Flue Duct Dampers

Quality Components for Flue Gas Isolation & Control

A World of Solutions

A World of Benefits
- Worldwide operating experience
- Financial stability
- Leading edge design and engineering
- Fully equipped manufacturing facility in the U.S.
- Worldwide manufacturing capability
- Domestic and international field service capability

A World of Service
- Quality Assurance Program
  Quality assurance is in accordance with ISO 9001 guidelines.
  All welding processes are qualified per AWS D1.1 and ASME Section IX.
- Product Testing
  We have the ability to test our products at temperatures up to 1500°F (815°C) and at system operating pressure.
- Retrofit/Repair Capability
  Field service is available worldwide from our global field service network for repairs, alterations or replacement regardless of the original manufacturer.

Slide Gate Dampers
Isolation capability with minimum pressure drop across the dampers. Available in low leak and zero leak designs.

Louver Dampers
Parallel blade design offers tight shut-off. Opposed blade design offers flow control capability. Double and tandem louver designs offer zero leak isolation.

Diverters
Provides extremely high-sealing efficiency in systems that require a through flow with bypass capabilities. Commonly used in HRSG applications.

Wafers
Cost-effective tight shut-off capability for round ducts.

Radial Vane Dampers
Fan inlet control capability.

Stack Isolation Damper
Cost-effective shut-off and weather protection capability. Commonly used in HRSG and industrial boiler applications.

Flue Duct Expansion Joints
EFLEX™ expansion joints incorporate the latest advancements in engineering and materials technology. Available for design applications up to 2000°F.
Slide Gates

EFFOX manufactures two basic types of Slide Gate Dampers (sometimes referred to as Guillotine Dampers) - ZERO LEAK and LOW LEAK.

The ZERO LEAK design is used primarily in positive pressure systems where zero flue gas leakage past the closed damper is required. Zero leakage is obtained by pressurizing the seal air chamber located around the periphery of the closed blade with ambient seal air.

The LOW LEAK design is used primarily in systems where a small amount of leakage can be tolerated past the closed damper. Typical leakage can be less than a few percent, depending on damper size and system conditions. The low leak design is also used in negative systems where ambient in-leakage can be tolerated.

Design Features
- Long wall mining chain drive
- Solid plate blade
- Metallic sweep seals with backup retainers
- Electric, pneumatic or manual actuation

Safety Factor
- 300% safety factor on drive sizing
- 200% safety factor on seal air volume at a minimum of +3 inches w.g. above system pressure
- Maximum 60% of yield stress on all components

Louvers

Louvers are typically used for either isolation or control in a variety of applications requiring fast operation. EFFOX manufactures three basic types of Louver Dampers - PARALLEL, OPPOSED and DOUBLE LOUVERS.

The PARALLEL design is used primarily for isolation. The use of blade edge and jamb seals achieves minimal leakage past the closed damper.

The OPPOSED design exhibits the best flow control characteristics with moderate leakage past the closed damper.

The DOUBLE LOUVER design utilizes two banks of blades. Zero flue gas leakage is achieved by pressurizing the area between the two closed banks of blades with seal air. The Parallel/Opposed configuration provides zero leakage yet retains good flow control characteristics. Double louvers can also be found where overhead space is not available to install a Slide Gate damper.

Design Features
- Bolted airfoil construction
- Jamb seals along side frame and blade-to-blade overlap
- Independent packing glands with outboard bearing assemblies
- Electric, pneumatic or manual actuation

Safety Factor
- 300% safety factor on drive sizing
- 200% safety factor on seal air volume at a minimum of +3 inches w.g. above system pressure
- Maximum 60% of yield stress on all components

Diverters

EFFOX manufactures two basic types of Diverters - ZERO LEAK and LOW LEAK.

The ZERO LEAK design is used where zero flue gas leakage past the closed diverter blade is required. Zero leakage is achieved by seating the diverter blade against a pressurized seal air chamber.

The LOW LEAK design is used where an extremely small amount of leakage can be tolerated across the closed diverter blade.

Both ZERO LEAK and LOW LEAK designs are used in waste heat recovery systems, but can also be used in any system that requires a through flow with bypass capability.

Design Features
- Composite blade design
- Metallic seal arrangements
- Single-pivot or toggle drive designs
- Electric, pneumatic or hydraulic actuation

Safety Factor
- 200% minimum safety factor on drive sizing
- 200% safety factor on seal air volume at a minimum of +3 inches w.g. above system pressure
- Maximum 60% of yield stress on all components
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