

Desiccant Air Dryers

Heatless and Heated

ARD, ARE & ARP Series Regenerative Dryers



Air-Rite Corporation

Made in the USA



WHICH DRYER IS RIGHT FOR YOU?

Whether it comes down to lower operating cost or a lower initial investment, Air-Rite has a desiccant dryer that fits your needs.

All regenerative dryers use a desiccant medium to remove moisture from the compressed air stream. Wet air passes directly through the desiccant medium, which then adsorbs the moisture. This water that is being held by the desiccant must be dried out, otherwise known as regeneration. Each dryer will use a portion of the dried compressed air to achieve this regeneration. This is referred to as purge air. The more purge air required, the higher the operating cost.

HEATLESS

- Lowest Initial Investment
- Unheated air is used to dry desiccant bed
- 11-15% purge air required

EXTERNAL HEATED

- Mid-range investment
- An external heater bundle supplements the regeneration process
- 5-8% purge air required

INTERNAL HEATED

- Highest initial investment, but lowest operating cost
- Individual internal heating elements supplement the regeneration process
- 1-2% purge required

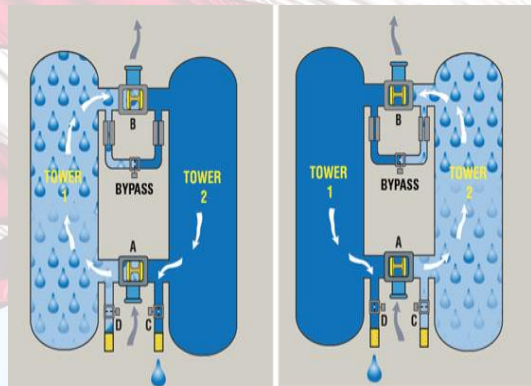
OPERATION & DESIGN

Air-Rite air dryers purify air to pressure dewpoints of -40 Deg. F to -100 Deg. F.

Our enhanced, highly adsorbent desiccant is contained in two ASME pressure vessels commonly referred to as “dual towers”.

As the compressed air flows through the “drying” vessel, the moisture adheres to the surface of the desiccant. The dry air then flows through an afterfilter to remove any final traces of particles or desiccant dust.

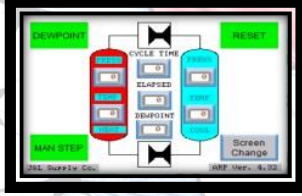
While one tower is drying, the other is going through a regeneration cycle. Purge air strips away the moisture collected on the desiccant bed. Once this has been achieved, a “state-of-the-art” PLC control signals the air flow to switch to the other tower where the process starts all over.



WHAT MAKES AIR-RITE DRYERS STAND OUT ABOVE THE REST?

STATE OF THE ART CONTROLLER

At the heart of Air-Rite's superior design is an advanced microprocessor PLC control. The controller constantly monitors dryer functions.



The standard Touch Screen shows all relevant information in a neat and organized display.

Control Features:

- NEMA 4 is standard
- Brightly colored display
- Wide array of Alarms available including:
 - Low Air Pressure
 - High Exhaust Pressure
 - Low Amperage
 - Heater Failure
 - Hi Inlet Temp
 - High Air Pressure
 - Drain Alarm
 - Change Filter
 - Hi Dewpoint
- Wide array of Communications including:
 - Ethernet
 - RS-485
 - RS-232
- Manual Step feature on heated dryers allows the operator to quickly step through a complete cycle.
- Heater over-temp, high limit safety shutoff
- Low Air Pressure alarm & Fail-to-shift are standard on all dryers.
- MODBUS Communications compatible
- Data Logging
- Alarm History



- Separation of 460V & 24VDC on heated dryers. 460V panel is lockable.
- Controlled purge air shutdown when your compressor unloads or is turned off

Additional Standard Features

- Stainless Steel Control Tubing and Fittings on all dryers. Most competitors use nylon {plastic} tubing as standard. Nylon tubing tends to become very brittle and prone to cracking with fluctuating temperatures.



- Non-lubricated, maintenance-free switching valve that operates without actuators. Built with an air-tight flexible seal resistant to high temperatures. Built to withstand repeated cycles, unlike diaphragm valves, which have a short life with constant switching activity or solenoid type valves, which easily collect desiccant dust.



- Stainless Steel removable flow distributors
- Cool-down solenoid valves to prevent dewpoint spikes and allow dryer to achieve lower dewpoints
- Power interruption protection –The dryer will shut down and remain in the same part of the cycle when the shut-down occurred
- Adjustable purge pressure
- Heavy duty mufflers with built-in safety relief. Ensures that mufflers will relieve in the event they become clogged with desiccant dust
- Heated dryers are constructed with an enhanced formula of adsorbant desiccant with an average life of 10 years. Competitors require desiccant changes every one to two years.
- Independent control filters
- “Fail to Shift” alarm standard on all dryers. Most competitors have this as an added option
- “Low Air Pressure” shutdown is standard on all dryers. Without this feature, all system air would deplete in the event air pressure wasn't high enough to switch over the shuttle valve
- Oversized ASME air vessels with full flow safety relief valves and air pressure gauges
- Stainless steel process check valves
- Stainless steel discharge check valve-prevents air from back flowing into dryer
- Each dryer is filled with desiccant prior to leaving the factory, eliminating the need for on-site filling
- Schedule 80 steel pipe is standard on all dryers

Specifications & Engineering Data

The Options You Need

Air-Rite desiccant dryers have a wide range of available options. Below are just some examples. If your application requires a feature not on our list, contact your Air-Rite distributor and we will build a custom dryer to meet your needs.

◆Dewpoint Demand Controller◆

This option will significantly reduce energy consumption by controlling the dryer cycles based on actual moisture load in the air stream rather than a set time cycle. A normal dryer control is programmed for the worst case moisture loading. Because moisture loads, temperatures and pressures fluctuated throughout the day, investment in the dewpoint demand controller will be your biggest energy saver, thus, biggest payback. In fact, studies show that a dewpoint controlled dryer can provide annual energy savings on a 1000cfm dryer in excess of \$6,000-\$10,000. With this option, you will also get digital dewpoint readout.

◆Deluxe Delta P Gauges◆

These gauges are programmed into the PLC, which monitors the filter condition. In the event of a filter rupture, ordinarily the differential would go back to zero, making it look as though the filter was in good condition. This feature triggers an alarm, which must be manually reset and ensures that the filter issue is acknowledged before operation can continue.

◆Purge Return Tubing & Valves◆

This feature is recommended to prevent control malfunctions and rapid cycling for compressors that are run in "automatic start-stop" operation.

◆Bypass Piping – Can be installed in any configuration the customer wants◆

◆Zero Air Loss, Automatic Drains◆

◆Insulated Vessels & Piping◆

◆High Quality, Low Pressure Drop Coalescing, Particulate and Hi Temp Filters to adapt to any installation.

◆Explosion Proof◆

◆Additional dry contacts for customer use◆

Heatless

| Model | CFM @100 PSIG | Size In/Out | Ht | W | D | Approx Wt (Lbs) |
|--------|---------------|-------------|-----|-----|-----|-----------------|
| ARD-8 | 125 | 1-1/4"NPT | 84" | 36" | 15" | 490 |
| ARD-12 | 285 | 2"FLG | 86" | 56" | 17" | 786 |
| ARD-16 | 514 | 2"FLG | 86" | 56" | 23" | 1,143 |
| ARD-20 | 803 | 3"FLG | 96" | 68" | 29" | 1,916 |
| ARD-24 | 1149 | 3"FLG | 96" | 68" | 33" | 2,514 |

External Heated

| Model | CFM @100 PSIG | Size In/Out | Ht | W | D | Approx Wt (Lbs) |
|--------|---------------|-------------|-----|-----|-------|-----------------|
| ARE-8 | 114 | 1"NPT | 84" | 36" | 15" | 511 |
| ARE-12 | 243 | 2"FLG | 86" | 56" | 18.5" | 811 |
| ARE-16 | 453 | 2"FLG | 86" | 56" | 23" | 1,160 |
| ARE-20 | 699 | 3"FLG | 96" | 68" | 29" | 2,067 |
| ARE-24 | 1027 | 3"FLG | 96" | 68" | 33" | 2,600 |

Internal Heated

| Model | CFM @100 PSIG | Size In/Out | Ht | W | D | Approx Wt (Lbs) |
|--------|---------------|-------------|------|-----|-----|-----------------|
| ARP-6 | 73 | 3/4"NPT | 98" | 44" | 14" | 849 |
| ARP-10 | 192 | 1-1/4"FLG | 103" | 56" | 18" | 1,186 |
| ARP-12 | 276 | 2"FLG | 103" | 56" | 20" | 1,742 |
| ARP-16 | 498 | 2"FLG | 103" | 56" | 23" | 2,448 |
| ARP-20 | 779 | 3"FLG | 114" | 68" | 29" | 3,995 |
| ARP-24 | 1115 | 3" FLG | 115" | 68" | 33" | 6,315 |

Operating Parameter Notes:

- Maximum working pressure on standard units is 175PSIG. 250PSIG is available.
- Maximum inlet or ambient air temperature 120Deg. F
- Controls are 24VDC. Other voltages available upon request.
- Pressure drop at rated flow is less than 5 psi.
- Dimensions and specifications are approximate and subject to change.

FOR INQUIRIES:

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