

# SPXFLOW

## Heat-Les™ Desiccant Air Dryer

LHA SERIES 7 - 50 SCFM



**> Pneumatic Products®**

# LHA Series Dryers

The LHA Series Heat-Les™ Desiccant Air Dryer will protect process and pneumatically operated equipment from the potentially harmful effects of moisture that are present in typical compressed air systems. LHA Series Dryers will produce pressure dew points of ISO 8573.1 Class 1 (-100°F, -73°C) and Class 2 (-40°F, -40°C) and guarantee flow rates from 7 scfm to 50 scfm (12 nm<sup>3</sup>/h to 85 nm<sup>3</sup>/h), thereby protecting air systems that are exposed to below freezing temperatures.

The LHA Series Dryers incorporate a time proven design, with superior features and reliability, in a compact and easy to install package. Standard features include:

## **SIMPLE HEAT-LES™ DESIGN**

- Consistent outlet pressure dew points - desiccant beds and cycle time optimized to produce -40°F (-40°C) pressure dew points at standard flow rating [equals an atmospheric dew point of -71°F (-57°C)] or -100°F (-73°C) pressure dew point at reduced flow ratings [equals an atmospheric dew point of -122°F (-86°C)]
- Minimum purge air usage - saving the heat of adsorption maximizes the moisture holding capacity of the purge air, minimizing the amount required
- Long desiccant life - beds sized to prevent fluidization, plus slow and complete regeneration, prevent desiccant movement and deterioration
- Heavy duty purge exhaust muffler for quiet operation
- Non-lubricated, soft seated control valves

## **RELIABLE SOLID STATE TIMER**

- Standard 4 minute cycle
- Fully repressurizes the regenerating tower before going on-stream to prevent bed movement and loss of pressure downstream.

## **INTEGRAL SUPPORT SCREENS & AIR DIFFUSERS**

(Top and Bottom of Vessels)

- Stainless Steel construction for long, corrosion-free life.
- Easily removed to perform maintenance.
- Prevents desiccant channeling resulting in extended bed life.

## **FRONT MOUNTED CONTROL PANEL**

- Power on light
- Tower indicator lights
- On-off switch

## **MOISTURE INDICATOR KIT INCLUDES:**

- Moisture indicator to provide visual verification of dryer performance.
- Piping kit for ease of field installation.



## WALL MOUNTED ENCLOSURE

- All dryer components are completely assembled, piped, and wired. (All filters and moisture indicator are field installed.)
- All models include a 6' (1.8 m) cord set.

## PRE AND AFTER FILTER KIT

- Grade HC coalescing prefilter captures oil down to 0.008 mg/m<sup>3</sup> protects the desiccant bed against contamination from liquid water or lubricant
- Grade PR afterfilter removes solids 1.0 micron and larger to protect downstream components.
- Pre-engineered piping kit for ease of field mounting.

## How It Works

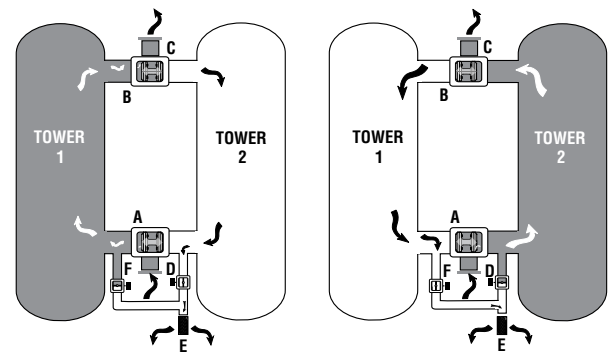
(See Figures 1)

Compressed air enters the dryer and is directed to TOWER 1 through valve (A) and then exits the dryer through shuttle valve (B). A portion of the dried air is throttled to near atmospheric pressure by means of an orifice (C). This extremely dry, low pressure air flows through and regenerates the desiccant in TOWER 2 and is then exhausted through purge/repressurization valve (D) and exhaust muffler (E) to atmosphere.

After a set time, the automatic solid state timer closes purge/repressurization valve (D) allowing TOWER 2 to repressurize slowly.

At the end of 2 minutes, valve (F) opens and Tower 1 depressurizes. The main air flow is now dried by TOWER 2 while TOWER 1 is regenerated.

**Figure 1 – Flow Schematic  
Models 7 through 50**



## Product Specifications

MODEL	DIMENSIONS						IN/OUT CONNECTIONS NPT	WEIGHT	
	in	H mm	in	W mm	in	D mm		lbs	kg
<b>LHA-7</b>	31	775	25	634	7	178	1/2"	67	30
<b>LHA-13</b>	31	775	25	634	7	178	1/2"	72	33
<b>LHA-20</b>	31	775	25	634	7	178	1/2"	83	38
<b>LHA-25</b>	32	803	32	808	9	229	1/2"	105	48
<b>LHA-30</b>	32	803	32	808	9	229	1/2"	105	48
<b>LHA-35</b>	32	803	32	808	9	229	1/2"	111	50
<b>LHA-50</b>	44	1,100	33	826	9	229	1/2"	148	67



**TABLE 1 - INLET & PURGE FLOWS @ 100 PSIG**

MODEL	INLET FLOW RATING <sup>1</sup> SCFM (NM <sup>3</sup> /H)				PURGE FLOW <sup>2</sup> SCFM (NM <sup>3</sup> /H)			
	-40°F	(-40°C)	-100°F	(-73°C)	Average		Maximum	
<b>LHA-7</b>	7.3	(12)	5.6	(9.5)	1.5	(2.5)	2	(3.4)
<b>LHA-13</b>	13	(22)	10	(17)	2.7	(4.6)	3.7	(6.3)
<b>LHA-20</b>	20	(34)	16	(27)	4.2	(7.1)	5.5	(9.3)
<b>LHA-25</b>	25	(42)	20	(34)	5.1	(8.7)	6.8	(12)
<b>LHA-30</b>	30	(51)	24	(41)	6.2	(11)	8.2	(14)
<b>LHA-35</b>	35	(59)	28	(48)	7.2	(12)	9.6	(16)
<b>LHA-50</b>	50	(85)	40	(68)	10.2	(17)	13.6	(23)

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**TABLE 2 - INLET & PURGE FLOW CORRECTION FACTORS**

INLET PRESSURE	psig							
	50	70	90	100	110	120	130	150
	kg/cm <sup>2</sup>							
	3.5	4.9	6.3	7	7.7	8.4	9.1	10.5
<b>MULTIPLIER A</b>	0.31	0.54	0.83	1.00	1.09	1.17	1.26	1.44
<b>MULTIPLIER B</b>	0.55	0.73	0.91	1.00	1.09	1.17	1.26	1.44

1 Inlet flows are established in accordance with CAGI (Compressed Air and Gas Institute) standard ADF-200, Dual Stage Regenerative Desiccant Compressed Air Dryers - Methods for Testing and Rating. Conditions for rating dryers are: inlet pressure - 100 psig (7 kg/cm<sup>2</sup>); inlet temperature - saturated at 100°F (38°C).

2 Average Purge Flow is the total amount of air used to purge and repressurize off-stream towers averaged over the cycle time. Maximum Purge Flow is the flow rate through the off-stream tower during that portion of the cycle the purge/repressurization valve is open.

**CAPACITY CORRECTION FACTORS**

- To determine maximum inlet flow at inlet pressures other than 100 psig (7 kg/cm<sup>2</sup>), multiply inlet flow from Table 1 by multiplier A from Table 2 that corresponds to system pressure at inlet of dryer.
- To determine purge flow at inlet pressures other than 100 psig (7 kg/cm<sup>2</sup>), multiply purge flow at 100 psig (7 kg/cm<sup>2</sup>), from Table 1 by multiplier B from Table 2 that corresponds to system pressure at inlet of dryer.
- To determine outlet flow capacity, subtract purge flow from inlet flow.