

# INDUSTRIAL FITTINGS - couplings

## Emergency couplings - ABV-S



**Material:** SS (AISI 316 / AISI 316Ti),  
SS/ECTFE

**Seal:** Viton - O-ring  
PTFE - for SS couplings  
(other also available)

**Connections:** BSP female thread  
DIN PN10/16 or ASA 150 flanges

**Working press.:** 25 bar

**Working temp.:** From -40°C up to +150°C  
(working temperature depends on seal  
and coupling material)

### Operation

A coupling with a cable activates disconnection when a hose assembly connected to a tank truck is pulled. At the same time the cable fixed to the coupling at one end and at the other to a rigid point on the installation is strained (the cable is shorter than the flexible hose assembly). The coupling disconnects. Simultaneously spring valves in both coupling halves lock so the transferred medium is not discharged to the atmosphere. The coupling has three levers that connect coupling halves. The levers are released when the strain of the cable achieves pre-determined limit. The lateral deflection of the force straining the cable from the coupling axis must not exceed 90°. After emergency situation which caused disconnection of the coupling, the coupling can be connected once again. However before it is reused, the coupling always requires thorough inspection.

### Application

ABV-S emergency couplings are used in industrial installations and reloading systems, to handle chemicals, fuels and gases. Compared to ABV couplings with breaking bolts, ABV-S couplings are more adjustable so can be activated with little force. Thus they can be used on installations that cannot handle excessive loads. When compared: ABV DN 50 coupling activates at 7.8 kN (pressure: 16 bar, angle: 0°), whereas ABV-S DN 50 at 0.3 kN (pressure: 25 bar, angle: 0°).

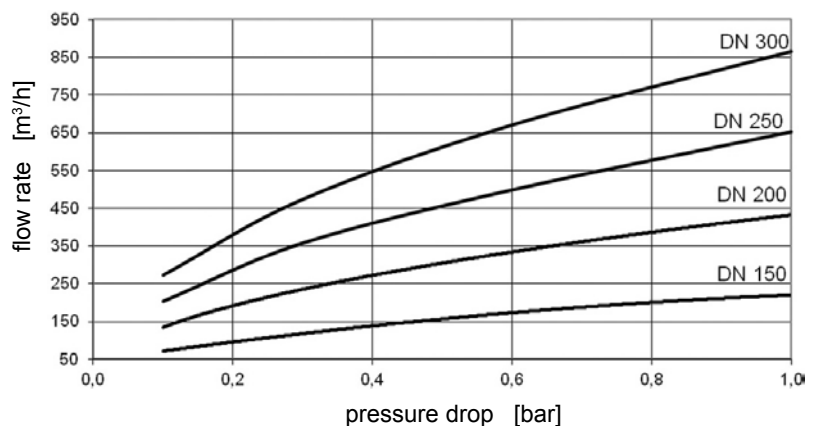
### Standards

Compliant with the Pressure Equipment Directive (CE marking) and the ATEX Directive for operation in potentially explosive atmospheres, zone 1.

### Force (P) that strains a cable and causes coupling disconnection at 25 bar:

DN [mm]	P [kN]	
	angle 0°	angle 90°
25	0.4	0.5
50	0.3	0.6
80	0.5	0.9
100	1.5	1.8
150	2.4	4.9
200	3	6.3

### Pressure drop in ABV-S coupling



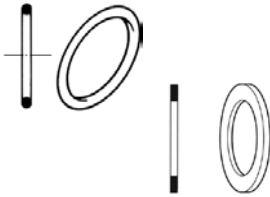
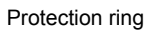


Test parameters:

Medium: water  
Temperature: +20°C  
DIN EN 60534-2-3

# INDUSTRIAL FITTINGS - couplings

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picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	RS-556100100121	1" BSP female	25	AISI 316	Viton	PTFE	1.15
	RS-556200200121	2" BSP female					3.85
	RS-556300300121	3" BSP female					7.95
	RS-556400400121	4" BSP female					14.35
	RS-55610010012174	1" BSP female					1.15
	RS-55620020012174	2" BSP female		3.85			
	RS-55630030012174	3" BSP female		7.95			
	RS-55640040012174	4" BSP female		14.35			
	RS-55610010012109	1" BSP female		1.15			
	RS-55620020012109	2" BSP female		3.85			
	RS-55630030012109	3" BSP female		7.95			
	RS-55640040012109	4" BSP female		14.35			
	RS-55610010012110	1" BSP female		1.15			
	RS-55620020012110	2" BSP female		3.85			
	RS-55630030012110	3" BSP female		7.95			
RS-55640040012110	4" BSP female	14.35					
	RS-553600600220	DN 150 PN10/16	16	AISI 316	Viton	-	37.50
	RS-553600600720	6" ASA 150 PSI	41.10				
	RS-553600600420	DN 150 PN25	25				41.50
	RS-553600600820	6" ASA 300 PSI	10				49.10
	RS-553800800120	DN 200 PN10	10				98.40
	RS-553800800220	DN 200 PN16	16				98.40
	RS-553800800720	8" ASA 150 PSI	102.30				
Set of flat seals and O-rings 	RS-550200200104	DN 50	-	-	Viton	PTFE	-
	RS-550200200105				EPDM		
	RS-550200200106				FEP		
	RS-550300300104	DN 80			Viton		
	RS-550300300106				FEP		
	RS-550400400104	DN 100			Viton		
	RS-550400400106				FEP		
	RS-550600600004	DN 150			Viton		
	RS-550600600006				FEP		
	RS-550800800004	DN 200			Viton		
Protection ring 	RS-554050200003	DN 50	-	PE	-	-	-
	RS-554080300003	DN 80	-	PE	-	-	-
	RS-554100400003	DN 100	-	PE	-	-	-

# INDUSTRIAL FITTINGS - couplings

## Emergency couplings - ABVL



**Material:** SS (AISI 316Ti / AISI 316), Al  
**Seal:** O-ring: Viton (options: NBR, EPDM, Kalrez)  
 Flat seal: PTFE  
**Connections:** Standard - BSP female thread  
 Options - NPT female thread, BSP male thread, EN 1092, ASME flanges, weld-in ends  
**Size:** DN50, DN80, DN100, DN150  
**Working press.:** 25 bar  
**Working temp.:** From -40°C up to +150°C

### Operation

ABVL emergency coupling is an upgraded version of ABV coupling. The coupling protects against consequences of accidental, excessive strain of a hose assembly connected to an installation e.g. during reloading, when a tank truck rolls away and the hose is still connected. Before the hose is strained so much that it breaks or the fittings are torn off, the bolts joining both halves are broken so that the coupling disconnects. Simultaneously the valves in both coupling halves lock so the transferred medium is not released to the atmosphere. If the load is lateral, the coupling disconnects earlier. The lateral deflection of the force straining the hose from the coupling axis must not exceed 90°. The main advantage of ABVL couplings over ABV couplings is low pressure loss at high flow rates obtained by the valves of special, streamlined construction.

### Application

ABVL emergency couplings are used in industrial installations and reloading systems, to handle chemicals, fuels and gases.

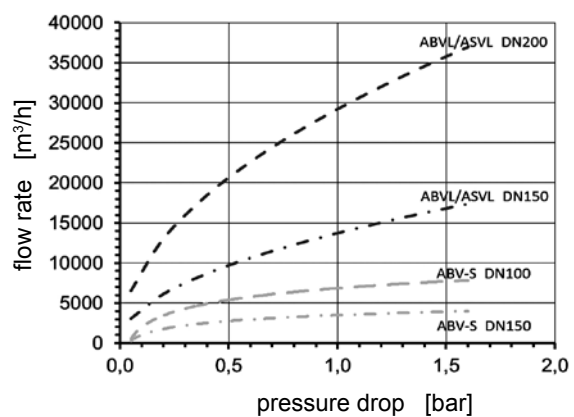
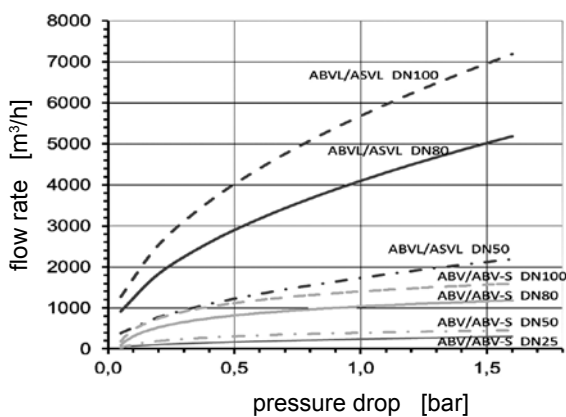
### Standards:

Compliant with the Pressure Equipment Directive (CE marking) and the ATEX Directive for operation in potentially explosive atmospheres.

### Axial force (P) breaking a coupling

DN [mm]	coupling break force [kN] - 0 bar	coupling break force [kN] - 16 bar	recommend. hose break force [kN]
50	12	8.8	16
80	22	14.7	30
100	30	19.5	40
150	60	38.6	80

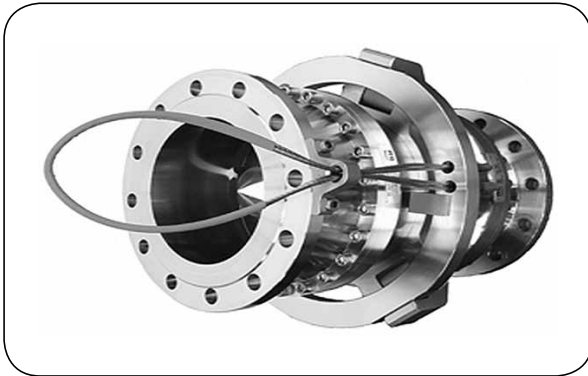
### Comparison of pressure drop in ABVL/ASVL and ABV/ABV-S emergency couplings



Test parameters: medium water, temperature +20°C.

# INDUSTRIAL FITTINGS - couplings

## Emergency couplings - ASVL



**Material:** SS (AISI 316Ti / AISI 316)  
**Seal:** O-ring: Viton (options: NBR, EPDM, Kalrez)  
 Flat seal: PTFE  
**Connections:** Standard - BSP female thread  
 Option - NPT female thread, BSP male thread, EN 1092, ASME flanges  
**Size:** DN50, DN80, DN100, DN150, DN200  
**Working press.:** 25 bar  
**Working temp.:** From -40°C up to +150°C

### Operation

ASVL emergency coupling is an upgraded version of ABV-S coupling. The coupling protect against consequences of accidental, excessive strain of a hose assembly connected to an installation e.g. during reloading, when a tank truck rolls away and the hose is still connected. When any displacement of a coupling connected to a tank truck occurs, the cable fixed to the coupling at one end and at the other to a rigid point on the installation is strained (the cable is shorter than the flexible hose assembly). The cable activates disconnection process. Simultaneously spring valves in both coupling halves lock, so the transferred medium is not discharged to the atmosphere. The coupling has three levers that connect coupling halves. The levers are released when the strain of the cable achieves pre-determined limit. The lateral deflection of the force straining the cable from the coupling axis must not exceed 90°. After emergency situation which caused disconnection of the coupling, the coupling can be connected again. However before it is reused, the coupling always requires thorough inspection. The main advantage of ASVL couplings over ABV-S couplings is low pressure loss at high flow rates obtained by the valves of special, streamlined construction.

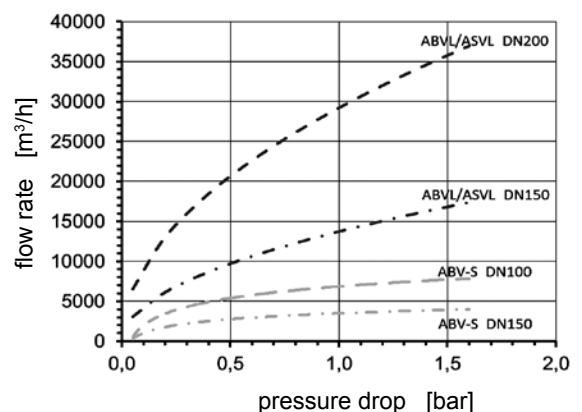
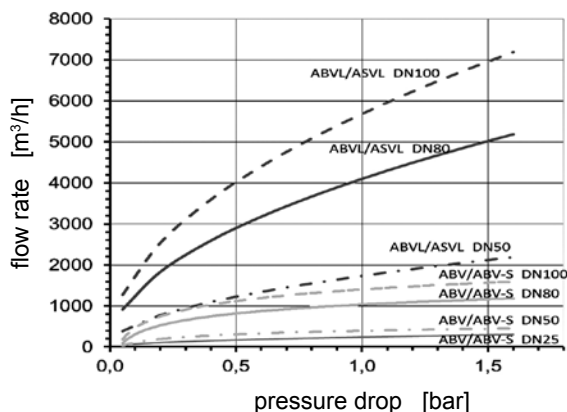
### Application

ASVL emergency couplings are used in industrial installations and reloading systems, to handle chemicals, fuels and gases.

### Standards:

Compliant with the Pressure Equipment Directive (CE marking) and the ATEX Directive for operation in potentially explosive atmospheres.

### Comparison of pressure drop in ABVL/ASVL and ABV/ABV-S emergency couplings



Test parameters: medium water, temperature +20°C.