DOING IT RIGHT THE FIRST TIME, EVERYTIME.

XⁿDamper

XⁿDamper automatically prevents air recirculation in the event of a fan shutdown. Gravity backdraft dampers rely on air velocity to force the damper open. The amount of force is proportional to the weight of the blade and the degree it is able to open. The force used to open the damper is wasted energy and contributes to a loss in efficiency, higher power consumption and higher noise. **XⁿDamper** does not require velocity pressure to open as its blades are vertically oriented on independent bearings that allow the blade to follow the streamline with little resistance to entering air flow.

Engineered to Control Air Circulation in Fan Arrays

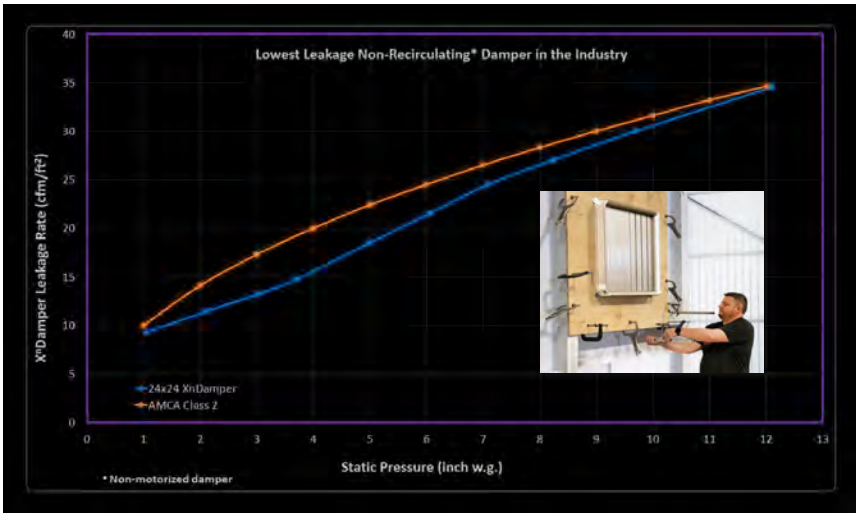
One of the most important features of fan arrays is redundancy or the ability to maintain air flow in the event of a fan failure. Redundancy is also commonly referred to as N-1 operation. In 2003, while developing the fan array concept, we understood the need to limit or prevent air recirculation. When a fan fails, remaining fans are sped up to compensate for lost air capacity. For example, approximately 11% of a fan array's capacity is lost if one fan fails in a 9-fan array, in addition to an 8% loss in efficiency due to air being recirculated through that fan.

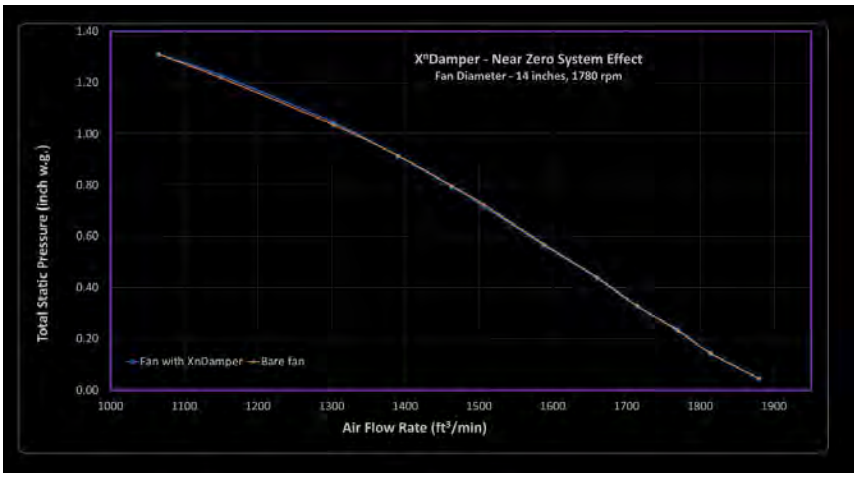
Many critical systems are designed for N-2 or N-3 redundancy. The only way to accomplish this in a fan array is to block the return path of the non-operational fans.

Initial efforts to manage air recirculation were based on using gravity type backdraft dampers or blank-off plates applied to the fan inlet. With gravity dampers, air entering the fan is used to open the blades and gravity is used to shut the blades when the fan is off. The problem with this approach is that the energy used to open the blades is lost and results in added static pressure. The losses are significant, typically 0.5 inch or more, which may translate to 25% for low-pressure high-volume systems. Another significant problem is increased noise level. A drop in fan performance combined with a higher noise level make gravity dampers a poor choice for fan array applications.

Extensive World Class Experience

Our main goal, at XNRGY Climate Systems, is to provide excellence in quality, performance and customer satisfaction in every product we offer.





To counter the negative effects of horizontal blade backdraft dampers, we developed an entirely new approach where blades were oriented vertically and rotate independently of one another. Unlike other designs, which rely on gravity, this damper shuts in air that is attempting to recirculate to the inlet plenum. In this configuration, the blades present very little resistance to air flow, emit little or no added noise and also have a reduced footprint. With outstanding test results, we went on to develop commercially viable efficient backdraft damper. Now in the latest generation, **X^{n}Damper**, features precision extruded aluminum blades with 100% blade seals, stainless steel corners, permanently sealed bearings and structural strength that can handle up to 12 inches of static pressure.

STANDARD CONSTRUCTION

Frame
3.5" X 1.5" 6063 T5 heavy gauge mill finish or anodized aluminum extrusion

Blades
3" wide 6063 T5 mill finish or anodized aluminum extrusion with reinforcement channels

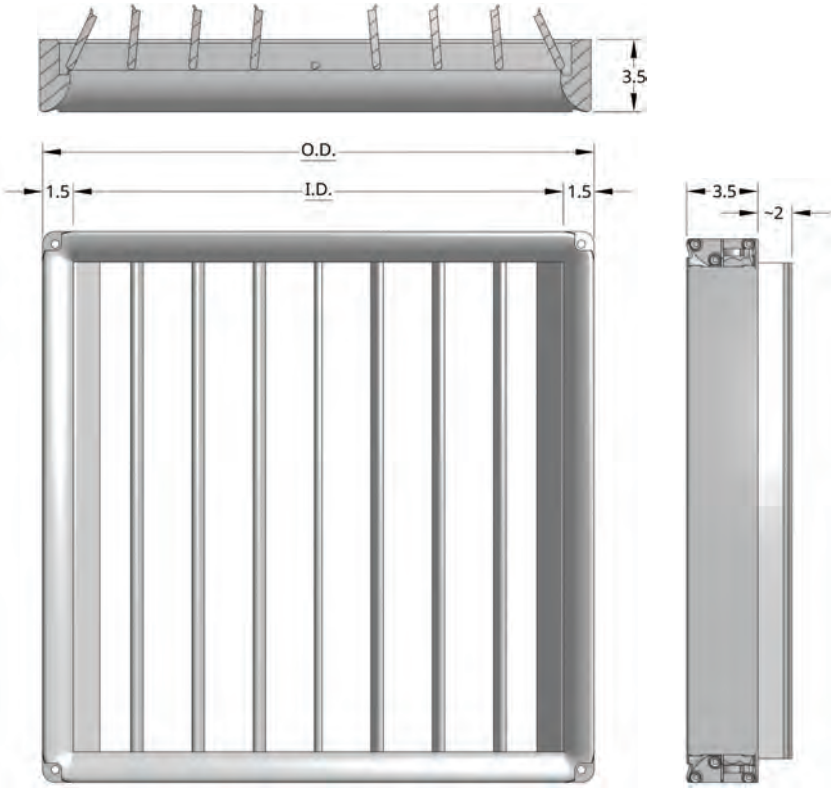
Bearings
Permanently sealed SAE 52100 ball type

Structural Corner
300 series stainless steel

Blade End Caps
300 series stainless steel

Blade Seals
Extruded santoprene TPE

Sizes
Nominal 12 to 60 inches, 3" increments in width as standard, custom widths available, 1" increments in height



FEATURES

- Virtually no adverse effects on fan performance
- Low leakage when closed allowing non-operating fan to come to a complete stop, leakage is AMCA class II or better, temperature limits -50°F to +250°F
- Capable of high static pressures up to 12 inches
- Little to no adverse acoustical impact
- Uses recirculating air to close without relying on gravity
- Extremely strong lightweight construction

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