

SINCE 1908  
**wessels**  
company

## INSTALLATION & OPERATION

TYPE: **WESS-VENT**  
**AIR & DIRT SEPARATOR**

MODELS: STANDARD & HIGH VELOCITY

I/O SHEET No. WVA-112 (PAGE 1 OF 3) Date: 8/04

### VESSEL DESCRIPTION

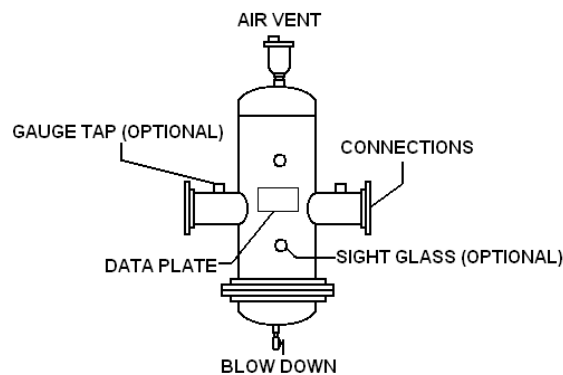
Wessels WVA-series Air & Dirt Separators are designed to eliminate entrained air and separate debris associated with start-up and maintenance of any hydronic system. The design incorporates a removable end cover for coalescing medium access, and an air vent to automatically release air from the separator. The design and construction conforms to ASME Section VIII, Div.1

### Factory Testing and Shipping

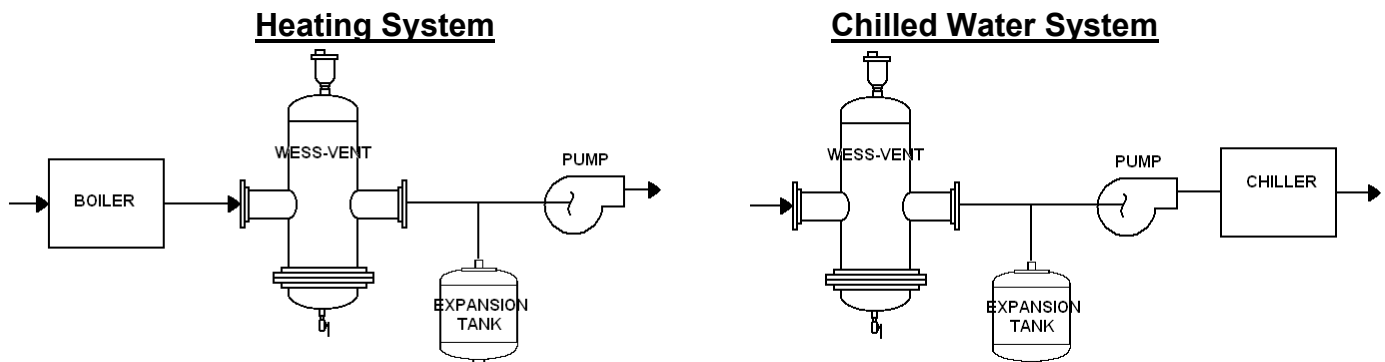
The WESS-VENT has been factory tested and inspected prior to shipment. Upon receipt of the unit, carefully inspect the unit for damage that may have occurred during shipment. If the WESS-VENT has been damaged, it should be noted on the freight bill and reported to the carrier.

### Installation

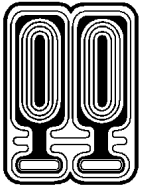
In order to protect the WESS-VENT from shipping damage, some components are shipped unattached and in a protective box. These components are to be added to the WESS-VENT on site. See Figure 1 for the correct installation location of loose components.



It should be noted that the solubility of air into water decreases as pressure drops and/or as temperature rises. Placing the WESS-VENT before the pump inlet will also 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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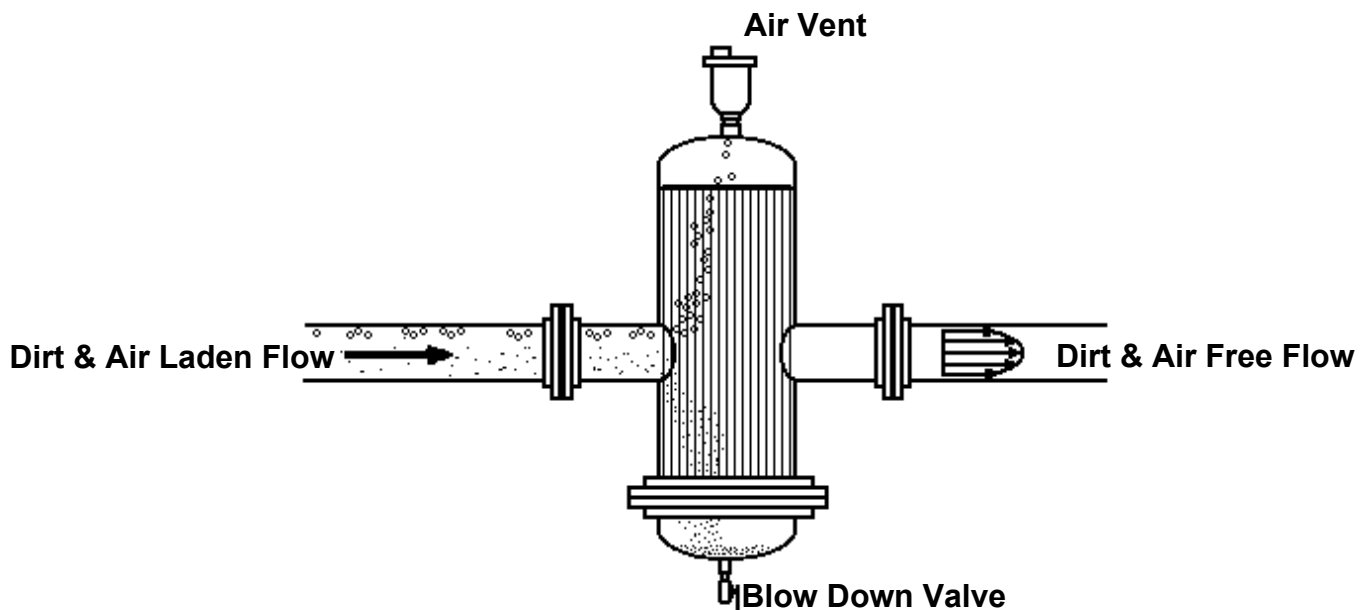
MODELS: **STANDARD & HIGH VELOCITY**

I/O SHEET No. WVA-112 (PAGE 2 OF 3)

Date: 8/04

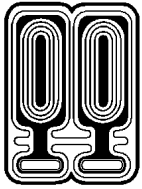
### Operation

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 fast as it can be separated.
4. Dirt particles are strained or filtered from the water and collect in the bottom of the vessel.
5. The coalescing medium/filter separates the air and dirt from the water. Stainless steel construction provides durability and long life.
6. Should the need to clean the coalescing medium arise, the standard removable bottom cover provides ease of removal and cleaning.
7. Collected sediment can be flush out through the Blow Down Valve.



**Figure 3: Wess-Vent Operation**

Upon initial start up, the blow-down 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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I/O SHEET No. WVA-112 (PAGE 3 OF 3)

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**Maintenance**

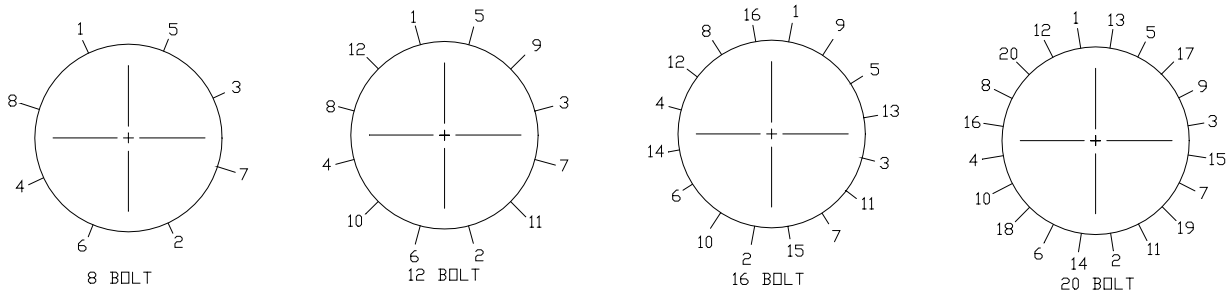
The coalescing medium is removable for cleaning. **NOTE: The removable cover supports the coalescing medium. The medium and cover are free to drop when the cover bolts are removed.**

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

The bolts should be torqued incrementally to 30%, 60%, and then to 100% of the appropriate value shown in the table below. They should be torqued in the sequential order of the appropriate pattern shown in Figure 4.

**Table 1: Bolt Torque Values**

WESS-VENT Connection Size	WESS-VENT Body Size	Bolt Size	Number Of Bolts	Torque Ft.-lbs. 150# Flgs.
2"	4"	5/8"	8	30
2.5"	5"	3/4"	8	50
3"	6"	3/4"	8	50
4"	8"	3/4"	8	50
5"	10"	7/8"	12	80
6"	12"	7/8"	12	80
8"	16"	1"	16	123
10"	20"	1-1/8"	20	195
12"	24"	1-1/4"	20	273



**Figure 4: Bolt Tightening Order**