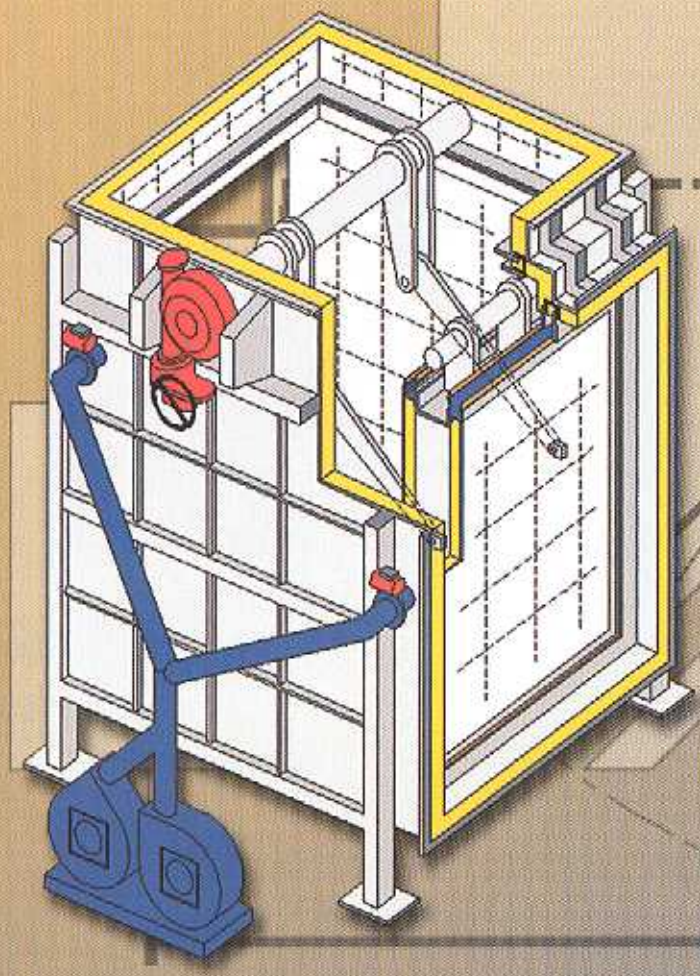
DIVERTER

Stejasa has designed and manufactured diverter dampers since 1986. The major development of gas turbine cogeneration installations in the world has made it possible to acquire invaluable experience of special dampers.

Single blade diverter advantages

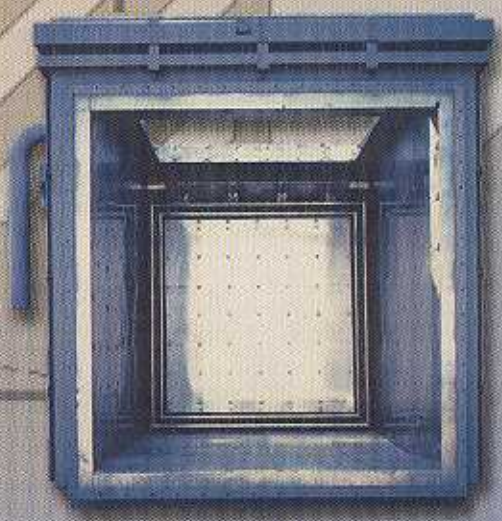
+ Optimal sealing efficiency: Single blade dampers has less seal periphery than multiple blade dampers
+ Diverter damper does not require simultaneous movement with other blades
+ Minimum pressure drop while comparing to multiple blade dampers
+ Diverter damper can be manufactured in modules for easy shipping and field assembly



Blade design

The damper blade has a lattice support construction with floating diaphragm cover plates on both sides. Hot gases can circulate within the blade structure so that the blade is evenly heated and can freely expand and contract remaining free of distortion. The pivoting blade will be hinged on one side of the casing. However, for large damper it will be connected to the main drive shaft by length-adjustable toggle arms, reducing the risk of deflection and this reduces proper blade closure in both positions.

Stejasa diverter dampers are available with internal or external insulation depending on the flue gas conditions.



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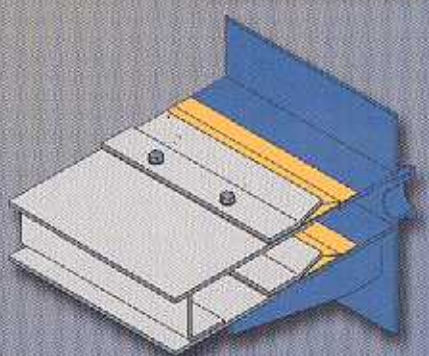

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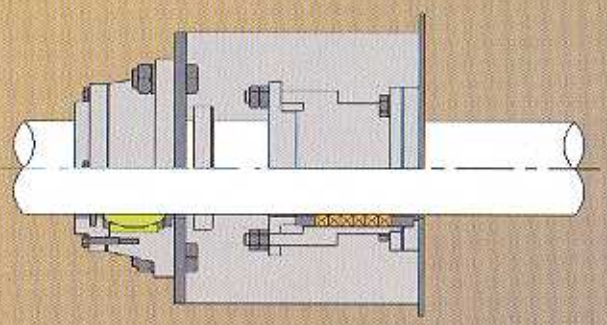
Bearing

The diverter bearings are self-aligning rotuling type, mounted externally, sturdy and dimensioned for the maximum expected temperature, pressures and work loads.



Packing gland system

Gas tightness on the shaft passing through the casing is achieved by means of glands provided with special packing for high temperatures. The arrangement is specially designed to accommodate the expansion and deflection of the shaft and can be adjusted or replaced without having to remove any drive component.

Seals

Seals are mounted around the periphery on both sides of the blade providing a sealing efficiency from 99,95% onwards. Seals are made in high-nickel alloy material and designed to absorb gaps between the blade and landing bars. These joints can be easily adjusted or replaced.

Air sealing system

For 100% sealing efficiency a double seal row is fitted. The chamber formed by the seals and the landing bars is pressurised by a small fan in order to provide an effective air barrier resulting in zero cross blade leakage or 100% tightness.

Drive system

The entire actuator system of a diverter damper shall be externally mounted and can be inspected and maintained while the main plant is running.

The sizing of the actuator is one of the most critical tasks in the design of a diverter. For any of the solutions used, direct shaft or toggle system drive, the following parameters must be considered:

Blade weight load: The weight of the diverter blade when it is horizontally orientated must be taken into account, as well as the friction generated by the lever heads.

Pressure duct loads: The actuator must be sized according to the pressure generated by the fluid on the surface of the blade.

Blade seals loads: Likewise, an additional torque will be provided in order to correctly tighten the joints and guarantee the tightness required.

The torque of the diverter's actuator installed will be defined according to the loads studied and a safety factor which is sufficiently broad for this type of application. Drive can be either electric, pneumatic or hydraulic.