



Tomorrow's Couplings  
Engineered Today

# Safety breakaway couplings

Product Range



## 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.

### Your advantages

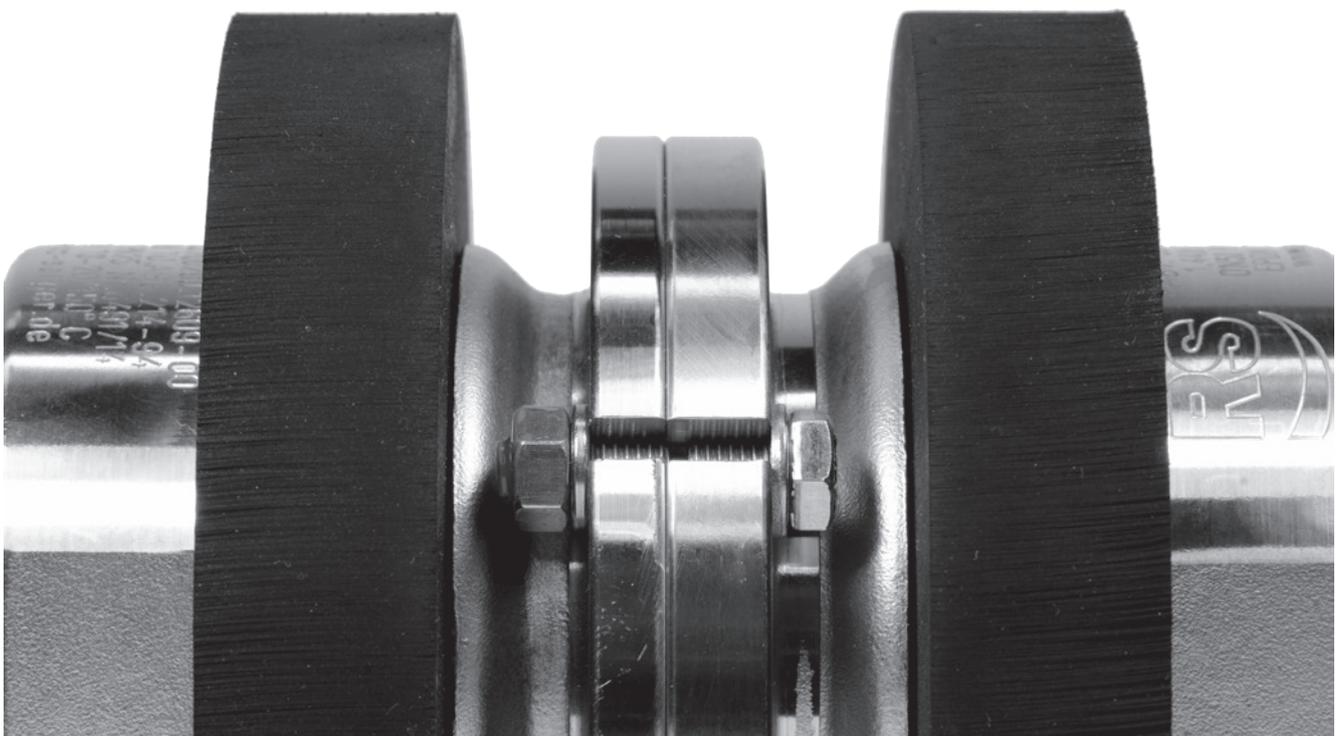
- › Protects humans and the environment from leaking hazardous substances
- › Matching coupling technologies for various requirements
- › Avoids media loss
- › Protects load lines
- › Customer-specific special versions from DN 25 to DN 300

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

- › A defined separating mechanism, which separates the line between the mobile unit and the loading system below the permissible load.
- › 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



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## Breakaway couplings at a glance

ABV series



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

### Nominal diameters

- › DN 25 to DN 100
- › Others on request

### Materials

- › Stainless steel (1.4571 / 1.4408)
- › Aluminum
- › Hastelloy® (C4/2.4610 / B3/2.4600)
- › E-CTFE coating for aggressive media
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5, TTMA

### Seals

- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C, Aluminium
- › -40°C to 60°C

ABVL series



With force-limited release by means of breaking pins and cone valve closure – The universal couplings for a broad range of applications that require high flow rates and low pressure loss.

### Nominal diameters

- › DN 50 to DN 150
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Aluminum
- › Hastelloy® (C4/2.4610 / B3/2.4600)
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

### Seals

- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C, Aluminium
- › -40°C to 60°C

ABVM series



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.

### Nominal diameters

- › DN 50 to DN 100
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

### Seals

- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C

ABML series



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.

### Nominal diameters

- › DN 50 to DN 150
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

### Seals

- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C

## ABVC series



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 diameters**

- › DN 25 to DN 100
- › Others on request

**Materials**

- › Stainless steel (1.4404)
- › Others upon request

**Connections**

- › Thread: NPT
- › Flange: EN1092-1, ASME B16.5

**Seals**

- › PTFE

**Pressure area**

- › up to 25 bar

**Temperature range**

- › -196 °C to 60 °C

## ABOV series



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 diameters**

- › DN 25 to DN 100
- › Others on request

**Materials**

- › Stainless steel (1.4571 / 1.4408)
- › Aluminum
- › Hastelloy® (C4/2.4610 / B3/2.4600)
- › E-CTFE coating for aggressive media
- › Others upon request

**Connections**

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5, TTMA

**Seals**

- › FKM, NBR, FFKM, EPDM
- › Others on request

**Pressure area**

- › up to 25 bar
- › Aluminium 0,8 to 10 bar

**Temperature range**

- › -40° C to 150° C, Aluminium -40° C to 60° C

## ABV-S series



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 diameters**

- › DN 25 to DN 300
- › Others on request

**Materials**

- › Stainless steel (1.4571)
- › Hastelloy® (C4/2.4610 / B3/2.4600)
- › E-CTFE coating for aggressive media
- › Others upon request

**Connections**

- › Thread: BSP, NPT (up to DN 100)
- › Flange: EN1092-1, ASME B16.5

**Seals**

- › FKM, NBR, FFKM, EPDM
- › Others on request

**Pressure area**

- › up to 25 bar

**Temperature range**

- › -40° C to 150° C

## ASVL series



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 diameters**

- › DN 50 to DN 200
- › Others on request

**Materials**

- › Stainless steel (1.4571)

**Connections**

- › Thread: BSP, NPT (up to DN 100)
- › Flange: EN1092-1, ASME B16.5

**Seals**

- › FKM, NBR, FFKM, EPDM
- › Others on request

**Pressure area**

- › up to 25 bar

**Temperature range**

- › -40° C to 150° C

## 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.



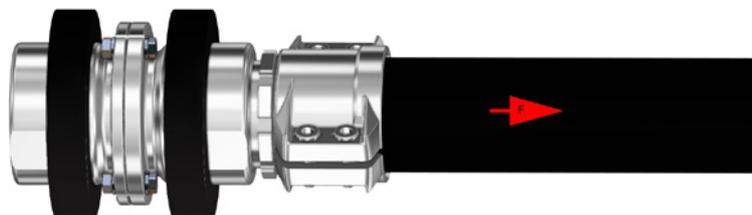
### Separation by force limitation

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 separation.



ABV series after separation.

# Your advantages

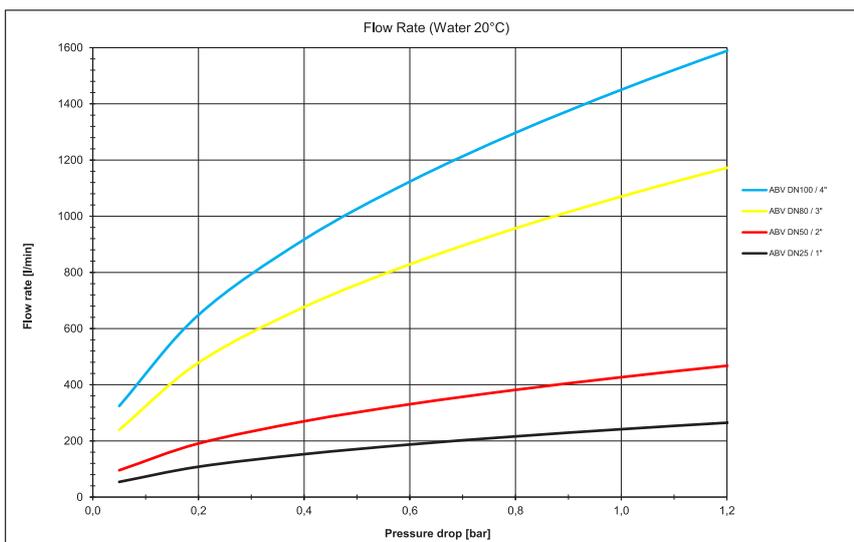
- › Universally deployable breakaway coupling
- › Compact construction
- › Favourable price/performance ratio
- › Small residues

## 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.

## Pressure losses



# Technical data

ABV series

### Nominal diameters

- › DN 25 to DN 100
- › Others on request

### Materials

- › Stainless steel (1.4571/1.4408)
- › Aluminum
- › Hastelloy® (C4/2.4610/B3/2.4600)
- › E-CTFE coating  
for aggressive media
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1,  
ASME B16.5, TTMA

### Seals

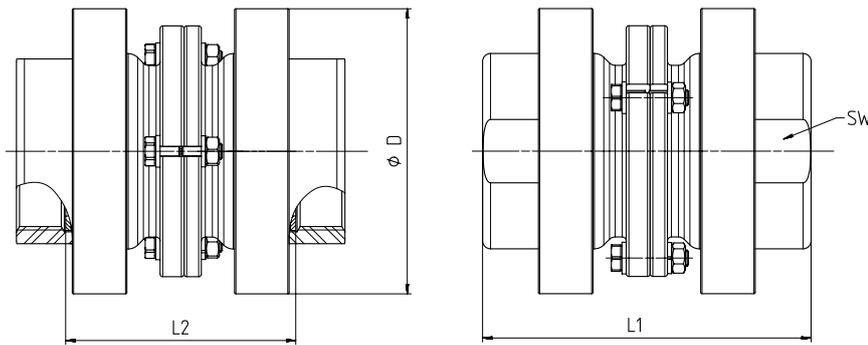
- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar
- › Aluminium 0,8 to 10 bar

### Temperature range

- › -40°C to 150°C,  
Aluminium -40°C to 60°C



### Dimensions and weights

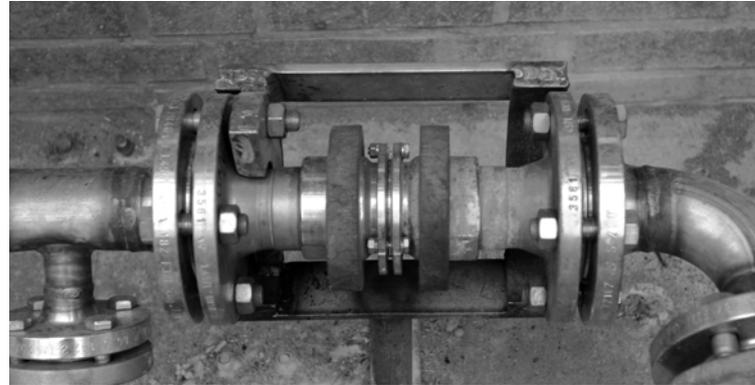
Type ABV (DN)	25	50	65	80	100
Connection	G 1"	G 2"	G 2 1/2"	G 3"	G 4"
D (mm)	77	108	133	148	169
L1 (mm)	112,5	123,5	147,5	174,5	209
L2 (mm)	90	86,5	106,5	131,5	166
SW	41	70	85	100	125
Weight* (kg)	1,1	2,4	5,4	5,7	10,1

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

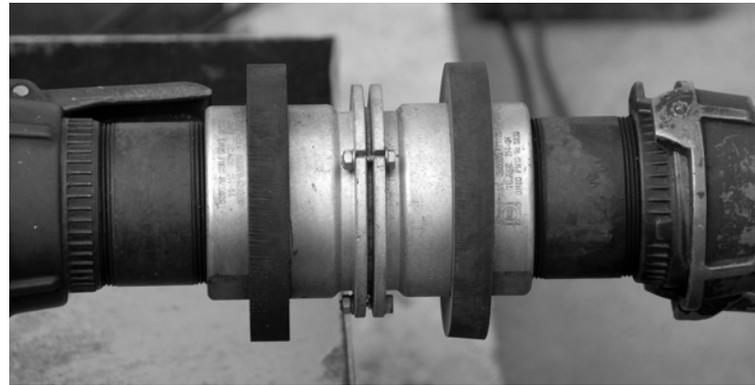
## Application examples

### Decouple in emergencies

ABV series breakaway couplings at the interface between plant and logistics ensure that shunting mistakes like „driving off too hastily“ cannot end in catastrophe. At a defined tensile load - long before the hose tears – the ABV cuts the connection and safely closes the separation points.



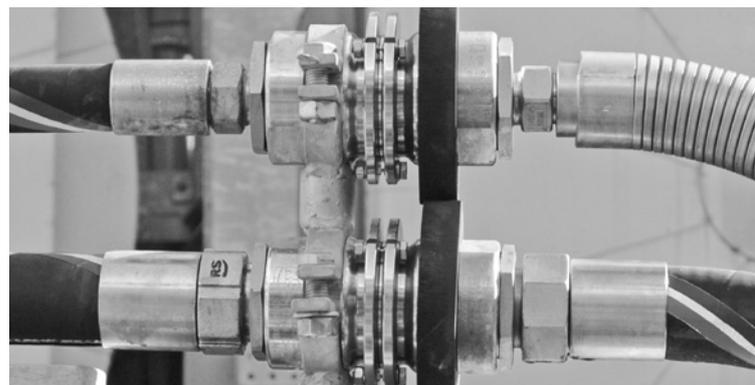
The ABV protects the hose or the connected system from an overburdening. For non-axial burdens, e.g. if the ship begins drifting off, both halves of the breakaway coupling separate via the traction force transmitted through the hose from the breaking of the predetermined breaking point at the three bolts. After separation, the valves close and prevent the leakage of the medium on the hose and pipe side.



At the interface between production and transport facilities, the ABV ensures that unexpected movement of the wagon cannot lead to an accident. At a predefined loading on the hose – far below the failure point – the coupling separates and safely seals the two ends of the joint.



On the loading station the railway tankers are filled from above. At this interface between the factory and the logistics, type ABV breakaway couplings make sure that shunting mistakes like “driving off over hastily“ do not lead to catastrophes. At the defined tensile load the ABV cuts the connection and safely closes the separation point.



## 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 load-ing process. The design was developed with an intense use of 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.



ABVL series before separation.



ABVL series after separation.

# Your advantages

## Applied bionics

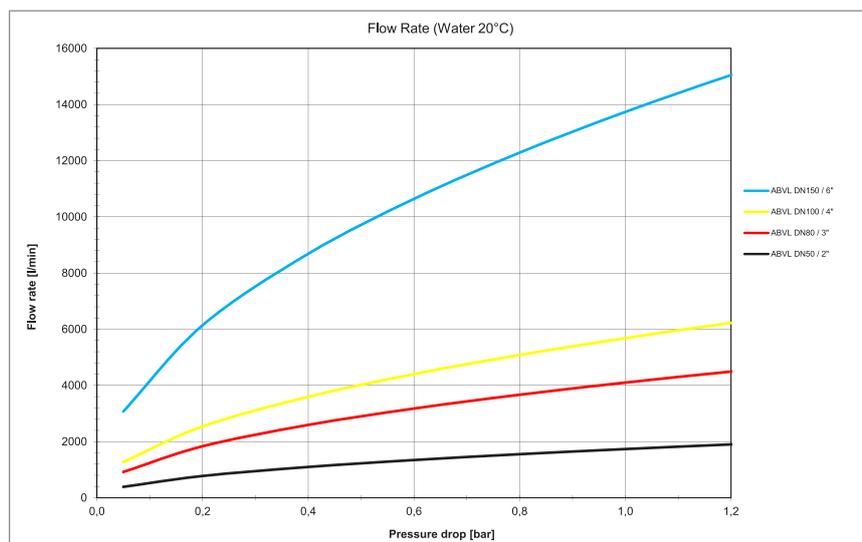
The design of the ABVL Series breakaway couplings was optimised using computational fluid dynamics (CFD).

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

- › 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



# Technical data

ABVL series

### Nominal diameters

- › DN 50 to DN 150
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Aluminum
- › Hastelloy® (C4/2.4610/B3/2.4600)
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

### Seals

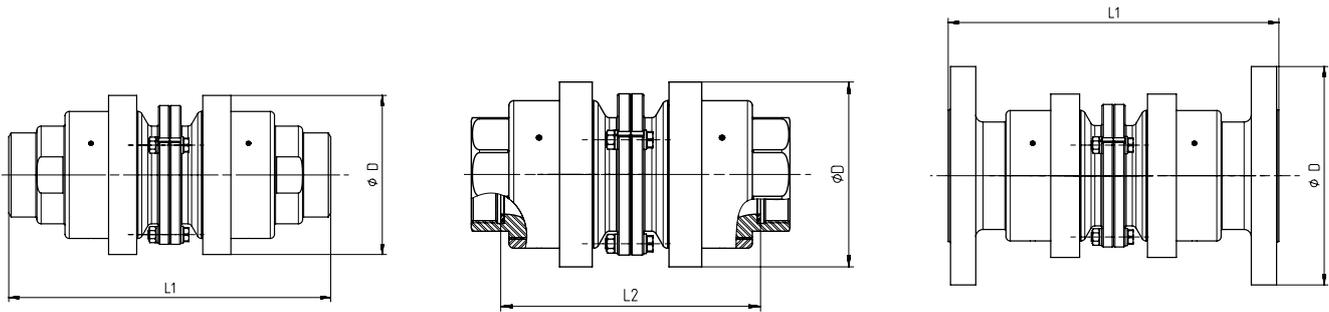
- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C,  
Aluminium -40°C to 60°C



### 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	ASME B16.5 class 150 PN16	ASME B16.5 class 300 PN16	EN 1092-1 PN16	EN 1092-1 PN25	ASME B16.5 class 300 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	ASME B16.5 class 150 PN16	ASME B16.5 class 300 PN16	EN 1092-1 PN25	EN 1092-1 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	13,9	13,3	21,5	24,6	21,2	19,6	5

Type ABVL (DN)	100									
<b>Connection</b>	G 4" IG PN16	G 4" AG PN16	4" NPT IG PN16	4" NPT AG PN16	AE- 114,3x6,02 PN16	ASME B16.5 class 150 PN16	ASME B16.5 class 300 PN16	EN 1092-1 PN25	EN 1092-1 PN16	G4" IG Aluminium
<b>D (mm)</b>	185,6	185,6	185,6	185,6	185,6	228,6	254	235	220	185,6
<b>L1 (mm)</b>	336	386	358	417	405	380	390	400	392	336
<b>L2 (mm)</b>	294	--	315	339	--	--	--	--	--	294
<b>SW</b>	125	125	125	125	125	--	--	--	--	125
<b>Weight* (kg)</b>	23,7	23,9	24,2	24,5	24	34,7	41,9	34	30,8	11,5

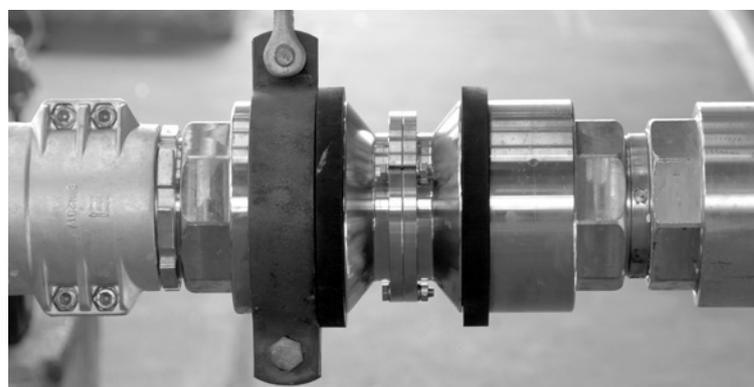
Type ABVL (DN)	150		
<b>Connection</b>	ASME B16.5 class 150 PN16	ASME B16.5 class 300 PN16	EN 1092-1 PN16
<b>D (mm)</b>	279,4	317,5	285
<b>L1 (mm)</b>	432	432	432
<b>L2 (mm)</b>	--	--	--
<b>SW</b>	--	--	--
<b>Weight* (kg)</b>	56,2	74,7	56,2

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

## Application examples

Protected for the worst possible case

The ABVL series breakaway coupling protects the hose and the connection to the tanker from excessively high stress. If, for example, the tank wagon starts moving due to being bumped by a train or wagon whilst unloading, both halves of the breakaway coupling separate through the breakage of the predetermined breaking point on the three bolts. After the separation, the valves close and prevent the medium from escaping from the hose and tank wagon side.



## ABVM series

The standard breakaway coupling for marine applications

The ABVM series has been specially developed for marine and offshore applications 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 specifically designed 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.

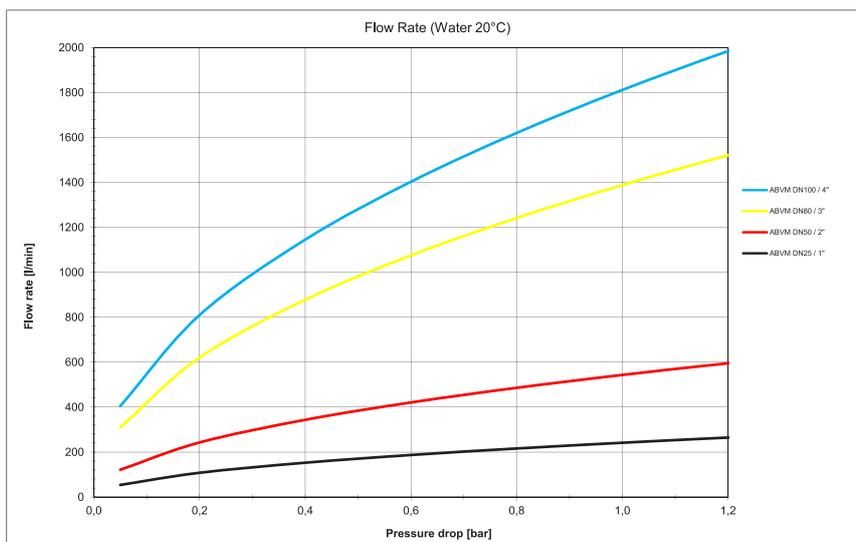


# Your advantages

## 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
- › 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



## Technical data

ABVM series

### Nominal diameters

- › DN 50 to DN 100
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Others upon request

### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

### Seals

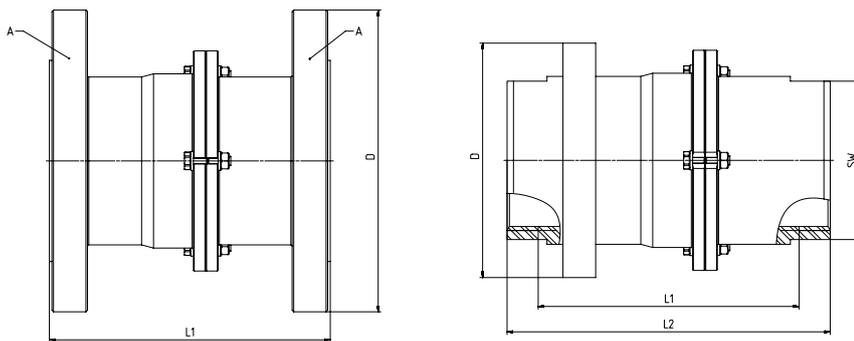
- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C



### Dimensions and weights

Type ABVM (DN)	50		80			100		
Connection	G 2"	2" NPT	G 3"	3" NPT	ASME B16.5 class 150	G 4"	4" NPT	ASME B16.5 class 150
D (mm)	108	108	148	148	190,5	200	200	228,6
L1 (mm)	131,5	162,5	90,6	86,5	131,5	162,5		
L2 (mm)	123,5	143,5	174,5	202,5	--	202,5	241,5	--
SW	70	70	100	100	--	125	125	--
Weight* (kg)	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.

## 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.

### 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.



Compared to the standard marine breakaway coupling, this cuts loading times by up to 75% which delivers 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.

### 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.



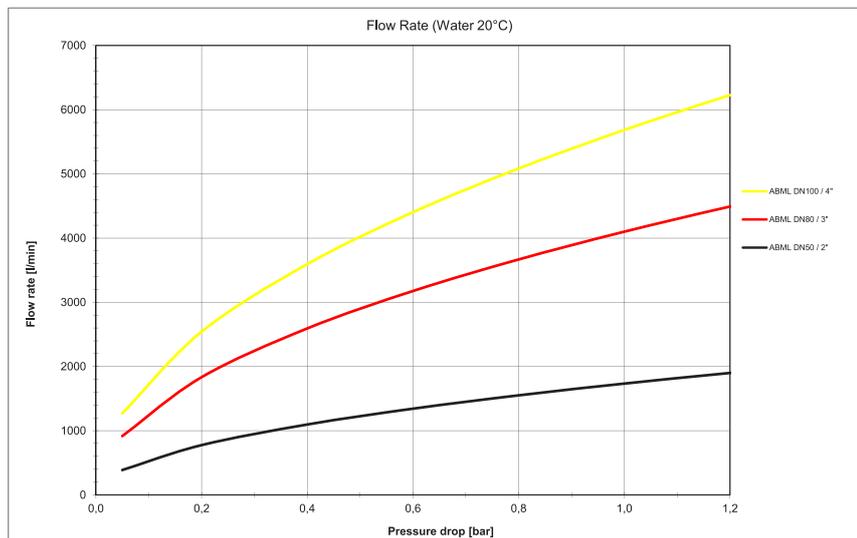
# Your advantages

- › 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 higher viscosity
- › Suitable for all loading processes between stationary and mobile unit
- › No weld seams, which means no weak points in the housing

## 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

## Pressure losses



# Technical data

ABML series

## Nominal diameters

- › DN 50 to DN 150
- › Others on request

## Materials

- › Stainless steel (1.4571)
- › Others upon request

## Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1, ASME B16.5

## Seals

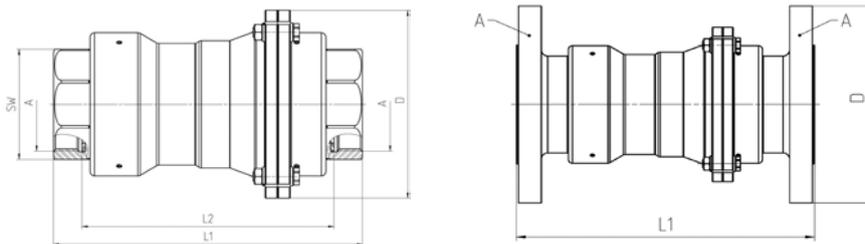
- › FKM, NBR, FFKM, EPDM
- › Others on request

## Pressure area

- › up to 25 bar

## Temperature range

- › -40°C to 150°C



## Dimensions and weights

Type ABML (DN)	50		80				100				150
Connection	G 2"	ASME B16.5 class 150	G 3"	3" NPT	ASME B16.5 class 150	ASME B16.5 class 300	G 4"	4" NPT	ASME B16.5 class 150	ASME B16.5 class 300	ASME B16.5 class 150
D (mm)	119,5	152,4	166	288	190,5	209,6	210	210	228,6	254	279,4
L1 (mm)	195	229	270	202,5	316	316	336	358	380	390	432
L2 (mm)	159	--	228	236	--	--	294	302	--	--	--
SW	70	--	100	100	--	--	125	125	--	--	--
Weight* (kg)	5,4	9,5	13,9	14,4	21,9	25	18,8	19,8	29,8	37,5	69

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

## 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.

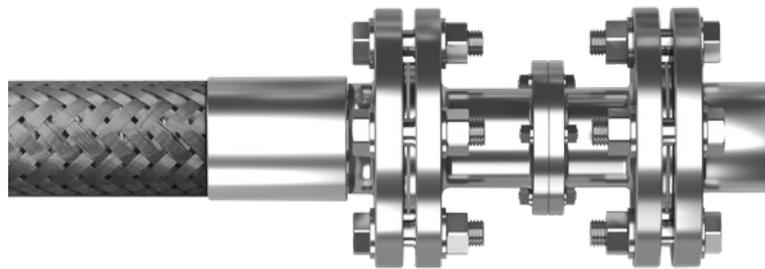


### Separation by force limitation

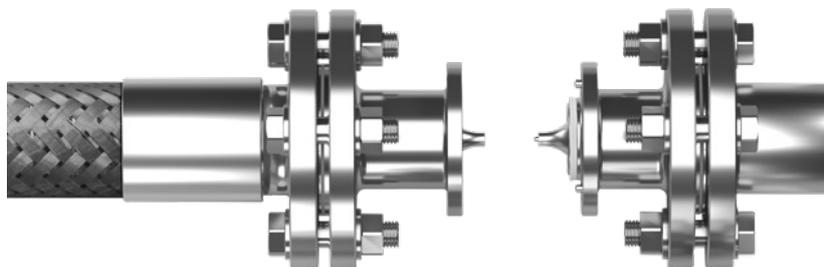
As well as ensuring compliance with the corresponding leak rates, using our breakaway coupling offers guaranteed protection for the hose line used and the plant components across the entire temperature range from -196 °C to 60 °C.

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.

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



ABVC series before separation.



ABVC series after separation.

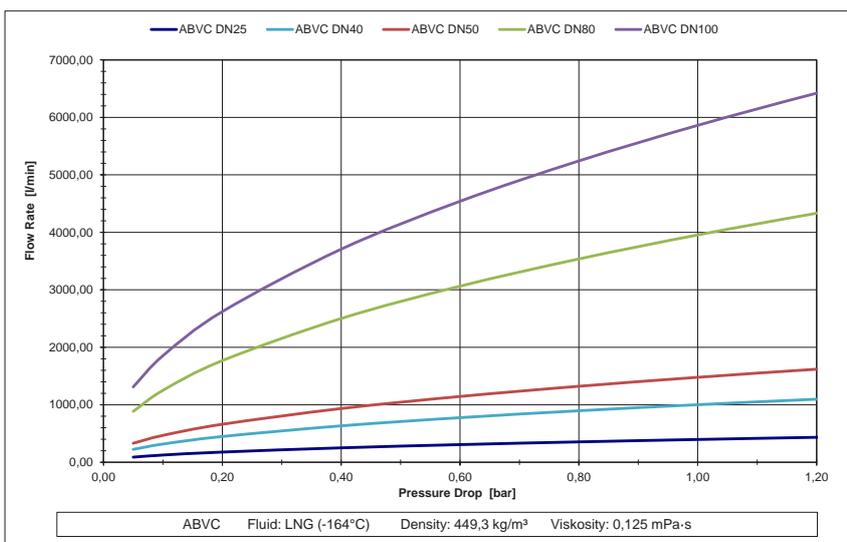
# Your advantages

## Attributes

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

- › 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



## Technical data

### ABVC series

#### Nominal diameters

- › DN 25 to DN 100
- › Others on request

#### Materials

- › Stainless steel (1.4404)
- › Others upon request

#### Connections

- › Thread: NPT
- › Flange: EN1092-1, ASME B16.5

#### Seals

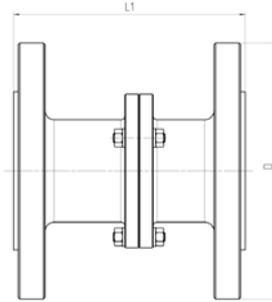
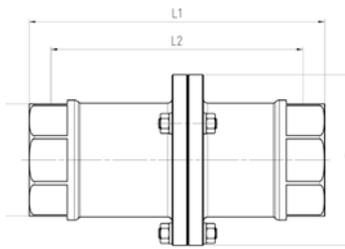
- › PTFE

#### Pressure area

- › up to 25 bar

#### Temperature range

- › -196 °C to 60 °C



### Dimensions and weights

Type ABVC (DN)	25				40			
Connection	1" NPT female	ASME B16.5 class 150	ASME B16.5 class 300	EN1092-1 PN40	1 1/2" NPT female	ASME B16.5 class 150	ASME B16.5 class 300	EN1092-1 PN40
	PN16	PN16	PN16	PN16	PN16	PN16	PN16	PN16
	PN25		PN25	PN25	PN25		PN25	PN25
	PN40		PN40	PN40	PN40		PN40	PN40
D (mm)	69,5	108	124	115	89	127	155,4	150
L1 (mm)	164	124,4	131	132	170	144,8	151	145,8
L2 (mm)	143,7	--	--	--	148,7	--	--	--
SW	38	--	--	--	55	--	--	--
Weight* (kg)	1,27	2,56	3,62	3,4	2,22	4,46	6,64	5,6

Type ABVC (DN)	50				80			
Connection	2" NPT female	ASME B16.5 class 150	ASME B16.5 class 300	EN1092-1 PN40	3" NPT female	ASME B16.5 class 150	ASME B16.5 class 300	EN1092-1 PN40
	PN16	PN16	PN16	PN16	PN16	PN16	PN16	PN16
	PN25		PN25	PN25	PN25		PN25	PN25
	PN40		PN40	PN40	PN40		PN40	PN40
D (mm)	99	152,4	165,1	165	149	190,5	209,6	200
L1 (mm)	169,5	146	152,6	147,8	244,7	213,5	222,5	213,7
L2 (mm)	147,4	--	--	--	205,8	--	--	--
SW	65	--	--	--	100	--	--	--
Weight* (kg)	2,71	6,42	7,87	7,36	8,57	14,86	18,16	15,66

Type ABVC (DN)	100			
Connection	4" NPT female	ASME B16.5 class 150	ASME B16.5 class 300	EN1092-1 PN40
	PN16	PN16	PN16	PN16
	PN25		PN25	PN25
	PN40		PN40	PN40
D (mm)	179	228,6	254	235
L1 (mm)	263	227	243	227
L2 (mm)	220,1	--	--	--
SW	125	--	--	--
Weight* (kg)	12,88	21,25	29,23	21,45

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

## 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 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. Same as the ABV 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.



ABOV series before separation.



ABOV series after separation.

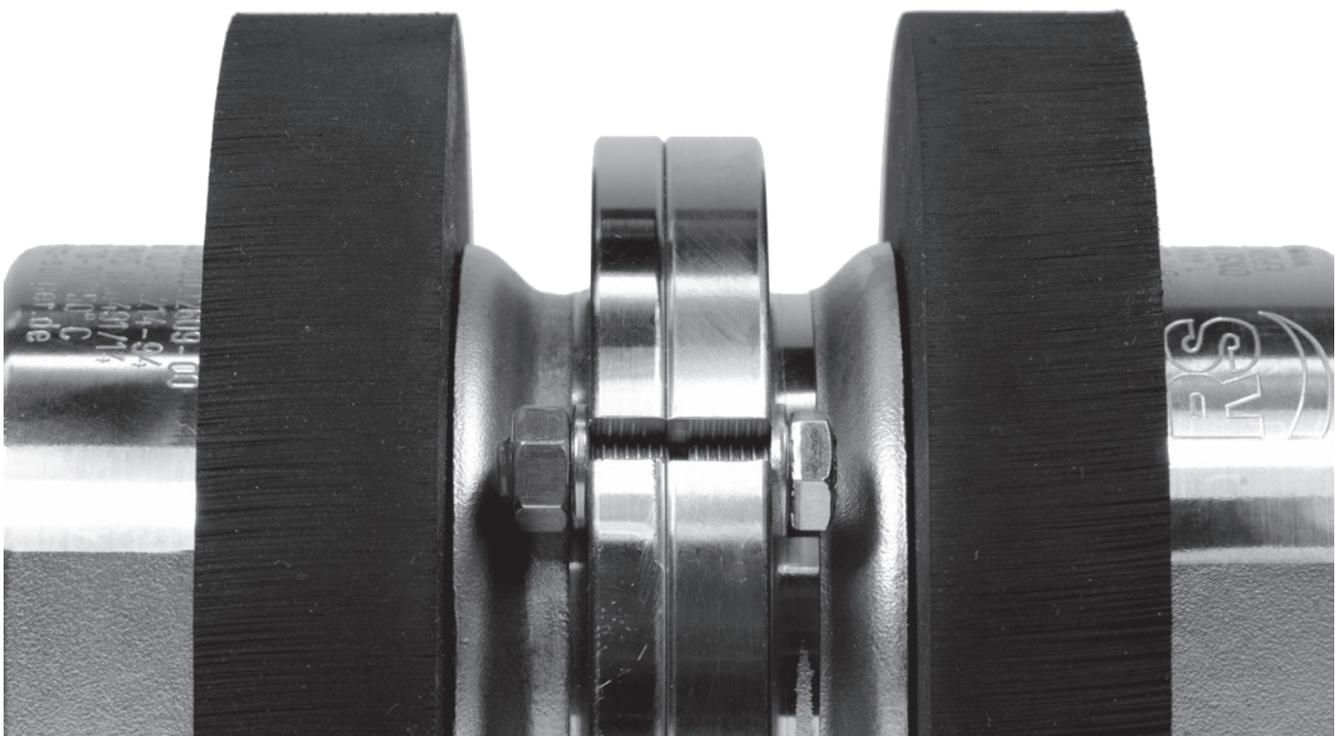
# Your advantages

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

## 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.



## Technical data

### ABOV series

#### Nominal diameters

- › DN 25 to DN 100
- › Others on request

#### Materials

- › Stainless steel (1.4571/1.4408)
- › Aluminum
- › Hastelloy® (C4/2.4610/B3/2.4600)
- › E-CTFE coating  
for aggressive media
- › Others upon request

#### Connections

- › Thread: BSP, NPT
- › Flange: EN1092-1,  
ASME B16.5, TTMA

#### Seals

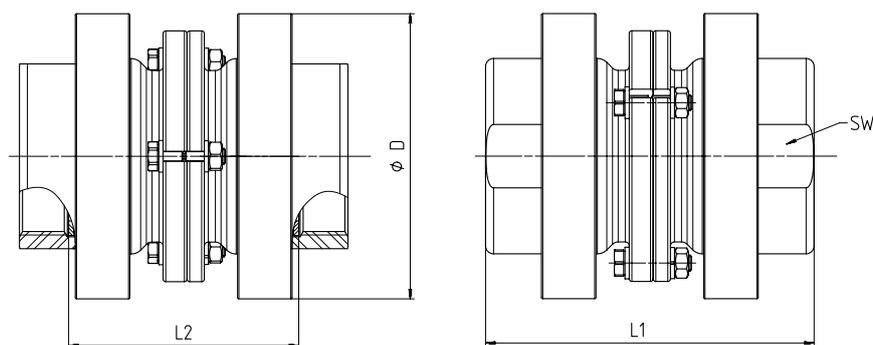
- › FKM, NBR, FFKM, EPDM
- › Others on request

#### Pressure area

- › up to 25 bar
- › Aluminium  
0,8 to 10 bar

#### Temperature range

- › -40°C to 150°C,  
Aluminium -40°C to 60°C



#### Dimensions and weights

Type ABOV (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.

## ABV-S series

The standard breakaway coupling with control cable

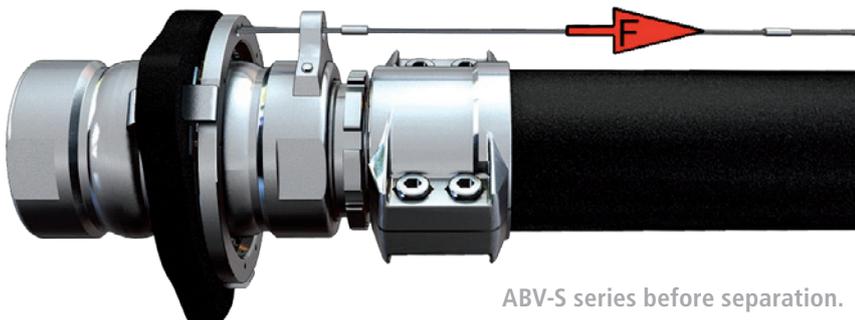
The ABV-S breakaway coupling for safe loading of liquids on road, rail and shipping. It is used to mechanically separate product lines during refuelling or unloading operations, thus protecting the lines from damage.



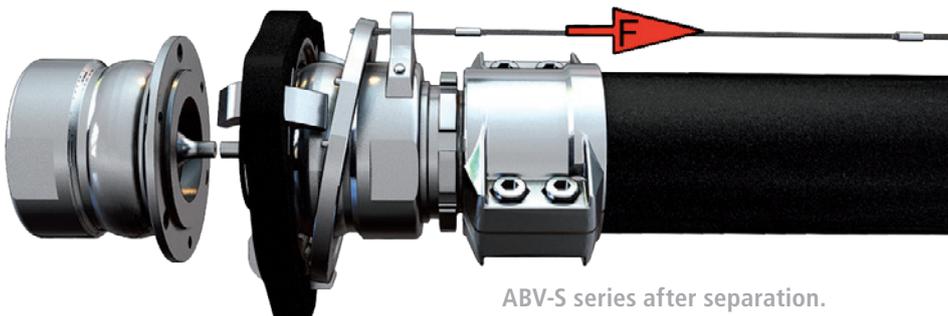
### Release cord as a safety cord

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 separation.



ABV-S series after separation.

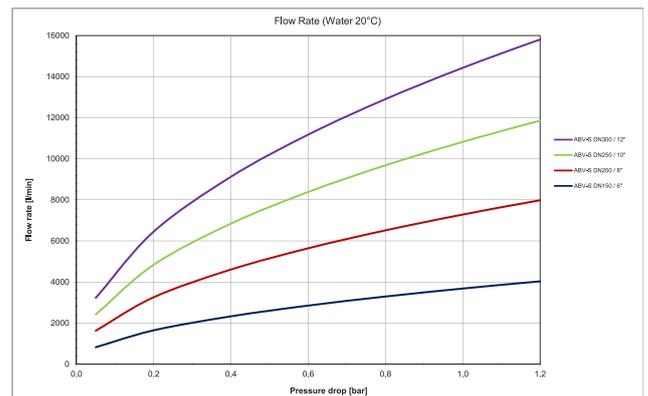
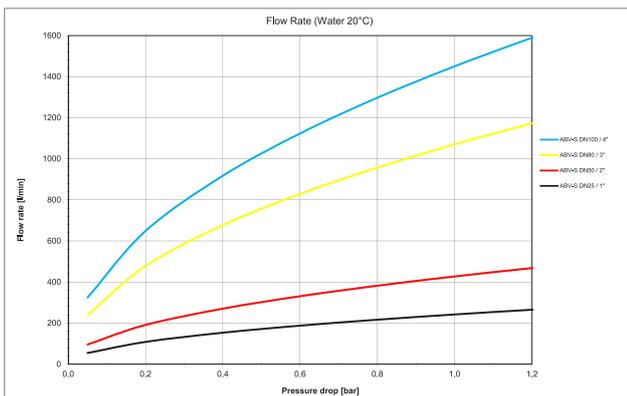
# Your advantages

- › No force on the hose line or system components
- › Compact construction
- › Easy to maintain
- › Simple to reassemble after separation
- › Not sensitive to lateral forces
- › Lubricant-free moving components

## 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.

## Pressure losses



# Technical data

ABV-S series

### Nominal diameters

- › DN 25 to DN 300
- › Others on request

### Materials

- › Stainless steel (1.4571)
- › Hastelloy® (C4/2.4610/B3/2.4600)
- › E-CTFE coating  
for aggressive media
- › Others upon request

### Connections

- › Thread: BSP, NPT (up to DN 100)
- › Flange: EN1092-1, ASME B16.5

### Seals

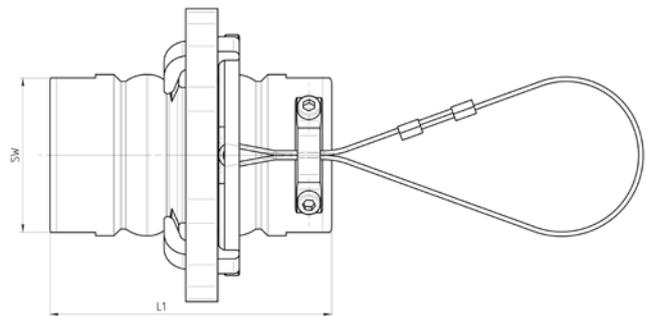
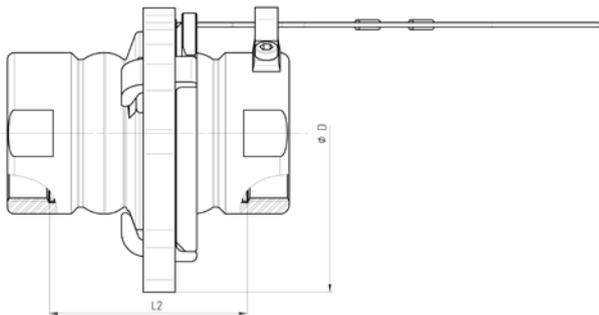
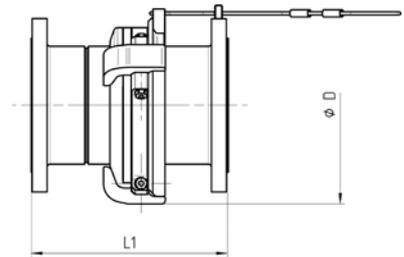
- › FKM, NBR, FFKM, EPDM
- › Others on request

### Pressure area

- › up to 25 bar

### Temperature range

- › -40°C to 150°C



### Dimensions and weights

Type ABV-S (DN)	25		50		80		100	
Connection	G 1"	1" NPT	G 2"	2" NPT	G 3"	3" NPT	G 4"	4" NPT
D (mm)	100	100	140	140	210	210	275	275
L1 (mm)	112,5	140,5	123,5	143,5	174,5	202,5	208,5	242,5
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

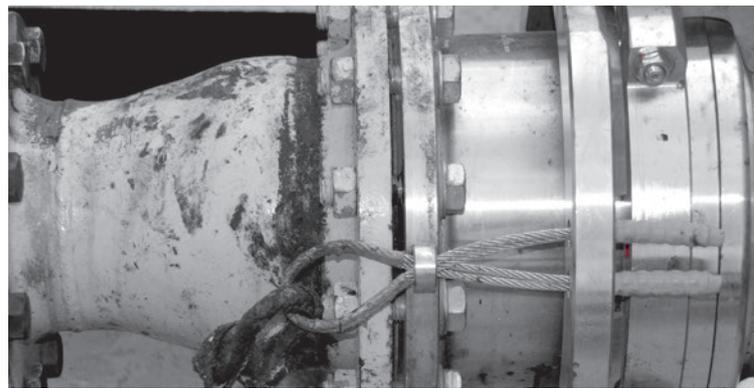
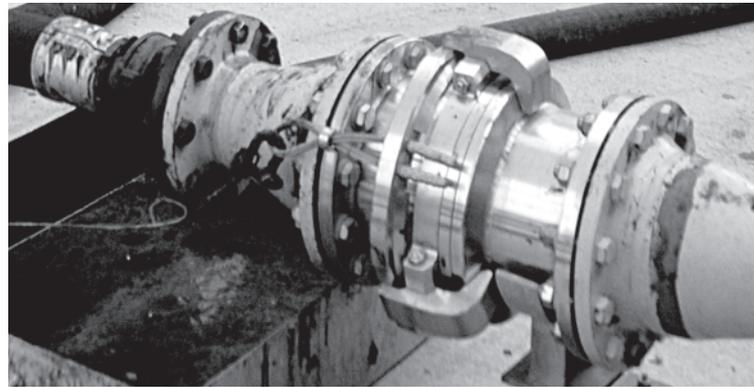
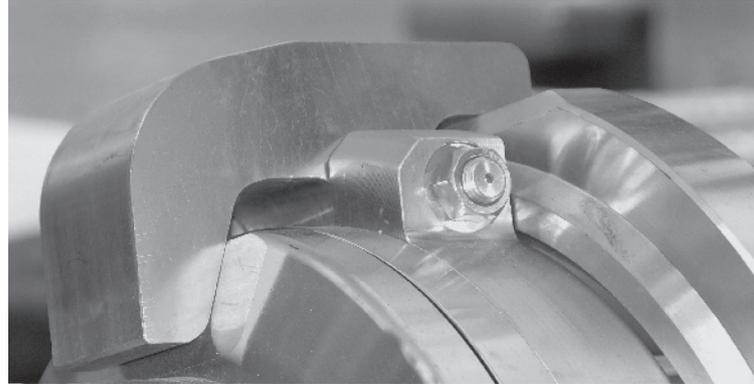
Type ABV-S (DN)	150				200					300
Connection	Flange EN 1092-1 PN 16	Flange EN 1092-1 PN 40	ASME B16.5 class 150	ASME B16.5 class 300	Flange EN 1092-1 PN 10	Flange EN 1092-1 PN 16	Flange EN 1092-1 PN 25	ASME B16.5 class 150	ASME B16.5 class 300	Flange EN 1092-1 PN 10
D (mm)	314	339	314	337,5	417,5	417,5	417,5	417,5	417,5	592
L1 (mm)	307	315	314	389,2	364	364	404	373	373	600
L2 (mm)	--	--	--	--	--	--	--	--	--	--
SW	--	--	--	--	--	--	--	--	--	--
Weight* (kg)	51,5	57,3	53,3	72,3	98,4	98,1	108,7	102,3	130	266

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

## Application examples

Secure for all situations

In case of emergency, the breakaway coupling of the ABV-S series are activated with a cable winch release. Steering away, the ABV-S releases – without mechanical stress being placed on the hose line – the secure disconnection and prevents the release of environmentally damages mediums.



## 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 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.

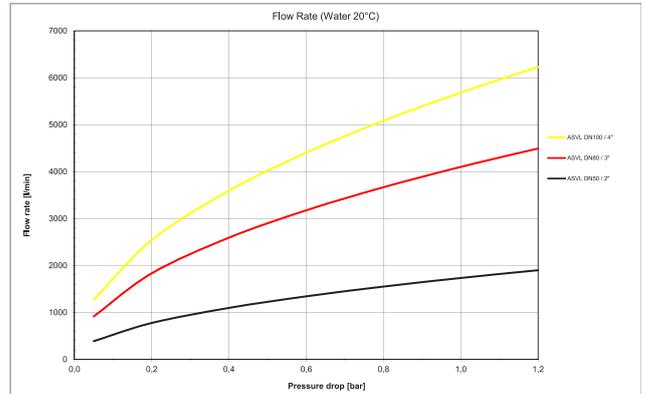
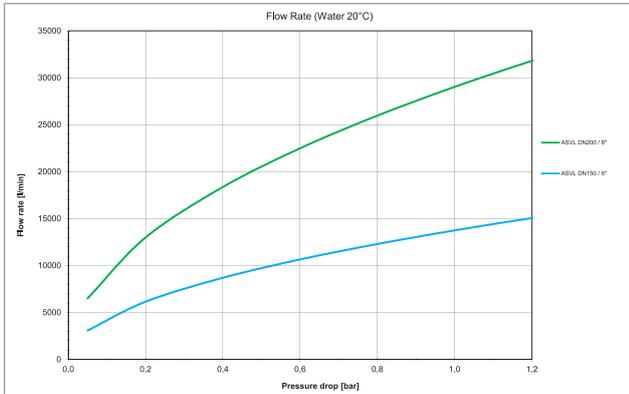
## Your advantages

- › 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

### 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

## Pressure losses



## Technical data

### ASVL series

#### Nominal diameters

- › DN 50 to DN 200
- › Others on request

#### Materials

- › Stainless steel (1.4571)

#### Connections

- › Thread: BSP, NPT (up to DN 100)
- › Flange: EN1092-1, ASME B16.5

#### Seals

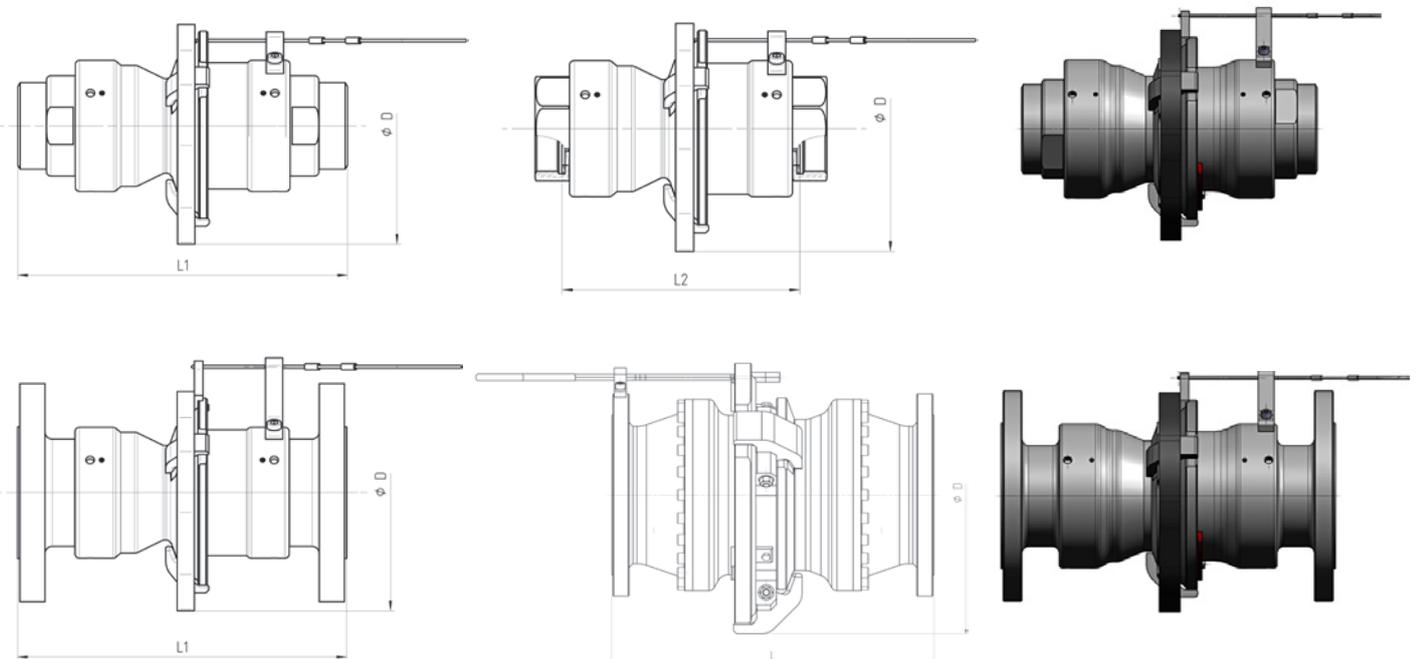
- › FKM, NBR, FFKM, EPDM
- › Others on request

#### Pressure area

- › up to 25 bar

#### Temperature range

- › -40°C to 150°C



### Dimensions and weights

Type ASVL (DN)	50								
Connection	G2" IG PN25	G2" AG PN25	2"NPT IG PN25	2"NPT AG PN25	ASME B16.5 class 150 PN25	ASME B16.5 class 300 PN25	AE 60,3x3,91 PN25	EN 1092-1 PN40	EN 1092-1 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 ASVL (DN)	80								
Connection	G3" IG PN25	G3" AG PN25	3"NPT IG PN25	3"NPT AG PN25	AE 88,9x5,49 PN16	ASME B16.5 class 150 PN10	ASME B16.5 class 300 PN25	EN 1092-1 PN40	EN 1092-1 PN16
D (mm)	220	220	220	220	220	240	240	240	240
L1 (mm)	270	318	288	345	338	316	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	27,8	24,3

Type ASVL (DN)	100								
Connection	G4" IG PN25	G4" AG PN25	4"NPT IG PN25	4"NPT AG PN25	AE 114,3x6,02 PN25	ASME B16.5 class 150 PN10	ASME B16.5 class 300 PN25	EN 1092-1 PN40	EN 1092-1 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 ASVL (DN)	150			200			
Connection	ASME B16.5 class 150 PN10	ASME B16.5 class 300 PN25	EN 1092-1 PN16	ASME B16.5 class 150 PN16	ASME B16.5 class 300 PN25	EN 1092-1 PN25	EN 1092-1 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. Other Dimensions and weights on request.





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