

## Case Study: High temperature sealing for soot blower in coal-fired boiler

### Problem

The existing packing had a very short service life, leading to increased maintenance and rising costs. Frequent adjustment was necessary, with replacement on average every 3 months.

Short service life,  
frequent adjustment

### James Walker solution

A unique construction of Lionpak<sup>®</sup> 5100 at the top and bottom, with Lionpak<sup>®</sup> 5501 parallel bevelled intermediate rings. This unique solution combines high purity graphite grades in the braided top and bottom rings with die moulded intermediate rings in parallel bevelled ring design at a 45 degree angle. Such a use of materials as well as design would enable the packing to withstand high temperature steam during soot blower operation and encourage higher contact force towards the lance tube to maximise sealability and service life during thermal cycling.

### Application

Soot blower within coal-fired boiler at paper and pulp manufacturer.

- Temperature: 320-350°C (608-662°F)
- Pressure: 20-21 bar (290-305 psi)
- Inner lance tube diameter: 60 mm (2 1/2") and 70 mm (2 3/4")
- Media: steam



### Results and benefits

Since changing to the Lionpak<sup>®</sup> 5100 and 5501 combination, the customer has reported an increase in service life from three months to one year. This has allowed them to replace the packing in line with their scheduled annual shutdown, significantly reducing their maintenance and replacement costs and therefore improving operational efficiency.

Service life  
increased  
by 4x

### Existing solution

Braided, metal reinforced graphite packing



Service life of packing increased by 4 times



Reduced maintenance costs



Improved operational efficiency due to less downtime