

Vacuum Tumbler System for Poultry Processing Tumblers



The Vacuum Tumbler System is a proven design that effectively replaces rotary vane pumps. The Vacuum Tumbler System features liquid ring vacuum pumps. A small fraction of the water used for the liquid ring seal is carried down the drain to both wash any accumulated carryover solids through the pump and to help keep the pump cool to the touch.

Fluid Flow's Vacuum Tumbler Systems vary in size from 5 HP to 40HP to fit a variety of applications

Why Use The VTS

- Longer Pump Life vs Rotary Vane
- Handles Liquid & Food Carryover
- Fewer Moving Parts

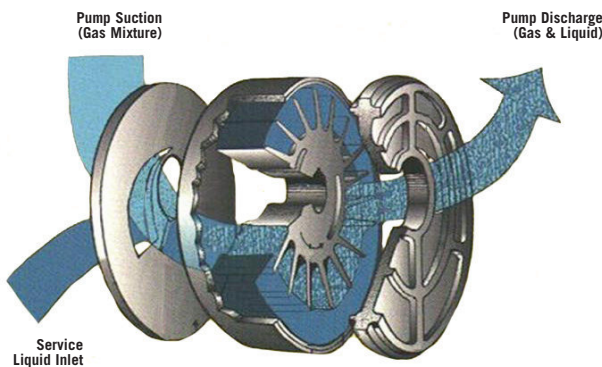
Who Uses The VTS

- Meat & Poultry Plants
- Food Processing Plants
- Mixing & Marinated Products

VTS Series Benefits

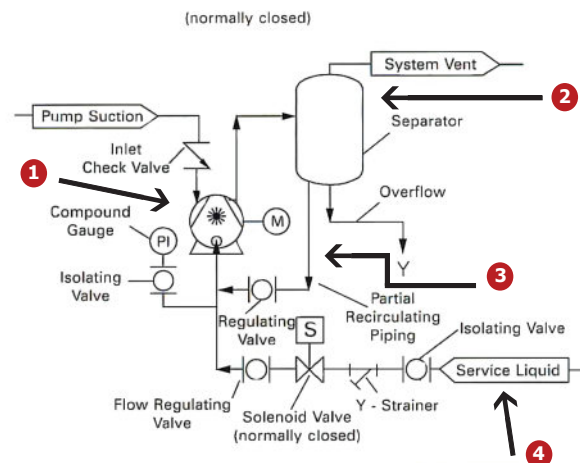
- Different sizes to fit your application
- Less down time than rotary vane pumps
- Handles liquid and food carryover
- Huge water savings = huge savings on expenses
- Less moving parts = less pump failure

Liquid Ring Vacuum Pumps Highest Removal Efficiency



VTS How it Works

- 1 Air at pump inlet is mixed with seal water (service liquid) to achieve isothermal vacuum/compression.
- 2 The air/water mixture at the outlet is separated.
- 3 The water is reintroduced at pump suction.
- 4 Only a small amount of make-up water is required, and differs by temperature of water and environment.



Notes:

1. Liquid ring vacuum pumps create vacuum by sealing with a ring of water.
2. A small fraction of the water used for the liquid ring seal is carried down the drain to both wash any accumulated carryover solids through the pump and to help keep the pump cool to the touch. Product and marinade carryover do not damage the pump.
3. The addition of a water recirculation tank and the water saver valve reduce the fresh water make up requirement dramatically.

VTS Model Comparison

Model	Pump Model	Speed (RPM)	Motor (HP)	Vacuum ¹ (in Hg.)				Liquid Flow USGPM ²	Type of Separator	Suction Discharge Size (in.)	Dimensions (L" x W" x H")	Shipping Weight (lbs) ³
				20 ACFM	25 ACFM	28 ACFM	28.9 ACFM					
TP-105	LEM 110	1,750	5.0	76	72.1	52	35	1.5	Vertical	1.5	45 x 16 x 22.5	275
TP-106	LEM 170	1,750	7.5	117	110	74	45	1.9	Vertical	1.5	45 x 16 x 24.5	300
TP-107	LEM 250	1,750	10.0	154	145	110	80	2.2	Vertical	2	51 x 19 x 32.25	525
TP-108	LEH 360	1,750	15.0	218	200	158	75.5	5	Horizontal	3	54 x 19 x 37.25	892
TP-109	LEH 460	1,750	20.0	301	272	219	135	5	Horizontal	3	60 x 19 x 37.25	1059
TP-110	LEH 560	1,750	25.0	348	324	280	155	6	Horizontal	4	66 x 19 x 44	1384
TP-111	LEH 760	1,750	30.0	432	410	360	206	6	Horizontal	4	66 x 19 x 44	1474
TP-112	LEH 860	1,750	40.0	546	498	419	235	7	Horizontal	4	69 x 24 x 45	1793

¹ Capacity in ACFM at inlet pressure at sea level for air at 20°C (68°F) using 15°C (59°F) water as service liquid, with atmospheric discharge pressure.

² Service liquid make-up flow rate based on 50% partial recirculation.

³ All dimensions and weights are approximate. Data is subject to change without notice.

System Options

SS = Stainless Steel Control Panel, No Water Saver (Ex. TP-105-SS)
 SW = Stainless Steel Control Panel, Water Saver (Ex. TP-105-SW)
 NP = No Control Panel (Ex. TP-105-NP)

VTS Application Solution

Problem:

Meat and poultry plants use vacuum to improve marinating chicken, bacon, pork and other pre-marinated meats. Central vacuum systems and rotary vane vacuum pumps have been widely used to supply vacuum to tumblers. Marinade carryover and other debris shorten rotary vane pumps life. Service life for oil sealed rotary vane vacuum pumps can be as little as two months. With regular maintenance a rotary vane pump may last two years supplying vacuum to a tumbler.

Regular maintenance includes keeping the inlet separator clean and frequent oil changes and lube filter change-outs. Because the pump is in a cold room and installed with the tumbler maintenance is difficult.

Solution:

Since 1999, Fluid Flow Products has been offering a Tumbler Vacuum System that replaces rotary vane pumps. Fluid Flow Products Tumbler Vacuum Systems have been in service with minimal maintenance in some poultry plants for more than seven years. Most OEMs today use a solution similar to Fluid Flow Product's Tumbler Vacuum System instead of rotary vane pumps.

Fluid Flow Product's Tumbler Vacuum Systems feature liquid ring vacuum pumps. The pumps have one moving part, an impeller keyed to a shaft. Liquid ring vacuum pumps create vacuum by sealing with a ring of water. A small fraction of the water used for the liquid ring seal is carried down the drain to both wash any accumulated carryover solids through the pump and to help keep the pump cool to the touch. Product and marinade carryover do not damage the pump.

The unit is installed adjacent to the tumbler in the cold room or sometimes in a close equipment room and can be furnished with casters.

VTS Model Dimensions

