

# D SERIES

DESICCANT COMPRESSED AIR DRYERS



**DESICCANT  
COMPRESSED AIR DRYERS  
7-5400 SCFM**

**SOME COMPANIES ARE FOUNDED ON HARD WORK.  
OTHERS ARE FOUNDED ON IDEALS.**

**FS-CURTIS WAS FOUNDED ON BOTH.**

# A HISTORY OF

**1854**

Curtis & Co. –  
Empire Saw founded  
in St. Louis, MO, USA

**1857**

Earned Agricultural  
and Mechanical Fair  
award for excellence  
and quality

**1876**

Named Curtis  
and Co.  
Manufacturing

**1897**

Built first  
reciprocating  
air compressor  
that later evolved  
into the Master  
Line Series

**1914**

Supported U.S.  
Government efforts  
by producing more  
than 2 million Howitzer  
shell forgings

**1940**

Designed and  
developed  
mobile oxygen  
compressors to be  
used in Aerospace  
applications

**1955**

Merged with U.S.  
Air Compressor  
Company, Central  
Petroleum Company,  
Lewis Machine  
Company



## **REAL-WORLD PEOPLE**

When you're successful, we're successful. That's why FS-Curtis listens. Trust and dependability are the foundations of our past and the fabric of our future, so you can count on being treated with the personal touch you deserve.

**“Trust and dependability are the foundations of our past and the fabric of our future.”**

**~ Brent Becker – President, FS-Curtis**

More than 150 years ago, the FS-Curtis way of doing business was established through two key commitments: a dedication to building quality products and a dedication to responsive customer service.

Over the decades, the company and its products have evolved through innovation and new technologies. But those commitments to quality and service remain unchanged. Today, just as in 1854, FS-Curtis customers can depend on our products for reliable, long-term service. Equally as important, they can depend on getting the same from our people.

# EXCELLENCE

1976

Merged with Toledo Tools as Curtis-Toledo Inc.

1979

Introduction of Challenge Air Series reciprocating air compressors

1995

Began manufacturing and assembling Rotary Screw Air compressors

2005

Expanded global market reach by joining forces with Fusheng Industrial

2006

U.S. Headquarters certified as ISO9001:2000 and ISO14001:2004

2010

Introduced next generation GSV Variable Speed Rotary Screw compressors



## REAL-WORLD PRODUCTS

Take more than a century of experience building quality compressors, add in a staff that's listening to the needs of the market, and the result is a product lineup that's built for tough working conditions. No wonder so many customers around the world depend on FS-Curtis compressors day in and day out.



# PRECISION PERFORMANCE

THE SAME COMMITMENT TO WORLD-CLASS QUALITY FOUND IN FS-CURTIS COMPRESSORS IS ALSO THE FOUNDATION OF THE D SERIES COMPRESSED AIR DRYERS.

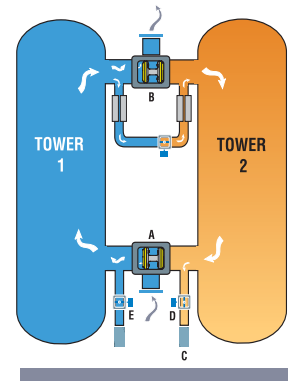
Compressed air users have relied on FS-Curtis to provide compressed air treatment solutions for critical applications worldwide. D Series desiccant dryers improve air system efficiency by using leading industry technology and premium grade activated alumina.



# HOW IT WORKS

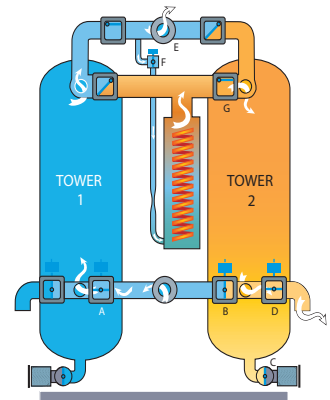
## HEATLESS REGENERATION

Moist, filtered compressed air enters the pressurized on-line desiccant-filled drying Tower 1 through the shift valve (A). Up-flow drying enables the desiccant to strip the air stream of moisture. Clean, dry compressed air exits through shift valve (B) to feed the air system. When in regeneration mode, Tower 2 depressurizes to atmosphere through the muffler (C) when the valve (D) opens. A portion of dry compressed air (purge air) is diverted before exiting (B) and passes through off-line Tower 2 and exits at valve (D) to desorb the moisture from the desiccant. Once desorbed, valve (D) closes and Tower 2 is re-pressurized. At tower shift-over, valve (E) will open, causing shift valves (A & B) to shift. Tower 2 will be placed on-line to dry the bed. Operations will switch and Tower 1 will be regenerated.



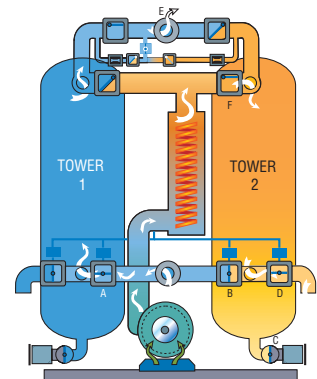
## HEATED PURGE REGENERATION

Moist, filtered compressed air enters the pressurized on-line desiccant-filled drying Tower 1 through valve (A). Up-flow drying enables the desiccant to strip the air stream of moisture. Clean, dry compressed air exits through valve (E) to feed the air system. Tower 2 (when in regeneration mode) closes valve (B), then depressurizes to atmosphere through muffler (C). Valves (D & G) open and the heater turns on. A portion of dry compressed air (purge air) is diverted before exiting (E) and passes through the heater. Hot dry purge air desorbs the moisture from the desiccant as it flows down through Tower 2 to exit at valve (D). Once desorbed, the heater turns off and cool dry purge air continues to pass until the desiccant bed is cooled. Finally, valve (D) closes and Tower 2 is re-pressurized. At a fixed time interval, valve (B) will open and Tower 2 will be placed on-line to dry the bed and valves (A & D) will close. Operations will switch and Tower 1 will be regenerated.



## BLOWER PURGE REGENERATION

Filtered compressed air enters on-line desiccant-filled, drying Tower 1 through valve (A). Up-flow drying enables the desiccant to strip moisture from the airstream. Clean, dry compressed air exits through (E) to feed the air system. Tower 2 (shown in regeneration mode) valve (B) closed, depressurizes to atmosphere through muffler (C). Valves (D & F) open and the heater turns on. The high-efficiency blower draws ambient air and feeds it through the heater. The ambient airstream passes through valve (F) and flows downward through the moist desiccant in Tower 2, collecting water vapor before exiting valve (D). Once the desiccant is fully desorbed, the heater turns off. Valves (F & D) close and Tower 2 is re-pressurized. At a fixed time interval, valve (B) will open and Tower 2 will be placed on-line to dry the airstream and valve (A) will close. Operations will switch and Tower 1 will be regenerated.



# PURE. COMPACT. PRODUCTIVITY.

## DLW (7-50 SCFM)

### WALL MOUNTED DESICCANT DRYERS

DLW desiccant air dryers protect air systems exposed to temperatures below freezing. The fully enclosed wall-mounted package delivers dew points of ISO 8573.1 Class 1 and Class 2 with flow rates of 7 to 50 SCFM. Applications including labs, hospitals, and high-tech installations all benefit from the clean, dry air, improved productivity, and more floor space provided by DLW series.

- Enclosed design with clean, streamlined piping for easy installation and quiet operation
- Premium grade desiccant beads enhance surface area, requires minimum purge air, and have high crush strength
- Front mounted at-a-glance control panel, automatic operation and stored adsorptive energy result in long desiccant life
- Optional filtration system increases lifetime of desiccant and avoids system contamination



# MATCH PERFORMANCE BY DEMAND

## DL (40-5400 SCFM)

### HEATLESS DESICCANT DRYERS

FS-Curtis DL desiccant dryers are available with three application specific control systems. No matter what your application, there's a control system just right for your needs.

FS-Curtis DL heatless desiccant dryers deliver consistent outlet pressure dew points to  $-100^{\circ}\text{F}$ . By combining the proven benefits of desiccant drying technology with the industry leading design, FS-Curtis' DL dryers provide the most reliable compressed air drying system for various applications.

- Up-flow drying which allows water and heavy contaminants to drop out of the air stream
- Premium grade desiccant beads enhance surface area, requires minimum purge air, and have high crush strength
- ASME and CRN certified pressure vessels
- Optional pre-mounted filtration package increases lifetime of desiccant and avoids system contamination
- Precision switch valves automatically shift to low pressure side of the circuit to control process flow



#### STANDARD CONTROLLER

- Time controlled bed regeneration cycles offer consistent performance and economy of purchase
- Simple timer based controller

#### SELECTABLE PURGE CONTROLLER

- Tailor the drying cycles to match your peak air demand in 10% increments
- Controller offers four pressure dew point settings to increase your savings

#### AUTOMATIC ENERGY SAVINGS CONTROLLER

- Automatically matches purge air use to the demand on the system
- Controller offers four pressure dew point settings to increase your savings
- Controller features vacuum fluorescent text display that communicates energy savings, operating mode and service reminders

# DEMAND MORE

## DHP (300-3200 SCFM)

### HEATED PURGE DESICCANT DRYERS

FS-Curtis' externally heated purge desiccant dryers offer consistent dew point performance and are equipped with our advanced purge booster. DHP Series dryers consume less dried compressed air volume for regeneration purpose by the use of a low-watt density heater. Reduce air loss to align supply-side equipment with demand-side requirements to optimize your air system.

- Low-watt density heater saves energy and prevents premature desiccant aging
- Premium grade desiccant beads enhance surface area and have high crush strength
- NEMA4 rated electrical enclosure
- Optional pre-mounted filtration package increases lifetime of desiccant and avoids system contamination





# ULTIMATE PERFORMANCE. SOLID RELIABILITY.

## DHB SERIES (500-4300 SCFM) BLOWER PURGE DESICCANT DRYERS

DHB blower purge desiccant dryers improve air system efficiency by the use of a dedicated axial blower, instead of a percentage of dehydrated purge air, to regenerate the off-line desiccant tower. ISO 8573.1 Class 2 dew point performance is guaranteed. DHB dryers do not use compressed air as purge air and thus are 100% efficient at delivering full supply-side compressor capacity.

- Industrial level high capacity blowers operate efficiently and quietly
- Low-watt density heater saves energy and prevents premature desiccant aging
- Premium grade desiccant beads enhance surface area and have high crush strength
- NEMA4 rated electrical enclosure
- Optional pre-mounted filtration package increases lifetime of desiccant and avoids system contamination



# TECHNICAL DATA

## DLW SERIES PRESSURE-SWING DESSICANT COMPRESSED AIR DRYERS

MODELS	INLET FLOW <sup>1</sup> (-40°F) scfm	POWER SUPPLY	INLET/OUTLET NPT male	DIMENSIONS (LxWxH-In.)	WEIGHT (Lbs.)
DLW-7	7	110-120/1/60 220-240/1/60	1/2"	30.5 x 17.5 x 6.7	55
DLW-13	13				60
DLW-20	20				71
DLW-25	25			30.5 x 24.4 x 8.6	93
DLW-30	30				93
DLW-35	35				99
DLW-50	50				132

1-Inlet flow - Conditions for rating above dryers are: compressed air at dryer inlet: 100 psig inlet pressure; 100% relative humidity.

## DL SERIES HEATLESS DESICCANT COMPRESSED AIR DRYERS

MODELS <sup>1</sup>	INLET FLOW <sup>2</sup> @ 100 psig scfm	POWER SUPPLY	INLET / OUTLET NPT Male	DIMENSIONS (LxWxH-In.)	WEIGHT (Lbs.)
DLS/DLP/DLE40	40	DLS 100-120/1/60  DLP/DLE 100-240/1/60 12-24VDC	1" NPT	49 x 34 x 35	365
DLS/DLP/DLE60	60			64 x 34 x 35	445
DLS/DLP/DLE90	90			81 x 34 x 35	575
DLS/DLP/DLE115	115			57 x 46 x 41	685
DLS/DLP/DLE165	165				685
DLS/DLP/DLE260	260				1010
DLS/DLP/DLE370	370		2" NPT	65 x 58 x 42	1215
DLS/DLP/DLE450	450			73 x 58 x 42	1350
DLS/DLP/DLE590	590			104 x 55 x 51	1473
DLS/DLP/DLE750	750		3" ANSI Fig.	107 x 57 x 51	2134
DLS/DLP/DLE930	930			112 x 63 x 59	2414
DLS/DLP/DLE1130	1,130			115 x 66 x 59	2875
DLS/DLP/DLE1350	1,350			120 x 68 x 59	3722
DLS/DLP/DLE1550	1,550			117 x 74 x 59	4167
DLS/DLP/DLE2100	2,100			119 x 82 x 59	4417
DLS/DLP/DLE3000	3,000		4" ANSI Fig.	125 x 86 x 67	9010
DLS/DLP/DLE4100	4,100			124 x 100 x 88	9900
DLS/DLP/DLE5400	5,400			6" ANSI Fig.	124 x 105 x 89

1-DLS: standard controller; DLP: selectable purge controller; DLE: automatic energy savings controller.

2-Inlet flow - Conditions for rating above dryers are: compressed air at dryer inlet: 100°F inlet 100 psig inlet pressure; 100% relative humidity, 100°F ambient temperature, and 5 psi pressure drop.

## THE NAME TO KNOW IS FS-CURTIS.

For a complete selection of top-quality, reliable air compressors, dryers and accessories, the only name you need to remember is FS-Curtis.



### DHP SERIES HEATED PURGE DESICCANT COMPRESSED AIR DRYERS

MODELS	INLET FLOW <sup>1</sup> @ 100 psig scfm	POWER SUPPLY	INLET / OUTLET NPT Male	DIMENSIONS (LxWxH-In.)	WEIGHT (Lbs.)	
DHP300	300	460/3/60	1.5" NPT	98 x 48 x 43	1400	
DHP400	400			105 x 53 x 50	1800	
DHP500	500		2" NPT	108 x 55 x 50	1800	
DHP600	600			114 x 60 x 62	2000	
DHP750	750		3" FLG	113 x 64 x 62	2400	
DHP900	900			118 x 66 x 62	2400	
DHP1050	1,050			116 x 80 x 62	2900	
DHP1300	1,300			4" FLG	124 x 85 x 64	3400
DHP1500	1,500				121 x 97 x 64	5100
DHP1800	1,800			7800		
DHP2200	2,200		7800			
DHP2600	2,600		9000			
DHP3200	3,200					

1-Inlet flow - Conditions for rating above dryers are: compressed air at dryer inlet: 100°F inlet 100 psig inlet pressure; 100% relative humidity, 100°F ambient temperature, and 5 psi pressure drop.

### DHB SERIES BLOWER PURGE DESICCANT COMPRESSED AIR DRYERS

MODELS	INLET FLOW <sup>1</sup> @ 100 psig scfm	POWER SUPPLY	INLET / OUTLET NPT Male	DIMENSIONS (LxWxH-In.)	WEIGHT (Lbs.)
DHB500	500	460/3/60	2" NPT	105 x 53 x 70	1866
DHB600	600			108 x 55 x 71	2111
DHB750	750		3" FLG	114 x 60 x 83	2456
DHB900	900			113 x 64 x 84	2472
DHB1050	1,050			118 x 66 x 85	2981
DHB1300	1,300			116 x 80 x 93	3576
DHB1500	1,500		4" FLG	124 x 85 x 104	5359
DHB1800	1,800			8018	
DHB2200	2,200		6" FLG	121 x 97 x 117	8123
DHB2600	2,600			128 x 97 x 117	9333
DHB3200	3,200			124 x 105 x 130	9833
DHB3600	3,600				
DHB4300	4,300				

1-Inlet flow - Conditions for rating above dryers are: compressed air at dryer inlet: 100°F inlet 100 psig inlet pressure; 100% relative humidity, 100°F ambient temperature, and 5 psi pressure drop.



**CURTIS-TOLEDO® , INC.**

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