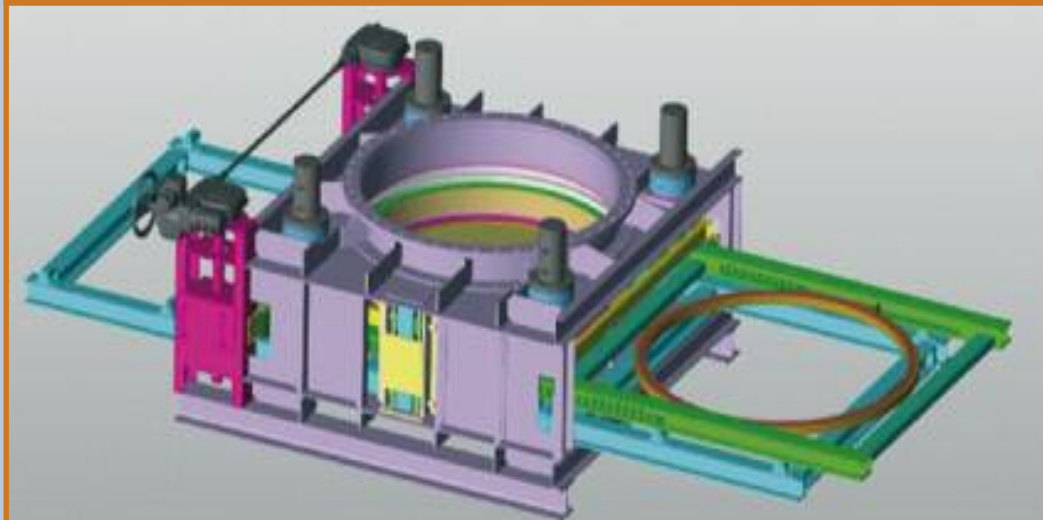
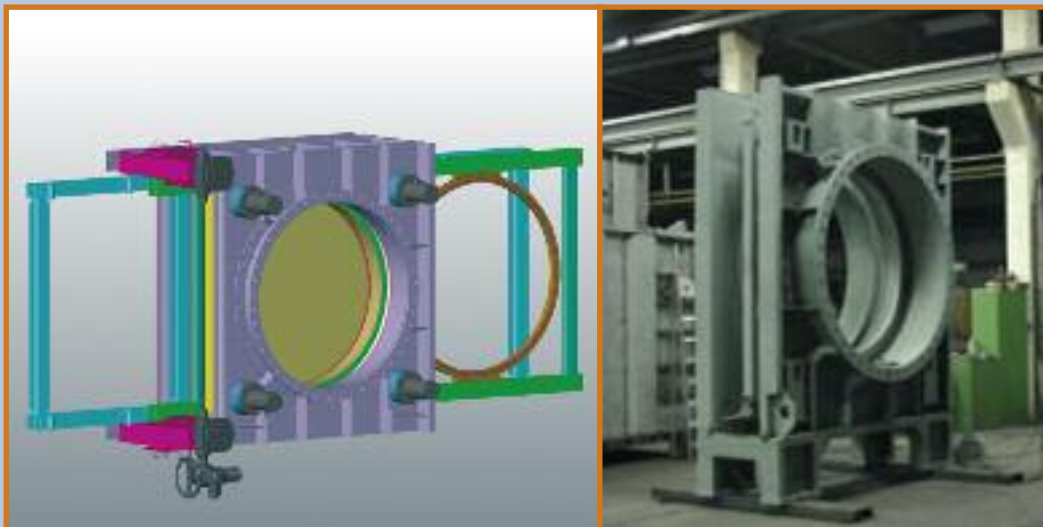




## GOGGLE VALVES

PERFECT DAMPER TECHNOLOGIES FOR INDUSTRIAL PLANTS



Goggle valves enable a 100% leak-tight closure of gas lines without purge air in accordance with the UVV safety provisions (periodic accident prevention inspection). The gas-tight shut-off is maintained even during power failure and is equivalent to a blind flange closure.

The goggle valves can be fitted with weather-proof cladding for open-air installation. The interior of the valve housing can be heated on request. For installation in enclosed spaces, the valve is supplied with a removable gas-tight housing. The sealing frame and blind plate operating elements can be located outside or inside the housing depending on the operating temperature and medium. Where dust, slurry or water run-out is to be taken into account, a collecting hopper is provided on the underside of the housing. A connecting nozzle is fitted at the highest point of the housing for a venting /aeration line.

### Deployment in smelting works

In blast furnace and converter gas lines, in wet, dry and electro-precipitation plants for furnace gas, in dust extraction plants for sintering off-gas in accordance with the Institution for Statutory Accident Insurance and Prevention in the Iron and Steelmaking Industry UVV (periodic accident prevention inspection).

### Deployment in the chemical and process engineering industry and in furnace gas fired power stations

everywhere where gas conveying pipelines quickly have to be shut off and made securely gas-tight. Depending on design and selection of materials, it can also be deployed for particularly chemically aggressive gases and for temperatures up to 700°C.

**Illustration right:** Goggle valve DN 2200 for furnace gas. The sealing frame is actuated hydraulically.

**Illustration below:** Goggle valve DN 3000 DVGW tested with gas-tight housing as the primary shut-off device in accordance with UVV (periodic accident prevention inspection) in the furnace gas line to a furnace gas fired boiler plant. The sealing frame and also the annular /blind goggle plates are actuated electro-mechanically.

### Advantages

- **Absolute leak-tight shut-off (blind flange)** – due to a multitude of self-adjusting pressure points on the sealing frame.
- **Free-moving and insusceptible to dust.**
- **Maintenance-friendly** – hydraulic cylinders can be exchanged without interrupting operation.
- **Low maintenance requirement and**
- **temperature insensitivity** – all moving parts are easily accessible from outside the pipeline and do not come in contact with the dust-conveying medium.
- **No wear to the seals and sealing surfaces** – these cover each other in the open and closed valve positions, becoming self-protecting.
- **No abrasion to the seals** – these are retracted from the sealing surface prior to each traverse.
- **No pressure loss** – with the valve open, no parts remain within the pipeline cross-section. The pressure loss is equivalent to a smooth pipe of the same length.
- **Good installation options** – the valve can be mounted at any attitude.



# Goggle valves



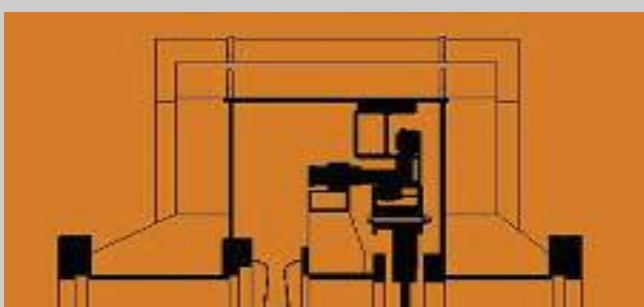
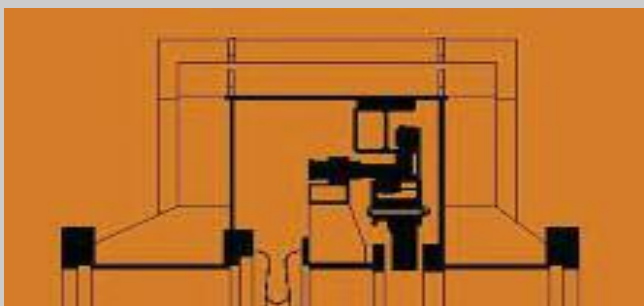
The goggle valve consists of two frame elements rigidly connected by bridge pieces. An axially movable sealing frame mounted on guides effects the gas-tight closure in the pressed-down position and in the retracted state permits the traversing of the annular/blind goggle plates. A compensator between the sealing frame and the housing forms a gas-tight connection. In the engaged position, the blind plate effects a gas-tight closure of the pipeline cross-section and the annular plate opens this fully. All sealing surfaces on the frame parts and on the blind/annular goggle plates are precision machined. Various options exist for the sealing arrangement according to operating requirements. Material for the special seals is also specified to correspond with the operating conditions (temperature, pressure, medium). The compensator can be executed in steel, stainless steel, special rubber or Teflon coated fabric. For better access and rapid removal of the housing pockets, a guide beam located above these is obtainable as a special accessory. Hence no additional lifting equipment is necessary to remove the pockets. The pockets are then fastened with clasp bolts.

**Illustration below:** Section through one side of the goggle valve.

**Above:** Annular plate traversed in, clear duct.

**Below:** Blind plate traversed in, duct shut off. In both cases the sealing frame is still retracted from the sealing surface.

**Illustration below, right:** The blind /annular goggle plates being traversed.



## Function

### Actuation takes place in three phases.

Retraction of the axially moving sealing frame from the sealing surface to allow the blind plate to move freely.

Traversing of the annular /blind goggle plates.

Pressing down of the sealing frame in the axial direction. The goggle plates can be traversed hydraulically, pneumatically, electro-mechanically or mechanically by hand. The sealing frame can be shifted mechanically by hand or also by electro-mechanical or hydraulic means.

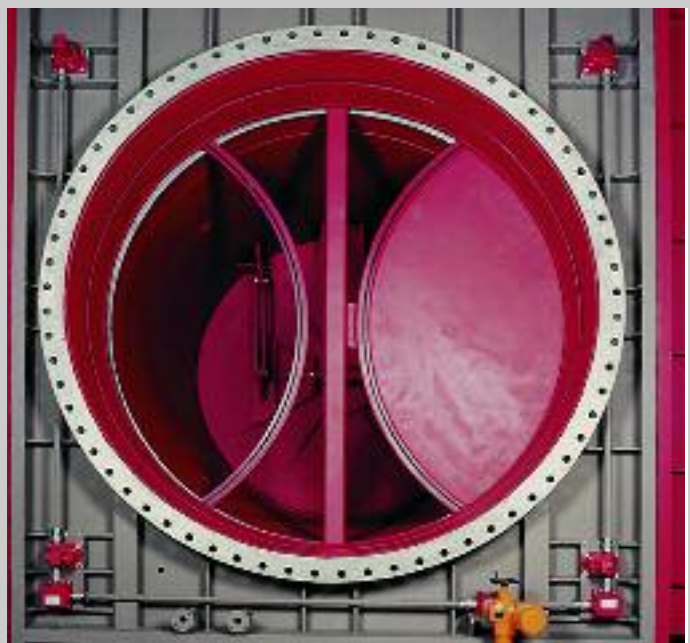
### Mechanical actuation

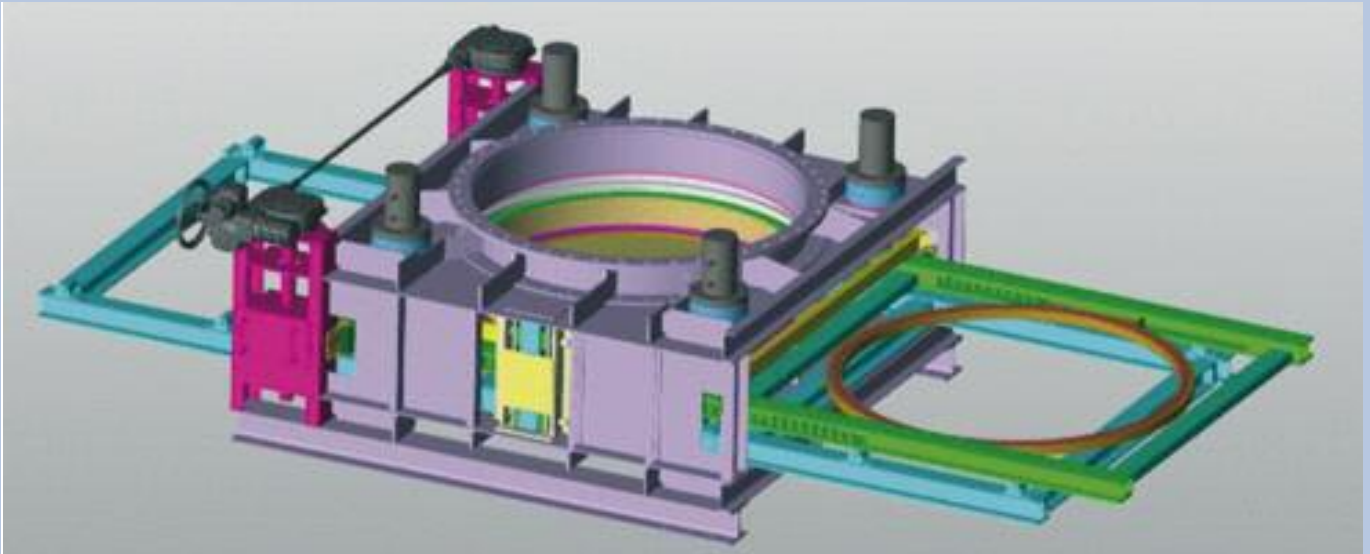
The pressing and retraction of the moving frame is done via cardan shafts by synchronously driven jack screw elements. In the end phase, spring packs become active in pressing down the frame with the effect that the pressure is maintained evenly over the whole circumference. The jack screw elements can be driven by hand via an appropriate reduction gear unit or by means of an electric actuator

### Hydraulic actuation

The retraction of the moving frame is effected by means of hydraulic cylinders. The contact pressure is generated by spring packs commensurate with safety regulations whereby this pressure always remains constant, independent of the hydraulic fluid pressure and also in the event of a power failure.

By virtue of the special design of this detail, it is also possible to remove the hydraulic cylinders during operation and renew these without the sealing pressure declining. Thus even all the cylinders can be simultaneously removed for longer periods, for example to renew the gaiter or seals after long service.





**Illustration above:** Goggle valve for installation in a vertical pipeline.  
The same execution is also deployed for vertical installation in a horizontal pipeline.

**Illustration left:** Goggle valve NS 1200, hydraulically actuated, during acceptance test in the factory.



**Illustration below:** Goggle valve NS 2200, mechanically actuated during assembly in the factory

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