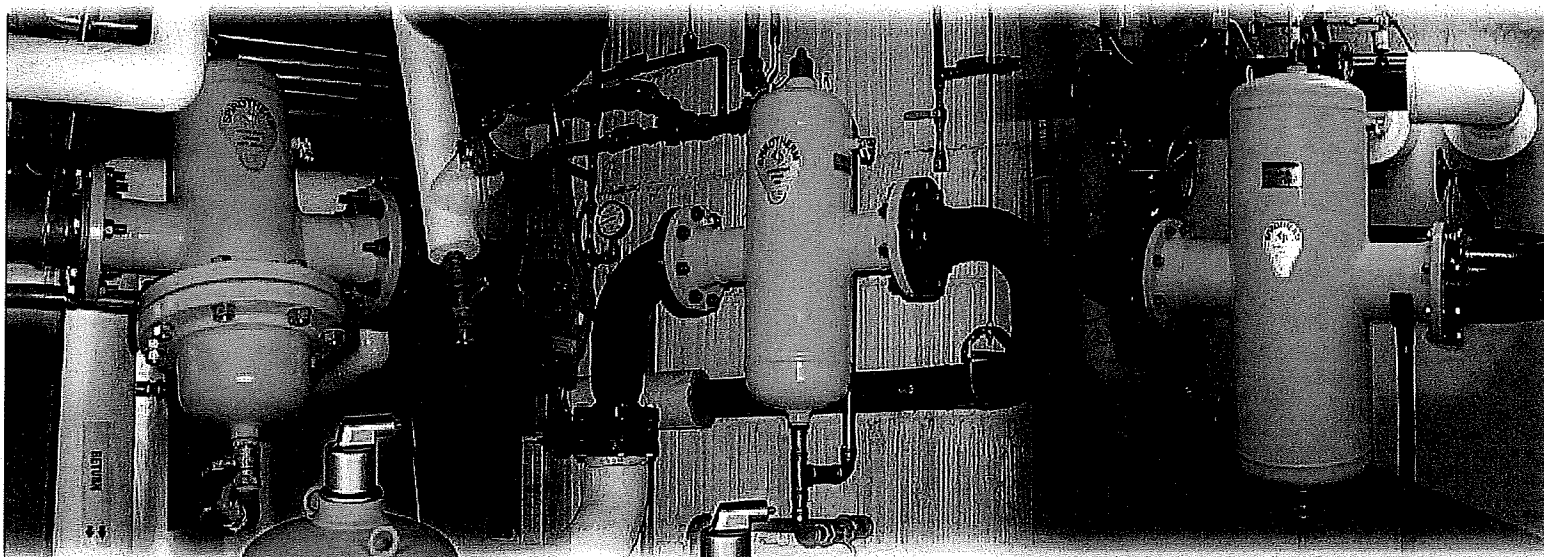
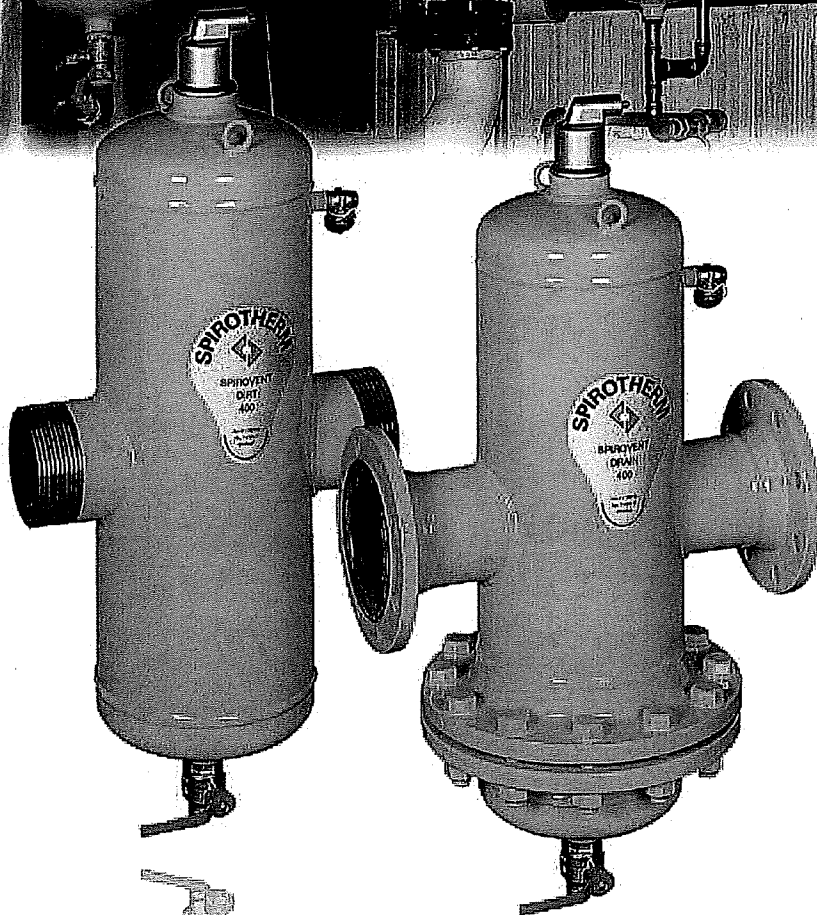


SPIROVENT® DIRT



AIR ELIMINATORS
DIRT SEPARATORS
STANDARD VELOCITY



SPIROTHERM

THE ULTIMATE IN DISTRIBUTION EFFICIENCY

AIR- AND DIRT-FREE SYSTEM WATER THROUGH A SINGLE UNIT

The life and efficiency of a heating or cooling system are greatly dependent on the quality of the system water. Air and dirt problems cause frequent breakdowns and increased customer complaints. Corrosion, cavitation, and component wear are consequences of air-saturated, dirty water.

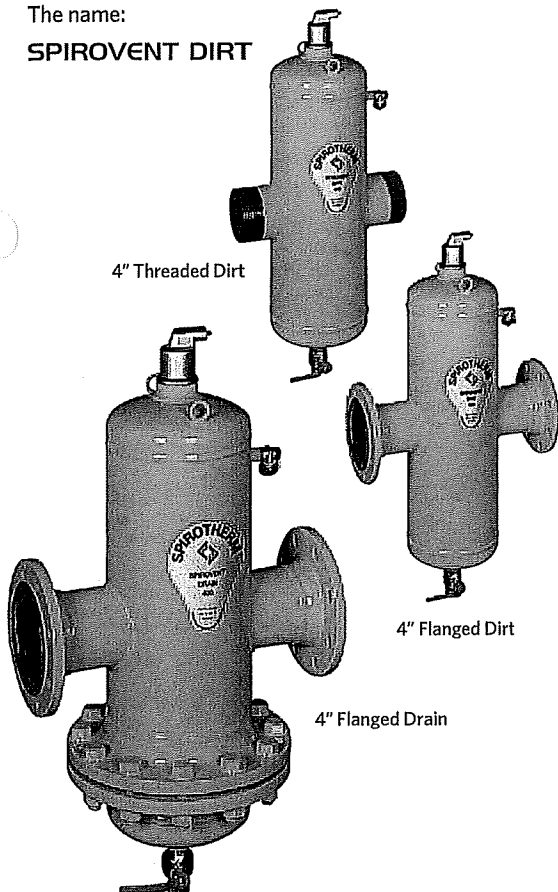
Recurring problems and increased maintenance results in unnecessary costs and dissatisfied owners.

There is a solution!

A system without air and dirt is possible! There is a unique dual-purpose device that will remove air and dirt down to the smallest particle, keeping the system free from air and dirt, permanently. It requires little maintenance, and works without strainers or filters. Less maintenance, fewer costs, satisfied owners!

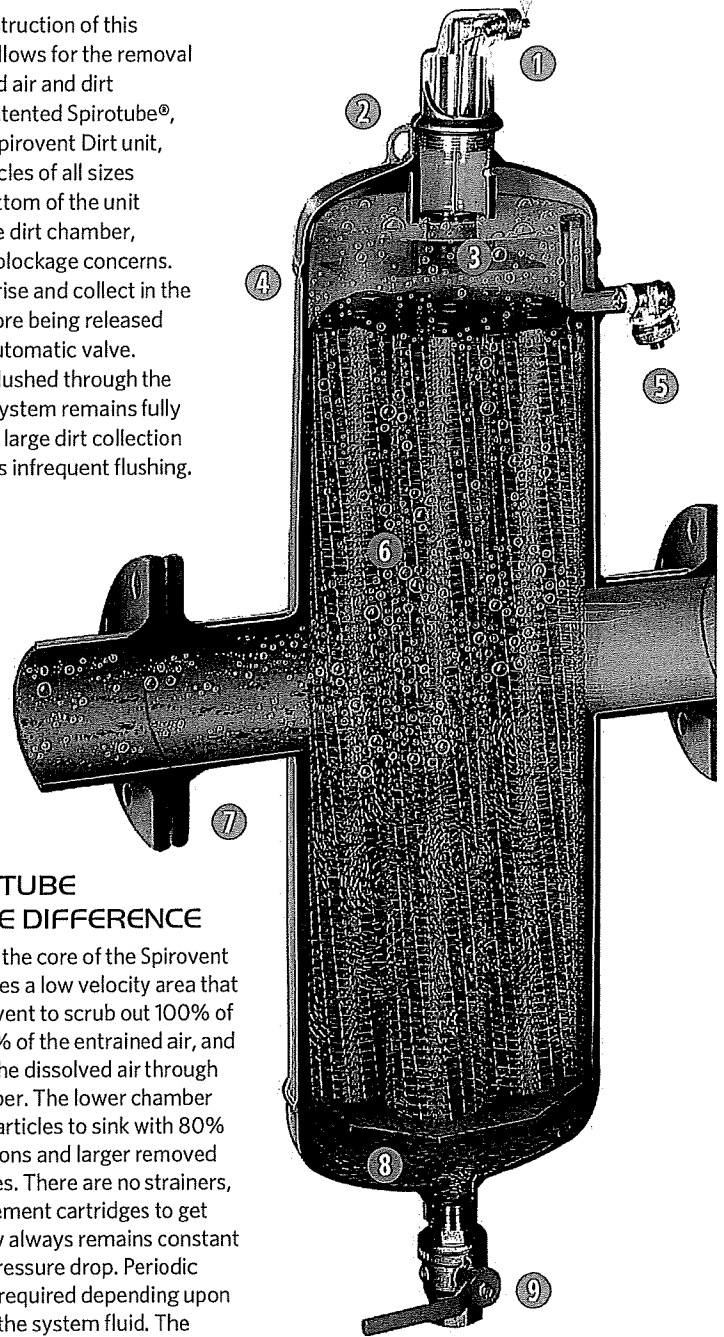
The name:

SPIROVENT DIRT



THE KEY DIFFERENCE

The unique construction of this combined unit allows for the removal of both entrained air and dirt particles. The patented Spirotube®, the core of the Spirovent Dirt unit, causes dirt particles of all sizes to sink to the bottom of the unit and collect in the dirt chamber, eliminating any blockage concerns. The air bubbles rise and collect in the air chamber before being released via an integral automatic valve. The dirt can be flushed through the drain while the system remains fully operational. The large dirt collection chamber ensures infrequent flushing.



THE SPIROTUBE MAKES THE DIFFERENCE

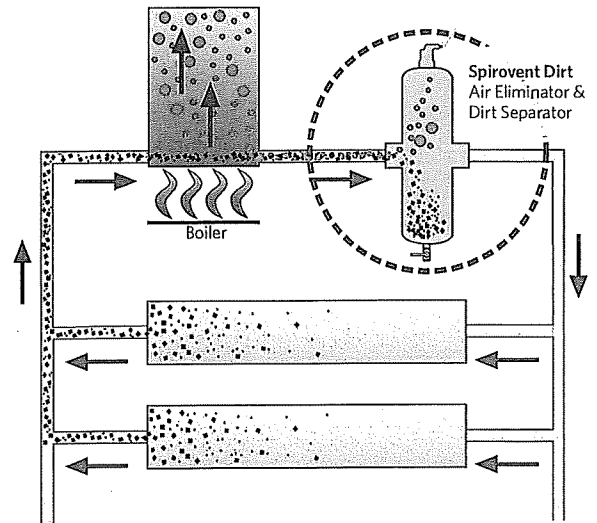
The Spirotube is the core of the Spirovent Dirt unit. It creates a low velocity area that allows the Spirovent to scrub out 100% of the free air, 100% of the entrained air, and up to 99.6% of the dissolved air through the upper chamber. The lower chamber allows the dirt particles to sink with 80% of those 30 microns and larger removed within 100 passes. There are no strainers, filters, or replacement cartridges to get clogged and flow always remains constant without a high pressure drop. Periodic blow downs are required depending upon the condition of the system fluid. The result: increased component life and heat transfer efficiency; decreased oxygen-based corrosion and pump cavitation; the elimination of air related noises such as gurgling and cascading; and the need for continual "routine" maintenance to vent, bleed, and purge.

THE ULTIMATE IN DISTRIBUTION EFFICIENCY



ADVANTAGES TO THE SPECIFIER, INSTALLER AND OWNER

- No bypass, isolating valves or replacement filters to clog and reduce flow
- Dirt can be flushed while the system is in full operation.
- Quiet operation
- Minimum pressure drop; always constant
- Increased component life
- Reduced oxygen-based corrosion and pump cavitation
- Provides optimum heat transfer
- Optional removable head for bundle inspection

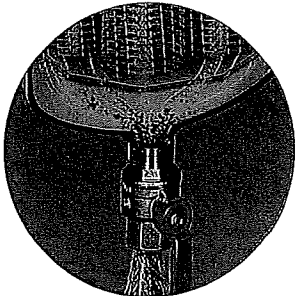


INSTALL THE SPIROVENT DIRT FOR OPTIMUM PERFORMANCE

Ideal placement of a Spirovent unit is based on microbubble separation and Henry's Law. Simply put, Henry's Law states that air is released from water as the temperature increases or the pressure decreases*. For this reason, the Spirovent is typically installed in the hottest point in the system. For a heating installation, this is in the supply from the boiler. In a chilled water circuit, the warmest point is in the return to the chiller.

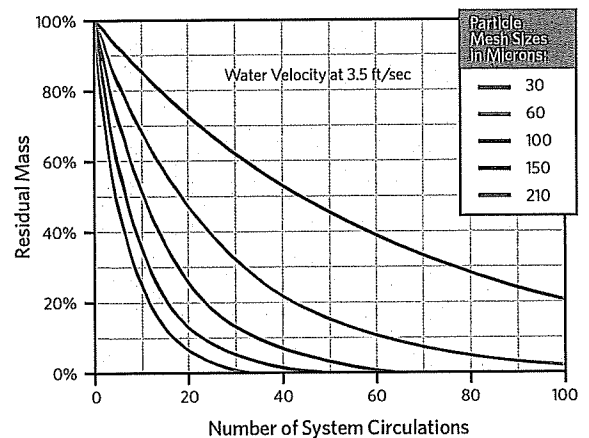
*For more detailed technical information, ask about our Spirotism booklet.

- ① The automatic air vent is guaranteed not to leak and can only be closed by the installer for a pressure test.
- ② Lifting eyes make installation easy.
- ③ The air chamber has been designed so that dirt cannot reach the valve.
- ④ Welded steel construction guarantees long life.
- ⑤ Valve for releasing large amounts of air during filling and for skimming off floating dirt.
- ⑥ The unique Spirotube is the core of the Spirovent. Designed to trap the smallest microbubble and microscopic dirt particle, yet it offers little resistance to flow.
- ⑦ Threaded or flanged connections available. Threaded 2"-4" (not available on units with removable head); Flanged 2" and up.
- ⑧ Large capacity collection chamber reduces the need for frequent draining.
- ⑨ Drain valve for flushing out the dirt.



When the drain valve is opened the system pressure flushes out the collected dirt. This only takes a few seconds.

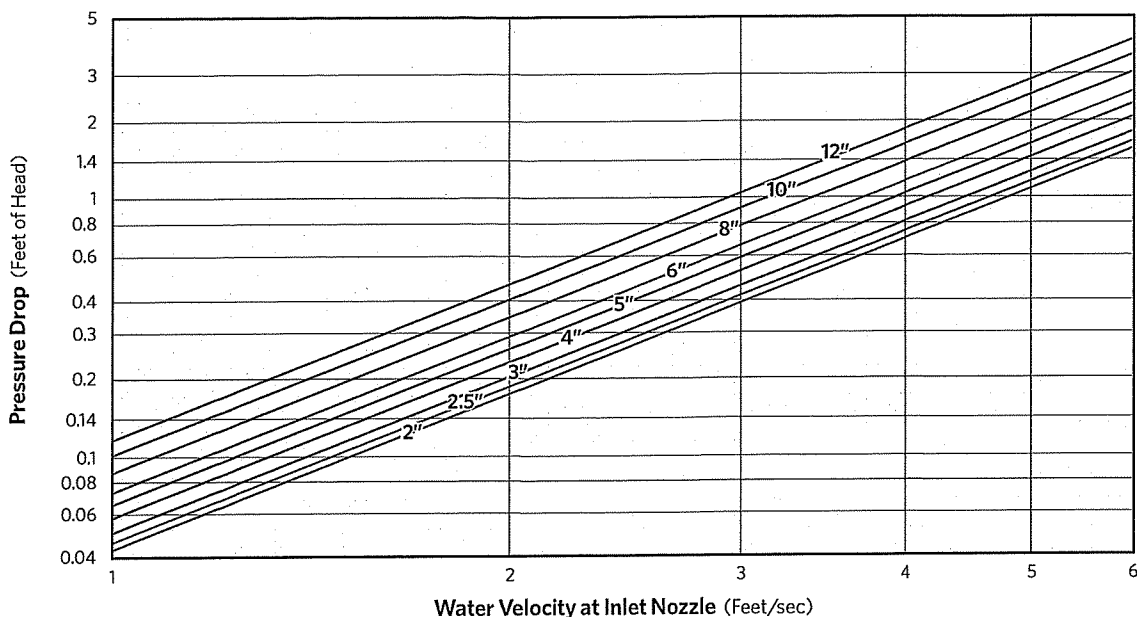
DIRT SEPARATION EFFICIENCY



THE ULTIMATE IN DISTRIBUTION EFFICIENCY

SPIROVENT® DIRT

PRESSURE DROP



TECHNICAL SPECIFICATIONS

SPIROVENT SENIOR

DIRT Part Number		VDT200	VDT250	VDT300	VDT400	VDT500	VDT600	VDT800	VDT1000	VDT1200
DRAIN Part Number		VDN200	VDN250	VDN300	VDN400	VDN500	VDN600	VDN800	VDN1000	VDN1200
Pipe Size	Inch	2	2.5	3	4	5	6	8	10	12
O.D.	Inch	2.375	3	3.5	4.5	5.5	6.625	8.625	10.75	12.75
Thread	NPT	2	2.5	3	4	—	—	—	—	—
D	Inch	6.3	6.3	8.6	8.6	12.8	12.8	16.0	20.0	24.0
H2	Inch	25.3	25.3	31.4	31.4	41.7	41.7	51.8	67.5	79.7
h2	Inch	10.4	10.4	13.6	13.6	18.9	18.9	24.2	32.1	38.2
L (Threaded)	Inch	10.2	10.2	14.6	14.6	—	—	—	—	—
LF (Flanged)	Inch	15.2	15.7	20.2	20.6	27.7	27.7	33.6	37.5	42.5
e	Inch	1	1	1	1	1	1	1	1	1
Volume	Gal.	1.8	1.8	6.6	6.6	19.8	19.8	39.6	79.3	132.1
Weight: Dirt										
Threaded	Lbs.	55	56	105	120	—	—	—	—	—
Flanged	Lbs.	66	75	139	149	238	260	436	718	1250
Weight: Drain**										
Flanged	Lbs.	107	150	202	233	325	355	686	990	1483
Recom. Flow*	GPM	60	90	140	240	370	540	940	1470	2090

*Approximately 6 ft. per second inlet velocity.

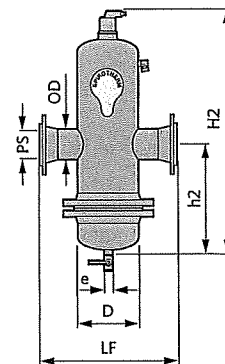
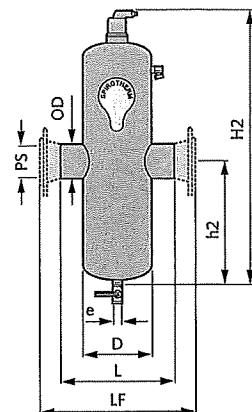
**Spirovent Drain models are available with flanged connections only and feature a removable lower head to facilitate cleaning.

All Spirovents fabricated and stamped in accordance with ASME Section VIII, Division 1 for unfired pressure vessels.

Standard rating is 150 psi at 270°F. Consult local sales office for special requirements.

Custom dimensions available for space limitations.

Refer to High Velocity models for higher flows and web site Submittal Data for models up to 36\".



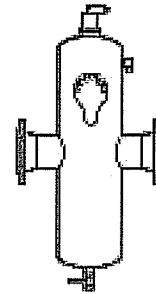
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SPIROTHERM®

SPIROVENT® INSTALLATION and OPERATION INSTRUCTIONS AIR ELIMINATOR & DIRT SEPARATOR MODELS VDT/VDN and VHT/VHN Through 12"



SAFETY INSTRUCTION

This safety alert symbol will be used to draw your attention to safety related instructions. When used, this symbol means Attention! Your safety is involved! Become Alert! Failure to follow these instructions could result in a safety hazard!

INSTALLATION INSTRUCTIONS

The Spirovent Air Eliminator should be installed at the point of lowest solubility in the system: that being where the temperature is the highest (i.e. after the boiler and/or heat exchanger or before the chiller) and the pressure is the lowest (i.e. before the pump suction), as pictured in Figure 1 below. As with all hydronic system piping, it is recommended to have the expansion tank connection to the system on the suction side of the pump or circulator.

Units must be mounted in a straight run of horizontal piping in a perfectly upright position to allow the vent to operate freely. The piping normally supports the weight of the Spirovent units up to and including 12". Support legs recommended for units 14" and larger. "X" pipe diameters of straight run before and after the unit are not required.

The flow may be directed to either side of the unit. There is NO directional arrow. Either connection may be used for inlet or outlet.

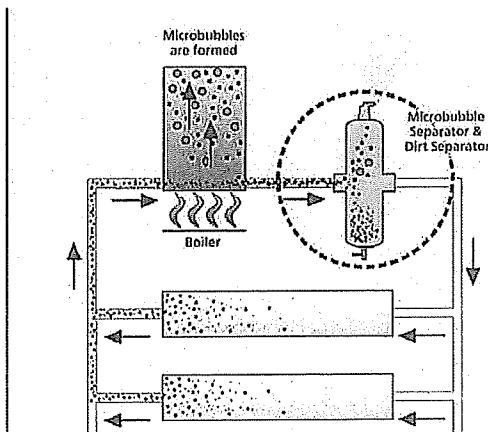


Figure 1

destroy the venting mechanism.

Do not pipe make-up water line near the vent head assembly as it will impede proper operation.

The tap valve on the side of the Spirovent Senior unit is provided to skim off debris that may collect and float on the surface of the water. The valve may be opened during system fill to allow for faster filling of the

The threaded connection at the air vent outlet has been provided as a convenience for those wanting to pressure test the system with air prior to filling.

1. To test, install a 1/2" pipe cap before filling with air and remove the cap once testing is complete. During normal system operation, this threaded connection should be free of any piping connection with the unit in service to allow the free flow of air and gases. It may be piped to another location if left open, however, the risk then exists for blockages, which will impede the product's performance.

CAUTION! Do not attempt to turn the venting port, as that will damage and/or

vessel. A hose may be used to direct air and water away from personnel and/or other equipment. Close valve once water is present. Do not use this connection for make-up water line.



WARNING! Water temperatures above 100°F can be very hazardous. Keep body away from valve while open. Failure to follow these instructions may cause serious bodily injury or property damage.

SERVICE INSTRUCTIONS

The Spirovent does not normally require maintenance and includes no moving parts other than those in the vent head itself.



WARNING! System fluid under pressure can be very hazardous. Before removing the vent head for inspection, reduce system pressure to zero, or isolate the Spirovent from the system. Allow the system to cool to below 100°F. Failure to follow these instructions may cause serious bodily injury or property damage.

The Spirovent Dirt and Drain Models also allow for dirt and sediment separation. The ball valve on the bottom of the unit should be opened on a regular basis to purge debris from the collection chamber. A container should be used to catch any debris.



WARNING! Water Temperatures above 100°F can be very hazardous. Keep body away from connection while open. Failure to follow these instructions may cause serious bodily injury or property damage.

Frequency of purging is system dependent based upon degree of sediment in the system. Frequent purging is recommended right after installation and then scheduled as needed as the systems clears.

Units with optional removable head can be disassembled and the tube bundle removed for inspection or cleaning. The removable head is a user-specified feature and frequency of inspection and/or cleaning is user or system dependent.



WARNING! System fluid under pressure can be very hazardous. Before removing the unit head, reduce system pressure to zero, or isolate the Spirovent from the system. Allow the system to cool to below 100°F. Failure to follow these instructions may cause serious bodily injury or property damage.



WARNING! Unit head and bundle are heavy. Keep body clear of the head and bundle when disassembling. Failure to follow these instructions may cause serious bodily injury or property damage.

1. Taking care to support the head, remove bolts and slide the bundle out. Clean the bundle using a pressure washer or hose and reinstall the bundle in the Spirovent unit. Be sure to check the gasket before reinstalling the head, and replace if necessary. Tighten bolts using a criss-cross pattern to proper torque. Before opening isolation valves, close ball valve.

SPIROTHERM

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