

SUPER DELIQUESCENT DRYERS

NO ELECTRICITY REQUIRED

Dry Construction Air—DCA Series
Complete, portable air treatment



SUPERIOR DESICCANT

Veri-Dri 40 Plus gives
dew point suppression
up to 70°F/38.9°C

Unique DESICCANT SAVER

The self-cleaning
medium minimizes
desiccant usage

DRY CONSTRUCTION AIR

Complete
portable dry,
clean air system



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SUPER DELIQUESCENT DRYER SD Series



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MR. BEST-AIRE FILTRATION PACKAGE

Complete drying
& filtration
systems



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SUPERIOR DESICCANT

Veri-Dri 40 Plus
beats the
competition



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CUSTOM EQUIPMENT



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SIZING & SELECTION MADE EASY



Page 5

Untreated compressed air is destructive

All pneumatically operated equipment is designed to perform more efficiently and reliably with clean, dry and properly lubricated compressed air. Atmospheric air is loaded with moisture. At 100 PSIG/6.89 BarG, it takes 7.8 ft³/0.22 m³ of free air to produce 1 ft³/28.2 liters of compressed air. What may have been acceptable levels of water vapor and contaminants in atmospheric air become intolerable in compressed air.

At 75°F/23.9°C and 75 percent relative humidity, a 500 SCFM/850 NM³H compressor takes in 90 gallons/340.6 liters of water in vapor form in a 24-hour period. An after cooler will condense only about half of it. The remaining moisture, if not removed, goes into the air lines and causes rust and scale in pipes, valves, instrument, air-operated tools and equipment.

Moisture washes away lubricants needed to run the air compressor. Due to the heat of compression, this oil decomposes to form a corrosive and sticky substance which causes slow and inconsistent equipment operation down stream.

A Pioneer Super Deliquescent dryer protects your equipment and saves you money

Pioneer Super Deliquescent dryers are the only deliquescent dryers capable of suppressing, or reducing, compressed air dew points by up to 70°F/38.9°C. This is important because dew point is the temperature at which moisture begins to condense. In a compressed air system, measurement of the dew point under pressure is called the pressure dew point (PDP). Knowing the needed PDP at the point of use is critical for proper sizing and operation of your Super Deliquescent dryer.

A Super Deliquescent dryer requires minimum capital outlay. It is easy to install and requires little maintenance. And, it typically pays for itself in one year or less by reducing maintenance costs and down time.

Applications

- Remote locations
- Intermittent air usage
- Explosive areas
- Natural gas drying
- Second stage drying
- Lumber mills
- Mines
- Construction sites

Typical Installation

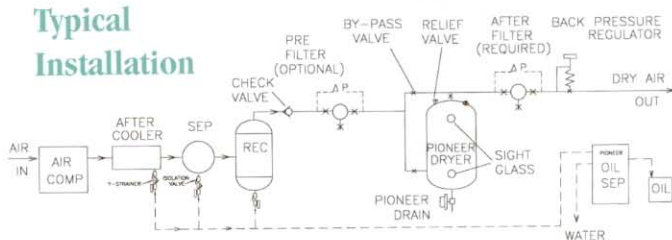


Figure 1

Pioneer advantages

1. 10-year limited warranty.

2. **Built-in Prefilter**—The Desiccant Saver prefilters the air/gas eliminating the need for an external prefilter.

3. Minimum Desiccant Consumption

—Pioneer's unique Desiccant Saver reduces desiccant consumption to a minimum. More than half of the moisture is removed in the first three steps of the drying process, none of which require additional desiccant (see Figure 1). This

reduces the desiccant usage—in relation to water removed—to less than half that of competitive systems.

4. **Prevents Drain Clogging**—The Desiccant Saver filters the condensate and prevents drain clogging.

5. **Quicker Desiccant Fill**—Models SD100 and larger have an oversized hand/man hole.

6. **Minimum Maintenance**—Inspect your Super Deliquescent Dryer about once a week to main-

tain desiccant at or above the desiccant sight glass level.

7. **Exceptional Reliability**—No moving parts.

8. **Low Pressure Drop**—Approximately 1.0 PSIG/.07 BarG.

9. **Energy Efficient**—No electrical parts in the dryer.

10. **Easy Inspection**—Two sight glasses.

11. **Durable**—Epoxy coated dryer vessel interior.

FOUR-STEP DRYING PROCESS FOR SUPERIOR PERFORMANCE

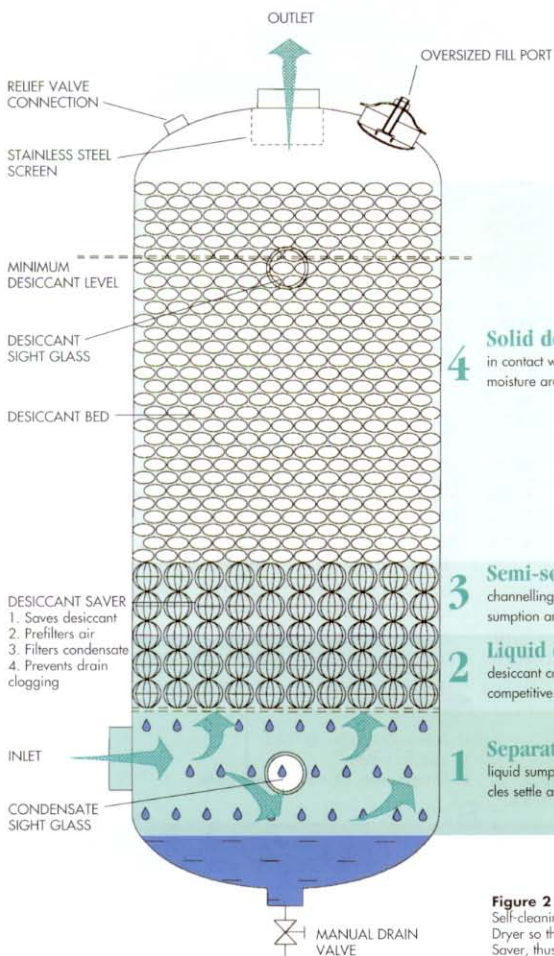


Figure 2
Self-cleaning Desiccant Saver captures solids in the Super Deliquescent Dryer so that the condensate—free of solids—flows over the Desiccant Saver, thus preventing drain clogging.

QUALITY FEATURES PROVIDE RELIABILITY

Super Deliquescent Dryer standard features

1. Initial Fill of Veri-Dri 40 Plus Desiccant—Free.
2. Four-Step Drying—The air is dried

four times to give the highest quality of clean dry air.

3. Superior Desiccant—Veri-Dri 40 Plus is the only deliquescent desiccant capable of achieving 70°F/38.9°C PDP suppression. It can absorb up to four times its weight in water (see Veri-Dri 40 Plus put to the test on page 6). And, even as a liquid mixture, it continues to absorb large amounts of moisture.
4. Desiccant Saver—Desiccant which is wasted in competitive dryers is used to increase drying capacity and reduce desiccant consumption. This feature also prevents drain clogging.

5. 10-Year Prorated Vessel Warranty
6. Epoxy Coated Vessel Interior—For longevity.
7. ASME Vessels—All models are designed and built to meet or exceed the ASME unfired pressure vessel code. Models SD75 and larger dryer vessels are ASME inspected and stamped.
8. Drain—Manual drain is standard. Use a Pioneer Stainless Steel Motorized Drain for automatic operation.
9. Desiccant Sight Glass
10. Condensate Sight Glass
11. Stainless Steel Outlet Screen—For longevity and to minimize desiccant carry over.

Super Deliquescent Dryers—SD Series

MODEL	CAPACITY ⁴ @100 PSIG/6.89 BAR G @40°F/22.2°C PDP SUPPRESSION		INLET/ OUTLET SIZE INCHES	DIMENSIONS (IN/300)			PRESSURE RATINGS PSIG/BAR G	VESSEL WEIGHT ⁶ LBS/KG	DESICCANT WEIGHT ⁶ LBS/KG	DRAIN PORT IN NPT
	SCFM	CFM / M3M		A	B	C				
SD10	10	0.28	½ NPT	14/355	32/813	10/254	200/13.79	45/20	9/4.0	¾
SD15	15	0.43	½ NPT	14/355	42/1066	10/254	200/13.79	60/27	15/7.0	¾
SD20	20	0.56	½ NPT	14/355	45/1143	10/254	200/13.79	68/31	19/8.7	¾
SD25	25	0.71	½ NPT	14/355	48/1219	10/254	200/13.79	75/36	23/10.5	¾
SD35	35	0.99	½ NPT	14/355	53/1346	10/254	200/13.79	90/41	30/14.0	¾
SD50	50	1.43	¾ NPT	14/355	75/1905	10/254	200/13.79	120/54	45/20.5	¾
SD75	75	2.12	1 NPT	15/381	66/1676	8.5/216	200/13.79	160/72	68/31.0	1
SD100	100	2.83	1 NPT	15/381	80/2032	8.5/216	200/13.79	240/108	90/41.0	1
SD150	150	4.25	1 NPT	15½/394	79/2007	10½/270	200/13.79	300/136	135/61.0	1
SD200	200	5.66	1½ NPT	17/432	68/1981	12¾/324	200/13.79	350/159	180/82.0	1
SD250	250	7.10	1½ NPT	17/432	84/2134	12¾/324	200/13.79	380/172	225/102.0	1
SD300	300	8.49	2 NPT	18/457	71/1803	15/381	150/10.34	450/294	270/122.5	1
SD400	400	11.32	2 NPT	18/457	84/2134	15/381	150/10.34	525/238	360/163.0	1
SD500	500	14.20	3 NPT	19½/495	85/2159	18/457	150/10.34	600/272	450/204.0	1½
SD625	625	17.70	3 NPT	21/533	72/1829	25½/648	150/10.34	690/313	563/255.0	1½
SD750	750	21.30	3 NPT	21/533	80/2032	25½/648	150/10.34	820/372	675/306.0	1½
SD1000	1000	28.32	3 NPT	21/533	90/2286	24/610	150/10.34	1045/474	900/408.0	1½
SD1250	1250	35.42	3 NPT	22½/571	85/2159	30/762	150/10.34	1250/567	1125/510.0	1½
SD1500	1500	42.52	4 FIG	25/635	86/2184	35/889	150/10.34	1600/726	1350/612.0	1½
SD1750	1750	49.56	4 FIG	25/635	85/2159	35/889	150/10.34	2000/907	1575/714.0	1½
SD2000	2000	56.64	4 FIG	27/686	89/2261	42/1066	125/8.61	2500/1134	1800/816.5	2
SD2250	2250	63.72	4 FIG	27/686	92/2337	42/1066	125/8.61	2800/1280	2050/937.0	2
SD2500	2500	70.80	4 FIG	27/686	95/2413	42/1066	125/8.61	3100/1406	2250/1020.5	2
SD2750	2750	77.88	4 FIG	27/686	94/2387	48/1219	125/8.61	3300/1508	2500/1142.0	2
SD3000	3000	84.96	6 FIG	30½/776	97½/2476	48/1219	125/8.61	3700/1678	2700/1225.0	2

Notes:

1 High pressure units up to 3000 PSIG are available.

2 Initial desiccant charge is included with the dryer.

3 Maximum recommended inlet temperature is 120°F/48.9°C; however, the dryer must be oversized by 15% for every 10°F/5.6°C increase in inlet temperature over 100°F/37.8°C.

4 For nonstandard conditions, see Table 2.

5 Larger sizes available.

6 For shipping weight, add vessel and desiccant weights.

Table 1

Correction Factors Actual Capacity = Correction factor x nominal capacity

Dew point suppression Correction factor	30°F/16.7°C	40°F/22.2°C	50°F/27.8°C	60°F/33.3°C	70°F/38.9°C										
	1.1	1.0	0.9	0.8	0.7										
Inlet pressure PSIG/BAR G	5/0.35	10/0.69	20/1.38	30/2.07	40/2.76	50/3.45	60/4.14	70/4.83	80/5.52	90/6.20	100/6.69	125/8.62	150/10.33	175/12.07	200/13.79
Correction factor	0.20	0.28	0.36	0.44	0.52	0.60	0.68	0.76	0.84	0.92	1.00	1.20	1.40	1.60	1.80

Table 2

Optional features

1. Pre-Filter
2. After Filter
3. Oil-Alert Filter
4. Mr. Best-Aire complete drying and filtration systems
5. Stainless Steel Motorized Drain
6. High Pressure Dryers—up to 3000 PSIG/206.8 BarG
7. Low Pressure Dryers—to atmospheric pressure
8. Dry Construction Air systems (DCA Series, see page 7)
9. Trailer-Mount/Portable Systems



*Carbon Adsorber-Alert

Pioneer's optional Carbon Adsorber-Alert is recommended to

remove remaining hydrocarbon vapors. OSHA standard 1910.1000 limits oil in compressed air exhaust to 4.32 ppm. Mr. Best Aire and Carbon Adsorber-Alert help you meet this regulation. For details, consult your nearest OSHA office.

The Carbon Adsorber-Alert element gradually changes color from white to red indicating the need for element change.



MR. BEST AIRE

For systems installed right the first time—without cost over runs and on time.

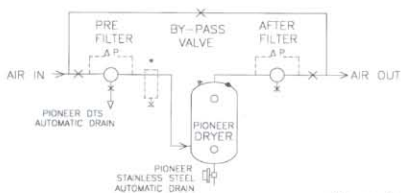


Figure 3

Mr. Best Aire Silver

- 10-year prorated vessel warranty
- Prefilter with ΔP gauge and auto drain
- After filter with ΔP gauge
- Three-valve bypass
- Prepiped and mounted on a heavy skid

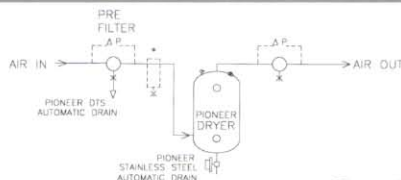


Figure 4

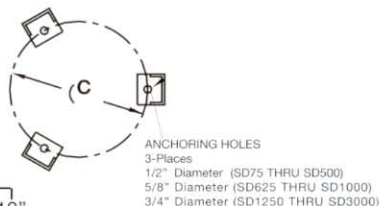
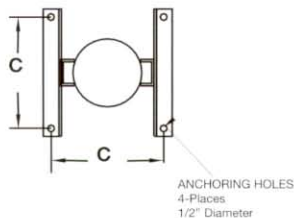
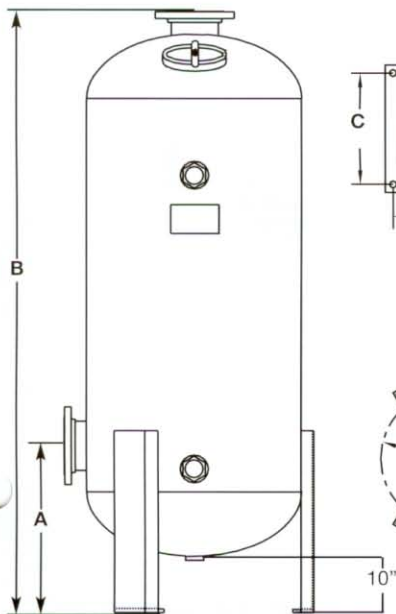
Mr. Best Aire Economy

- 10-year prorated vessel warranty
- Prefilter with ΔP gauge and auto drain
- After filter with ΔP gauge
- Prepipiped and mounted on a heavy skid

Call for your **FREE EZ-Quote CD-Rom**
1-800-264-1AIR(1247) or 423-346-6693

PIONEER'S
EZQuote

Pioneer's EZ-Quote software simplifies selection, sizing and pricing of compressed air drying and filtration equipment and water cooling equipment.



VERI-DRI 40 PLUS

Superior desiccant beats the competition and provides drier air.

Advantages of Veri-Dri 40 Plus

1. Only deliquescent desiccant capable of achieving 70°F/38.9°C PDP suppression
2. Absorbs four times its weight in water
3. Continues to absorb moisture in a liquid state
4. Briquetted with a binder for strength and to minimize dusting
5. Dries air/gas up to 3000 PSIG/206.8 BarG
6. Convenient packaging

Veri-Dri 40 Plus (in background) is the only deliquescent desiccant capable of achieving 70°F PDP suppression. The leading competitor can't make this claim about their desiccant (shown below).



Veri-Dri 40 Plus Beats the Competition.

Improve performance of other deliquescent dryers

You can improve the performance of competitive dryers by using Veri-Dri 40 Plus and Desiccant Saver. Fill approximately one-third of the dryer with Desiccant Saver, and then top it with Veri-Dri 40 Plus.

Pioneer Veri-Dri 40 Plus is available in 50 lb./22.6 kg containers or 425 lb./193 kg resealable drums (shipping weights).



Before



After 24 hours



Tests prove: Veri-Dri 40 Plus is the better desiccant.

As a practical way to demonstrate the properties which comprise Veri-Dri 40 Plus, Pioneer deliquescent desiccant, a performance test was conducted during the 1990 Pioneer Sales Meeting.

Two identical funnels were filled with equal amounts of desiccant—one with Veri-Dri 40 Plus and one with a leading competitor's brand. The funnels were placed on top of two identical empty glass containers. These containers were allowed to stand for 24 hours, after which the results were examined by over 80 distributor representatives at the sales meeting.

The results: Veri-Dri 40 Plus absorbed 10 times more moisture than the popular competing brand. Ask your distributor to provide samples so you can conduct a similar test of your own.

No electricity required.



CONVENIENT CONNECTIONS
Easy-to-reach height for a system mounted on a truck or trailer

NEW! Dry Construction Air

Designed especially for the construction industry and other applications requiring clean dry air without the use of electricity, DCA Series is a complete cooling, drying, and filtration system. DCA Series is loaded with features to save you time and money.

It is ready to connect directly to your portable compressor and is designed for easy access to all points.

In addition to the standard Pioneer Super Deliquescent Dryer features, the

DCA Series includes these features:

- Compact design.
- Lifting lugs and forklift access from all four sides.
- Air-cooled aftercooler with air motor and filter/regulator/lubricator.
- Built-in separator, prefilter and oversized after filter.
- Manual drain.
- Dual sight glasses.
- Pressure relief valve.
- Factory filled with desiccant
- Heavy duty skid.
- Sturdy platform for convenient desiccant loading.
- In, out, and drain connections conveniently located on one side at the same height.



NEW! Dryer-Pak Portable Air

Model DP75

- Capacity 75 SCFM@150 PSIG, 65 SCFM@125 PSIG, or 50 SCFM@100 PSIG.
- ½" NPT inlet and outlet.
- No electricity required.
- Lifting handles.
- Ambient air after-cooler.
- Built-in separator and prefilter.
- Manual drain.
- Sight glass.
- Free initial desiccant fill.
- Total weight approximately 100 pounds, including desiccant.

Dry Construction Air—DCA Series

MODEL	CAPACITY - SCFM/HR			IN/OUT IN. NPT	FILTER MODEL	DIMENSIONS - IN./MM			APPROX. SHIP WT. LBS./KG
	@100 PSIG/ 6.89 BAR G	@125 PSIG/ 8.63 BAR G	@150 PSIG/ 10.35 BAR G			LENGTH	WIDTH	HEIGHT	
DCA280	200/340	240/408	280/476	1½	PS2500	48/1219	32/813	82/2083	750/341
DCA430	300/510	360/612	430/731	2	PS4250	60/1524	36/915	73/1855	950/431
DCA900	625/1063	750/1275	900/1530	2½	PS7500	72/1829	48/1219	74/1880	1400/635
DCA1800	1250/2125	1500/2550	1800/3060	3	PS17000	84/2134	60/1524	88/2236	2400/1089

Larger sizes available. Consult factory.

Table 3

CUSTOM ENGINEERED AND MANUFACTURED EQUIPMENT

PIONEER PERSONNEL PRIDE THEMSELVES ON delivering quality custom equipment. Since our founding in 1980, nearly half of our business has been building custom equipment to meet the strictest specifications. Our engineering staff and well-equipped factory are prepared to meet and exceed your expectations.

From vacuum to 10,000 PSIG; 10 to 15,000 SCFM; air or corrosive, flammable gases. If your application has to do with drying and cleaning compressed air or gas, chances are Pioneer is your best choice.

Contact your Pioneer representative today for a dependable solution.



LONGEST WARRANTY IN THE INDUSTRY

Ten-year prorated vessel warranty is standard on all Pioneer Super Deliquescent Dryer Series.

For one year from the date of purchase, Pioneer Air Systems, Inc. will replace or repair, or provide free of charge any part or parts found to be defective in material or workmanship.

The customer shall contact factory to obtain authorization before returning

equipment or to obtain field service.

One-year mechanical parts only warranty applies to equipment outside the mainland U.S.A., Canada and Mexico. Ten year warranty does not apply to nonstandard equipment.

Manufacturer is not responsible for incidental, consequential, shipping and handling charges.



4,761,968

4,638,852

4,499,033

5,107,919

5,207,895

other Patents pending

TYPICAL SPECIFICATIONS

SD Series Super Deliquescent Dryer

The compressed air dryer shall dry air in a single vessel which utilizes a deliquescent desiccant. The operation shall be continuous and automatic, requiring no utilities. The dryer shall have self-cleaning Desiccant Saver to capture the larger desiccant particles. The Desiccant Saver shall prefilter and predry the air to minimize desiccant consumption. The Desiccant Saver shall filter the condensate to prevent drain clogging. The dryer shall have a stainless steel exit screen to prevent desiccant carry over. The inside of the dryer vessel shall be epoxy coated. The

dryer shall have a 10-year prorated warranty. The pressure drop through the dryer shall be less than 1% of the operating pressure.

The dryer shall be capable of drying _____ SCFM (NM3/HR) of compressed air at _____ PSIG (BarG). The dryer shall be designed for a dew point suppression of _____ °F (°C). The dryer shall be Pioneer Model _____ or approved equal. Initial desiccant fill shall be included.

Recommended option

Mr. Best Aire Silver _____, Mr. Best Aire Economy _____, with Carbon Adsorber-Alert _____.

Information provided is deemed to be current at the time of publication. The company disclaims all liability for any errors resulting in loss or damage.



1-800-264-1AIR

Pioneer Air Systems, Inc. & Pioneer Engineering, Inc.
210 Flatfork Road, Wartburg, TN 37887-3201 U.S.A.
(423) 346-6693 fax: (423) 346-3865
<http://www.pioneerair.com>
email: sales@pioneerair.com

Nanjing Shunfeng-Pioneer
Xiao Hang Zhong Hua Men Wei
Nanjing, China
tel: 8625-241-7271 fax: 8625-241-1128

Visit us on the internet... www.pioneerair.com