Safety breakaway couplings

RS®
A Strong Brand in Your System

Basic information

Breakaway couplings are safety components used to prevent one of the most serious safety hazards in the process of loading fluid media: the unwanted and disproportionate tensile load on the load line, caused, for example, when tanker trucks and rail tank wagons move off too soon or by ships drifting. Such tensile loads can mechanically damage or even destroy both the connection points and the load line itself, which could even lead to uncontrolled leaks of the media being loaded, posing a corresponding hazard to humans and the environment.

To avoid these risks, breakaway couplings are typically equipped with two functions:

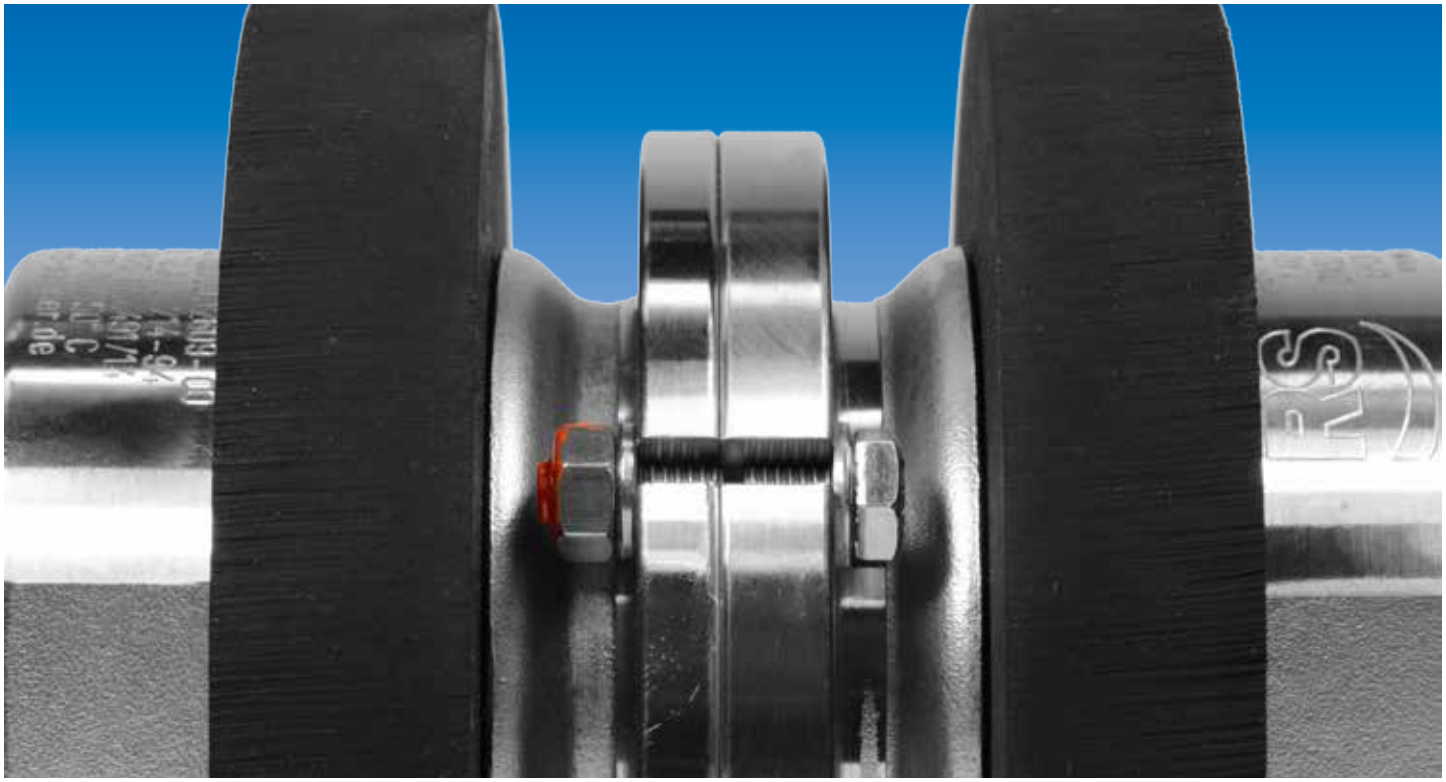
1. A defined separating mechanism, which separates the line between the mobile unit and the loading system below the permissible load.
2. A spontaneous automatic shutter for both sectioning points to prevent the fluid from leaking.

Application areas

- Loading processes by means of hose lines
- Loading processes by means of hinged pipe bracket
- Coupling stations
- Filling processes
- Mobile tanking systems

Your benefits at a glance

- Protects humans and the environment from leaking hazardous substances
- Matching coupling technologies for various requirements
- Avoids media loss
- Protects load lines
- Customer-specific special versions from DN 25 to DN 300



Contents

Breakaway couplings

The TOP 5 application areas

	Chemicals	Tanker trucks and Silo	Gas
Dry disconnect couplings (dry break couplings)	TR series 1" - 6"; TM series TMV 1" - 4", TMM 1" - 4"; TK series 1" - 4"	TR series 1" - 6"; TM series 1" - 4"; TKU series 1" - 4"; TR container version	TR TRV 1" - 6"
Safety breakaway couplings	ABV 1"- 4"; ABV-S 1"- 4", 6"- 12"; ABVL 2"- 6"; ASVL 2" - 8"; ABVN 2"	ABV 1"- 4"; ABV-S 1"- 4", 6"- 12"; ABVL 2"- 6"; ASVL 2" - 8"; ABVN 2"	ABV 1"- 4"
Hose loading arms	SGA Length 2,5 m - 6 m; DN 25 - DN 100	SGA Length 2,5 m - 6 m; DN 25 - DN 100	Length 2,5
Swivel joints/ Ball swivel joints	DG 1/2"- 4"; DGLL 1"- 3"; Radial stress-resistant swivel joints 3/4"-4"; KDG 1"- 4"	DG 1/2" - 4"; Hose swivel joints 1/2" - 2"; DGLL 1"- 3"; Radial stress-resistant swivel joints 3/4"-4"; KDG 1" - 4"	DG 1/2" - 4"
Quick couplings	Quick couplings 1" - 2"; Storz coupling 1" - 4"; Tank truck couplings 2" - 4"	Quick couplings 1" - 2"; Storz coupling 1" - 4"; Tank truck couplings 2" - 4"	
Adapters	Reducers 1/2" - 4"; Flange threaded nipples 1/2" - 4"; Reducing nipples 1/2" - 4"	Reducers 1/2" - 4"; Flange threaded nipples 1/2" - 4"; Reducing nipples 1/2" - 4"	Double 1/2" - 5
Hose connection fittings	Press sleeves DN 25 - DN 100; Couplings with threaded ferrules DN 13 - DN 100; Clamps DN 13 - DN 100; MSL DN 13 - DN 100; ECTFE-coating 1/2" - 4"; FSL DN 13 - DN 200; PP 1/2" - 3"; VSL DN 13 - DN 100	Press sleeves DN 25 - DN 100; Couplings with threaded ferrules DN 13 - DN 100; Clamps DN 13 - DN 100; MSL DN 13 - DN 100; ECTFE-coating 1/2" - 4"; FSL DN 13 - DN 200; PP 1/2" - 3"; VSL DN 13 - DN 100	DN 13 - DN 1 DN 13 -
Standard fittings	TAL-Connect DN 10 - DN 100		
Steam cleaners	DSG 3/4"	DSG 3/4"	

Breakaway couplings

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Ship loading and unloading

series
TRM
1" - 6"

TC series
1" - 6"

TR series
1" - 6"

TM series
1" - 4"

TKU series
1" - 4"

ABV-S
1"- 4"

ABVL
6"- 12"

2"- 6"

ASVL
2" - 8"

ABVC
1 1/2"

ABVN
2"

ABV
1"- 4"

ABVL
2"- 6"

ABVM
2"- 6"

ABV-S
1" - 4"

ASVL
6" - 12"

2" - 8"

ABML
2" - 6"

SGA
m - 6 m

DN 25 - DN 100

DGLL

Radial stress-resistant swivel joints
1"- 3"

3/4"-4"

DG
1/2"- 4"

DGLL
1"- 3"

Radial stress-resistant swivel joints
3/4"-4"

KDG
1"- 4"

Quick couplings
1/2" - 4"

Storz coupling
1/2" - 4"

Tank truck couplings
2" - 4"

nipples
1/2"

Reducer connector for sleeve nut
1/2" - 5 1/2"

Reducers
1/2" - 4"

Flange threaded nippels
1/2" - 4"

Reducing nipples
1/2" - 4"

Clamps
00
DN 13 - DN 200

DN 13 - DN 100

Couplings with threaded ferrules
DN 25 - DN 100

Clamps
DN 13 - DN 200

DN 13 - DN 100

FSL
DN 13 - DN 200

VSL
DN 13 - DN 100

MSL
DN 13 - 100

DN 100

DN 13 - DN 100

Petrochemicals

TR series
TRV
1" - 6"

TRM
1" - 6"

TM series
TMV
1" - 4"

TMM
1" - 4"

TKU series
1" - 4"

ABV
1"- 4"

ABV-S
1"- 4"

6"- 12"

ABVM
2"- 6"

ABVL
2"- 6"

ASVL
2" - 8"

ABVN
2"

ABML
2"- 6"

SGA
Length 2,5 m - 6 m

DN 25 - DN 100

DG
1/2" - 4"

Hose swivel joints
1/2" - 2"

DGLL
1"- 3"

Radial stress-resistant swivel joints
3/4"-4"

KDG
1" - 4"

Quick couplings
1/2" - 4"

Storz coupling
1/2" - 4"

Tank truck couplings
2" - 4"

Reducers
1/2" - 4"

Flange threaded nippels
1/2" - 4"

Reducing nipples
1/2" - 4"

Couplings with threaded ferrules
DN 25 - DN 100

Clamps
DN 13 - DN 200

DN 13 - DN 100

FSL
DN 13 - DN 200

VSL
DN 13 - DN 100

MSL
DN 13 - 100

DSG
3/4"

Breakaway couplings at a glance

ABV series
Page 08

with force-limited release by means of breaking pins and disc valve closure
- The universal couplings for a broad range of applications.

- Nominal widths
  DN 25 to DN 100
  Others on request
- Materials
  Stainless steel (1.4408 cast, 1.4571)
  Brass (2.0401)
  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
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
  Aluminium
  0,8 to 10 bar
- Temperature range
  -40 °C bis 150 °C,
  Aluminium
  -40 °C to 60 °C

- Compact construction
- Small residual amount

ABVL series
Page 12

with force-limited release by means of breaking pins and disc valve closure
- The universal couplings for applications that require a radial stress-resistant breakaway coupling (e.g. marine).

- Nominal widths
  DN 50 to DN 150
  Others on request
- Materials
  Stainless steel 1.4571
  Aluminium 3.3547
  E-CTFE coating for aggressive media
  Others on request
- Connections
  Female thread/male thread BSP or NPT, flange in accordance with EN 1092 or ASME
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
- Temperature range
  -40 °C to 150 °C,
  Aluminium -40 °C to 60 °C

- Compact, modular construction
- Small residual amount
- Very high flow rate
- Very low pressure loss

ABVM series
Page 16

mit kraftbegrenzter Auslösung über Bruchbolzen und Tellerventilverschluss
- die Universalkupplungen für Anwendungen, bei denen es auf eine querkraftstabile Nottrennkupplung ankommt (z. B. Marine).

- Nominal widths
  DN 50 to DN 100
  Others on request
- Materials
  Stainless steel 1.4571
  Others on request
- Connections
  Flange in accordance with EN 1092 or ASME
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
- Temperature range
  -40 °C to 150 °C

- Compact construction
- Small residual amount
- Suitable for marine applications between two hoses
- Very high radial force stability
- Only axial separation possible

ABML series
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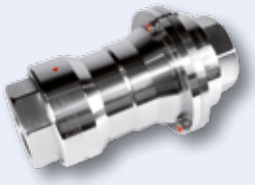

with force-limited release by means of breaking pins and cone valve closure
- The high-performance couplings with high flow rates and low pressure loss for applications that require a radial stress-resistant breakaway coupling (e.g. marine).

- Nominal widths
  DN 50 to DN 150
  Others on request
- Materials
  Stainless steel 1.4571
  Others on request
- Connections
  Thread G ISO228 or NPT, flange in accordance with EN 1092 or ASME
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
- Temperature range
  -40 °C to 150 °C

- Compact, modular construction
- Small residual amount
- Very low pressureloss
- Very high flow rate
- Suitable for marine applications between two hoses
- Very high radial force stability
- Only axial separation possible

ABVC series
Page 22

with force-limited release by means of breaking pins and cone valve closure – for cryogenic media such as LNG and other low-temperature media.

- Nominal widths
  DN 25 to DN 100
  others on request
- Materials
  Stainless steel 1.4571
  Others on request
- Connections
  Flange in accordance with EN 1092 or ASME
- Seals
  PTFE
- Pressure area
  DN 25 to DN 100:
  0,8 to 40 bar
  DN 40: 0,8 to 16 bar
- Temperature range
  -196 °C to 60 °C

- Compact, modular construction
- Small residual amount
- Very low pressure loss
- High flowrate
- Suitable for cryogenic applications

ABVN series
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with force-limited release by means of breaking pins and sleeve valve closure – the pressure-neutral technology for exact and pressure-independent triggering forces, particularly at higher pressures and/or lines with low tensile strength (e.g. film wrap hoses).

- Nominal widths
  DN 50
  Others on request
- Materials
  Stainless steel 1.4571
- Connections
  Female thread
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,2 to 40 bar
- Temperature range
  -40 °C to 150 °C

- Compact construction
- Small residual amount
- Freely selectable breakaway forces
- Release force independent of internal pressure
- Very high radial force stability
- Only axial separation possible

ABOV series
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with force-limited release by means of breaking pins WITHOUT valves - if product loss is neither a financial nor a safety consideration, but the hose must nevertheless be protected.

- Nominal widths
  DN 25 to DN 100
  Others on request
- Materials
  Stainless steel 1.4571, 1.4408 (cast)
  Hastelloy 2.4602, 2.4610
  Others on request
- Connections
  1" bis 4"
  Female thread BSP or NPT
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,2 to 25 bar
  Aluminium
  0,2 to 10 bar
- Temperature range
  -40 °C to 150 °C
  Aluminium
  -40 °C to 60 °C

- Compact construction
- No shut-off valves
- High flow rate

ABV-S series
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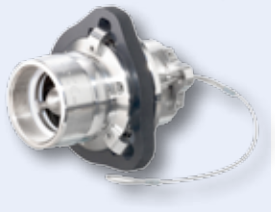

with distance-controlled triggering by patented control cable and disc valve closure – the basic technology for all lines of low tensile strength (e.g. film wrap hoses) – and for pressures and/or nominal widths at which breaking pin technology reaches its limits.

- Nominal widths
  DN 25 to DN 300
  Others on request
- Materials
  Stainless steel 1.4571, 1.4408
  Brass 2.0401
  Hastelloy 2.4602, 2.4610
  E-CTFE coating for aggressive media
  Others on request
- Connections
  1" to 4" female thread BSP or NPT, flange in accordance with EN 1092 or ASME
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
- Temperature range
  -40 °C to 150 °C

- Compact construction
- Low residue
- Cable release
- The required separating forces do not act on the hose
- Simple reassembly after release

ASVL series
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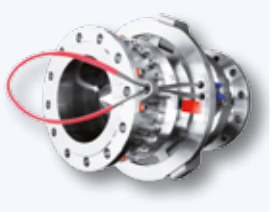
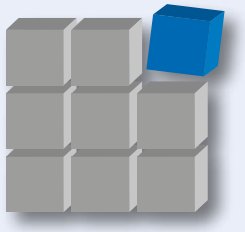


with distance-controlled triggering by patented control cable and cone valve closure – the high-performance coupling with high flow rates and low pressure loss for all lines of low tensile strength (e.g. film wrap hoses) – and for pressures and/or nominal widths at which breaking pin technology reaches its limits.

- Nominal widths
  DN 50 to DN 200
  Others on request
- Materials
  Stainless steel 1.4571
  E-CTFE coating for aggressive media
- Connections
  1" to 4" female thread/ BSP or NPT, flange in accordance with EN 1092 or ASME
- Seals
  FKM, NBR, FFKM, EPDM
  Others on request
- Pressure area
  0,8 to 25 bar
- Temperature range
  -40 °C to 150 °C

- Compact, modular construction
- Small residual amount
- Very low pressure loss
- Very high flow rate
- Cable release
- The required separating forces do not act on the hose
- Simple reassembly after release



Additional customer-specific designs on request.

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

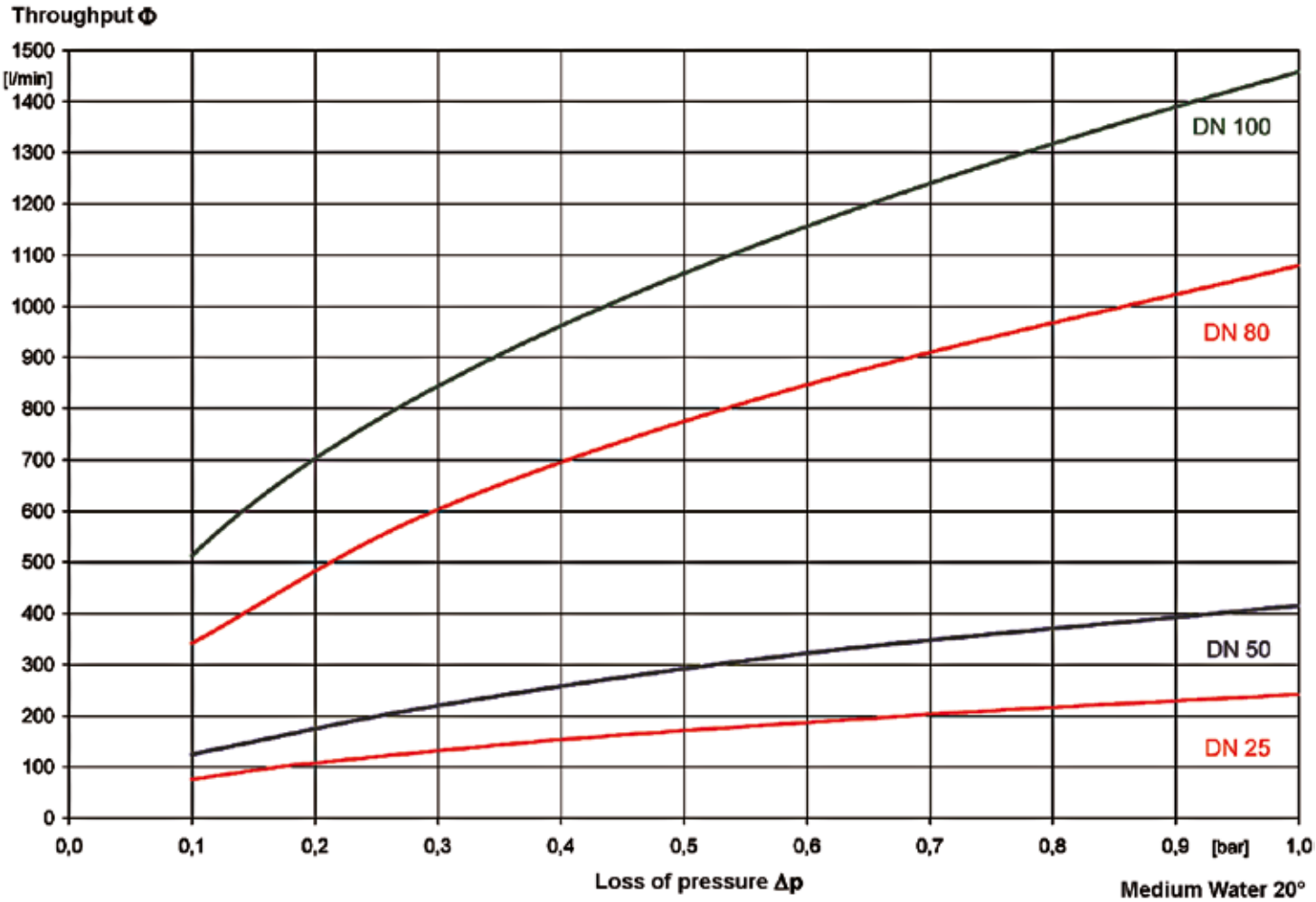
Closure by valve technology

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

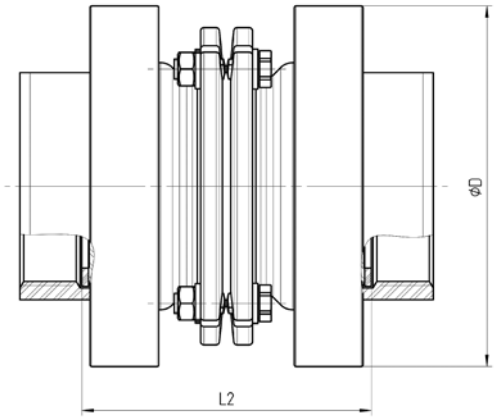
Type ABV (DN)	25	50	65	80	100
Connection	G 1"	G 2"	G 2 1/2"	G 3"	G 4"
D (mm)	77	108	133	148	169
L1 (mm)	112,5	123,5	147,5	174,5	209
L2 (mm)	90	86,5	106,5	131,5	166
SW	41	70	85	100	125
Weight* (kg)	1,1	2,4	5,4	5,7	10,1

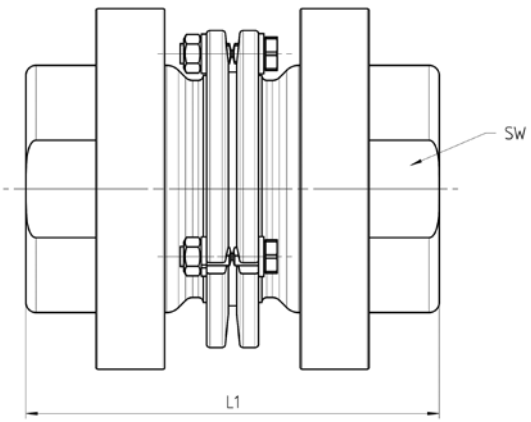
*The weight applies to stainless steel only.
Other Dimensions and weights on request.

Triggering forces

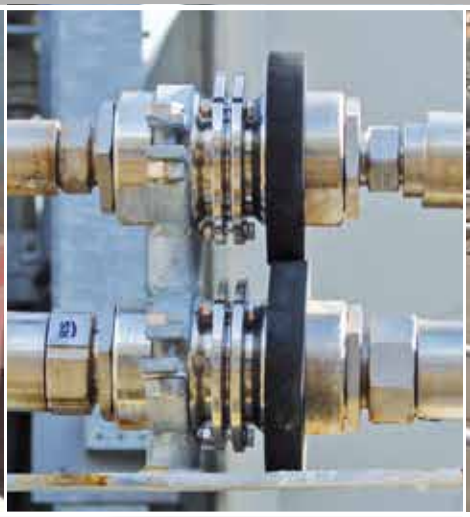
Type ABV (DN)	25	50	65	80	100
Triggering force unpressurised [kN]	3,2	10	15	20	30
Triggering force 16 bar [kN]	2,2	7,8	11	14	20
Triggering force 25 bar [kN]	5,4	11,5	14	18,4	28,5
Hose - min. required tensile strength	4,2	13	19,5	26	39

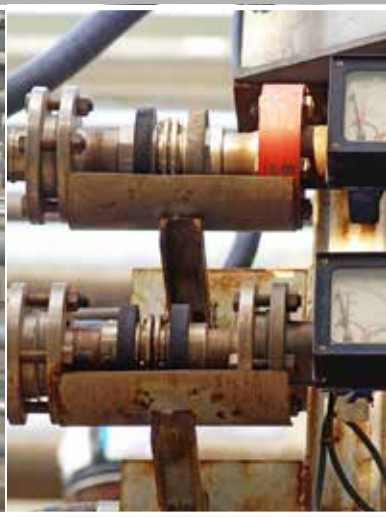
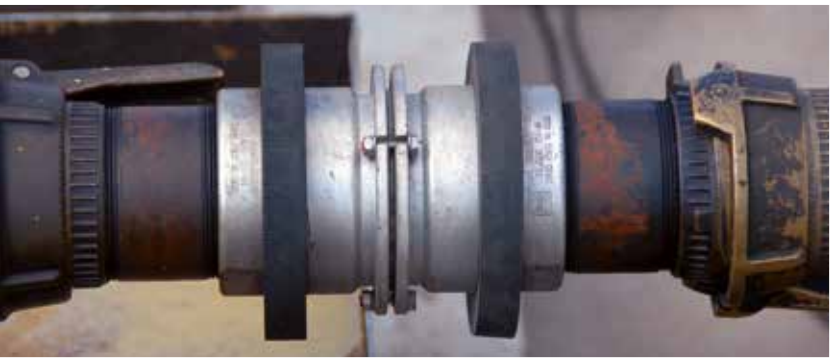
The triggering forces listed above are designed for use on hoses in accordance with EN 12115.
Breaking pins with different triggering forces e.g. for hinged pipe bracket applications available on request.





In use

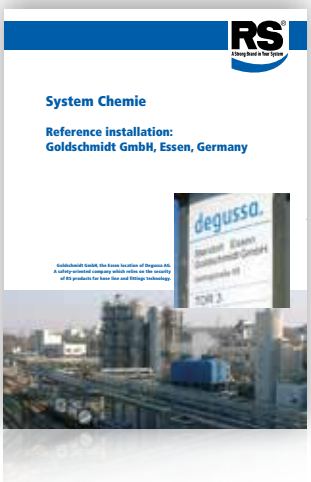




The references

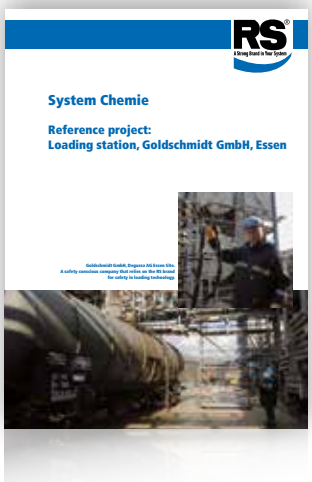
BASF SE, Ludwigshafen

Bominflot Tanklager GmbH, Kiel

Evonik Goldschmidt GmbH (chemical manufacturing), Essen



Evonik Goldschmidt GmbH (loading station), Essen



Breakaway couplings ABVL series

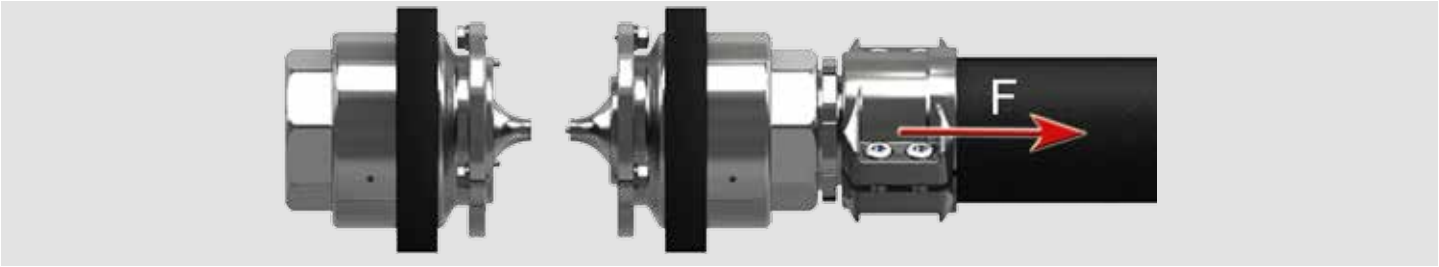
The breakaway coupling with a high flow rate

The ABVL series breakaway coupling is a consistent further development of the RS breakaway coupling programme. Along with the accustomed safe triggering as seen in the ABV series, this series minimises the pressure loss within the coupling. This saves energy and time during the loading process.
The design is based on models from nature such as dolphins and squids and was developed with the aid of CFD or computational fluid dynamics analysis.

Separation by force limitation

The ABVL series breakaway couplings separate the line at a defined tensile load. This must be selected with a sufficient safety margin below the load limit of the line, such as the maximum permissible tensile load of the hose line.
Three breaking pins, which connect two nearly identical ABVL 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 their maximum tensile strength is exceeded, the pins break. This simultaneously loosens the flanged connection.
Two non-return valves on both coupling halves ensure that the sectioning points of the line are safely when the coupling is released. In the operating state, the two spring-loaded non-return valves brace each other in such a way that keeps the line cross-section open and guarantees the maximum flow. In the case of separation, the two valves immediately close each cross section being released.

ABVL series before emergency separation.



ABVL series after emergency separation.

Separation instead of emergency

Applied bionics

The design of the ABVL Series breakaway couplings was optimised using computational fluid dynamics (CFD).

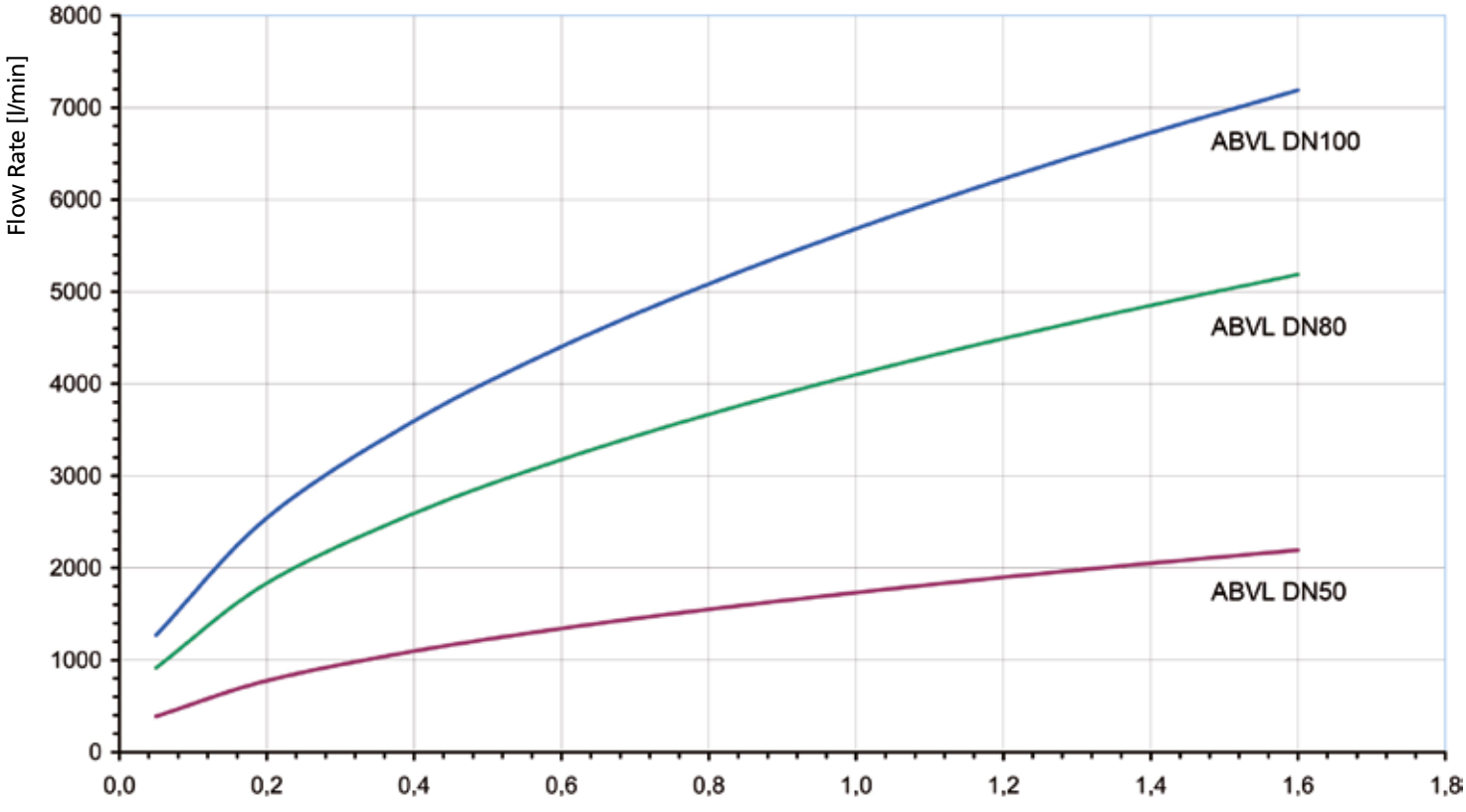
The result:

- Significant increase of flow-through with the same nominal width
- Significant reduction of the pressure loss
- Fewer parts for safe handling and simple maintenance
- Low amounts of emissions through fast closing valves
- Flow-through possible in both directions
- Only slight tendency of the coupling toward cavitation

Your benefits at a glance

- High savings potential in power consumption and time in comparison to standard breakaway couplings
- Especially in loading processes in which the safety of a breakaway coupling must not have any influence on the pressure loss or the flow-through capacity
- Applicable for all fluids (liquids and gases), also for those with high viscosity
- Suitable for all loading processes between stationary and mobile unit
- Various connection formats available thanks to modular structure
- Small residues

Pressure losses



Additional technical information

Technical data

- Safe triggering at angles up to 90°

- High-quality sealing materials
  O-ring: NBR, EPDM, FFKM, FKM
  threaded seal: PUR, PTFE

- Materials: Stainless steel (1.4571), Aluminium (3.3547), E-CTFE coating for aggressive media, Others on request

- Connections: Female thread BSP or NPT, Male thread BSP or NPT, Weld ends, flange in accordance with EN 1092 or ASME

- Nominal widths: DN 50, DN 80, DN 100 and DN 150, Others on request

- Temperature range: -40 °C to 150 °C, for aluminium -40 °C to 60 °C

- Pressure area: 0,8 to 25 bar, DN 150: 0,8 to 16 bar

Other dimensions and materials on request.

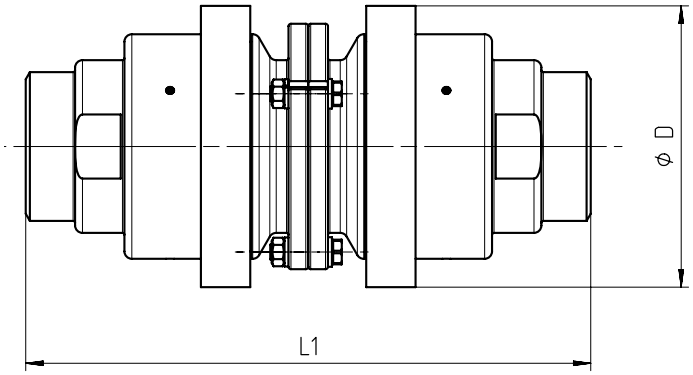
Approvals/certificates

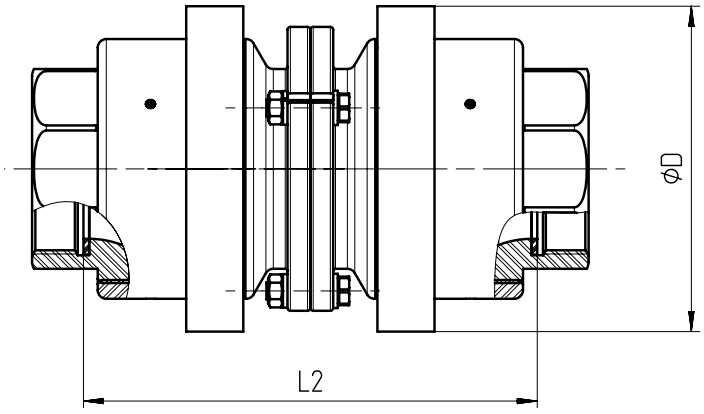
- Approved acc. to WHG § 19, by DIBT (German Institute for Building Technology)
- ATEX Zone 1 approved
- TA Luft (German Clean Air Act) approved
- After testing by BAM (Federal Institute for Materials Research and Testing)
- EC type examination

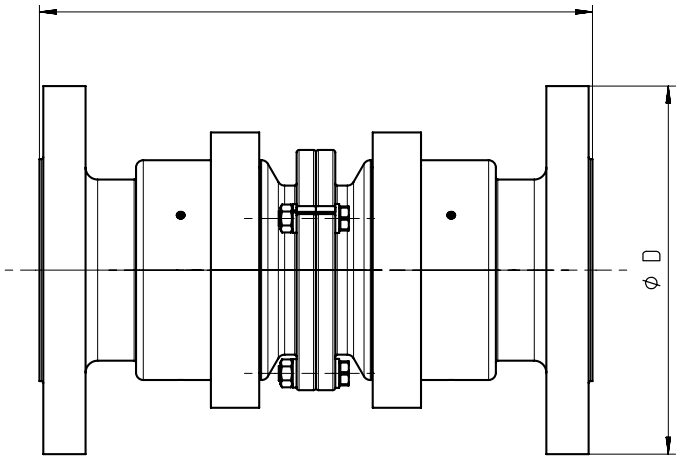
Triggering forces

Type ABVL (DN)	50	80	100	150
Triggering force unpressurised [kN]	12	22	30	60
Triggering force 16 bar [kN]	8,8	14,7	19,5	38,6
Hose - min. required tensile strength [kN]	18	33	45	90

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.







Additional technical information

Dimensions and weights

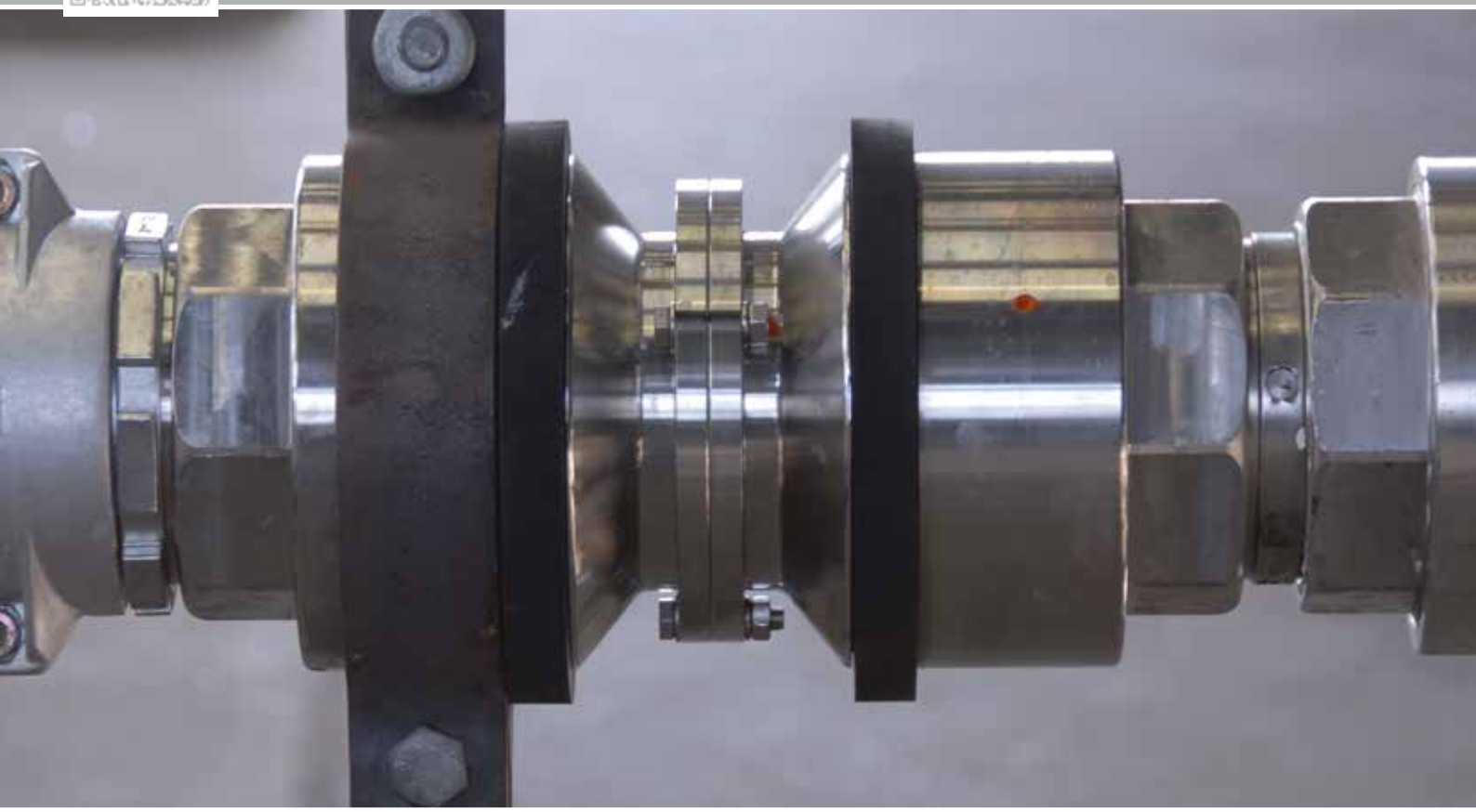
Type ABVL (DN)	50									
Connection	G 2" IG PN16	G 2" AG PN16	2"NPT IG PN16	2"NPT AG PN16	AE-60,3x3,91 PN16	ASA 150 PSI PN16	ASA 300 PSI PN16	EN 1092-B PN16	EN 1092-B PN25	ASA 300 PSI DN40
D (mm)	114	114	114	114	114	152,4	165,1	165	165	155,4
L1 (mm)	195	235	201	244	229	229	229	229	229	229
L2 (mm)	159	--	181	205,6	--	--	--	--	--	--
SW	70	70	70	70	65	--	--	--	--	--
Weight (kg)	5,2	5,5	5,3	5,6	5,1	9,4	10,4	9,7	10,3	12,7

Type ABVL (DN)	80									
Connection	G 3" IG PN16	G 3" AG PN16	3"NPT IG PN16	3"NPT AG PN16	AE-88,9x5,49 PN16	ASA 150 PSI PN16	ASA 300 PSI PN16	EN 1092-B PN25	EN 1092-B PN16	G3" IG Aluminium
D (mm)	153,6	153,6	153,6	153,6	153,6	190,5	209,6	200	200	153,6
L1 (mm)	270	318	288	345	290	316	316	324	316	270
L2 (mm)	228	--	227	284	--	--	--	--	--	228
SW	100	100	100	100	90	--	--	--	--	100
Weight (kg)	13,4	13,6	14,0	13,9	13,3	21,5	24,6	21,2	19,6	5,0

Type ABVL (DN)	100									
Connection	G 4" IG PN16	G 4" AG PN16	4"NPT IG PN16	4"NPT AG PN16	AE-114,3x6,02 PN16	ASA 150 PSI PN16	ASA 300 PSI PN16	EN 1092-B PN25	EN 1092-B PN16	G4" IG Aluminium
D (mm)	185,6	185,6	185,6	185,6	185,6	228,6	254	235	220	185,6
L1 (mm)	336	386	358	417	405	380	390	400	392	336
L2 (mm)	294	--	315	339	--	--	--	--	--	294
SW	125	125	125	125	125	--	--	--	--	125
Weight (kg)	23,7	23,9	24,2	24,5	24,0	34,7	41,9	34,0	30,8	11,5

Type ABVL (DN)	150		
Connection	ASA 150 PSI PN16	ASA 300 PSI PN16	EN 1092-B PN16
D (mm)	279,4	317,5	285
L1 (mm)	432	432	432
L2 (mm)	--	--	--
SW	--	--	--
Weight (kg)	56,2	74,7	56,2

*The weight applies to stainless steel only.



The references

**Sasol Germany GmbH,
Herne plant**

Breakaway couplings ABVM series

The standard breakaway coupling for marine applications

It has been specially developed for marine and offshore applications as well as for use between two hose lines.

The innovative design is characterised by its high resistance to lateral forces that can affect the coupling, causing it to release unintentionally. This is achieved by means of a cylindrical overlap, or tapered overlap, between the two coupling halves.

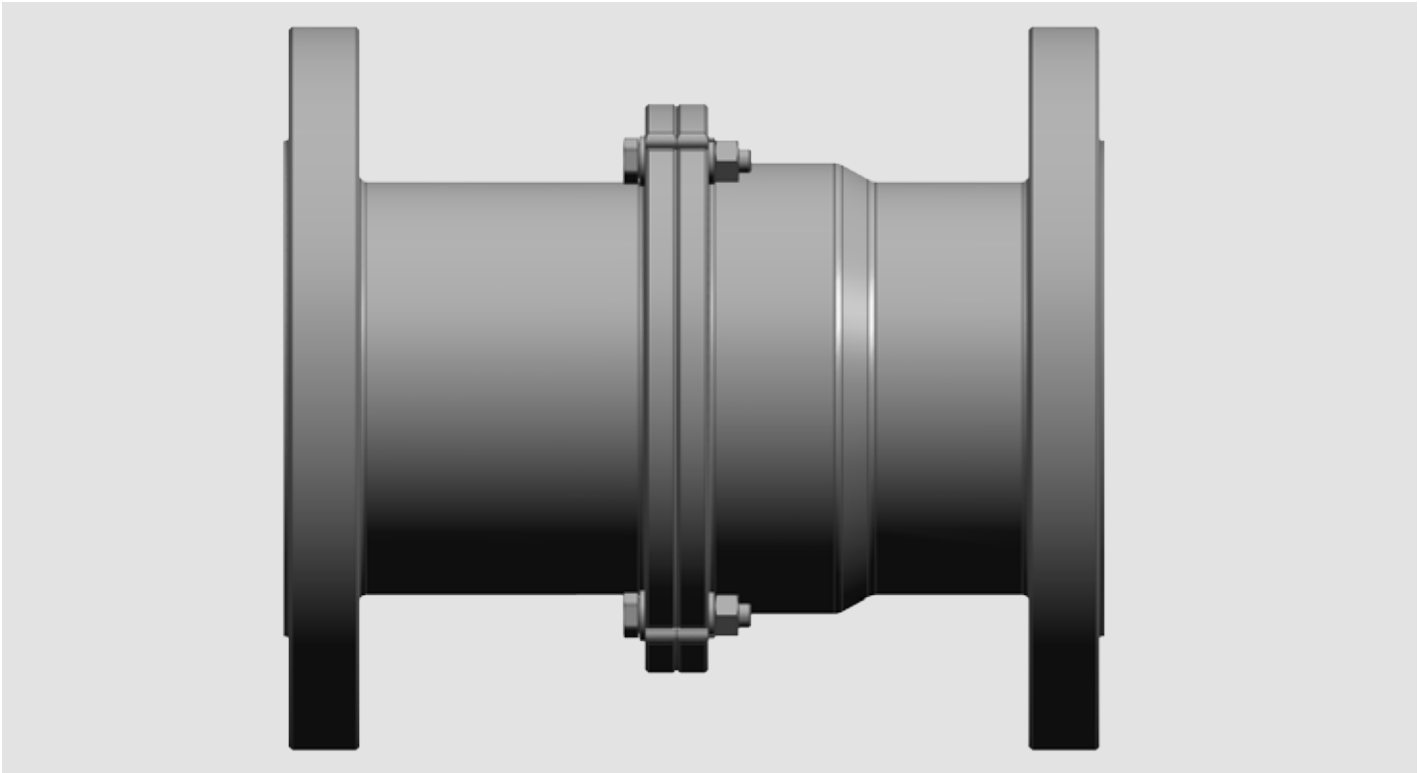
Separation by force limitation

In scenarios where the breakaway coupling is fitted between two hose lines, the ABVM series offers a high degree of resistance to lateral forces such as those that can affect floating hoses in a heavy swell or when hose lines are being coiled.

The marine series breakaway couplings only separate when subjected to an axial load.

After the separation, the valves close and prevent the medium from escaping from the hose and tube side, and in this way protect both humans and the environment.

Costly accidents are thus avoided. Separation occurs in a controlled fashion by means of the breaking pins integrated into the breakaway coupling. These were specially designed for the application.



Separation instead of emergency

Attributes

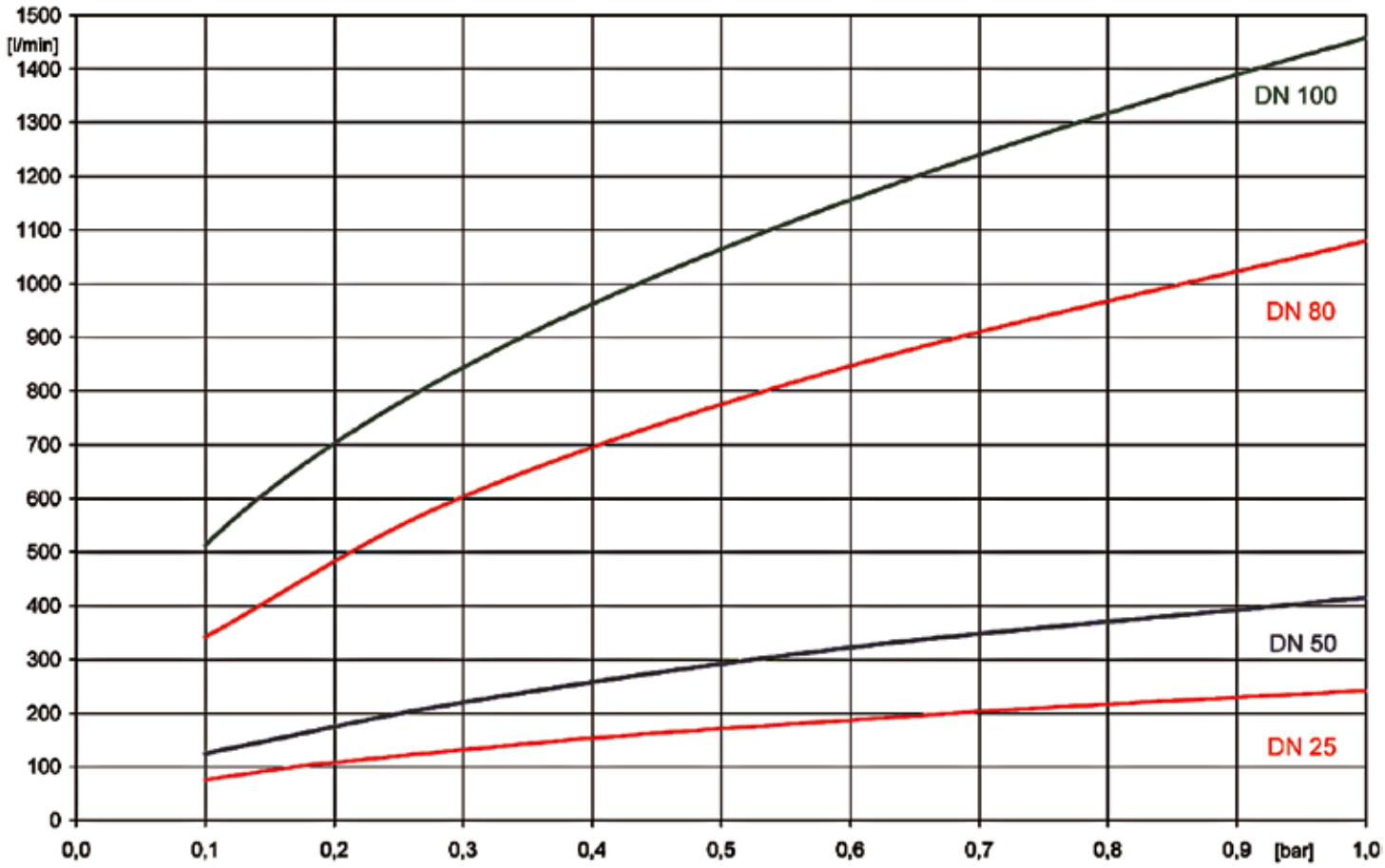
- Resistant to lateral forces
- Fewer parts for safe handling and simple maintenance
- Low amounts of emissions through fast closing valves
- Flow-through possible in both directions

Your benefits at a glance

- High stability when lateral forces act on the coupling
- Controlled separation through breaking pins (different pins for different force ratios available on request)
- No loss of product, which avoids additional costs
- Secure separation when subjected to an axial tensile load
- No weld seams, which means no weak points in the housing

Pressure losses

Throughput Ø



Loss of pressure Δp

Medium Water 20°C

Additional technical information

Technical data

- High-quality sealing materials
  O-ring: FKM
  EPDM
  NBR
  FFKM
- Materials: Stainless steel A4 (1.4571, 1.4408)
  Hastelloy (2.4610, 2.4602, 2.4819)
- Connections: Flange in accordance with EN 1092 or ASME
- Nominal widths: DN 50 to DN 100
- Temperature range: -40 °C to 150 °C
- Pressure area: 0,8 to 25 bar

Triggering forces

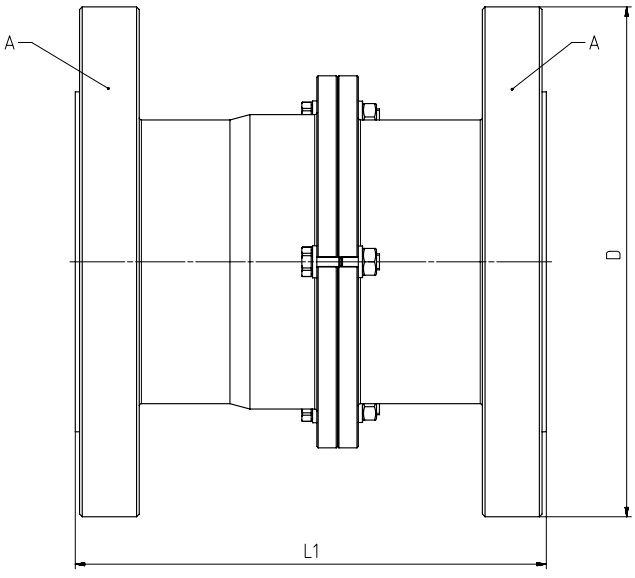
Type ABV (DN)	25	50	65	80	100
Triggering force unpressurised [kN]	3,2	10	15	20	30
Triggering force 16 bar [kN]	2,2	7,8	11	14	20
Triggering force 25 bar [kN]	5,4	11,5	14	18,4	28,5
Hose - min. required tensile strength	4,2	13	19,5	26	39

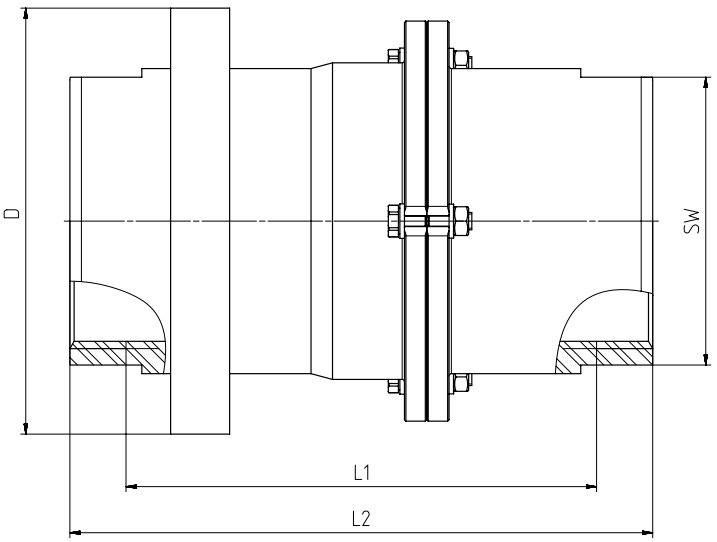
The triggering forces listed above are designed for use on hoses in accordance with EN 12115.
Breaking pins with different triggering forces e.g. for hinged pipe bracket applications available on request.

Dimensions and weights

Type ABVM (DN)	25		50		80			100		
Connection	G 1“	1“NPT	G 2“	2“NPT	G 3“	3“NPT	ASA 150 PSI	G 4“	4“NPT	ASA 150 PSI
D (mm)	77	77	108	108	148	148	190,5	200	200	228,6
L1 (mm)	90,6	86,5	131,5	162,5	90,6	86,5	131,5	162,5		
L2 (mm)	112,5	140,5	123,5	143,5	174,5	202,5	--	202,5	241,5	--
SW	41	41	70	70	100	100	--	125	125	--
Weight* (kg)	1,2	1,4	3	3,3	6,5	7,4	13,5	13	14,2	18,6

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





Breakaway couplings ABML series

The marine breakaway coupling with a high flow rate

This variant of the flow-optimised breakaway coupling offers exceptional resistance to lateral forces and was specially developed for use in marine and offshore applications.
As with the ABVL series breakaway coupling, this coupling is particularly suitable for situations that require high flow rates and low pressure losses.

This variant is similar to the standard ABVM marine breakaway coupling in that it is designed to offer high resistance to lateral forces. A cylindrical overlap between the two coupling halves is also used here as a structural element to achieve the desired degree of lateral-force stability. However, the focus of the ABML series breakaway couplings is on delivering the high flow rate of the ABVL series. Compared to the standard marine breakaway coupling, this cuts loading times by up to 75 per cent, this delivering real financial returns from its first use on. Due to the low pressure losses in this flow-optimised variant, the ABML series breakaway coupling is also particularly suitable for retrofitting to existing loading facilities – without any significant increase in loading times.

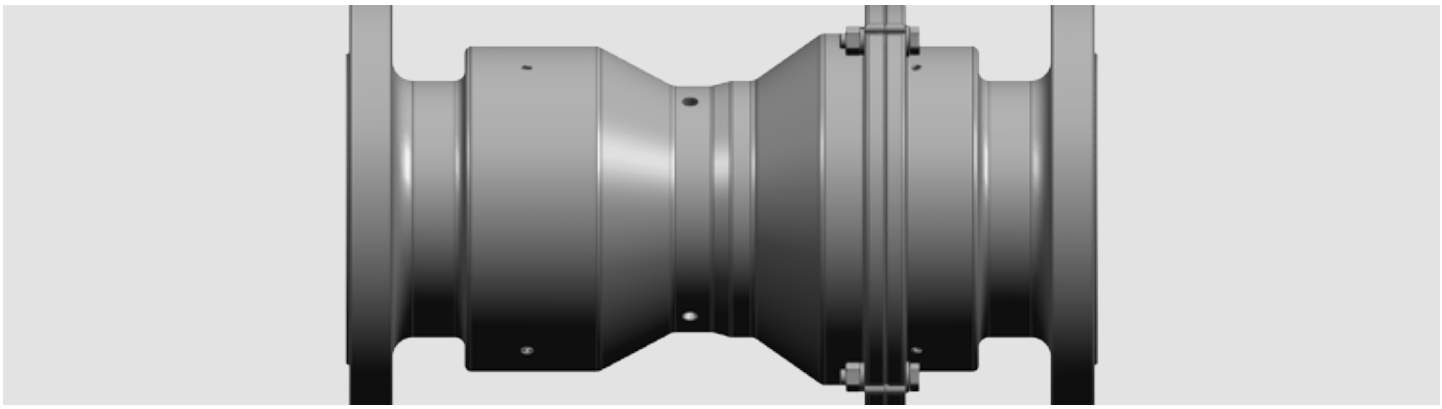
Fields of application

Particularly in the marine and offshore sector, breakaway couplings are frequently installed between floating hoses.

A heavy swell can exert high bending forces, which could cause a conventional breakaway coupling to release unintentionally. The same applies when hose lines are being coiled.
In this case, the breakaway coupling must withstand lateral forces created on the radius of the hose reel in order to avoid unintentional release.

Functional principle

As with all breakaway couplings fitted with breaking pins, separation is triggered by the tensile force transmitted by the hose – although only in the axial direction on the marine breakaway couplings. Once the pins break, the valves close and product leakage is prevented. The breaking pressure of the breaking pins can be individually selected depending on the tensile strength of the hose.



Separation instead of emergency

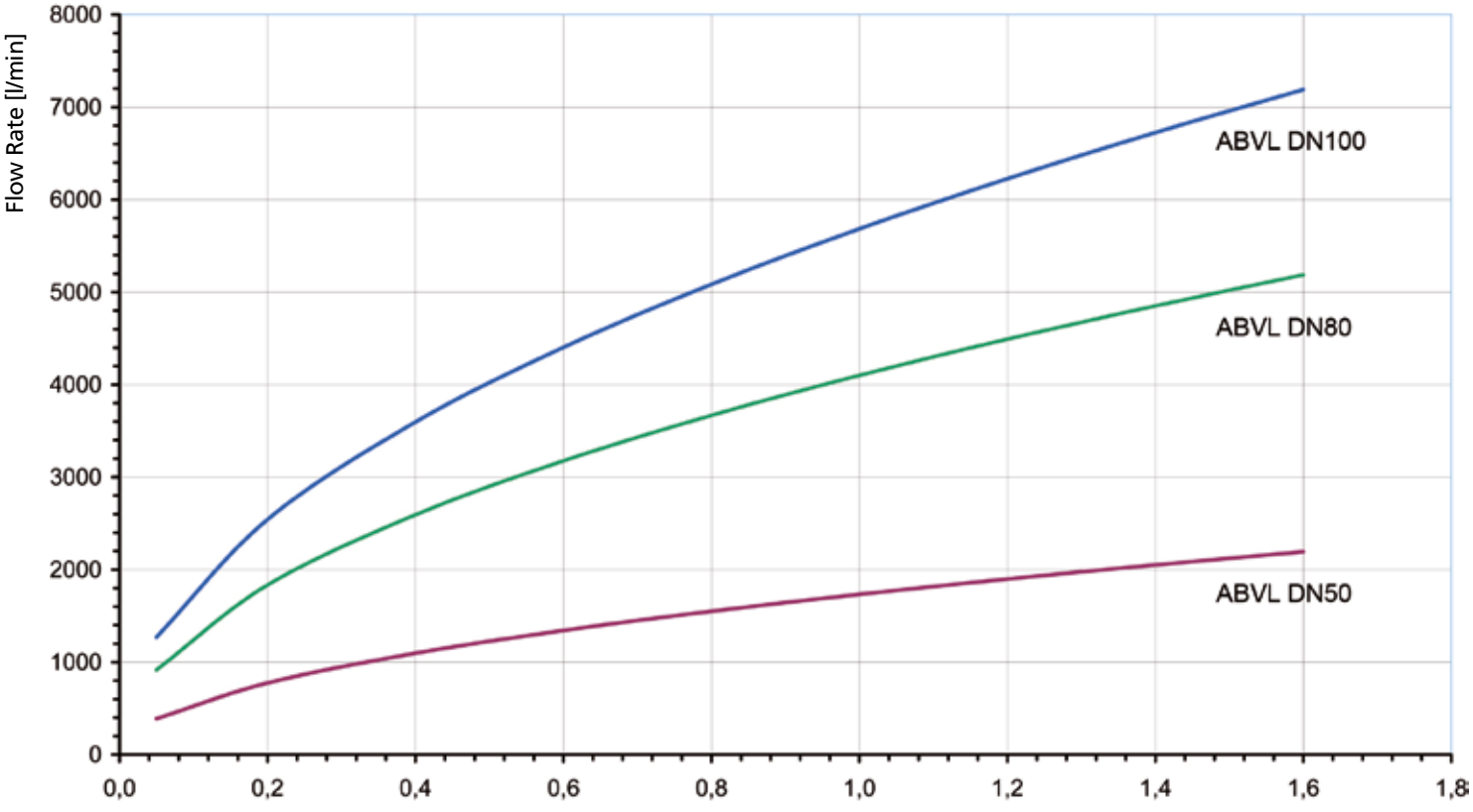
Attributes

- Resistant to lateral forces
- Very low pressure loss, very high flow rates
- Fewer parts for safe handling and simple maintenance
- Low amounts of emissions through fast closing valves
- Flow-through possible in both directions

Your benefits at a glance

- High stability when lateral forces act on the coupling
- High savings potential in power consumption and time in comparison to standard breakaway couplings
- Especially in loading processes in which the safety of a breakaway coupling must not have any influence on the pressure loss or the flow-through capacity
- Applicable for all fluids (liquids and gases), also for those with high viscosity
- Suitable for all loading processes between stationary and mobile unit
- No weld seams, which means no weak points in the housing

Pressure losses



Additional technical information

Technical data

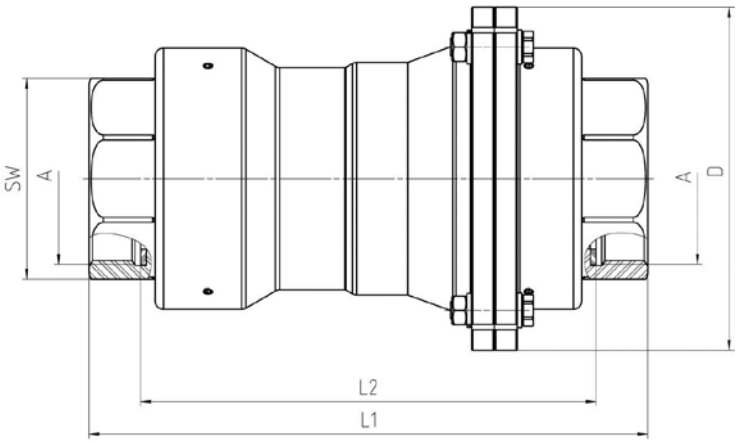
- Seals available on request
- Materials: Stainless steel(1.4571)
- Small residual amount
- Connection: Thread G ISO228 or NPT
  Flange in accordance with EN 1092 or ASME
- Nominal widths: DN 50, DN 80, DN 100 and DN 150
  Others on request
- Temperature range: -40 °C to 150 °C,
- Pressure area: 0,8 to 25 bar

Dimensions and weights

Type ABML (DN)	50		80			
Connection	G 2“	ASA 150 PSI	G 3“	3“ NPT	ASA 150 PSI	ASA 300 PSI
D (mm)	119,5	152,4	166	288	190,5	209,6
L1 (mm)	195	229	270	202,5	316	316
L2 (mm)	159	--	228	236	--	--
SW	70	--	100	100	--	--
Weight* (kg)	5,4	9,5	13,9	14,4	21,9	25

Type ABML (DN)	100				150
Connection	G 4“	4“ NPT	ASA 150 PSI	ASA 300 PSI	ASA 150 PSI
D (mm)	210	210	228,6	254	279,4
L1 (mm)	336	358	380	390	432
L2 (mm)	294	302	--	--	--
SW	125	125	--	--	--
Weight* (kg)	18,8	19,8	29,8	37,5	69

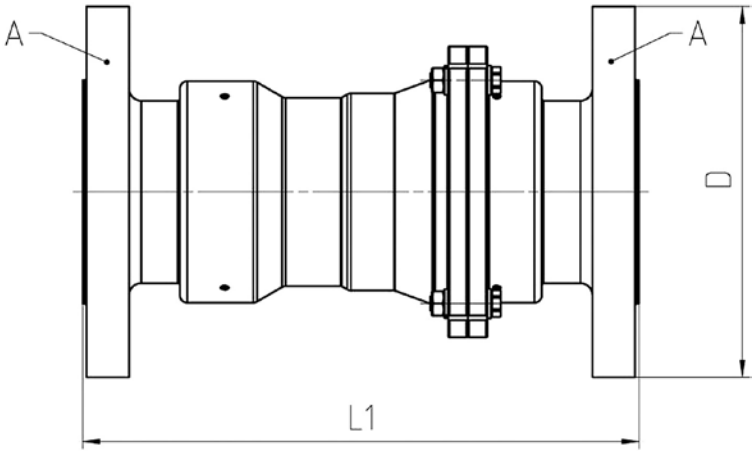
*The weight applies to stainless steel only.
Other Dimensions and weights on request.



Triggering forces

Typ ABML (DN)	50	80	100	150
Triggering force unpressurised [kN]	12	22	30	60
Triggering force 16 bar [kN]	8,8	14,7	19,5	38,6
Hose - min. required tensile strength [kN]	18	33	45	90

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



Breakaway couplings ABVC series

The breakaway coupling for cryogenic media

Even under normal circumstances, the process of loading fluid media requires a high standard of safety technology in the area of fittings. When the temperature factor is added to the mix, for example for cryogenic media, the requirements enter a new dimension. For low-temperature applications, RS Roman Seliger has the ABVC breakaway coupling, which also supports RS safety standards for the unique challenges posed by cryogenics.

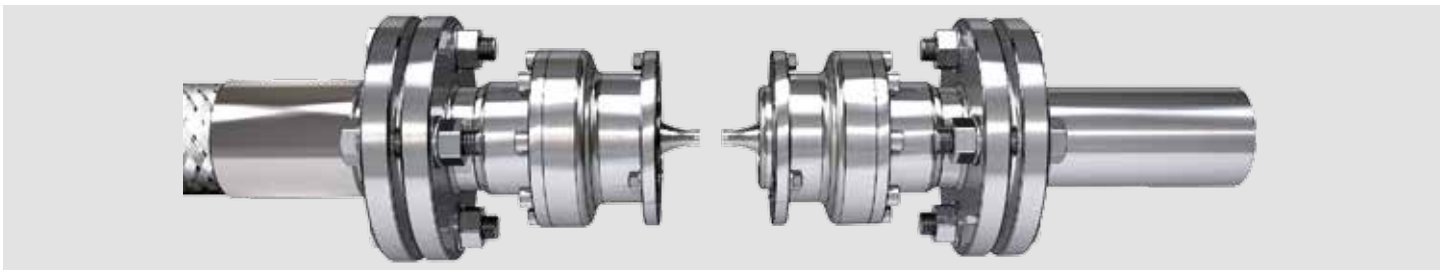
The ABVC breakaway coupling protects the hose line from unwanted breakaway, thus protecting humans and the environment from uncontrolled product leakages.

Separation by force limitation

As well as ensuring compliance with the corresponding leak rates, using our breakaway coupling offers guaranteed production for the hose line used and the plant components across the entire temperature range from -196 °C to 60 °C.

It's not just the low temperature, but also the particular hazard potential associated with cryogenic media such as LNG or liquid oxygen that calls for safe handling of the load line.

ABVC series before emergency separation.



ABVC series after emergency separation.

Separation instead of emergency

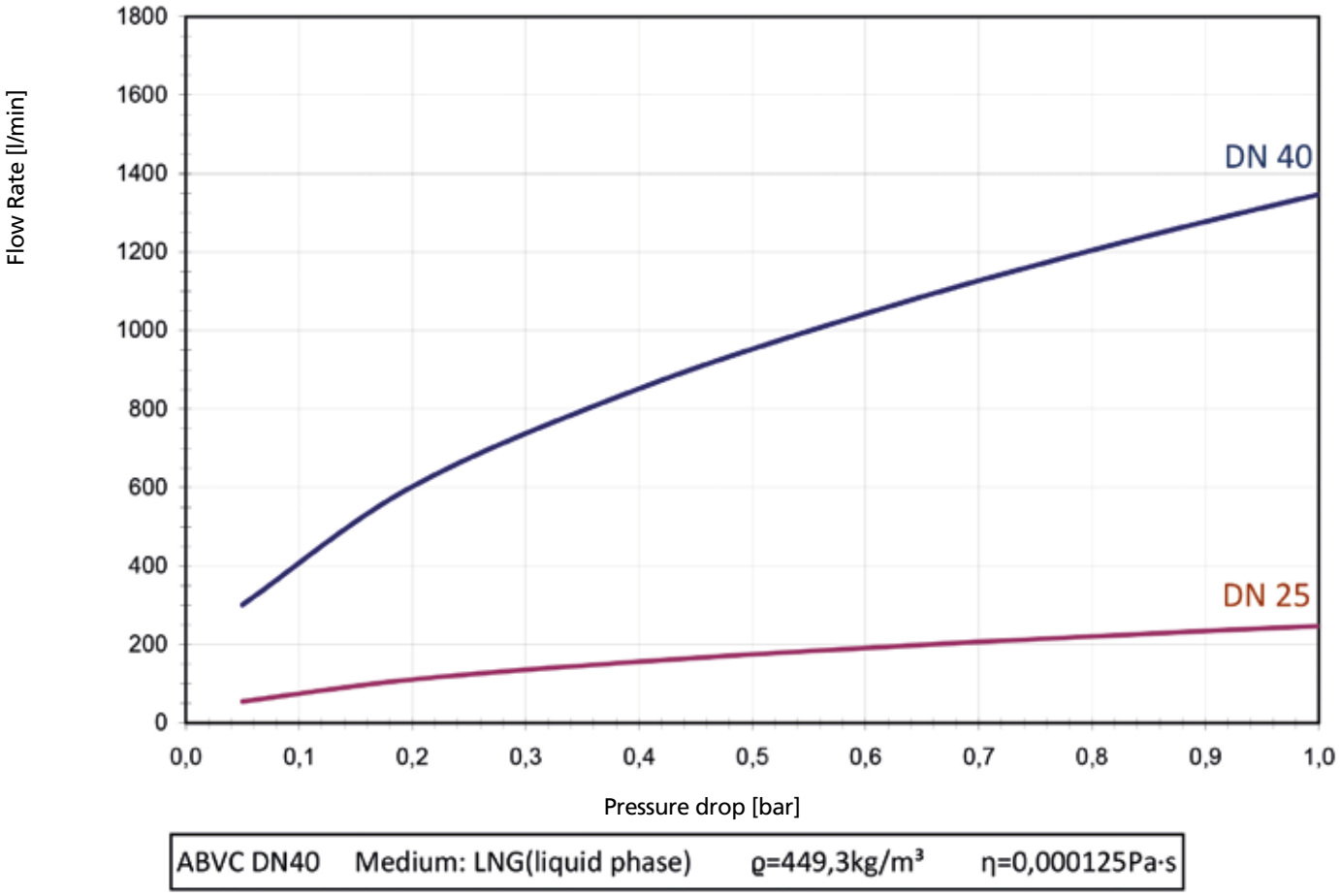
Attributes

- Developed for low temperatures down to -196 °C
- Streamlined design
- High flow rate
- Low pressure loss

Your benefits at a glance

- Safe function in the temperature range from -196 °C to 60 °C
- Small residual amount thanks to swift valve closure
- Safe triggering at breakaway angles of up to 90°
- Controlled separation through breaking pins
- Protects the hose and flanged-mounted systems from damage

Pressure losses



Additional technical information

Technical data

• Seals:	PTFE
• Materials:	Stainless steel (1.4571) Others on request
• Connection:	Flange in accordance with EN 1092 or ASME
• Nominal widths:	DN 25, DN 40, DN 50, DN 80, DN 100 Others on request
• Temperature range: -196 °C to 60 °C	
• Pressure area:	DN 25 to DN 100: 0,8 to 40 bar DN 40: 0,8 to 16 bar
• Triggering forces:	13 kN Others on request

Approvals/certificates

Currently in planning

Triggering forces

Type ABVC (DN)	25		
Triggering force	PN 16	PN 25	PN 40
unpressurised [kN] RT	7,0	12,0	18,0
unpressurised [kN] -196°C	10,7	18,4	27,5
16 bar [kN] RT	7,0	--	--
16 bar [kN] -196°C	10,7	--	--
25 bar [kN] RT	--	12,0	--
25 bar [kN] -196°C	--	18,4	--
40 bar [kN] RT	--	--	18,0
40 bar [kN] -196°C	--	--	27,5

Type ABVC (DN)	40	
Triggering force	PN 16	PN 25
unpressurised [kN] RT	13,0	20,0
unpressurised [kN] -196°C	19,9	30,6
16 bar [kN] RT	13,0	--
16 bar [kN] -196°C	19,9	--
25 bar [kN] RT	--	20,0
25 bar [kN] -196°C	--	30,6
40 bar [kN] RT	--	--
40 bar [kN] -196°C	--	--

Type ABVC (DN)	50		
Triggering force	PN 16	PN 25	PN 40
unpressurised [kN] RT	10,0	16,0	26,0
unpressurised [kN] -196°C	15,3	24,5	39,8
16 bar [kN] RT	10,0	--	--
16 bar [kN] -196°C	15,3	--	--
25 bar [kN] RT	--	16,0	--
25 bar [kN] -196°C	--	24,5	--
40 bar [kN] RT	--	--	26,0
40 bar [kN] -196°C	--	--	39,8

Type ABVC (DN)	80		
Triggering force	PN 16	PN 25	PN 40
unpressurised [kN] RT	24,0	38,0	58,0
unpressurised [kN] -196°C	36,7	58,1	88,7
16 bar [kN] RT	24,0	--	--
16 bar [kN] -196°C	36,7	--	--
25 bar [kN] RT	--	38,0	--
25 bar [kN] -196°C	--	58,1	--
40 bar [kN] RT	--	--	58,0
40 bar [kN] -196°C	--	--	88,7

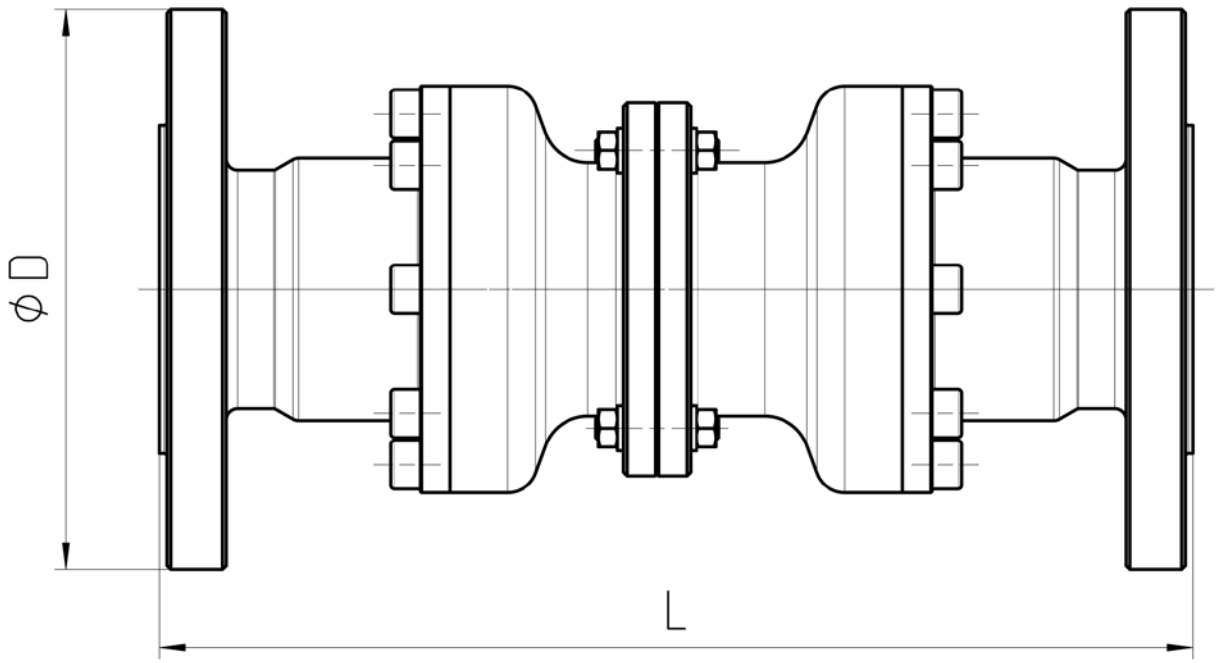
Additional technical information

Dimensions and weights

Type ABVL (DN)	25						40					
Connection	1“ NPT female			ASA 150 PSI - 1“			ASA 150 PSI 1,5“	ASA 300 PSI 1,5“	EN 1092-B	ASA 150 PSI 3“	ASA 150 PSI 2“	ASA 300 PSI 2“
	PN16	PN25	PN40	PN16	PN25	PN40	PN16					
D (mm)	70	70	70	108	108	108	127	155	150	190,5	152,4	165,1
L1 (mm)	200	200	200	180	180	180	277	277	277	287	277	277
L2 (mm)	179,4	179,4	179,4	--	--	--	--	--	--	--	--	--
SW	38	38	38	--	--	--	--	--	--	--	--	--
Weight* (kg)	2,2	2,2	2,2	3,5	3,5	3,5	8,6	10,7	10,0	14,9	10,3	11,7

Type ABVL (DN)	50			80			100		
Connection	2“ NPT female			3“ NPT female			4“ NPT female		
	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40
D (mm)	111	111	111	165	165	165	196	196	196
L1 (mm)	177	177	177	268	268	268	291	291	291
L2 (mm)	155	155	155	229	229	229	248	248	248
SW	65	65	65	100	100	100	125	125	125
Weight* (kg)	4,0	4,0	4,0	10,9	10,9	10,9	17,1	17,1	17,1

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



In use

Breakaway couplings ABVN series

The breakaway coupling with selectable pressure-independent separating force

As opposed to standard breakaway couplings, the triggering force of the new ABVN Series coupling made by Roman Seliger is not dependent on the pressure within the line transporting the medium.

Separation by force limitation

Based on practice, it is known that with flange connections the dimensioning of the screws is dependent on the internal pressure of the connected lines, since the internal pressure attempts to press both flanges apart. This must also be considered in the dimensioning of breaking pins for current breakaway couplings. This effect is eliminated through a patent-protected measure applied to the ABVN series breakaway coupling. For the operator this means that the release force can be individually calibrated to the existing application. As a result, even hoses of low tensile strength (e.g. film wrap hose) or lines and equipment components under enormous pressure can be optimally protected from damage due to excessive external tensile loads. The breakaway coupling is suitable for use wherever pipe lines and hoses have to be protected from excessive loads. As opposed to the breakaway couplings in regards to the latest technology, the triggering force of the innovations presented here can then be individually selected, regardless of the line pressure.

Attributes

- Release force is independent of internal pressure of fluid line
- Arbitrary triggering force
- Suitable for hoses that can only transfer low tensile loads

Your benefits at a glance

- Controlled separation through breaking pins with arbitrary breaking pressure (different pins for different force ratios are available on request)
- High throughput rates
- As opposed to other breakaway couplings, they can also be used for vacuum applications
- Secure separation in axial direction
- Radial stress-resistant through joined version
- Protected connections and system components
- Protects employees and the environment from unwanted product leakages

Additional technical information

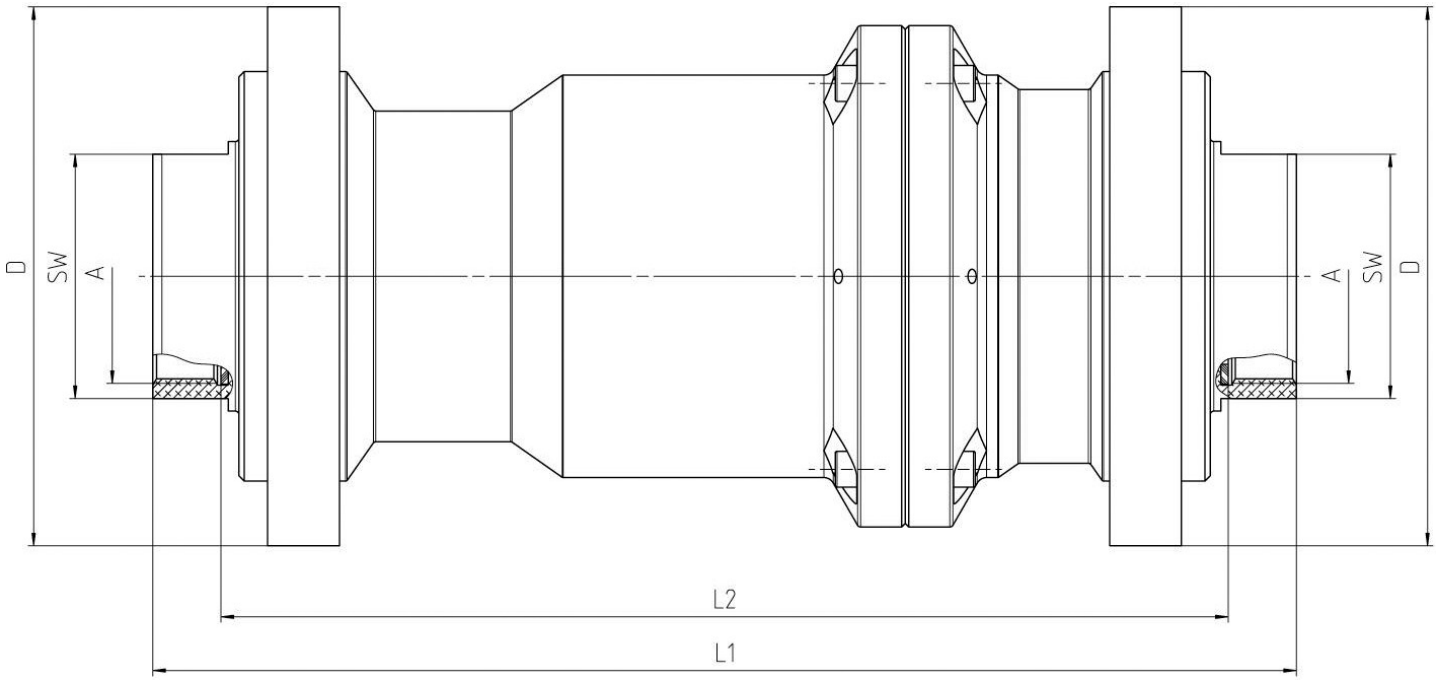
Technical data

• Seals:	FKM NBR FFKM EPDM
• Materials:	Stainless steel (1.4571) Others on request
• Connection:	Female thread
• Nominal widths:	DN 50 Others on request
• Temperature range:	-40 °C to 150 °C dependent on the sealing material
• Pressure area:	0,2 to 40 bar
• Triggering forces:	Can be individually selected, but at least 2 kN

Dimensions and weights

Type ABVN (DN)	50
Connection	G 2“
D (mm)	150
L1 (mm)	318,7
L2 (mm)	280,7
SW	68
Weight* (kg)	12,9

*The weight applies to stainless steel only.



Breakaway couplings ABOV series

The breakaway coupling without shut-off valves

ABOV series breakaway couplings separate the line at a defined tensile load, but do not close the two line ends. The tensile load should be selected with a sufficient safety margin below the load limit of the line, such as the maximum permissible tensile load of a hose line.

Separation by force limitation

Unlike the ABV series breakaway couplings, the ABOV series breakaway couplings are not fitted with valves that can safely close both line ends to prevent product leakages in the event of a separation. For this reason, these breakaway couplings are particularly suitable for loading media that are non-critical to humans and the environment. As such, they represent a cost-effective alternative to automatically closing breakaway couplings. The breakaway coupling releases in the same way as the ABV series when three predetermined breaking points, or breaking pins, are broken. As with other RS breakaway couplings for industrial use, the design of the coupling does not impose any restriction of the load angle of the line ends. The ABOV will safely release at a traction angle of up to 90° from the line axis. The nominal breakaway force is configured for a purely axial tensile force, which acts evenly on all three breaking pins. In this case, it is at its highest level.

In the case of lateral breakaway, the tensile force only acts on one or two breaking pins. In this situation, the breakaway force is correspondingly lower.

Separation instead of emergency

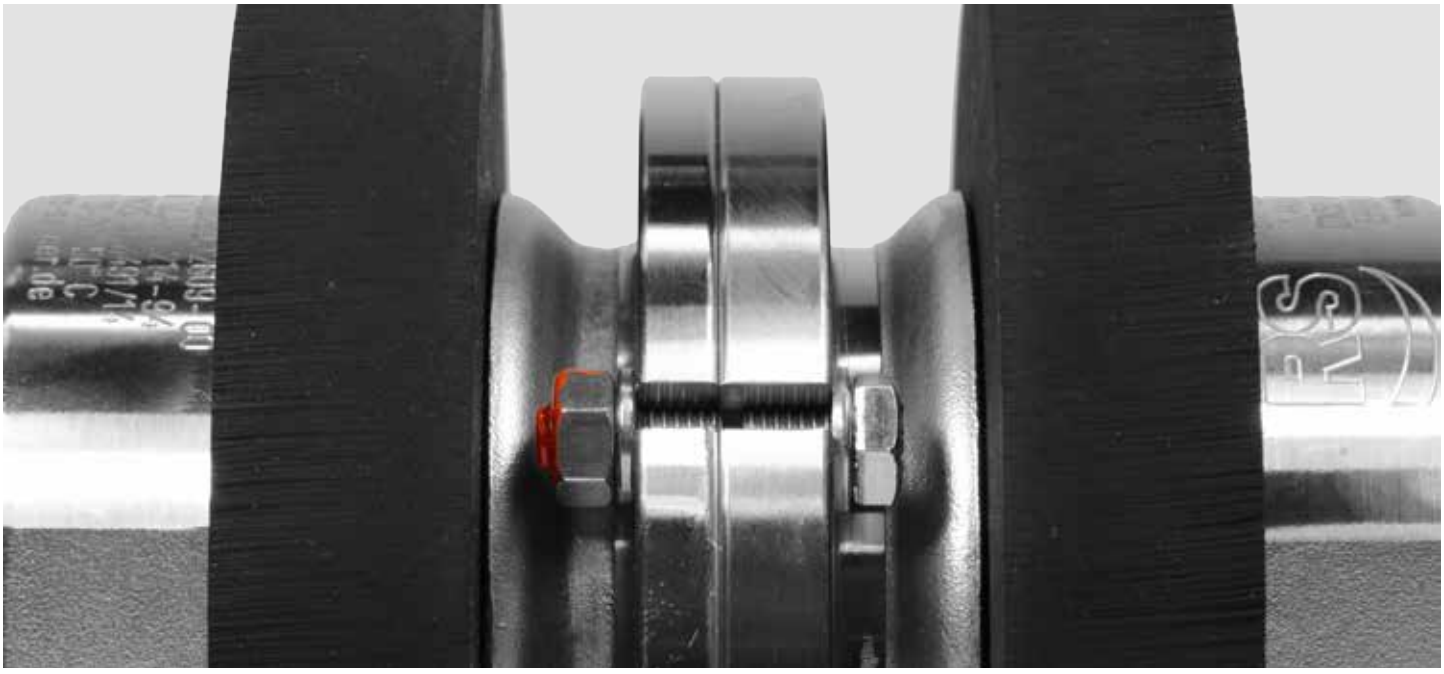
Separation without closing

Even without the automatic shutter used on other breakaway couplings fitted with valves, the ABOV breakaway coupling can provide the hose line and plant components with effective protection against disproportionate tensile loads.

If the media being loaded do not pose a hazard to humans and environment and the loss of medium does not cause any significant economic loss, this represents a cost-effective protective device for the connected plant components.

Your benefits at a glance

- Hose protection
- Protection against damage to the system
- Prevents consequential damage
- Cost savings



Additional technical information

Technical data

- Safe triggering at angles up to 180°
- High-quality sealing materials
  O-ring: FKM, EPDM, NBR, FFKM
- Materials: Stainless steel A4 (1.4571, 1.4408)
  Hastelloy (2.4602, 2.4602, 2.4819)
- Small residual amount
- Connection: 1" to 4"
  Female thread BSP or NPT
  Flange of 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: 0,2 to 25 bar
  Aluminium: 0,2 to 10 bar

Dimensions and weights

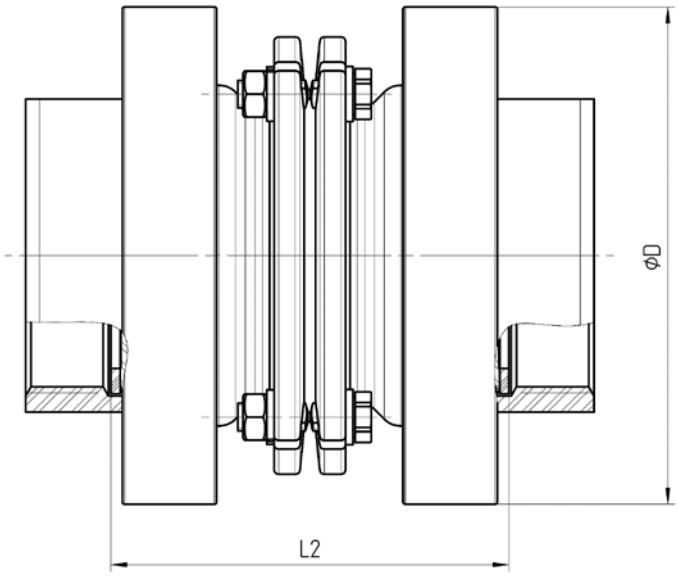
Typ ABOV (DN)	25	50	65	80	100
Anschluss	G 1"	G 2"	G 2	G 3"	G 4"
D (mm)	77	108	133	148	169
L1 (mm)	112,5	123,5	147,5	174,5	209
L2 (mm)	90	86,5	106,5	131,5	166
SW	41	70	85	100	125
Gewicht* (kg)	1,1	2,4	5,4	5,7	10,1

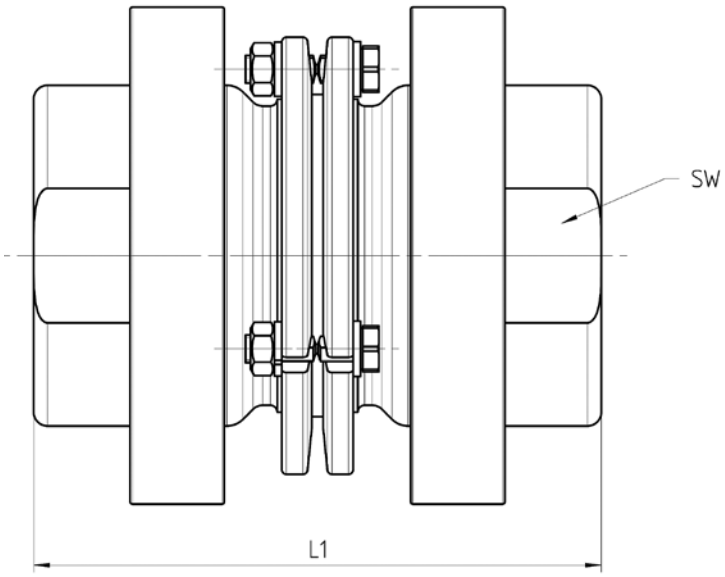
*The weight applies to stainless steel only.

Triggering forces

Typ ABOV (DN)	25	50	65	80	100
Auslösekraft drucklos [kN]	3,2	10	15	20	30
Auslösekraft 16 bar [kN]	2,2	7,8	11	14	20
Auslösekraft 25 bar [kN]	5,4	11,5	14	18,4	28,5
Schlauch min. erforderliche Zugfestigkeit	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.





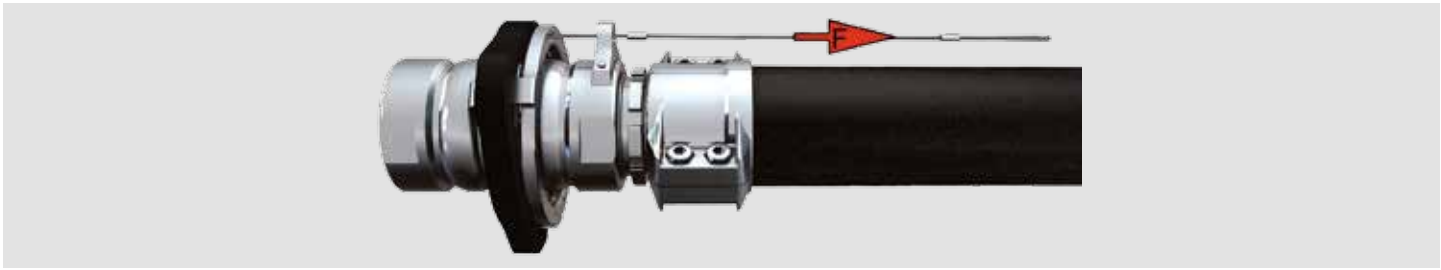
Breakaway couplings ABV-S series

The standard breakaway coupling with control cable

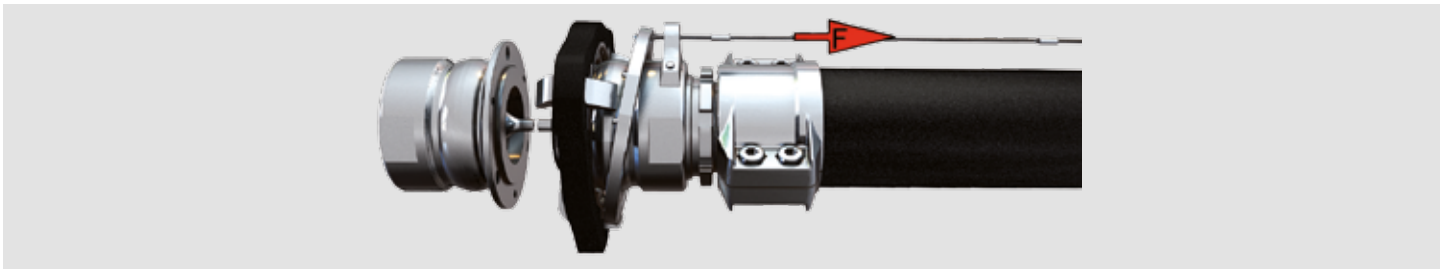
The ABV-S breakaway coupling for safe loading of liquids on road, rail and shipping. It is used to mechanically separate product lines during refuelling or unloading operations, thus protecting the lines from damage.

Release cord as a safety cord

The traditional breakaway couplings are not for use everywhere. That's because breaking pins require the breakaway forces to be transferred by the hose, which inevitably results in tolerance and design problems at higher nominal widths and/or pressures.
The system with cable triggering has a lower threshold and easier to dose. And it is activated not just when the load is really heavy, but simply by means of travel limitation.
Even low cable forces are sufficient to release the ABV-S. In this case, no loose components are lost.
The ABV-S can easily be reassembled on the spot to create a functional safety system.



ABV-S series before emergency separation.



ABV-S series after emergency separation.

Separation without consequences

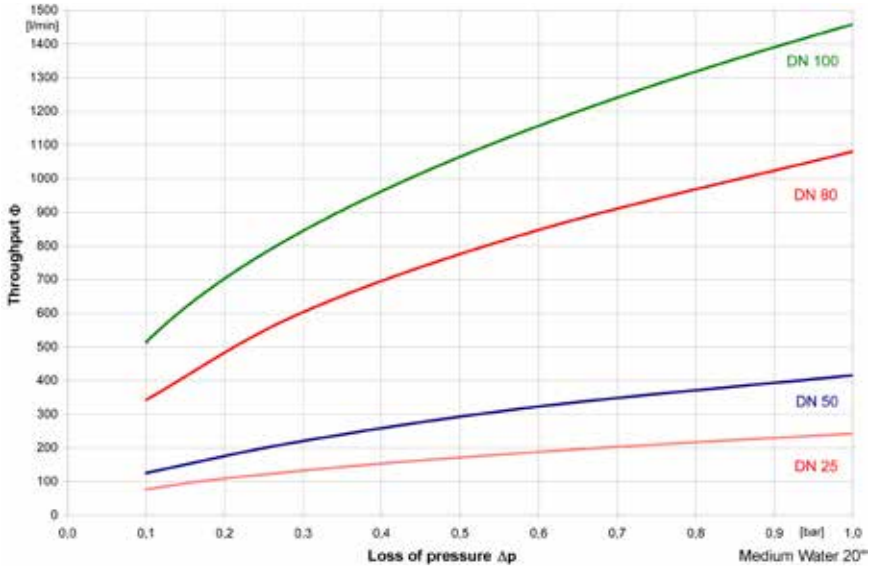
The release cord principle

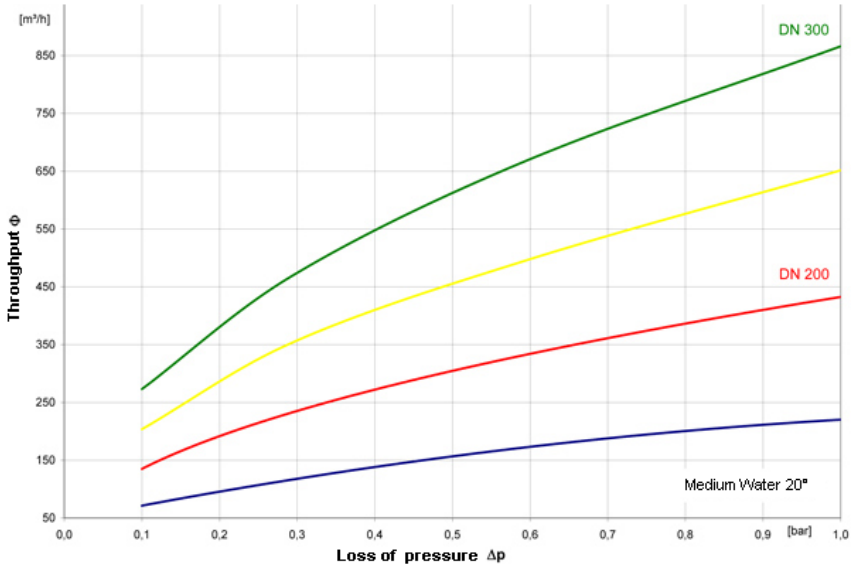
For example, at a loading station equipped with a hose loading arm, the “release cord” is attached at a suitable point by means of a load cable anchor. In case of an emergency, the coupling “detects” when things reach a critical point. It then disconnects the line – preventing damage to the hose, coupling, vehicle and loading facilities. At both sectioning points, the valves in the safety couplings abruptly close so that no medium can escape.

Your benefits at a glance

- No action of force on the hose line or system components
- Compact construction
- High quality and safety thanks to the use of TÜV-approved materials
- Easy to maintain
- Simple to reassemble after separation
- Not sensitive to lateral forces
- Lubricant-free moving components

Pressure losses





Additional technical information

Technical data

- Safe triggering at angles up to 90°
- High-quality sealing materials
  O-ring: NBR, EPDM, FFKM, FKM
  threaded seal: PUR, PTFE
- Materials: Stainless steel, Hastelloy, E-CTFE coating for aggressive media
- Connection: 1" bis 4" female thread BSP or NPT flange in accordance with EN 1092 or ASME
- Nominal widths: DN 25 to DN 300
- Temperature range: -40 °C to 150 °C
- Pressure stages: 0,8 to 25 bar, DN 300: 0,8 to 10 bar

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

Triggering forces

Type ABV-S (DN)	25-1"	50-2"	80-3"	100-4"
Triggering force 25 bar [kN] At 0° triggering angle	0,4	0,3	0,5	1,5
Triggering force 25 bar [kN] At 90° triggering angle	0,5	0,6	0,9	1,8

Type ABV-S (DN)	150-6"	200-8"	300-12" (bei PN 10!)
Triggering force 25 bar [kN] At 0° triggering angle	2,4	3,0	3,0
Triggering force 25 bar [kN] At 90° triggering angle	4,9	6,3	--

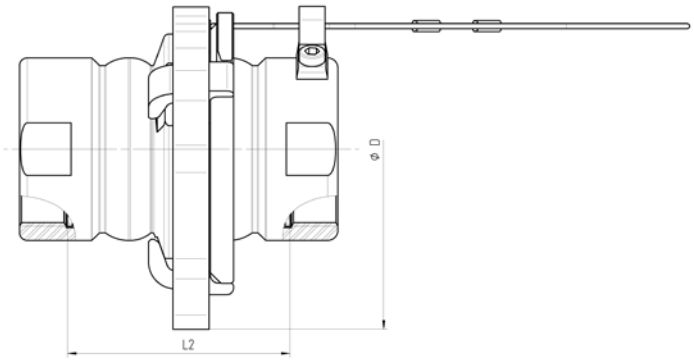
Additional technical information

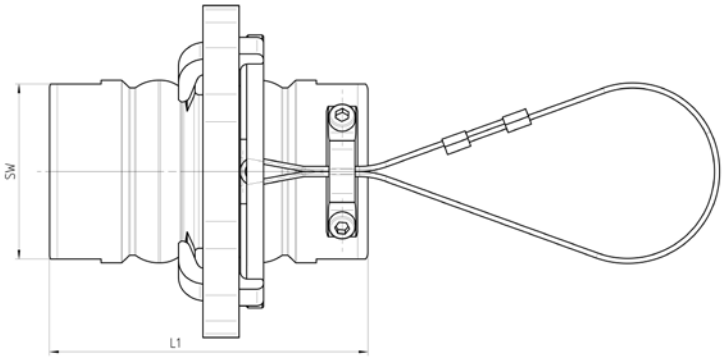
Dimensions and weights

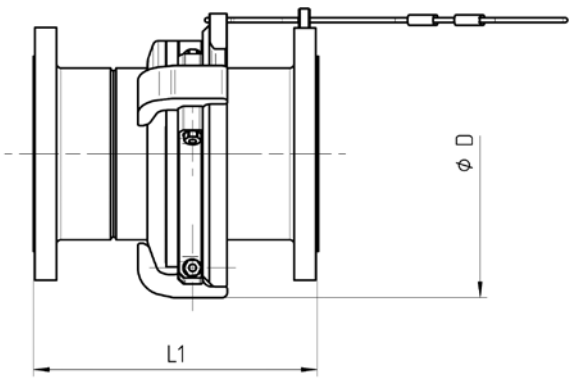
Type ABV-S (DN)	25		50		80		100		150
Connection	G 1“	1“NPT	G 2“	2“NPT	G 3“	3“NPT	G 4“	4“NPT	Flansch PN10/16
D (mm)	100	100	140	140	210	210	275	275	314
L1 (mm)	112,5	140,5	123,5	143,5	174,5	202,5	208,5	242,5	307
L2 (mm)	90,5	105,8	86,5	105,1	131,5	141,5	165,5	176,5	--
SW	41	41	67	67	100	100	125	125	--
Weight* (kg)	1,1	1,3	2,5	2,8	7,4	8,4	13,8	15,1	51,5

Type ABV-S (DN)	150			200					300
Connection	Flansch PN25/40	ASA 150 PSI	ASA 300 PSI	Flansch PN10	Flansch PN16	Flansch PN25	ASA 150 PSI	ASA 300 PSI	Flansch PN10
D (mm)	339	314	337,5	417,5	417,5	417,5	417,5	417,5	592
L1 (mm)	315	314	389,2	364	364	404	373	373	600
L2 (mm)	--	--	--	--	--	--	--	--	--
SW	--	--	--	--	--	--	--	--	--
Weight* (kg)	57,3	53,3	72,3	98,4	98,1	108,7	102,3	130	266

*The weight applies to stainless steel only.







In use

The references

Bominflot Tanklager GmbH, Kiel

Breakaway couplings ASVL series

The control cable breakaway coupling with a high flow rate

The pressure loss of these breakaway couplings was optimised and significantly improved. The design is based on models from nature such as dolphins and squids and was developed with the aid of CFD or computational fluid dynamics analysis.

Separation by relative movement

Just like the other RS series breakaway couplings, the ASVL series breakaway coupling with cable triggering protects against industrial accidents. It protects the hose or flanged systems such as pipes from too much of a burden, even in the case of non-axial burdens. Separation occurs by means of a path-controlled load cable that must be shorter than the connected hose line. After separation, the valves close and prevent the medium from escaping from the hose and tube side, thus protecting humans and the environment.

In comparison to conventional breakaway couplings, the control cable breakaway coupling offers even greater potential savings of energy and time. Pressure loss has been reduced to a minimum; at the same time, the flow rate has been improved.

The energy reduced and time gained during the loading process deliver real financial savings.

Attributes

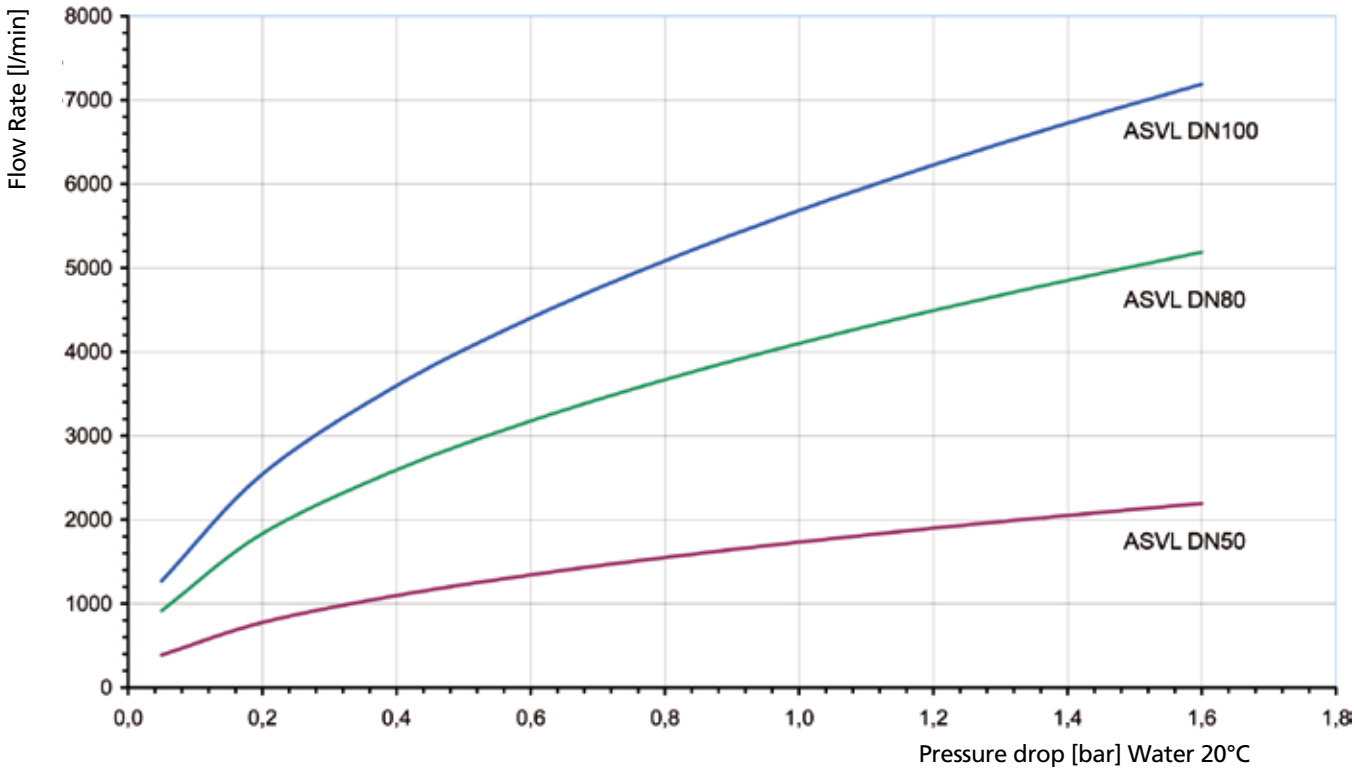
- Significant increase of flow-through with the same nominal width
- Fewer parts for safe handling and simple maintenance
- Low amounts of emissions through fast closing valves
- Flow-through possible in both directions

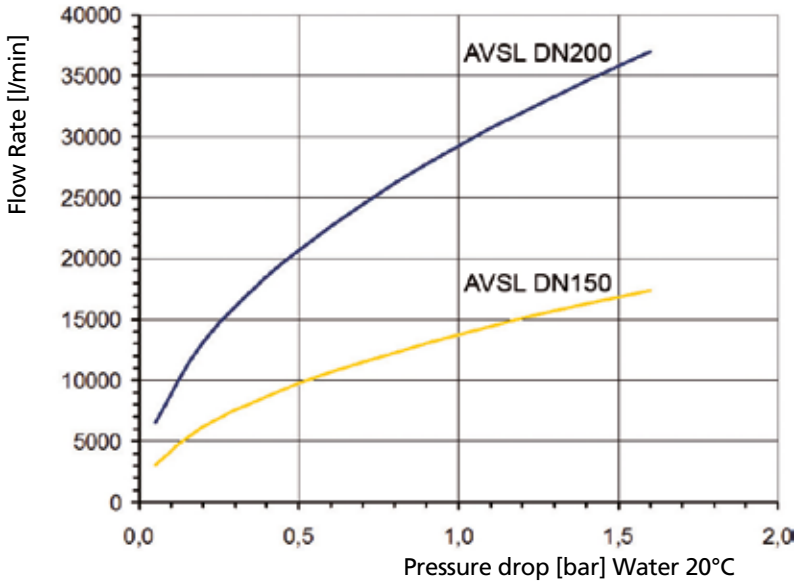
Your benefits at a glance

- High throughput rates
- Significant reduction of the pressure loss
- Safe triggering at breakaway angles of up to 90°
- Control cable version for hoses that cannot transmit tensile forces
- Protects employees and the environment from unwanted product leakages
- Protected hose connections
- Various connection formats available thanks to modular structure

Separation instead of emergency

Pressure losses





Additional technical information

Technical data

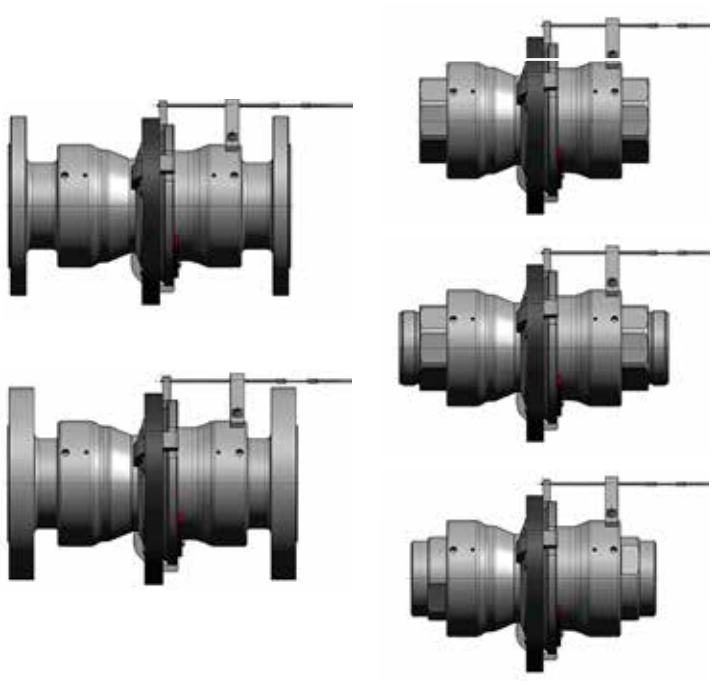
- Safe triggering at angles up to 90°
- High-quality sealing materials
  O-ring: FKM, NBR, EPDM, FFKM, Others on request
- Materials: Stainless steel (1.4571), E-CTFE coating for aggressive media, Others on request
- Connection: 1" to 4" female thread BSP or NPT flange in accordance with EN 1092 or ASME
- Nominal widths: DN 50 to DN 200, Others on request
- Temperature range: -40 °C to 150 °C
- Pressure area: 0,8 to 25 bar, Others on request

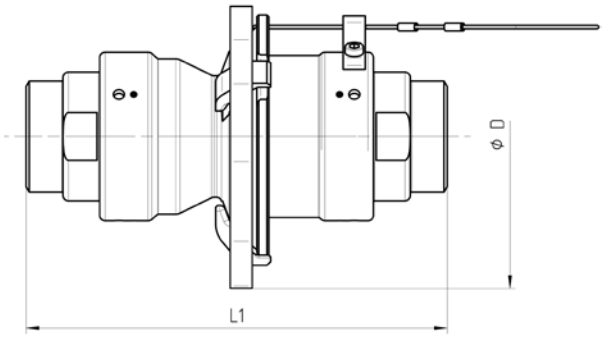
Approvals/certificates

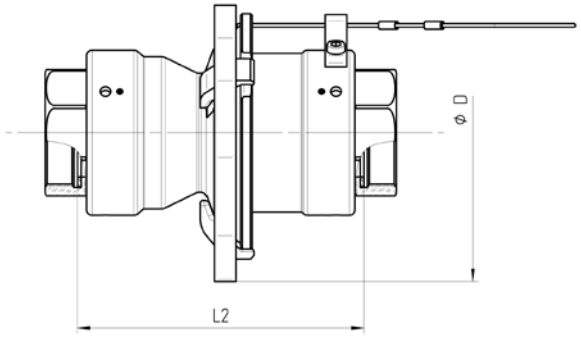
- Approved acc. to WHG § 19, by DIBT (German Institute for Building Technology)
- ATEX Zone 1 approved
- TA Luft (German Clean Air Act) approved
- EC type examination

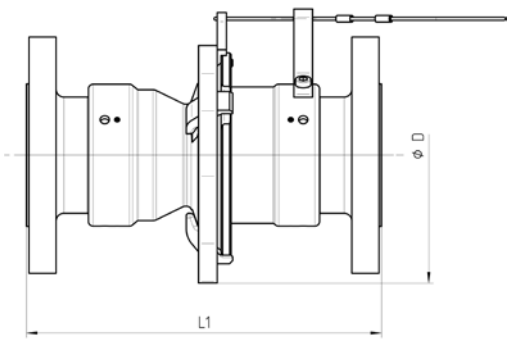
Triggering forces

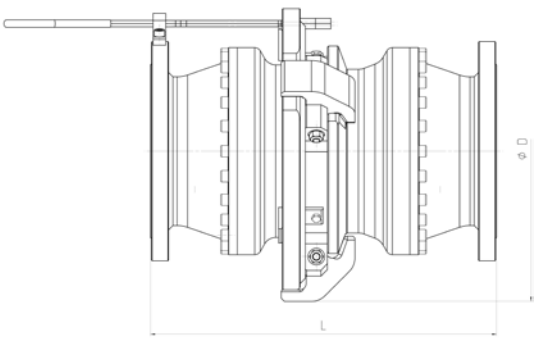
Type ASVL (DN)	50	80	100	150	200
Triggering force 25 bar [kN], tension direction: 0°	On request	On request	1,2	2,8	4,3
Triggering force 25 bar [kN] tension direction: 90°	On request	On request	2	5,0	6,5











Additional technical information

Dimensions and weights

Type ASV-L (DN)	50								
Connection	G2“ IG PN25	G2“ AG PN25	2“NPT IG PN25	2“NPT AG PN25	ASA 150 PSI PN25	ASA 300 PSI PN25	AE 60,3x3,91 PN25	EN 1092-B PN25	EN 1092-B PN16
D (mm)	165	165	165	165	188,5	188,5	165	188,8	188,5
L1 (mm)	195	235	201	244	229	229	229	229	229
L2 (mm)	159	--	132,6	205,6	--	--	--	--	--
SW	70	70	70	70	--	--	65	--	--
Weight* (kg)	5,7	6	5,9	6,1	10	11,4	5,7	10,9	10,4

Type ASV-L (DN)	80							
Connection	G3“ IG PN25	G3“ AG PN25	3“NPT IG PN25	3“NPT AG PN25	AE 88,9x5,49 PN16	ASA 150 PSI PN10	ASA 300 PSI PN25	EN 1092-B PN25
D (mm)	220	220	220	220	220	240	240	240
L1 (mm)	270	318	288	345	338	316	316	324
L2 (mm)	228	--	227	284	--	--	--	--
SW	100	100	100	100	90	--	--	--
Weight* (kg)	16,2	16,4	16,8	16,4	16,2	24,7	27,8	24,3

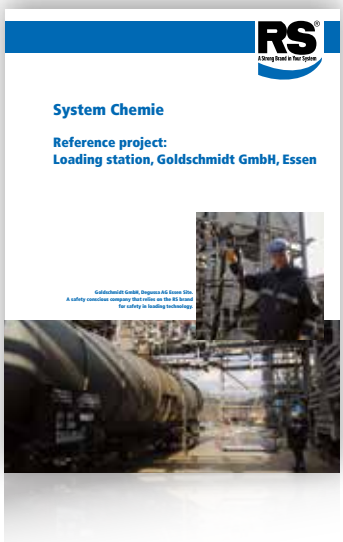
Type ASV-L (DN)	100								
Connection	G4“ IG PN25	G4“ AG PN25	4“NPT IG PN25	4“NPT AG PN25	AE 114,3x6,02 PN25	ASA 150 PSI PN10	ASA 300 PSI PN25	EN 1092-B PN25	EN 1092-B PN16
D (mm)	295	295	295	295	295	295	295	295	295
L1 (mm)	336	386	378	437	405	380	390	392	400
L2 (mm)	282	--	312	371	--	--	--	--	--
SW	125	125	125	125	125	--	--	--	--
Weight* (kg)	--	--	--	--	--	37,8	45,6	34,2	37

Type ASV-L (DN)	150			200			
Connection	ASA 150 PSI PN10	ASA 300 PSI PN25	EN 1092-B PN16	ASA 150 PSI PN16	ASA 300 PSI PN25	EN 1092-B PN25	EN 1092-B PN16
D (mm)	370,5	370,5	370,5	473	473	473	473
L1 (mm)	432	432	432	542	542	532	532
L2 (mm)	--	--	--	--	--	--	--
SW	--	--	--	--	--	--	--
Weight* (kg)	82,7	98,4	80,4	156,6	179,4	159,4	151,3

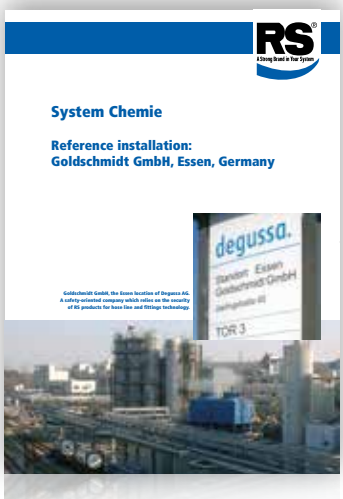
*The weight applies to stainless steel only.

RS references for breakaway couplings

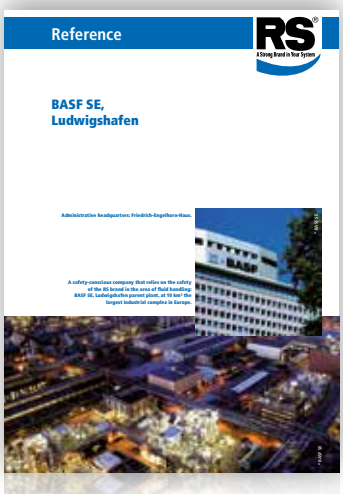
Evonik Goldschmidt GmbH (loading station), Essen



Evonik Goldschmidt GmbH (chemical manufacturing), Essen

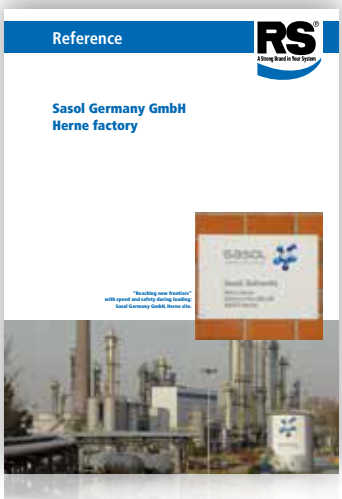


BASF SE, Ludwigshafen



Bominflot Tanklager GmbH, Kiel

Sasol Germany GmbH, Herne plant



RS certificates for breakaway couplings

Certificate

GL Systems Certification

GL Systems Certification herewith certifies, that the company

Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20, D-22848 Norderstedt

has established and maintains a Management System relevant for

Development, production and distribution of couplings
and control equipment for hose and pipework systems.

GL Systems Certification confirms that the Management System of the above mentioned company has been assessed and found to be in accordance with the requirements of the following standard:

ISO 9001:2008

The validity of this certificate is subject to the company applying and maintaining its Management System in accordance with the standard indicated. This will be monitored by GL Systems Certification.

This certificate is valid from July 13, 2012 until July 10, 2015.

GL Systems Certification Hub Germany

Certificate No. QS-096HH

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-16026-01-02

Certificate Quality Management System acc. to ISO9001:2008 standard

Development, production and distribution of couplings and control equipment for hose and pipework systems

EC Assessment Report

for the EC Assessment of the Quality Assurance System according to the Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the Approximation of the Laws of the Member States concerning Pressure Equipment, in its valid Version.

Certificate No.:	98 256 - 12 HH
Authorized Representative:	- - -
Manufacturer:	RS Roman Seliger Armaturenfabrik GmbH An'n Slagboom 20 D - 22848 Norderstedt
Certification Object	
Manufacturers Designation:	a) Dry Disconnect Coupling, Swivel Joint b) Break Away Coupling
Description:	a) Pressure Accessories b) Safety Accessories
Category:	a) up to III b) IV
Applied Module:	D1 / D
Applied Standard:	EN ISO 14420, EN ISO 14423, EN 12266, EN 12516
Marking:	CE 0098

Basis:
Basis for Assessment was the EC Directive 97/23/EC and VdTÜV Merkblatt 100 (Ed. 07-2001).

Results:
The Quality Assurance System is in accordance with the relevant essential safety requirements of the EC Directive 97/23/EC (Report No. 765/12).

Accompanying Documents/ Enclosures:
EC Type-Examination Certificate No. 07 202 1637 Z 0001/3/0001 Rev.02
EC Type-Examination Certificate No. 07 202 1321 Z 0016/1/0006
EC Type-Examination Certificate No. 07 202 1321 Z 0016/1/0007
EC Type-Examination Certificate No. 07 202 1423 Z 0101/14/D0126

EC Assessment Report valid until: 2015-07-10

Hamburg, 2014-09-16

DNV GL
Notified Body for the Certification of Pressure Equipment
Identification No. 0098

Thomas Woehler

EC Declaration of Conformity 97/23/EC TRM/TRV

RS certificates for breakaway couplings

TÜV NORD

ZERTIFIKAT

Qualitätssicherungs-System
für werkstofftechnische Bearbeiter
nach Richtlinie 97/23/EG für Druckgeräte

Zertifikat-Nr.: 07-202-1326 WZ-0540/08

Name und Anschrift des Herstellers: Roman Seliger Armaturenfabrik GmbH
22848 Norderstedt

Hiermit wird bescheinigt, dass der Hersteller ein QS-System eingeführt hat und dies anwendet. Dieses QS-System wurde gemäß der Richtlinie 97/23/EG in Bezug auf die im Geltungsbereich genannten Werkstoffe einer spezifischen Überprüfung unterzogen.

Geprüft: QS-System nach Richtlinie 97/23/EG
Anhang I, Kap. 3.1 und 4.3

Prüfbericht-Nr.: 1326WL18480

Geltungsbereich: Schlauchkupplungen aus Aluminiumlegierungen, Kupferlegierungen und verschiedenen Stahlwerkstoffen, zerspanend gefertigt, ohne anschließende Wärmebehandlung.
Einzelheiten zum Geltungsbereich sind der Anlage zum Zertifikat AD 2000-Merkblatt W0 zu entnehmen.

Fertigungsstätte: Norderstedt

Der Hersteller verfügt über die erforderlichen Verfahren und Einrichtungen zur qualitätsgesicherten Herstellung und Prüfung der im Geltungsbereich aufgeführten Erzeugnisse, sowie über das erforderliche sachkundige Personal.

Hamburg, den 06.11.2008

TÜV CERT-Zertifizierungsstelle
für Druckgeräte
der TÜV NORD Systems
GmbH & Co. KG

Marrek

Certificate 97/23/EG

Quality Management System acc. to Pressure Equipment directive 97/23/EC - Module D/D1 – Manufacture of Dry Disconnect and Break-away Couplings

TÜV NORD

CERTIFICATE

Certification Body
of TÜV NORD Systems GmbH & Co. KG

certifies, that the company

Roman Seliger Armaturenfabrik GmbH
D-22848 Norderstedt

has been verified and recognised as mechanical processor according to

AD 2000-Merkblatt W0

Certificate-No.: 07-202-1326-WP-0540/12

The range of validity and details of the inspection can be taken from our Letter of Confirmation no. 1326WL18420.

The company fulfils the following essential requirements:
Facilities permitting appropriate manufacturing and inspection corresponding to the present technical standards, quality assurance, which guarantees that manufacturing and inspection of products stated in our scope of approval are carried out in accordance with technical regulations, competent supervising and inspecting personnel.

This certificate is valid until

February 2015

Hamburg, 20.02.2012

Marrek
Certificate Body

Certificate AD 2000-HP0/TÜV Nord

Manufacturer of fired an unfired pressure vessel parts for piping systems, as well as couplings, swivel joints, hose loading arms, adapter and connecting parts for valves.


РОССИЙСКАЯ ФЕДЕРАЦИЯ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ C-DE.AE41.B.00092 ТР 0722974

ЗАЯВИТЕЛЬ Roman Seliger Armaturenfabrik GmbH. Адрес: An'n Slagboom 20 22848 Norderstedt, Германия. Телефон +49 40 523064-0, факс +49 40 523064-25.

ИЗГОТОВИТЕЛЬ Roman Seliger Armaturenfabrik GmbH. Адрес: An'n Slagboom 20 22848 Norderstedt, Германия. Телефон +49 40 523064-0, факс +49 40 523064-25.

ОРГАН ПО СЕРТИФИКАЦИИ

ПОДТВЕРЖДАЕТ, ЧТО ПРОДУКЦИЯ

код ОК 005 (ОКП) 36 4790

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ТЕХНИЧЕСКОГО РЕГЛАМЕНТА (ТЕХНИЧЕСКИХ РЕГЛАМЕНТОВ) Технический регламент о безопасности машин и оборудования (Постановление Правительства РФ от 15.09.2009 N 753), ГОСТ 22790-89 «Сборочные единицы и детали трубопроводов на Ру св. 10 до 100 МПа (св. 100 до 1000 кгс/см кв.). Общие технические условия» П. п. 2.1.9, 2.1.12 - 2.1.14

код ЕКПС

код ТН ВЭД России 7307

ПРОВЕДЕННЫЕ ИССЛЕДОВАНИЯ (ИСПЫТАНИЯ) И ИЗМЕРЕНИЯ Протокол сертификационных испытаний № 1006-004/2011Л от 10.06.2011г. ИЦ "Станкотест", рег. № РОСС RU.0001.21ММ10, адрес: 153032, г.Иваново, ул.Станкостроителей, 1

ПРЕДСТАВЛЕННЫЕ ДОКУМЕНТЫ Сертификат системы менеджмента качества ISO 9001:2008 рег. № QS-096 HH от 08.07.2006 выдан Germanischer Lloyd Certification GmbH. Схема сертификации: 3с.

СРОК ДЕЙСТВИЯ СЕРТИФИКАТА СООТВЕТСТВИЯ с 07.07.2011 по 06.07.2016

Руководитель (заместитель руководителя) органа по сертификации А.П.Фузов

Эксперт (эксперты) Б.С.Мигачев

Gost-R

Russian certificate / Declaration of Conformity. Declares that RS products are according to Russian Standard


TRANSPORTOWY DOZÓR TECHNICZNY

CERTYFIKAT

CERTIFICATE

Nr. TDT-UW-43/12

Niniejszym potwierdza się, że firma:
We hereby certify that the company:

RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
D-22848 Norderstedt
Niemcy / Germany

posiada uznanie do wytwarzania wyposażenia urządzeń do napełniania i opróżniania zbiorników transportowych przewidzianego do dostawy do Polski

possess recognition to manufacture equipment for loading systems destined for the delivery to Poland.

Szczegółowy zakres i warunki uznania zostały zawarte w załączniku do niniejszego certyfikatu.

Detailed scope and conditions of recognition are included in enclosure to the certificate.

Załącznik:
Warunki uznania
Enclosure:
Conditions of recognition

DYREKTOR
Jan Urbanowicz

Miejsce i data wystawienia: Warszawa, 22 maj 2012 r.
City and date of issue: Warszawa, May 22, 2012

Data wystawienia pierwszego certyfikatu: 22 maj 2012
Date of issue of first certificate: May 22, 2012

Uznanie ważne do dnia: 21 maj 2014 r.
Date of expiry: May 21, 2014

QMS - TDT
(Transportowy Dozor Techniczny)

Equipment for loading systems (including dry-connect couplings and breakaway couplings) destined for the delivery to Poland

RS certificates for breakaway couplings

TÜV NORD

ZERTIFIKAT

EG-Baumusterprüfung
nach Richtlinie 97/23/EG

Zertifikat-Nr.: 07 202 1321 Z 0016/1/0006

Name und Anschrift des Herstellers: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Hiermit wird bescheinigt, dass das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.

Geprüft nach Richtlinie 97/23/EG: EG-Baumusterprüfung (Modul B)
Prüfberichts-Nr.: 1321 P 0016/1/0006
Beschreibung des Baumusters (Druckgerät): Nottrennkupplung
ABVL DN 50, DN 80, DN 100

Fertigungsstätte: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Gültig bis: 21.11.2021

Hamburg, 21.11.2011

Zertifizierungsstelle für Druckgeräte der TÜV NORD Systems GmbH & Co. KG
S. Korn

EC Declaration of Conformity ABVL

TÜV NORD

ZERTIFIKAT

EG-Baumusterprüfung
nach Richtlinie 97/23/EG

Zertifikat-Nr.: 07 202 1837 Z 0001/3/0001

Name und Anschrift des Herstellers: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Hiermit wird bescheinigt, dass das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.

Geprüft nach Richtlinie 97/23/EG: EG-Baumusterprüfung (Modul B)
Prüfberichts-Nr.: 1837 P 0001/3/0001 ; 1321 P 0015/0/0001 ; 1321 P 0016/1/0001
Beschreibung des Baumusters (Druckgerät): Nottrennkupplung
ABV-S DN 25 - DN 100 Gewindeanschluss: 1" – 4"
ABVF-S DN 150 - DN 300 Flanschanschluss

Fertigungsstätte: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Gültig bis: 30.06.2013

Hamburg, 20.06.2011

Zertifizierungsstelle für Druckgeräte der TÜV NORD Systems GmbH & Co. KG
S. Korn

EC Declaration of Conformity ABV-S

TÜV NORD

ZERTIFIKAT

EG-Baumusterprüfung
nach Richtlinie 97/23/EG

Zertifikat-Nr.: 07 202 1321 Z 0016/1/0007

Name und Anschrift des Herstellers: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Hiermit wird bescheinigt, dass das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.

Geprüft nach Richtlinie 97/23/EG: EG-Baumusterprüfung (Modul B)
Prüfberichts-Nr.: 1321 P 0016/1/0007
Beschreibung des Baumusters (Druckgerät): Nottrennkupplung
ASVL DN 100, DN 150, DN 200

Fertigungsstätte: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Gültig bis: 18.01.2022

Hamburg, 18.01.2012

Zertifizierungsstelle für Druckgeräte der TÜV NORD Systems GmbH & Co. KG
S. Korn

EC Declaration of Conformity ASVL

TÜV NORD

ZERTIFIKAT
CERTIFICATE
(Konformitätsbescheinigung) / (of conformity)
EG-Baumusterprüfung
EC type-examination
nach Richtlinie 97/23/EG / according to directive 97/23/EC
Zertifikat-Nr. / Certificate No.: 07 202 1423 Z 0101/14/D/0126

Name und Anschrift des Herstellers / Name and address of bearer/ manufacturer: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
D-22848 Norderstedt
Germany

Hiermit wird bescheinigt, dass das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt. / We hereby certify that the type examination mentioned below fulfills the requirements of directive 97/23/EC.

Geprüft nach Richtlinie 97/23/EG / Tested according to 97/23/EC: EG-Baumusterprüfung (Modul B) , AD 2000
EC type-examination (module B)
Prüfbericht-Nr. / Test report No.: 1423 P 0101/14/D/0126
Beschreibung des Baumusters (Druckgerät) / Description of type (pressure equipment): Nottrennkupplung
Typ ABV DN 25 – DN 100

Fertigungsstätte/Place of manufacture: RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
D-22848 Norderstedt

Gültig bis/ valid until: 15.09.2024

Hamburg, 15.09.2014

Zertifizierungsstelle für Druckgeräte der TÜV NORD Systems GmbH & Co. KG
S. Korn

EC Declaration of Conformity ABV

Allgemeine bauaufsichtliche Zulassung

Zulassungsnummer:
Z-38.4-255

Geltungsdauer
vom: 27. Juni 2012
bis: 27. Juni 2017

Antragsteller:
Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Zulassungsgegenstand:
Nottrennkupplung ABVL mit Bruchbolzenauslösung für Schlauch- und Rohrleitungen

DIBt

DIBT certificate ABV

Allgemeine bauaufsichtliche Zulassung

Zulassungsnummer:
Z-38.4-254

Geltungsdauer
vom: 27. Juni 2012
bis: 27. Juni 2017

Antragsteller:
Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

Zulassungsgegenstand:
Nottrennkupplung ASVL mit Seilzugauslösung für Schlauch- und Rohrleitungen

DIBt

DIBT certificate ASVL

Prüflaboratorium für Druckgeräte der
TÜV NORD Systems GmbH & Co.KG
Prüfstelle für Sicherheitseinrichtungen/Armaturen

Auftrag: 1837 GV 01340

Bescheinigung
zur Typprüfung
nach TA Luft (VDI 2440)

Name und Anschrift:	Roman Seliger GmbH An'n Slagboom 20 22848 Norderstedt
Prüfverfahren:	Heliumlecktest DIN EN 13185, A.1 (Vakuumverfahren, integral)
Prüfobjekte:	Nottrennkupplung mit Bruchbolzen Typ: ABV, DN 50 Nottrennkupplung mit Seilzug Typ: ABV-S, DN 50 Trockenkupplung mit Griff Typ: TR-V, TR-M, DN 50
Nenndruckstufe:	PN 25
Werkstoff:	1.4571
Geltungsbereich:	Trockenkupplung vom Typ TR und Nottrennkupplung Typen ABV und ABV-S in Ab- und Umfüllanlagen in den Nennweiten DN 25 – DN 65
Prüfberichts-Nr.:	1837 GV 01340

Es wird hiermit bescheinigt, dass die im Abschnitt Bauart genannten Prüfobjekte die Dichtheitsanforderungen gemäß der TA-Luft Abschnitt 5.2.6.4 (VDI 2440 Abs. 3.3.1.3) erfüllen.

Hamburg, 26. Sep. 2005

Competence Center
Druckgeräteanlagen und Systemtechnik
Prüfstelle für Sicherheitseinrichtungen / Armaturen

O. Schulenberg, Dipl.-Ing.

TA-Luft-certificate

Fachhochschule Münster University of Applied Sciences

EST
FH Münster
Forschungsbereich Dichtungstechnik

Zertifikat

Z11112502-1

Die Nottrennkupplungen der Baureihen
ABVL / ASVL und ABML
der Firma

RS Roman Seliger Armaturenfabrik GmbH
An'n Slagboom 20
22848 Norderstedt

wurden vom Forschungsbereich Dichtungstechnik der FH Münster nach den Vorgaben der VDI-Richtlinie 2200 (Ausgabe Juni 2005) hinsichtlich Hochwertigkeit nach TA-Luft geprüft. Die Untersuchung fand unter folgenden Randbedingungen statt:

Prüfling:	ABVL, stellvertretend für die genannten Baureihen
Dichtungsmaterial:	FKM
Dichtungsabmessungen:	Verbindungs-O-Ring, 75,79 x 3,53 mm Anschlussstutzen O-Ring, 113,99 x 3,53 mm (2 Stück)
Baugröße:	DN80/PN16 stellvertretend für andere Nenngrößen
Anschlussgröße:	3" BSP, stellvertretend für andere Anschlussgrößen
Auslegung:	60 °C / 40 Std
Testbedingungen:	24 Std / 22±2 °C

Die anschließende Leckagemessung bei Raumtemperatur, mittels Helium-Massenspektrometer, bei einem Prüfdifferenzdruck von 1 bar, ergab eine Leckage von:

$$7{,}45 \cdot 10^{-8}\ \frac{mbar \cdot l}{s \cdot m}$$

Das Leckagekriterium von $1{,}0 \cdot 10^{-6}\ \frac{mbar \cdot l}{s \cdot m}$ wurde nicht überschritten. Die oben genannte Nottrennkupplung gilt somit als hochwertig im Sinne der TA-Luft.

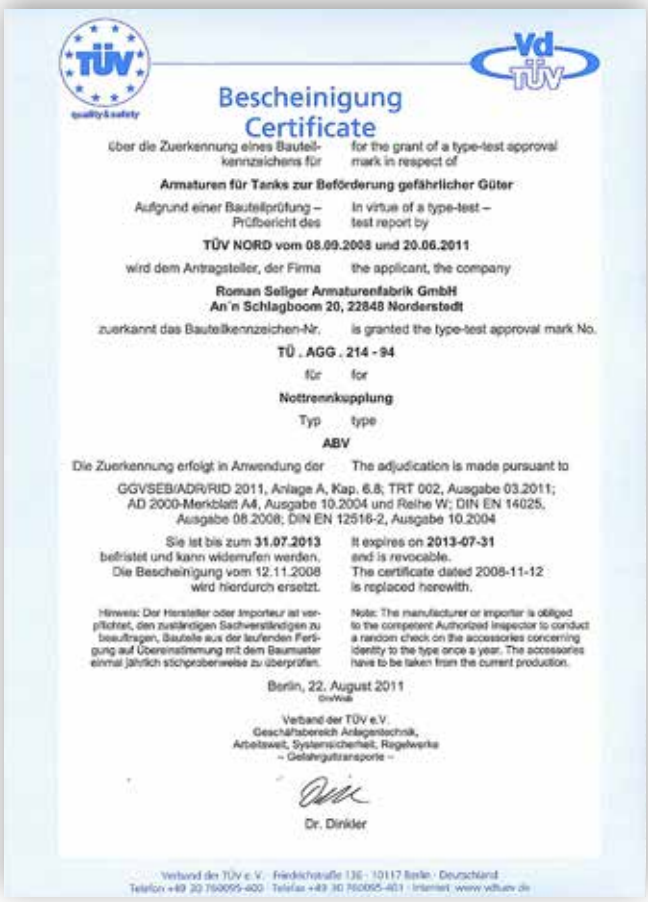
Dieses Zertifikat ist nur in Verbindung mit dem Prüfbericht 11112502 gültig.

Steinfurt, 12.02.2013

Prof. Dr. A. Redl

TA-Luft-certificate

RS certificates for breakaway couplings



Bescheinigung
Certificate

über die Zuerkennung eines Bauteilkennzeichens für — for the grant of a type-test approval mark in respect of

Armaturen für Tanks zur Beförderung gefährlicher Güter

Aufgrund einer Bauteilprüfung – Prüfbericht des — In virtue of a type-test – test report by

TÜV NORD vom 08.09.2008 und 20.06.2011

wird dem Antragsteller, der Firma — the applicant, the company

Roman Seliger Armaturenfabrik GmbH
An´n Schlagboom 20, 22848 Norderstedt

zuerkannt das Bauteilkennzeichen-Nr. — is granted the type-test approval mark No.

TÜ . AGG . 214 - 94

für — for

Nottrennkupplung

Typ — type

ABV

Die Zuerkennung erfolgt in Anwendung der — The adjudication is made pursuant to

GGVSEB/ADR/RID 2011, Anlage A, Kap. 6.8; TRT 002, Ausgabe 03.2011; AD 2000-Merkblatt A4, Ausgabe 10.2004 und Reihe W; DIN EN 14025, Ausgabe 08.2008; DIN EN 12516-2, Ausgabe 10.2004

Sie ist bis zum **31.07.2013** befristet und kann widerrufen werden. Die Bescheinigung vom 12.11.2008 wird hierdurch ersetzt. — It expires on **2013-07-31** and is revocable. The certificate dated 2008-11-12 is replaced herewith.

Hinweis: Der Hersteller oder Importeur ist verpflichtet, den zuständigen Sachverständigen zu beauftragen, Bauteile aus der laufenden Fertigung auf Übereinstimmung mit dem Baumuster einmal jährlich stichprobenweise zu überprüfen. — Note: The manufacturer or importer is obliged to the competent Authorized Inspector to conduct a random check on the accessories concerning identity to the type once a year. The accessories have to be taken from the current production.

Berlin, 22. August 2011
Dr/Wak

Verband der TÜV e.V.
Geschäftsbereich Anlagentechnik,
Arbeitswelt, Systemsicherheit, Regelwerke
– Gefahrguttransporte –

Dr. Dinkler

Verband der TÜV e. V. · Friedrichstraße 136 · 10117 Berlin · Deutschland
Telefon +49 30 760095-400 · Telefax +49 30 760095-401 · Internet: www.vdtuev.de

Bescheinigung
Certificate

über die Zuerkennung eines Bauteilkennzeichens für — for the grant of a type-test approval mark in respect of

Schnelltrennstellen

Aufgrund einer Bauteilprüfung – Prüfbericht des — In virtue of a type-test – test report by

TÜV Nord vom 26.06.2003 und dem 4. Nachtrag vom 20.06.2011

wird dem Antragsteller, der Firma — the applicant, the company

Roman Seliger Armaturenfabrik GmbH
22848 Norderstedt

zuerkannt das Bauteilkennzeichen-Nr. — is granted the type-test approval mark No.

TÜV . ST . 009 - 10

für — for

Weggesteuerte Schnelltrennstelle
in Gewinde- oder Flanschausführung mit Seilzugauslösung

Typ — type

ABV-S Gewindeanschluss: DN 25 bis DN 100, G 1"bis 4"
ABVF-S Flanschausführung: DN 150 bis DN 300

Die Zuerkennung erfolgt in Anwendung von — The adjudication is made pursuant to

Druckgeräte-Richtlinie 97/23/EG, Anhang I, Ausgabe 05.1997 in der Fassung vom 20.11.2003;VdTÜV-Merkblatt „Schnelltrennstelle 100", Entwurf 10.2002; AD 2000-Merkblatt A 4, Ausgabe 10.2004

Sie ist bis zum **30.06.2013** befristet und kann widerrufen werden. Die Bescheinigung vom 17.02.2011 wird hierdurch ersetzt. — It expires on **2013-06-30** and is revocable. The certificate dated 2011-02-17 is replaced herewith.

Hinweis: Der Hersteller oder Importeur ist verpflichtet, den zuständigen Sachverständigen zu beauftragen, Bauteile aus der laufenden Fertigung auf Übereinstimmung mit dem Baumuster einmal jährlich stichprobenweise zu überprüfen. — Note: The manufacturer or importer is obliged to the competent Authorized Inspector to conduct a random check on the accessories concerning identity to the type once a year. The accessories have to be taken from the current production.

Berlin, 21. Juli 2011
Blo/Wek

Verband der TÜV e. V.
Geschäftsbereich Anlagentechnik, Arbeitswelt,Systemsicherheit, Regelwerke
– Zertifizierungen und Registrierungen –

Blohm

Verband der TÜV e. V. · Friedrichstraße 136 · 10117 Berlin · Deutschland
Telefon +49 30 760095-400 · Telefax +49 30 760095-401 · Internet: www.vdtuev.de

C S T
Center of Sealing Technologies
Fachhochschule Münster
Fachbereich Physikalische Technik
Bürgerkamp 3
D-48565 Steinfurt

Fachhochschule Münster University of Applied Sciences

Zertifikat

Die Nottrennkupplung vom Typ

ABV-S / ABVF-S mit eingelegtem FEP ummantelten O-Ring mit Viton Kern

der Firma

Roman Seliger
An´n Slagboom 20
D-22848 Norderstedt

wurde vom Forschungsbereich Dichtungstechnik der FH Münster nach den Vorgaben der VDI- Richtlinien 2200 (Ausgabe Juni 2005) hinsichtlich Hochwertigkeit nach TA Luft geprüft. Die Untersuchung fand unter folgenden Randbedingungen statt:

Dichtungsgeometrie:	85 x 4 mm (Innendurchmesser * O-Ring Stärke)
Prüflansch:	ABV-S DN 100
Auslagerung:	70 °C / 48h
Testbedingungen:	24h / Umgebungstemperatur

Die anschließende Leckagemessung bei Raumtemperatur, mittels Helium-Massenspektrometer, bei einem Prüfdifferenzdruck von 1 bar, ergab eine Leckage von

$$2,3 \cdot 10^{-5} \frac{mbar \cdot l}{s \cdot m}$$

Das Leckagekriterium von $10 \cdot 10^{-4} \frac{mbar \cdot l}{s \cdot m}$ wurde nicht überschritten. Die oben genannte Dichtung gilt somit als hochwertig im Sinne der TA Luft.

Dieses Zertifikat ist nur in Verbindung mit dem Prüfbericht 09011301-1 gültig.

Steinfurt, den 08. Mai 2009 — Prof. Dr. A. Riedl

Z08121101-1

Akkreditiert im Rahmen der DAP Akkreditierung durch den TÜV SÜD

C S T
Center of Sealing Technologies
Fachhochschule Münster
Fachbereich Physikalische Technik
Bürgerkamp 3
D-48565 Steinfurt

Fachhochschule Münster University of Applied Sciences

Zertifikat

Die Nottrennkupplung vom Typ

ABV-S / ABVF-S mit eingelegtem Viton O-Ring

der Firma

Roman Seliger
An´n Slagboom 20
D-22848 Norderstedt

wurde vom Forschungsbereich Dichtungstechnik der FH Münster nach den Vorgaben der VDI- Richtlinien 2200 (Ausgabe Juni 2005) hinsichtlich Hochwertigkeit nach TA Luft geprüft. Die Untersuchung fand unter folgenden Randbedingungen statt:

Dichtungsgeometrie:	85 x 4 mm (Innendurchmesser * O-Ring Stärke)
Prüflansch:	ABV-S DN 100
Auslagerung:	70 °C / 48h
Testbedingungen:	24h / Umgebungstemperatur

Die anschließende Leckagemessung bei Raumtemperatur, mittels Helium-Massenspektrometer, bei einem Prüfdifferenzdruck von 1 bar, ergab eine Leckage von

$$2,5 \cdot 10^{-4} \frac{mbar \cdot l}{s \cdot m}$$

Das Leckagekriterium von $10 \cdot 10^{-4} \frac{mbar \cdot l}{s \cdot m}$ wurde nicht überschritten. Die oben genannte Dichtung gilt somit als hochwertig im Sinne der TA Luft.

Dieses Zertifikat ist nur in Verbindung mit dem Prüfbericht 09011301-2 gültig.

Steinfurt, den 26. Juni 2009 — Prof. Dr. A. Riedl

Z08121101-2

Akkreditiert im Rahmen der DAP Akkreditierung durch den TÜV SÜD

Threads and flanges

1 Threaded connections

Threaded connections are generally classified according to male and female thread. A further distinction is then made according to thread types, which perform very different sealing functions quite apart from the thread structure.

Some threads transfer the force in order to create a flat and conical seal (not in the thread). The other type of seal is created in the thread itself.

Overview of threads commonly used in fitting technology

Description		Standard	Application areas
General	**International**		
G-thread	BSP	DIN EN ISO 228	General industry
R-thread	BSPT	DIN 2999/EN 10226 1-3	
NPS	NPS	ANSI/ASME B 1.20.1	
NPT	NPT	ANSI/ASME B 1.20.1/3	
Milk pipe round thread	Round thread	DIN 405 1-2	Foodstuffs, Pharmaceutical
ACME	ACME	ASME B1.5	Gas
Metric ISO-thread	Metric thread	DIN 13	Hydraulics
51/2" rail tank wagon thread	–	DIN 11	Loading rail tank wagons

Overview of identifying features

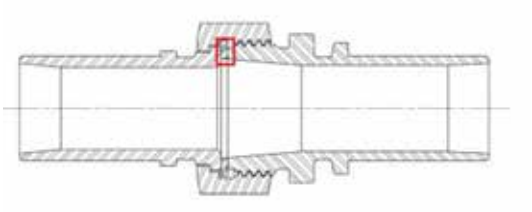
Thread	Male thread	Female thread
G-thread	cylindrical	cylindrical with seal
R-thread	conical	cylindrical without seal
NPS	cylindrical	cylindrical with seal
NPT	conical	conical
Milk pipe round thread	cylindrical with seal	cylindrical
ACME	cylindrical with seal	cylindrical with sealing face
M-thread	cylindrical with cone	cylindrical with conical face
51/2" rail tank wagon thread	cylindrical	cylindrical with seal

Overview of types of seal

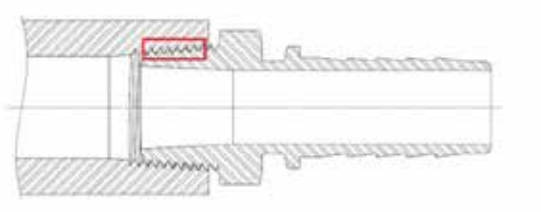
Thread	Seal type	Sealing point	Compatibility	Notes
G-thread	flat	Thread seal	R-thread	if male thread flat sealing
R-thread	conical	Thread + sealing band	G-thread	if male thread flat sealing
NPS	flat	Thread seal	NPT	
NPT	thread	Thread + sealing band	NPS	if male thread flat sealing
Milk pipe round thread	flat	Thread seal	–	
ACME	flat	Thread seal	–	
M-thread	conical	Cone / metallic	–	24 or 60 degree cone
51/2" rail tank wagon thread	flat	Thread seal	–	

Threads and flanges

For safety couplings with threaded connections usually only G and NPT threads are used.



G



NPT

2 Flange connections

Flange connections are divided into lapped flanges and fixed flanges. The lapped flange can be turned on the hose coupling or on the plant and can be aligned with its counterpiece. As the name implies, fixed flanges are fixed to the plant or to the hose and cannot be turned. For this reason, a hose fitted with flanged connections at both ends will have a lapped flange on at least one end. This prevents hose torsion, which occurs if both ends are fitted with fixed flanges.

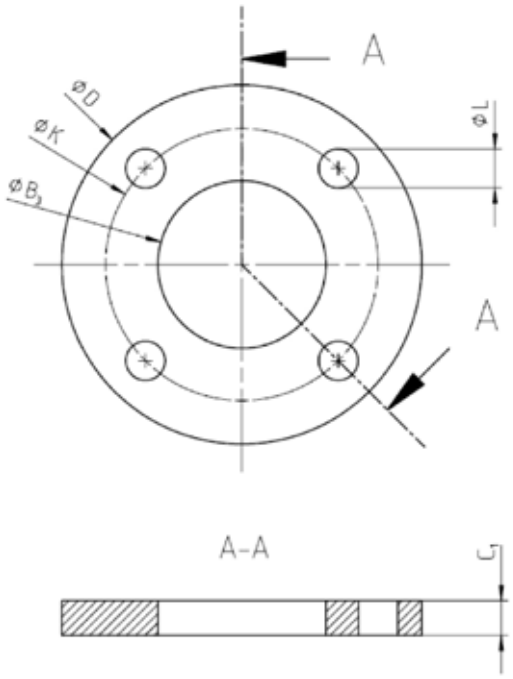
Flanged connections are generally standardized in the same way as threads. These standards are broken down further into pressure stages. Depending on the pressure stage, the flanges differ, for example, in terms of outer diameter, hole circle, number of holes, flange width etc. Lapped and fixed flanges of the same standards and pressure level are compatible with each other. ANSI (ASA) flanges are not compatible with DIN or EN flanges.

Flanged connections are attached at the front with the aid of a suitable flange seal, screwed on with nuts and bolts and thus sealed.

Safety couplings with flanged connections are always delivered with fixed flanges.

Typical flange standards compared according to pressure levels

Standards				
	DIN/EN		ANSI (ASA) B16.5	
Pressure stage	Lapped flange	Fixed flange	Lapped flange	Fixed flange
PN10/16	DIN 2673	DIN 2633	ANSI ASA 150PSI	
	EN 1092 Type = 04/34	EN 1092 Type 11		
PN25/40	DIN 2676	DIN 2635	ANSI ASA 300PSI	
	EN 1092 Type = 04/34	EN 1092 Type 11		



D	Flange outer diameter
K	Hole circle diameter
B3	Central hole diameter
L	Hole diameter
C1	Flange thickness

3 Materials

3.1 Materials for fitting bodies

For a wide range of fittings, there are also a large number of possible materials. Depending on the fitting, these materials are selected based on standards and/or applications. Factors such as strength, chemical and thermal resistance as well as manufacturing processes play a major role in the choice of material.

The following main groups products are used in the most diverse variants and qualities in valve technology:

Overview of the most widely used materials in valve technology

Materials by manufacturing process				
Material groups	Machined (turned/milled)	Cast	Forged	Injected
Steel	1.0254, 1.0570, 1.0038, 1.0718	–	–	–
Stainless steel 2A grade	1.4301, 1.4305, 1.4541	–	–	–
Stainless steel 4A grade	1.4571, 1.4404, 1.4435	1.4401, 1.4408	–	–
Hastelloy	2.4610, 2.4602, 2.4600, 2.4819	–	–	–
Brass	CW614N, CW617N	CW614N, CW617N	CW614N, CW617N	–
Aluminium	EN AW-6060	EN AC-47000	EN AW-6082	–
Plastics	Polypropylene, PEEK	–	–	Polyamide

For safety couplings stainless steel, aluminum, or (rarely) brass are usually used.

3.2 Materials for seals

The large number of thread and coupling seals require varied variety of materials for seals. Elastomeric seals are common for this purpose.

Overview and characteristics of the most widely used sealants in fitting technology

Material	Chemical properties	Physical properties
FKM/FPM	good general chemical resistance	High temperature resistance
(Viton)	good ozone & weathering resistance	For water & water steam max. 60°C
		Operating temperature -20° – +200°C
NBR	good resistance to petroleum & fuel	good mechanical properties (abrasion resistance)
(Perbunan)	limited ozone & weathering resistance	good low-temperature behaviour
		Operating temperature -50° – +110°C
Polyurethan	good resistance to petroleum & fuel	good mechanical strength (wear & tear resistance, elasticity)
(Vulkulan)	poor chemical resistance	Operating temperature -40° – +110°C
PTFE	universal chemical resistance	Good anti-friction properties
(Teflon)	good ozone & weathering resistance	High temperature resistance
		Operating temperature -40° – +250°C
CSM	good acid & lye resistance	good mechanical strength (wear & tear resistance, elasticity)
(Hypalon)	good resistance to petroleum & fuel	Operating temperature -35° – +140°C
FFKM	excellent chemical resistance	High temperature resistance
(Kalrez)		Operating temperature -25° – +225°C
Novapress Multi	good steam & hot-water resistance	High pressure resistance
	good resistance to petroleum & fuel	Operating temperature -25° – +250°C
EPDM	good steam & hot-water resistance	good mechanical strength (wear & tear resistance)
	poor resistance to petroleum & fuel	Operating temperature -50° – +180°C
	good ozone & weathering resistance	

Depending on the particular application, a suitable sealant must also be used in addition to the suitable fitting material.

3.3 Surface finishing / surface protection

corrosive media call for special fittings which provide suitable surface protection.

For protection against aggressive media such as acids and lyes, highly chemical-resistant fluoroplastic coatings are used. These include PTFE, FEP, E-CTFE, ETFE, or PFA.

This coating is applied to those parts of the fitting getting in contact with the media. Unfortunately not all parts of a coupling assembly can be coated. In this case highly chemical-resistant materials like nickel-based alloys (e.g. Hastelloy or Inconel) are used.

By fax: +49 40 523064-25

As a download: www.rs-seliger.de ➞ Products ➞ Breakaway couplings ➞ Questionnaire

☐ Bruchbolzen
Breaking Pins

☐ Seilzug
Cable Release

☐ geschäftete Trennstelle (nur axial auslösbar)
Shaftet parting point (axial release only)

☐ ungeschäftete Trennstelle (winklig auslösbar)
unshaftet parting point (angular release)

Verwendetes Medium: _____
Media to be transferred

Konzentration des Mediums: _____%
Concentration of media

Feststoffanteil des Mediums: _____%
Solids content of media

Dichte des Mediums: _____kg/m^3
Densitiy of media

Dynamische Viskosität des Mediums: _____Pa s
Dynamic viscosity of media

Geforderter Durchfluss geschätzt / berechnet: _____m^3/h
Requested flow rate estimated / calculated

Minimale und maximale Umgebungstemperatur: _____°C
Minimum and maximum ambient temperature

Minimale und maximale Temperatur des Mediums: _____°C
Minimum and maximum transfer temperature of medium

Minimaler, maximaler und durchschnitt. Betriebsdruck: _____bar
Minimum, maximum and average transfer pressure

Mögliche Druckschwankungen: _____bar
Surge pressures

Querkraftbelastung der Armatur: _____N
Shear-force of armature

Anwendung Schlauch oder Ladearm: _____
Hose or loading arm application

Zusätzliche Reduzierungen (Koncenter) vor/hinter Abreisskupplung: _____
Additional reductions (concenter) before/behind coupling

Anschlüsse: _____
Inlet / outlet connections e.g. flange, thread

Maximale Zugbelastung: _____N
Maximum permissible tensile load on loading arm

Schlauchtyp/ -marke: _____
Hose type / brand

Minimale Zugfestigkeit der Schlauchleitung: _____N
Minimum tensile strength of hose

Länge der Rohr/Schlauchleitung zur Nottrennkupplung: _____m
Length of pipe/hose between pump and Safety-Break-Away

Nennweite der Rohr/Schlauchleitung zur Nottrennkupplung: _____mm
Size of pipe / hose between pump and Safety-Break-Away

Skizze der Anwendung inkl. der Hauptkomponenten:
Sketch of the application incl. major components. Please also indicate the expected direction of pull force to be applied to the Safety-Break-Away coupling.

Cad-Daten (UG/Iges/Step/Dwg) an info@rs-seliger.de

Zusätzliche Informationen / Anforderungen
Additional information and instructions

_____

_____

_____

_____

_____

_____

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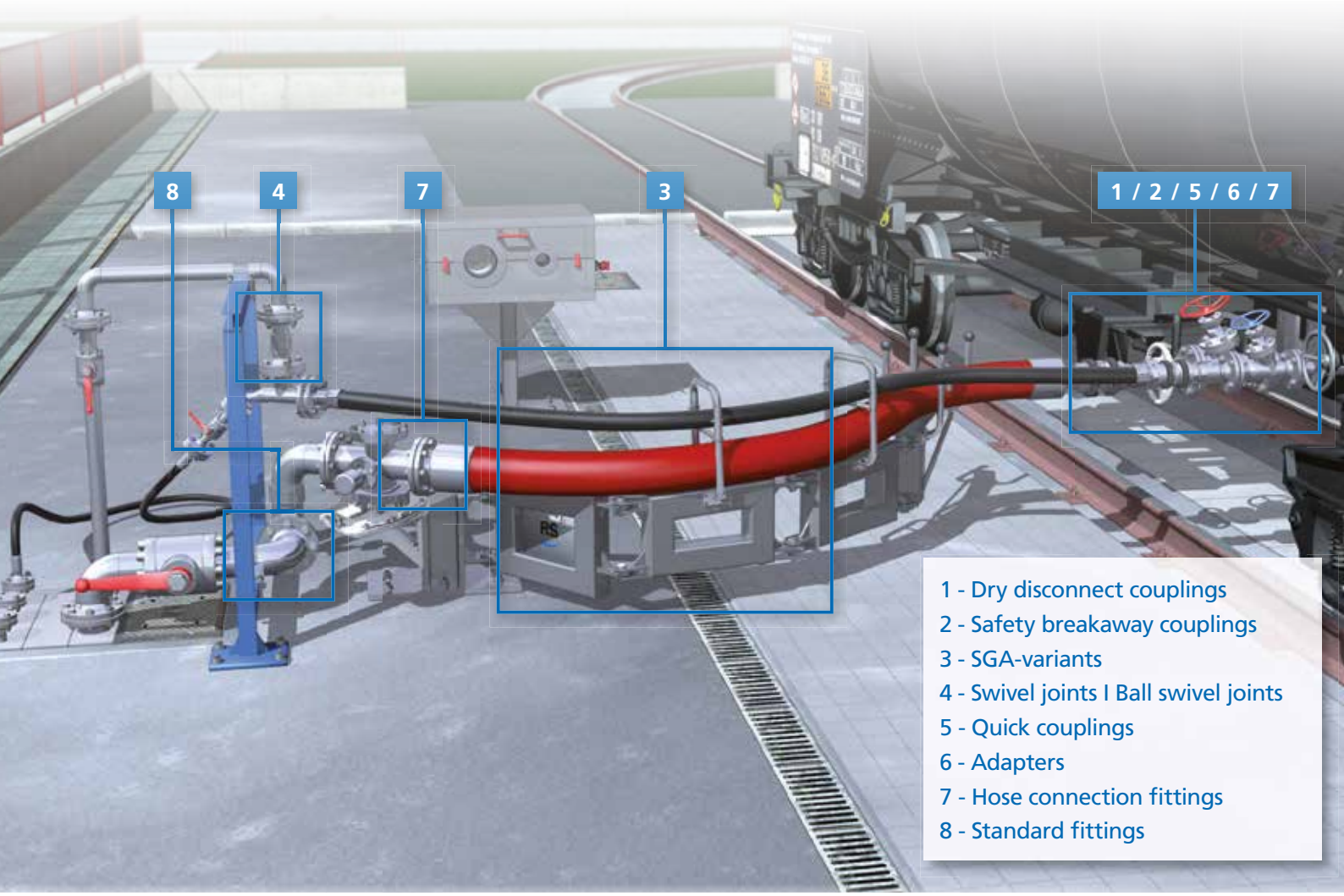
All RS ranges



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Numbers – Data – Facts

RS - a global mid-sized company based in Norderstedt near Hamburg - is considered one of the leading manufacturers in the hose line and valve technology sector for the reliable conveyance and control of a wide variety of media. RS products are used in demanding applications from plant engineering to the chemical and pharmaceutical industry and at the interface between industry and logistics. The managing director is Dr. -Ing. Jens Reppenhagen.

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