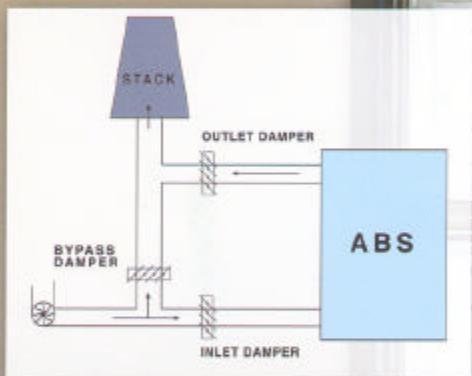
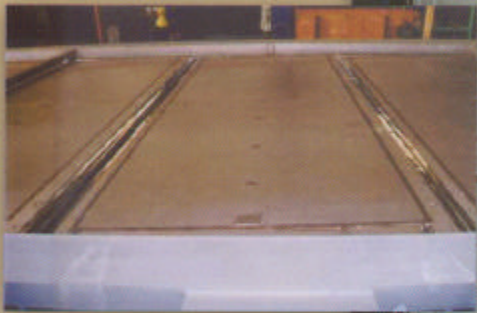


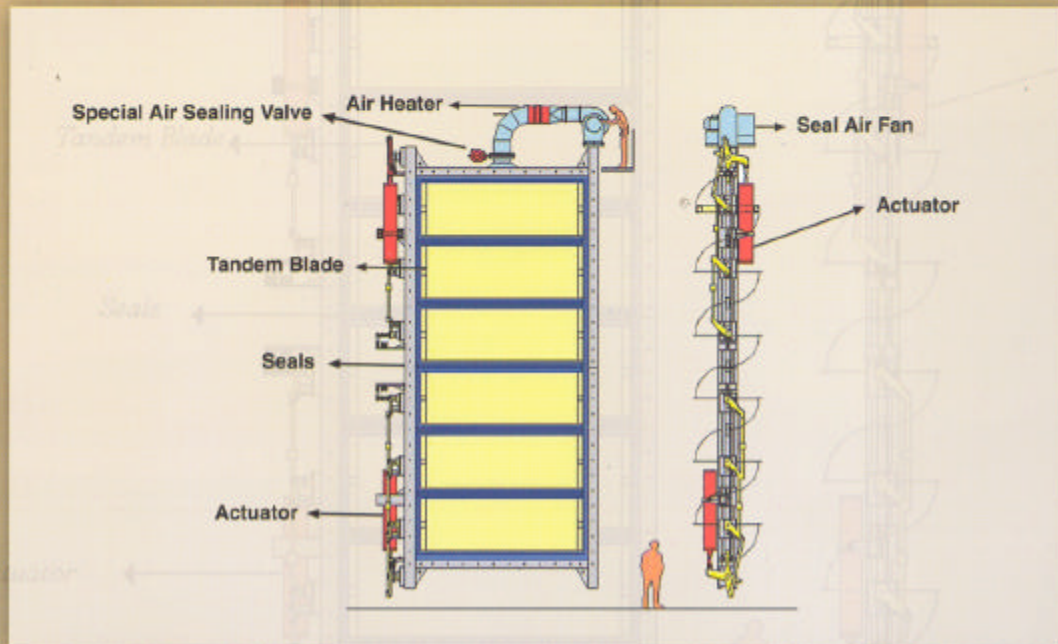
# FGD DAMPERS TANDEM & GUILLOTINES



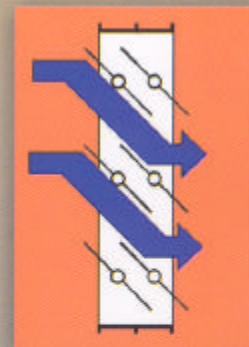
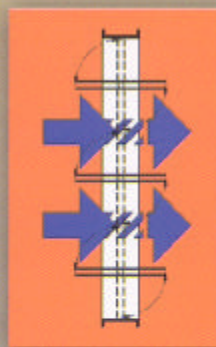
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# TANDEM MATERIAL DESCRIPTION

**Tandem** dampers are installed to isolate and regulate flue gases. The standard configuration is as follows: two louvre dampers in one. The blades are designed as a hollow profile when closed, fitted with two rows of seals, to form a chamber which is pressurized with seal air. **TJK Tandem** damper seals provide a simple space saving method of ensuring zero leakage. Our **Tandem** dampers are available in different materials according to gas characteristics and we offer chemically resistant internal linings for installations in FGD plants where aggressive media is present.



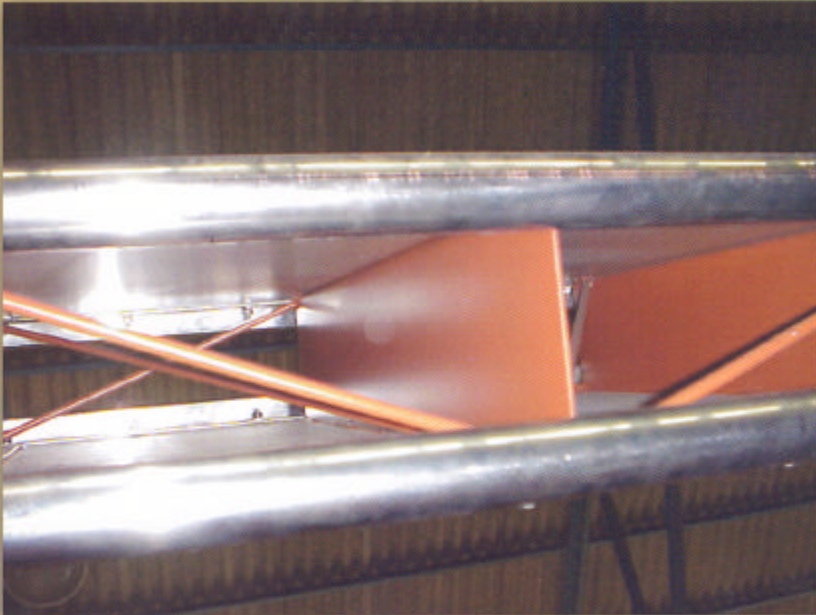
Tandems and double multilouvres comparison



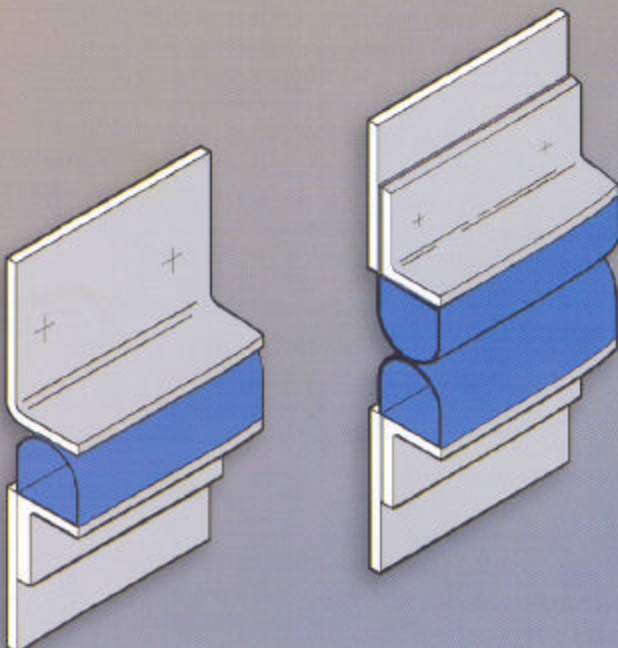
	TANDEM	DOUBLE MULTILOUVRE
Distance between Flanges	Low	High
Weight	Low	Medium
Overhead space required	No	No
Mounting position	H or V ducting	H or V ducting
Pressure drop	Low	Medium
Actuator*	P, H, E	P, H, E
Closing / Opening time	Low	Low
Emergency shut-down	Yes	Yes
Seal air consumption	Medium	Medium
Maintenance	Easy	Medium
Erection	Easy	Medium

\*P = Pneumatic, H = Hydraulic, E = Electric

**Blades:** Torsion resistant TJK blades provide excellent rigidity and optimal aerodynamic properties. Blades are made from two plate sections assembled with an internal structure. The most outstanding benefit of this stable, rigid construction is that it allows larger blades, thus reducing the overall seal length. This improves the sealing air efficiency and reduces the number of moving parts. TJK tandem blades reduce the pressure drop and deposit formation.



According to the installation circumstances, operating conditions and customer requirements, tandem dampers may be electrically, pneumatically or hydraulically driven.

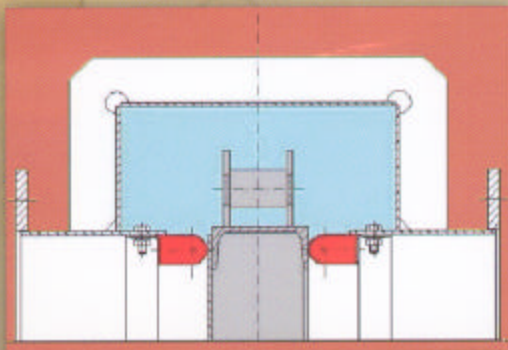
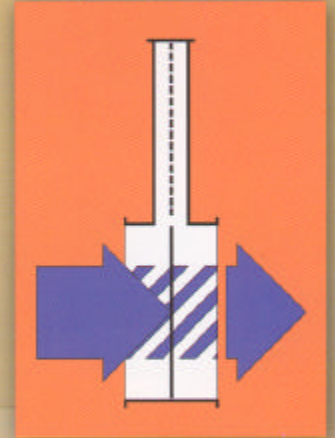


**Seals:** STEJASA sealing system is made from corrosion and wear resistant materials. They have a special design that ensures high elasticity while maintaining minimum size. The seals return to their original shape even after being in a closed position for a long time. The seal recovers full contact with the sealing surface at a very short distance. Any deposit is cleaned off automatically when the damper is closed, in contrast to metal and shaft leaf seals. These types of seals are protected at the ends to prevent dust entering and causing damage. These seals do not require landing bars between the blades. This means lower pressure drop and noise levels. This is a major benefit to the fact that the overall sealing length is reduced by around 25% resulting in higher sealing efficiency with less sealing air.

# STS GUILLOTINE

The frame is suitable for bolting to adjacent ducting and designed to resist all loads imposed by operation conditions. STS guillotine's bonnet ensures that there is no leakage from the damper to the atmosphere, or vice versa, under all conditions. The blade is reinforced to minimise deflexion and stresses. Where dust accumulates, a clearance door can be fitted in the base of the guillotine or alternatively an air purge system giving a burst of air at regular intervals.

	GUILLOTINE
Distance between Flanges	Medium
Weight	High
Overhead space required	Yes
Mounting position	H ducting (bonnet on top)
Pressure drop	Very low
Actuator*	Electric
Closing / Opening time	Very high
Emergency shut-down	No
Seal air consumption	Low
Maintenance	Medium
Erection	Medium



**Actuator:** This system uses a single electric actuator powering two gearboxes. These operate two racks and pinions located on each side of the blade. This system avoids the risks of blocking. STS dampers operate automatically via the control room and therefore do not require any personnel for the operation.

**Seals:** The sealing technology used is the same as the one used in the tandem multilouvre.

