

Custom Ancillary Parts



DuraLeaf™ Full Contact Axial Seal

In the Ljungström type airheater, one of the leakage paths for incoming air is to bypass the rotor entirely by leaking past the circumferential/bypass seals. Once the air leaking past the circumferential/bypass seal enters the space between the rotor and the housing, the natural low pressure of the cold end gas side creates a favorable leakage path for much of this air to travel around the perimeter of the rotor and escape into the cool gas leaving the airheater.

The air that leaks directly from the cold end air side to the cold end gas side results in wasted fan horsepower. The placement of the DuraLeaf™ Full Contact Axial Seals outboard of the rotor constrains the air on the air side of the airheater and within the housing creating a path that minimizes leakage thus reducing the wasted fan horsepower.

Currently, the OEM design for axial seals is similar to their design for radial seals; a 12 gauge cold rolled steel set to a clearance from a fixed plate. This is dependable, but inefficient. Paragon's DuraLeaf™ Full Contact Axial Seal allows for full contact between sealing elements. With tight space requirements, there is usually insufficient room for any mechanical sealing devices. Paragon's DuraLeaf™ Full Contact Axial Seal is a multi-leaf seal. Comprised of a sturdy backing strip and multiple layers of very thin, pliable stainless steel. The design is compact, yet robust enough to handle its environment. The positive contact with the axial sealing plate ensures that the perimeter air leakage past the rotor stays in the air ducting.



Full Contact Axial Seal



Complete DuraLeaf™
Full Contact Axial Seal

Damper Seals

Paragon's Damper Seals have an enhanced 'crank' angle to enable the damper when closed to seal onto the flexible collapsing leaf arrangement. Paragon's Damper Seals were developed to address the inability to properly seal the dampers where thermal distortion or corrosion/erosion has damaged the sealing surface. These Damper Seals can achieve "near zero" leakage due to the exceptionally tight sealing technique that the multi-leaf design delivers. These Damper Seals can also help reduce mill fires which are not easily controlled when leakage allows air to bypass the dampers.

Paragon's Damper Seals are manufactured from temper hardened precision grade stainless steel, nested together to form a durable spring surface, which dampers can close to create a very tight seal reducing leakage.



Damper Seal

DuraGuard™ Hopper Level Detector

The DuraGuard™ non-contact hopper level detector features a uniquely simple solution to your fly ash measurement challenges. Gravity does the work. The vacuum present in a negatively pressurized hopper (in a balanced draft boiler) pulls the detector's flapper closed. When the hopper fills above the detector's pipe opening, vacuum is lost and the flapper falls open to energize the switch, sending an alert to the operator.

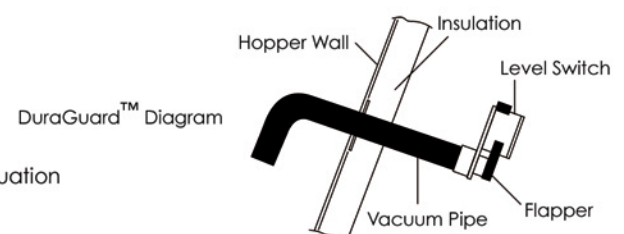
This ingenious and economical detector can be used to replace nuclear design detectors at a fraction of the cost. The DuraGuard™ is mounted outside the hopper, so it is never exposed to fly ash or flue gas, and it can be easily incorporated into your control systems.



DuraGuard™ Hopper Level Detector

Design Features

- Switch contacts rated 4.5 amps at 120 VAC
- Does not require separate power supply
- Self cleaning; does not require purge air supply
- Can be equipped with quick-disconnect fittings
- field reversible switch contacts
- For balanced draft boilers only; requires negative pressure for actuation
- High or low sulfur coal
- Economical design permits multiple detection points



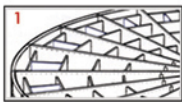
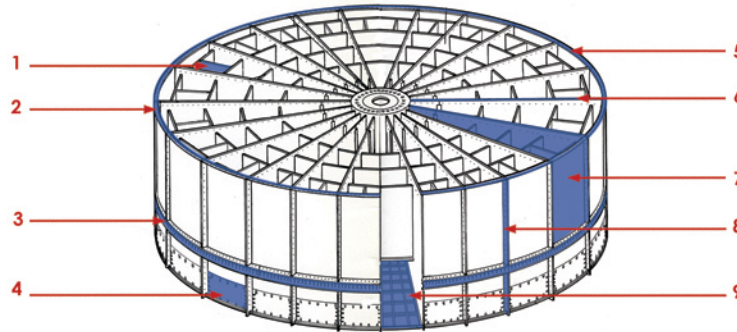
DuraGuard™ Diagram

Standard

Replacement Parts

Standard Components

Paragon provides standard replacement parts for rotary regenerative airheaters. These products undergo the same stringent manufacturing processes as all our products and are built to meet or exceed original equipment manufacturing requirements. We are proud to provide a full line of replacement parts for an airheater, including:



Diaphragm, Stay Splitter Plates

We will build any rotor assembly sub-component individually or as complete sets.



T-Bar Assembly

Quality assured, Paragon T-Bars and support angles are available for all sizes on hot and cold ends.



Pin Racks

An improved metallurgical product. All pins are heat treated throughout their thickness for an extended life improvement over past induction surface hardening techniques.



Shell Plates and Covers

We will provide a partial or complete shell plate replacement specific to the needs in each contract. Each shell plate is rolled to an exact radius for ease of replacement and fit.



Circumferential / Bypass Seals

The circumferential seals prevent air and gas from bypassing the heating element through the space between the rotor and the housing shell. They are retained by mounting angles bolted to the circumference of the rotor. The circumferential seals wear against the sealing rings, which are welded to the housing of the airheater. The bypass seals are mounted on the housing and seal against the rotor mounted T-Bar.



Radial

Radial seals are used to minimize the direct air to gas leakage that occurs across the sector plates that separate the air and gas sides of the airheater. The seals are attached to each diaphragm of the rotor to maintain close contact with the sealing surface that separates the air and gas streams.



Airheater Rotor Modules

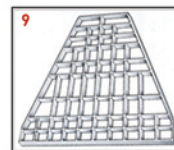
Modular-constructed airheater rotors bolt to the center post for fast field erection. Paragon can design and produce a complete range of replacement modules for all or modular rotors. Modular designs include:

- Complete frames
- Sub-component assemblies
- Modules with installed basketed element



Axial Seals

Axial seals are used to minimize air leakage that can travel around the circumference of the rotor.



Gratings

Support grating are a major structural steel member for rotor compartments in horizontal or vertical design airheaters. Paragon can provide a complete range of grating assemblies at a competitive price.

Other Standard Parts Available

- Bearings
- Seal Tabs
- Sector Plates
- Reinforcing Gussets
- Basket Access Cover Plates
- Rotor Angle
- Bypass Seal Support Angles
- Circumferential Seal Mounting Angles
- Circumferential Seal Angle (Seal Ring)
- Stay Plates
- Element Tightners
- Axial Seal Plate Assemblies
- Radial Sector Plate Assemblies
- Radial Sector Plate Adjusters
- Custom Fabricated Components
- Access Doors
- Full Sector Basket Shims
- Basket Seal Strips
- Holding Strips
- Fasteners
- Sealing Surface Liner