

Industrial dampers

Product catalogue

Power of innovative ideas

Powerz

About us

Powerz is an innovative international company specialized on engineering solutions in the field of thermal power, oil-gas and chemical industries.

According to the customer's technical inquiry your engineering team designs the dampers of round and rectangular cross-sections equipped with electrical and pneumatic actuators.

Powerz industrial dampers

- are developed for regulating and shut-off of gas air flows
- are widely used in gas turbine industry, gas-, dust and air ducts of boilers, gas scrubbing systems, blast furnaces and other power plant equipment
- can be also manufactured:
 - in nonstandard dimensions
 - heat-resistant for high temperature operation
 - have a high gas-tightness (up to 100%)
 - acid-resistant for aggressive operating media
 - with additional sealing air system in order to guarantee the 100%-tightness of flaps

Industrial dampers: round and rectangular

The main function of industrial dampers is to shut-off the air flows inside the air-gas duct for air and gas ducts systems of boiler units, in metallurgical and oil-gas branches.

Due to special flaps construction the gas tightness of not less than 98% can be guaranteed when the damper flaps are in the closed position.

The average tightness of standard dampers offered on market today is only 96%.

Powerz dampers are fitted with external bearing supports which provide improved operational reliability. Due to pairwise-counter rotation of the flaps, the **Powerz** butterfly dampers provide an extended linear range of the flow characteristic and eliminate an asymmetric deflection of the gas flow.

The dampers can be equipped with manual, electrical or pneumatic actuator.

Industrial dampers for air and gas ducts

According to customer's requirements the dampers can be made of chemical-resistant materials against aggressive media or materials with high heat resistance up to 900°C.

Depending on media temperature the following materials can be used:

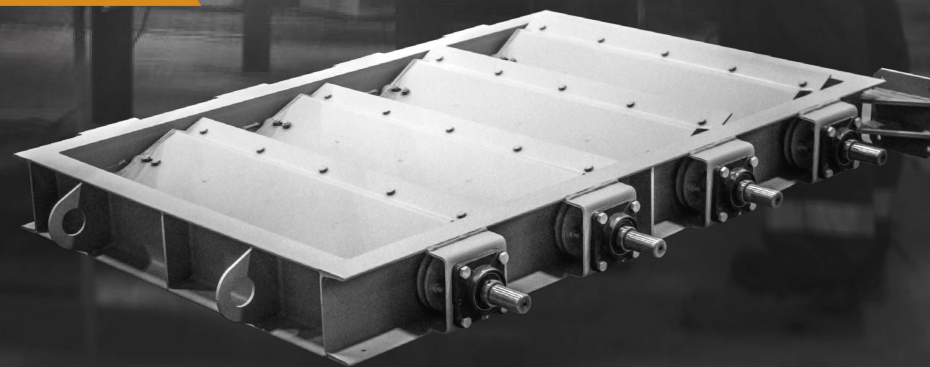
Temperature	up to 425°C	425°C - 585°C
Material	EN 1.0038	EN 1.7715

Operating mode:

- open/closed, intermediate position is possible
- regulating (control) damper

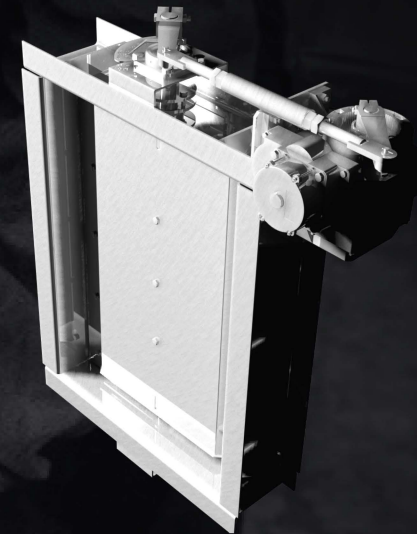
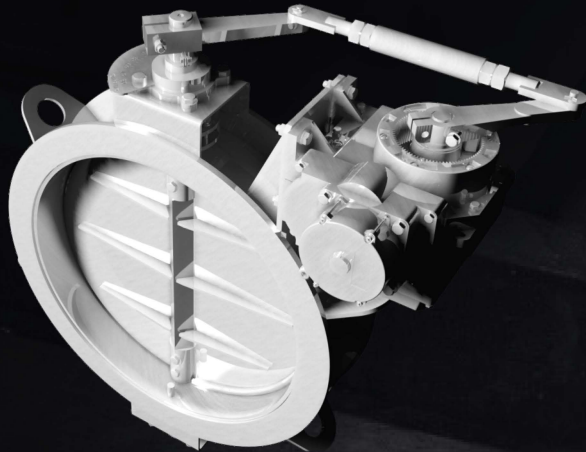
Max. media pressure:

0,15 bar



The flap opening is operated by the actuator that is mounted on the valve body housing.

Industrial dampers for air and gas ducts



Round dampers: DN 100 – DN 7000

- are used for installation in air- and gas ducts
- gas tightness of not less than 98% when the flaps are closed
- fitted with external bearing supports in order to increase operational reliability
- equipped with pneumatic or electrical actuator
- media temperature:
 - up to 425°C
 - 425°C - 900°C

Rectangle dampers: 400x500 - 5500x5500

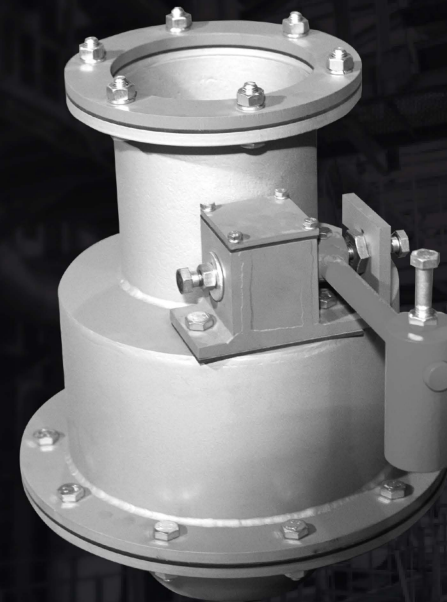
- Due to pairwise-counter rotation of the flaps, the Powerz butterfly dampers provide an extended linear range of the flow characteristic and eliminate an asymmetric deflection of the gas flow
- gas tightness of not less than 98% when the flaps are closed
- media temperature:
 - up to 425°C
 - 425°C - 900°C

Shuttle valves are used on dust ducts of coal-fired power plants within coal pulverization systems and are mounted under the dust separator, aspiration and ash handling equipment.

Their main function is to discharge the collected dust within constant flow and to prevent the air leaks during the dust movement from the low-pressure area into the area with atmospheric pressure. Within dust and slag unloading the leak tightness shall be secured.

Shuttle valves

The valve housing can be manufactured with transition from the rectangle to the round flange.



- Valve tightness is based on close adjoining of cone to the valve housing supporting the optimal position of the actuator arm.
- Optimal load position shall be adjusted within installation phase and prevent the air leaks into the low pressure area.
- In case of correct load position the possible valve opening even with minimum dust weight is fully excluded: a pillar of dust acts as sealing agent

Shuttle valves: DN 100 – DN 600

Size	DN 100	DN 150	DN 200	DN 300	DN 450	DN 600
Flow rate, t/h	0,1–6	0,2–14	0,4–24	1–54	2–120	4–216

Guillotine dampers

Shut-off guillotine dampers are designed to shut off the individual sections of gas and air ducts.

The guillotine damper consists of a body bearing a frame construction with actuator mounted above. Driven by the actuator powered feed-screw, the guillotine blade slides along the guiding ways within the body and the frame construction of the damper. The damper body is fitted with the limit switches which signal the extreme open-closed positions. A scale with an arrow helps to check the blade position by sight.

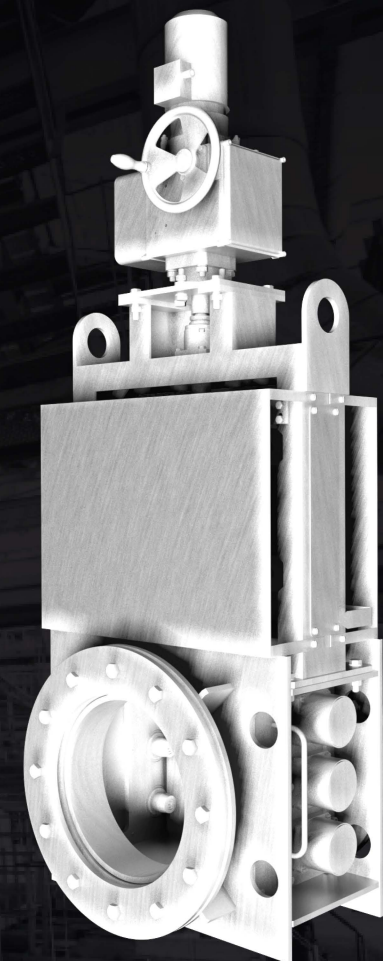
Depending on medium temperature such dampers are offered in the following design versions:

Temperature	up to 425 °C	425°C - 585°	585°C -610°C	610°C -900°C
Material	1.0038	C 1.7715	1.4541	1.4843

Guillotine dampers can also be made of aggressive media resistant materials.

They are available within size range from DN 100 to DN 2500. The dampers bodies are of welded design. Since guillotine blade is manufactured by cutting out from a solid plate by the laser, so the blade deformations in the process of manufacturing are minimal. Mechanically treated fitting areas allow the blade to fit tightly all over the plane.

The damper's operation concerning the working medium consists in shutting off the dust duct's flow section by the valve blade. The gas-tightness of closed damper is ensured by tight fitting of the blade's perimeter to the seal packing of the damper's body. For the ease of maintenance, the hatches are provided in the body of the damper. All pilofacturing holes of the dampers are sealed with the packing glands and the gaskets. The damper opening/closing process is monitored by means of the endpoint current sensors which are installed in the actuator and connected to the automatic control system. A scale with an arrow is also available. The dampers are supplied complete with counter flanges so they can either be welded to the gas duct, or be fixed by the bolted connection. The above stated damper arrangement along with the use of high-quality materials guarantee the high serviceability of the dampers and provide a long operating time, as well as a long time between repairs.



Gas-tight dampers

The gas-tight dampers are designed to shut-off the air-gas flows within ducts with internal and external insulation.

The gas-tight dampers are no less than 99%-tight when the flaps are closed. The seal air system makes the damper 100%-gas tight. The dampers may be installed paired or as individual units.

Depending on media temperature different high-resistant materials can be used.

The tightness in position „closed“ is insured by:



tight fitting of the flap's perimeter to the housing



sealing air boosted in to the area between flaps

Due to their special design the Powerz dampers have small dimensions.

The compressed-air unit can be mounted on the damper's housing or near it.

This unit is a screw-type compressor equipped with air preparation system. It pumps the seal air into the double flaps' intermediate space using the common collector.

By getting the signal from the sensors that the flaps are closed, the seal air is provided to the flaps by means of closed solenoid valves.

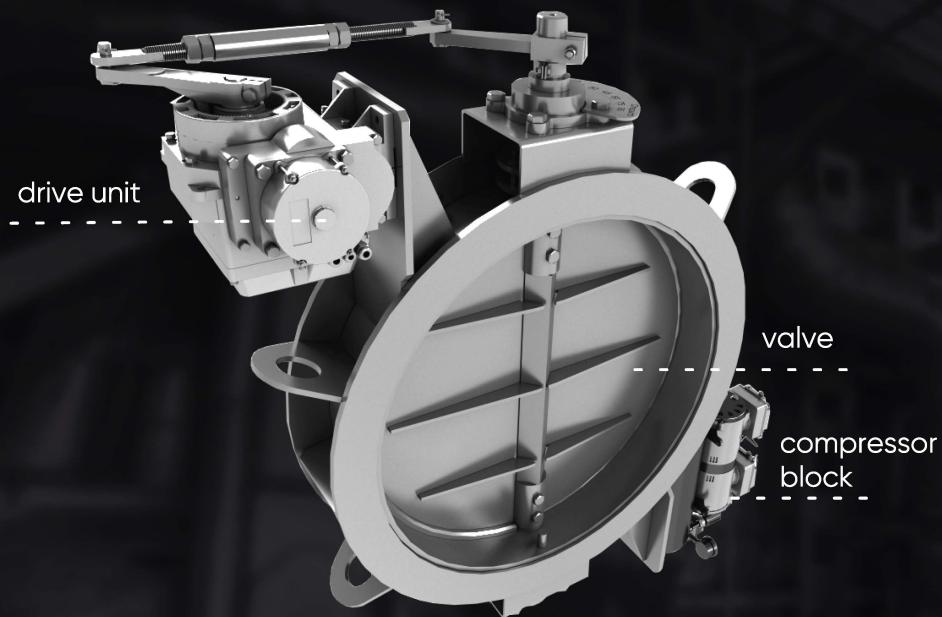
The gas-tight dampers can be designed in round and rectangular cross-sections.

Gas-tight dampers

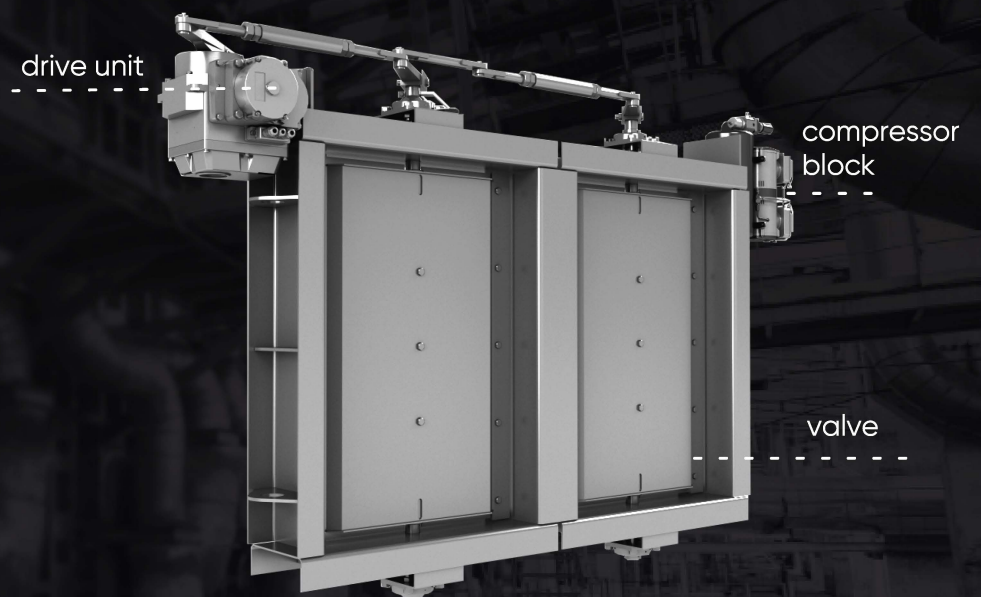
Depending on media temperature the following materials can be used:

Temperature	up to 425 °C	425°C - 585°	585°C -610°C	610°C -900°C
Material	1.0038	C 1.7715	1.4541	1.4843

The gas-tight damper consists of three main parts: valve body, actuator and compressed-air unit.



DN300-DN3500



400x500 – 5500x7500

Pendulum dampers

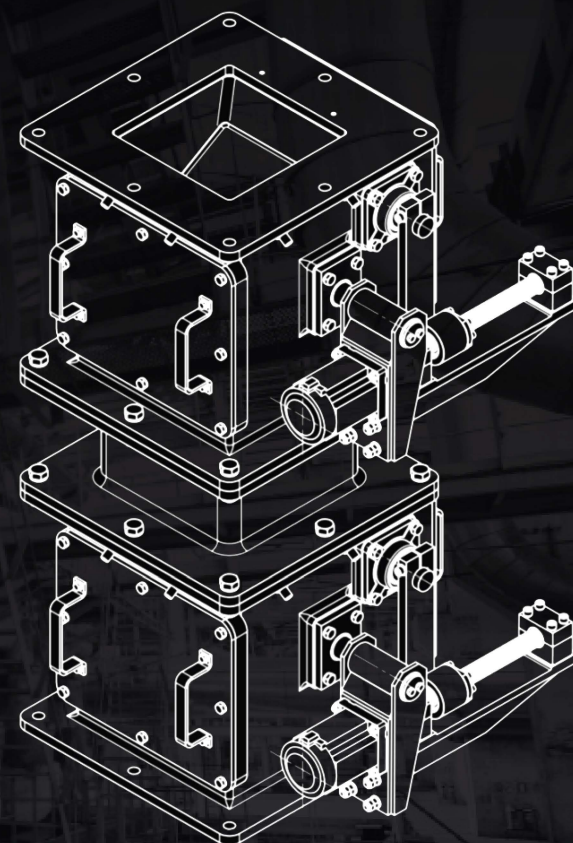
Pendulum valves are designed for the tight closing of dust silos that are operated under pressure different from atmospheric pressure and their discharge without decompression. The dampers are used within ash collecting and pulverization systems.

The pendulum damper consists of two separate valves connected with spacer plate. Each valve's body has a basket inside with tight fitted flap actuated by the shaft.

The damper's housing has special service hatches.

Depending on medium temperature such dampers are offered in the following design versions:

Temperature	up to 425 °C	425°C - 585°	585°C -610°C	610°C -900°C
Material	1.0038	C 1.7715	1.4541	1.4843



Valves can be made of materials resistant to aggressive media. All technological valve openings are sealed with seals and gaskets.

Shaft sealing is done with the help of stuffing rings.

Thus, the breakthrough of gases through sealing units is excluded. Such a valve device and the use of high-quality materials guarantee its operability and provide greater operating time in hours, as well as a long time between repairs.



Additional sealing air system is possible.

Stack dampers

The stack dampers are designed for its operation within combined cycle gas turbine unit.

The stack dampers are used to bank a recovery boiler when the turbine is not under operation as well as to collect and drain the atmospheric precipitation when the recovery boiler is cut off. These dampers open automatically when the maximum permissible pressure in the gas duct is reached.

Powerz stack dampers can be equipped with built-in or stand-alone electric actuators.

The following dimensions are available:

Round	DN 1700-7500
Rectangular	1800x1800 – 7500x6000

Different designs are possible depending on media temperature:

- up to 200°C
- up to 650°C

Round and rectangular cross-sections

