



A WCS Group Company

8FDGO DISC FILTER INSTALLATION, OPERATION & MAINTENANCE MANUAL

SITE NAME:

REFERENCE NUMBER:

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Revision table:

REVISION	CHANGES TO VERSION	DATE	BY
A	FIRST HIRE ISSUE	21/06/2022	TC
B	FLANGE SIZES CONFIRMED ON PAGE 4	12/08/2022	TC
C	REVISED LAYOUT	29/11/2022	TC

MICROSCREEN 8FDGO DISC FILTER



IMAGE SHOWING THE WCSEE, 8FDGO HIRE SCREEN

The Hire unit comes in 3 separate parts due to the size.

- 1) The Main Skid assembly with the 8FDGO and balance chamber
 - Dimensions: - (L) 8800mm x (W) 2880mm x (H) 3500mm
 - Weight: - 8000kg
- 2) The Platform (which bolts on to Skid)
 - Dimensions: - (L) 5100mm x (W) 850mm x (H) 2900mm
 - Weight: - 800kg
- 3) The Access Stairs (which bolts on to the platform)
 - Dimensions: - (L) 3900mm x (W) 950mm x (H) 1200mm
 - Weight: - 200kg

TOTAL ASSEMBLED WEIGHT: - 9,000kg

1. MISCROSCREEN SPECIFICATIONS – 8FDGO – DISC FILTER

Basic information	Type: 8FDG_O	Application: Tertiary treatment
	Installation type	Stainless steel tank
Materials used	Frame, tank, supporting structure, cover	stainless steel AISI 304
	Other - sealings, caps, ...	high-resistant plastic materials, rubber
	Drive belt	Habasit
	Filtration mesh	PES
Standard unit design	Filter orientation	right
	Unit dimensions (L x W x H)	3714 x 2713 x 2883 mm
	Disc diameter	2200 mm
	Height of the integrated overflow edge	1600 mm
	Weight with water	13500 kg
	Weight without water	3300 kg
	Maximum flow (for 10 µm mesh; 40 mg/l)	95 l/s
	Filter inflow	by gravity
	Inlet pipes	DN500, PN16, BS4504, SS
	Outlet pipes	DN500, PN16, BS4504, SS
	Outlet sludge flange	DN200, PN16, BS4504, SS
	Manual outlet valve	2"
	Number of discs/segments	8 discs / 96 segments
	Filtration surface overall / applicable	42,2 / 27,1 m ²
	Inlet for rinsing water - connection	7-10 bar
	Number of rinsing nozzles	112 pcs
	Water level monitoring	pressure probes LMP 307
	Sludge discharge	by pump*/gravity
	Connection of sludge pump, if applicable	2", internal thread

ELECTRICAL INFORMATION

Electrical information	Power supply	3x400V/50Hz/PE+N
Input	Standard design - output (without sludge pump)	12,5 kW
	Engine - drive of the disc shaft	Siemens 1LE1002-0EB42-2FA4 (1,5kW)
	Gearbox	F 41 3 H40 84.9 P90 H1 N
	Backwash pump	Lowara SVI3304/12S110T (11kW)
	Sludge pump*	Lowara DOMO 20VXT (1,5 kW)
	Min. consumption / 1 day	22,5 kWh
	Ø consumption / 1 day	26,25 kWh
	Max. consumption / 1 day	145 kWh
	Recommended back-up fuse	25A/3/C (D)
	Recommended supply system	CYKY - J 5 x 4 (C)

The control panel comes with a 32A, 3ph, 5pin, appliance Inlet socket mounted on the left.

WATER LEVELS

At the inlet	Minimum water level	1600 mm
	Switch-off level	1650 mm
	Switch-on level	1800 mm
	Max. (emergency) water level	1840 mm
At the outlet	Max. water level behind the filter	1500 mm

There is a balance chamber situated before the screen which has a smaller inlet to connect to. Please see below the flange connection sizes and ratings:-

Inlet DN300 PN16
Outlet DN500 PN16
Gravity Sludge Outlet DN200 PN16

2. SAFETY

When using and performing maintenance on the filters in this document, it is extremely important that maintenance procedures in this document are followed. Any deviation from this could cause serious injury or have a detrimental effect on the filter and its operation.

1.1 Health and safety at work act 1974:

Section 6a of this act requires manufacturers to advise their customers on safety and handling precautions to be observed when operating, maintaining and servicing their products.

The user's attention should be drawn to the following:

- All sections of this manual should be read before undertaking work on the equipment.
- Suitably trained personnel must carry out the installation.
- Normal safety precautions must be taken and appropriate procedures observed to avoid accidents.
- Refer to WCSEE Ltd for further technical advice or product information.

1.2 Leptospirosis:

It is the client's responsibility to ensure that the relevant Personal Protective Equipment (PPE) is available and used.

There are two types of Leptospirosis that effect people in the UK and they are as follows:

1. Weil's disease, which is a serious infection transmitted to humans by contact with soil, water or sewage that has become contaminated with urine from infected rats.
2. Hardjo-type Leptospirosis, which is transmitted from cattle to humans.

The typical symptoms for both diseases start with a flu like illness, with a persistent and severe headache, muscle pains and vomiting. Jaundice generally appears on the fourth day of the illness.

The bacteria can enter your body through cuts and scratches or through the lining of the mouth, throat and eyes.

1.3 Sensible precautions:

After working with contaminated fluid or materials it is important that hands and forearms are washed thoroughly with soap and water. If your

clothing or boots become contaminated then they should also be washed after use.

Immediate action should be taken, so that any cuts scratches or abrasions are washed thoroughly with clean water, prior to applying any protective covering (plaster or bandage).

Do not handle food, drink or smoking material without first washing your hands. If you display any of the symptoms described after coming in to contact with sewage; report to your doctor immediately advising them of the circumstances.

1.4 Vaccinations:

To avoid the possibility of illness it is recommended that all site personnel have the following vaccinations. WCSEE Ltd also recommends that you that you consult your doctor for any additional vaccinations that you may require. The general vaccinations WCSEE use for all personnel are as follows:

- Hepatitis A
- Hepatitis B
- Polio
- Tetanus
- Typhoid/cholera – probably carried out as a child.

1.5 Warranty period:

There is a 24 month guarantee with this product. WCSEE Ltd takes no responsibility for improper storage, or bad installation/maintenance performed by unqualified personnel. This also covers the overloading of the filter, above that of normal conditions, and any other accidental cause or disregard for the information in this document.

1.6 Warranty limitations and exemptions:

WCSEE Ltd shall not be liable for any labour involved for the removal or replacement of its equipment or the subsequent transportation, handling or packaging of any part or parts thereof. In no case will WCSEE Ltd be liable for loss incurred because of interruption of service or for consequential damages, labour or expense required to repair defective units, nor shall this constitute a cause for the cancellation of the contract of purchase and sale. Specifically exempt from this warranty are limited life of consumable components subject to normal wear and tear, such as air pump vanes, diaphragms and filters.

1.7 Chargeable non warranty work:

Service charges will be incurred (including parts and labour), due to the following:

- Unauthorised alteration.
- Accidental damage.
- Improper use.
- Abuse.
- Tampering.
- Failure to follow installation instructions or failure to follow operating and maintenance procedures.

The above will not be covered by this warranty and are not assumed by WCSEE Ltd. All service visits for non-warranty work are chargeable. This warranty gives specific additional benefits. Statutory rights are unaffected.

Note: WCSEE Ltd will not uphold the guarantee on the hire/purchased filter if the routine maintenance has not been performed and documented.

WCSEE Ltd strongly recommends that the installation of the hire/purchased product is carried out by a qualified and experienced installer. Dependent on the site a qualified civil engineer may need to be consulted for the construction of suitable base materials.

2 OPERATION

Water containing solid particles flows through the inlet pipe or sewer into the centre of the disc shaft, impurities are caught on the inside of the filter cloth and the filtered water flows through the cloth out. The entire filter remains off during this process. As the filter cloth slowly becomes clogged by the increasing amount of filtered impurities, its resistance to the flow increases and the water level inside the disc shaft rises.

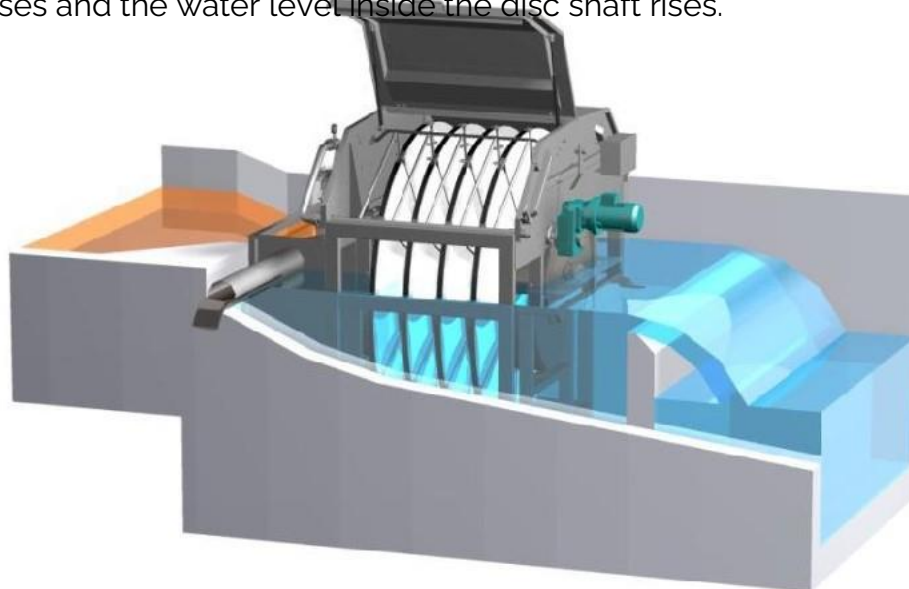


Fig. 1: Filtration process

When the preset difference between the levels inside and outside of the disc filter is reached, the water level probe positioned at the inlet of the filter activates the drum drive and the backwash pump which pumps the filtered water into the jet rinse system. The impurities accumulated on the inside of the filter cloth is removed by the directed jet stream of water from the nozzles and then washed into the waste channel positioned in the interior of the drum shaft. The sludge is washed into the sludge tank from where it is washed out by the sludge pump. This pump is automatically controlled by level probes located on the wall of the sludge tank. If the sludge is discharged by gravity flow, the sludge pump is not necessary. Thanks to backwash the filter cloth permeability is restored.

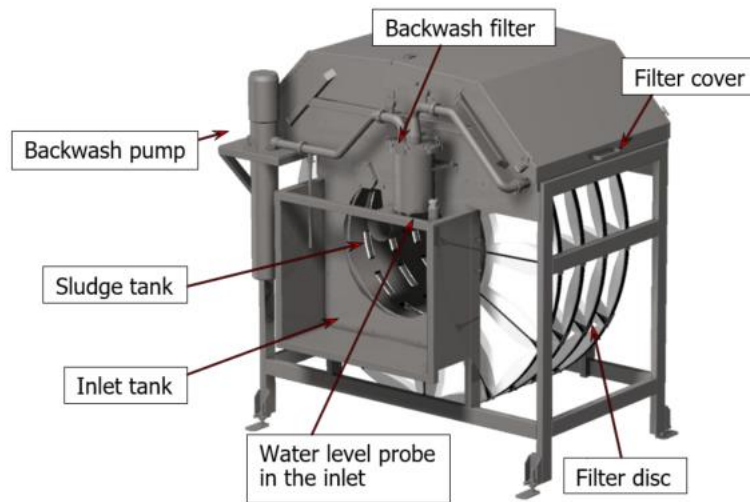
The rinsed cloth is moved to the bottom of the filter by the rotation of the disc shaft, the difference in water levels drops and the probe automatically switches off the disc shaft rotation and the pump.

The drive of the disc shaft and the pump remain off until reactivated.

This operation repeats in cycles. The ratio of the rest cycle and the rotation cycle depends on the amount of solids flowing into the filter, their character and the condition of the filter cloth.

3 DESCRIPTION OF THE DISC FILTER

3.1 Basic parts of the filter



3.2 Filtration part

The basic filtration element is a filter cassette of the circular sector shape which is coated with polyester filter cloth.

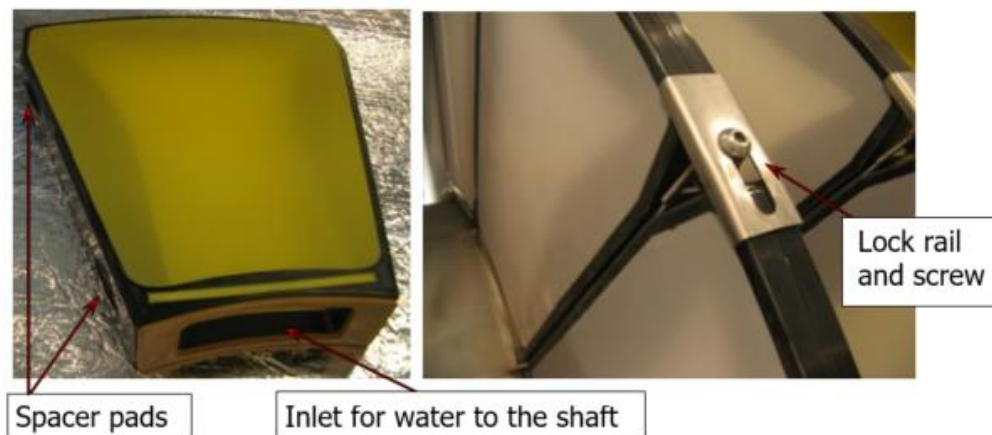


Fig. 4: Filter cassette and its anchoring in the filter disc shaft

Cassettes are attached to the shaft and as such create a filtration disc.

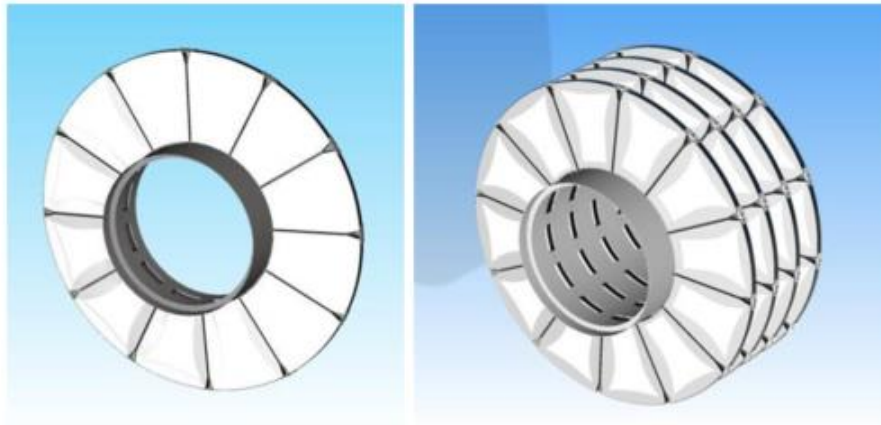


Fig.5: Filter disc

Fig. 6: Disc shaft with 4 discs

Each disc consists of 12 separate cassettes.



Fig. 7: Inside of the disc shaft

Water flowing to the centre of the shaft gets through openings in the shaft casing to filter cassettes and from there it flows out through the filter cloth. Impurities get caught on the cloth inside the cassette.

The filter cassette is moulded from ABS plastic and coated with filter polyester cloth with pore sizes ranging in 10, 20, 30 or 40 micro meters according to the customer's requirements. In case of damage (rupture) the filter cassette can be changed as described further (see chapter 7.9). The easy replacement of the cassette helps speed up the process and decreases the costs of the service and maintenance.

3.3 Backwash system

Impurities caught on the cloth are transferred to the sludge tank by the backwash system which also ensures that the filter cloth is passable.

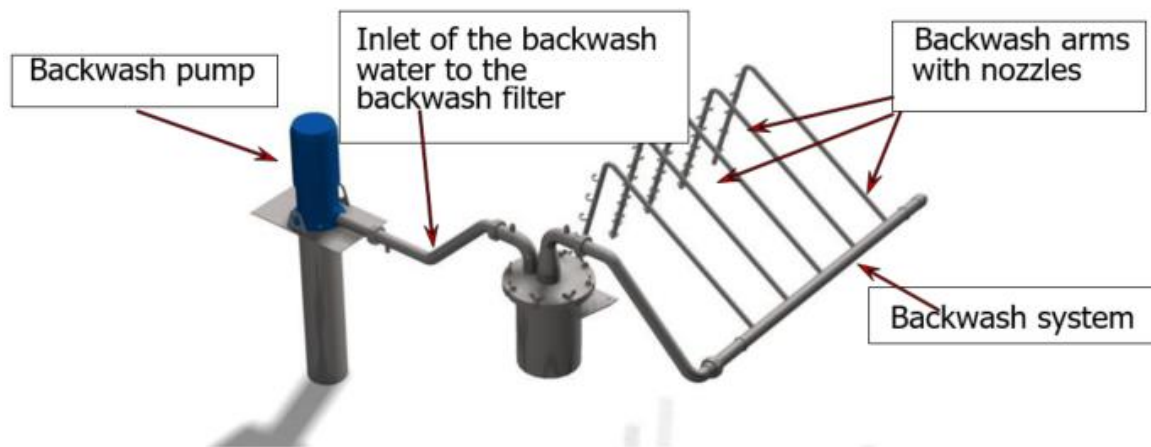


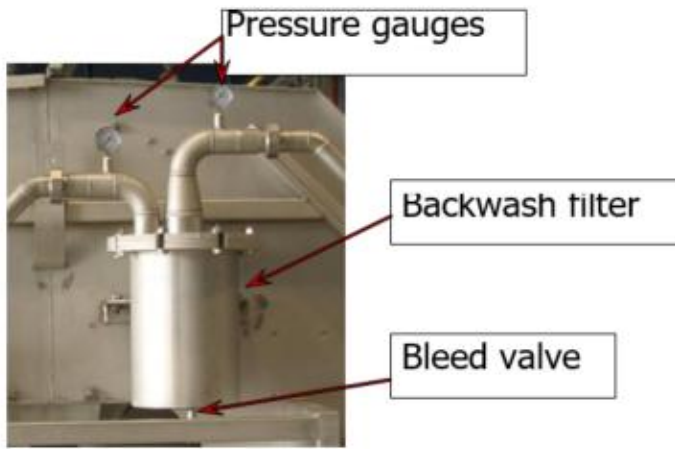
Fig. 8: Backwash system

Backwash is done by filtered water which is taken directly from the filter. The backwash pump, pumps this water to the backwash pipes and through the backwash filter it is delivered to the backwash system. When the backwash system is cleaner, it is necessary to lower the water pressure in the backwash pipes. This is ensured by the valve for pressure decrease.

The maximal pressure of the backwash system is 10 bar. The filter is equipped with a safety valve, in case the system fails and the pressure rises, the valve will open.

The hoses on the disc filter are rated to 18 bar.

Backwash filter



The Backwash filter filters water before it is fed to the backwash system – to jets. This filtration is necessary to prevent clogging nozzles and breakdown of this system.

Fig. 9: Backwash filter

It is necessary to monitor the flow capacity of the filter and if clogging is discovered, it needs to be cleaned immediately. Permeability of the backwash filter is checked based on the difference of the pressure of backwash water in front of the filter and behind the filter.

In the filter with pressure gauges the difference of pressure is checked by operating personnel – they have to check pressure values in the gauges at certain intervals

and evaluate their difference. When the difference of pressure shows a value higher than is permissible (1bar) – the filter is clogged, it is necessary to stop the filter, remove the filter cassette and rinse it thoroughly.

The Backwash system consists of backwash arms with fitted nozzles.

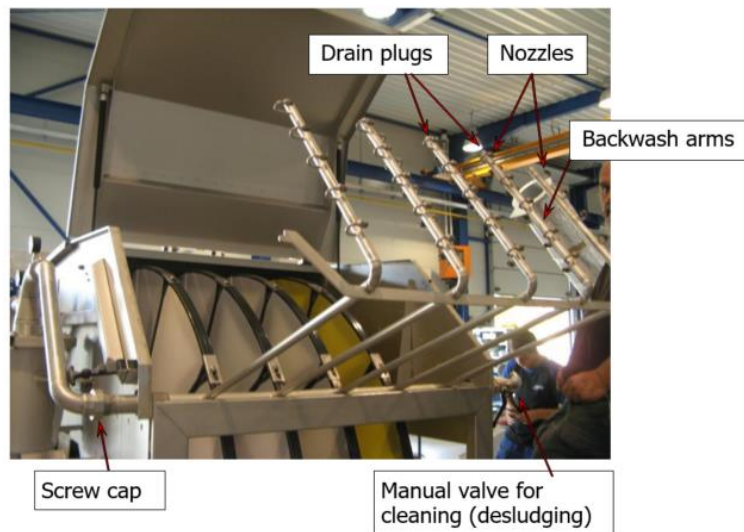


Fig. 10:

Backwash system in service position

3.4 Pressure Probes

To measure the water level the filter is equipped with 2 pressure probes fitted in a holder which maintains their right position and protects them from tempering.



Fig. 11:

A) 4-20mA Pressure probe in the holder on the inlet (Left image).

B) 4-20mA Pressure probe.

C) 4-20mA Pressure probe is positioned in the holder (Right Image).

4 INSTALLATION AND OPERATION

4.1 Installation

The FDGO skid assembly should be set in a horizontal position and on level ground.

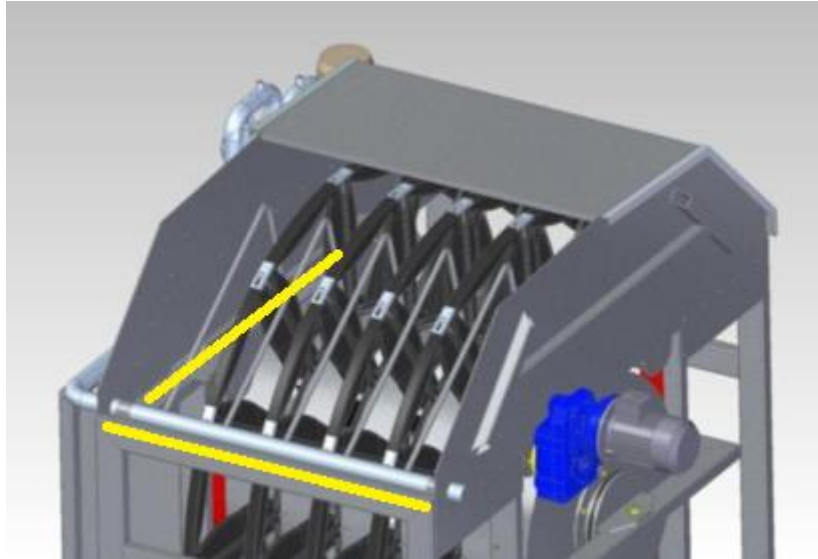


Fig. 12: Measuring the level position of the filter

We recommend checking the level position of the filter by placing a spirit level on the filter frame. The figure shows yellow highlighted places where to do the checks.

If the filter is not in a level position, it could mean unsuitable load for the steel structure and thus shortening the life span of the filter. For easy levelling it is necessary to ensure a level ground for the filter.

If the filter does not have gravitational discharge and sludge is pumped by a sludge pump, it is necessary to connect a sludge drainpipe to the filter. Standard delivery includes 3m long sludge pipes. The diameter of the sludge pipe changes according to the type of the filter.

4.2 Installation of the filter in the steel tank

- 1) Place the filter in a working position. The foundation must be level with the ground. Make sure that the foundation is levelled with the ground in order to avoid problems when setting the filter.
- 2) Connect the inlet pipe of the raw water, outlet for filtered water.
- 3) Connect the sludge drainpipe. The filter is manufactured in two versions – in the first version the sludge is drained by gravity flow or by a pump. In the first case it is necessary to connect the drainpipe to the sludge pipe using a flange and in the latter one connect the drainpipe to the pipe of the sludge pump.
- 4) Next, connect the electric supply cable to the control panel
- 5) After the unit is connected to the distribution board it is necessary to check the rotation of motor drives – rotation of the disc shaft (see the arrow on the inner side of the filter front), the rotation of the backwash pump and the sludge pump (see Fig. 16)



Fig. 16: Direction of rotation

A) direction of rotation of the drum

B) direction of rotation of the backwash pump

C) direction of rotation of the sludge pump

Warning: Direction of the rotation of the pump can be checked without water flow only for a period of a few seconds because the pump could get burnt. The first reaction of the pump after its activation is important.

4.3 Putting the filter into operation

Before putting the filter into operation for the first time or after a longer period of downtime it is necessary to fill the filter with clean water up to the overflow edge (crest) in order to eliminate the occurrence of a great difference in water levels which could activate the disc shaft and backwash pumps. The pumps would not have enough water which could result in failure.

The raw water should be from solid coarse particles bigger than 10mm, sticky substances, including oil and fats.

Outlet for filtered water must be completely obstacle-free, and with no pipe reducers if possible. Reducing the outlet pipe size could result in backing up of fluids within the screen.

Maximum level in the outlet channel must be no higher than 200mm under the crest.

The water level upfront of the filter must not be allowed to rise to such an extent that due to insufficient outflow the water level in the outlet part of the disc shaft would rise excessively.

Filter stops functioning

After a long period of down time it is necessary to clean the filter by thoroughly backwashing before it is put into operation.

5 CONTROL OF THE FILTER

The Disc filter is a fully automatic unit. Automatic operation is ensured by a PLC unit inside the control panel which has preset parameters including working water levels.

The PLC unit operates from signals fed from the pressure sensors reading the current water levels in the inlet area, or in the sludge tank. It controls the operation of the filter.

5.1 Working levels

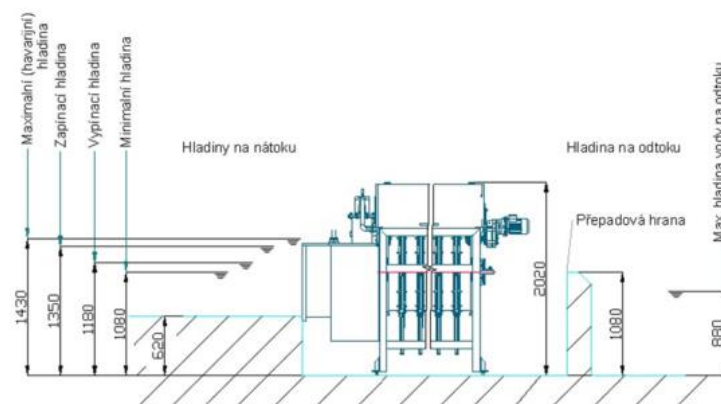


Fig. 17: Example of working levels of a disc filter
(see the drawing)

5.2 Control of the filter

There is a probe at the inlet connected to PLC (LOGO! Siemens), with preset working levels (switch-off, *higher switch-off level, switch-on, emergency).

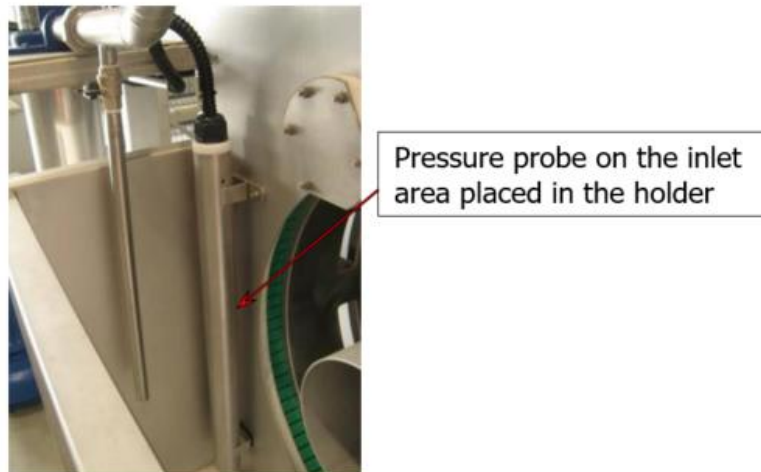


Fig. 18: Inlet tank of the filter

The probe monitors the water level in front of the filter and sends information on its height to the PLC in the control panel. When the present water level (switch-on level) is reached, rotation and backwash of the disc shaft is activated. When the water level is decreased under the pre-set switch-off level, the filter is stopped. This cycle continuously repeats. After reaching the emergency level the filter runs for a period set by a timer until the water level decreases and then it is stopped. The distribution board shows a red check light symbol for emergency water level.

At that moment, the sludge and backwash pump and filter operation are automatically blocked.

If the sludge is removed by a sludge pump, a probe is mounted in the sludge tank.

There are only two preset water levels in the PLC for the sludge tank (switch-off and switch-on). The principle is the same as in the case of probes at the outlet of the filter. The sludge pump is activated when the level in the sludge tank rises to the switch-on level and then is stopped when the level drops to the switch-off level.

With aging of the filter cloth it can happen whereby the water level in front of the filter never decreases to the switch-off level. In this case there is a preset "higher switch-off level" in the PLC. If the filter drum and backwash pump run continuously for a certain time and the water does not drop under the switch-off level, the filter is switched off and shall be reactivated only after the water level reaches the switch-on level.

6 DISTRIBUTION BOARD



Fig. 19: Seen mounted to the WCSEE Hire Unit.

7 SETTING AND EDITING PARAMETERS

All the logic functions in the distribution board are performed by a re-programmed SIEMANS unit called LOGO!. This unit enables editing to be made to important parameters for the operation of disc filters. LOGO! Uses a touch screen along with cursor buttons mounted to the side, ESC and ENTER buttons on the underside of the display to modify the parameters.

7.1 SIEMANS LOGO PLC

The PLC has pre-set parameters. If necessary, the parameters can be edited to enhance the performance of the filter. Consult editing parameters with the WCSEE team on how this is done.

SIEMENS

Data sheet	6ED1055-4MH00-0BA1
LOGO! TD TEXTDISPLAY, 6 LINES, 3 BACKGROUND COLORS 2 ETHERNET PORTS ACCESSORIES, FOR LOGO! 8	



General information	
Suitability for use	Can be used with LOGO! 8 and higher
Display	
Design of display	FSTN
graphics-enabled	No
Line display	
• Number of lines	6
• Number of characters per line	20
Backlighting	
• Type of backlighting	LED
Control elements	
Keyboard fonts	
• Keys with LED	No
• System keys	Yes
— Number of configurable system keys	0
• Numeric/alphabetical input	
— Numeric keyboard	No
— alphanumeric keyboard	No

8 SERVICE AND MAINTENANCE OF THE FILTER

The filter requires regular checks (once a day) and cleaning checks (once a week).

Regular maintenance and check is very important for the lifespan of the unit and its correct functioning which influences the quality of the pre-treated water.

When performing any maintenance work on the unit, the main CIRCUIT BREAKER must be switched off!

8.1 Regular checks

Daily checks:

- 1) Check alerts and messages on the PLC display.
- 2) Check the difference of pressure in the backwash filter. If the filter is fitted with probes, check messages displayed on PLC.
- 3) Do a visual check of the filter for any mechanical defect.
- 4) Check how the filter runs during several cycles of the filter in the automatic mode. Check the correct rotation of the drum and the backwash pump (they should be activated and deactivated at the same time).
- 5) Check the disc shaft if it is running continuously.
- 6) Check if the sludge pump is activated after the level of sludge increases (if the discharge is not done by gravity flow) and also deactivated when the level drops. This way you can check the regular function of the level probes. If this is not the case, the probes must be cleaned using a clean damp cloth or if necessary wash them with clean water in a container. Do not use pressure water! (Fig. 6)
- 7) Check the correct functioning of cloth backwash.
- 8) Check that water jets from spray pipes are directed and have the correct shape (Fig. 7).
- 9) Check if there is enough water for backwashing.
- 10) Do a visual check of the cloth for excess clogging, any mechanical or other damage.

Weekly checks:

- 1) Check belts for any damage.
- 2) Check if the probes are clean.

8.2 Maintenance of the backwash system

It is necessary to check the correct function of the backwash system in order to prevent excessive clogging of the filter cloth which could result in its blockage. This would lead to gradual decrease in the filter capacity and the filter would not manage to treat the required amount of water which would accumulate in front of the filter. As a result the emergency level would be reached quickly and the filter would have to be bypassed.

With the view of the above, maintenance of the backwash system is the second most important part of the filter function and must be taken due care of !

The basic check if the backwash system is working correctly includes checking the cloth for cleanliness, especially the water jets of the backwash water which are spouted from the nozzles. In Fig. 23 you can see the correct process of backwash – complete and overlapping water jets. Jets which are not full, do not overlap, only flow out or spout from the nozzles interruptedly, signify that the backwash system must be cleaned.

First it is necessary to find out if the problem is not in a faulty nozzle. If so, it must be cleaned (see below for the correct procedure). If water spouts from all nozzles incorrectly, then the whole backwash system must be cleaned.

8.3 Cleaning the backwash system

If you find that the water jet is not right, it is necessary to check first if there is enough filtered water. Next, you must check the pressure difference in the backwash filter. If the pressure difference is higher than permissible (1 bar), it is necessary to clean the backwash filter (see below), if the pressure difference is all right, the filter must be switched to manual mode and backwash must be switched on.

When the backwash is switched on, open the manual valve at the end of the backwash system and let water run through this valve for a few seconds. Repeat several times.

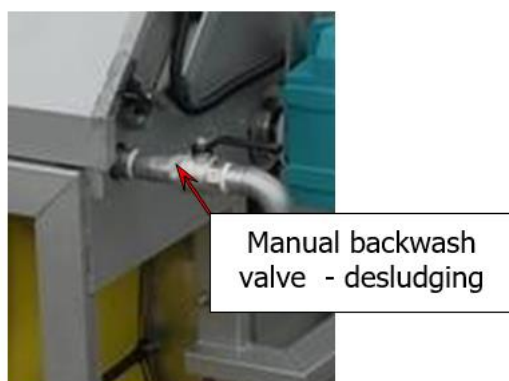


Fig. 23: Valve for sludge discharge of the backwash system

If this still does not help, it is necessary to clean the arms and nozzles of the backwash systems.

8.4 Cleaning arms of the backwash system

The filter remains in the manual mode.

To clean the arms we need to tilt the backwash system from the disc shaft. Loosen the screw cap of the backwash system, tilt the backwash system to the end position as shown in the picture.

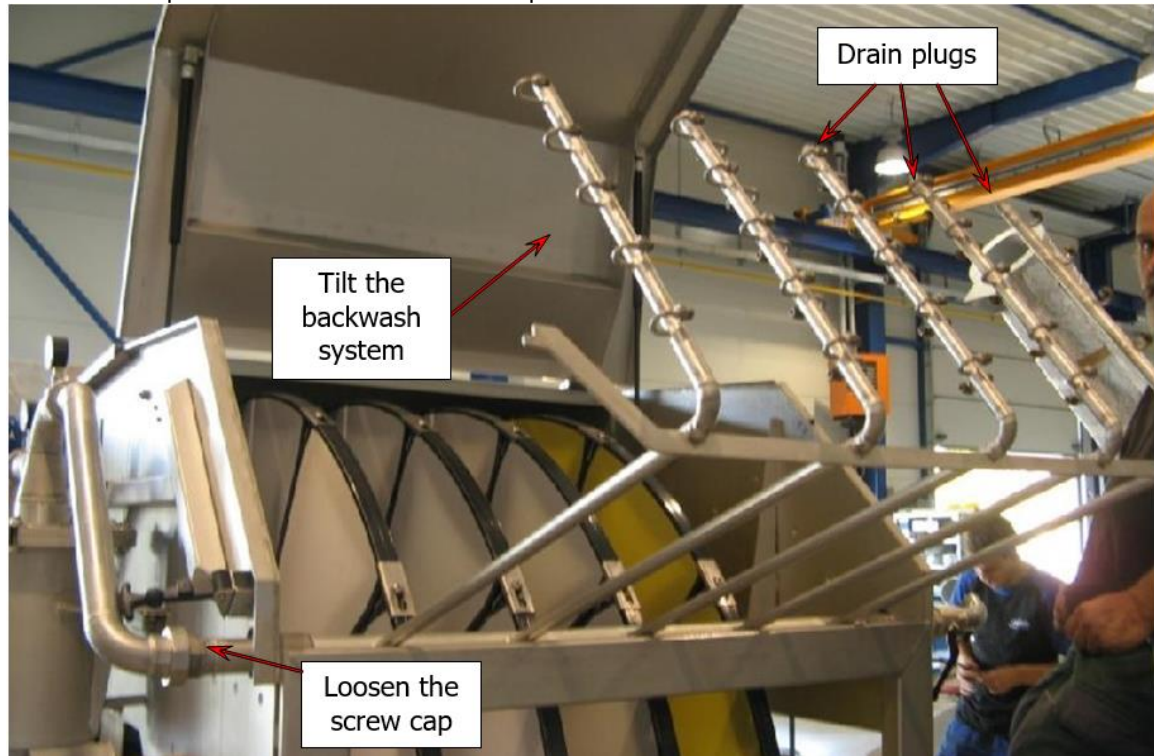


Fig. 24: Position of the backwash system for service work

Unscrew and remove the drain plugs at the end of the backwash arms (right-hand thread).

Put the arms back to their working position and run backwash in the manual mode. The arms should get cleaned by water. Stop backwash, tilt the backwash system again and put the drain plug back. Put back the backwash system, switch on backwash and check if water jets spout from nozzles in the right way. If it is still not the case, go on to clean the nozzles.

8.5 Cleaning nozzles



Fig. 25: Nozzle Fig. 26: Nozzle in detail

Check in which nozzle the water jet is not right and clean them. Cleaning of nozzles is similar to cleaning of drain plugs. The filter is in the manual mode and filter functions are off.

Loosen the screw cap of the backwash system and lift the backwash system in service position. Remove the nozzles which need cleaning.

Put the backwash system back in the working position and run backwash in the manual mode. This should clean the side arms. Stop backwash, tilt the backwash system out. Clean nozzles with running water, or clean mechanically if necessary. Put the nozzles back on the backwash arm and put the spray back in the working position. Switch on manual backwash and check it.

8.6 Maintenance of the backwash filter

As was already mentioned, the backwash filter is supplied in two versions – in the first version the monitoring and evaluating the condition of the filter is done by operating personnel and in the case of the second version the monitoring and evaluating is done automatically.

Pressure difference should not be higher than 1 bar. If the difference is higher, it means that the filter is clogged and needs to be cleaned.

Remove the cartridge of the filter by loosening the screw caps in front and behind the filter and remove the filter. Loosen the screws of the lid, lift the lid together with the pressure gauges and put aside. Lift the cartridge and clean it with a water jet.

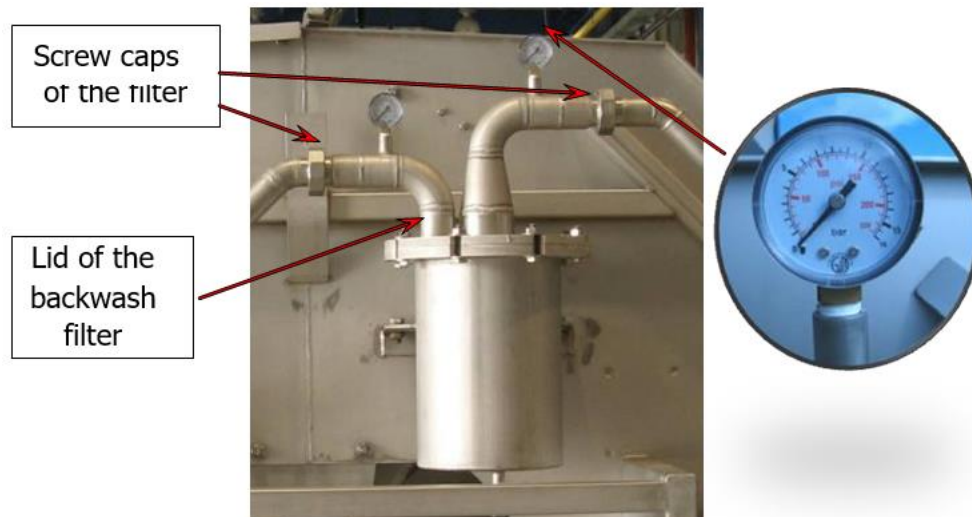


Fig. 27: Backwash filter
After cleaning put everything back and tighten all the screws.

8.7 Probe cleaning

Once a week it is necessary to clean level probes (see Fig. 29). Probes which are well cleaned and regularly checked ensure the correct functioning of the filter. The pressure probes must be removed from the protective pipe.

Probes can be cleaned by two possible ways

- It is usually sufficient just to wipe the probes with a wet cloth, but make sure you do not cause any mechanical damage to the probe.
- If the probes are so dirty that they cannot be well cleaned with a cloth, remove the probes and wash them in some container, do not use pressure water!
- Remember to keep all 4 holes in the black lid (Fig. 29) clean. If they are not clean and rinsing them with water does not help, clean the lid.



Fig. 28: Correct cleaning of a pressure probe



Fig. 29: Incorrect cleaning of the probe

8.8 Visual check of the belt

It is necessary to check the belt for any mechanical damage.

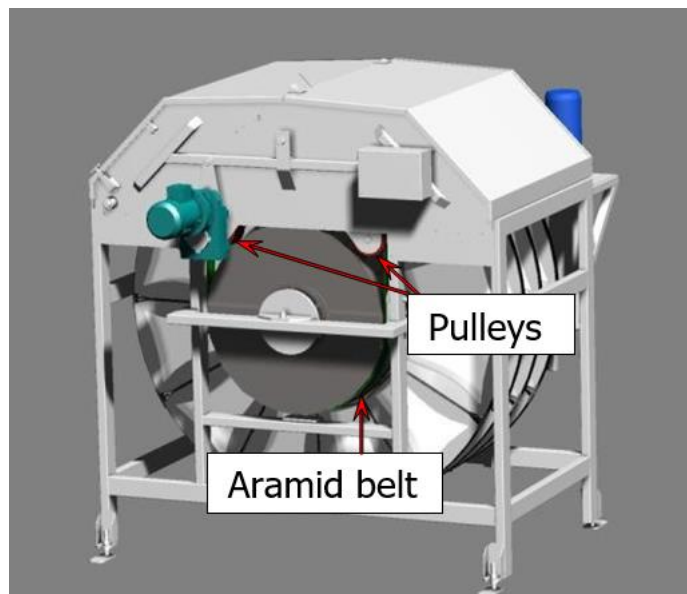


Fig. 30: Drive belt

8.9 Assembly – changing filter cassettes

Changing filter cassettes is easy and fast. No fixture is free to be removed from the rotary part of the disc filter, their number is considerably lower. Fixtures are freely accessible and are placed only on the circumference of the disc. As the fixtures are not freely removable, it is not necessary to hold them in hand when changing cassettes and thus there is no risk that the screws could fall down inside bottom part of the filter usually filled with water, where they could not be reached. Also, it is no longer necessary to change the cassettes in the centre of the discs which could only be done with difficulty as it is possible to work only on the disc circumference.

When loosening and tightening screws, the necessary torque force for screws is 5 to 8 Nm to prevent damaging the screw lock in the end position and dropping it in the tray area.

Therefore, an acudrill is recommended to be used to tighten and loosen the screws because it enables to pre-set the torque.



Fig. 31: Loosening a screw rails

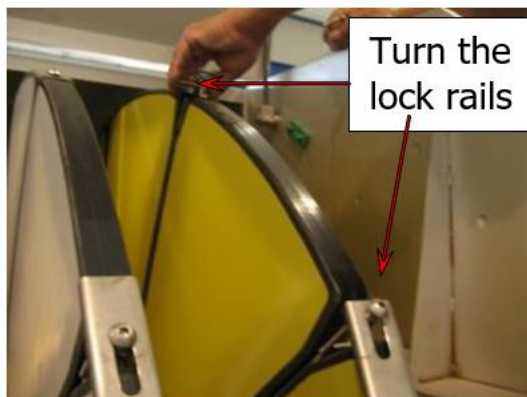


Fig. 32: Loosening of lock rails

Loosen screws using Allen wrench no.6, while at the same time releasing the lock rails which can be turned by 180° in order to remove the cassette. Remove the cassette using both hands in the direction shown in Fig. 33.

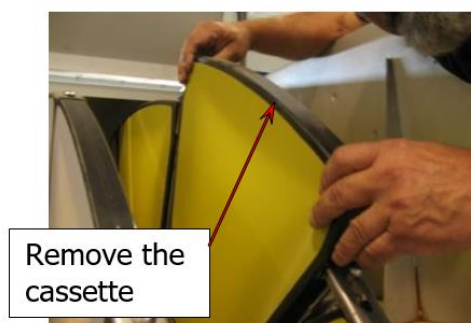


Fig. 33: Removing cassette



Fig. 34: Area for mounting a cassette

Locking the cassette back in place is done in the opposite way. It is necessary to pay special attention to the precise positioning of the cassette. To this purpose there are so-called spacer pads.

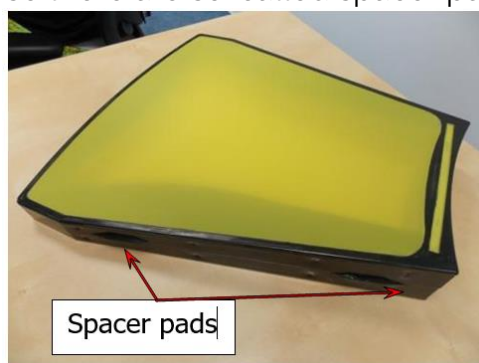


Fig. 35: Filter

cassette

9 TROUBLESHOOTING

A) Faulty function of the backwash system

The most important aspect for the correct functioning of the filter is to make sure that the nozzles are functioning correctly. Therefore water nozzles must be regularly checked for blockage and that the water jets are the right shape. If a check shows an incorrect shape of the jet, or a dysfunctional nozzle, it can be cleaned following the instructions in chap.7. If the jets are not strong enough, it is necessary to clean the whole system.

B) Continuous rotation of the filter drum It can be caused by the following:

1. The filter is overloaded with an excessive amount of impurities in the raw water. Once the quantity of impurities is decreased, normal function is restored.
2. Improper function of the jet rinse system (for troubleshooting see above).
3. Filter cloth is clogged with grease or becomes gradually clogged due to a long operation.

This can be eliminated by switching the filter to continuous operation for the period of 30 to 60 minutes. If the problem remains, the cloth can be either sprayed with de-greasants or replaced.

4. The level probe in front of the filter is clogged. The probe needs to be taken out of the holder and the impurities between the electrodes removed.
5. The filter is switched to continuous operation.

C) Water keeps flowing over the edge of the sludge tank inside the drum and into the sludge tank.

1. The jet rinse system is not functioning properly.
2. The filter is overloaded with a large amount of impurities in the influent water.
3. The filter cloth is clogged.

D) Water does not reach the edges of the sludge tank inside the drum but flows over the edges of the sludge tank.

1. The level probe in the sludge tank is clogged.
2. The sludge pump is clogged.

When checking the filter make sure that the automatic discharge of the sludge tank is functioning properly.

When the sludge tank is filled with sludge up to the upper level probe, the sludge pump must be automatically activated. Once the sludge is pumped out to the level of the bottom probe, it is deactivated.

When handling the level probes (e.g. during cleaning) it is imperative that the circuit breaker in the switchboard is switched off!

10 SAFETY

When using, handling and maintaining the machine it is necessary to follow the instructions contained in this document and observe the regulations and standards on the occupational health and safety for wastewater treatment plants. It is also necessary to observe legal regulations on occupational health and safety when working in the environment which presents a risk of electric shocks.

TURN OFF THE MAIN CIRCUIT BREAKER when performing any maintenance work on the filter!

WARNING!

It is necessary to switch off the circuit breaker on the distribution board before handling or carrying out assembly works on the microscreen filter.

Do not touch any moving components of the microscreen filter unit with any part of the body unless the electrical supply on the switchboard is switched off.

The unit can be installed, operated and maintained only by authorized and qualified personnel, trained for the conditions of the operation and occupational safety principles.

11 GUARANTEE

There is 24 month guarantee on the product. The supplier does not take any responsibility for damage caused by improper storage, bad or unqualified operation or handling, overloading the filter above the normal operational conditions or any other accidental cause or disregarding the information contained in this document.

The guarantee does not apply to the filter cloth. With optimal load and operation the filter cloth should be replaced once a year.

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