

Description

Greywater system GWM Connect MB for treatment of low polluted wastewater (greywater) from showers, hand basins and bathtubs using multibore membrane technology to high-quality process water that meets the hygienic / microbiological quality requirements of the European standard EN 16941-2 (systems for the use of treated greywater).

Your benefits:

- reduction of overall mains water consumption up to 60% without loss of comfort in residential and commercial buildings, public buildings, hostels, hotels, sports facilities,...
- excellent reuse-water quality (clear, odourless, germ-free) to substitute mains water for toilet flush, green irrigation, cleaning purposes, washing machine, cooling processes,...
- eco-friendly bio-mechanical treatment process without using chemicals
- energy efficient technology using only 0,5 kWh/m³ treated greywater
- integrated mains water back-up system acc. to european standard EN 1717
- full automated controller with 4" high-resolution touchscreen
- webinterface DehoustCONNECT for real-time access on controller via smartphone, tablet and PC
- visualisation of fill levels, bio-mechanical purification process, operation status
- evaluation of relevant operating data (recycled greywater total/per day, efficiency rate, mains water saving, current treatment performance,...)
- volt-free alarm output for building management system
- modular system concept to design according individual project specification
- compatible with rainwater harvesting systems
- additional accessories available



Function

Based on the latest multibore membrane technology the GWM Connect MB treats greywater from the drains of showers, bath tubes and handwash basins and provides a high-quality process water for different reuse- applications.

Initially the raw greywater is mechanically treated in the coarse filter TridentMAX to remove all undissolved water contents, such as textile fluff or hair. An automatic backwash unit keeps the filter plate clear and ready for a high filtration performance.

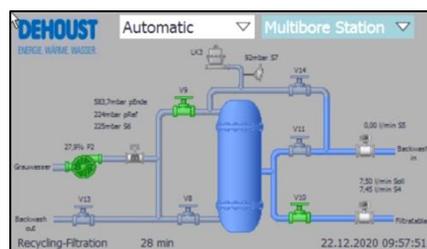
In the next step the system takes care that all organic pollutants (e.g. detergents) will be decomposed in the aerobic biological cleaning stage by especially developed bacteria culture.

After a following short sedimentation phase the heart of the GWM Connect MB, the multibore membrane filter starts to filter out the pre-treated greywater. With a physically pore width of only 20 nm (2.500 times finer than a human hair!) all solid particles, germs and individual absorbed viruses are safely retained in the system all the time.

The filtration process is managed by a special developed program called SFC for greywater filtration to achieve maximum treatment performance and service lifetime. After the filtration process a short backwash of the multibore membrane filter is carried out.

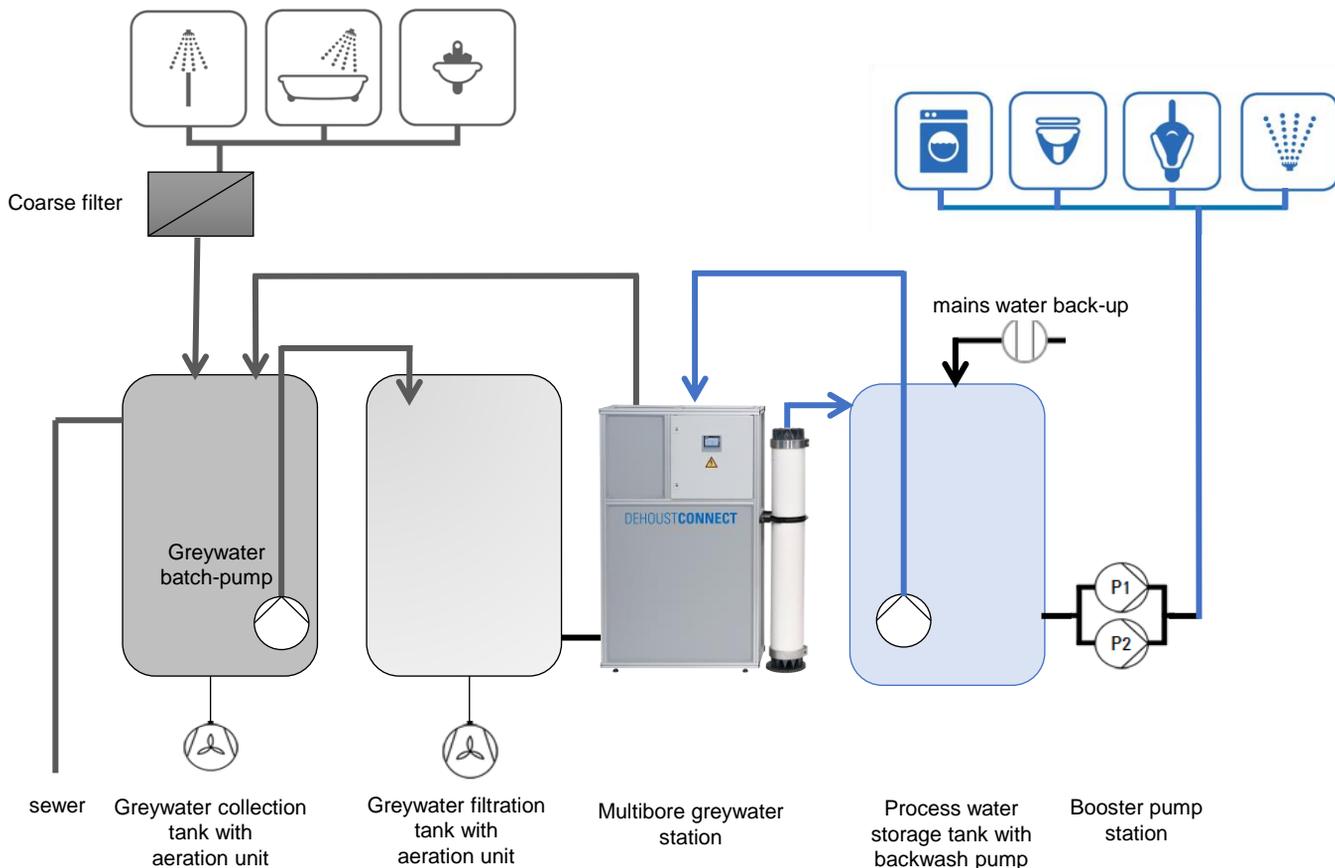
Thanks to the very high effluent quality the purified process water is suitable for a long storage (toilet flush box) and a variety of safe reuse applications.

In case of a lack of process water the automatic mains water back up system will be activated and ensures an safe water supply all the time.



Treatment steps and main components

coarse filtration 0,3 mm → aerobic biological treatment → sedimentation → ultrafiltration 20 nm



Effluent qualities on treated greywater

Parameter	Raw greywater	Treated greywater
COD [mg/ltr]	150 – 400	< 20
BOD ₅ [mg/ltr]	85 – 200	< 3
Suspended solids [mg/ltr]	30 – 70	0
pH	7,5 – 8,2	7 – 9
Total coliform bacteria [cfu/100 ml]	10 ³ – 10 ⁷	<100
Escherichia coli [cfu/100 ml]	10 ³ – 10 ⁷	<10



Effluent qualities on treated greywater comply with

- European standard EN 16941-2 for greywater reuse
- British Standard 8525-1 for greywater reuse
- European standard bathing water 2006/7/EG.

Design configuration

Multibore greywater station incl. greywater filtration tank and aeration unit

to manage and operate a greywater system GWM Connect MB; incl. main components like controller, webinterface, multibore membrane filter, filtrate pump, backwash pump, level sensors, flow sensors, motor valves,...



Model	140 W	240 W	340 W	440 W
Item	813371	813372	813373	813374
treatment performance (m ³ /d)*	3 – 5	10	15	20
Membrane surface (m ²)	40	80	120	160
weight Multibore station (kg)	120	190	260	330
volume greywater filtration tank (L)	1,500	2,000	2,500	3,000
weight greywater filtration tank (kg)	75	115	120	170
electrical load	400 V / 50 Hz 2,31 kW		400 V / 50 Hz 2,44 kW	
connection backwash in	1 ¼" male thread			
connection backwash out	1 ¼" male thread			
connection filtrate effluent	1" male thread			
Connection backwash coarse filter	1" male thread			
sound level Multibore station	max. 48 dB (A)			

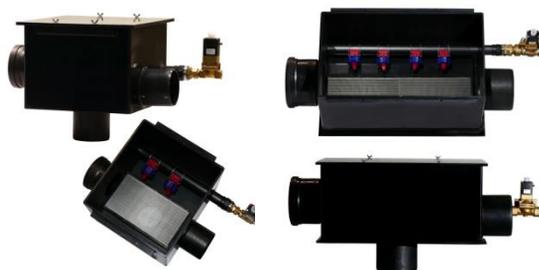
*Net treatment performance dependent on membrane filter backwash, operating settings and greywater contamination.
Filter replacement interval: Treatment performance lower performance range > 12 months; upper performance range < 12 months.

**Connected load excl. further components, such as aeration unit, greywater batch pump,...

Design configuration

Coarse filter

Coarse filter Trident MAX I with ports DN 100 incl. cleaning nozzle and automatic backwashing ½" female thread controlled by Multibore greywater station
Item 812651



Coarse filter Trident MAX II with ports DN 150 incl. cleaning nozzle and automatic backwashing 1" female thread controlled by Multibore greywater station
Item 812657

Greywater collection tank 1,500 – 4,000 litres

Greywater collection tank with inlet DN 100/150 and overflow nozzle DN 100/150 controlled by Multibore greywater station

Item 962051 – 1,500 litres

Item 962053 – 2,000 litres

Item 962055 – 2,500 litres

Item 962057 – 3,000 litres

Item 962059 – 4,000 litres



➤ greywater extension tanks are also available to increase volume!
Click: <https://www.dehoust.com/5243>

Aeration system

Aeration unit for PE HD greywater collection tank
power consumption 130 Watt
controlled by Multibore station
Item 813440



Extension package aeration unit for second PE-HD greywater collection tank
controlled by Multibore greywater station
Item 813442

Greywater batch pump

Greywater batch pump DOC 3
volume rate: max. 8.7 m³ / h
delivery height: max. 7 m
power consumption 310 Watt
controlled by Multibore greywater station
Item 813443



Greywater batch pump DOC 7
volume rate: max. 13,8 m³ / h
delivery height: max. 11 m
power consumption 780 Watt
controlled by Multibore greywater station
Item 813444

Design configuration

Process water storage tank incl. mains water back-up

Process water storage tank according to EN 1717 with overflow DN 100/150 and solenoid valve for mains water back-up controlled by Multibore greywater station

Item 962050 – 1,500 litres

Item 962052 – 2,000 litres

Item 962054 – 2,500 litres

Item 962056 – 3,000 litres

Item 962058 – 4,000 litres

➤ process water extension tanks are also available to increase volume!

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Multibore-Rainwater feed package

Rainwater-feed package to feed automatic rainwater into a greywater system GWM Connect MB including fill level control of rainwater cistern

volume rate: max. 16,5 m³ / h

delivery height: max. 13,5 m

power consumption: 1.100 Watt

controlled by Multibore greywater station

Item 813457



Auto-drainage-system for process water storage tank

Automatic drainage of storage tank after defined downtime according to the requirements of European standard EN 16941-2 and British Standard 8525:1-2011.

controlled by Multibore greywater station

Item 813456



Technical requirements on installation and plant room

➤ separate downpipe for greywater (excluding kitchen sinks, toilet, washing machine)

➤ separate process water pressure pipe to consumer (toilet box, irrigation ,...)

➤ mains water connection to process water storage tank for mains water back-up

➤ floor drain according to EN 1717 in case of emergency overflowing

➤ electrical power source according to specification

➤ dry, frost-free and ventilated plant room for Multibore greywater station and greywater filtration tank



Design and configuration examples

A) Multibore greywater station MB 140W (item 813371)

B) Coarse filter Trident MAX I (item 812651)

C) Greywater collection tank 3,000 litres (item 962057)

D) Aeration unit (item 813440)

E) Greywater batch pump DOC 3 (item 813443)

F) Process water storage tank 3,000 litres (item 962056)

➤ Treatment capacity: 3 - 5 m³/day

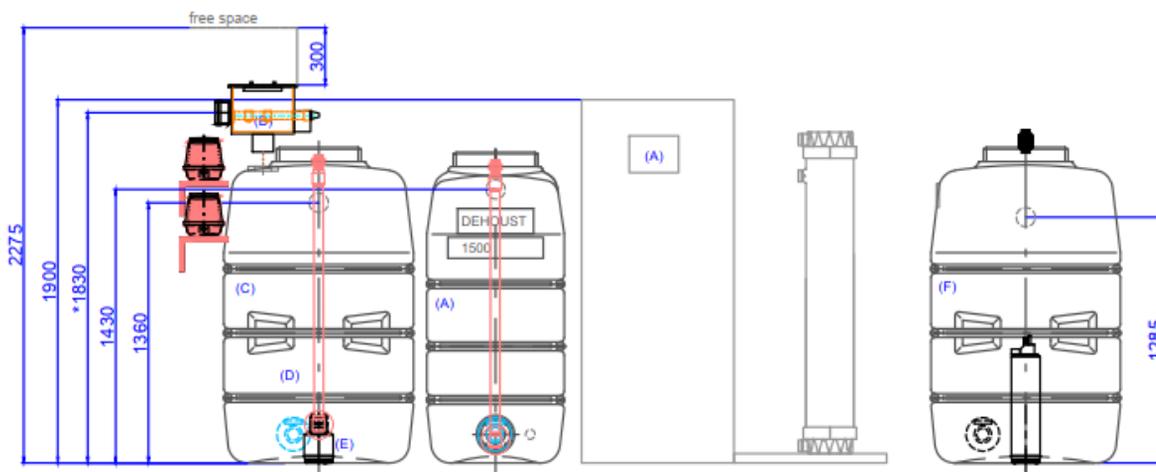
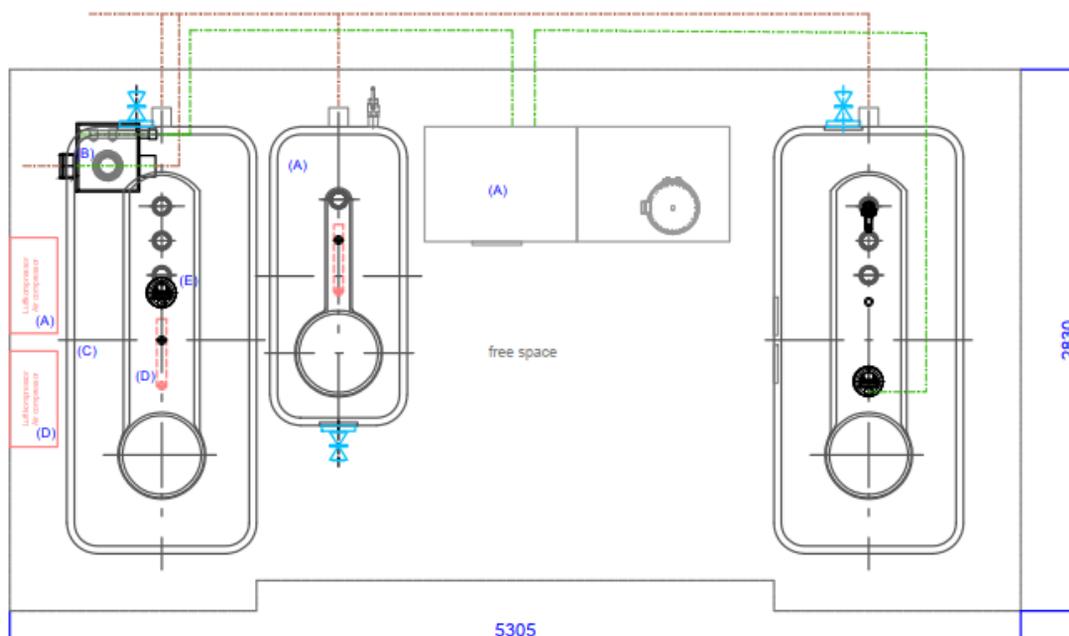
➤ Total weight (empty): 580 kg

➤ Electrical load: 400 V / 16 A / 50 Hz / 2,75 kW

Not included in the scope of delivery

----- backwash pipe 1 1/4"

----- overflow pipe DN 100



Design and configuration examples

A) Multibore greywater station MB 240W (item 813372)

B) Coarse filter Trident MAX II (item 812657)

C) Greywater collection tank 4,000 litres (item 962059)

D) Aeration unit (item 813440)

E) Greywater batch pump DOC 3 (item 813443)

F) Process water storage tank 4,000 litres (item 962058)

➤ Treatment capacity: 10 litres/day

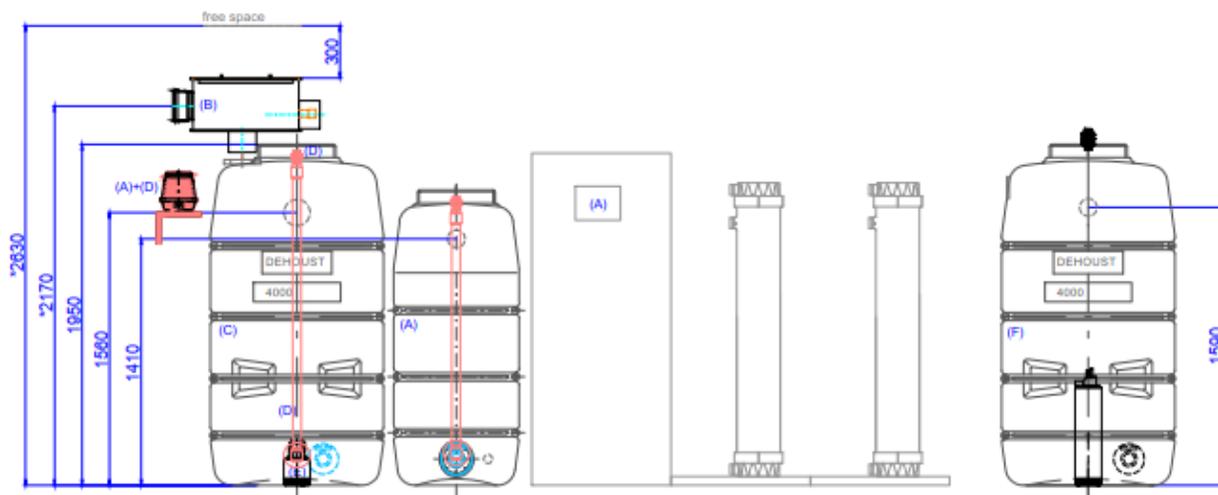
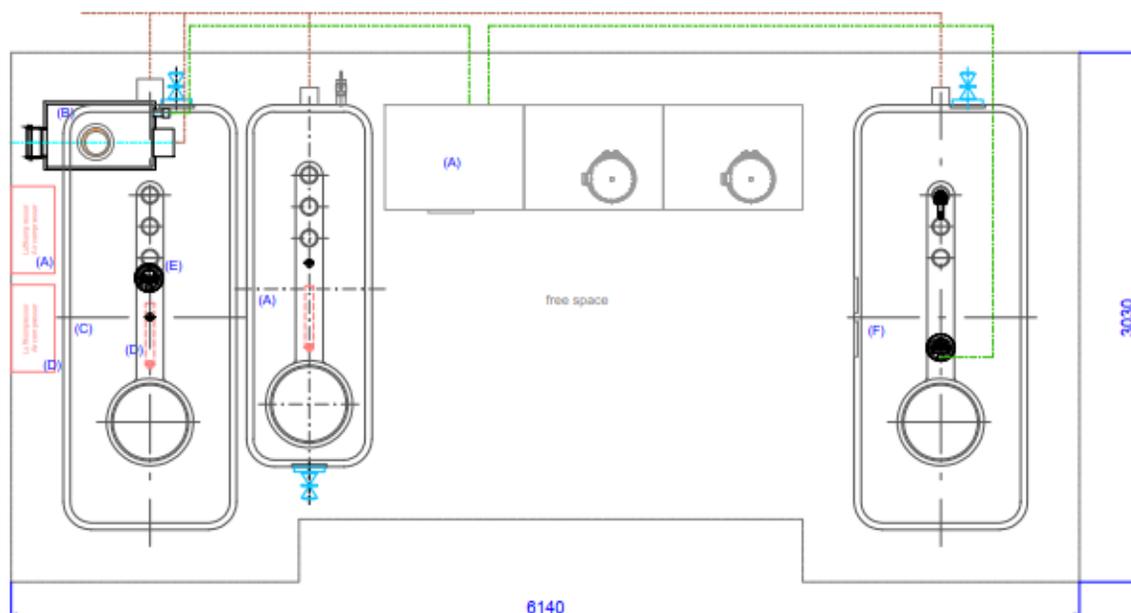
➤ Total weight (empty): 840 kg

➤ Electrical load: 400 V / 16 A / 50 Hz / 2,75 kW

Not included in the scope of delivery

----- backwash pipe 1 ¼"

----- overflow pipe DN 100

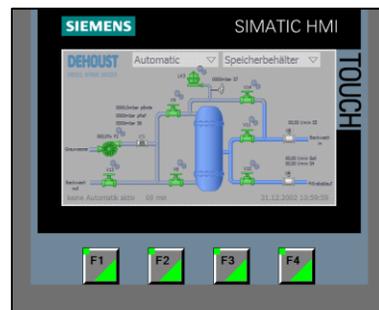


Further design configuration for higher treatment capacities on request!

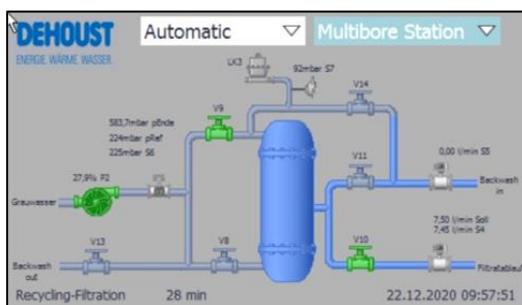
Remote control via DehoustCONNECT

The controller DehoustCONNECT allows you to have following functions available:

- realtime access to controller
- change settings to adjust performance
- live-monitoring on important data
- remote troubleshooting and inspection
- alarms and operation status
- updates via internet



The connection of DehoustCONNECT is simple and takes into account the highest security standards to the domestic LAN network. The web interface establishes an outgoing VPN connection via the TCP port 1194 to the DehoustCONNECT server. This port must be activated by the operator in the firewall for an outgoing TCP connection. All data communication is optimally protected against unauthorized access and only running via the DehoustCONNECT server.



	letzter Zyklus	Gesamt	
Aufbereitetes Grauwasser brutto	0,145m³	26,866m³	Reset
Membranfilter Rückspülung	0,056m³	4,321m³	Reset
Aufbereitetes Grauwasser netto	0,090m³	22,545m³	Reset
Aufbereitungsleistung	63,382 Liter/Stunde	1521,158 Liter/Tag	

References

Forum der Senioren, Viernheim, Germany

Retirement home with 24 residential units and 143 permanent care places.

Greywater from showers and hand wash basins in guest and staff rooms

Reuse for WC flushing in guest and staff rooms

Treatment capacity: 6,000 liters / day.

Commissioning: 07/2020

Multibore station MB 140 W

Grey water storage tank: 2x 3,000 liters

Process water storage: 2x 3,000 liters



References

Municipal utilities, Darmstadt, Germany

Municipal operation for municipal tasks and services with 200 employees

Greywater from showers and hand wash basins in staff rooms

Reuse for WC flushing and street cleaning feeds

Aufbereitungsleistung: 10,000 Liter / Tag

Inbetriebnahme: 03/2020

Multibore-Station MB 140 W

Grauwasserspeicher: 2x 2,000 Liter

Betriebswasserspeicher: 1x 3,000 Liter



References

Wohnsinn Bessungen, Darmstadt, Germany

Residential building with 43 housing units
Greywater from showers, bathtub and hand basins
Reuse for WC flushing and irrigation
Treatment capacity: 3,000 liters / day.
Commissioning: 09/2021

Multibore station MB 140 W
Grey water storage tank: 1x 3,000 liters
Process water storage: 1x 3,000 liters



Around 150 Dehoust greywater plants in operation worldwide!