

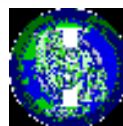
Storage Tank Vent Air Dryers

Featuring moisture elimination from
storage tanks:

- decreases internal tank corrosion
- maintains purity of stored liquids
- low maintenance – add desiccant
only once annually



MODEL V-10



ENGINEERING DATA

TANK VENT DRYER DATA

PERFORMANCE

SUPER BEAD DESICCANT is hygroscopic and is slowly consumed as it comes in contact with moisture laden air. It contains no sodium chloride (salt) and the approximate 1/16" diameter provides a desiccant bed with millions of passage – ways for cleansing incoming air to 1 ½ micron particle size while absorbing moisture vapor.

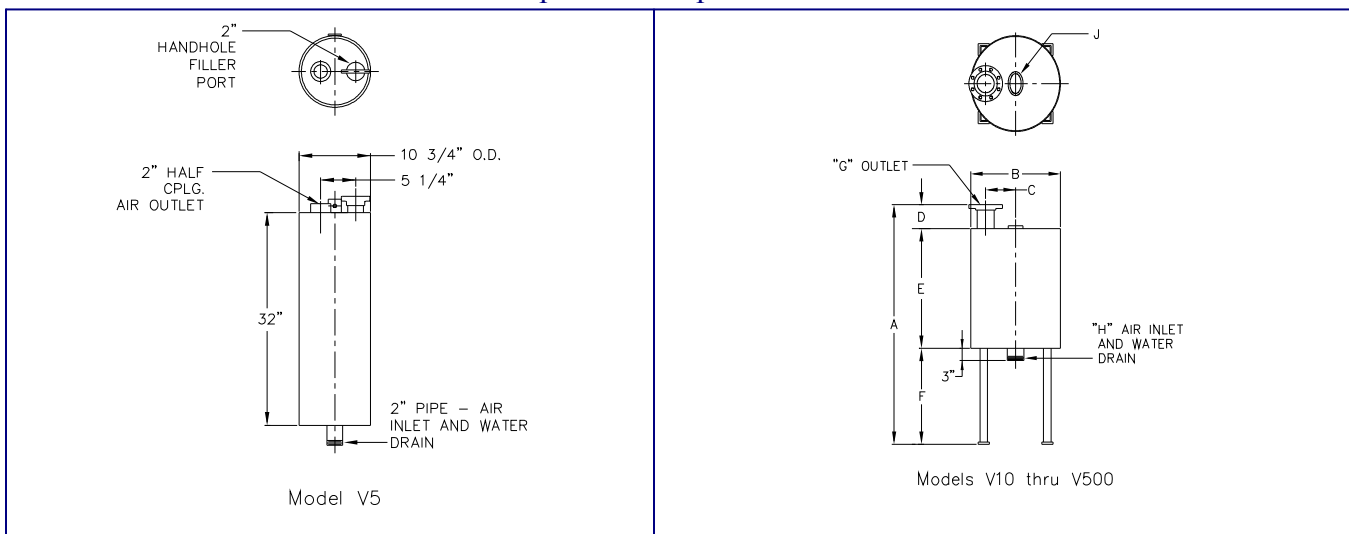
The table lists the humidity reduction with equivalent dewpoint temperature for maintaining a dry air volume in any storage tank as air is drawn into the tank.

Note: Super Dry Tablet desiccant may be used in lieu of Super Bead desiccant.

TANK VENT DRYER DEWPOINTS Using SUPER BEAD DESICCANT

Ambient (Dryer Inlet) Air Conditions		Outlet Air Delivered to Storage Tank Conditions		
Inlet Air Temp	Relative Humidity Effective Operating Range	Relative Humidity	Exit Air Dew-Point	Moisture Volume Percent
100°F	34%-100%	33.2%	64°F	2.10%
90°F	37%-100%	36.3%	58°F	1.70%
80°F	38%-100%	37.3%	50°F	1.20%
70°F	40%-100%	39.8%	43°F	.93%
60°F	39%-100%	38.2%	33°F	.62%
50°F	37%-100%	36.4%	24°F	.42%
40°F	37%-100%	36.2%	16°F	.28%
30°F	49%-100%	48.6%	14°F	.26%

Nominal pressure drop is 3 ½" W.C.



Model No	CAPACITY RATINGS		Super Bead or Super Dry Tablet Desiccant Req'd. (lbs.)	DIMENSIONS IN INCHES									
	Air Flow SCFM	Rel. Liquid Flow – (GPM)		A	B	C	D	E	F	Outlet G (Flange)	Inlet H (Pipe)	Filler Port J	
V5	7.5	56	100	SEE DRAWING									
V10	15.0	112	100	60	12	3 ¼	6	30	24	2	2	2	
V15	22.0	168	250		18	5 ⅞				3	3	4 x 5	
V30	45.0	336	400		24	8				4	4	4 x 5	
V50	75.0	561	650		30	10				6	6	6	6 x 8
V75	112.0	841	900		36	12							11 x 15
V110	165.0	1234	1250		42	12				72	68	42	6
V190	285.0	2131	2050	54	12								
V300	450.0	3366	4500	72	68	6 ½	42	36 ½	8				
V400	600.0	4486	6300	85	80	on CL	6 ½	42	36 ½	8	8	(2)	
V500	750.0	5607	8500	91	88	CL	6 ½	48	36 ½	8	8	11 x 15	



TANK VENT DRYER DATA

Tank Vent Dryers are also referred to as “Breather Dryers”.

PSB Tank Vent Dryers are the solution to moisture and corrosion problems for any vented, closed system operation (with the added benefit of filtering out most dirt and other contaminants). They work on the same principle as the standard PSB Desiccant Air Dryers, with the exception that they are designed to efficiently dry air at atmospheric or near atmospheric conditions.

They enable air to be inhaled into the storage tanks, eliminating condensation of moisture. This decreases the corrosion ability of stored corrosive products, and controls rust corrosion in the air void portion of all storage tanks.

As a result, stored products which have the ability to mix with water can be stored and drained with a higher level of purity.

A number of these dryers have been installed on ocean-going tankers carrying sulfuric acid, where they have effectively decreased corrosion of the steel tanks due to vent inhaling of moist atmospheric air.

Since moisture is a contaminant for practically any tank-stored product, reduction of this moisture content can only improve the life span of the storage tank and the purity of the stored products. Since the average tank vent dryer requires replenishment of desiccant only once annually, this nearly maintenance-free system may be easily considered a must for all storage tanks.

Operation

The smallest tank vent dryer, Model V5, May be suspended from the storage tanks own vent piping system or mounted on a post buried in the ground. All larger models are standard, with leg mountings which are placed on the ground alongside the tanks for easy access and inspection.

Each model has a filler port on the top, where desiccant is placed into the desiccant chamber. Desiccant chambers are filled to the top.

As fluids are drawn from a storage tank, moist and sometimes dirty air is drawn into the tank. When stored fluids are exposed to temperature changes such as night versus day, the fluids expand and contract, breathing air through the tank’s vent pipe and again drawing in moisture and other contaminants.

With the tank vent dryer installed, collected moisture drops through the constantly-open bottom inlet air nozzle to the ground. On a 100°F day, air inhaled into the tank will have an approximate 64°F dewpoint or 33.2% relative humidity or 2.1% moisture volume. On a 70°F day, relative humidity will be reduced to 39.8%, equally a 43°F dewpoint temperature or a .93% moisture volume. On a 30°F day, the relative humidity will be reduced to 48.6% and have a dewpoint of 14°F or .26% moisture volume. In some areas, it may be noted that ambient relative humidity on a 30°F day be less than 48.6% to begin with. With these conditions, drying is not really required. Since the moisture content of the air is already below the capability of the dryer, the dryer acts only as a filter without consuming desiccant.

The greatest area of protection occurs during the warm summer months, when night and day temperature changes may vary 20°F or more at a high relative humidity content. This is when tank vent dryers really pay off.

Most tank vent dryers are installed outdoors, and it is recommended that they be placed on the north side of tanks when feasible, to take advantage of shading from direct sun rays for lower temperature operation. The dewpoint table, shown on the tank vent dryer bulletin, readily points out the advantages of drying with a cooler inlet air temperature.

