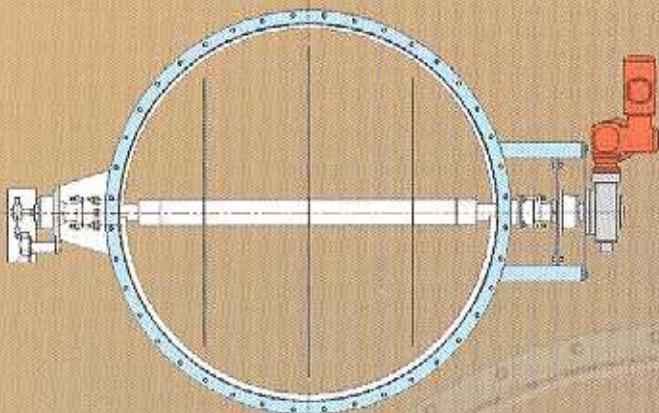


BUTTERFLY AND MULTILOUVER



STEJASA designs and supplies fully manufactured butterflies and multilouvers for all industrial applications. They are built in a wide range of sizes and shapes. They can be circular, square or rectangular. We can design them for external insulation or supply them with internal insulation (ceramic fibre, mineral wool or refractory insulation).

Depending on the application's temperature, we can use carbon steels, alloyed steels or stainless steels. Butterfly dampers are single bladed. They are used to control and/or isolate gas flow. Multilouvers are equivalent to butterfly dampers but have 2, 3 or more blades.



CASING: The damper's casing is machine-welded out of the material defined in the specifications sheet, so as to cover the damper's operating temperature range. Construction is reinforced to withstand all the static and dynamic stresses inherent to the damper, but not for external loads as a standard.

All accessories and drives are mounted on the casing. Therefore, the damper is ready to work as soon as it is installed on the ducting.



STEJASA AGREGADOS INDUSTRIALES, S.A.

C/ Albasanz, 34

28037 MADRID (SPAIN)

Tel.: +34 91 327 00 13

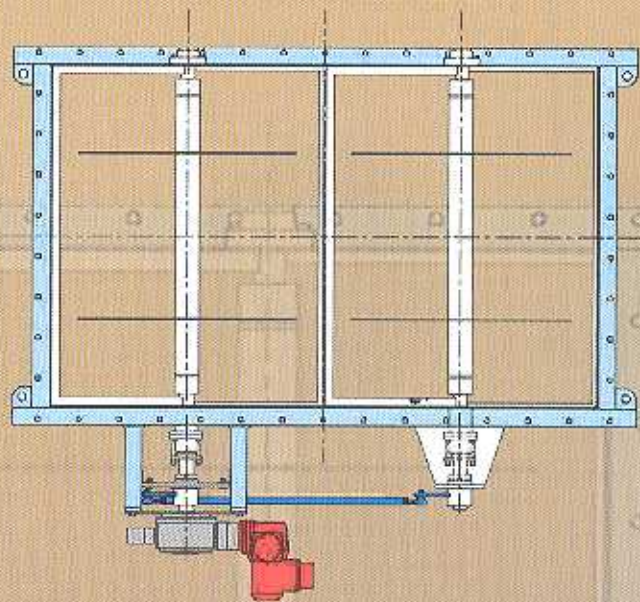
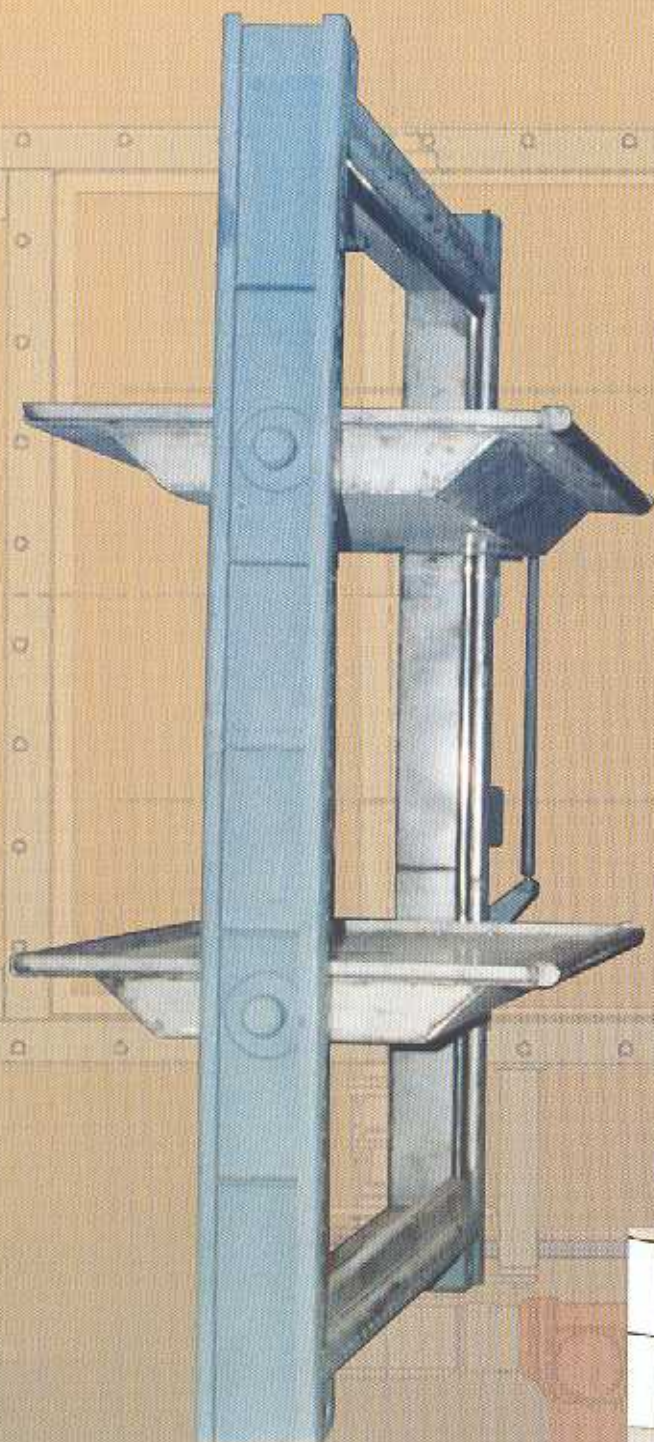
Fax: +34 91 327 21 20

e-mail: general@stejasa.com

www.stejasa.com



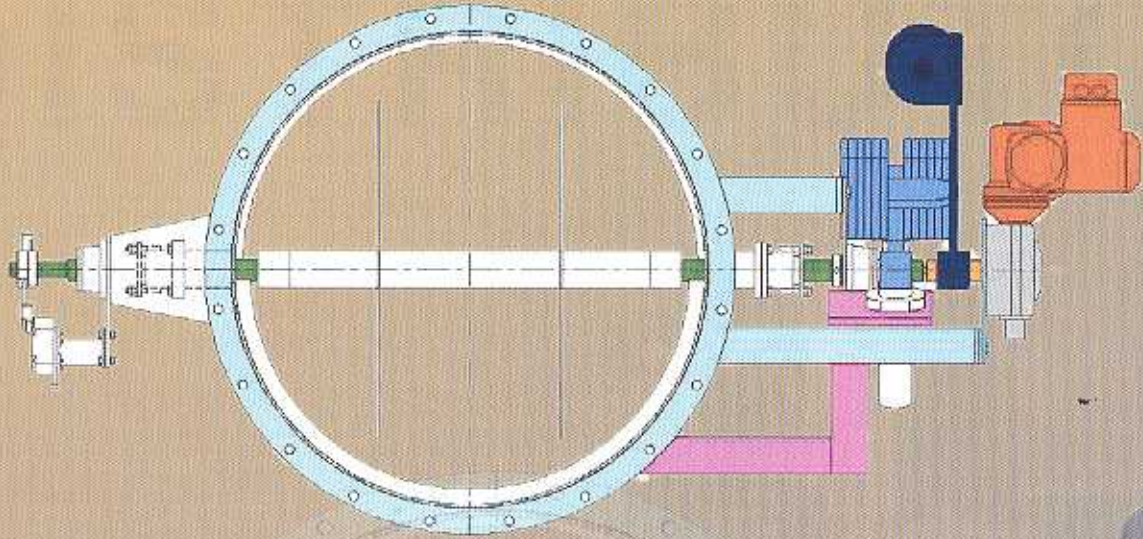
BUTTERFLY AND



BLADE DESIGN: Our blade design allows a very low pressure drop and an efficient flow control. We take into account the thermal growth at the specified operating conditions. A thermal compensation system is included to prevent misalignment with the drive system.



MULTILOUVER



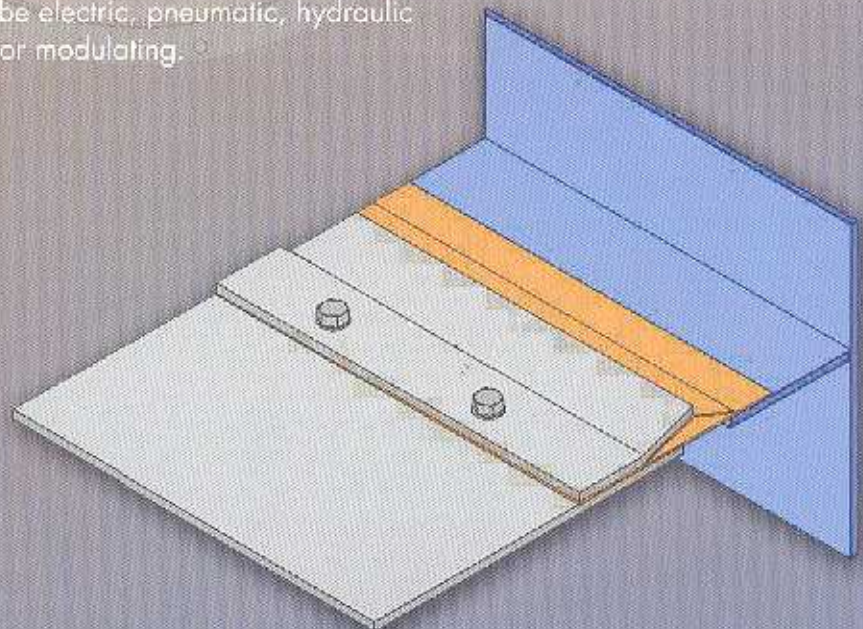
Butterfly damper with counterweight for emergency operation in case of electrical failure

SEALS: Butterfly and multilouver dampers are designed with metal-metal or elastic seal systems. Flatness and strict manufacturing ensures optimal sealing.

For 100% tightness efficiency special dampers with air sealing are also available.

For square or rectangular designs and in certain circular sizes, this seal called "lamela" is a perfect choice. It is a thin metal strip designed to be very flexible yet very resistant in time. It can absorb small deformations on the landing bar to ensure a perfect tightness. Also, it was carefully chosen and tested to withstand high temperatures and speeds in many applications.

TYPE OF ACTUATOR: Actuator can be electric, pneumatic, hydraulic or manual. They can either be on-off or modulating.



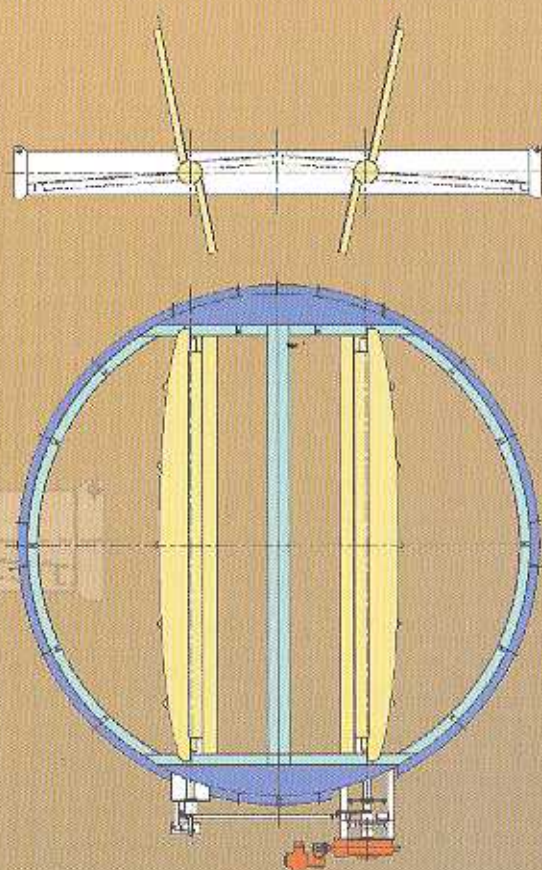
STACK DAMPER

STEJASA's stack dampers are generally used to slow down the cooling rate of the HRSG by limiting the heat loss through the stack following a gas turbine shutdown. They also prevent rain entering the HRSG.

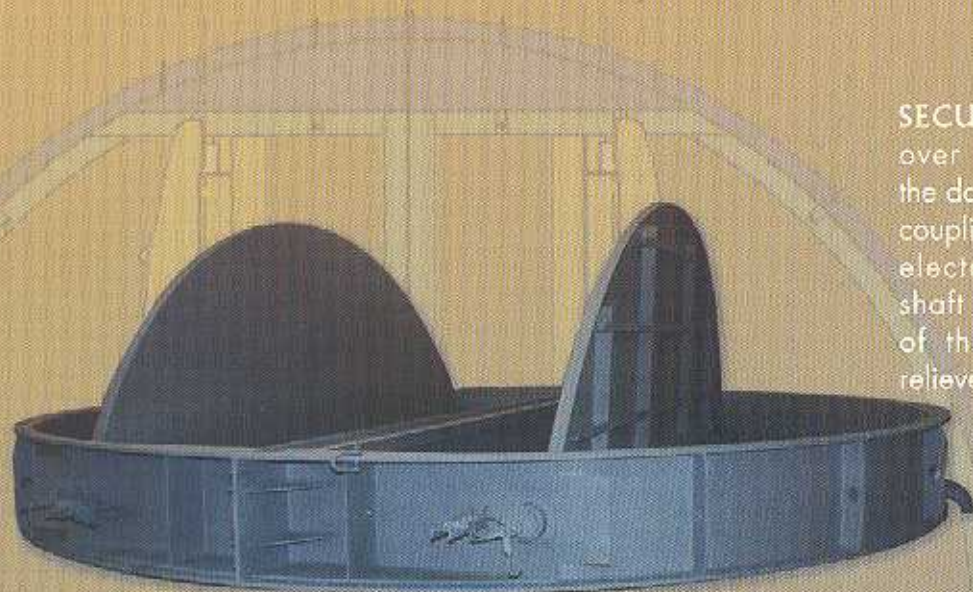
Drilled flanges are standard for the erection on the boiler stack. The whole frame has been reinforced in order to withstand the normal working stresses on these dampers.

The blade geometry is such that it closes all around its periphery on a landing bar fixed to the frame. Both the blade and the metal joint (designed to form a gutter) allow rainwater to drain through two drainage pipes built for this purpose.

The blade movement is provided by an electrical actuator. This servomotor drives the actuator shaft and the connection shaft by means of a lever and an adjustable articulated linkage arm.



SECURITY SYSTEM: In case of an over pressure inside the boiler when the damper is closed, a special coupling mounted between the electrical actuator and the actuator shaft allows the self-opening movement of the blades. When the pressure is relieved, the blades will close automatically.



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