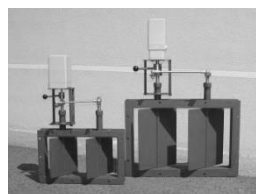


# Instructions for the instalalation, maintenance and operation of

## Butterfly valves



### 1. Application

Butterfly valves are used to alter the flow of liquids, gases and vapours in a pipeline within the permitted pressure and temperature limits. The butterfly valves must not be used as a flame arrester/non-return valve.

### 2. Safety instructions

#### Caution!

The operating conditions for butterfly valves must always be observed.

Exceeding the permitted specified operating conditions as well as improper handling will invalidate the warranty.

Failure to observe the operating conditions constitutes a danger to life and limb and can lead to damage to the pipework system.

You must ensure that all materials selected for the butterfly valve that come into contact with media are suitable for the medium conveyed. The manufacturer assumes no liability for damage occurring as a result of corrosion caused by aggressive media.

The operator, and not the manufacturer, is responsible when using the valve for ensuring that:

- The valve is used only as described above.
- All pipework systems are properly laid and checked regularly.
- The valve has been properly connected to the pipeline.
- The valve is operated and maintained only by personnel fully conversant with pressurised pipelines.
- Steps have been taken to prevent water hammers, cavitation, adiabatic compressions as well as the ingress of foreign bodies in this pipework system.



### 3. Installation:

The shafts of the butterfly valves must be in a horizontal position after the valve has been installed.

If this is not possible due to site conditions, the position of the shafts must be agreed with us so that we can adapt the butterfly valve to site conditions.

The same instructions that apply to the connection of pipe and similar pipeline elements apply to the installation of butterfly valves in a pipeline.

The butterfly valves are sealed on the shaft with a high pressure stuffing box packing which must on no account be insulated. It must be inspected (at least once a month) and maintained after commissioning. The union nut must not be overtightened as this will impair the function of the stuffing box and may cause the shaft to jam.

You must ensure that the lower half of the damper blade on opening moves against the direction of flow.

#### **Caution!**

When installing butterfly valves ensure that they are attached in such a way that no axial forces, vibrations or oscillations arise



#### **Caution!**

##### **Installation of push-in butterfly valves Type R4E, 5, 5a, 5b, 5k**

When installing push-in-butterfly valves ensure that the butterfly valve is attached exactly in the centre between the flanges as otherwise the damper blade could strike against the pipe because of the small overall length of the valve. The internal diameter of the connecting pipe must not be too small.



#### **Caution!**

##### **Installation of weld-in-butterfly valves Type 1, 1V, 2V, 3, 2a, 4**

When installing weld-in butterfly valves you must also ensure that the damper blade has been opened during welding as this can jam in the pipe due to thermal distortion.



#### **Caution!**

The welds of the valves must be checked during the trial run of the system. No liability can be assumed for defects that are not identified until after commissioning.



#### 4. Storage and transport

Butterfly valves must be carefully handled, transported and stored:

- Lifting tackle (ropes, straps....) must be attached only to the frame.
- While the valve is being stored prior to installation it must be protected in closed rooms from harmful effects such as dampness or soiling.

##### Caution!

Crushing hazard from butterfly valves whose damper blade has not been secured.

After lengthy storage retest the butterfly valve before installation to ensure it is working correctly.

With pneumatically single-acting actuators, streamless open:

The damper blade must be opened before compressed air is applied. **Keep a safe distance!**



##### The following applies additionally to the Ex-zone:

The housing must be earthed.

When installing the valve ensure that the damper blade does not strike or rub against either the housing or the pipeline.

The formation of dust deposits must be prevented.

The circumferential speed of the damper blade must be less than 1m/sec.

Constructional explosion protection measures are not used.

Constantly opening and closing the butterfly valve in contact with hot surfaces is not permitted within the scope of intended use in Ex-zone 1.

During installation and before commissioning a local equipotential bonding must be effected between the frame of the butterfly valve and the rest of the metal pipelines. All connections must be suitable for Ex-Zone 1 and secured against self-loosening.

