

Smart Solutions for Drying Compressed Air
Single Tower Heat Reactivated Desiccant Air Dryer

 **TURBO**TM HSU Dryer
Utility Series



EAP

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Engineered Air Products

HSU Turbo heat reactivated desiccant air dryers use the adsorption method to remove moisture from compressed air. Pressure dew points as low as -40°F (-40°C) are achieved by directing the flow of saturated compressed air over

HSU Turbo Utility Series Heat Reactivated Dryer

a bed of desiccant. The most commonly used desiccant is activated alumina, a spherically shaped, hygroscopic material, selected for its consistent size, shape and extreme surface to mass ratio. This physically tough and chemically inert material is contained in an ASME pressure vessel. As the saturated compressed air flows through the adsorption tower, its moisture content adheres to the surface of the desiccant. The dry compressed air is then discharged from the vessel into the distribution system.

A master controller puts the unit into the regeneration mode once a day at the users selected time.

Regeneration, sometimes referred to as “purging”, is the process of stripping the accumulated moisture from the desiccant bed.

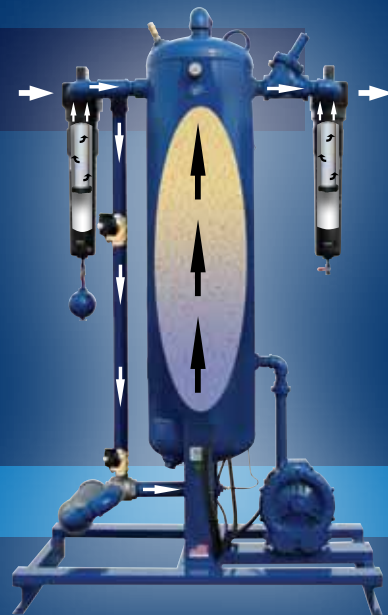
EAP Turbo Utility Series heat reactivated dryers combine heat with forced ambient air to affect regeneration. Regeneration requires no compressed air or heat of compression and is self contained.

As heated, low pressure, purge air flows gently through the regenerating bed, it desorbs the moisture that had accumulated on the surface of the desiccant during the drying cycle and exhausts it to the atmosphere.

During operations, Turbo Utility has no moving parts and chances of shutdown are eliminated.

- 1** Compressed air enters the dryer through a pre-coalescing filter where 99.9% of liquid oil, moisture and particles are removed.
- 2** Next the compressed air flows over the desiccant where water vapor is separated resulting in dew points as low as $-40^{\circ}\text{F}/\text{C}$.
- 3** A final filter polishes the air and removes any desiccant and particle fines before delivering clean, dry air.

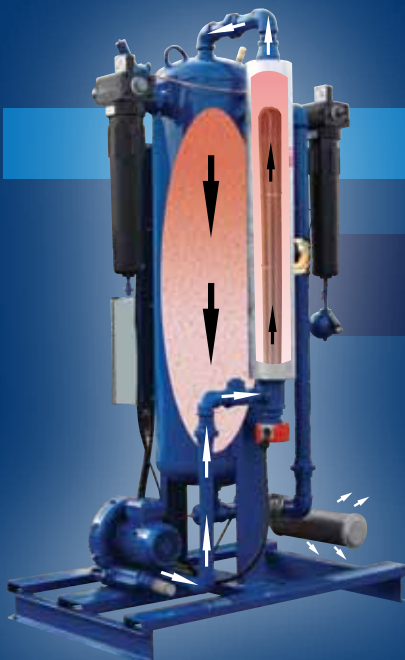
Drying Mode



Regeneration Mode

Turbo Utility regenerates during off peak hours with extremely low energy costs.

- 1** The HSU Turbo exclusive digital controller will automatically start the regeneration cycle at the selected time.
- 2** The inlet solenoid closes and the exhaust solenoid opens to depressurize the desiccant tank allowing regeneration air to escape through an exhaust muffler.
- 3** The heater and blower provide a steady stream of heated, low pressure air that gently desorbs the accumulated moisture from the desiccant material. Upon completion, the system is cooled and repressurized, returning to the drying position.



HSU Turbo Dryers vs Refrigerated Dryers

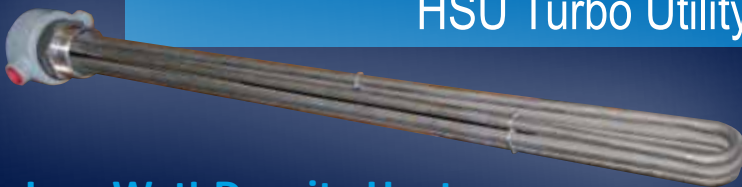
HSU Turbo Dryer	Performance	Refrigerated
0 to -40°F	Dew Point	+40° to 60°F
99.9% @ 0.3 - 0.6 Micron	Oil Removal	0%
99.9% @ 1 Micron	Particle Remover	0%
Simple only 2 moving parts. No Certified Technician Required	Service	Complex over 50 Moving Parts Certified HVAC Technician is required to Troubleshoot and Fix the Unit
No Refrigerants / Desiccant is inert	Environmental Impact	Contains Refrigerants

Power Cost Comparison — 60-250 SCFM

Capacity (SCFM)	Non-Cycling	Cycling	HSU Single Tower	Heatless Twin Tower	Heated Blower Purge
60	\$587	\$456	\$456	\$1,417	\$872
100	\$876	\$561	\$456	\$2,362	\$1,105
150	\$1,139	\$759	\$456	\$3,544	\$1,612
200	\$1,577	\$1,226	\$659	\$4,725	\$2,389
250	\$1,577	\$1,343	\$659	\$5,906	\$2,897

Power Cost is based on full load conditions, two shift operation and \$0.10/kw

HSU Turbo Utility's High Quality Components



Low Watt Density Heater

This industrial duty low watt density heater is rated for over 36,000 hours of operation.

Given the HSU Dryer operation, the heater will operate an average of 4 hours a day or 1,460 hours per year, making the life expectancy of the heater over 24 years.

Packaged Filters

System Coalescing pre-filter removes oils, hydrocarbons and particle matter prior to entering the air drying column. All pre-filters are provided with a zero loss drain with isolation valve.

Particulate after-filters remove solids with 99+% efficiency to 1 micron. Pre-packaging of filters simplifies installation and ensures system integrity





HSU Specifications

Model	SCFM @ 100 PSIG	Line Size (Inches)	Electrics	Dimensions W x D x H (Inches)	Unit Weight (lbs)	Maximum Pressure (PSIG)
HSU-60	60	1	120V/1	32 x 32 x 76	290	200
HSU-100	100	1	120V/1	32 x 32 x 73	465	200
HSU-150	150	1	120V/1	32 x 32 x 76	550	200
HSU-200	200	1 1/2	120V/1	46 x 30 x 78	590	200
HSU-250	250	1 1/2	120V/1	46 x 30 x 78	610	200

Specifications and dimensions subject to change without notice.

Standard Equipment

- Pre and After-Filters Installed
- Filter Drains
- Pre-Filter Differential Pressure Indication
- Diaphragm Directional Valves
- Tuned Regeneration System (Patent Pending)
- High Volume Blower
- Low-Watt Incoloy Heater
- Dew Point Sight Glass
- Tower Pressure Gauges
- ASME/CRN Pressure Vessels (HSU-100 & larger)
- Purge Exhaust Muffler
- Full Charge of USA Desiccant

Optional Equipment

- Three (3) Valve System Bypass
- Dual Filter Packages
- High Pressure (to 800 PSIG)
- Tower Insulation
- Outdoor Insulation

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Patents Pending

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