SYSTEMS

REFRIGERATED DRYERS 10–2000 SCFM | FILTRATION

Air Treatment

Air Treatment Portfolio

DV Systems enhanced air treatment portfolio delivers the perfect balance between sustainable performance, technology and simplicity offering stable ISO 8573-1 Air Quality for the most demanding of compressed air systems.

DVN Series

- Non-Cycling Refrigerated Dryer
- 10–1200 SCFM
- ISO8573-1 Class 4-5 pressure dew point

DVE Series

- Energy Savings Refrigerated Dryer
- 75–2000 SCFM
- ISO8573-1 Class 4-5 pressure dew point

DVH Series

- High Temperature Refrigerated Dryer
- 10–125 SCFM
- ISO8573-1 Class 4-5 pressure dew point

DVF Series

- High Efficiency Filtration Available in 5 Grades
- 20–2500 SCFM
- ISO8573-1 Class 1-5

ISO 8573.1 Quality Classes

ISO 8573.1 was developed in 1992 by ISO (International Organization for Standardization) to help plant engineers specify desired compressed air quality globally by providing “Quality Classes” for solid particulates, humidity and oil. Quality classes provide engineers with an internationally accepted unit of measure. A typical pharmaceutical plant, for example, would have a compressed air specification of ISO Quality Classes 1.2.1. This is equivalent to 0.1 micron solid contaminants, -40° F (-40° C) dew point, and 0.008 ppm (0.01 mg/m³) oil content filtration.

No matter what language is spoken and what unit of measure is used, using ISO 8573.1 Air Quality Classes ensures that your factory will get the compressed air quality you specified.

QUALITY CLASSES	SOLID CONTAMINANTS (MAX. PARTICLE SIZE)	MAXIMUM PRESSURE DEW POINTS		MAXIMUM OIL CONTENT (DROPLETS, AEROSOLS, VAPOR)	
	MICRONS	°F	°C	PPM W/W	PPM MG/M³
1	0.1	-94	-70	0.008	0.01
2	1	-40	-40	0.08	0.1
3	5	-4	-20	0.8	1
4	15	38	3	4	5
5	40	45	7	21	25
6	-	50	10	-	-

DVN Series
Refrigerated Global Design

DVN series refrigerated air dryers offer the perfect balance between technology and simplicity to dry compressed air systems to a stable ISO 8573-1 Air Quality, Class 4 to 5 pressure dew point.

Design Features

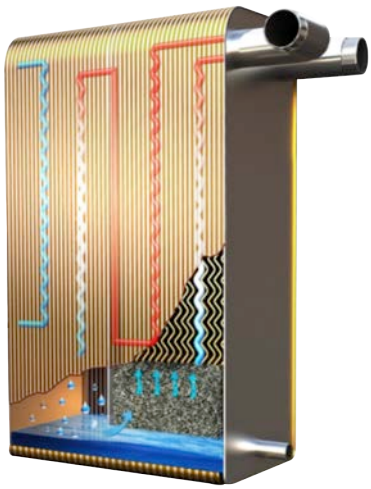
DVN 10–50 SCFM

- Smooth bore, copper tube-on-tube heat exchangers
- Centrifugal separator efficiently captures condensate
- Static condenser design provides trouble free, quiet operation
- Electronic drain valve

DVN 75–1200 SCFM

- Stainless steel, cross flow heat exchangers optimize heat transfer and service life
- Compact design saves floor space
- Stainless steel inlet/outlet connections to prevent corrosion
- Timed electric condensate drain
- Integral demister/separator

Copper
“Tube-on-Tube”
Heat Exchanger



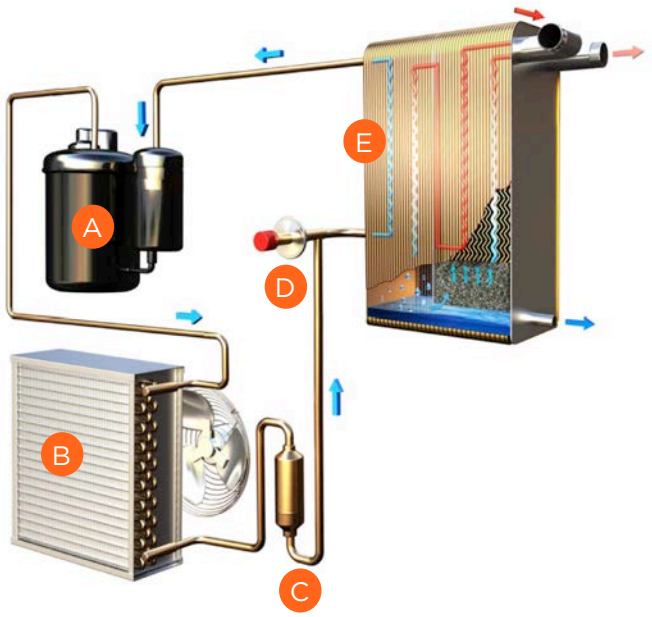
Stainless Steel
Demister/Separator

How it Works

Refrigeration Circuit

A hermetically sealed refrigerant compressor (A) takes in evaporated refrigerant and compresses it to a higher pressure. The air cooled condenser (B) turns the high pressure gas into a high pressure refrigerant. An in-line filter dryer (C) removes contaminants from the high pressure refrigerant gas. A constant pressure valve (D) reduces the pressure and regulates the flow of refrigerant into the heat exchanger (E).

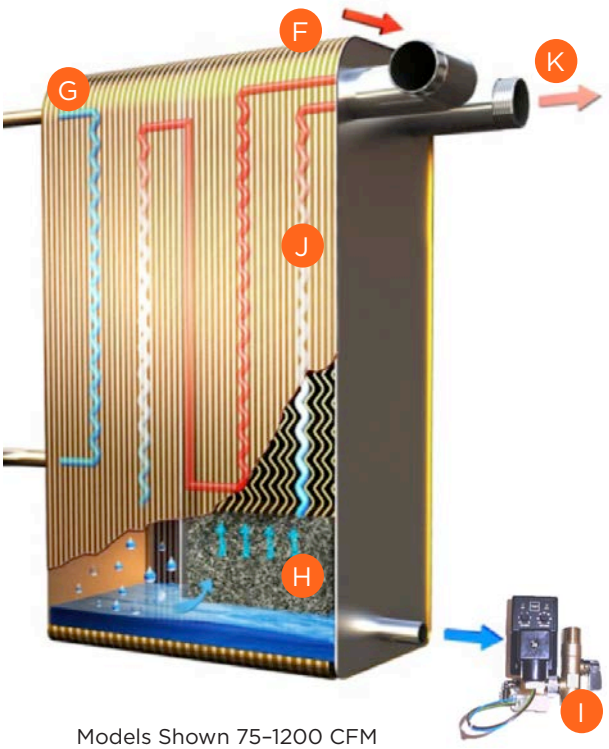
Refrigerant is continuously circulated through the system



Models Shown 75–1200 CFM

Air Circuit

Warm, saturated compressed air enters the air to air heat exchanger (F) and is cooled by the exiting air. The precooled air (G) then enters the air to refrigerant heat exchangers and is further chilled causing water vapor to condense. Condensed moisture is collected from the air stream by an integral separator (H) with stainless steel demister. Liquid condensate is removed from the separator by a (I) high performance drain. Cold air is then reheated in the air-to-air heat exchanger (J) to eliminate pipe line sweat. Clean dry air exits (K) the dryer and is now conditioned for use.



Models Shown 75–1200 CFM

Value at its Best

Efficient Condensate Management

- Increased calming zone and integral demister/separator captures liquid condensate and solid particles
  - Effectively removes condensate from 0–100% flow conditions without moisture carry-over
- Furnished with condensate drain
  - Electronic or timed electric (dependent on scfm range)

Safety First – Environmentally Friendly

- Models 10–125 scfm CFC free R134A refrigerant
- Models 150–1200 scfm R407C refrigerant
- CSA approved

1. Fan motor and blade assembly
2. Rugged, epoxy coated cabinet
3. Timed electric drain
4. Controls—models shown are 200–500 scfm
5. Stainless steel heat exchanger with integral demister separator
6. Refrigerant compressor
7. Constant expansion valve
8. Air-cooled condenser core

Take Control

Models 10–150 SCFM

- Illuminated on/off switch
- Dew point temperature display to monitor inlet load conditions

Models 200–1200 SCFM

- Illuminated on/off switch
- LED dew point temperature display
- EDV control
- Dry alarm contact
- Equipped with panel mounted drain timer control

DVN SPECIFICATIONS

MODEL	INLET FLOW		PRESSURE DROP	VOLTAGE	DIMENSIONS				DEPTH		REFRIGERANT	IN/OUT CONNECTIONS	POWER CONSUMPTION	WEIGHT
					HEIGHT		WIDTH							
	SCFM	NM^3/H	PSI		IN	MM	IN	MM	IN	MM		NPT	KW	LBS
DVN10A1	10	16	2.3		15	381	13	330	13	330		⅜″ OD	0.21	64
DVN15A1	15	25	2.5		15	381	13	330	13	330		⅜″ OD	0.24	69
DVN25A1	25	42	2.7		22	558	16	406	15	381		¾″	0.47	88
DVN35A1	35	59	2.9		22	558	16	406	15	381		¾″	0.47	92
DVN50A1	50	84	2.9	115/1/60	22	558	20	508	20	508	R 134a	¾″	0.63	101
DVN75A1	75	127	2.5		24	609	15	381	33	838		1″	0.52	123
DVN100A1	100	170	3.3		24	609	15	381	33	838		1″	0.65	129
DVN125A1	125	212	3.7		24	609	15	381	33	838		1″	0.68	135
DVN150A1	150	255	3.0		21	533	13	330	30	762		1″	1.11	161
DVN200A4	200	340	2.6		30	762	20	493	37	932		1 ½″	1.42	183
DVN250A4	250	424	2.8	460/3/60	30	762	20	493	37	932	R 134a	1 ½″	1.98	211
DVN300A4	300	509	3.1		32	812	20	493	44	1112		1 ½″	2.05	219
DVN400A4	400	680	2.5		30	762	21	787	38	965		2″	2.5	232
DVN500A4	500	849	3.0		32	812	22	558	48	1218		2″	3.18	328
DVN600A4	600	1019	3.7		32	812	22	558	50	1270		2″	3.8	353
DVN600W4	600	1019	3.7		32	812	22	558	50	1270		2″	3.8	353
DVN800A4	800	1359	2.8		59	1450	30	762	42	1067		3″ FLG	5.4	687
DVN800W4	800	1359	2.8	460/3/60	59	1450	30	762	42	1067	R 407c	3″ FLG	5.4	687
DVN1000A4	1000	1699	2.9		64	1626	29	737	45	1143		4″ FLG	6.6	786
DVN1000W4	1000	1699	2.9		64	1626	29	737	45	1143		4″ FLG	6.6	786
DVN1200A4	1200	2038	3.9		64	1626	29	737	45	1143		4″ FLG	8.66	810
DVN1200W4	1200	2038	3.9		64	1626	29	737	45	1143		4″ FLG	8.66	810

Maximum Inlet Air Temperature: 120°F (49°C) Maximum Operating Pressure: 250 psig (Models DVN25–50), 232 psig (Models DVN75–500).
Above conditions tested at 100°F inlet air temperature, 100% saturated inlet air, 100 psig operating pressure and 100°F ambient air temperature.

Premium Warranty

2 Years—Standard
3 Years—Extended
5 Years—Total

Parts and labor included. Contact your local distributor for more details.

OPERATING CONDITIONS

MODEL SCFM	MAX INLET AIR PRESSURE		MIN INLET AIR PRESSURE		MAX INLET AIR TEMPERATURE		MIN INLET AIR TEMPERATURE		MAX AMBIENT AIR TEMPERATURE		MIN AMBIENT AIR TEMPERATURE	
	PSIG	BARG	PSIG	BARG	°F	°C	°F	°C	°F	°C	°F	°C
5–10 to 50	250	17	30	2	120	49	40	4	110	43	45	7
75–500	232	16	10	1	120	49	40	4	110	43	45	7
600–1200	232	16	43	3	120	49	45	7	110	43	34	1

CAPACITY CORRECTION FACTORS

INLET AIR PRESSURE		INLET AIR TEMPERATURE			
PSIG	BARG	90°F/32°C	100°F/38°C	110°F/43°C	120°F/49°C
80	5.6	1.19	0.95	0.77	0.63
100	6.9	1.25	1	0.82	0.68
125	8.6	1.3	1.05	0.86	0.72
150	10.3	1.34	1.08	0.9	0.75
175	12.1	1.37	1.11	0.92	0.78
200	13.8	1.39	1.14	0.95	0.8
250	17.2	1.43	1.17	0.98	0.83

AMBIENT AIR TEMPERATURE	80°F/27°C	90°F/32°C	100°F/38°C	110°F/43°C
Multiplier	1.12	1.06	1	0.94

To adjust the dryer capacity for non-standard conditions, use the Capacity Correction Factors (multipliers) from the tables below. **Sizing Example:** What is the capacity of an DVN100 at 100°F inlet air temperature, 150 psig working pressure and 110°F ambient air temperature? **Answer:** 100 scfm (rated flow from DVN specifications table) × 1.08 (correction factor for inlet air temperature, table 1) × 0.94 (correction factor for ambient air temperature, table 2) = 102 scfm

Sustainable Energy Saving Solutions

DV Systems is a place where innovation is constant and the real-world needs of our customers are understood. We transform market-inspired ideas into actioned solutions enabling our global customers to meet their sustainability goals and thrive in a complex, ever-changing marketplace.

Utilizing the latest advancements in heat transfer technology, DVE Series refrigerated dryers offer an innovative approach to efficiently remove liquid contamination from compressed air.

The DVE Series with Standard Energy Saving System

The ESS (Energy Saving System) is capable of transferring heat energy through a change of state. During the thermal change process, the media's temperature remains constant—known as latent heat transfer. Latent heat transfer occurs when the media changes from a solid to liquid or a liquid to solid. The state of the media is monitored by a temperature probe that automatically engages the refrigeration compressor to power on or off according to varying inlet load profiles. Because the ESS is capable of storing and releasing heat energy without a change in temperature, the refrigerant compressor cycles less frequently and saves energy.

The dryer requires fewer components than conventional cycling designs and does not require a cooling media circulation pump, storage tank and glycol to refrigerant heat exchanger. All cooling is accomplished in the 3-in-1 heat exchanger.

The media within the ESS is non-toxic, does not require replacement and maintains its thermal properties regardless of age. In the frozen state the media will not thermally expand, maintaining the long-term integrity of the heat exchanger assembly.

Energy Saving Sustainability

The DVE Series lowers air system power costs and improves productivity by matching power consumption to compressed air demand.

In a typical manufacturing facility, up to 30% of electricity consumed is for generating and treating compressed air. To reduce total cost of operation and qualify for utility company incentive programs, proper air treatment equipment selection and application is required.

Load Matching Performance

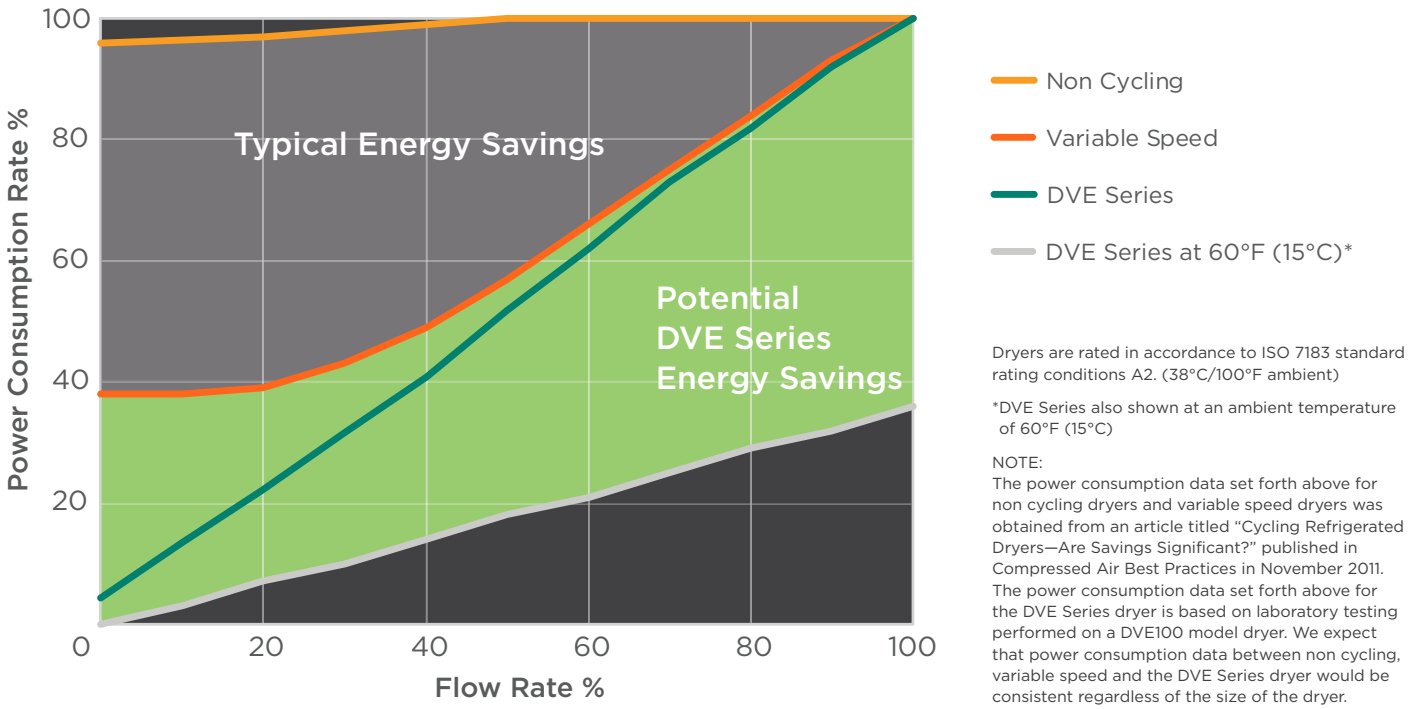
Compressed air load profiles in most manufacturing facilities fluctuate. The DVE Series provides cost-effective energy savings by matching electrical power consumed in direct proportion to air demand. Linear load matching is achieved from 0% up to 100% demand.

Non-cycling dryers operate with the refrigeration compressor running continuously, regardless of inlet load conditions. Minimal energy savings are realized from 100% down to 0% inlet air load.

Linear Energy Savings

DVE Series dryers automatically power (on/off) the refrigeration compressor in response to inlet load conditions. As the inlet air load is reduced, the power requirement to dry the air is matched in proportion to the demand. For example, at 60% inlet air load, a non-cycling dryer consumes 96% of the full load power consumption, a 4% energy savings. By comparison, at 60% inlet air load, the DVE Series consumes only 60 % of the full load power, a 40% energy savings.

ENERGY SAVINGS COMPARISON



Dryers are rated in accordance to ISO 7183 standard rating conditions A2. (38°C/100°F ambient)

*DVE Series also shown at an ambient temperature of 60°F (15°C)

NOTE:
The power consumption data set forth above for non cycling dryers and variable speed dryers was obtained from an article titled "Cycling Refrigerated Dryers—Are Savings Significant?" published in Compressed Air Best Practices in November 2011. The power consumption data set forth above for the DVE Series dryer is based on laboratory testing performed on a DVE100 model dryer. We expect that power consumption data between non cycling, variable speed and the DVE Series dryer would be consistent regardless of the size of the dryer.

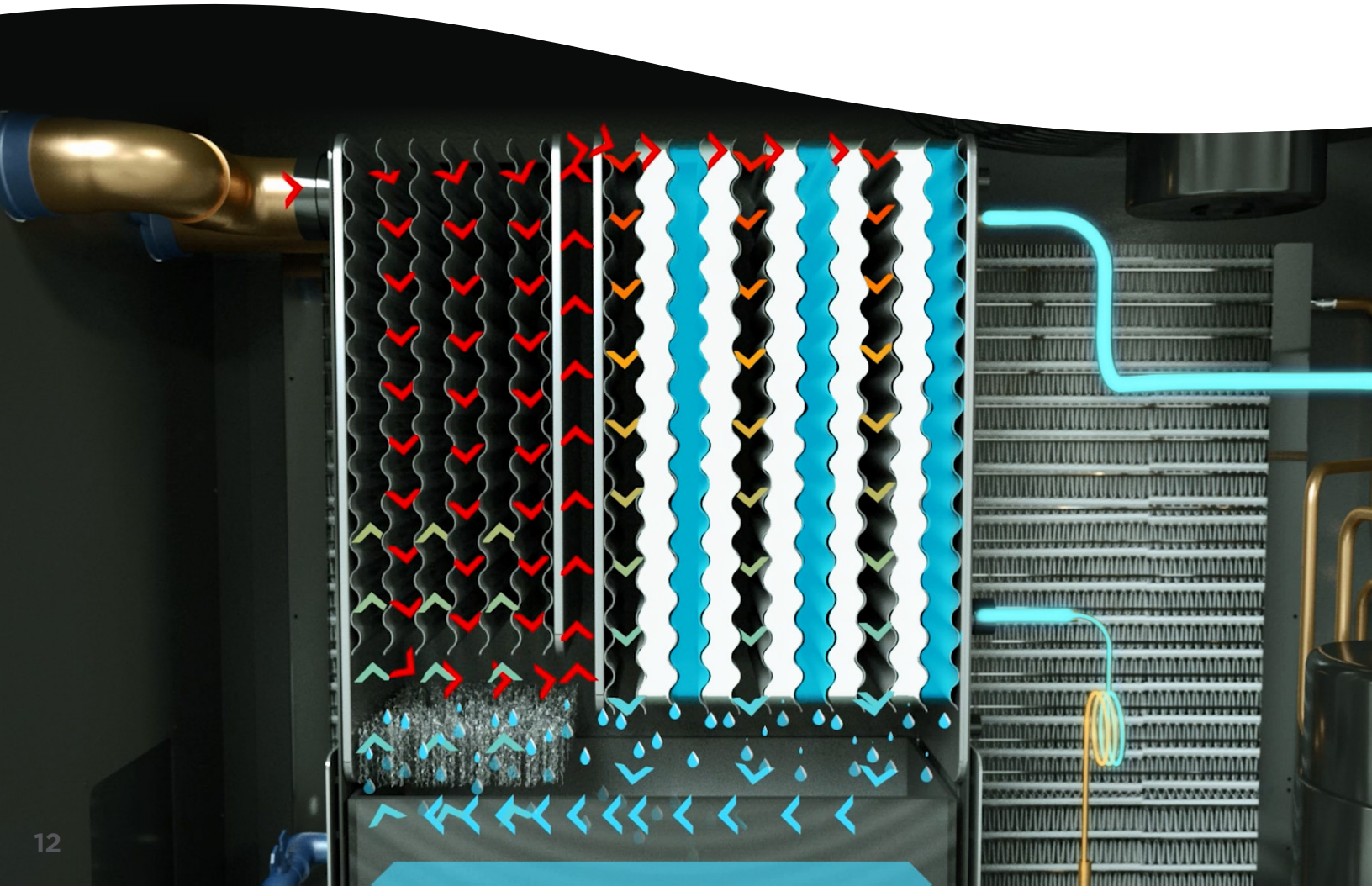
DVE SERIES

How It Works

1. The DVE Series utilizes an ESS that allows for heat to transfer medium between the refrigeration and compressed air circuits that serves as a reservoir for thermal storage.

2. The thermal reservoir is comprised of a patent-pending heat exchanger filled with a media that efficiently transfers heat energy through a “change of state”.
   - Thermal Change: changing from liquid to solid back to liquid in a continuous cycle.

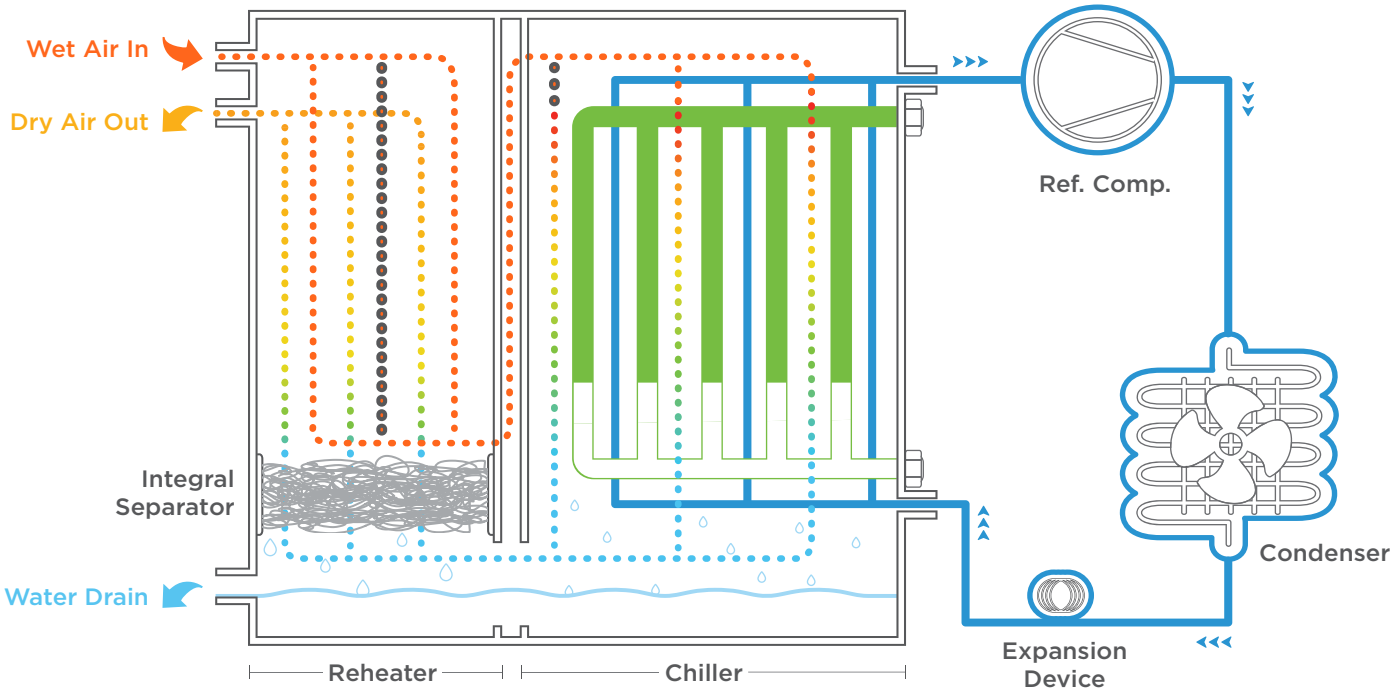
3. The refrigeration circuit operates to cool down the medium until it forms into a solid at which time the refrigeration system powers off.
   - Thermal Change: changing from liquid to solid back to liquid in a continuous cycle.



4 As the compressed air enters the ESS, the media absorbs heat from the airstream and begins to melt the media at a constant temperature.

5 When most of the media has turned to liquid the refrigeration system powers on to again cool down the media turning it back into a solid.

6 This process repeats as required to meet the corresponding compressed air load on the DVE Series dryer.



Better by Design

DVE Energy Saving Series 75–2000 scfm

The DVE Series is the ideal solution to reliably and economically dry compressed air. The innovative technology does not require a recirculating pump and associated piping. This results in a simpler, more energy efficient design.

1. Stainless steel brazed plate 3-in-1 heat exchanger (patent-pending), with Energy Saving System
   - The ESS thermal reservoir operates at a precise temperature to deliver a stable pressure dew point
   - Smooth, non-fouling stainless steel surfaces promote low resistance to flow, optimizing air system efficiency
2. No-air-loss, demand drain efficiently removes condensate without loss of compressed air
   - Condensate drain lines terminate at discharge connections conveniently located on the side of the dryer
   - Failure-to-discharge alarm on the operator interface enhances system reliability
3. High-efficiency, up-flow aluminum air-cooled condenser
   - Pulls ambient air through the condenser and releases out the top of the dryer condenser
   - Provides cooler condensing air and greater efficiency
4. Reliable, semi-hermetic refrigerant compressor
   - Environmentally-friendly, globally-accepted refrigerants
   - Rugged design, for long-term operation
5. Controller with LCD display provides ease-of-monitoring and operating status
   - DVE75 & DVE100
     - Energy savings (%), dryer operating time, refrigeration compressor operating time, active fault message and dew point status
   - DVE150 to DVE2000
     - Energy saving (%), dryer operating time, refrigeration compressor operating time, active fault message and dew point status
     - USB connection port to download operating data and upgrade firmware
     - Remote monitoring capability - RS485 communications port

Simple
Reliable
Energy Efficient

Premium Warranty

2 Years—Standard
3 Years—Extended
5 Years—Total

Parts and labor included.
Contact your local distributor for more details.

DVE SERIES PRODUCT SPECIFICATIONS

DRYER MODEL	INLET FLOW		PRESSURE DROP	VOLTAGE	IN/OUT CONNEC-TIONS	POWER CONSUMP-TION	REFRIGER-ANT	DIMENSIONS H × W × D		WEIGHT	
	SCFM	NM^3/H	PSI			KW		IN	MM	LBS	KG
AIR-COOLED CONDENSER											
DVE75	75	127	2.9	115/1/60	1″ NPT	0.54	R134A	30 × 15 × 24	751 × 381 × 603	120	54.5
DVE100	100	170	3	115/1/60	1″ NPT	0.62	R134A	28 × 15 × 31	711 × 381 × 781	147	66.5
DVE150	150	255	1.7	115/1/60	2″ NPT	1.04	R407C	30 × 18 × 36	751 × 443 × 911	203	92.0
DVE200	200	340	2.1	460/3/60	2″ NPT	1.26	R134A	30 × 18 × 38	751 × 443 × 961	244	111.0
DVE300	300	509	3.6	460/3/60	2″ NPT	1.99	R407C	36 × 20 × 44	911 × 494 × 1111	324	147.0
DVE450	450	765	3.0	460/3/60	2″ NPT	3.23	R407C	41 × 20 × 50	1032 × 494 × 1253	366	166.0
DVE550	550	935	3.0	460/3/60	2″ NPT	3.42	R407C	41 × 20 × 50	1032 × 494 × 1253	396	180.0
DVE800	800	1300	3.70	460/3/60	FLG 3″	4.3	R407C	59 × 32 × 59	1488 × 800 × 1494	1056	479.0
DVE1250	1250	2150	4.60	460/3/60	FLG 4″	7.6	R407C	59 × 39 × 62	1488 × 1000 × 1572	1537	697.0
DVE1500	1500	2550	3.90	460/3/60	FLG 4″	9	R407C	59 × 39 × 62	1488 × 1000 × 1572	1766	801.0
DVE2000	2000	3400	3.10	460/3/60	FLG 4″	10	R407C	59 × 39 × 69	1488 × 1000 × 1742	2028	920.0
WATER-COOLED CONDENSER											
DVE800	800	1360	3.7	460/3/60	FLG 3″	4.2	R407C	59 × 28 × 58	1499 × 712 × 1474	926	421
DVE1000	1000	1700	4.3	460/3/60	FLG 3″	5.4	R407C	59 × 28 × 58	1499 × 712 × 1474	1059	481
DVE1250	1250	2124	4.6	460/3/60	FLG 4″	7.1	R407C	59 × 28 × 64	1499 × 712 × 1626	1204	547
DVE1500	1500	2549	3.9	460/3/60	FLG 4″	7.1	R407C	78 × 32 × 58	1982 × 813 × 1474	1579	717
DVE2000	2000	3398	3.1	460/3/60	FLG 4″	8.5	R407C	78 × 32 × 65	1982 × 813 × 1651	1804	819

Performance data presented in accordance with ISO 7183 (Option A2) conditions: 100°F inlet temperature, 100°F ambient temperature and 100 psig conditions.

CAPACITY CORRECTION FACTORS

To adjust the dryer capacity for non-standard conditions, use the Capacity Correction Factors (multipliers) from Tables 1, 2 & 3.

TABLE 1: INLET AIR PRESSURE	75 PSIG 5.2 BAR	100 PSIG 6.9 BAR	120 PSIG 8.3 BAR	150 PSIG 10.3 BAR	225 PSIG 15.5 BAR
Multiplier	0.86	1.00	1.04	1.09	1.15

TABLE 2: INLET AIR TEMPERATURE	80°F / 27°C	90°F / 32°C	100°F / 38°C	110°F / 43°C	120°F / 49°C
Multiplier	1.12	1.06	1.00	0.83	0.68

TABLE 3: AMBIENT AIR TEMPERATURE	80°F / 27°C	90°F / 32°C	100°F / 38°C	110°F / 43°C	120°F / 49°C
Multiplier	1.46	1.23	1.00	0.82	0.68

High Inlet Temperature Refrigerated Compressed Air Dryers

Space-Saving Design for Use with Reciprocating Compressors up to 30 HP

DV Systems specializes in delivering the best air quality for all working environments. Designed to work with reciprocating compressors, the DVH Series is ideally suited for auto body shops, auto service centers, and light industrial facilities with 5 to 30 horsepower compressors. A unique heat exchanger allows the dryer to accept high inlet temperatures, up to 180° F (82° C). This allows compressed air users to send high temperature air straight from their compressor directly to the DVH Series refrigerated dryer. Separate aftercooler and separator installations are no longer necessary. This provides important savings in installation space and installation time. The models match to most reciprocating compressor sizes and can also be easily sized if the compressor already has a tank-mounted air-cooled aftercooler.

DVH Series Features

- Stainless steel heat exchangers with high heat transfer coefficients allow inlet temperatures to 180° F (82° C). All models feature air-to-air and air-to-refrigerant heat exchangers.
- Adjustable timed electric drain—valve open and closed time—reliably discharges condensate from the dryer
- Widely spaced Inlet/Outlet connections, flow direction stamped into cabinet, for ease of installation and filter mount
- Instrumentation with lighted compressor On/Off switch, dew point temperature indicator and fault light
- Top mount fan, upward condenser air flow allows installation in tight spaces
- Bottom base rail with pre-drilled mounting holes for secure floor mount
- Quick release front panel for ease of access to dryer internals for routine maintenance

Reduce Overhead Costs

Removing water, solid particulates and oil from your compressed air system has many benefits which all lead to increased productivity and reduced overhead costs. One typical use for compressed air is for painting. Modern refinish materials and spray guns deliver superior paint finishes. Moisture and oil in the compressed air will result in paint rejects and lead to unnecessary purchases of extra unthinned color-coat paints, thinners and hardeners.

CALCULATE THE COST OF PAINT REJECTS

COST OF LABOR, MATERIALS & THROUGH-PUT DELAYS		PAINT REJECTS PER WEEK × NUMBER OF WEEKS	COST OF PAINT REJECTS
$150	×	1 × 52	**= $7,800**
$150	×	2 × 52	**= $15,600**
$200	×	1 × 52	**= $10,400**
$200	×	2 × 52	**= $20,800**

SPECIFICATIONS

MODEL	FLOW CAPACITY	POWER REQUIREMENTS		IN/OUT CONNECTIONS	REFRIGERANT COMPRESSOR CAPACITY	REFRIGERANT TYPE**	MAX WORKING PRESSURE		MAX INLET TEMPERATURE		AMBIENT TEMPERATURE RANGE***	
	SCFM*	V/PH/HZ	KW	NPT	BTU/HR		PSIG	BAR	°F	°C	°F	°C
DVH20	20	115/1/60	0.69	3/4"	4982	R-134a	42–227	3.0–16.0	40–180	4–82	40–180	4–82
DVH25	25	115/1/60	0.69	3/4"	4982	R-134a						
DVH35	35	115/1/60	0.99	3/4"	9724	R-407c						
DVH50	50	115/1/60	0.83	1"	12420	R-407c						
DVH75	75	115/1/60	1.13	1"	12420	R-407c						
DVH125	125	230/1/60	1.97	1"	19300	R-407c						

*Rating conditions are 180°F inlet temperature, 125 psig inlet pressure, 100% inlet relative humidity, 100°F ambient temperature.
**Refer to dryer data plate for refrigerant charge.
***To ensure optimal performance, do not operate continuously in conditions below or above max/min specifications.

DIMENSIONS

MODEL	H		W		D		WEIGHT	
	IN	MM	IN	MM	IN	MM	LBS	KG
DVH20	29	744	14	366	17	430	100	45
DVH25	29	744	4	366	17	430	100	45
DVH35	29	744	14	366	17	430	106	48
DVH50	41	1044	18	447	17	430	125	57
DVH75	41	1044	18	447	17	430	130	59
DVH125	46	1166	18	447	17	430	153	69

Premium Warranty

2 Years—Standard
3 Years—Extended
5 Years—Total

Parts and labor included. Contact your local distributor for more details.

World Class Filtration

DVF Series Filters provide your compressed air system with premium quality filtration for the three typical contaminant types:

1. Solid particles come from ambient air contaminants like dust and from rusted, oxidized pipework. They will cause pneumatic equipment to malfunction, cause instrument and control failures, and contaminate end products.
2. Condensed water droplets come from the humidity in ambient air. Water will oxidize pipework and pneumatic equipment, ruin paint finishes and end products.
3. Liquid oil and oil vapors are introduced by compressor lubricants and by hydrocarbon vapors present in ambient air. Oil-free compressed air is particularly important in food and pharmaceutical processes.

International Standards for Test & Measurement

ISO 12500 defines a universal method for manufacturers to test and rate compressed air filters. Critical performance parameters are specified for inlet oil challenge and solid particulate size distribution.

- ISO 12500-1 defines the testing of coalescing filters for oil aerosol removal performance.
- ISO 12500-2 quantifies vapor removal capacity of adsorption filters.
- ISO 12500-3 outlines requirements to test particulate filters for solid contaminant removal.

The DFV Series is tested to ISO 12500. Test results provide certifiable performance data based on defined challenge concentrations.

DFV SERIES FILTRATION PERFORMANCE

ELEMENT GRADE	S	DP	GP	HE	AC
Particle Retention Size[1] (Per ISO 12500-3)	3.0 µm	1.0 µm	0.01 µm	0.01 µm	0.01 µm
Particle Removal Efficiency (Per ISO 12500-3)	—	99.999+%	99.999+%	99.9999+%	99.999+%
Oil Removal Efficiency (Per ISO 12500-1)	50%	80%	99.9+%	99.99+%	—
Remaining Oil Content[2] (Per ISO 12500-1)	5.0 mg/m³	2.0 mg/m³	< 0.01 mg/m³	< 0.001 mg/m³	< 0.004 mg/m³ (as a vapor)

1 Solid particulate size distribution 0.01 to 5.0 µm; 2 Inlet oil challenge concentration 10 mg/m³

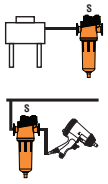
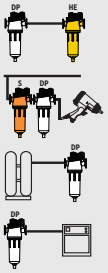
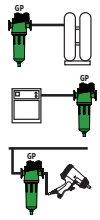
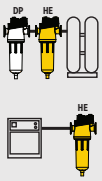
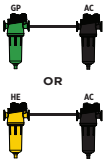
Total System Protection

The DVF Series provides protection for the entire compressed air system. A wide range of filters exceeds customer requirements for ISO Quality Class performance, service life and optimal energy savings.

Compressed air contamination exists in three states: solid, liquid and gaseous.

- Ingested contaminants appear in the form of water, hydrocarbons and particulates.
- The compression process introduces lubricant and wear particles into the system.
- Piping distribution and storage tanks foster contaminants in the form of rust, pipe scale and bacteria.

DVF SERIES ELEMENT SPECIFICATIONS

ELEMENT GRADE	DESCRIPTION	ISO PERFORMANCE DATA	WHERE APPLIED	
 **Grade S** Bulk Liquid Separator/ Filter	Separator/filter removes bulk liquid and solids.	▪ Removes solids 3 micron and larger ▪ Remaining oil content 5 mg/m³ ISO 8573.1: 2009 Air Quality Class: ▪ Solid Particles - Class 3 ▪ Remaining Oil Content - Class 5	▪ Downstream of aftercoolers ▪ At point-of-use if no aftercooler/ separator used upstream	
 **Grade DP** General Purpose Filter	General purpose filtration to protect pneumatically operated tools, motors and cylinders.	▪ Removes solids 1.0 micron and larger ▪ Remaining oil content 2.0 mg/m³ ISO 8573.1: 2009 Air Quality Class: ▪ Solid Particles - Class 2 ▪ Remaining Oil Content - Class 4	▪ Upstream of ultra high efficiency oil removal filters ▪ At point-of-use if aftercooler/ separator installed upstream ▪ Downstream of heatless desiccant dryers ▪ Upstream of refrigerated dryers	
 **Grade GP** High Efficiency Oil Removal Filter	Fine coalescer provides oil free air for industrial applications such as spray painting, injection molding, instrumentation and control valves.	▪ Removes 99.999+% of solids 0.01 micron and larger ▪ Remaining oil content <0.01 mg/m³ ISO 8573.1: 2009 Air Quality Class: ▪ Solid Particles - Class 1 ▪ Remaining Oil Content - Class 1	▪ Upstream of desiccant dryers ▪ Downstream of refrigerated dryers ▪ At point-of-use if aftercooler/ separator installed upstream	
 **Grade HE** Ultra High Efficiency Oil Removal Filter	Ultra fine coalescer delivers oil free air for critical applications including, conveying, electronics manufacturing and nitrogen replacement.	▪ Removes 99.9999+% of solids 0.01 micron and larger ▪ Remaining oil content <0.001 mg/m³ ISO 8573.1: 2009 Air Quality Class: ▪ Solid Particles - Class 1 ▪ Remaining Oil content - Class 1	▪ Upstream of desiccant dryers ▪ Upstream of membrane dryers (Use a PF Grade as a prefilter if heavy liquid loads are present) ▪ Downstream of refrigerated dryers	
 **Grade AC** Oil Vapor Removal Filter	Activated carbon filter removes oil vapor and provides oil free air for food and drug manufacturing, breathing air and gas processing.	▪ Removes solids 0.01 micron and larger ▪ Remaining oil content <0.004 mg/m³ (as a vapor) ISO 8573.1: 2009 Air Quality Class: ▪ Solid Particles - Class 1 ▪ Remaining Oil Content - Class 1	▪ Downstream of high efficiency oil removal filters	

Patented Venturi-Wave™ Element

1 Patented Filter Element Design

- The venturi profile promotes a turbulent-free transition for compressed air entering the element
- Optimized flow distribution through the element minimizes pressure loss and reduces system operating cost
- Unique backside contour assists smooth movement of air exiting the filter housing

2 Deep Bed Pleated, High Performance Media

- Increased effective filtration surface area, reduces pressure drop by 50%
- 96% voids-volume ratio optimizes dirt loading capacity
- HEPA grade micro fiberglass media maximizes efficiency
- Thermally bonded polyester support layers minimize media migration
- Low wetted pressure drop for the life of the element
- Seam welded, stainless steel inner and outer support cores enhance dimensional stability of the element
- Chemically inert, non-aging polyester drain layer expedites removal of liquid
- All materials of construction are silicone free

3 Element Grade Identification

- Color coded end caps promote ease of element grade identification
- Bottom end caps pad printed with genuine DV Systems filter element replacement part number

ELEMENT: MATERIALS OF CONSTRUCTION	
Filter Media	HEPA grade borosilicate fiberglass
Inner/Outer Support Cores	400 Series stainless steel
Drainage Layer	Filtration grade polyester
End Caps	Fiberglass reinforced polyamide resin
Bonding Agent	Polyurethane
End Cap Seal	Nitrile

Optimized Housing Design

4 Sculpted Design

- Covers flow ranges 20 scfm to 1500 scfm (34 to 2549 nm^3/h)
- Flanged inlet and outlet connections make installation easy
- Thirteen flow models, with multiple port sizes, 1/4" to 3" NPT, allow for greater application flexibility
- Sculpted housing designs, with large unrestricted flow paths, reduce pressure drop

5 Safety Built-In

- Die cast aluminium housings provide a cost effective solution in the 1030 to 1500 scfm (1750 to 2549 nm^3/h) flow range
- Chromated housings, with a polyester epoxy powder coating for corrosion resistance
- Internally ribbed bowls facilitate condensate draining
- Audible alarm when attempting bowl removal under pressure

HOUSING: MATERIALS OF CONSTRUCTION	
Filter Head	Aluminum
Filter Housing	Aluminum
Seals	Nitrile
Chromating Process	Hexavalent-free trivalent
Exterior Coating	Polyester epoxy powder
Manual Drain	Brass body, Viton® seal
Internal Float Drain	Polyacetal float, Brass body, Viton® seal and stainless steel springs

NOTE: Images representative of 20–1500 SCFM filters.

Comply with Pressure Vessel Directives Worldwide

DVF Series Filters utilize housings which conform to most major pressure vessel directives in the Americas, Europe, and Asia.

SZU CRN UDT

110672

Standard Warranty

12 Months from Start-up

18 Months from Date of Shipment

Parts only. Contact your local distributor for more details.

ISO QUALITY CLASS 8573.1: 2010

ELEMENT GRADE	ISO QUALITY CLASS **SOLIDS**	ISO QUALITY CLASS **OIL**
S	3	5
DP	2	4
GP	1	1
HE	1	1
AC	1	1 (as a vapor)

DVF series elements are performance validated to ISO 12500 ensuring air quality delivered is in accordance to ISO 8573.1: 2010 classifications.

AIR QUALITY CLASS	SOLID PARTICLES MAXIMUM NUMBER OF PARTICLES PER M^3			WATER VAPOR PRESSURE DEW POINT		OIL TOTAL OIL CONCENTRATION: AEROSOL, LIQUID & VAPOR	
	0.10–0.5 MICRON	0.5–1.0 MICRON	1.0–5.0 MICRON	°C	°F	MG / M^3	PPM W/W
0	As specified by the equipment user or supplier and more stringent than class 1						
1	≤20,000	≤400	≤10	≤-70	≤-94	0.01	0.008
2	≤400,000	≤6,000	≤100	≤-40	≤-40	0.1	0.08
3	-	≤90,000	≤1,000	≤-20	≤-4	1	0.8
4	-	-	≤10,000	≤+3	≤+37	5	4
5	-	-	≤100,000	≤+7	≤+45	-	-

DVF SERIES PRESSURE DROP PERFORMANCE*

ELEMENT GRADE	FILTER DESCRIPTION	DRY ΔP		WETTED ΔP	
		PSIG	BAR	PSIG	BAR
S	Bulk Liquid Separator/Filter	0.8	0.06	1.0	0.07
DP	General Purpose Filter	0.6	0.04	1.4	0.10
GP	High Efficiency Oil Removal Filter	0.6	0.04	1.8	0.12
HE	Ultra High Efficiency Oil Removal Filter	0.8	0.06	2.0	0.14
AC	Oil Vapor Removal Filter	1.0	0.07	-	-

**Pressure drop not to exceed stated values at ISO 12500 test conditions*

SPECIFICATIONS

MODEL	CAPACITY @ 100 PSIG		CONNECTIONS NPT/ ANSI FLG.	STANDARD FEATURES FILTER GRADES	MAX PRESSURE PSIG [BAR] & TEMP °F (°C)	DIMENSIONS HEIGHT		DIMENSIONS WIDTH		WEIGHT		ELEMENT - LESS GRADE	
	SCFM	NM³/ HR		S DP GP HE AC	D, G1, P1 & T	IN	MM	IN	MM	LB	KG	BASE MODEL	QTY
MODULAR TYPE HOUSINGS													
DVF20	20	34	1/4" NPTF	D P1	250 psig/17.2 bar 150°F/66°C	8.1	206	4.50	114	1.8	0.8	DVF20	1
DVF35	35	59	3/8" NPTF	D P1		8.10	206	4.50	114	1.8	0.8	DVF35	
DVF50	50	85	½" NPTF	D P1		9.9	251	4.50	114	1.9	.8611.1	DVF50	
DVF75	75	127	3/4" NPTF	D P1		10.30	262	5.20	132	3.1	1.4	DVF75	
DVF103	103	175	3/4" NPTF	D P1		10.30	262	5.20	132	3.1	1.4	DVF103	
DVF157	157	267	1" NPTF	D G1		12.8	325	5.20	132	3.5	1.6	DVF157	
DVF257	257	437	1½" NPTF	D G1		13.30	338	7.90	201	8.4	3.8	DVF257	
DVF360	360	612	1½" NPTF	D G1		17.10	434	7.90	201	10	4.5	DVF360	
DVF401	401	681	2" NPTF	D G1		22.30	566	7.90	201	12	5.4	DVF401	
DVF584	584	993	2½" NPTF	X G1		24.90	632	9.10	231	19	8.6	DVF584	
DVF775	775	1,317	2½" NPTF	X G1		24.90	632	9.10	231	19	8.6	DVF775	
DVF1030	1,030	1,750	3" NPTF	X G1		24.90	632	9.10	231	19	8.6	DVF1030	
DVF1200	1,200	2,039	3" NPTF	X G1		32.20	818	9.10	231	28	12.7	DVF1200	
DVF1500	1,500	2,549	3" NPTF	X G1		42.70	1245	9.10	231	41	18.7	DVF1500	
PRESSURE VESSEL													
DVF2500	2,500	4,247	4" FLG.	T G1	225 psig/15.5 bar 150°F/66°C	52.25	1327	20.00	508	179	81.2	DVF2500	4
DVF3125	3,125	5,309	4" FLG.	T G1		52.25	1327	20.00	508	182	82.6	DVF3125	5
DVF5000	5,000	8,495	6" FLG.	T G1		54.63	1387	24.00	610	271	123.0	DFV5000	8
DVF6875	6,875	11,681	6" FLG.	T G1		62.56	1589	28.00	711	518	235.0	DFV6875	11
DVF8750	8,750	14,866	6" FLG.	T G1		62.56	1589	28.00	711	527	239.0	DFV8750	14
DVF11875	11,875	20,176	8" FLG.	T G1		69.13	1756	33.00	838	709	322.0	DVF11875	19
DVF16250	16,250	27,690	8" FLG.	T G1		67.94	1726	39.00	991	918	416.0	DFV16250	26
DVF21250	21,250	36,104	10" FLG.	T G1		70.94	1802	45.88	1165	1412	640.0	DVF21250	34

(1) Drain plugs standard. Externally mounted automatic drains are available.
D – Internal Automatic Drain, G1 – Differential Pressure Gauge, P1 – Differential Pressure Slide, T – Drain Plug, X – External Drain Adapter

SIZING CORRECTION FACTORS

To find the maximum flow at pressures other than 100 psig [7 kgf/cm²], multiply the flow by the Correction Factor corresponding to the minimum pressure at the inlet of the filter. Do not select filters by pipe size; use flow rate and operating pressure.

EG: DVF360 nominal rated capacity 360 SCFM. Inlet Operating Pressure: 120 PSIG. Corrected filter flow capacity: 360 SCFM × 1.17 = 421.20 SCFM

PSIG	20	30	40	60	80	100	120	150	200	250	300	60*	100*	125*	150*	175*	200*	250*	300*
KGF/CM²	1.4	2.1	2.8	4.1	5.6	6.9	8.3	10.3	13.8	17.2	20.7	4.2	6.9	8.8	10.6	12.3	14.1	17.6	21
CORRECTION FACTOR	0.30	0.39	0.48	0.65	0.83	1	1.17	1.44	1.87	2.31	2.74	0.65	1	1.22	1.43	1.65	1.87	2.31	2.74

* Denotes correction factor for filters ≥2500 SCFM only.
EG: use correction factor of .48 for all filter sizes @ 40 PSIG, no * denotes common value for all filter sizes

Create a Custom Air Treatment System

Lubricated Rotary Screw Compressor

Grade DP

Wet Air Receiver

High Temp. Refrigerated Dryers

Grade GP

Quality Class 1.6.1

Pneumatic Tools
Spray Painting

Quality Class 1.4.1

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