



Breakaway couplings ABV series

The standard breakaway coupling

The ABV series breakaway couplings separate the line at a defined tensile load. This should be selected with a sufficient safety margin below the load limit of the line, such as the maximum tensile load of a hose line.



Separation by force limitation

Three so-called breaking pins, which connect two nearly identical ABV coupling halves via a pair of flanges are used as the triggering elements. The flanged connection has no overlaps, so tensile forces acting on the line are directly transmitted to the breaking pins independent of the load angle. If the minimum tensile strength is exceeded, the pins break. This simultaneously loosens the flanged connection, releasing both coupling halves so that the load line is separated. The ABV function is available without limitation of the load angle. However, a pure axial tensile force is to be assumed as a design case on principle. In this case the tensile force is

distributed evenly to all three pins so that the threshold for triggering is the highest here.

In contrast, with lateral tensile forces the load is unevenly distributed to the breaking pins. The greater the angle to the coupling axis, this is all the more true. The load then increasingly focuses on one or max. 2 pins, so that the planned separation takes place at a lower threshold value.



ABV series before emergency separation.



ABV series after emergency separation.

Safe separation and closure

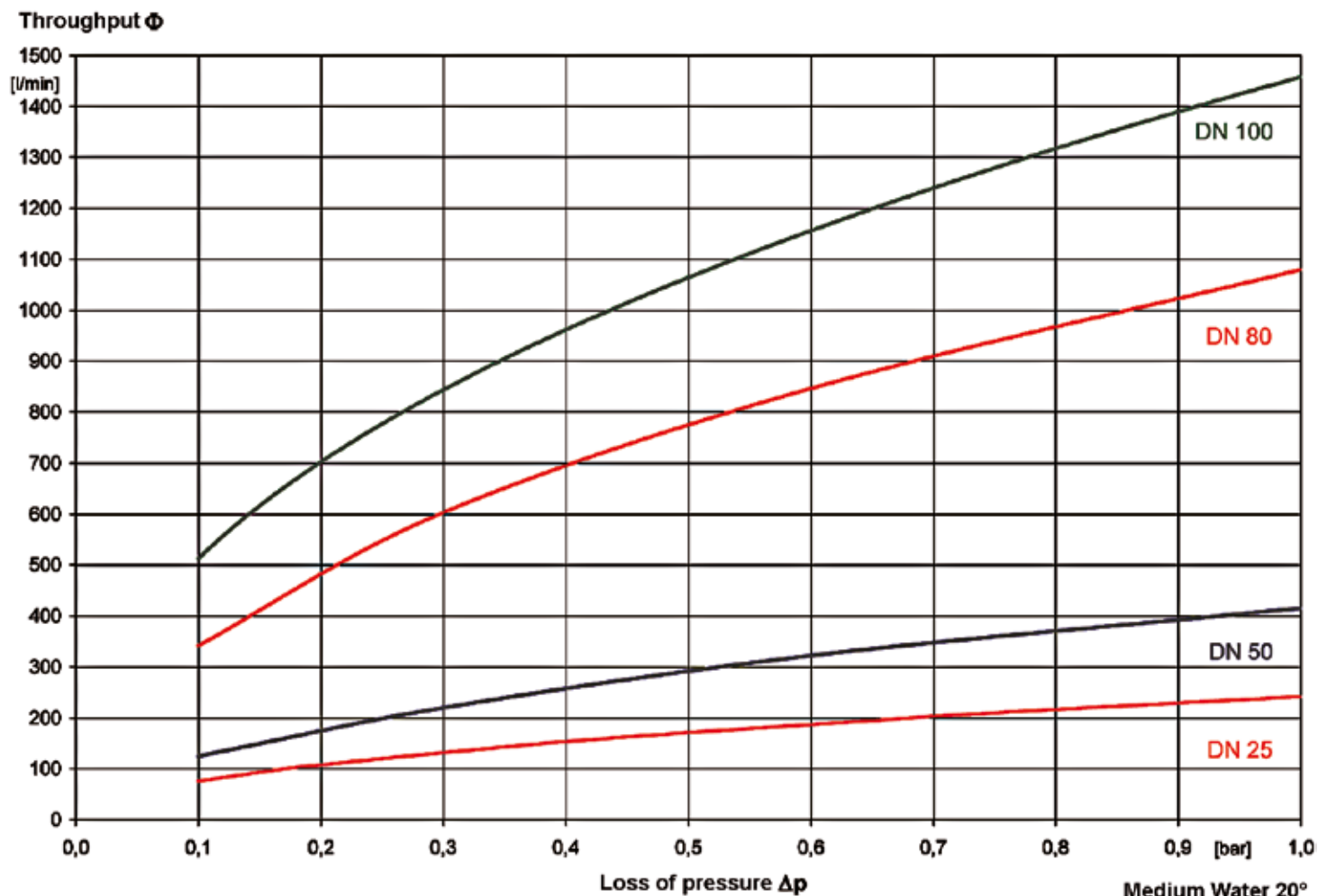
Closure by valve technology

The coupling halves are each equipped with a non-return valve to safely close the sectioning points of the line, i.e. the separated coupling halves when triggered. The two spring-loaded non-return valves brace each other in the operating state and keep the line cross-section open. This way the streamlined design ensures the maximum flow cross-section. In the case of separation the mutual support effect of the valves no longer exists so that they abruptly close each cross section being released.

Your benefits at a glance

- Universally deployable breakaway coupling
- Compact construction
- Favourable price/performance ratio
- Small residues

Pressure losses



Additional technical information

Technical data

- Safe triggering at angles up to 180°
-
- High-quality sealing materials
 - O-ring: NBR
EPDM
FFKM
 - FKM
 - threaded seal: PUR
PTFE
-
- Materials: Stainless steel (1.4408 cast, 1.4571)
Aluminium (3.2315, 3.3527, 3.3547)
Hastelloy (2.4602, 2.4610)
E-CTFE coating for aggressive media
Others on request
-
- Connections: 1" to 4"
Female thread BSP or NPT
Flange to EN 1092 or ASME
-
- Nominal widths: DN 25 to DN 100
-
- Temperature range: - 40 °C to 150 °C,
with aluminium up to 60 °C
-
- Pressure area: 0,8 to 25 bar
Aluminium: 0,8 to 10 bar

Other dimensions and materials on request.

Approvals/certificates

- Approved acc. to WHG § 19, by DIBT
(German Institute for Building Technology)
-
- ATEX Zone 1 approved
-
- TA Luft (German Clean Air Act) approved
-
- After testing by BAM (Federal Institute for Materials
Research and Testing)
-
- EC type examination

Dimensions and weights

| Type ABV (DN) | 25 | 50 | 65 | 80 | 100 |
|---------------------|-------|-------|----------|-------|------|
| Connection | G 1" | G 2" | G 2 1/2" | G 3" | G 4" |
| D (mm) | 77 | 108 | 133 | 148 | 169 |
| L1 (mm) | 112,5 | 123,5 | 147,5 | 174,5 | 209 |
| L2 (mm) | 90 | 86,5 | 106,5 | 131,5 | 166 |
| SW | 41 | 70 | 85 | 100 | 125 |
| Weight* (kg) | 1,1 | 2,4 | 5,4 | 5,7 | 10,1 |

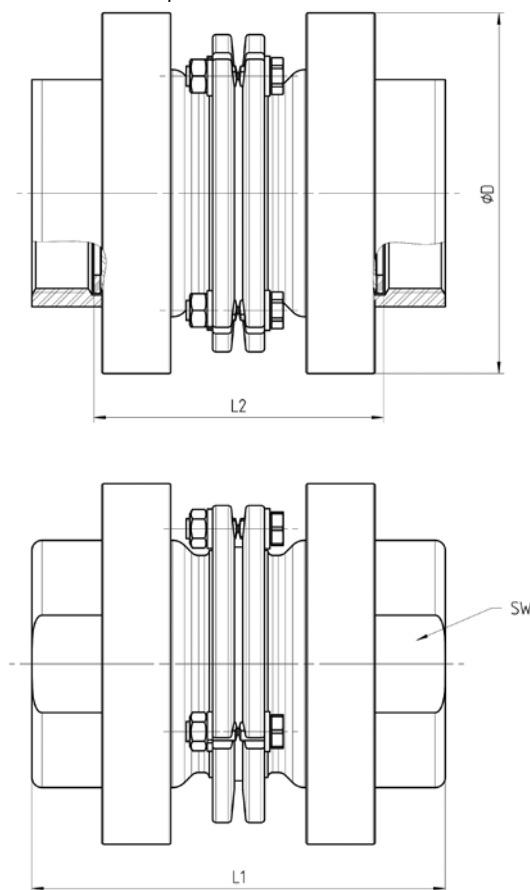
*The weight applies to stainless steel only.
Other Dimensions and weights on request.

Triggering forces

| Type ABV (DN) | 25 | 50 | 65 | 80 | 100 |
|--|-----|------|------|------|------|
| Triggering force unpressurised [kN] | 3,2 | 10 | 15 | 20 | 30 |
| Triggering force 16 bar [kN] | 2,2 | 7,8 | 11 | 14 | 20 |
| Triggering force 25 bar [kN] | 5,4 | 11,5 | 14 | 18,4 | 28,5 |
| Hose - min. required tensile strength | 4,2 | 13 | 19,5 | 26 | 39 |

The triggering forces listed above are designed for use on hoses in accordance with EN 12115.

Breaking pins with different triggering forces e.g. for hinged pipe bracket applications available on request.



In use



The references

BASF SE, Ludwigshafen

Reference 

BASF SE, Ludwigshafen

Administration buildings in Ludwigshafen

A safety system ensuring 24/7 safety for the 17th largest chemical plant in the world, BASF SE, Ludwigshafen, Germany, at the largest industrial complex in Europe.




Bominflot Tanklager GmbH, Kiel

Reference 

Bominflot Tanklager GmbH für Mineralöle mbH & Co. KG, storage tanks in Kiel

The Best Way for Ships to Refuel from the Baltic Sea is the North Sea. Bominflot offers 100% safety with RS technology.




Evonik Goldschmidt GmbH (chemical manufacturing), Essen

Reference 

System Chemie

Reference installation: Goldschmidt GmbH, Essen, Germany

Goldschmidt GmbH, the Essen location of Evonik AG, is a global chemical company which relies on the security of its products for basic raw and storage technology.




Evonik Goldschmidt GmbH (loading station), Essen

Reference 

System Chemie

Reference project: Loading station, Goldschmidt GmbH, Essen

Goldschmidt GmbH, Essen, is a global chemical company which relies on the security of its products for basic raw and storage technology.