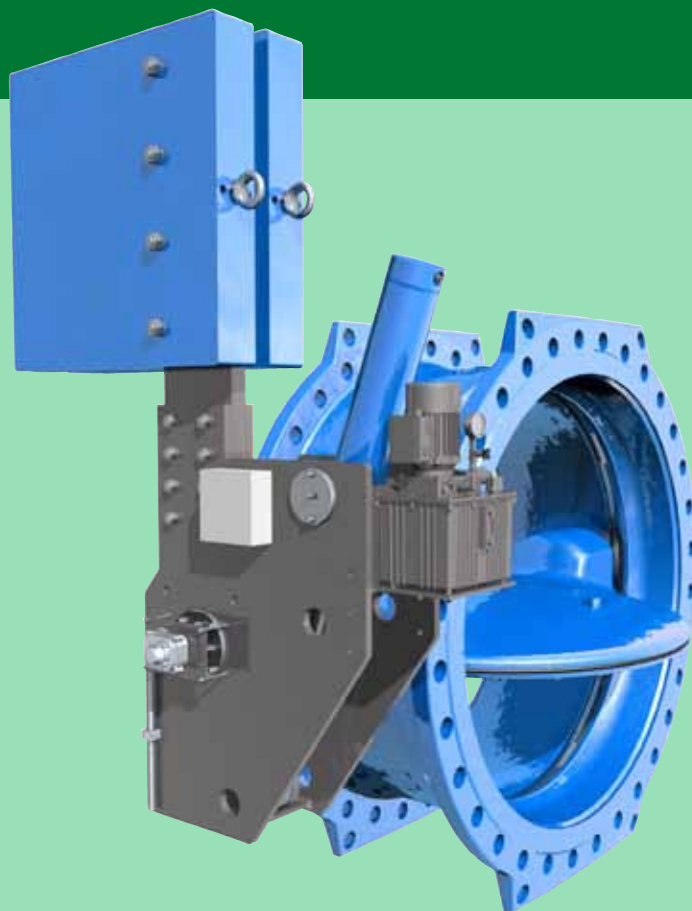


## **VAG HYsec** **hydraulic brake and lift unit**





## VAG HYsec hydraulic brake and lift unit

Fast, safe, reliable – we protect your system!

VAG HYsec with VAG EKN® Butterfly Valve as a quick-closing safety valve at the turbine inlet

Your turbine with generator

VAG HYsec with VAG RIKO® Plunger Valve as a quick-opening valve in the turbine bypass

We protect your turbine in Hydropower stations.

### Fields of application

For the start-up and shut-down of turbines, robust and reliable valves are needed, as parts of the plant could be damaged or even destroyed due to uncontrolled backflow and/or uncontrolled closing. Controlled shut-down is therefore essential. For this purpose, double-offset butterfly valves with hydraulic brake and lift units are normally used.

The VAG HYsec hydraulic brake and lift unit meets all the requirements of safe and reliable operation. Combined with a VAG EKN® Butterfly Valve or a VAG RIKO® Plunger Valve, it serves as a quick-closing safety valve at turbine inlets and in pumping stations, as a pipe-burst safety device with hydro-mechanical activation or as a quick-opening valve in the turbine bypass.

- **Quick-closing safety valve**

Used as shut-off valves, hydraulic brake and lift units made by VAG protect e.g. the pump in case of a sudden power failure from excessive pump reversal which caused by uncontrolled backflow of water and/or from hydraulic pressure surges where the increase in pressure may exceed the rated pressure and thus could destroy parts of the plant.

- **Pipe-burst safety device**

Designed as a pipe-burst safety device, VAG HYsec in combination with a VAG EKN® Butterfly Valve prevents reservoirs from draining off and/or the washout of roads and railway tracks in the event of a pipe burst.

- **Quick-opening valve in the turbine bypass**

In bypass lines the water usually bypasses the turbines and

is discharged to atmosphere. Due to this, the energy which was converted into electricity by the turbine and generator before is reduced or destroyed. This means that in case of a turbine failure, the bypass must be opened quickly to prevent a pressure increase exceeding the rated pressure in the pipeline system.

VAG HYsec hydraulic brake and lift units are suitable for all applications ranging from the very small waterworks up to dams or nuclear power plants. In general, the valve is opened and closed according to the principles described below:

- **Closing the valve**

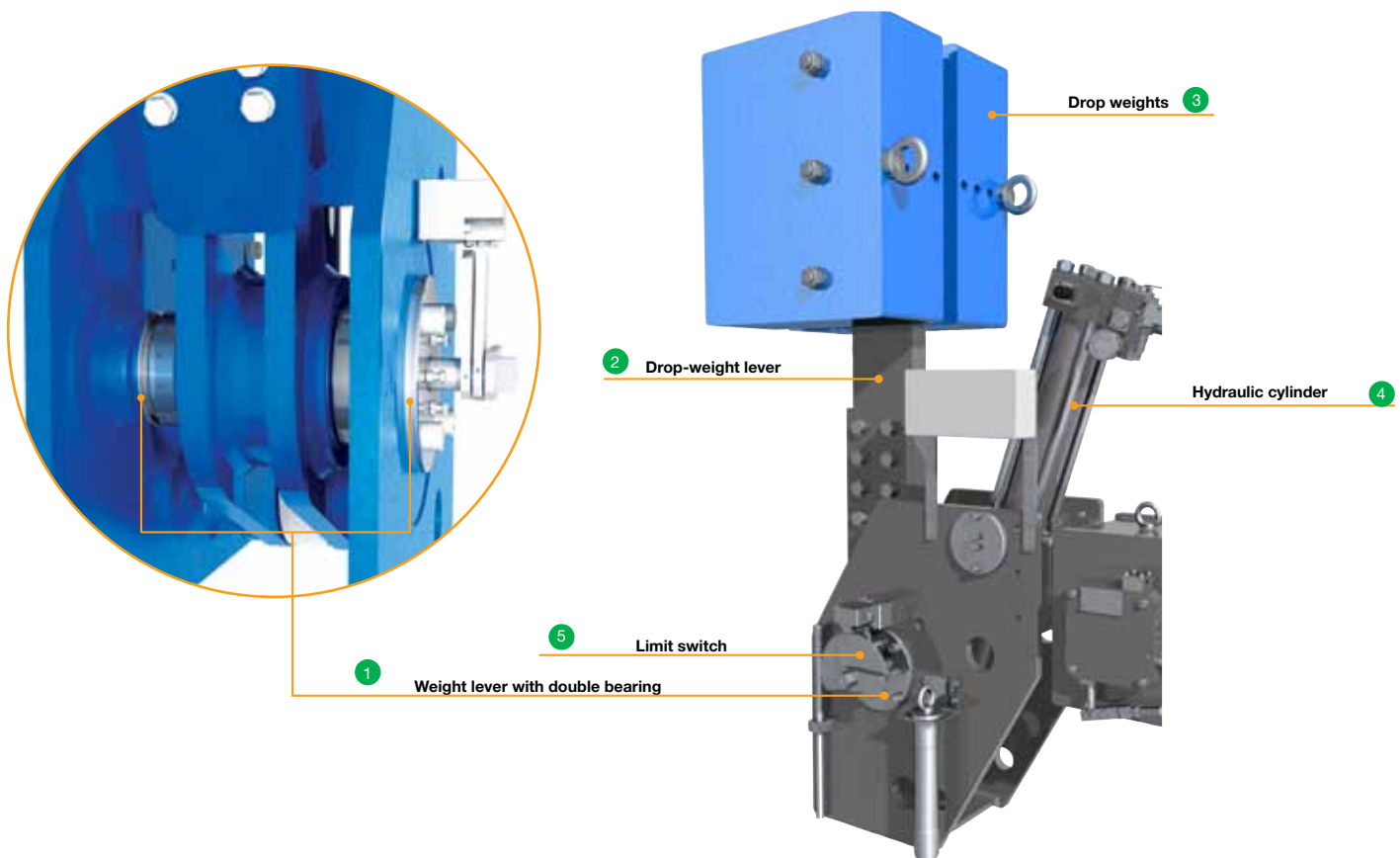
The closing operation is either initiated via an electro-magnetic valve in the brake and lift unit or hydro-mechanically, so that the valve is closed via the drop weight. The valve must neither be closed too fast nor too slowly and the closing time must be adapted to the plant conditions.

- **Opening the valve**

The valve is opened via the hydraulic cylinder. The hydraulic cylinder has a positive connection with the valve shaft and the drop-weight lever so that when the cylinder is extended, the closing of the valve is controlled hydraulically. Oil supply is ensured either by the hydraulic system of the brake and lift unit or via the turbine.

## VAG HYsec hydraulic brake and lift unit

### Innovative details, compact design



## Technical details

### VAG HYsec hydraulic brake and lift unit

The VAG HYsec is available in compact design with a factory-mounted VAG EKN® Butterfly Valve or a factory-mounted VAG RIKO® Plunger Valve in the following varieties:

- **VAG HYsec F**

With external oil supply from an external hydraulic unit.

- **VAG HYsec E**

With internal oil supply from the integrated hydraulic unit as a completely assembled operational unit.

As an option, it is available with a throttling valve for adjustment of the closing time.

VAG HYsec is available for all fields of application in the following ranges of nominal pressures and diameters:

- **VAG EKN® Butterfly Valves**

- Nominal pressure from PN 6 to PN 40
- Nominal diameters from DN 100 to DN 1400

- **VAG RIKO® Plunger Valves**

- Nominal pressure from PN 10 to PN 40
- Nominal diameters from DN 150 to DN 1200

### VAG HYsec PRO hydraulic brake and lift unit

For larger nominal valve diameters, our hydraulic brake and lift unit is available in the HYsec PRO type:

- **VAG EKN® Butterfly Valves** up to DN 4000

- **VAG RIKO® Plunger Valves** up to DN 2000

Customised types with equipment in accordance with customer specifications are no problem with VAG HYsec PRO. Our Professional series offers all possibilities of customisation.

## Product features

- 1 No transmission of drop-weight loads to the valve bearing due to the double bearing of the lever and weight - with angular joint on one side and bearing ring made of PTFE gliding sheet on the other.
- 2 Easy transport and assembly due to removable drop-weight lever.
- 3 The modular design of the drop weights allows individual adaptation to the operation conditions.
- 4 VAG HYsec F with hydraulic cylinder with external oil supply for control pressures from 80 to 200 bar.
- 5 Limit switch to indicate the open and closed positions as well as additional safety switch for VAG HYsec E (for keeping the valve open automatically).



## Your requirements

### VAG HYsec hydraulic brake and lift unit

The right solution for your system.  
You can contact our HYsec  
specialists at  
info@vag-group.com  
or  
Fax: +49 621 749 2153  
Phone: +49 621 749 0

To identify the perfect VAG HYsec for your application, the following information will be helpful.  
Just mail or fax a completed copy to our specialists. We will promptly find the right hydraulic  
brake and lift unit for you from the VAG HYsec range.

#### 1. Valve

☐ Butterfly valve

☐ Plunger valve

Nominal diameter DN: \_\_\_\_\_

Fluid: \_\_\_\_\_

Nominal pressure PN: \_\_\_\_\_

Operating pressure: \_\_\_\_\_ bar

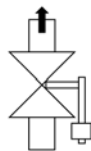
Flow rate: normal \_\_\_\_\_ m<sup>3</sup>/h max. \_\_\_\_\_ m<sup>3</sup>/h

Installation in the pipeline: ☐ horizontal ☐ vertical ☐ limited dimensions (see sketch)

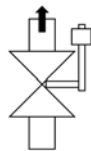
#### 2. Arrangement of actuator

in flow direction on the right

**standard**



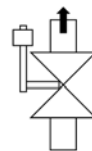
weight drops  
against  
flow direction

☐

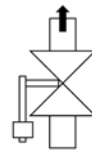
weight drops  
in  
flow direction

☐

in flow direction on the left



weight drops  
in  
flow direction

☐

weight drops  
against  
flow direction

☐

#### 3. Function

☐ Quick closing valve

☐ Quick opening valve

☐ Pipe burst safety device

☐ Pump protection valve

Opening time: \_\_\_\_\_ sec.

Closing time: \_\_\_\_\_ sec.

Flow rate: \_\_\_\_\_ m<sup>3</sup>/s  
(releasing pipe burst safety device)

#### 3. Hydraulic brake-and-lift cylinder

##### Standard

Lever and weight with hydraulic cylinder for external oil supply Oil pressure: \_\_\_\_\_ bar

Limit switch open/closed

☐ mechanical IP 65

☐ inductive IP 68

##### Standard + Accessories

Like standard type, but with hydraulic unit ☐ 400 V/50 Hz 0,37 kW Opening time : \_\_\_\_\_ sec.

☐ 400 V/60 Hz \_\_\_\_\_ kW Opening time : \_\_\_\_\_ sec.

Closing time 2-100 sec.

Voltage of solenoid valve: ☐ **24VDC** / 30W ☐ **110VDC** / \_\_\_\_\_ W

#### 4. Comments

##### Your contact details:

Company:

Name:

Street:

Telephone:

Post code:

Fax:

Country:

E-Mail



www.vag-group.com  
info@vag-group.com