

SINCE 1908
wessels
 company

INSTALLATION & OPERATION

TYPE: WVA-WM
AIR & DIRT WITH WESMAG
MODELS: STANDARD & HIGH VELOCITY

I/O SHEET No. WVA-114 (PAGE 1 OF 3) Date: 8/18

VESSEL DESCRIPTION

Wessels WVA-series Air & Dirt Separators with WesMag® are designed to eliminate entrained air and separate debris associated with start-up and maintenance of any hydronic system. The design incorporates multiple removable WesMag® stacks of neodymium rare-earth magnets in a stainless steel closed well. The design incorporates a removable end cover for coalescing medium access, and an air vent to automatically release air from the separator. The design and construction conform to ASME Section VIII, Div.1.

Factory Testing and Shipping

The WVA-WM has been factory tested and inspected prior to shipment. Upon receipt of the unit, carefully inspect the unit for damage that may have occurred during shipment. If the WVA-WM has been damaged, it should be noted on the freight bill and reported to the carrier.

Installation

To protect the WVA-WM from shipping damage, some components are shipped unattached and in a protective box. These components are to be added to the WVA-WM on site. See **Figure 1** for the correct installation location of loose components.

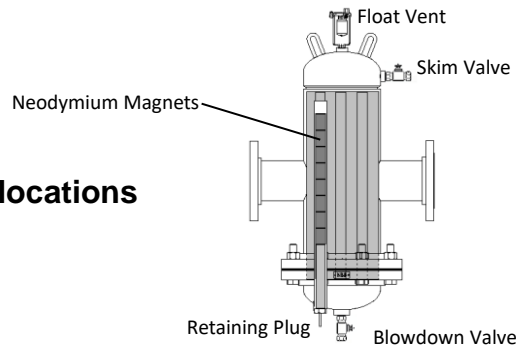


Figure 1: Component locations

It should be noted that the solubility of air into water decreases as pressure drops and/or as temperature rises. Placing the WVA-WM before the pump inlet will help pump performance and increase seal life. **Figure 2** shows suggested mounting locations for a heating or cooling system.

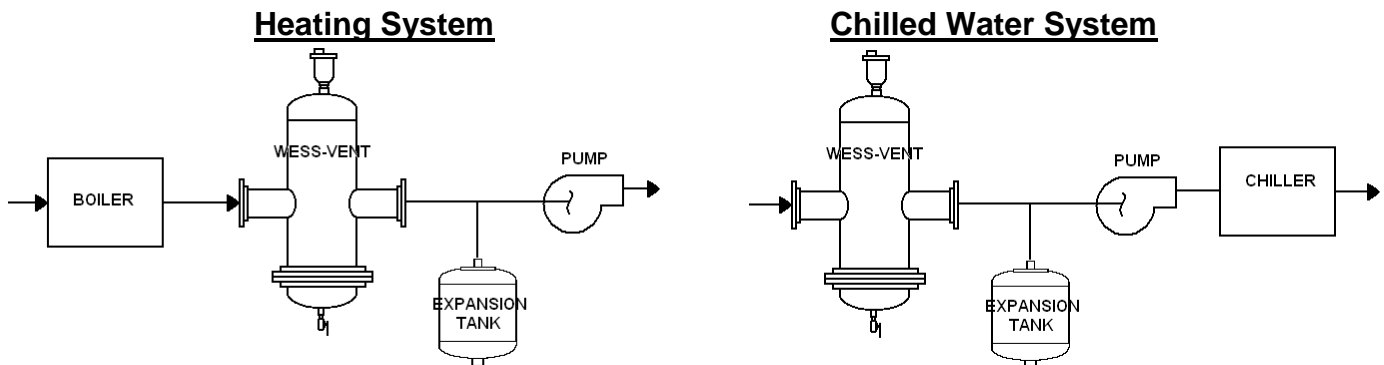
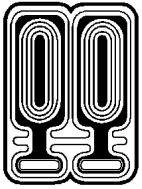


Figure 2: Suggested Mounting Locations



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Operation

1. The system water contains air bubbles, entrained air, and dirt particles.
2. Large air bubbles quickly rise to the top of the vessel and into the vent. Micro bubbles coalesce and form larger bubbles. Entrained air is pulled out of solution and forms micro bubbles.
3. The air vent releases air as fast as it can be separated.
4. Dirt particles with specific gravity greater than the fluid are strained or filtered from the water and collect in the bottom of the vessel.
5. Neodymium rare-earth magnets will attract iron particles of all micron sizes and adhere to the enclosed stainless-steel well.
6. The coalescing medium/filter separates the air and dirt from the water. Stainless steel construction provides durability and long life.
7. Should the need to clean the coalescing medium arise, the standard removable bottom cover provides ease of removal and cleaning.
8. Collected sediment can be flushed out through the Blow Down Valve.

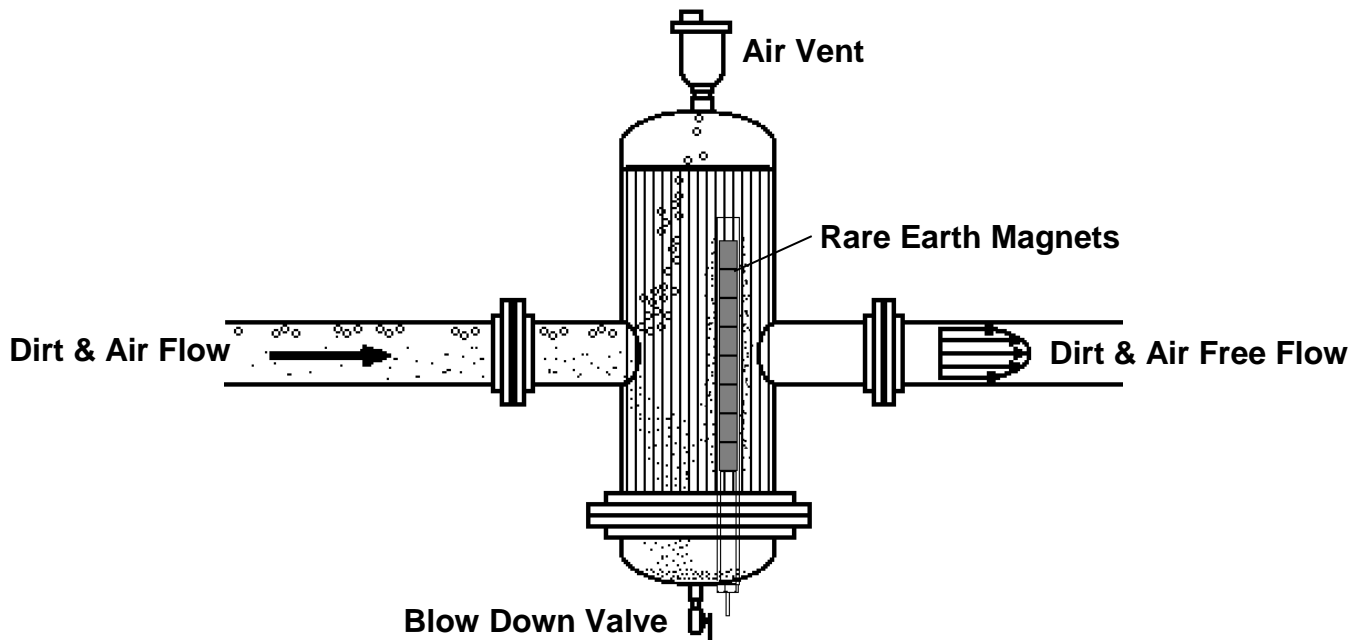
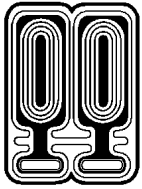


Figure 3: WVA-WM Operation

Upon initial start-up, the blow-down valve should be operated frequently. At each blow-down operation, document the amount of sediment and the amount of time since the previous blow-down operation. Use the information to determine an adequate blow down schedule.



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Maintenance

The coalescing medium is removable for cleaning. **NOTE: The removable cover supports the coalescing medium. The medium and cover are free to drop when the cover bolts are removed.**

Should the coalescing medium need to be removed for cleaning, new gaskets should be installed upon assembly of the WVA-WM.

Rare earth magnets can be removed while the separator is in service. The magnets are positioned in a closed stainless steel well. As the magnets attracts the iron debris, the debris will collect on the outer stainless well (**figure 4**). Remove the magnets by unscrewing the plug at the base of the well. As the magnets move down, the debris will follow due to the strong magnetic force (**figure 5**). As the magnets are fully removed, the debris is trapped in the bottom dome of the separator (**figure 6**). The blow-down valve can then be opened to discharge the debris from the system.

Re-install the magnets and tighten the retaining plug back into position.

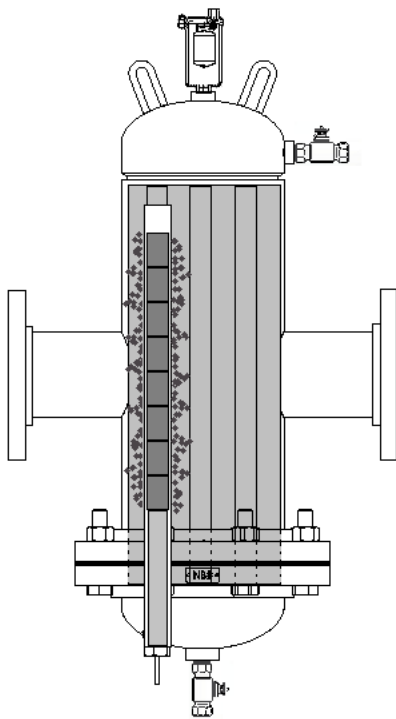


Figure 4

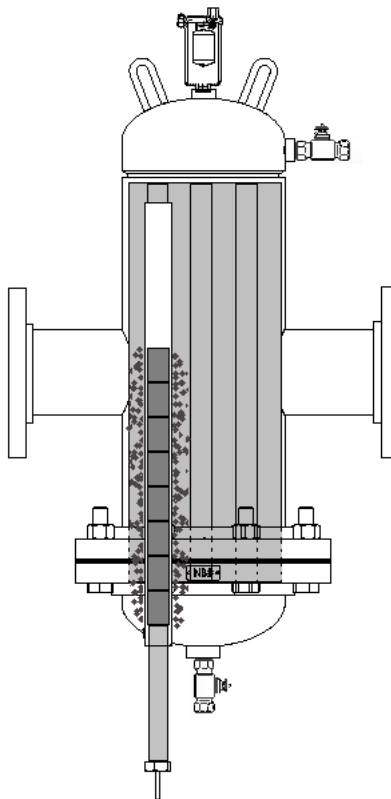


Figure 5

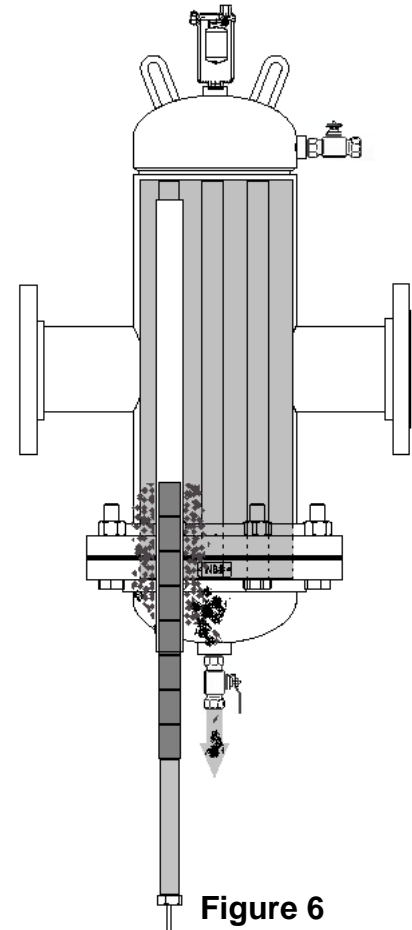


Figure 6