

Cyclone Water Separator

AG-Z & LS Series

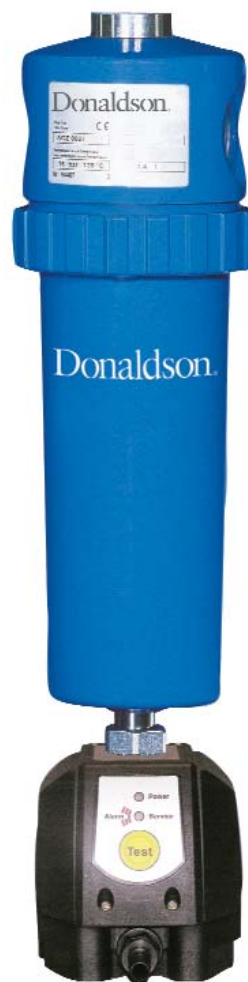
Donaldson Cyclone Water Separators are designed for removal of liquid water and particulate from compressed air and gases.

Donaldson Cyclone Water Separators

are available in two styles depending on the flow rate. The AG-Z (aluminum) Cyclone Water Separator has a three-piece aluminum housing while the LS (carbon steel) incorporates a two-piece carbon steel housing. Both designs include swirl vanes allowing for efficient liquid removal with low pressure drop.

Features

- AG-Z is available in eight different housing sizes with a flow range of 70 -1400 scfm.
- LS is available in five different housing sizes with a flow range of 2000 – 6000 scfm.
- Standard housings are equipped with timer-operated drain valves.
- Superplus housings are equipped with Ultramat UFM-T zero air-loss condensate drain valves.



Superplus Cyclone Water Separator
with UFM-T Drain Valve

Cyclone Water Separator

How the Cyclone Water Separator Works

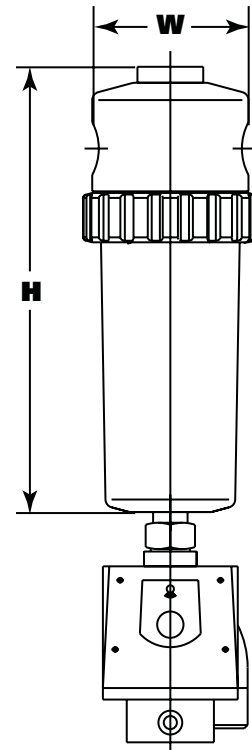
The compressed air is guided over the swirl vanes, which direct the compressed air into the housing. Liquid aerosols and particles flow down the filter housing and are drained out of the filter housing. The conical form of the lower filter bowl is designed to eliminate aerosol carry over. The turbulent free zone in the lower part of the filter housing prevents condensate from being picked up and “carried over” into the clean air.



Superplus Dimensions

Model	Capacity ¹ (scfm)	Connection (FNPT/ANSI)		Superplus Dimensions			Weight (lbs)	Zero Air-Loss Drain Size
		Inlet	Outlet	Height	Width	Conn. Height		
AGZ0009	70	1/2"	1/2"	16	4	14	2.4	UFM-T05
AGZ0018	125	3/4"	3/4"	17	4	15	3.5	UFM-T05
AGZ0027	200	1"	1"	21	5	18	4.2	UFM-T1
AGZ0036	300	1-1/4"	1-1/4"	21	5	18	4.2	UFM-T1
AGZ0048	450	1-1/2"	1-1/2"	25	6	22	11.4	UFM-T20
AGZ0072	600	2"	2"	28	6	25	13.6	UFM-T20
AGZ0144	900	2-1/2"	2-1/2"	32	8	28	19.8	UFM-T100
AGZ0192	1400	3"	3"	32	8	28	19.6	UFM-T100

¹ Capacity based on 100 psig inlet pressure; 14.7 psia, 68°F ambient conditions, and 1" psid. Superplus housings are equipped with Ultramat UFM-T zero air-loss condensate drain valves.

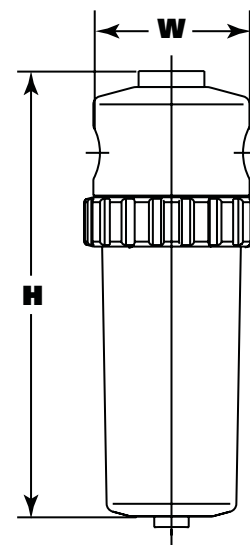


Cyclone Water Separator

Standard & LS Dimensions

Model	Capacity ¹ (scfm)	Connection (FNPT/ANSI)		Standard Dimensions			Weight (lbs)
		Inlet	Outlet	Height	Width	Conn. Height	
AGZ0009	70	1/2"	1/2"	13	4	11	2.4
AGZ0018	125	3/4"	3/4"	14	4	12	3.5
AGZ0027	200	1"	1"	17	5	14	4.2
AGZ0036	300	1-1/4"	1-1/4"	17	5	14	4.2
AGZ0048	450	1-1/2"	1-1/2"	22	6	19	11.4
AGZ0072	600	2"	2"	22	6	19	13.6
AGZ0144	900	2-1/2"	2-1/2"	26	8	22	19.8
AGZ0192	1400	3"	3"	26	8	22	19.6

¹ Capacity based on 100 psig inlet pressure; 14.7 psia, 68°F ambient conditions, and 1" psid. Standard housings are equipped with timer-operated drain valves.



Model	Capacity ¹ (scfm)	Connection (FNPT/ANSI)		Dimensions (inches)					Weight (lbs)
		Inlet	Outlet	Height		Width	Conn. Height		
				Std	Super-Plus		Std	Super-Plus	
LS2000	2000	4" FLG	4" FLG	42	44	20	31	23	194
LS2500	2500	4" FLG	4" FLG	41	43	22	32	34	210
LS3500	3500	4" FLG	4" FLG	46	48	26	34	36	245
LS4500	4500	6" FLG	6" FLG	51	53	28	40	42	360
LS6000	6000	8" FLG	8" FLG	60	62	32	47	49	485

¹ Capacity based on 100 psig inlet pressure; 14.7 psia, 68°F ambient conditions, and 1" psid.

Specifications

Materials

AG-Z Housing Aluminum
LS Housing Carbon Steel

Surface Finish

Blue Polyester Resin

Retention Rate 99% for particles $\geq 10 \mu\text{m}$
Maximum Inlet Air Temperature 150°F (65°C)
Minimum Inlet Air Temperature 34°F (1°C)
Maximum Operating Pressure AG-Z 250 psig
 LS 125 psig

LS is ASME Code Stamped.
CRN numbers available upon request for Superplus, Standard, and LS.

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Capacity Correction Factors

The published standard capacities for compressed air Cyclone Separators are based on 100 psig inlet pressure and 100°F inlet temperature. When these conditions vary, a given Cyclone Separator will be able to purify either more or less compressed air than its standard capacity. There are two ways in which this information can be used. The first is to start with a

specific Cyclone Separator size and recalculate its capacity based on the known operating conditions using the correction factors given below. The other, with a given set of operating conditions, is to select the proper Cyclone Separator size based on applying the correction factors to the flow rate. Examples based on applying the correction factors are shown below.

Capacity correction factors for differing system air pressure (C1)

System Pressure (psig)	20	40	60	80	100	120	140	160	180	200	220	240	250
Correction Factor	0.30	0.48	0.65	0.83	1	1.17	1.35	1.52	1.70	1.87	2.05	2.22	2.31

Capacity correction factors for differing system air temperature (C2)

System Pressure (°F)	-20	0	20	40	60	80	100	120	140	150
Correction Factor	1.52	1.41	1.31	1.22	1.14	1.07	1	0.94	0.88	0.86

To Size the Cyclone Separator Capacity for Actual Conditions

Adjusted Capacity = scfm x C1 x C2

To calculate the capacity of a given Cyclone Separator based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor.

EXAMPLE: Cyclone Separator Model: AGZ0072
 Standard Capacity: 600 scfm
 Actual Operating Conditions: 80 psig inlet pressure: C1 = 0.83
 120°F inlet temperature: C2 = 0.94
 Adjusted Capacity = 600 scfm x 0.83 x 0.94 = **468 scfm**

To Select the Cyclone Separator for Actual Conditions

Adjusted Capacity = scfm/C1/C2

To choose a Cyclone Separator based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factors.

EXAMPLE: Given Flow: 1200 scfm
 Actual Operating Conditions: 120 psig inlet pressure: C1 = 1.17
 60°F inlet temperature: C2 = 1.14
 Adjusted Capacity = 1200 scfm / (1.17 x 1.19) = **900 scfm**
 Adjusted Cyclone Separator Model Size: AGZ0144



Donaldson Company, Inc.
 Compressed Air & Gas
 P.O. Box 1299
 Minneapolis, MN
 55440-1299 U.S.A.

Tel 800.543.3634 (USA)
 Tel 800.343.3639 (within Mexico)
 Fax 770.448.3854
 compressedair@mail.donaldson.com
 www.donaldson.com

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