Parker Balston® Model UDA-300 Compressed Air Dryer

Installation, Operation, and Maintenance Manual

Introduction

Parker Balston Air Dryers provide clean, dry air from an existing compressed air supply. The UDA-300 Air Dryer delivers -100°F (-73°C) dewpoint air.

The Parker Balston Compressed Air Dryers are powered by a 12 VDC power supply. Each dryer is equipped with an external 12 VDC plug in transformer for connection to most worldwide standard power supplies. **Do not wire dryer directly to local power supply.**

Installation

These instructions must be thoroughly read and understood before installing and operating this product. Modification of the unit will result in voiding the warranty. If you have any questions or concerns, please call the Technical Services Department at 800-343-4048, 8AM to 5PM Eastern Time or email at balstontechsupport@parker.com (North America only). For other locations, please contact your local representative.

Note: The moisture indicator assembly is provided, but not installed on the generator (see Figure 1). Locate the moisture indicator assembly packed in the open end (bottom) of the generator. Identify the outlet port on the right side of the generator, remove the protective red plug and screw in the moisture indicator assembly clockwise. Tighten hand-tight and orient in the final vertical position (see Figure 1). Check for leaks using soapy water when the installation is complete and starting up for the first time.

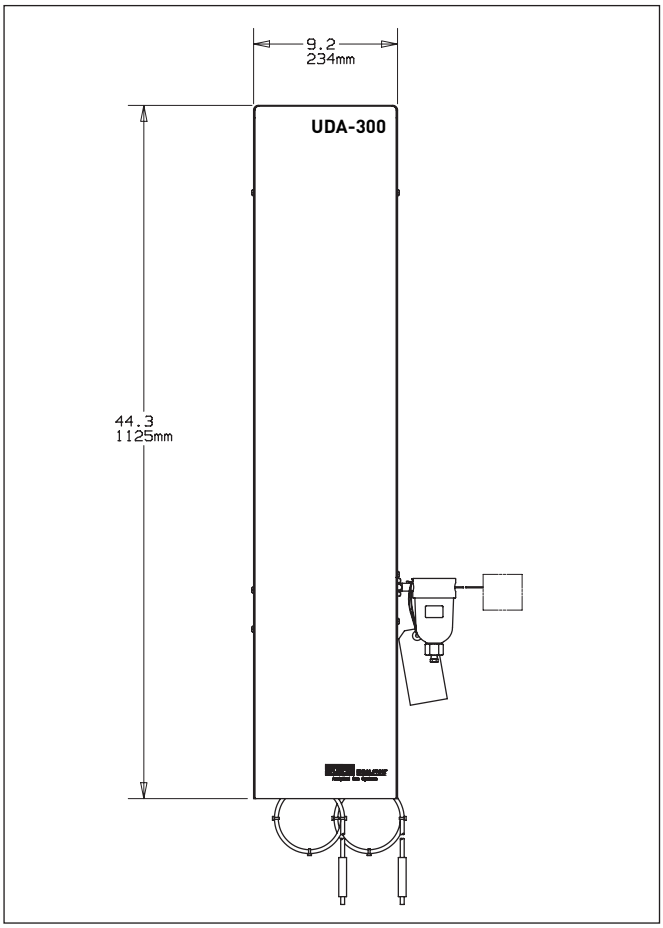

Figure 1: Overall Dimensions

The dryer should be fastened securely, in a vertical position, to a wall or similar mounting surface according to National Electrical Code (NEC) and local building code guidelines. All mounting hardware supplied by the customer should be adequately sized to support the weight of the unit in its mounted position.

To facilitate routine maintenance, install a shut-off valve on the supply air line, upstream from the dryer. Pipe the supply air (60 psig-125 psig, 4.1 barg-8.6 barg) to the inlet port of the dryer. (**Note:** Pipe size must match inlet and outlet port sizes or adequate lengths of pipe must be used to reduce/increase pipe size to match ports. Please consult factory for additional assistance.) The air dryer should be installed on a compressed air system which contains a properly sized aftercooler. The temperature of the supply air entering the Parker Balston Air Dryer should not exceed 78°F(25°C). If the temperature of the inlet compressed air exceeds 78°F(25°C), the dewpoint of the air generated by the dryer may not meet specifications. If the compressed air supply has excess water and/or oil or is supplied to the dryer from an elevated air line, a drip leg must be installed directly upstream from the dryer to reduce the amount of water and oil which could get into the dryer and associated valves and cause non-warranty damage to the unit (see Figure 2). A minimum supply air pressure to the air dryer of 60 psig (4.1 barg) is required to maintain proper operation of the drying towers and associated valves. The maximum supply pressure should not exceed 125 psig (8.6 barg) or damage to the unit may occur.

It is important to control output pressure and flow from the dryer to avoid exceeding the rated capacity of the dryer. If the maximum flow rate of the dryer is exceeded, the process air may not meet the published dewpoint specifications. The installation of a pressure regulator and flow control valve downstream from the Parker Balston Air Dryer is recommended to control output flow characteristics. The Parker Balston 72-400 Series Flow Controllers offer these components in a ready-to-use accessory(reference Bulletin TI-810) (see Figure 2).

The UDA-300 Air Dryer is equipped with 2 coalescing prefilters. The prefilters have integral automatic float drains. The 1/8" NPT drain port will pass small quantities of water and oil and should be piped away to a suitable containment device or drain.

The Parker Balston Air Dryers are powered by a 12 VDC power supply through the accompanying 12 VDC transformer. Plug the transformer line cord into the dryer first (see Figure 1), then plug the transformer into the appropriate AC outlet. Turn the unit on.

Regenerate the drying towers for 24 hours prior to initial startup. To regenerate the drying towers, open the inlet air supply, shut off the outlet flow from the dryer, and turn on the power. This process will cycle the dryer with 100% purge air.

Maintenance

All installation, operation, and maintenance procedures for the compressed air dryers should be performed by suitable personnel using reasonable care.

Disconnect the electrical power and isolate the unit from the compressed air supply before starting any maintenance procedure.

The only required maintenance activity for the Parker Balston UDA-300 Air Dryer is changing the filter cartridges in the prefilters (see Ordering Information at the end of this section for prefilter cartridge part numbers). **To ensure consistent product performance and reliability use only genuine Parker Balston replacement parts and filter cartridges.** The UDA-300 dryer is equipped with a differential pressure indicator which monitors the pressure drop across the prefilters. When the red piston in the differential pressure indicator reaches the top of the lens, the prefilter cartridge should be changed (or annually, whichever is earlier). Changing the prefilter cartridges on the air dryers requires approximately 15 minutes.

Additional coalescing prefilter cartridges and moisture indicating cartridges for the Parker Balston UDA-300 Air Dryer may be ordered through the local Parker Balston representative. For convenience, a one-year supply of these replacement cartridges has been assembled into a maintenance kit (P/N MK7525). The Parker Balston MK7525 Maintenance Kit contains one first stage coalescing prefilter cartridge (P/N 100-18-DX), one second stage coalescing prefilter cartridge (P/N 100-18-BX), and one humidity indicator cartridge (P/N 75800).

The moisture indicator monitors the condition of the air coming out of the dryer. The moisture indicator should be green. If the indicator changes to yellow, follow the trouble shooting procedures on page 4.

Note: Upon startup, the moisture indicator may be yellow, but permit dryer to run for at least 30 minutes before reporting this as a malfunction.

Ordering Information

Description	Part Number	Service Interval
Replacement Filter Cartridges*		
Filter Cartridges; 1st stage	100-18-DX	Annual
Filter Cartridges; 2nd stage	100-18-BX	Annual
Humidity Indicator (1 each)	75800	Annual
Maintenance Kit (1 year)	MK7525	Annual
Universal 12 VDC Transformer	A03-0192	

* To ensure consistent product performance and reliability use only genuine Parker Balston replacement parts and filter cartridges.

Recommended Accessories

Parker Balston Flow Controllers - The Parker Balston flow controllers are available in a variety of flow ranges, as single or manifolded units, with or without pressure controllers. For more information, request the Gas Management Supplies Catalog or Bulletin TI-810.

Parker Balston 72-130-V883 Pressure Regulator - The pressure regulator should be used to control the inlet air pressure to the dryer. Eliminating pressure fluctuations from the compressed air supply enhances the operation of the dryer, eases troubleshooting, and minimizes variations from documented specifications which could result from an inconsistent air supply. The 72-130-V883 has 1/2" female NPT inlet and outlet ports, and is assembled with a 0-130 psig (0-9.0 barg) pressure gauge. For more information, request the Gas Management Supplies Catalog.

Balston 2206N-1B1-DX Coalescing Prefilter - When the compressed air supply to the dryer contains excess water, install an auxiliary prefilter upstream from the dryer. The Balston 2206N-1B1-DX coalescing filter has 3/4" NPT ports and an automatic float drain. For more information on Balston coalescing prefilters, please request Bulletin FNS.

Ordering Information

Part Number	Description
72-130-V883	Pressure Regulator
W-FM6410	Single Style Flow Controller
72-400 Series (1)	Manifolded and Single Style Flow Controllers
2206N-1B1-DX	Auxiliary Coalescing Prefilter

Notes: **1** Call factory to select according to customer application. Reference Bulletin TI-810 for options.

Specifications

Principal Specifications

Model Number	UDA-300 Compressed Air Dryers
Dew Point	-100°F (-73°C)
Max Dry (outlet) Air Flow Rate for Specified Dew Point: {SCFM, (LPM)}	
Inlet Pressure 125 psig (8.6 barg)	12.0 (340)
Inlet Pressure 100 psig (6.9 barg)	10.0 (283)
Inlet Pressure 80 psig (5.5 barg)	8.3 (235)
Inlet Pressure 60 psig (4.1 barg)	6.5 (184)
Air Loss for Regeneration {SCFM, (LPM) } (1)	2.5 (71)
Min/Max Inlet Air Pressure	60 psig/125 psig (4.1 barg/8.6 barg)
Max Inlet Air Temperature (2)	78°F (25°C)
Pressure Drop at Max Flow Rate (psi)	8 psi (0.5 bar)
Inlet/Outlet Port Size	1/4" NPT
Electrical Requirements (3)	12 VDC
Shipping Weight	50 lbs. (23 kg)

Note: The Dryers in this bulletin are not recommended for use with FT-IR Spectrometers. Please refer to Bulletin AGS for FT-IR Purge Gas Generators intended for this application.

Notes:

1 Total air required = air loss for regeneration + process demand (up to max. dry air flow rate).

2 Outlet dew point will increase at higher inlet compressed air temperatures.

3 Power consumption less than 10 watts. Each dryer is shipped with a 12 VDC plug-in transformer to connect to the local electrical supply.

Recommended Installation

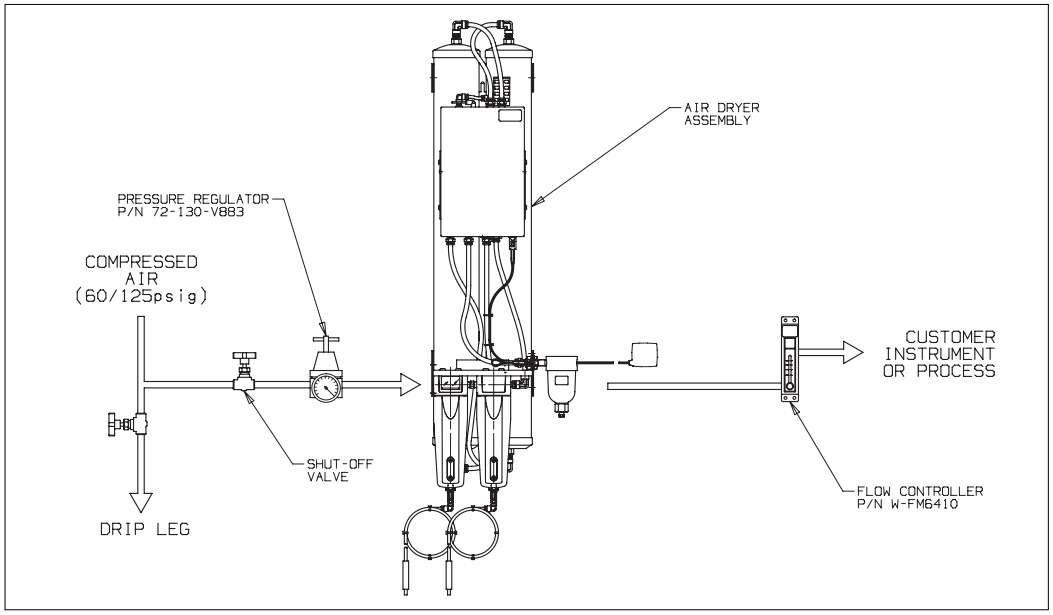

Figure 2: Recommended Installation (Schematic)

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
Lancaster, NY • 1-800-343-4048

Troubleshooting

All troubleshooting activities should be performed by suitable personnel using reasonable care. To arrange for system service, contact the Technical Services Department at 800-343-4048, 8AM to 5PM Eastern Time (North America only). For other locations, please contact your local representative.

Warning: To avoid electrical shock, disconnect electrical power before servicing this product.

Symptom	Course of Action
Moisture Indicator Turns Yellow	Check Inlet air temperature. If higher than 78°F (26°C), install aftercooler upstream of the dryer. Check inlet air pressure. Dryer requires 60 psig (4.1 barg) minimum. Check flow rate. Do not exceed dryer capacity. Install Parker Balston Flow Controller downstream. Confirm tower cycling (5 minute cycle time). If not, call factory. Check electric power source.
High Pressure Drop Through Dryer (low flow)	Check flow demand. Must match process flow requirements to dryer capacity. Check inlet filters for particulate clogging; replace if necessary. Check for leaks in downstream piping and process. Check prefilter drain(s) for leaks.
No Flow Through Dryer	Check supply line pressure / 60 psig (4.1 barg) minimum. Check supply line source (compressor). Check to make sure all customer installed valves are open. Check prefilter drain(s) for leaks.
Logic Box Hum (loud and annoying)	Contact your local representative to arrange Logic Box repair. Please have product Serial Number available.

Notes: Regeneration

After a problem has been resolved, the towers may be regenerated by turning on the inlet air supply, shutting off the outlet flow from the dryer and turning on the power. This will cycle the dryer with 100% purge air. The dryer should purge for at least 12 hours to assure complete regeneration.

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