



# MAG Pro Plus

## Installation & Servicing Instructions



In this procedure document we have endeavoured to make the information as accurate as possible.

We cannot accept any responsibility should it be found that in any respect the information is inaccurate or incomplete or becomes so as a result of further developments or otherwise.

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## WARNING

This filter contains a powerful magnet and strong magnetic fields are present.

It is recommended that wearers of pacemaker devices should maintain a safe distance during the filter operation and/or maintenance.

It is also important to minimize the use of electronic equipment in the vicinity of the magnet in order to ensure its operation is unaffected.

## INTRODUCTION

These installation and servicing instruction apply to ZILMET Mag Pro Plus magnetic system hub and should be read prior to installation.

The ZILMET Mag Pro Plus is a magnetic system hub which comprises of a magnetic dirt separator with integral filter basket, automatic air vent, manual air venting point, draining valve and a chemical dosing point where you can add up to 5 litres per minute of chemical dosing fluid using the ZILMET dosing funnel (Z1-DP)

ZILMET Mag Pro Plus represents the best solution to resolve plant problems due to debris resulting from ferrous material and other debris entering the system during construction and also corrosion products forming during normal system operation.

Thanks to its powerful magnetic capacity, size and flanged connections the ZILMET Mag Pro Plus is ideal hub for use in industrial and commercial heating systems.

Through its effective and constant action, the filter collects all the impurities present preventing them from continually circulating, thus avoiding wear and damage to all the components making up the system.

The impurities collected by the filter accumulate inside the stainless steel filter basket which itself incorporates a self closing valve to assist with the simplistic servicing schedule.

## PRODUCTS

| Code  | Description  |
|-------|--|
| ZMP02 | ZILMET Mag Pro Plus Magnetic System Hub with 2" Flanged Connections  |
| ZMP03 | ZILMET Mag Pro Plus Magnetic System Hub with 2½" Flanged Connections |
| ZMP10 | ZILMET Mag Pro Plus Magnetic System Hub with 3" Flanged Connections  |
| ZMP11 | ZILMET Mag Pro Plus Magnetic System Hub with 4" Flanged Connections  |
| ZMP12 | ZILMET Mag Pro Plus Magnetic System Hub with 5" Flanged Connections  |
| ZMP20 | ZILMET Mag Pro Plus Magnetic System Hub with 6" Flanged Connections  |

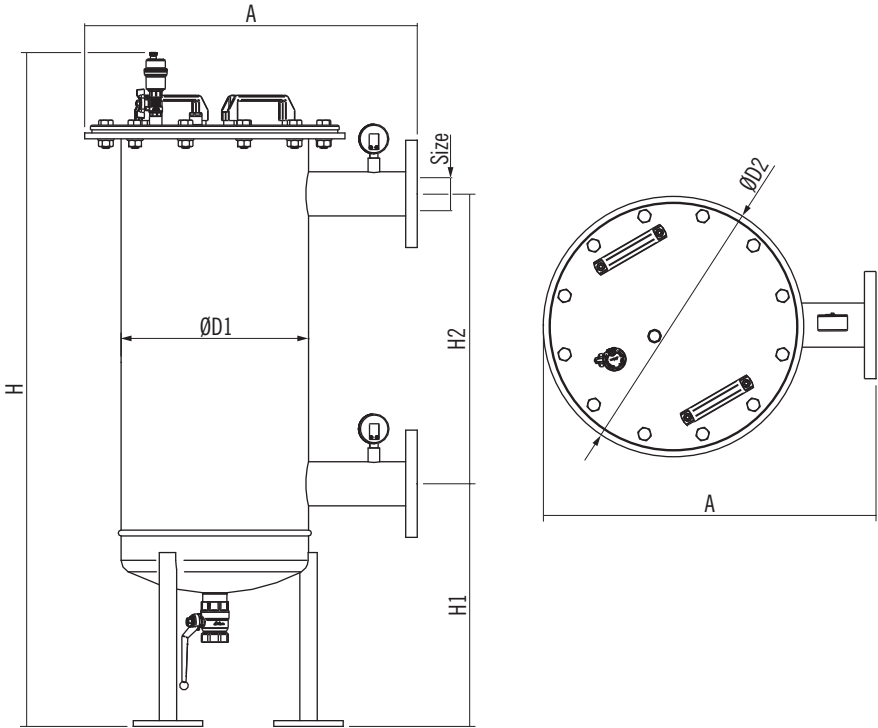
Also available:

Insulation jacket (TBC)

Dosing pot accessory (Z1-DP)



## Dimensions



| Code  | Size* | A      | ØD1    | ØD2    | H1#    | H2     | H#     |
|-------|-------|--------|--------|--------|--------|--------|--------|
| ZMP02 | 2"    | 18.62" | 8.66"  | 23.62" | 15.16" | 17.72" | 41.73" |
| ZMP03 | 2½"   | 22.64" | 12.76" | 17.72" | 16.50" | 19.69" | 45.75" |
| ZMP10 | 3"    | 22.64" | 12.76" | 17.72" | 16.50" | 19.69" | 45.75" |
| ZMP11 | 4"    | 22.64" | 12.76" | 17.72" | 16.50" | 19.69" | 45.75" |
| ZMP12 | 5"    | 25.83" | 15.98" | 20.94" | 17.13" | 21.65" | 48.86" |
| ZMP20 | 6"    | 25.83" | 15.98" | 20.94" | 17.13" | 21.65" | 48.86" |

\* Suitable for connecting to ASME/ANSI B16.5 steel flanges and ASME/ANSI B16.1 cast iron flanges

# Minimum value - supplied with adjustable legs extendable by approximately 8"



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## MATERIALS

|                          |                                   |
|--------------------------|-----------------------------------|
| Body including flanges:  | Steel coated on external surfaces |
| Cover:                   | Stainless steel                   |
| Ball valve and air vent: | Brass                             |
| Seals:EPDM               |                                   |
| Filter basket:           | AISI stainless steel              |
| Neodymium magnets:       | B = 12,000 Gauss                  |
| Number of magnets:       | 4                                 |
| Connections:             | Flanged ASME/ANSI B16.5 & B16.1   |
| Dosing point connection: | ½" NPT - plugged when supplied    |

## TECHNICAL SPECIFICATION

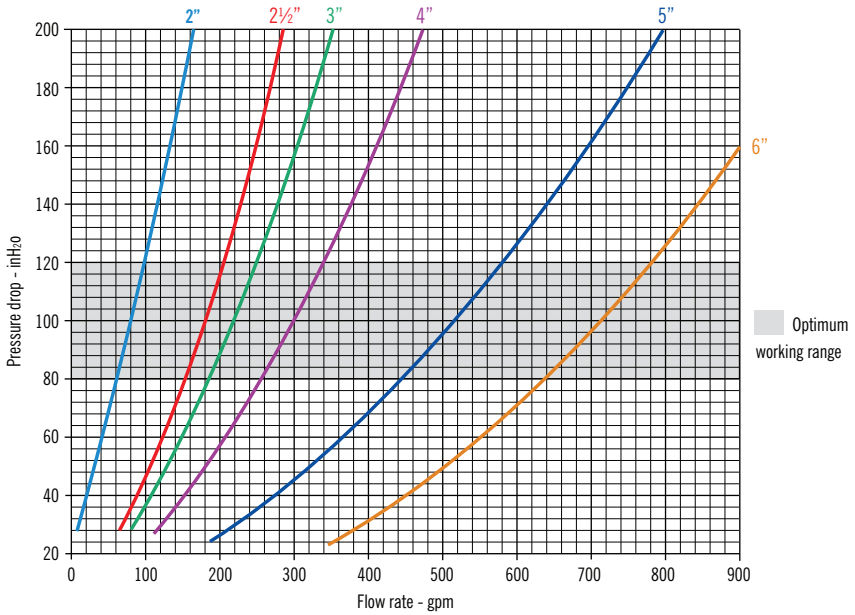
|                             |                             |
|-----------------------------|-----------------------------|
| Medium:                     | Water & 30% glycol solution |
| Maximum temperature         | 95 °C                       |
| Maximum operating pressure: | 10 bar                      |
| Degree of filtration:       | 100 microns                 |

## FEATURES

- Removes any impurities
- Self cleaning
- Helps to maintains optimum system efficiency
- Reinforced stainless steel mesh with 100 micron filtering.
- Fitted with a dosage point to add treatment fluids easily, for dosing pot see Z1-DP
- Magnets protected from contact with water making it easier to maintain.
- The large removable basket with check valve prevents impurities from falling into the filter.
- The large water content extends maintenance intervals.
- The possibility of cleaning the filter without draining system.
- Anti-condensation insulation jacket also available upon request.
- Inlet and outlet pressure gauge to assist with servicing intervals
- Height adjustment using adjustable legs
- Manual and automatic air venting points



## FLUID DYNAMICS



| CODE  | SIZE | Q80<br>gpm | Q120<br>gpm |
|-------|------|------------|-------------|
| ZMP02 | 2"   | 61         | 99          |
| ZMP03 | 2½"  | 154        | 203         |
| ZMP10 | 3"   | 185        | 250         |
| ZMP11 | 4"   | 255        | 340         |
| ZMP12 | 5"   | 442        | 580         |
| ZMP20 | 6"   | 638        | 780         |

Q<sub>30</sub> = flow rate with 120 inH<sub>2</sub>O pressure drop

Q<sub>20</sub> = flow rate with 80 inH<sub>2</sub>O pressure drop

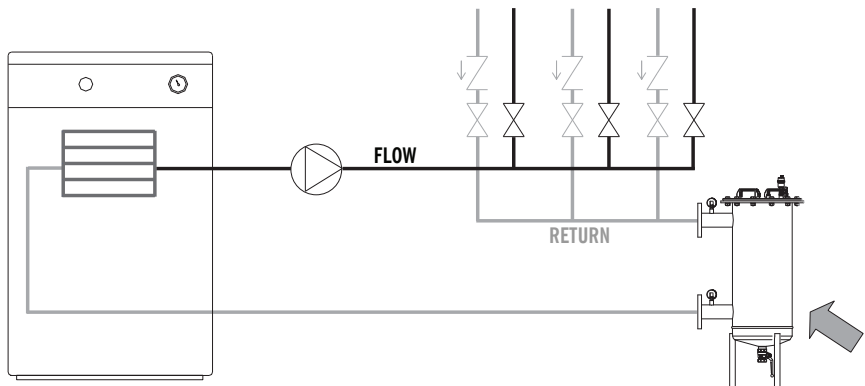
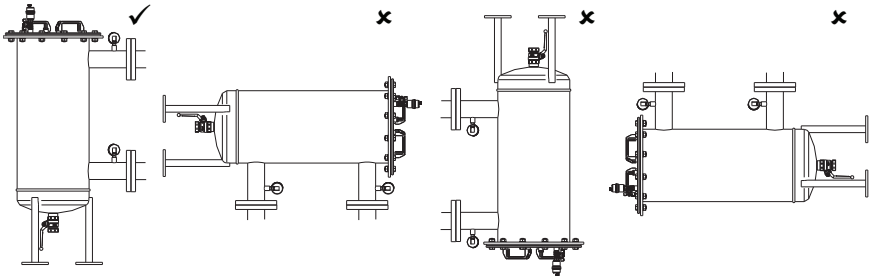
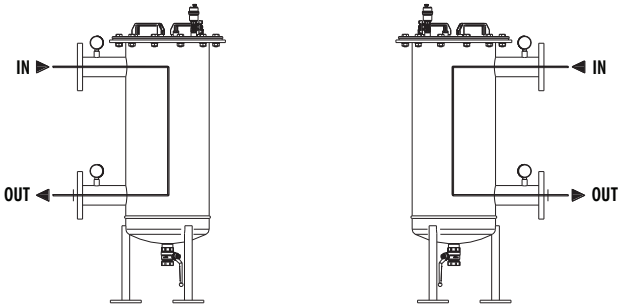
## INSTALLATION

ZILMET Mag Pro Plus features 3 stabilising legs which are adjustable in length.

NOTE: leg adjustment should be carried out prior to installation.

At the base of the legs there are fixing holes to allow the unit to be secured to the floor.

The ZILMET Mag Pro Plus must be installed vertically on the return to the heat source as shown below.



## INSTALLATION CONTINUED

Once in situ, appropriate connection must be made to the water supply using the flanged connections.

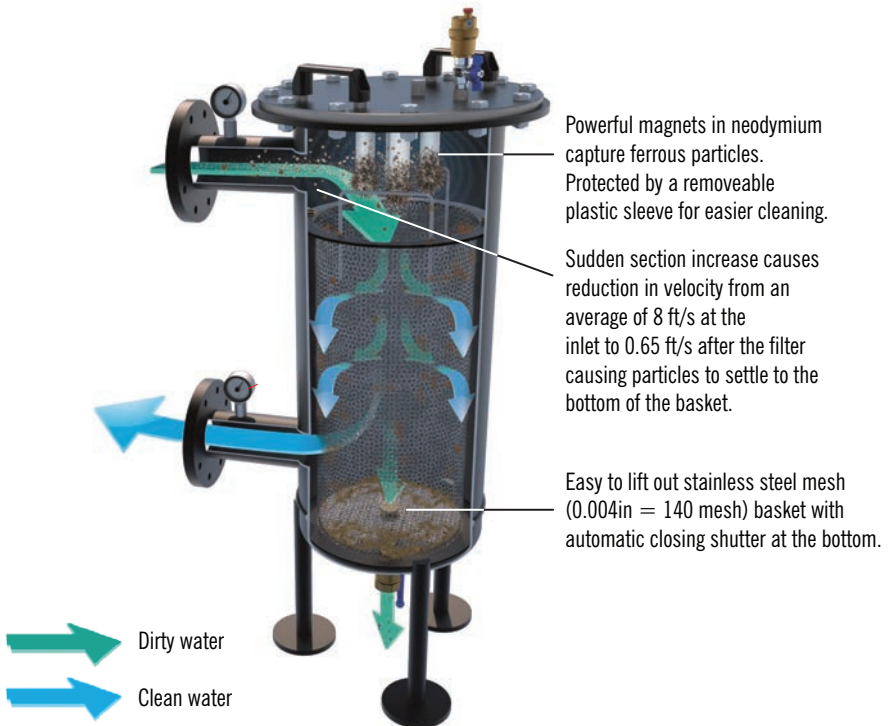
It is recommended that isolation valves are installed up and downstream of the unit to allow any future maintenance work to be carried out.

The ZILMET Mag Pro Plus is supplied with a flanged connection on the inlet and outlet.

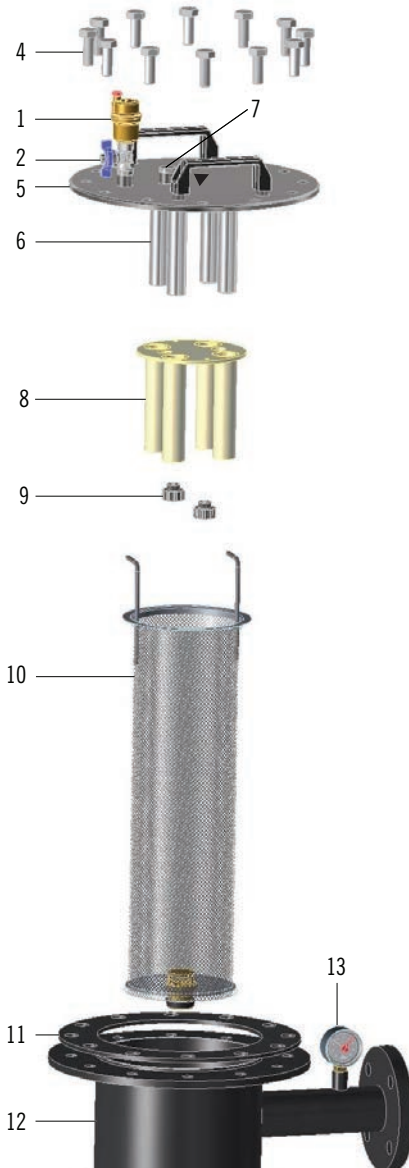
Connect the inlet and outlet pipework to the ZILMET Mag Pro Plus using an appropriate flange seal and secure in place using appropriately sized bolts (not supplied), tighten securely and check for leakage.

NOTE: Water flow into the ZILMET Mag Pro Plus should always be to the UPPER connection.

## OPERATING PRINCIPLE



## COMPONENTS



| Item | Component                   |
|------|-----------------------------|
| 1    | Automatic air vent          |
| 2    | Manual air venting valve    |
| 3    | Drain valve (not shown)     |
| 4    | Bolt                        |
| 5    | Cover                       |
| 6    | Magnets                     |
| 7    | Dosing pot connection point |
| 8    | Plastic sleeves for magnets |
| 9    | Locking nuts                |
| 10   | Filter Basket               |
| 11   | Gasket                      |
| 12   | Body                        |
| 13   | Pressure gauge              |



## MAINTENANCE

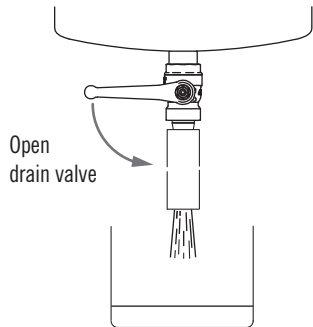
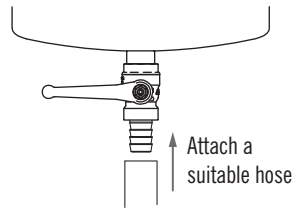
The ZILMET Mag Pro Plus magnetic system hub may require regular maintenance dependent on the system conditions.

In order to maintain your system and the hub's optimum performance levels we recommend that this servicing schedule is adhered to.

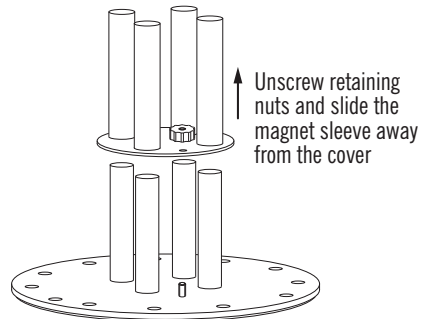
Please see below for ZILMET's recommended servicing schedule;

## SERVICING SCHEDULE

- ~ Remove Insulation jacket if applicable.
- ~ Close inlet and outlet isolation ball valves (not supplied).
- ~ Attach a suitable hosing method to the bottom drain valve to enable the draining of the fluid in the filter pot housing.
- ~ Once attached, open the bottom drain valve and allow to flow into a suitable container until pot is empty then close the drain valve.



- ~ Using a suitably sized socket undo the retaining nut and bolts from the cover plate.
- ~ Remove cover to reveal magnet and magnet sleeve, hold over a suitable container and proceed to undo retaining nut to release magnet sleeve.





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## SERVICING SCHEDULE CONTINUED

- ~ Wash off excess debris from the magnet sleeve.
- ~ Re-fit magnet sleeve and secure with the retaining nuts.
- ~ Lift basket (10) out and empty contents into a suitable container and thoroughly wash inside and outside mesh walls to remove all debris.
- ~ Wash out the rest of the filter pot if necessary and drain through bottom drain valve (3).
- ~ Refit filter basket.
- ~ Check gasket for signs of damage and replace if necessary.
- ~ Refit Cover plate and secure retaining nut and bolts and tighten securely.
- ~ Open isolation valves and top up system if required.
- ~ Check for signs of leakage.
- ~ At this point if any dosing chemicals or inhibitors are to be added see **page 10** for dosing information.

## DOSING

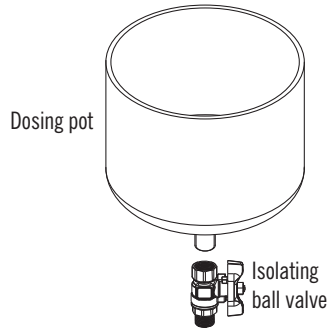
The ZILMET Mag Pro Plus magnetic hub has a dosing point (14) which can be used to add or increase the concentration of water treatment chemicals.

The (Z1-DP) accessory is a stainless steel dosing pot for the addition of system chemicals and inhibitors, see below for operation guidance

Note the filter pot should be empty for the addition of fluid and the isolation ball valves must remain in the closed position until dosing is complete.

## METHOD

- ~ Isolate the unit by closing the two isolating valves on the flow and return pipes and drain the contents.
- ~ Screw the dosing pot into the 1/2" isolating ball valve and screw the complete assembly into the 1/2" connection on top of the filter pot using a suitable fluid tight seal.
- ~ Open the butterfly ball valve by turning the black handle into the vertical position.
- ~ Begin to add fluid until the requirements is met.
- ~ Once finished turn the butterfly ball valve handle to the horizontal position to isolate from the system - refit blanking cap if required.
- ~ Re-open inlet/outlet ball valves and top up system as necessary.





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