

FILTER POT MIDDLE

FLOWIO
SUSTAINABLE BUILDING SOLUTIONS

THE ALL-IN-ONE SIDE STREAM FILTER AND DOSING UNIT

INCORPORATING:

- BSRIA compliant side stream filtration
- BSRIA compliant dosing pot with 24L capacity
- Magnetic particle removal with rare earth magnets
- Non-magnetic particle removal with 3-stage depth cartridge filtration
- Anti-microbial cartridge filtration range: 50µm, 20µm, 5µm and 0.5µm
- Air removal, including micro-bubbles
- All stainless steel construction, including all valves and fittings
- Suitable for systems up to 375,000L, 16Bar working pressure and maximum working temperature up to 100°C
- Unique drain and fill feature
- Combined temperature and pressure gauge as standard
- Insulation jacket included

DID YOU KNOW?

Side-stream filtration is suitable for most systems and strongly recommended for systems over 2,500 litres. (BSRIA BG29)

In Partnership With



THE POWER AND BSRIA COMPLIANCE OF THE FILTER POT MIDI

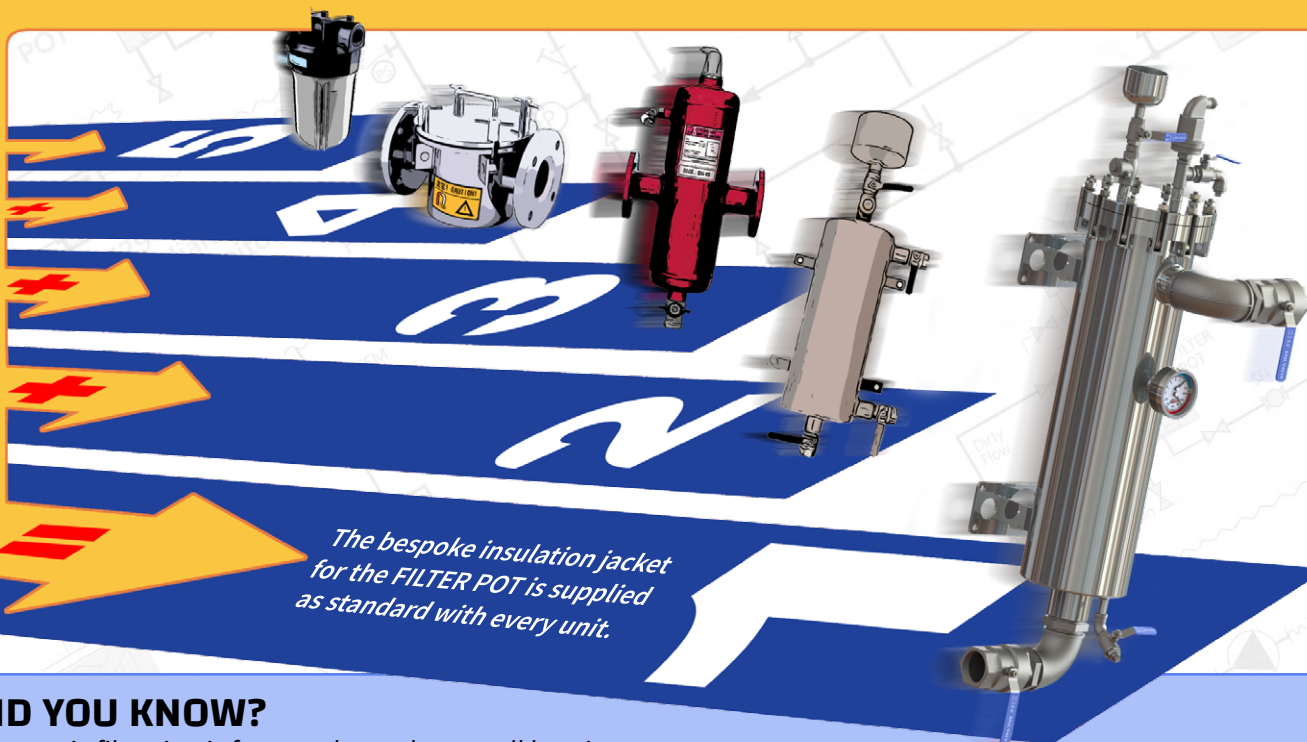


The Filter Pot complies with the intent of the BSRIA Guidelines BG29/2020 and BG50/2021

Description	BG29 Section	BG50 Section
Side Stream Filtration	2.3.8	3.4.2 & 5.3
Chemical Dosing	2.3.8 & 7.2.6	3.4.3
Corrosion Inhibitor Treatment		5.1.3
Magnetic Filtration	2.3.8	5.3.2
Disposable Media Filtration		5.3.3
Passive Deaeration		5.4.1
Fill Water Pre-Treatment	4.3.4	3.4.1
Solids Removal & Filtration	2.3.8	3.4.2
Bacteria & Bio-fouling Inhibition	2.3.8	4.2 & 5.2
CPD Dynamic Filling	6.1	
Maintenance & Inspection	7.3	3.4.4
Dynamic Flushing Procedure	5.2.1	
On-Line Cleaning	2.3.8	6.4.1

DID YOU KNOW?

There's a simple reason why the All-In-One FILTER POT MIDI is the number 1 choice. It contains ALL the functions of Dosing Pots, Dirt & Air Separators, Magnetic In-Line Filters and Cartridge Filters, including the many other features within the BSRIA Guidelines as listed above.



The bespoke insulation jacket for the FILTER POT is supplied as standard with every unit.

DID YOU KNOW?

"Magnetic filtration is frequently used on small heating systems to remove abrasive iron-oxides (magnetite) from circulating water. In larger systems, some form of side-stream filtration (that can remove solids) is preferred." (BSRIA BG29)

FILTER POT MIDI



PRODUCTION CODE:
FPM202012



FLOWIO REFERENCE:
FILTER POT MIDI



DESCRIPTION:
FILTER POT MIDI
Side Stream & Filtration Unit



Tundish for dosing water
treatment chemicals

SS Auto Air Vent removes system
gasses and microbubbles, lowering the
rate of system corrosion

Manual Air Vent used during the
speedy dosing of water
treatment chemicals

Wall Mounting Bracket
for quick, easy and
sturdy installation

**Magnet Grate,
Baffle Plate and
Anti-Microbial
Cartridge Filter**
all located
within the
vessel

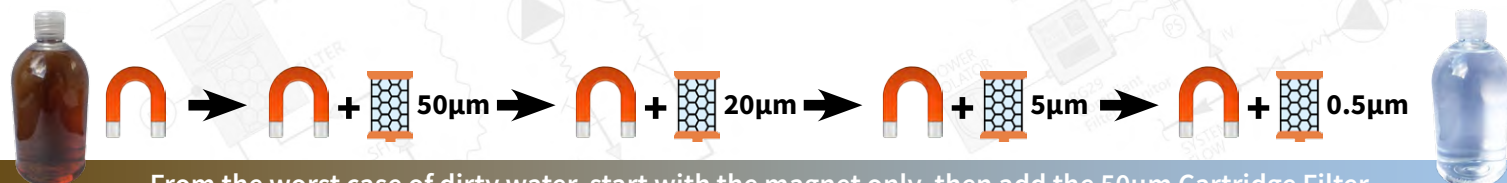
**A 0.5µm Anti-
Microbial Filter**
is supplied
standard
with the unit.

**Dirty Water
In Connection**
Dirty system water
enters the Filter Pot

**Combined
Pressure and
Temperature
Gauge**

Unique Drain and Fill Feature
Guaranteed drainage even when the
Cartridge Filter is blocked. System
filling feature using the Anti-Microbial
Cartridge Filter as a pre-treatment filter

Clean Water Out Connection
cleaned water exits the Filter Pot



From the worst case of dirty water, start with the magnet only, then add the 50µm Cartridge Filter and by working your way down to the 0.5µm Cartridge Filter to achieve a polished clear water sample.

FILTER POT MIDI



CARTRIDGE FILTER PRODUCT CODES

0.5µm	CFR 202045
5µm	CFR 202046
20µm	CFR 202047
50µm	CFR 202048



CARTRIDGE FILTER CONSTRUCTION MATERIALS:

Filter Media:	Nylon infused with Silver Ions
End Caps:	Nylon
Gasket:	EDPM



Rare Earth Magnetic Rods housed within a 316SS Magnetic Grate

Magnetic Removal of Corrosion Debris

At the core of the FILTER POT MIDI lies a 316SS Magnetic Grate containing four extremely powerful Rare Earth Magnetic Rods. The Magnet Grate has been designed to optimise the fluid dynamics required to capture magnetic corrosion particles as they enter the vessel body before the system water flows down to the Cartridge Filter below.



Magnetite collected on the external surface of the Rare Earth Magnetic Grate

Non-Magnetic Debris Removal by the Anti-Microbial Cartridge Filter

Not only is the new FILTER POT MIDI filtration cartridge excellent at capturing dirt down to 0.5µm, but the vessel promotes a pressure drop within, resulting in coalescence occurring and producing micro-bubbles on the Cartridge Filter surface. These micro-bubbles make their way out of the vessel by way of the stainless steel AAV, reducing the overall gas levels in the system water and thereby reducing the overall corrosion rate.

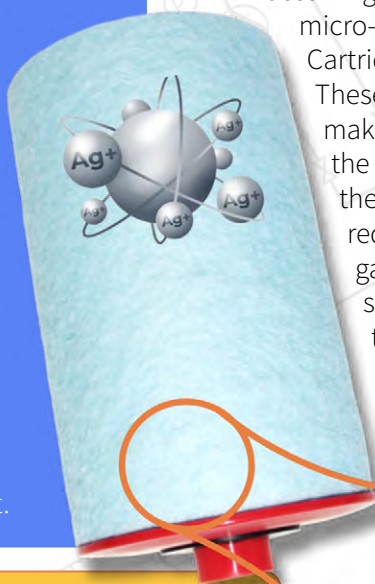


Non-magnetic dirt and debris captured by the Anti-Microbial Cartridge Filter

DID YOU KNOW?

The new BSP Anti-Microbial Depth Filtration Cartridges utilise a layer of nylon infused anti-bacterial additive to effectively trap and retain variously sized particulates down to a class leading 0.5µm, but they also inhibit the growth of trapped bacteria and microbes within the filter.

This prevents premature blocking from bio-film by using Silver-Ion technology with anti-microbial properties to neutralise bacteria so keeping the filter core open to capture more dirt.

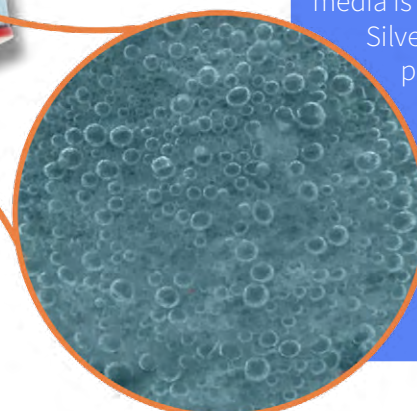


DID YOU KNOW?

According to Henry's Law at a constant temperature, the solubility of a gas in a liquid is directly proportional to the pressure of the gas. (In layman's terms, as the pressure drops, the liquid cannot hold as much gas, so the excess gas bubbles out of the solution.)

DID YOU KNOW?

The Polypropylene filtration media is impregnated with Silver Ions and a new preparatory ingredient which increases the bio-degradable breakdown of the filtration media by 250 times! (Effectively 3 years down from 750 years).



FILTER POT MIDI

THE TECHNICAL BITS



SIZING THE CORRECT PIPEWORK TO/FROM THE FILTER POT MIDI AND SETTING THE DANFOSS PICV TO COMPLY WITH BSRIA GUIDANCE

To size the pipework to comply with BSRIA Guidance to/from a FILTER POT MIDI and to control the flow rate is simple and can be broken down into three easy steps:

1. PRESSURE

Make sure the system working pressure is below 16Bar for the FILTER POT MIDI.

2. SYSTEM WATER VOLUME

The BSRIA guide advises the total system water volume of the system water should pass through the FILTER POT MIDI in a 24-hour period.

3. Once you confirm the system volume, then the chart below will confirm the pipe size to/from the FILTER POT MIDI.

If you know the system volume:

Total volume of system	Pipework size to/from system
2,000L to 36,000L	DN15 - ½" pipe to the FILTER POT MIDI
36,100L to 53,000L	DN20 - ¾" pipe to the FILTER POT MIDI
53,100L to 90,000L	DN25 - 1" pipe to the FILTER POT MIDI
90,100L to 103,000L	DN32 - 1¼" pipe to the FILTER POT MIDI
103,100L to 141,000L	DN40 - 1½" pipe to the FILTER POT MIDI
141,100L to 213,000L	DN50 - 2" pipe to the FILTER POT MIDI
213,100L to 375,000L	DN65 - 2½" pipe to the FILTER POT MIDI

If you know the kW rating of the heating system:

Total heating system kW	Pipework size to/from heating system
660kW to 3,000kW	DN15 - ½" pipe to the FILTER POT MIDI
3,000kW to 4,400kW	DN20 - ¾" pipe to the FILTER POT MIDI
4,400kW to 7,500kW	DN25 - 1" pipe to the FILTER POT MIDI
7,500kW to 8,500kW	DN32 - 1¼" pipe to the FILTER POT MIDI
8,500kW to 11,750kW	DN40 - 1½" pipe to the FILTER POT MIDI
11,750kW to 17,750kW	DN50 - 2" pipe to the FILTER POT MIDI
17,750kW to 30,750kW	DN65 - 2½" pipe to the FILTER POT MIDI

If you know the kW rating of the cooling system:

Total cooling system kW	Pipework size to/from cooling system
530kW to 2,400kW	DN15 - ½" pipe to the FILTER POT MIDI
2,400kW to 3,500kW	DN20 - ¾" pipe to the FILTER POT MIDI
3,500kW to 6,000kW	DN25 - 1" pipe to the FILTER POT MIDI
6,000kW to 6,900kW	DN32 - 1¼" pipe to the FILTER POT MIDI
6,900kW to 9,400kW	DN40 - 1½" pipe to the FILTER POT MIDI
9,400kW to 14,200kW	DN50 - 2" pipe to the FILTER POT MIDI
14,200kW to 24,500kW	DN65 - 2½" pipe to the FILTER POT MIDI

4. FLOW RATE CONTROL

To control the flow rate through the FILTER POT MIDI, use the following calculation:

$$\frac{\text{Total Volume of System}}{86,400} = \text{L/sec}$$

Example:
 $\frac{135,500}{86,400} = 1.57 \text{ L/sec}$ through DN40 pipework
 to/from the FILTER POT MIDI



Bespoke Insulation Jacket supplied standard with every unit

If the system volume is between 2,000L and 7,300L the minimum flow rate is to be no less than 0.085L/s through ½" pipework.

Note: You can estimate the system volume by multiplying the kW rating:

Heating kW x 12 = Litres

Cooling kW x 15 = Litres

You can then set the Danfoss PICV (within the BG29 Compliant Valve Pack) to a flow rate of 1.57L/sec. This will now limit the flow through the FILTER POT MIDI to comply with BSRIA regulations.

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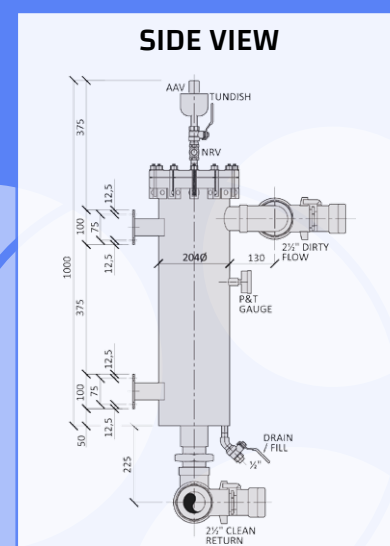
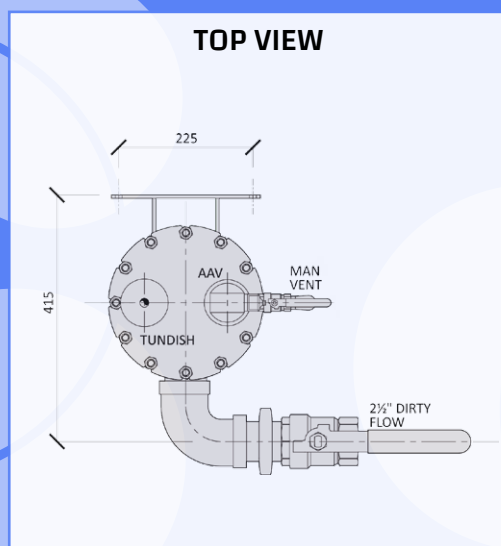
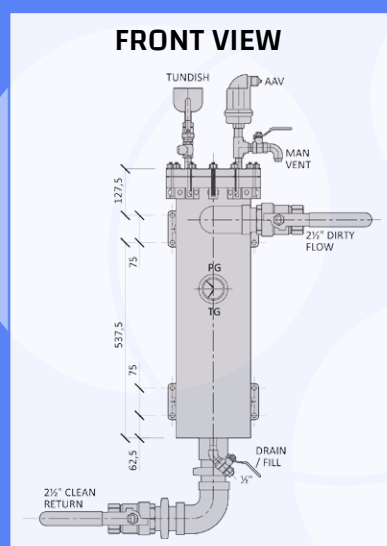
FEATURES & DESCRIPTION



Product Code	Reference	Description
FPM202012	FILTER POT MIDI	FILTER POT MIDI Side Stream Filter and Dosing Unit

Description	BG29 Section
Design pressure (Bar G)	FV/16
Suitable for system volumes up to	375,000 Litres
Flow rate through the vessel	0.08 L/sec to 4.34 L/sec (4.8 L/min to 260 L/min)
Temperature range	0°C to 100°C (Magnet Only) 0°C to 90°C (Heating Systems)
Filtration rate	Down to 0.5 micron
Dirty flow inlet connection	DN65 - 2½" BSP Male
Clean return outlet connection	DN65 - 2½" BSP Female
Dosing capacity	24 Litres
Filter body mounting	Wall mounted
Designed to	Generally to PD5500
Vessel body	304 SS (complies with PED SEP 2014/68/EU - Fluid group 2)
Magnets x 6No	Neodymium Rare Earth
Cartridge Filter (1No 0.5micron - supplied with FILTER POT MIDI)	Polypropylene Melt Blown Anti-Microbial and Bio-Degradable Spun Bonded Fibre available in 50, 20m 5 and 0.5 micron as spare replacements
Isolation valves, NRV and fittings	304 SS
Automatic air vent	304 SS / 110°C / 16 Bar Max Working Pressure

The manufacturer reserves the right to change and/or amend details, specifications and/or dimensions of the FILTER POT MIDI at any time and without notice. Worldwide Patent Pending.



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