



RF200AR

INSTRUCTIONS



Installation and servicing instructions

Rotorflush RF200AR self-cleaning filter

Servicing and installation safety precautions

Before installing or servicing the filter observe safety precautions:

1. Wear gloves to protect hands against the risk of injury from any sharp filtrate particles etc and contamination from any bio-hazards which may be present.
2. Wear safety shoes to protect against injury to feet if the Filter is accidentally dropped.
3. Wear safety glasses to prevent eye injury.
4. Take special care to minimise risks to health from any bio-hazards which may exist due to the operating conditions of the Filter Recommended precautions include
5. Thoroughly clean all external surfaces of the Self Cleaning Filter and if appropriate, disinfect the pump and filter unit by immersing it in a proprietary disinfectant in accordance with the manufacturer's instructions.
6. Damp down the filter to minimise the airborne dispersion of any filtrate particles.
Wear a suitable face mask to prevent inhalation of any filtrate particles etc.
7. Wear gloves.
8. Wear safety glasses.
9. Thoroughly wash hands.
10. Do not eat, drink or smoke in the work area.

Description

The self cleaning filter is designed for use with centrifugal pumps as a pre-filter attached to the end of the suction hose. It has an internal cleaning rotor which continually backflushes the filter screen. The cleaning rotor is powered by taking a Tee off the output of the pump.

Construction:

Filter cage	304/316 stainless steel
Cleaning Rotor	304/316 stainless steel
Bearing	Delrin/304/316 stainless steel
Filter screen:	Sintered stainless steel or nylon. Standard 300 micron nylon (315 stainless steel and 100 and 50 micron nylon are available as options)

Flow rates and pressures

The maximum usable flow through the filter, (with standard 300 micron screen), 220 litres per minute with up to an additional 60-180 litres per minute required for backflushing, depending on the total suspended solids contained in the fluid and the type of solids, (fatty/ sticky solids will reduce performance)

Pressures and flow Rates to backwash rotor

Pressure at backwash connection (Bars)	Flow to backwash (litres/minute)
0.2	52
0.3	68
0.4	75
0.45	80



Installation

Please observe safety precautions as detailed under “servicing and installation safety precautions” above.

Filter positioning:

In Tanks:

It is important that there is enough room around the filter for solids backwashed from the screen to move away from the filter. When positioning in a tank there should be a minimum of 300mm between the outside diameter of the filter and the sides of the tank. It should be kept out of any debris that may settle at the bottom of the tank.

In Flowing Water:

Where the filter is positioned in flowing water, solids backwashed from the filter will be taken down stream and will not build up. It is still important to have space around the filter and we would recommend a minimum of 300mm between the outside diameter of the filter and the sides of the channel that it is sited in.

Pipe connections:

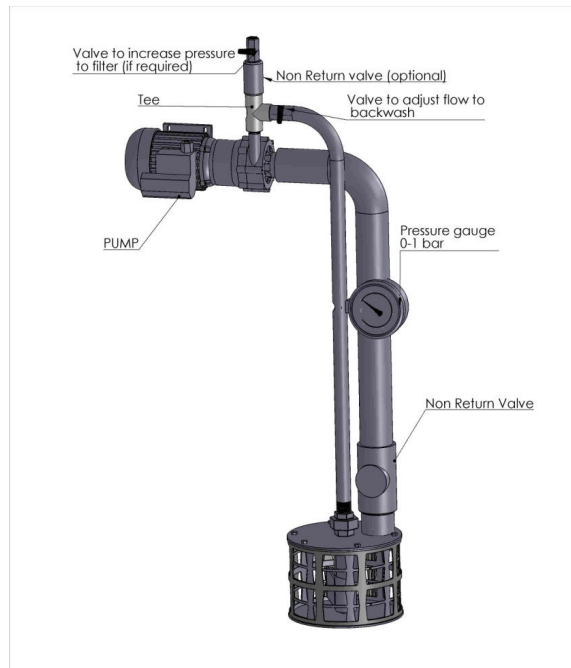
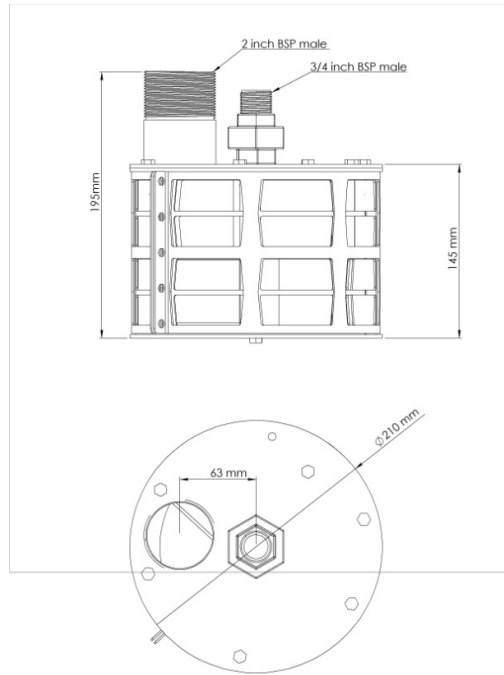
1. Connect the suction pipe from the pump to the 2 inch B.S.P. pipe which is off-centre at the top of the filter.. A 2 inch non- return valve should be fitted in the suction line near to the filter. It is important that when the pump is switched on water is immediately being returned to the flushing rotor inside the filter

2. Take a “T” off the output pipe of the pump. The return pipe from the Tee to the fitting in the centre of the top of the filter should be a **minimum of 1 inch** to avoid excessive pipe friction losses. When the pump is switched off the upstream pipe-line may drain back through the filter backwashing line. If this is likely to be a problem fit a non-return valve upstream of the Tee.

Fit a pressure gauge to the backwash line (scale 0-1 bars), as close to the filter as possible to avoid readings affected by friction losses in the backwash line.

Fit a valve on the branch of the TEE going to the filter backwash connection, (the central fitting on the filter). This is used to adjust the flow to the filter. The filter backwash only requires about 0.2-1.0 bars The filter rotor should run at 60-122 rpm depending on pressure to backwash connection. For most applications a the pressure to the backwash should be 0.2-0.5 bars. It can be set higher than this if there are a lot of suspended solids in the water and/or they are sticky and difficult to filter this will reduce the life of the screen if nylon screens are fitted. Stainless screens are more robust but we only fit 315 micron stainless screens. 100 micron and 50 micron screens are always nylon as they clean more efficiently.

3. Prime pump and run.



Fine Tuning

1. If the water to be filtered is very badly contaminated and filter blocks, unblock filter, by thoroughly cleaning the screen, (observe safety precautions under servicing). If this continues to occur, put a wheel valve or ball valve upstream of the "T" off. This can then be partially closed to send more fluid to the cleaning rotor. This will increase the cleaning power of the filter but reduce the amount of usable filtered flow.

Maintenance

Cleaning of tanks

As the filter is withdrawing water from the tank and leaving solids behind in the tank, the concentration of solids in the tank will increase. Unless the tank is cleaned out the increased solids concentration will eventually block the filter. Tanks either need to have a flow through them to take solids away, or they need to be cleaned out regularly.

Cleaning Filter Screen

Over a period of time the filter screen may become blocked with small particles that the self cleaning mechanism is unable to remove.

315 micron Stainless Steel Screens: Clean the outside of the filter using a pressure washer, or even better a steam cleaner thoroughly clean the outside of the filter screen

Replacement of Nylon Screens:

The 100 micron and 50 nylon screens will need replacing every 1000 hours of operation. The 300 micron nylon screens every 5000 hours. New inserts/screens are available from Rotorflush Filters Ltd

Servicing the cleaning Rotor

Over a period of time, there may be a decline in the cleaning performance of the filter and blockage may occur. This can be due to a build up of detritus in the jets of the cleaning rotor.

Remove the top plate of the filter (the plate with the suction and return pipes), by unscrewing the six bolts
Remove the top plate from the filter cage.

Turn the cleaning rotor so that the ends line up with the cut away parts of the filter cage and remove the cleaning rotor from the filter.

Using a high pressure hose blast water through the hole in the top of the cleaning rotor to remove detritus.



Replacing Stainless Steel Mesh

The Stainless Filter Mesh has sharp edges wear gloves to protect from cuts

1. Remove the 5 M6/M8 bolts on the tabs of the clamp on the filter cage and remove the outer clamping ring with filter inserts
2. Clean the inner filter cage.
3. Place the stainless steel filter mesh around the filter cage. The smooth side of the mesh to the inside of the filter
4. Place the outer clamping ring over the filter mesh.
5. This is the fiddly bit!!
The outer clamping rings apertures must line up with the inner filter cage apertures. The ends of the stainless steel mesh must be positioned so that they line up with one of the uprights between the apertures.
Have a pair of mole grips handy, so that when is all in the correct position you can clamp the tabs on the outer ring to hold all in position and re-adjust as necessary.
6. Double check that the ends of the filter mesh are not visible and are firmly behind one of the uprights. If they are visible then there will be a gap where particles can enter the filter.
7. When all is correct install the 5 bolts in the outer clamp and tighten.
8. Re-check alignment of both Cage with Clamp and Mesh joint with an upright column.

Please note that failure to do these alignments will cause reduced flow and/or larger particles to enter the pump. Either way this will eventually lead to a pump failure.

If there is a miss-alignment please go back to step 1.



NOTES.