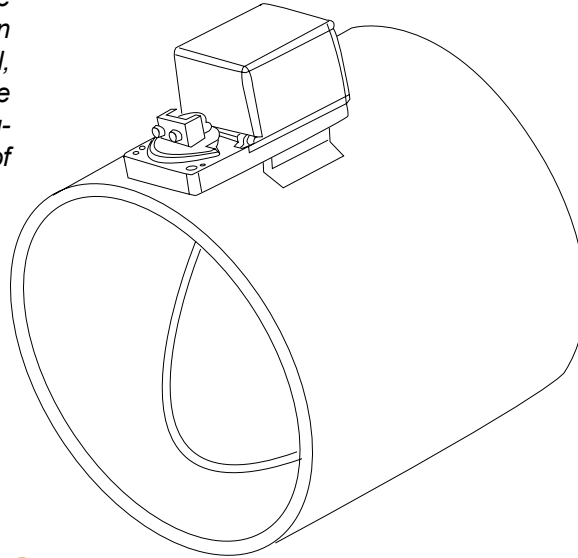


The Precision Damper Assembly (AF-DPR-A) was designed from the onset to be a continuous control valve to take maximum advantage of the fast, high resolution, electronic actuator.

The current technology for making air control butterfly damper assemblies is to make them from thin gauge sheet metal with pressed-in, sintered metal bearings. The damper blade is also made of thin sheet metal located off-center from the shaft. This type of assembly works best either fully open or closed, not in continuous usage. Also, the thin sheet metal casing can easily be warped during handling and installation, adding to its operational problems. The fit of the damper blade to the inside of the damper is usually so bad that some type of rubber seal must be used to accomplish minimum turn-down. Some of the more serious problems this type of assembly has are high wear rates on the bearing; high bearing friction or sticking between the damper and the damper wall, resulting in poor control; loss of turn-down; and noise generation. Opposed blade damper assemblies usually make the worst control valves due to the loss of motion in the drive linkage.

The AF-DPR-A differs from this technology in several important ways. The damper body is made of extruded thick-walled PVC (schedule 40) to give structural stiffness and accurate bore. The damper blade is made of stainless steel for rigidity.



## APPLICATIONS

- ▼ Continuous flow control of airflow
- ▼ Fume hood flow control
- ▼ Laboratory exhaust flow
- ▼ Room supply flow control
- ▼ Room exhaust flow control
- ▼ Room pressurization
- ▼ Use in corrosive media

## ADVANTAGES

- ▼ High turn-down without rubber seals
- ▼ Damper body will not warp during installation.
- ▼ All materials in contact with the flowing stream made of chemically inert PVC or stainless steel
- ▼ Damper blade made of stainless steel
- ▼ Superior low dead band characteristics—no loss of motion in linkages
- ▼ Smooth movement from the low-friction damper
- ▼ When used with an AF-ACT-1 actuator, the AF-DPR-A retracts to 70% (or greater) open position on loss of power
- ▼ Long life even at high speed operation
- ▼ Low air leakage though shaft bearing
- ▼ Low pressure drop in fully open position

## SPECIFICATIONS

- ▼ **Maximum Static Pressure:** 4 in. wc (996 Pa)
- ▼ **Maximum Operating Temperature:** 125°F (52°C)
- ▼ **Maximum Torque (any position, no flow):** 0.075 in-lbf (0.0085 N-m)
- ▼ **Damper Body:** schedule 40 PVC
- ▼ **Damper Blade:** stainless steel
- ▼ **Bearing material:** Synthetic
- ▼ **Maximum Pressure Loss (>90% open):** 0.15 x velocity pressure
- ▼ **Internal Hardware:** stainless steel

# AF-DPR-A

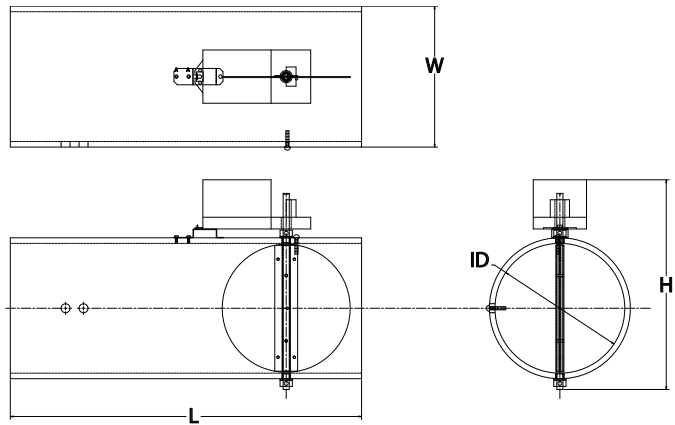
## OPERATIONAL NOTES

- ▼ For minimum acoustical noise, operate at minimum static pressure required to attain desired flow.
- ▼ For good control response, system should be capable of at least 20% excess flow.
- ▼ Operation at 4000 fpm (20.3 m/s) duct velocities is acceptable if noise is not a problem. Unrecovered pressure loss at 4000 fpm = 0.15 in. wc (20.3 m/s = 37.35 Pa).
- ▼ The damper position default is normally open. May be field-changed to nominally closed .
- ▼ In line or horizontal mount field selectable.

## ORDERING INFORMATION

AF-DPR-08-A	8 in. (20.20 cm) nominal, stainless steel damper and schedule 40 PVC duct
AF-DPR-10-A	10 in. (25.40 cm) nominal, stainless steel damper and schedule 40 PVC duct
AF-DPR-12-A	12 in. (30.48 cm) nominal, stainless steel damper and schedule 40 PVC duct

## DIMENSIONS



inches(cm)

Model	L	W	H	ID
AF-DPR-08-A	21.5 (54.61)	8.63 (21.92)	12.83 (32.59)	7.94 (20.17)
AF-DPR-10-A	29.0 (73.66)	10.75 (27.31)	14.95 (37.97)	9.98 (25.35)
AF-DPR-12-A	29.0 (73.66)	12.75 (32.39)	16.95 (43.05)	11.89 (30.20)

Model	minimum cfm <sup>*</sup> , damper closed 1 in. wc static <sup>**</sup> (minimum m <sup>3</sup> /m <sup>3</sup> , @249 Pa static <sup>**</sup> )	cfm <sup>*</sup> flow @ 2000 fpm duct velocity (m <sup>3</sup> /m <sup>3</sup> @ 10.15m/s)	unrecovered pressure loss in. wc (Pa) > 90% open (.15 x velocity pressure)
AF-DPR-08-A	35 (0.991)	689 (19.51)	0.039 (9.711)
AF-DPR-10-A	44 (1.246)	1088 (30.81)	0.039 (9.711)
AF-DPR-12-A	65 (1.841)	1544 (43.72)	0.039 (9.711)

\*\* to find new minimum cfm (m3/m) for different static pressures, multiply minimum cfm (m3/m) by square root of static pressure in. wc (Pa)

\* at standard conditions

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