

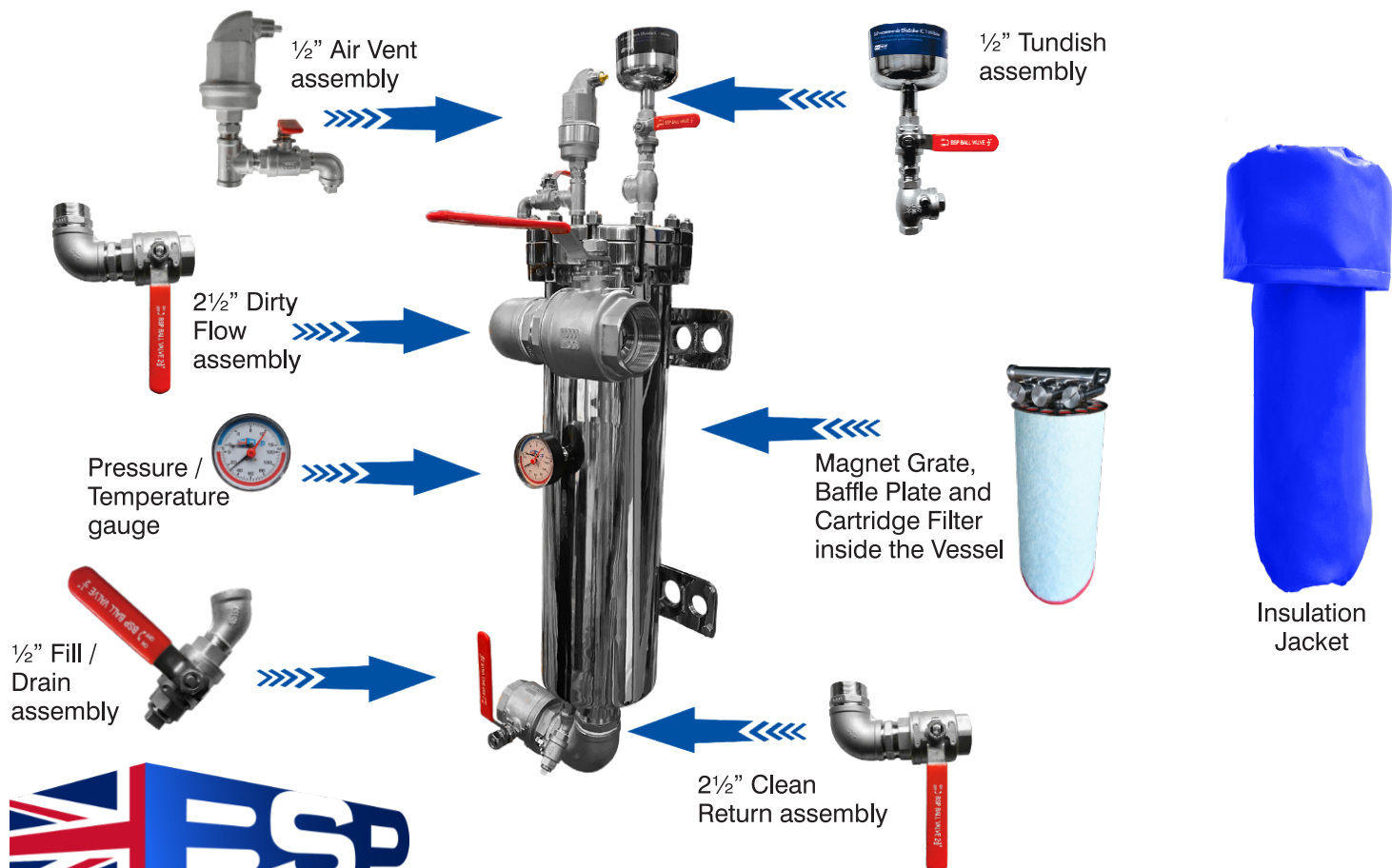
FILTER POT MIDI

SIDE STREAM FILTRATION & DOSING UNIT

Data Sheet

Prod Code:	BSP Ref:	Description
FPM202012	BSP FILTER POT MIDI	BSP FILTER POT MIDI Side Stream Filter and Dosing Unit

Feature:	Description:
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 0.5micron
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 + 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



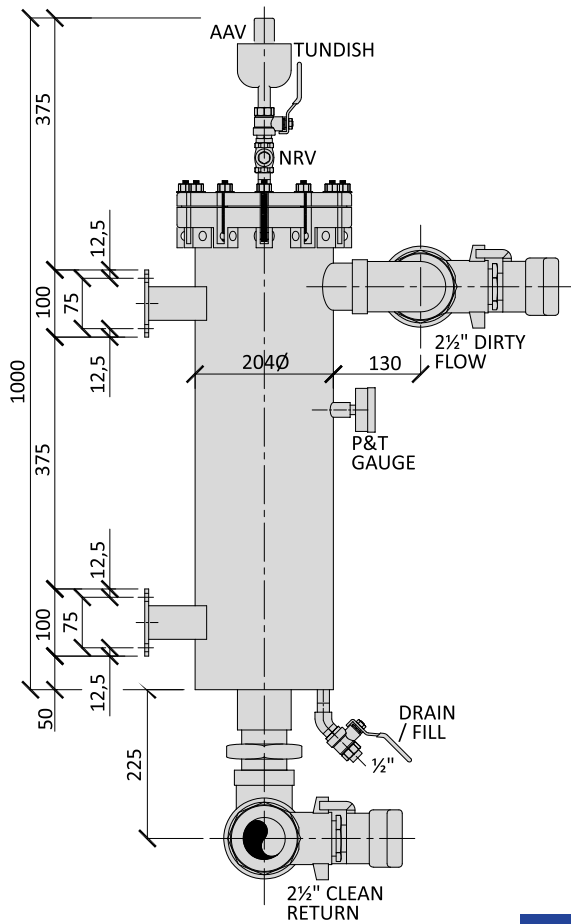
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Feature	Description
Compliance	Fully compliant with BSRIA guidelines BG29 and BG50 for side stream filtration, chemical dosing, corrosion inhibitor treatment, magnetic filtration, passive deaeration, fill water pre-treatment, solids removal and filtration, bacteria and bio-fouling inhibition, CPD dynamic filling, maintenance and inspection, dynamic flushing procedure and on-line cleaning. Cartridge Filters tested to ASTM E-2149 and ASTM G-29.
Magnetic Filter	Removes magnetic system debris before reaching the Cartridge Filter below, helps to increase the lifespan of the boiler, chiller and cooling system components, reduces carbon emissions, increases fuel efficiency and increases the lifespan of the Cartridge Filter.
Anti-Microbial & Bio-Degradable Polypropylene Cartridge Filter	<p>BSP's Anti-Microbial Spun Cartridge Filters remove both magnetic and non-magnetic system debris, available in 50, 20, 5 and 0.5 micron filtration rates, ensures coalescence micro-bubble formation on the surface of the Filter and surpasses BSRIA guidance for filtration rates.</p> <p>These Cartridge Filters are typically used in instances when the water has a heavy degree of particles. BSP Cartridge Filters can catch and hold a large volume of particles before they become clogged.</p> <p>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 (3 years from 750 years).</p> <p>The Silver Ions block the bacterial respiratory system of bacteria thereby destroying the energy production of the cell, leading to the bursting of the cell membrane and neutralising of the bacteria.</p> <p>Max working temperature is 90°C.</p>
BSP Stainless Steel Automatic Air Vent	Ensures the system micro-bubbles and air are emitted from the system, helps reduce noisy pipework and decreases stress on system components.
24L Dosing Pot Capacity	Enables installers and maintenance personnel to quickly and safely dose the system with water treatment chemicals.
DN65 - 2½" BSP Dirty Flow and Clean Return Connections	Suitable for LTHW heating and cooling water systems up to 375,000 Litres in system volume.

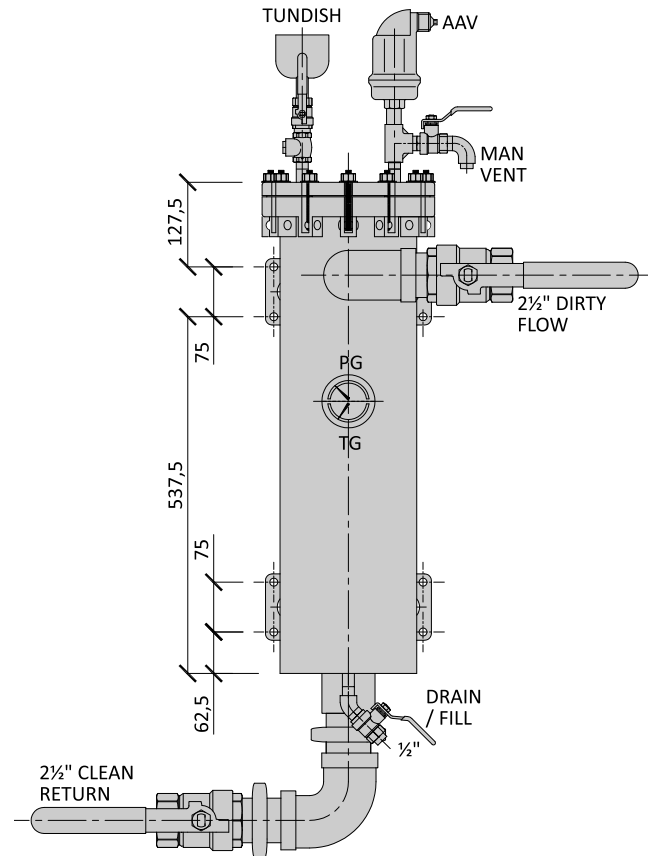
Feature	Description
DN15 - ½" BSP System Fill and Drain Connection	<p>Using the System Fill feature with the BSP Anti-Microbial 0.5micron Cartridge Filter reduces the possibility of bacteria, dirt and debris entering the system. Further, the fill feature can also be used to add larger volumes of inhibitor when an external pump is required for dosing.</p> <p>The dedicated DN15 - ½" Drain Connection ensures the system water is drained from the vessel during filter cleaning, leading to faster filter replacement time.</p>
6No 8,500 Gauss Neodymium Magnet Bars	Each magnet is fully encased in a 304SS shell, easily removable from the 316SS Magnet Grate for cleaning and fully submerged into the system water flow path for increased filtration.
Installation	Complete with 2No backing plates for simple installation to wall or frame (8 x M12 holes)
Servicing	The cleaning of the filters can be simply achieved without the need to shut the main system down and the dosing of water treatment chemicals is achieved safely and effectively, again without the need to shut the system down.
Unblockable System	Even if the filters are never serviced the ingenious design ensures that the filter will not inhibit system performance.
Stainless Steel Components	All components are manufactured from 304SS or 316SS for easy cleaning and servicing of the the filter.
Pressure / Temperature Gauge	A 0-16 Bar pressure and 0-120°C Temperature Gauge is included on the front of the vessel to give extra reassurance that the vessel is empty and safe to open and remove the lid before cleaning the filters.
Polished Inner Surface of Vessel	The inner surface of the Vessel is highly polished to remove any crevices. Metal 'eating' bacteria habitate crevices within pipework.
Full Bore Flat Face Isolation Valves	The 304SS isolation valves do not restrict system flow and increases the ease of installation.
Bespoke Insulation Jacket	The bespoke insulation jacket ensures heat loss is minimised.
Warranty	10 years from date of first installation (refer to the warranty document).

LINE DRAWINGS

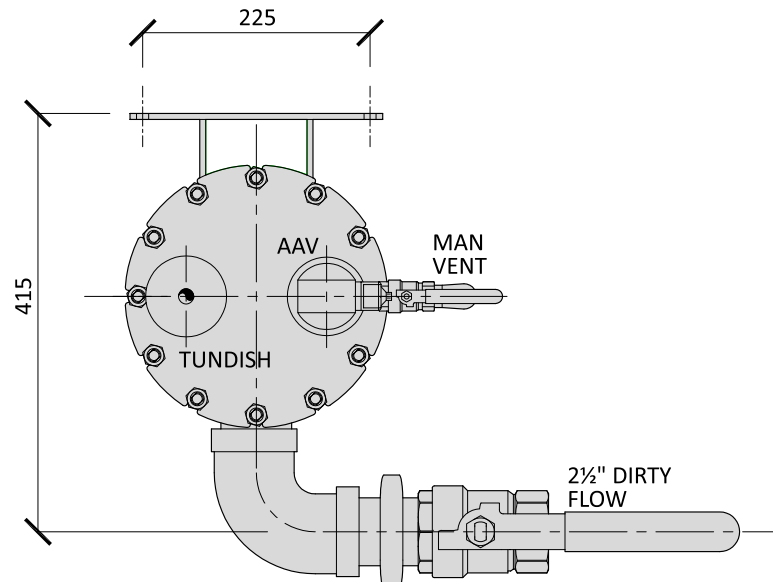
SIDE VIEW



FRONT VIEW



TOP VIEW



-sizing the correct pipework to/from the filter pot midi and setting the danfoss picv to comply with bsria guidance

To size the pipe to/from a FILTER POT MIDI and control the flow rate, this can be broken down into three simple steps:

- PRESSURE:** Make sure the system working pressure is below 16Bar for the FILTER POT MIDI unit.
- SYSTEM WATER VOLUME:** The BSRIA guide advises the total system water volume of the system should pass through the FILTER POT MIDI in a 24-hour period.
- If you don't know the system volume, you can estimate the system volume by multiplying the kW rating:
For example: Heating kW x 12 = Litres or for Cooling kW x 15 = Litres

Once you confirm the system volume, then the chart below will confirm the pipe size to/from the Filter Pot.

If you know the system volume:

Total volume of system	Pipe size to/from system
8,000L 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 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.

If you know the kW rating of the heating system:

Total heating system kW	Pipe 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	Pipe 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:

$$\frac{\text{Total Volume of System}}{86400} = \text{L/sec}$$

Example:

$$\frac{135,500\text{L}}{86400} = 1.57 \text{ L/sec through DN40 pipework to/from the FILTER POT MIDI}$$

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

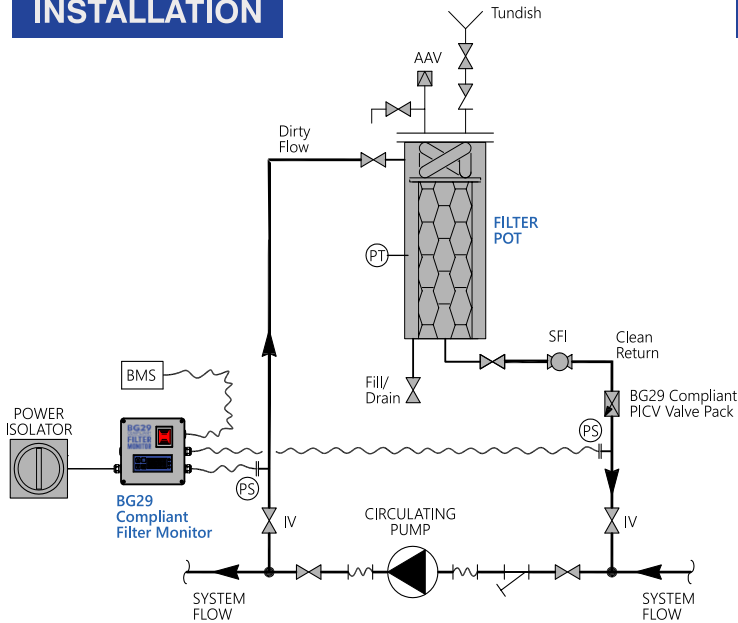
Heating kW x 12 = Litres or for Cooling kW x 15 = Litres

You can then set the Danfoss PICV (within the BSP BG29 Compliant Valve Pack) to 1.57L/sec. This will now limit the flow through the Filter Pot to comply with BSRIA regulations (see typical installation drawings on page 6).

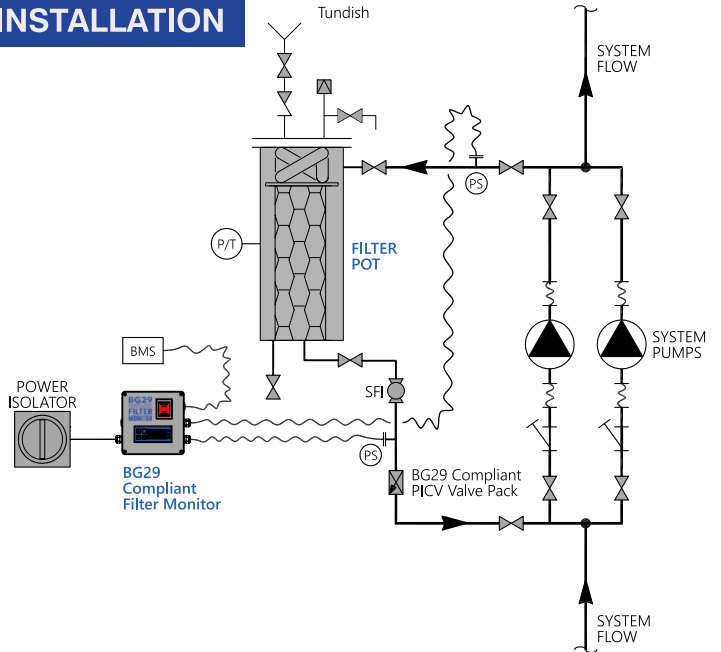


TYPICAL INSTALLATION SCHEMATICS

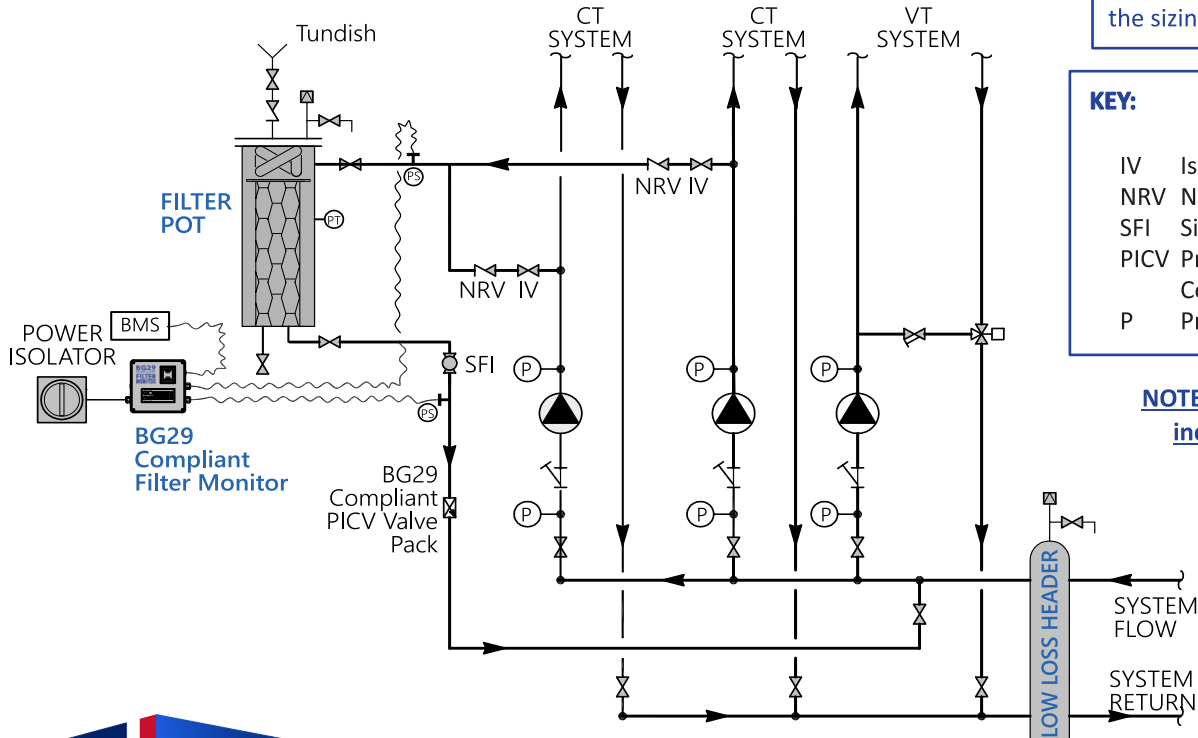
SINGLE PUMP INSTALLATION



TWIN PUMP INSTALLATION



LOW LOSS HEADER INSTALLATION



For the sizing of the dirty flow and clean return pipework, see the sizing details on page 5.

KEY:

- IV Isolation Valve
- NRV Non-Return Valve
- SFI Sight Flow Indicator
- PICV Pressure Independent Control Valve
- P Pressure Gauge

NOTE: These schematics are indicative of pipework schematics only.



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