

- For the protection of moisture sensitive liquids
- Low pressure drops
- Flanged or threaded connections
- Integral humidity indicator
- Easy inspection and maintenance
- Large, removable desiccant receptacle
- No tools required for maintenance
- Large diameter desiccant chamber



### OBJECTIVE

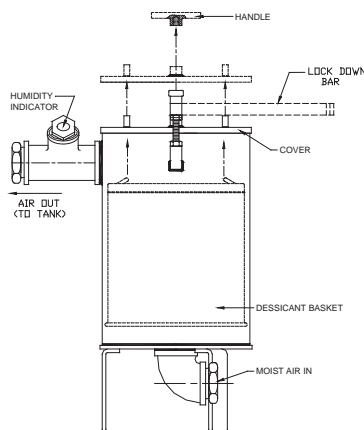
The Protectoseal Series 782 Air Dryer provides a simple, relatively inexpensive means of extracting unwanted moisture from make-up air. It is recommended for tanks and systems where the installation of an expensive central air drying or inert gas system cannot be justified. Incoming air (from normal venting or during liquid pump-out) must pass through a highly efficient desiccant material before entering the tank. The desiccant is capable of absorbing a considerable amount of moisture before it approaches its saturation point, whereupon it can be either replaced or regenerated.

### TECHNIQUE

The Protectoseal Series 782 Air Dryer is an ideal means of drying tank air. Available with either 2" or 3" NPT or flanged connections, it holds a 30# charge of silica gel in a perforated stainless steel basket. The Air Dryer is less than 30" in overall height and the basket can be easily removed. Cover removal is simplified by the use of a single wing nut fastener.

Unusually low pressure drop through the desiccant is provided by the large diameter of the dryer and is further enhanced by the use of Protectoseal Silica Gel No. 780S30 as the absorptive material.

A humidity indicator is mounted on the outlet stream of air. It is calibrated in percentage of relative humidity and the indicator background changes color as the humidity increases. This allows the plant operator to determine when the desiccant should be regenerated.



### SPECIFICATIONS

#### Sizes Available

Model No.	Inlet	Outlet
782T2	2" FNPT	2" FNPT
782T3	3" FNPT	3" FNPT
782F2	2" Flange	2" Flange
782F3	3" Flange	3" Flange

#### Dimensions

- Overall height - 29½"
- Body diameter - 12¾"
- Centerline of inlet to base - 4⅜"
- Centerline of outlet to base - 23⅜"

	782T2	782T3	782F2	782F3
Face of inlet to centerline of body	8⅞"	9¼"	4¼"	3⅞"
Face of outlet to centerline of body	16⅞"	15¼"	14½"	13⅞"

#### Materials of Construction

- Body and Cover Assembly - Steel, 316 S.S. also available
- Basket Assembly - 316 S.S.
- Screen - 316 S.S.
- O-Ring Seal - Buna N

Polyvinyl Chloride (PVC) model also available. Refer to Spec Sheet No. V-PVC780; call factory or visit website [www.protectoseal.com](http://www.protectoseal.com) for details.

**Shipping Weight** - 180 lbs. (without desiccant)

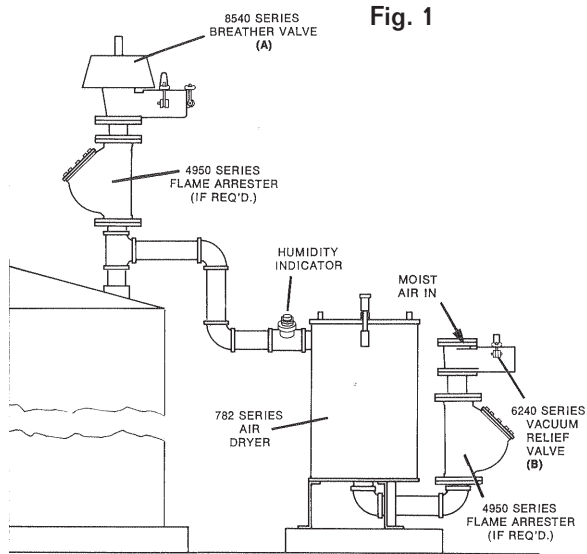


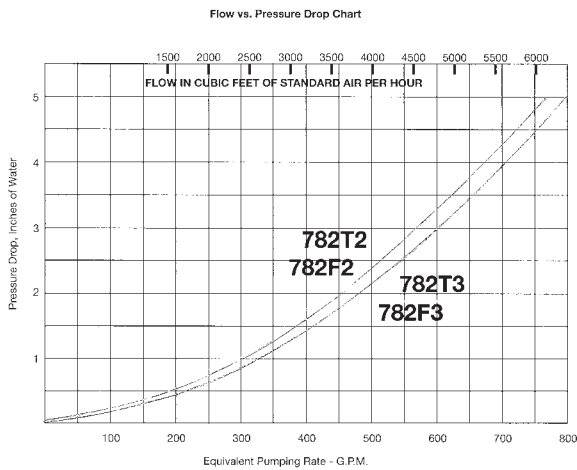
Fig. 1

Above ground vertical tank shown. Above ground horizontal tanks and below ground tanks use the same equipment with modified piping arrangement.

Reference to Figure 1 shows a typical air dryer installation. Out-breathing of the storage tank due to a temperature increase or the filling operation is handled by the pressure relief valve portion of the breather valve (A) mounted on top of the tank. In the case of in-breathing however (due to temperature drop or withdrawal of liquid from the tank), the moist outside air is drawn through the separate vacuum relief valve (B) mounted at the bottom of the dryer. This valve is normally closed but will open upon being exposed to its set pressure - in this case we will assume this to be  $\frac{1}{2}$  oz./sq.<sup>2</sup>. The vacuum valve portion of the breather valve (A) remains closed because it is set at a higher pressure - 2 oz./in.<sup>2</sup> for example. As a result, the only air normally entering the tank is dried by the desiccant material in the air dryer. The vacuum valve portion of the breather valve would open only in case of emergency where the vacuum in the tank would exceed 2 oz./in.<sup>2</sup>.

**NOTE: Diaphragm type breather vents should be used with the air dryer to assure pallet tightness, particularly on tanks containing volatile liquids.**

## Flow vs. Pressure Drop Chart



## DESICCANT SPECIFICATIONS

Desiccant -	Silica Gel, No. 780S30*
Capacity -	30 lbs.
Mesh Size -	Average particle diameter - .145' Nominal mesh range - 4 x 8
Crush Strength -	35 lbs.
Avg. Pore Diameter -	21 Angstroms
Absorption Area -	3 million ft <sup>2</sup> of surface absorption area per lb.
Regeneration -	Bake in oven at 450°F for 8 hrs.
Water Absorption Capacity -	8 lbs. per charge

\* Outsourced product

## ADDITIONAL PRODUCTS FROM PROTECTOSEAL

### Series 18540



Pipe-Away Pressure Vacuum Relief Vent for applications that require hazardous vapors be processed into manifolded piping and not released into the atmosphere.

### Series 7800



Emergency Vent protects tanks against rupture or explosion resulting from excessive internal pressure caused by exposure to fires.

### Series 4950



Vent Line / In-Line Parallel Plate Flame Arrester is designed for installation in open vent pipe or bleed lines from storage or processing tanks. Suitable for NEC Group D (IEC Group IIA) vapors.

### Series 830



Combination Pressure / Vacuum Relief Vent & Flame Arrester provides pressure and vacuum relief as well as protection from propagation of externally introduced flames. Suitable for NEC Group D (IEC Group IIA) vapors.