

(ENGINEERS)
SUBMITTAL DATA
CONTROL DAMPERS
 Airfoil Blade

Suggested Specifications:

Furnish and install at location shown on drawing or in accordance with schedules dampers meeting the following specifications: Rectangular damper shall have 3/8" thick nose hollow airfoil blade and .081 extruded aluminum top and bottom frames. Damper to have thrust bushings and meet the low pressure drop and low leakage equal to S&P Air Control **MODEL CD-150, 151**. Damper bears the AMCA seal for air performance and leakage. Manufacturer must have a series of six dampers certified.

Standard Construction:

Frame: .081 Extruded Aluminum (6063-T5)

Blade: Hollow Airfoil with .375" thick end nose
(6063-T5) Extruded Aluminum

Extended shaft: 1/2" diameter

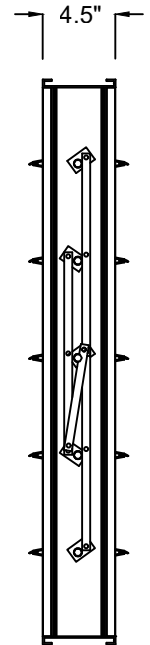
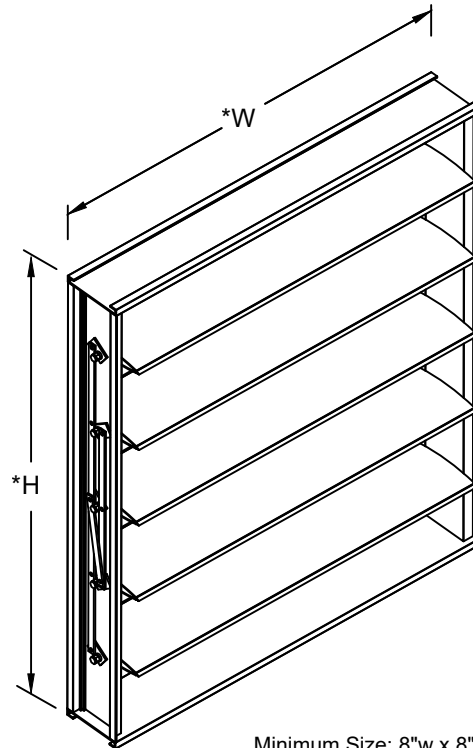
Bearing: Bronze Oilite

Linkage: Concealed in frame

Pivot axels: Zinc with Thrust Bushings

Blade seals: Removable TPV (250° F)

Jamb seals: Stainless Steel (compression)



*Undersized 1/4"

Minimum Size: 8"w x 8"h

Maximum Size: 60"w x 72"h (single section)

Maximum multi-section: Unlimited

Options:

- ☐ .125 Extruded Aluminum Box Frame
- ☐ .125 Extruded Aluminum Flanged Frame
- ☐ Insulated (Fiberglass Insulation filled blades)
- ☐ Header Plates (End Flange)
- ☐ Hand Quadrant
- ☐ Factory Actuators (*See catalog sheet H-1*)
- ☐ Stand Off Bracket, 2"
- ☐ Face and By-pass Damper
- ☐ Chain Operate
- ☐ Position Switch
- ☐ Air Dry Heresite Coated
- ☐ Powder Coated - Epoxy



Due to continuing research, S&P Air Control reserves the right to change specifications without notice.

Job Name:		☐ MODEL CD-150 (Opposed)	
Location:		☐ MODEL CD-151 (Parallel)	
Architect:	DRAWN BY:	DATE:	REV. DATE:
Engineer:	CLJ	June 2003	May 2026
Contractor:	REV. NO.	APPROVED BY:	DWG. NO.:
	23		A-9

MODEL CD-150, CD-151 PERFORMANCE DATA

Imperial Units (CD-150 Opposed Blade, Forward Flow)

Damper Width X Height	1 in. w.g.	4 in. w.g.	8 in. w.g.	*Torque (per sq. ft.)
36" X 36"	Class 1A	Class 1	Class 1	10 lbs-in
12" X 48"	Class 1	Class 1	Class 1	17.5 lbs-in
48" X 36"	Class 1A	Class 1	Class 2	10 lbs-in
60" X 36"	Class 1A	Class 2		10 lbs-in

*Torque applied to close and seat damper in during the test.

Imperial Units (CD-150 Opposed Blade, Reverse Flow)

Damper Width X Height	1 in. w.g.	4 in. w.g.	8 in. w.g.	*Torque (per sq. ft.)
36" X 36"	Class 1A	Class 1	Class 1	10 lbs-in
12" X 48"	Class 1A	Class 1	Class 1	17.5 lbs-in
48" X 36"	Class 1A	Class 1	Class 2	10 lbs-in
60" X 36"	Class 1A	Class 1		10 lbs-in

*Torque applied to close and seat damper in during the test.

Imperial Units (CD-151 Parallel Blade, Forward Flow)

Damper Width X Height	1 in. w.g.	4 in. w.g.	8 in. w.g.	*Torque (per sq. ft.)
36" X 36"	Class 1	Class 1	Class 1	32.5 lbs-in
12" X 48"	Class 1	Class 1	Class 1	32.5 lbs-in
48" X 36"	Class 1A	Class 1	Class 2	32.5 lbs-in
60" X 36"	Class 1A	Class 2		16 lbs-in

*Torque applied to close and seat damper in during the test.

Imperial Units (CD-151 Parallel Blade, Reverse Flow)

Damper Width X Height	1 in. w.g.	4 in. w.g.	8 in. w.g.	*Torque (per sq. ft.)
36" X 36"	Class 1A	Class 1	Class 1	32.5 lbs-in
12" X 48"	Class 1	Class 1	Class 1	32.5 lbs-in
48" X 36"	Class 1A	Class 1	Class 2	32.5 lbs-in
60" X 36"	Class 2	Class 2		16 lbs-in

*Torque applied to close and seat damper in during the test.

S&P Air Control certifies that the CD-150 and CD-151 are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Rating Seal applies to Air Performance and Air Leakage ratings.



Air leakage is based on operation between 50° F to 104° F. All data corrected to represent air density of 0.075 lbs/ft³.

Leakage, ft ³ /min/ft ²				
Pressure Class	Required Rating			
	1"	4"	8"	12"
1A	3	n/a	n/a	n/a
1	4	8	11	14
2	10	20	28	35
3	40	80	112	140

All data corrected to represent standard air at a density of 0.075 lbs/ft³

MODEL CD-150, CD-151 PERFORMANCE DATA

Metric Units (CD-150 Opposed Blade, Forward Flow)

Damper Width X Height (mm)	0.25 kPa	1.0 kPa	2.0 kPa	*Torque (per sq. m.)
915 X 915	Class 1A	Class 1	Class 1	12 N-m
305 X 1220	Class 1	Class 1	Class 1	22 N-m
1220 X 915	Class 1A	Class 1	Class 2	12 N-m
1524 X 915	Class 1A	Class 2		12 N-m

*Torque applied to close and seat damper in during the test.

Metric Units (CD-150 Opposed Blade, Reverse Flow)

Damper Width X Height	0.25 kPa	1.0 kPa	2.0 kPa	*Torque (per sq. m.)
915 X 915	Class 1A	Class 1	Class 1	12 N-m
305 X 1220	Class 1A	Class 1	Class 1	22 N-m
1220 X 915	Class 1A	Class 1	Class 2	12 N-m
1524 X 915	Class 1A	Class 1		12 N-m

*Torque applied to close and seat damper in during the test.

Metric Units (CD-151 Parallel Blade, Forward Flow)

Damper Width X Height	0.25 kPa	1.0 kPa	2.0 kPa	*Torque (per sq. m.)
915 X 915	Class 1	Class 1	Class 1	40 N-m
305 X 1220	Class 1	Class 1	Class 1	40 N-m
1220 X 915	Class 1A	Class 1	Class 2	40 N-m
1524 X 915	Class 1A	Class 2		20 N-m

*Torque applied to close and seat damper in during the test.

Metric Units (CD-151 Parallel Blade, Reverse Flow)

Damper Width X Height	0.25 kPa	1.0 kPa	2.0 kPa	*Torque (per sq. m.)
915 X 915	Class 1A	Class 1	Class 1	40 N-m
305 X 1220	Class 1	Class 1	Class 1	40 N-m
1220 X 915	Class 1A	Class 1	Class 2	40 N-m
1524 X 915	Class 2	Class 2		20 N-m

*Torque applied to close and seat damper in during the test.

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Air leakage is based on operation between 50° F to 104° F. All data corrected to represent air density of 0.075 lbs/ft³.

Leakage, L / s / m²				
Class	Pressure			
	Required Rating	Extended Ranges (optional)		
Class	0.25 kPa	1.0 kPa	2.0 kPa	3.0 kPa
1A	15.2	n/a	n/a	n/a
1	20	41	56	71
2	51	102	142	178
3	203	406	569	711

All data corrected to represent standard air at a density of 1.2 kg/m³

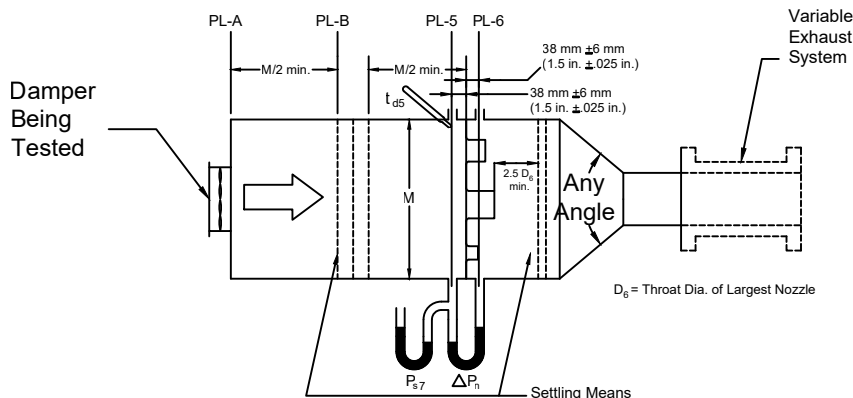
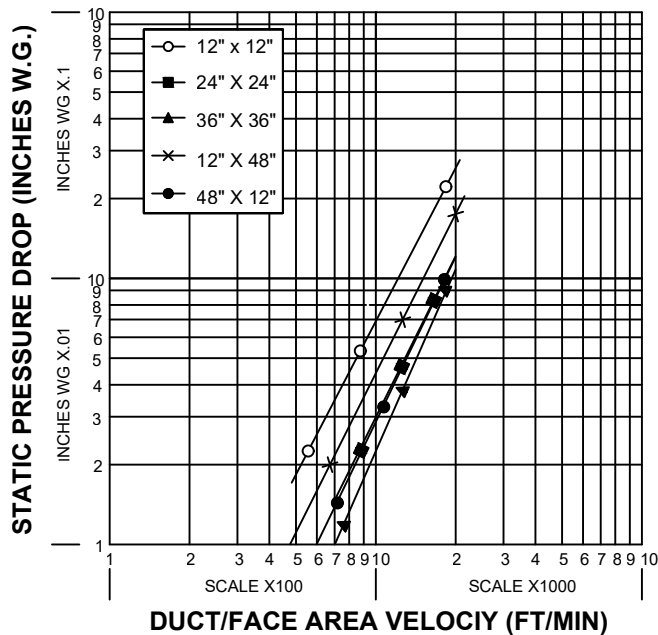


Figure 6.3- Airflow Rate Measurement Setup- Multiple Nozzle Chamber on Fan Inlet

MODEL CD-150, 151 PERFORMANCE DATA

PRESSURE DROP



Based on STANDARD AIR- .075 lb. per cubic foot.
 CD-150,151 sizes: 12" x 12", 24" x 24", 48" x 12", 12" x 48", 36" x 36"
 (305 x 305mm, 610 x 610mm, 1219 x 305mm, 305 x 1219mm, 914 x 914mm)

Pressure drop test per AMCA Standard 500-D, Figure 5.3.



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12" x 12" (305mm x 305mm)

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.07 (17)
1500 (7.62)	0.16 (39)
2000 (10.16)	0.28 (69)

24" x 24" (610mm x 610mm)

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.03 (8)
1500 (7.62)	0.07 (18)
2000 (10.16)	0.13 (32)

48" x 12" (1219mm x 305mm)

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.03 (8)
1500 (7.62)	0.07 (17)
2000 (10.16)	0.12 (31)

12" x 48" (305mm x 1219mm)

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.05 (12)
1500 (7.62)	0.09 (22)
2000 (10.16)	0.18 (45)

36" x 36" (914mm x 914mm)

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.03 (7)
1500 (7.62)	0.06 (15)
2000 (10.16)	0.11 (27)

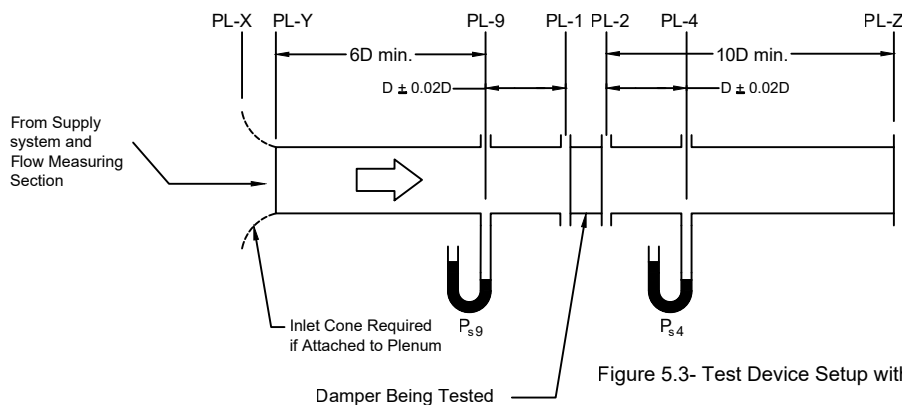
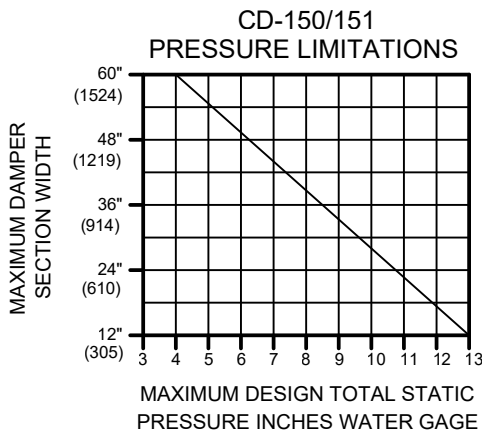


Figure 5.3- Test Device Setup with Inlet and Outlet Ducts