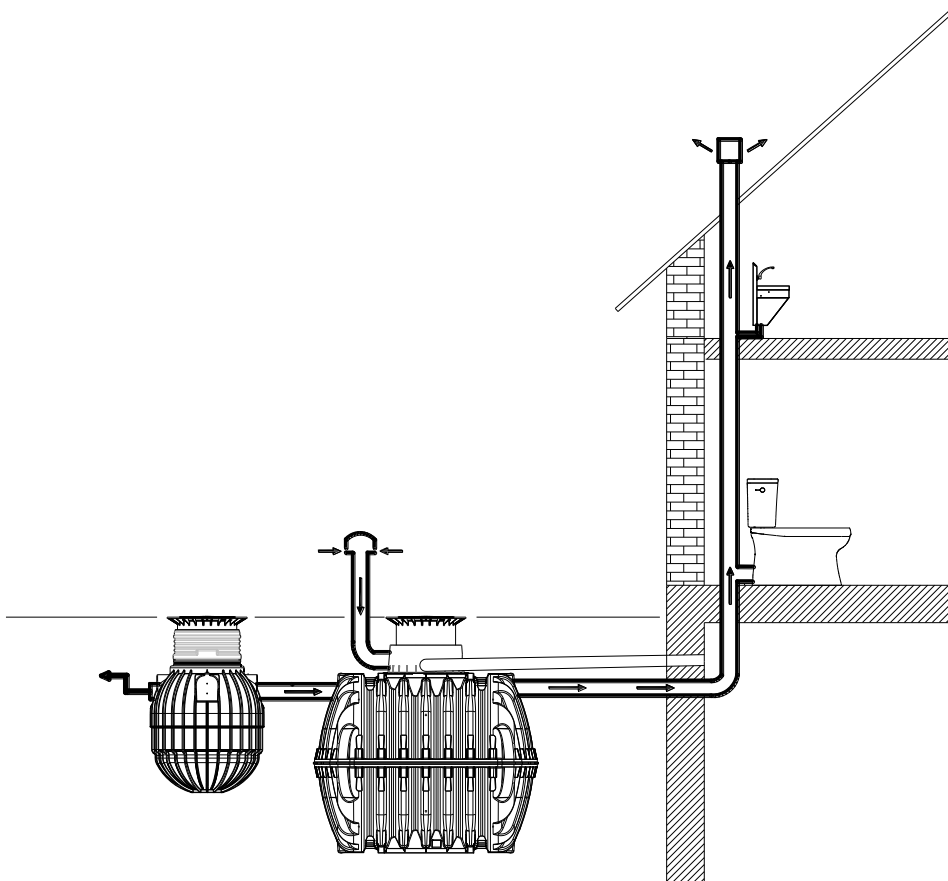
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1. General

1. General

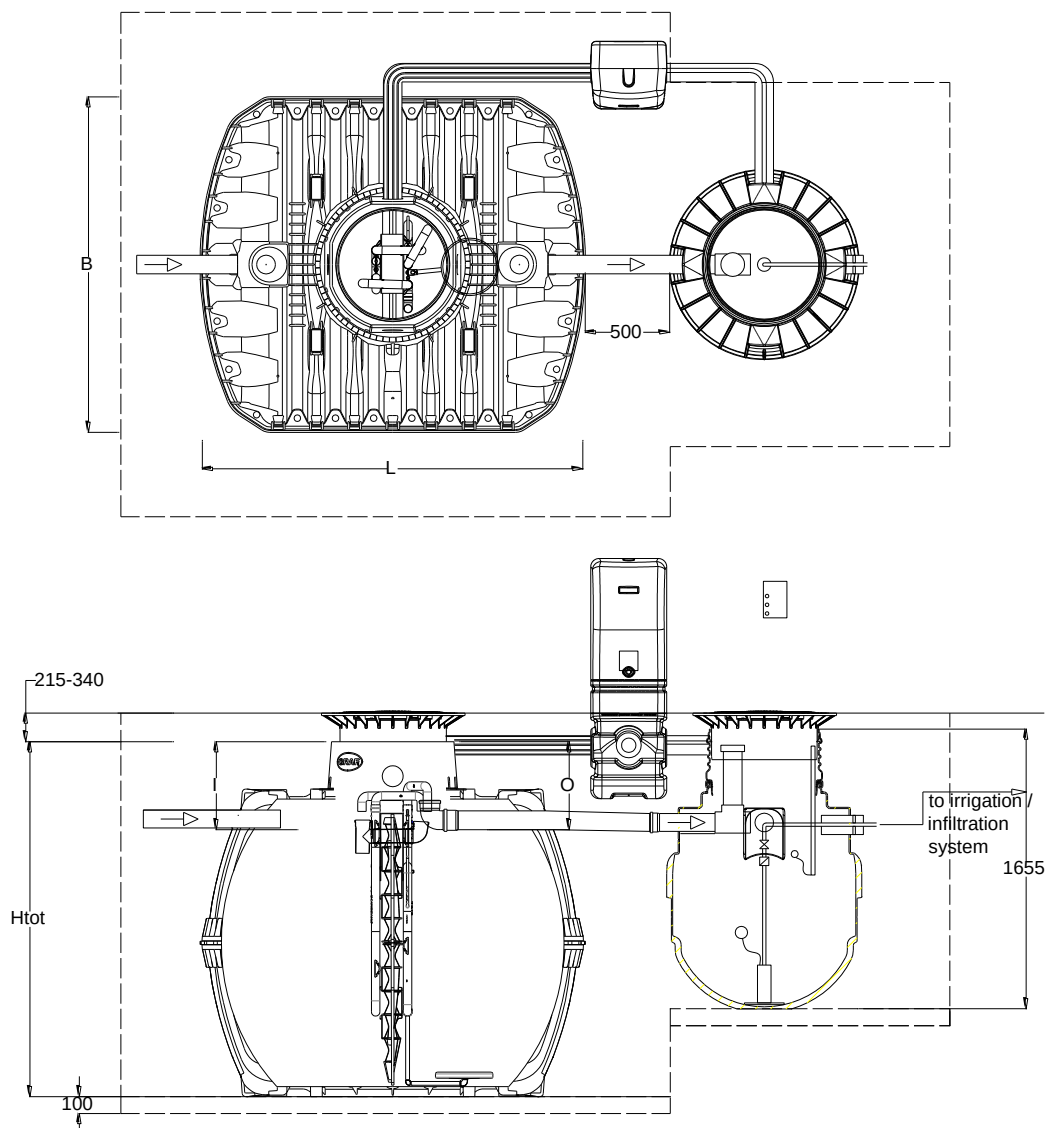
- The installation of the tank must follow the directions in the enclosed installation instructions. These instructions also contain further information on the installation conditions for the tanks and how to connect up the inlet and outlet lines.
- During the operation of a wastewater treatment system some odor can arise. The location of the wastewater treatment system should be situated away from living areas (patio, windows on buildings, etc.).
- The treatment system needs ventilation so that air blown into the tank by the compressor, can escape together with gases without causing any problems. The ventilation lines must be arranged such as to allow natural ventilation (flue effect). The vent outlet height should be as high as possible (more than 3 m recommended). Additional ventilation lines or ventilation openings must be fitted if necessary.



Ventilation with seepage or an obstructed drain

2. Dimensions

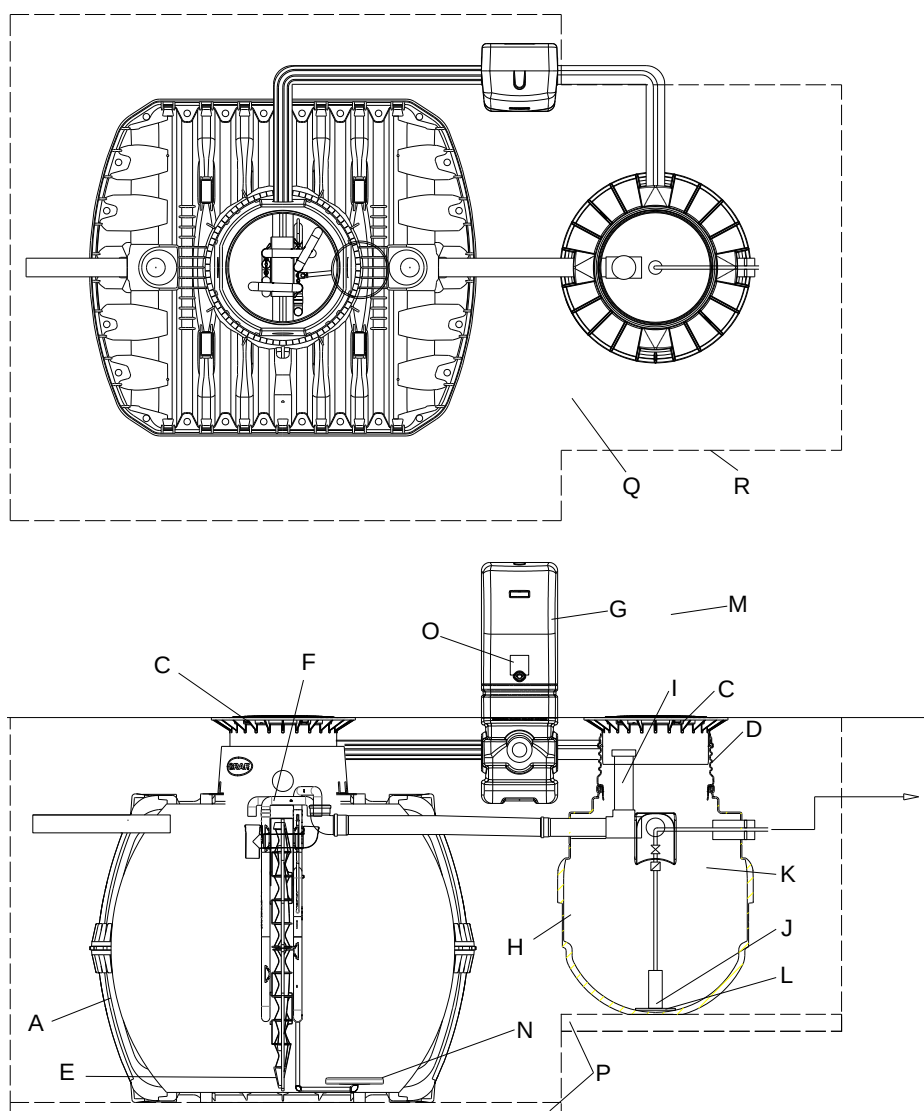
2. Dimensions



		Eclean20
Tank		6500 L
PE		10
Max. hydraulic load		1500 L/d
Length	L	2390 mm
Width	B	2190 mm
Height	H _{tot}	
Inlet	I	
Outlet	A	595 mm

3. System design

3. System design



A	Carat tank	J	Irrigation pump
B	Tank dome mini	K	High-level alarm float
C	Tele lid mini	L	Pump platform
D	Riser extension	M	Internal alarm plate
E	Baffle	N	Air diffuser
F	Air lift / aeration	O	Cabinet ventilation fan
G	Outdoor cabinet poly	P	100 mm compacted base material
H	Pump well 900 l	Q	Approved backfill
I	Chlorine tablet feeder	R	Excavation

3. System design

Eclean20 systems are available in 3 different versions:

Eclean 20 One (separate Installation Manual)

With chlorination and effluent pump in additional Sapphire 900 L tank.

Eclean 20 Two

With effluent pump in additional Sapphire 900 L tank.

Eclean 20 Three

W/o additional tank. Outflow free slope.

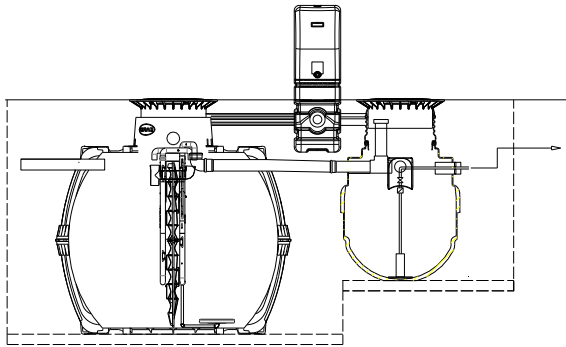


Figure 1: Eclean20 One

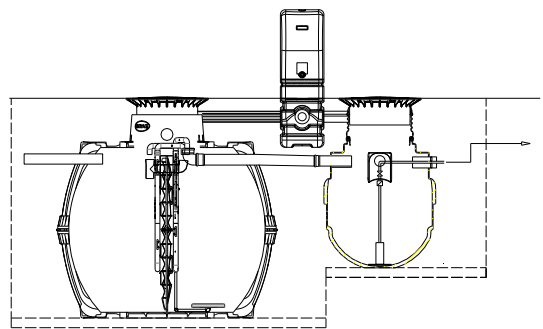


Figure 2: Eclean20 Two

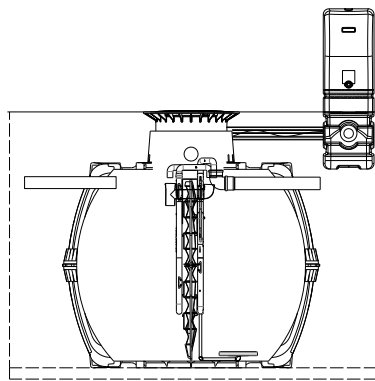


Figure 3: Eclean20 Three

4. Assembly of tank components

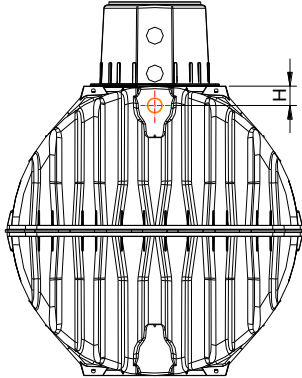
4. Assembly of tank components

Carat RS tank has to be installed according to instruction manual.

4.1 Holes for In- / Outflow

Holes for DN 100 inlet and drain pipes are to be drilled in all tanks and fitted with GRAF DN 100 edge seals. A core drill ($\varnothing$ 124 mm) is required for drilling.

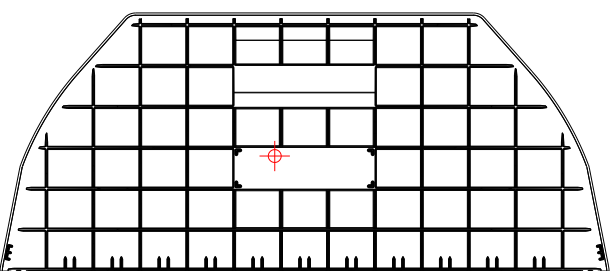
The height of the hole on the end faces of the tank can be found in the table below.



Tank	6500 L
Height	250 mm

5. Installation set-up kit

5. Installation set-up kit

1.	 Drill a hole using a 10 mm drill inside the baffle	2.	 The cross marks the point where the hole has to be drilled.
3.	 Fix the screw for the pipe clamp on the baffle.	4.	 Fix the pipe clamp at the baffle
5.	 Insert dividing wall in upper shell, one groove off from the center.	6.	 Once the baffle has been positioned, drill the inner rib directly above the wall using an 8 mm. drill.

5. Installation set-up kit

7.



Mount the fixing plate with the 1st screw. Drill a hole through the baffle by using the hole from the fixing plate as a drilling template. Use the same 8 mm drill.

8.



Mount the fixing plate with the 2nd screw.

Repeat this procedure on the opposite side

9.



Continue assembling the Carat RS tank as described in the installation instructions (seal, centring pins, lubricant)

10.



Place lower shell on upper shell with dividing wall.

11.



Fit clips to connect upper and lower shells.

12.



Turn tank with fitted dividing wall.

5. Installation set-up kit

13.



Drill inlet and outlet with DN 100 core drill (diameter 124 mm).

14.



Deburr hole. Insert DN 100 edge seal. The pipe must run from the inside out.
Affix "Outlet" sticker.

15.



Slide drain pipe through outlet hole from inside.

16.



For fixing drain pipe, DN 100 pipe clamp, threaded stud and two nuts are required.

17.



For fastening the threaded rod, drill with a 9 mm drill through the tank.

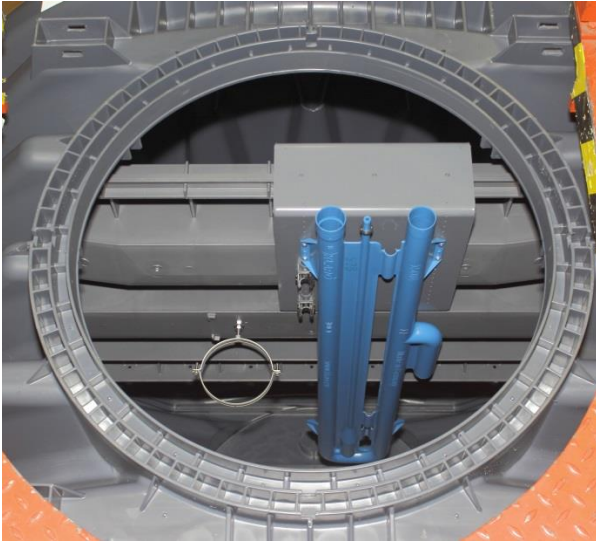
18.



The pipe is fixed by threaded bolt and pipe clamp.

5. Installation set-up kit

19.



Set-up kit has to be set on the baffle.

20.



Wrap the thread with PTFE tape and screw piping together as shown.

21.



Wrap the thread with PTFE tape and screw aerator plates together on piping as shown.

22.



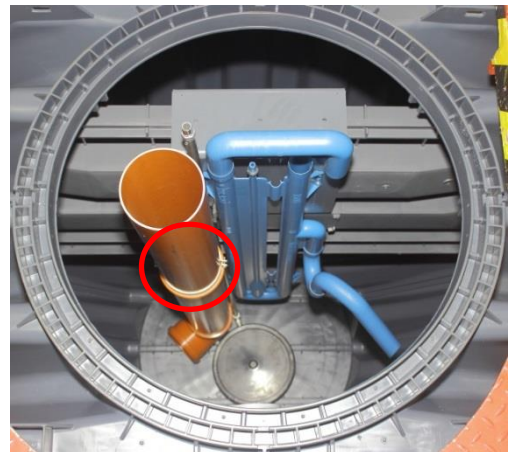
The aeration unit has to be clicked on the set-up kit holder.

23.



Put the pipes together for the sludge extraction. Fix them with screws

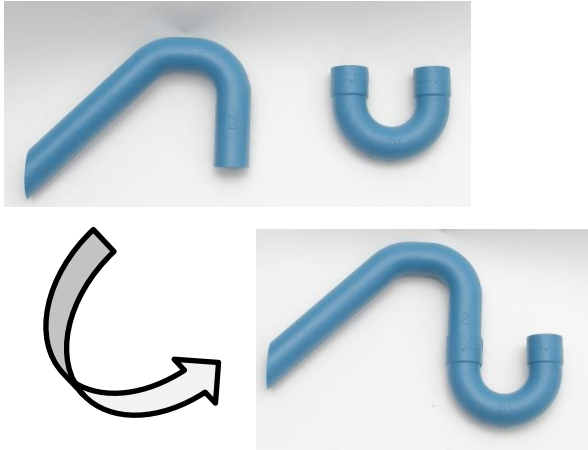
24.



Fix the tube for the sludge extraction at the pipe clamp.

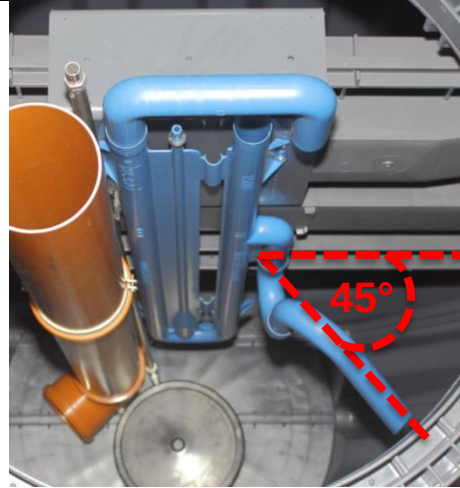
5. Installation set-up kit

25.



Put the tubes for the suction side together.

26.



Important: The tube at the suction side on lifter has to be in an angle of 45° with the baffle

27.



The U-bend is placed on the clear water lifter. The outflow of the U-bend must lead into the drain pipe.

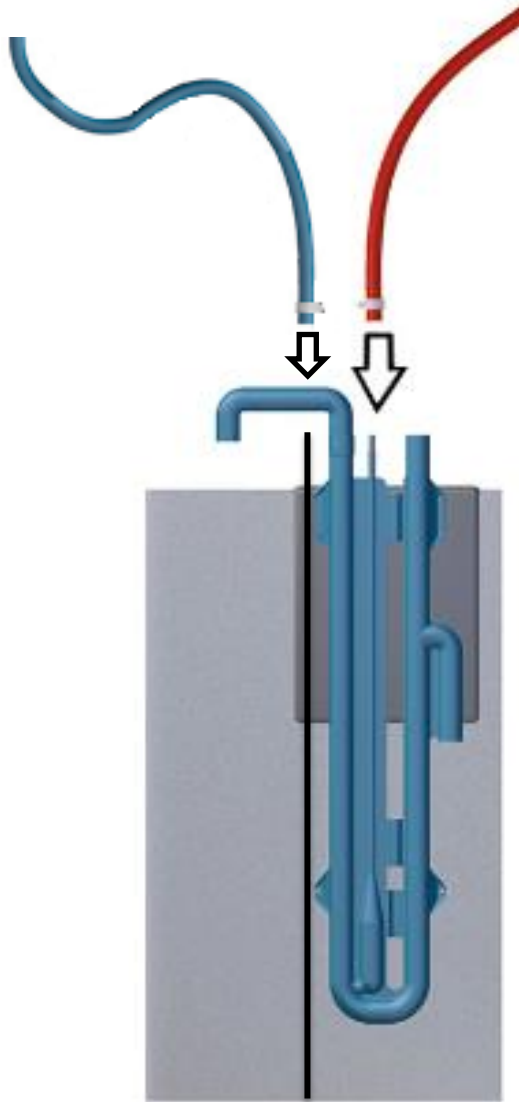
28.



All loose pipe connections must be fixed with drilling screws.

5. Installation set-up kit

5.1 Air hose connection

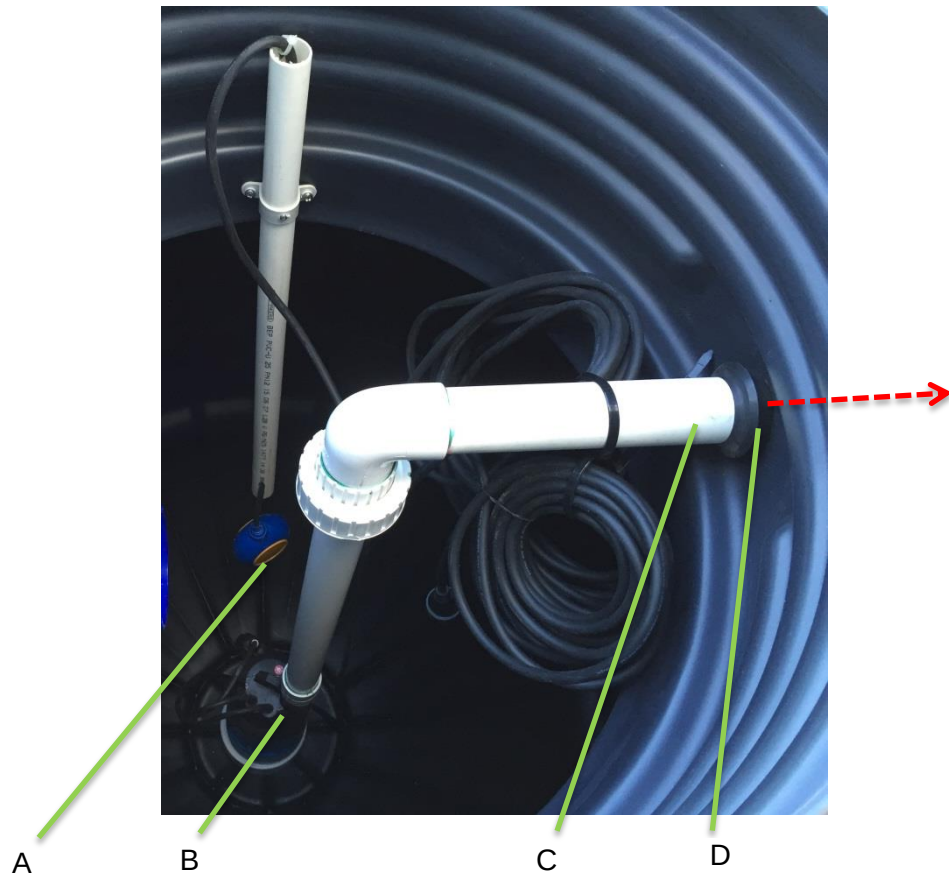


Air hoses have to be drawn through the empty pipe. Colored hoses have to be connected and fixed with hose clamps according to color-coded grommets on the set-up kit.

The blue hose Ø19 mm must be connected to the stainless steel downpipe. There is no color marking.

5. Installation set-up kit

5.2 Components of Sapphire as pump-out tank

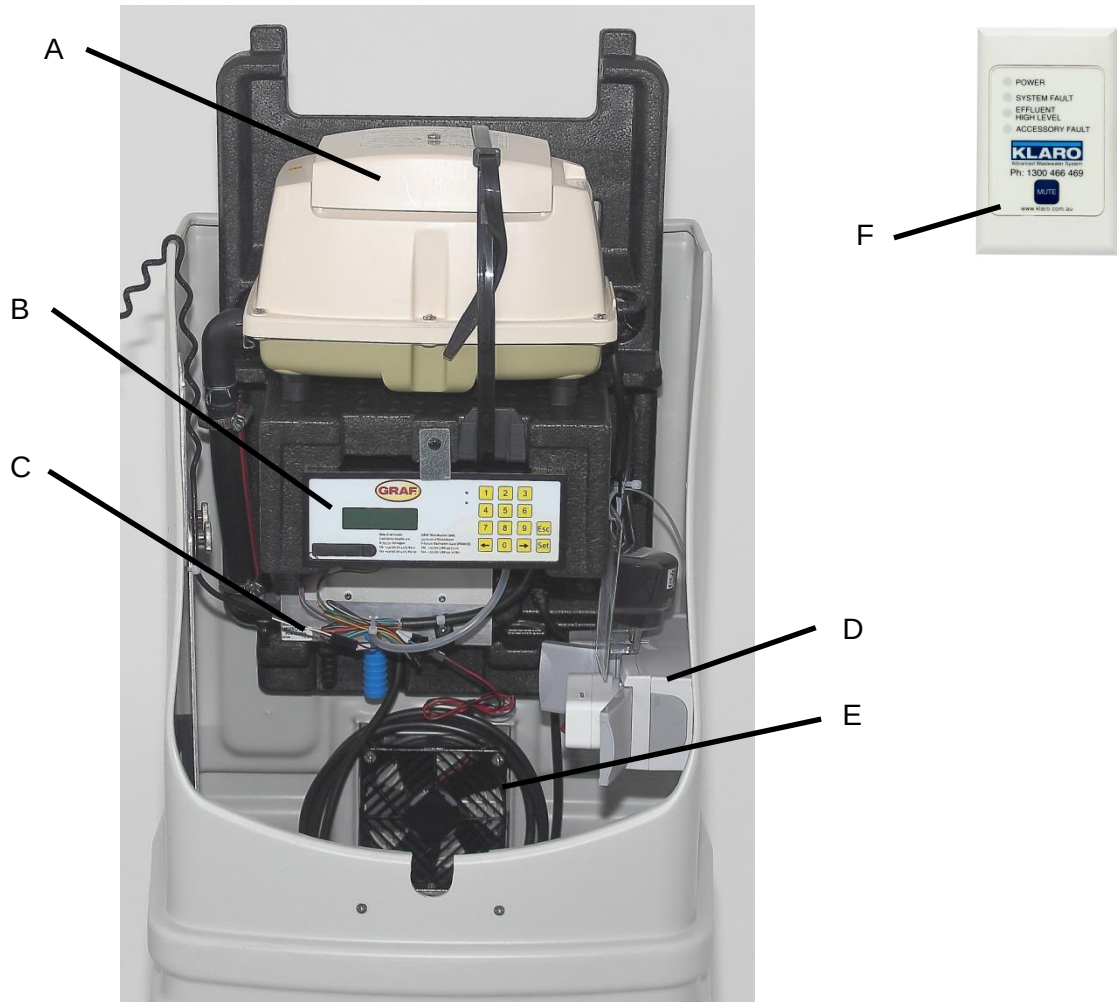


A	High water level alarm float	C	Pressure Pipe 40 mm
B	Irrigation pump	D	Lip seal DN50

6. Assembly of switch cabinet

6. Assembly of switch cabinet

6.1 Components



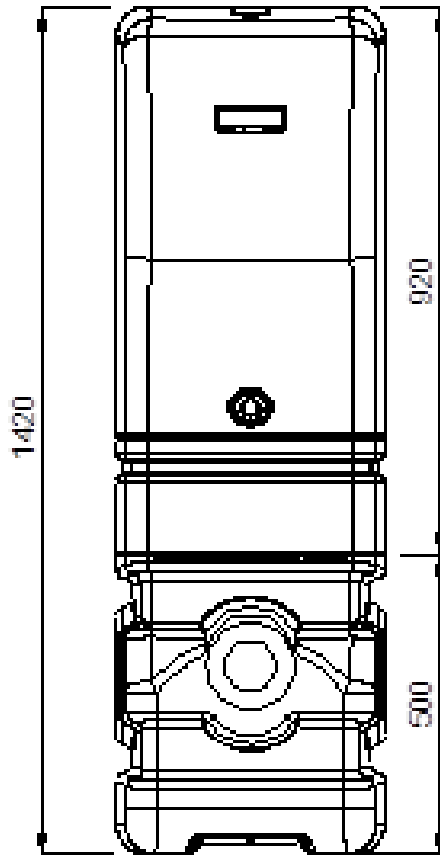
A	Piston air compressor	D	Power supply
B	Control Unit KL24plus	E	Cooling fan
C	Manifold with step motor valves	F	Remote alarm plate (as option)
			Alarm LED (not figured)

6.2 Assembly and installation

- Find proper location for the cabinet:
 - Close to the treatment tanks. Mind given length of air hoses (5 meter) and cables
 - Shady as possible

6. Assembly of switch cabinet

Graf plastic exterior cabinet for Eclean15



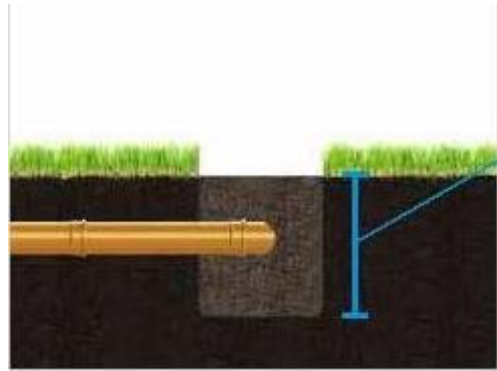
Excavations:

Length approx. 400 mm

Width approx. 450 mm

Depth approx. 500 mm

Conduit pipe:



Electric cable:



Filling up:

- Make sure cabinet stands leveled and up-right before filling up the pit
- Use only material that is free from rock prevent the cabinet from damage

Illustration only: Must comply with all Australian electrical standards

6. Assembly of switch cabinet

6.3 Air hose connection

- Pull the air hoses through the conduit pipe (100 mm DWV PVC). Make sure hoses are not kinked.
- Seal the conduit pipe to prevent any gases from transferring from treatment tank into the cabinet and causing corrosion. Use one GRAF sealing cap at the cabinet side and the second one to seal also the other end (tank side) of conduit pipe.



Insert the hoses from the thin side of the sealing cap

Push the hoses through the thin top layer. A plug of material remains stuck in the end of the hose.



Cut off the end of the hose to remove this plug.



Push the sealing cap into the conduit pipe to seal it tightly.

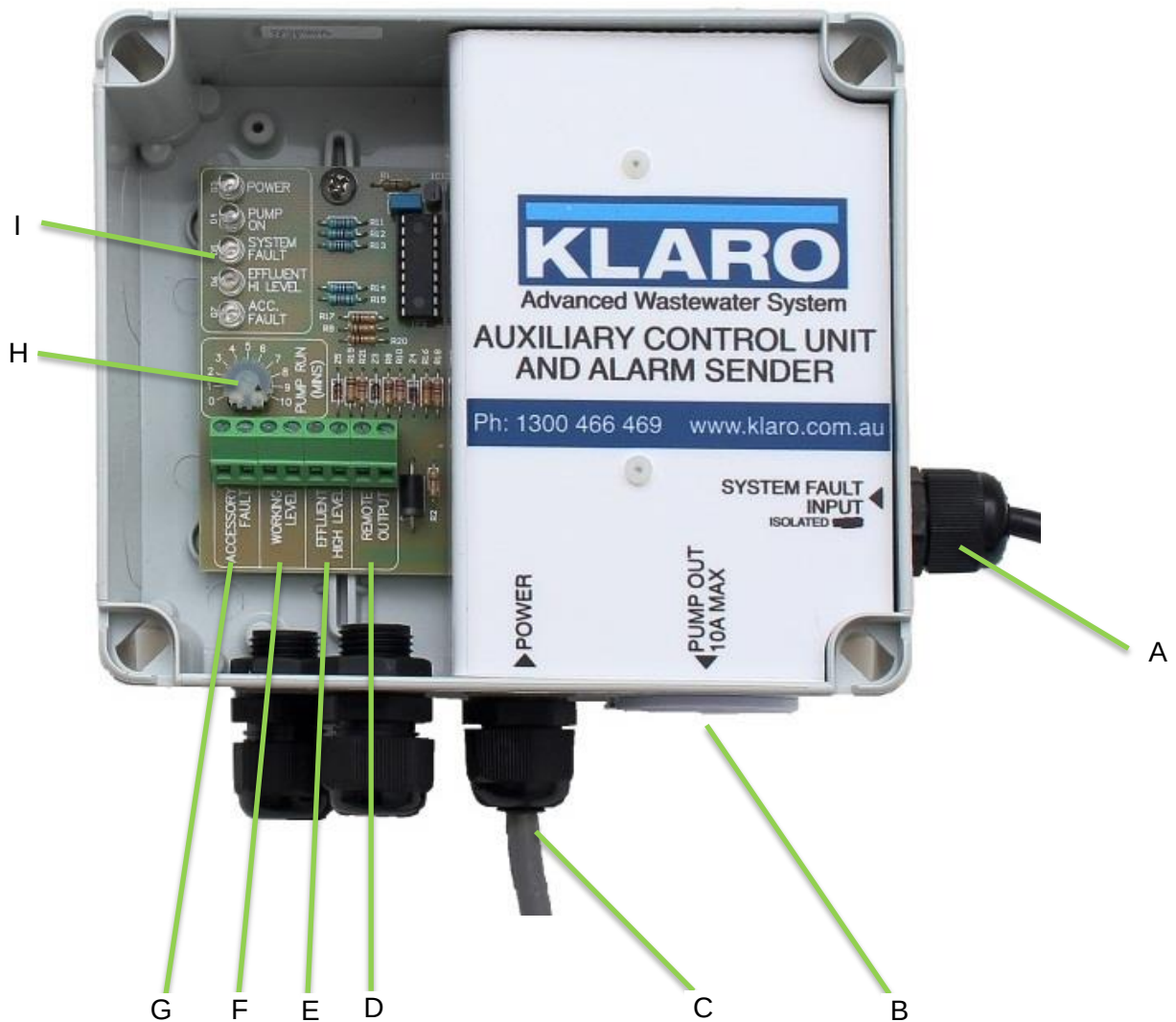
- Connect the hoses at both ends according to their color code:

Aeration (stainless steel)	→	blue hose, 19mm
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Discharging air lifter (black)	→	black hose, 13mm
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6. Assembly of switch cabinet

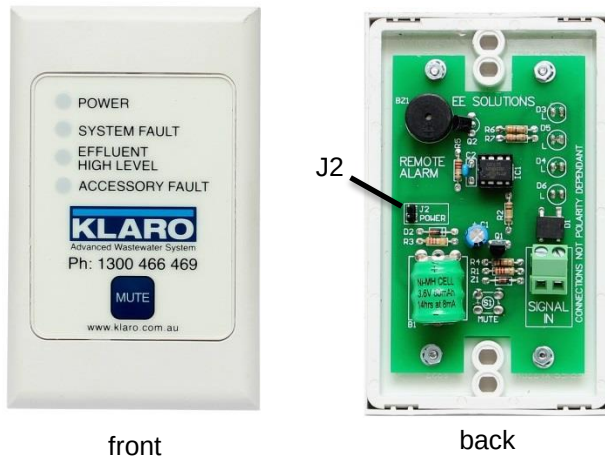
6.4 Auxiliary controller



A	System fault input from KL24plus	F	Workload (option for additional float)
B	Power output for irrigation pump	G	Accessory fault (option for additional alarm input)
C	Power input	H	Pump run, set to 10 min
D	Remote output for alarm plate	I	Status LEDs
E	Effluent high level / working for float switch		

- Auxiliary alarm unit must be installed inside the EPro Control Cabinet
- Connect "System Fault Input" (A) with alarm output plug "X1.5" of KL24plus control unit
- Connect irrigation pump to "Power Output" (B)
- Connect high-water-level / pump working level float (E)
- "Pump Run" (H) shall be set on maximum (10 min)
- Connect external alarm plate to "Remote Output" (D)
- Put the power plug (C) into the cabinets' power supply

6. Assembly of switch cabinet



Remote alarm plate

- The 2 core connecting cable should be run in a separate conduit to the system power supply to avoid possible interference
- Install remote alarm plate at a place where the operator can easily hear and see it
- To activate the alarm, move the power bridge “J2” on the back from one pin to bridge two pins, before mounting alarm plate to the wall

7. Commissioning

7. Commissioning

- Finish all installation work described in this installation instruction
- Fill up the treatment tank with fresh water; otherwise no test run and system check are possible. You can stop filling up when water level is approx. 20 cm below bottom of outlet pipe
- Connect electric cable to power supply – double socket (licensed electrician only!)
- Plug in the power plug of the auxiliary alarm controller into the GPO.
- Plug in power plug coming from control unit into Power supply. The control unit of an Eclean20 will then start automatically. If the system goes on alarm and shows “Set Date and Time”, you can quit the alarm by pressing ESC two times. Then you should enter the correct date and time in the control units’ operation area.
- Go to “manual operation” in operation area and test all valves and the cooling fan. Turn them on by pressing “1” button and off by “0” button. You should always turn the previous off before jumping to the next. See if all air lifts are working and aeration on valve 2 shows fine bubbles. Finally leave “manual operation” with ESC.
- The cabinet is then ready to operate and will count down in “cycle pause” until the start of its first treatment cycle
- Find more information in “Start-up, operation and maintenance manual” inside the cabinet. Especially read the dos and don’ts.

8. Notes

8. Notes

[illegible]