SINCE 1908
wessels company

PSA - PRIMARY/SECONDARY HEADER

Hydraulic Separation Solutions

MADE WITH PRIDE
USA
IN AMERICA

MODELS
PSA & PSAV

Primary/Secondary Header

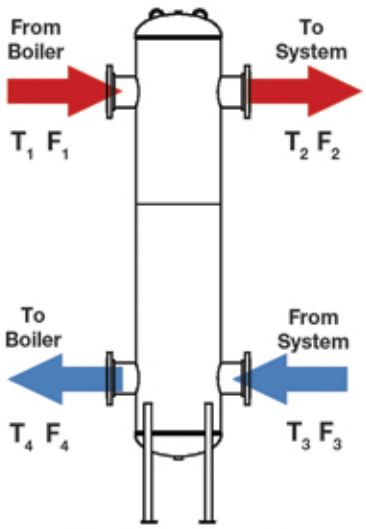
Wessels Primary / Secondary Headers are used in heating and cooling systems that require the primary and secondary loop of their system to be interlocked. The PSA is designed to keep both connected hydraulic circuits completely independent from one another and to provide a means for system air elimination. The PSAV builds on that functionality with the inclusion of Internal coalescence coils in the tank that eliminate entrained air and separate debris associated with start-up and maintenance of the system. As a result, the PSAV replaces the need for an air/dirt separator.

- **Separates Primary and Secondary loop hydraulically**
- **Removes air from system**
- **Separates and collects sediments**
- **Easy installation**

SINCE 1908
wessels company

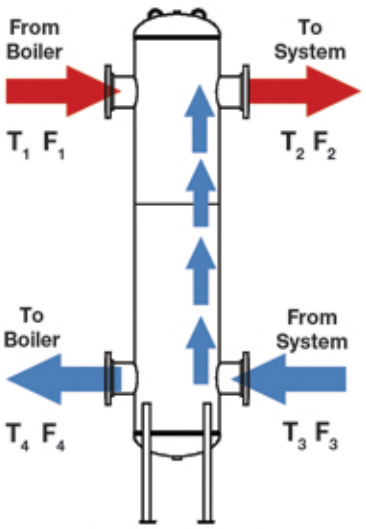
101 Tank Street, Greenwood, IN 46143 • phone 317 | 888.9800 • www.westank.com

How it Works • 3 Possible Flow Paths



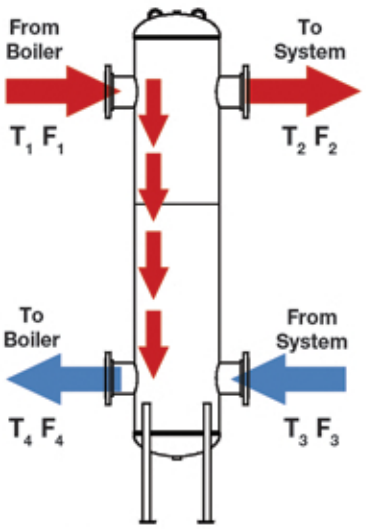
$T_1=T_2$ $F_1=F_4$
$T_3=T_4$ $F_2=F_3$

Equal Flow: Temperature (T) from boiler and distribution system is equal and flow (F) is balanced with minimal mixing in the center PSA body.



$T_1>T_2$ $F_1=F_4$
$T_3=T_4$ $F_2=F_3$

Greater Secondary Flow: System demand is greater than boiler output, which results in mixing in the center PSA body and decreased temperature of water delivered to system (T2).



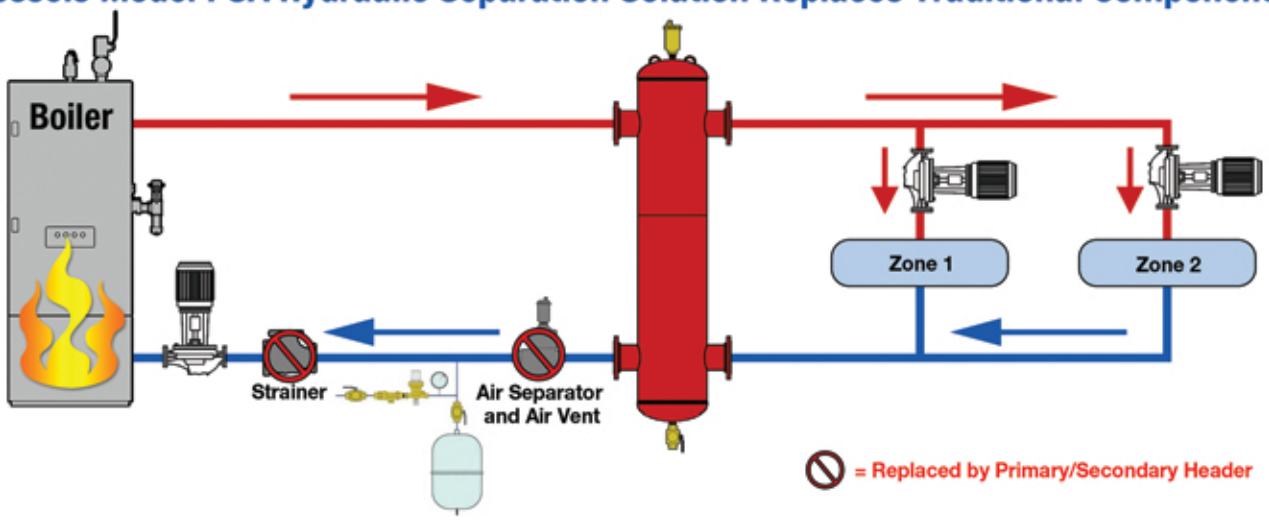
$T_1=T_2$ $F_1=F_4$
$T_3<T_4$ $F_2=F_3$

Greater Primary Flow: System demand is less than boiler output, which results in mixing in the center PSA body and increased temperature of water returned to boiler (T4).

FORMULAS TO DETERMINE TEMPERATURE

$$T_2 = \left(\frac{(F_3-F_1)T_3 + (F_1)T_1}{F_3} \right) \qquad T_4 = \left(\frac{(F_1-F_2)T_1 + (F_3)T_3}{F_1} \right)$$

Wessels Model PSA Hydraulic Separation Solution Replaces Traditional Components



PSA PRIMARY/SECONDARY HEADER

WITH INTERNAL BAFFLE – 150 PSI

Model	Part No.	Conn.	Dia.	Height	Width	Flow (GPM)	Wt. (Lbs.)
PSA-2	71002020	2	6 5/8	34 1/4	14 3/4	69	86
PSA-2.5	71002025	2.5	6 5/8	39 1/4	14 3/4	108	108
PSA-3	71002030	3	10 3/4	49 1/2	18 3/4	144	225
PSA-4	71002040	4	10 3/4	70 1/4	22 3/4	255	312
PSA-5	71002050	5	14	80 1/2	26	398	214
PSA-6	71002060	6	18	93 3/4	30	570	296
PSA-8	71002080	8	24	122 3/4	36	945	520
PSA-10	71002100	10	30	149 1/4	42	1440	1130
PSA-12	71002120	12	30	179 1/2	42	2100	1165
PSA-14	71002140	14	42	199.25	54	2550	2430
PSA-16	71002160	16	48	224.25	60	3300	3348

Materials = Steel Shell; Coalescing Medium = Stainless Steel; Maximum Pressure = 150 psig; Maximum Temperature = 450°F; Finish = Primer Painted Exterior
Legs come standard with 6" connection models and above.

PSAV PRIMARY/SECONDARY HEADER • WessVent

WITH AIR/DIRT SEPARATION – 150 PSI

Model	Part No.	Conn.	Dia.	Height	Width	Flow (GPM)	Wt. (Lbs.)
PSAV-2	71102020	2	6 5/8	34 1/4	14 3/4	69	92
PSAV-2.5	71102025	2.5	6 5/8	39 1/4	14 3/4	108	115
PSAV-3	71102030	3	10 3/4	49 1/2	18 3/4	144	250
PSAV-4	71102040	4	10 3/4	70 1/4	22 3/4	255	342
PSAV-5	71102050	5	14	80 1/2	26	398	254
PSAV-6	71102060	6	18	93 3/4	30	570	366
PSAV-8	71102080	8	24	122 3/4	36	945	720
PSAV-10	71102100	10	30	149 1/4	42	1440	1443
PSAV-12	71102120	12	30	179 1/2	42	2100	1490
PSAV-14	71102140	14	42	199.25	54	2550	3067
PSAV-16	71102160	16	48	224.25	60	3300	4180

Materials = Steel Shell; Coalescing Medium = Stainless Steel; Maximum Pressure = 150 psig; Maximum Temperature = 450°F; Finish = Primer Painted Exterior
Legs come standard with 6" connection models and above.

ASME SETTING THE STANDARD

Model PSA and PSAV comes ASME certified, meeting rigorous standards of construction and insurance compliance. Non-ASME also available (Models PSN and PSNV).

OTHER PRODUCTS BY wessels company

Thermal Expansion Vessels

- Fixed Diaphragm Tanks
- Replaceable Bladder Tanks
- ASME and Non-ASME in stock

Wess-Vent Air & Dirt Separators

- Coalescing Media Separators
- Up to 36" available
- ASME standard in stock

Hydro-Pneumatic Vessels

- Fixed Diaphragm Tanks
- Replaceable Bladder Tanks
- ASME and Non-ASME in stock

Air Elimination Equipment

- Tangential Air Separators
- Inline Air Purgers
- In stock

Severe Service Products

- All models available in stainless steel
- Purgers
- Air Purgers
- Air Separators
- Compression Tanks
- Replaceable Bladder Tanks
- Epoxy-lined designs available

Hydronic Accessories

- Chilled Water Buffer Tanks
- Primary/Secondary Headers
- Chemical Pot Feeder Tanks
- Flash Tanks
- Blowdown Tanks

Custom Vessels

- Stainless Steel Tanks
- Glass-lined
- Epoxy-lined
- Cement-Lined
- Rubber-lined
- Galvanized
- Insulated
- Up to 25,000 gallons

Storage Tanks

- Insulated and Jacketed Tanks
- Glass-Lined, Epoxy-Lined, and Non-Jacketed Tanks
- ASME in stock

Shock & Surge Vessels

- ASME Shock & Surge Tanks
- Fire protection an municipal engineered vessels
- Bladder and Epoxy-lined designs available

Glycol Make-Up Packages

- Glymatic Package
- Glycol Make-Up Package
- In stock

Hydronic Expansion Vessels

- Fixed Diaphragm Tanks
- Replaceable Bladder Tanks
- Compression Tanks
- ASME and Non-ASME in stock

Wessels Company • 101 Tank Street, Greenwood, IN 46143 • **phone** 317 | 888.9800 • **www.westank.com**