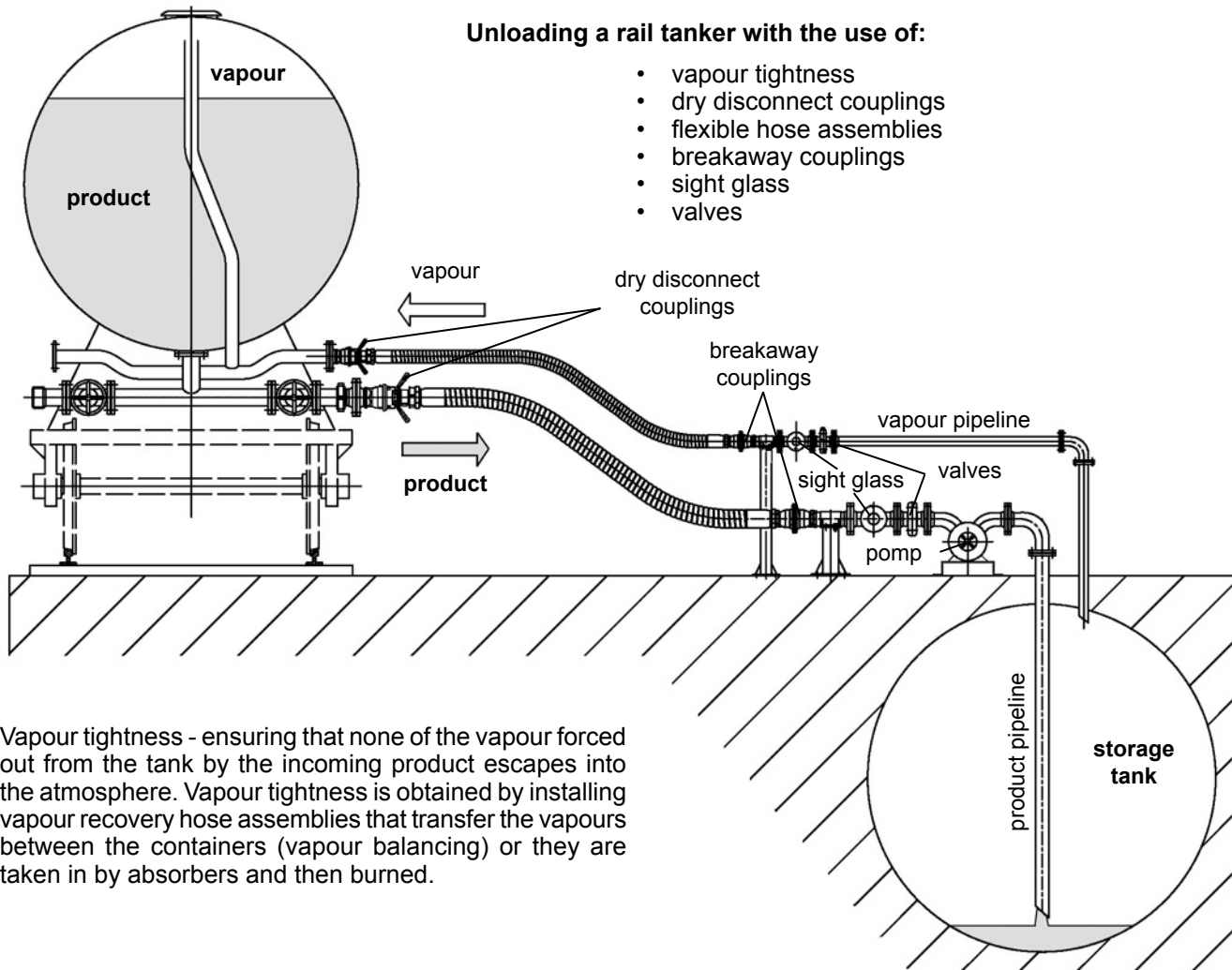


INDUSTRIAL FITTINGS - couplings

Reloading couplings - application in transport

Reloading couplings are designed for loading and unloading of various transport containers (intermediate bulk containers, tank trucks, rail tankers, tankers). Flexible hose assemblies or rigid loading arms equipped with couplings are used to load or unload products. The flexible hose assembly used for reloading is a part of transport container equipment (e.g. tank truck) or loading terminal, then it is a part of the device for filling and emptying. Reloading hose assemblies and loading installations are under strict control of appropriate authorities (in Poland - Transportation Technical Supervision).



Vapour tightness - ensuring that none of the vapour forced out from the tank by the incoming product escapes into the atmosphere. Vapour tightness is obtained by installing vapour recovery hose assemblies that transfer the vapours between the containers (vapour balancing) or they are taken in by absorbers and then burned.

coupling function	coupling types	application			
		IBC	tank trucks	rail tanker	tank ships
couplings	flange		•	•	•
	threaded rail			•	
	IBC	•			
	CAMLOCK	•	•	•	•
	TW (tankwagen)		•		
	STORZ, GUILLEMIN		•		
	lever (PERROT, LAUX, BAUER)		•	•	
dry disconnect	swivel		•	•	•
	API		•		
breakaway	dry disconnect	•	•	•	•
	INDUSTRIAL MARINE		•	•	•

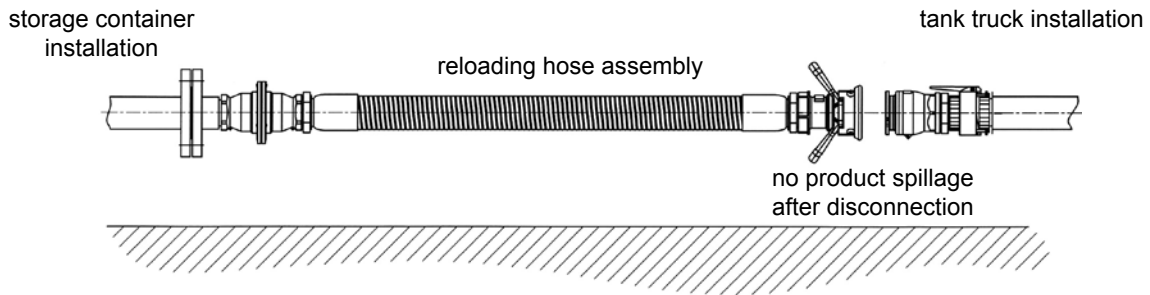
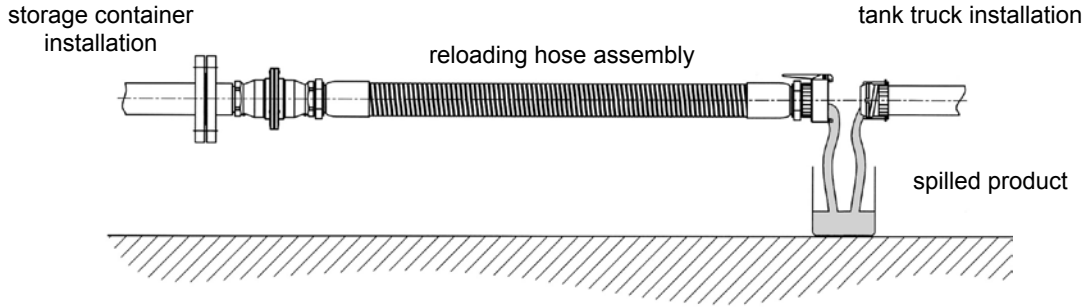
INDUSTRIAL FITTINGS - couplings

Dry disconnect coupling - operation and types

Dry disconnect couplings are designed for fast connection and disconnection of a hose assembly and installation with minimum or no product spillage.

Advantages:

- protects the operator, production plant and environment against a hazardous product,
- protects the product in installation against contamination,
- protects against the loss of expensive product.



Types of available dry disconnect couplings

coupling type	standard	picture	technical data					
			principle of operation	max. working pressure [bar]	size [inch]	spillage [ml]	mat.	main application
API	API RP 1004 PN-EN 13083		piston valve-based	10	4	up to 5	Al	fuel - tank trucks
DDC	STANAG 3756			25	3/4 ÷ 8	0.5 ÷ 2.2	Al	typical reloading standard (fuel, chemical industry)
DGC				25	1 ÷ 4	0.2 ÷ 1.6	SS	
DAC	STANAG 3105 ISO 45			10	2.1/2	1.1	Al	aviation fuel
DRY-DISTR	producer's			25	1 ÷ 4	0.2 ÷ 0.6	Ms SS	reloading, industrial installations (hazardous chemical industry)
DRY-LINK	producer's		butterfly valve-based	14.3	1 ÷ 4	0	SS	industrial installations (chemical, food, pharmaceutical industry)
EPSILON	producer's		ball valve-based	30	1 ÷ 3	0.7 ÷ 2	SS	reloading, industrial installations (chemical industry)
DRY-MATE	producer's			7	1.1/2 ÷ 2 1 ÷ 2	2 1 ÷ 2	PP SS	reloading, industrial installations (light chemical industry)

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - API



Material: Aluminium
Seals: Coupler - NBR (option Viton-B, Viton GFLT)
Adaptor - Baylast™ resistant to fuel, including biodiesel (option - Viton, PTFE)
Connection: 4" TTMA flange
Working temp.: From -20°C up to +50°C

Operation:

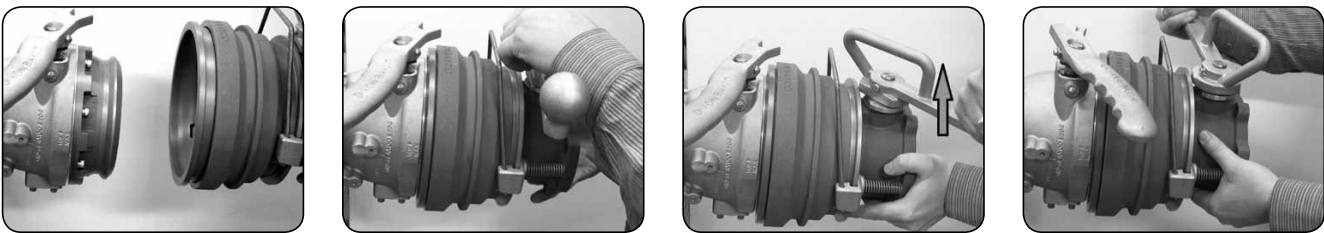
There are two types of API couplings: for liquid phase products (fuel) and gaseous phase (vapour). API couplings for liquid-phase are manufactured in one size, 4" API. Since API are dry disconnect couplings, a coupler (hose unit) and an adaptor (tank unit) are equipped with piston valves which open when the coupler lever is turned. However it cannot be turned unless the coupler is properly connected to the adaptor. If it is necessary, the valve of the adaptor on the tank can be opened separately, without connecting with the coupler. API vapour coupling is usually of CAMLOCK 4" type. It has a valve in the adaptor (tank unit), which opens with a pilot - a probe inside of the CAMLOCK coupler (hose unit). Along with the API range, gravity drop couplings are also available.

Application:

API couplings are designed for bottom loading and unloading of fuel tank trucks. They usually make a part of bottom loading arms at storage terminals (at fuel storage facility). The bottom loading method is widely used in petrochemical industry as its cost-effectiveness, safety and loading speed rate outperforms a top loading method. A bottom loading island is much cheaper to build than a top loading rack. A person operating the loading arm remains on the ground which is the safety advantage of the method. The bottom loading reduces the build-up of electrostatic charge and vapours. Tanks can be filled much faster (whole process is on the ground level) and a number of compartments can be loaded at the same time. All benefits of the method make it increasingly popular.

Standard:

API couplings are designed and manufactured in compliance with API RP-1004 (American Petroleum Institute). There are two counterparts of this standard: EN 13083 that applies to the coupling's adaptor for bottom loading and unloading and EN 13081 that applies to both adaptor and coupler for vapour recovery. The couplings are compatible with the couplings of other brands compliant with the standards.



Connecting API coupling - a coupler (hose unit) with an adaptor (tank unit).



The valve of the adaptor for bottom unloading can be opened with a lever
- separately without connecting with the coupler.

INDUSTRIAL FITTINGS - couplings







Dry disconnect couplings - API

Each bottom loading / unloading system can be divided into two parts:

- for liquid phase (fuel),
- for gaseous phase (vapour).

Liquid phase (fuel) - intended for fuel transfer. There is API coupling on a tank truck (tank unit - adaptor) which connects with API coupling of a hose assembly (hose unit - coupler). It **works as a dry disconnect coupling** and is usually used when there is a loading arm at the terminal.

The hose assembly with a standard CAMLOCK coupling (coupler) can also be connected to a tank truck. In this case, it is required to fit a gravity drop coupling on API tank truck coupling. However the application of such couplings **does not work as a dry disconnect coupling**.

picture	code	connection 1 / 2	medium*	working pressure [bar]	seal	characteristics
	DX-API-5400B	4" TTMA flange / 4" API	1, 2, 3, 5, 6, 7, 8	10	Viton-B	Coupler(hose unit) for bottom loading and unloading. Max. flow: 2271 l/min. Pressure drop: 0.27 bar. DX-API-5300BC version is intended for crude oil.
	DX-API-5400G		1, 2, 3, 5, 6, 7, 8		Viton-GFLT	
	DX-API-5400		1, 2, 3, 5, 6, 7		NBR	
	DX-API-5300BC		1, 2, 3, 4, 5, 6, 7, 8		Viton-B	
	DX-API-5204LNG	4" TTMA flange / 4" API	1, 2, 3, 5, 6, 7, 8	6	Baylast™	Adaptor (tank unit) for bottom loading, without sight glass.
	DX-API-5204LSNG		1, 2, 3, 4, 5, 6, 7, 8		Baylast™	Adaptor (tank unit) for bottom loading, without sight glass. Version intended for crude oil.
	DX-API-5204L		1, 2, 3, 5, 6, 7, 8		Baylast™	Adaptor (tank unit) for bottom loading, with sight glass.
	DX-API-5204SNG	4" TTMA flange / 4" API	1, 2, 3, 4, 5, 6, 7, 8	6	Baylast™	Adaptor (tank unit) for bottom loading and unloading, without sight glass. Version intended for crude oil.
	DX-API-5204NG		1, 2, 3, 5, 6, 7, 8		Baylast™	Adaptor (tank unit) for bottom loading and unloading, without sight glass. Option - with removable handle (DX-API-5204NGC).
	DX-API-5204NGV		1, 2, 3, 7, 8		Viton	Adaptor (tank unit) for bottom loading and unloading, without sight glass.
	DX-API-5204	4" TTMA flange / 4" API	1, 2, 3, 5, 7, 8	6	Baylast™	Adaptor (tank unit) with sight glass for bottom loading and unloading (handle allows manual opening of valve when coupling is disconnected). Option - with removable handle (DX-API-5204C).
	DX-API-5000-25	- / 4" API		-	NBR	Adaptor cap (DX- API-5204 coupling). Material: nylon.
	DX-API-5000-24	- / 4" API		-	Baylast™	Adaptor cap (DX- API-5204 coupling). Material: aluminium.

* 1 - petrol, 2 - diesel, 3 - ULSD, 4 - crude oil, 5 - E20 (20% ethanol and 80% petrol), 6 - E100 (100% ethanol), 7 - B20 (20% biodiesel and 80% diesel), 8 - B100 (100% biodiesel).

INDUSTRIAL FITTINGS - couplings

Vapour recovery couplings - API

Gaseous phase (vapour) - intended for vapour transfer (vapour tightness). A hose with a special vapour coupling (coupler with a pilot which opens a valve) is connected to an adaptor with a vapour valve on a tank truck.





picture	code	connection 1 / 2	medium*	working pressure [bar]	seal	characteristics
	ZP-VR-ZPO300-A	BSP 3" female / CAMLOCK 3"	1, 2, 3, 5, 6, 7, 8	6	NBR	Vapour recovery coupling with valve (CAMLOCK A with female thread).
	ZP-VR-ZPO400-A	BSP 4" female / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8		NBR	
	DX-API-VR4000	4" flange TTMA / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7	1.4	Viton / NBR	Vapour valve (Viton) with drain plug and two sight glasses (NBR).
	DX-API-4050AL	- / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7	-	NBR	Vapour valve cap. Material: aluminium.
	DX-API-4050ALC	- / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7	-	NBR	Vapour valve cap with chain. Material: aluminium.
	DX-API-4050PL	- / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7	-	NBR	Vapour valve cap. Material: nylon.
	DX-API-4050PLC	- / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7	-	NBR	Vapour valve cap with chain. Material: nylon.
	ZP-VR-DVR300-A	BSP 3" female / CAMLOCK 3"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	Vapour recovery coupling with pilot without valve (CAMLOCK D with female thread).
	ZP-VR-DRVR4030-A	BSP 3" female / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	ZP-VR-DVR400-A	BSP 4" female / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	ZP-VR-DARVR4030-A	CAMLOCK 4" / CAMLOCK 3"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	Vapour recovery coupling with pilot without valve (CAMLOCK D / CAMLOCK A).
	ZP-VR-CVR300-A	CAMLOCK 3" / DN75	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	Vapour recovery coupling with pilot without valve (CAMLOCK C with hose fitting). Version with valve available as well.
	ZP-VR-CVR400-A	CAMLOCK 4" / DN100	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	DX-API-VR4030CS-AL	CAMLOCK 4" / DN75	1, 2, 3, 4, 7, 8	6	Viton / NBR	Vapour recovery coupling (NBR) with pilot and valve (Viton).

* 1 - petrol, 2 - diesel, 3 - ULSD, 4 - crude oil, 5 - E20 (20% ethanol and 80% petrol),
6 - E100 (100% ethanol), 7 - B20 (20% biodiesel and 80% diesel), 8 - B100 (100% biodiesel).

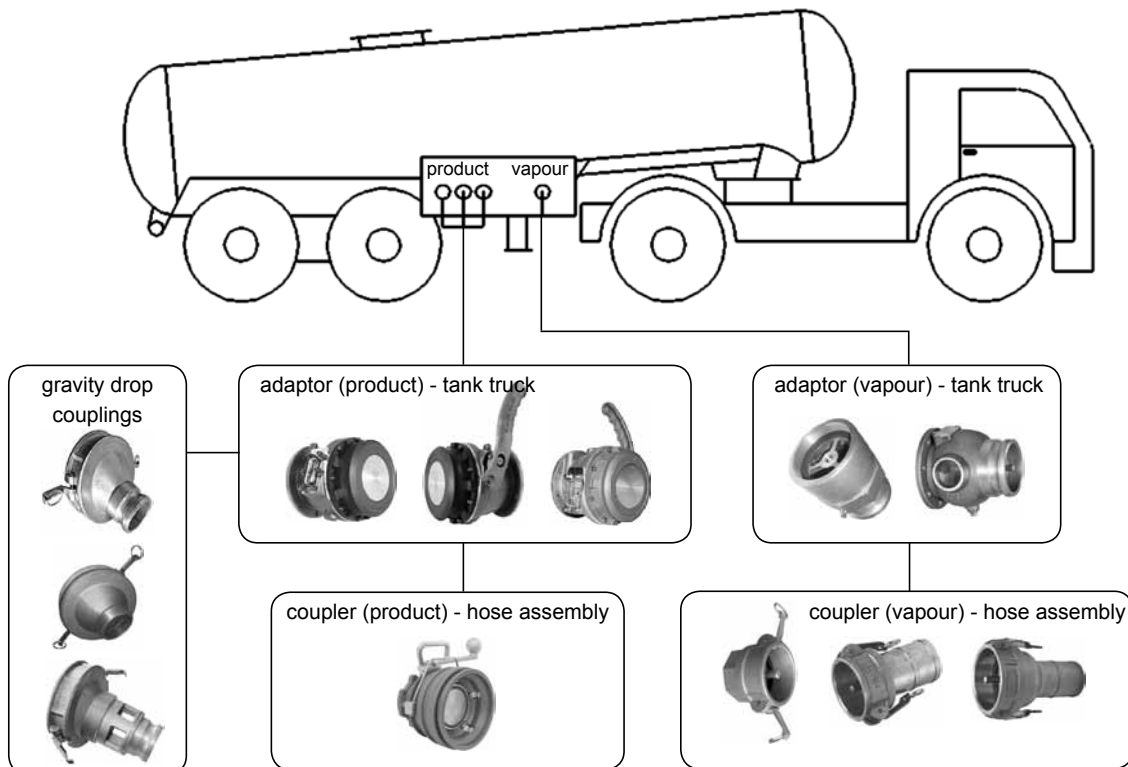
INDUSTRIAL FITTINGS - couplings

Gravity drop couplings (adapters to API couplings)

Gravity drop couplings are designed for gravity unloading. They allow for connection of API tank truck coupling with a regular reloading coupling e.g. CAMLOCK type.

picture	code	connection 1 / 2	medium*	working pressure [bar]	seal	characteristics
	ZP-API-OLS43-AI	4" API / CAMLOCK 3"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	One-piece gravity drop coupling, angle 45°. AISI 316 steel version available (CAMLOCK coupling straight fitted).
	ZP-API-OLS44-AI	4" API / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	ZP-API-OLS4GZ3-AI	4" API / CAMLOCK 3"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	One-piece gravity drop coupling, angle 45°. AISI 316 steel version available (thread connection straight fitted).
	ZP-API-OLS4GZ4-AI	4" API / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	ZP-API-OLSP43-AI	4" API / CAMLOCK 3"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	One-piece gravity drop coupling with sight glass, angle 45°.
	ZP-API-OLSP44-AI	4" API / CAMLOCK 4"	1, 2, 3, 4, 5, 6, 7, 8	6	NBR	
	ZP-API-OLS4GZ3-AI	4" API / -	1, 2, 3, 4, 5, 6, 7, 8	-	-NBR	Gravity drop coupling cap.

* 1 - petrol, 2 - diesel, 3 - ULSD, 4 - crude oil, 5 - E20 (20% ethanol and 80% petrol), 6 - E100 (100% ethanol), 7 - B20 (20% biodiesel and 80% diesel), 8 - B100 (100% biodiesel).



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC



- Material:** Aluminium, brass, AISI 316, titanium, PEEK, PVDF/Hastelloy, Hastelloy, Duplex
- Seals:** O-ring: FPM (Viton), EPDM, Chemraz, Kalrez, NBR
Flat seal: PTFE, FPM/FKM (Viton), PUR, Thermpac (HBD)
Other materials on request
- Connections:** BSP, NPT thread
ANSI 150, 300, PN EN 1092-1 flange
- Working temp.:** From -25°C up to +80°C

The acceptable working temperature ranges from -54°C up to +250°C, but as it depends on the medium, confirm the working temperature of each application with Technical Department of TUBES INTERNATIONAL®.

Operation

A hose unit (coupler) and a tank unit (adapter) of DDC type (Dry Disconnect Coupling) are both equipped with piston valves which can be opened only after the coupling is connected and closed before it is disconnected. It prevents spillage. The head of the hose unit is rotary (360°). To allow fluid flow, both units must be coupled by rotating the head of the hose unit about 100° clockwise. To stop the fluid flow, turn the head of the hose unit anticlockwise so the valves close and the coupling disconnects. A coded version of the coupling is also available. It prevents connecting the hose unit to the wrong tank unit, conveying other fluid. They are coded using slots of special dimension on the hose unit which mate only with pins on the corresponding tank unit.

Application

DDC couplings are widely used in road, rail, water and air transport, in petrochemical, chemical and pharmaceutical industry. They meet all requirements for safe, reliable and environment friendly transfer of hazardous, toxic or valuable products.

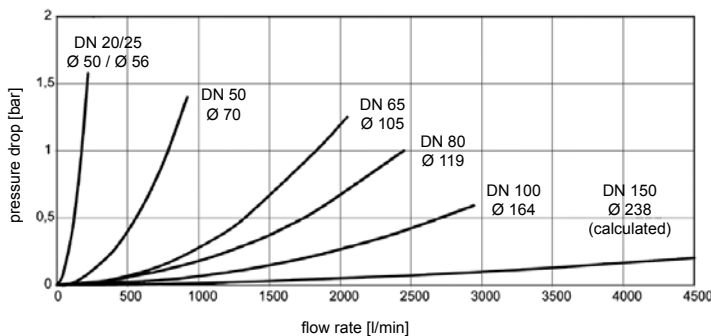
Standards

Manufactured according to NATO STANAG 3756 (DDC 2", 2.1/2", 3" and 4") and ATOFINA SGM 2049.TUY.C.(DDC 2", 3"). Meet the requirements of ATEX, TDT, ADR, RID, IMDG, Pressure Equipment Directive 97/23/WE. Approved by the European Chemical Industry Council - CEFIC.

Flow rate, maximum spillage at disconnection

size [inch]	1	2	2.1/2	3	4	6	8	
DN [mm]	25	50	65	80	100	150	200	
tank unit diameter [mm]	56	70	105	119	164	238	272	
max. flow rate [l/min]	200	900	1500	2000	3500	6000	8000	
max. spillage [ml]	0.5	0.5	1.1	1.33	2.2	-	-	

Pressure drop vs. flow rate



Test parameters:

Medium: n-paraffin
Temperature: +20°C
Density: 0.75 kg/dm³
Viscosity: 1.75 mm²/s
Stanag 3756. annex E

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC


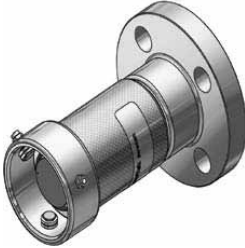

Tank unit- size 1" (Ø 56)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]			
					O-ring	thread				
	MK-DDC-T101A1101B	3/4" BSP	16	aluminium	FPM/ FKM	-	-			
	MK-DDC-T103A1101B	1" BSP								
	MK-DDC-T105A1101B	1.1/4" BSP								
	MK-DDC-T101A2201B	3/4" BSP		brass						
	MK-DDC-T103A2201B	1" BSP								
	MK-DDC-T105A2201B	1.1/4" BSP								
	MK-DDC-T101A4401A	3/4" BSP	25	AISI 316	FPM/ FKM	-	-			
	MK-DDC-T103A4401A	1" BSP								
	MK-DDC-T105A4401A	1.1/4" BSP								
	MK-DDC-T101A7701A	3/4" BSP		Hastelloy						
	MK-DDC-T103A7701A	1" BSP								
	MK-DDC-T105A7701A	1.1/4" BSP								
	MK-DDC-T101A9901A	3/4" BSP	6	PEEK	FPM/ FKM	-	-			
	MK-DDC-T103A9901A	1" BSP								
	MK-DDC-T105A9901A	1.1/4" BSP								
	MK-DDC-T169A1101	3/4" BSP	16	aluminium				FPM/ FKM	-	-
	MK-DDC-T171A1101	1" BSP								
	MK-DDC-T169A2201	3/4" BSP		brass						
	MK-DDC-T171A2201	1" BSP								
	MK-DDC-T169A4401	3/4" BSP	25		AISI 316					
	MK-DDC-T171A4401	1" BSP								
	MK-DDC-T123A1101	DN25 PN10/16	16	aluminium	FPM/ FKM	-	1.10			
	MK-DDC-T124A1101	DN25 PN25/40								
	MK-DDC-T151A1101	1" ASA 150								
	MK-DDC-T152A1101	1" ASA 300		brass						
	MK-DDC-T123A2201	DN25 PN10/16								
	MK-DDC-T124A2201	DN25 PN25/40								
	MK-DDC-T151A2201	1" ASA 150	25	AISI 316			FPM/ FKM	-		
	MK-DDC-T152A2201	1" ASA 300								
	MK-DDC-T123A4401	DN25 PN10/16								
	MK-DDC-T124A4401	DN25 PN25/40								
	MK-DDC-T151A4401	1" ASA 150		Hastelloy						
	MK-DDC-T152A4401	1" ASA 300								
	MK-DDC-T123A7701	DN25 PN10/16								
	MK-DDC-T124A7701	DN25 PN25/40	6	PEEK			FPM/ FKM	-		
	MK-DDC-T151A7701	1" ASA 150								
	MK-DDC-T152A7701	1" ASA 300								
	MK-DDC-T123A9901	DN25 PN10/16								
	MK-DDC-T124A9901	DN25 PN25/40								
MK-DDC-T151A9901	1" ASA 150									
MK-DDC-T152A9901	1" ASA 300									
	MK-DDC-C100A2201	-	-	composite	FPM/ FKM	-	0.13			
	MK-DDC-C100A1101	-	-	aluminium			0.22			
	MK-DDC-C100A4401	-	-	AISI 316			0.59			
Repair kit set of O-rings	MK-DDC-O-T1-01	-	-	FPM/FKM	-	-	-			
Repair kit flat seal	MK-1498-09	3/4" BSP	-	PUR	-	-	-			
	MK-1498-06			PTFE						
	MK-1220-09	1" BSP		PUR						
	MK-1220-06			PTFE						
	MK-1536-09	1.1/4" BSP		PUR						
	MK-1536-06			PTFE						
Set of spare parts	MK-DDC-S-T1-11	-	16	aluminium	-	-	-			
	MK-DDC-S-T1-22			brass						
	MK-DDC-S-T1-44			AISI 316						

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC




Hose unit - size 1" (Ø 56)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]			
					O-ring	thread				
	MK-DDC-S101A1101B	3/4" BSP	16	aluminium	FPM/ FKM	-	PUR	0.50		
	MK-DDC-S103A1101B	1" BSP								
	MK-DDC-S105A1101B	1.1/4" BSP								
	MK-DDC-S101A2201B	3/4" BSP		brass				PTFE	1.40	
	MK-DDC-S103A2201B	1" BSP								
	MK-DDC-S105A2201B	1.1/4" BSP								
	MK-DDC-S101A4401A	3/4" BSP	25	AISI 316	FPM/ FKM	-	1.30			
	MK-DDC-S103A4401A	1" BSP								
	MK-DDC-S105A4401A	1.1/4" BSP								
	MK-DDC-S101A7701A	3/4" BSP		Hastelloy			PTFE	1.50		
	MK-DDC-S103A7701A	1" BSP								
	MK-DDC-S105A7701A	1.1/4" BSP								
	MK-DDC-S101A9901A	3/4" BSP	6	PEEK	-	-	0.30			
	MK-DDC-S103A9901A	1" BSP								
MK-DDC-S105A9901A	1.1/4" BSP									
	MK-DDC-S123A1101	DN25 PN10/16	16	aluminium	FPM/ FKM	-	-	1.10		
	MK-DDC-S124A1101	DN25 PN25/40								
	MK-DDC-S151A1101	1" ASA 150								
	MK-DDC-S152A1101	1" ASA 300		brass				1.60		
	MK-DDC-S123A2201	DN25 PN10/16								
	MK-DDC-S124A2201	DN25 PN25/40								
	MK-DDC-S151A2201	1" ASA 150	25	AISI 316				FPM/ FKM	-	2.20
	MK-DDC-S152A2201	1" ASA 300								
	MK-DDC-S123A4401	DN25 PN10/16								
	MK-DDC-S124A4401	DN25 PN25/40								
	MK-DDC-S151A4401	1" ASA 150		Hastelloy						2.50
	MK-DDC-S152A4401	1" ASA 300								
	MK-DDC-S123A7701	DN25 PN10/16								
	MK-DDC-S124A7701	DN25 PN25/40	6	PEEK				-	-	0.50
	MK-DDC-S151A7701	1" ASA 150								
	MK-DDC-S152A7701	1" ASA 300								
	MK-DDC-S123A9901	DN25 PN10/16								
	MK-DDC-S124A9901	DN25 PN25/40								
MK-DDC-S151A9901	1" ASA 150									
MK-DDC-S152A9901	1" ASA 300									
	MK-DDC-P100A2201			composite	FPM/ FKM	-	-	0.06		
	MK-DDC-P100A1101	-	-	aluminium				0.12		
	MK-DDC-P100A4401			AISI 316				0.32		
Repair kit flat seal	MK-DDC-O-S1-01	-	-	FPM/FKM	-	-	-			
Repair kit flat seal	MK-1498-09	3/4" BSP	-	PUR	-	-	-	0.001		
	MK-1498-06			PTFE						
	MK-1220-09	1" BSP		PUR				0.002		
	MK-1220-06			PTFE						
	MK-1536-09	1.1/4" BSP		PUR				0.001		
	MK-1536-06			PTFE					0.003	
Set of spare parts	MK-DDC-S-S1-11	-	16	aluminium	-	-	-	-		
	MK-DDC-S-S1-22			brass						
	MK-DDC-S-S1-44			AISI 316						

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC


Tank unit - size 2" (Ø 70)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]		
					O-ring	thread			
	MK-DDC-T207A1101B	1.1/2 BSP	16	aluminium	FPM/ FKM	PUR	-		
	MK-DDC-T210A1101B	2" BSP		brass					
	MK-DDC-T207A2201B	1.1/2 BSP						25	AISI 316
	MK-DDC-T210A2201B	2" BSP		Hastelloy					
	MK-DDC-T207A4401A	1.1/2 BSP	6	PEEK		PTFE			
	MK-DDC-T210A4401A	2" BSP							
	MK-DDC-T207A7701A	1.1/2 BSP							
	MK-DDC-T210A7701A	2" BSP							
	MK-DDC-T207A9901A	1.1/2 BSP	6	PEEK	PTFE				
MK-DDC-T210A9901A	2" BSP								
	MK-DDC-T278A1101	2" BSP	16	aluminium	FPM/ FKM	-	-		
	MK-DDC-T278A2201	2" BSP		brass					
	MK-DDC-T278A4401	2" BSP	25	AISI 316					
	MK-DDC-T227B1101	DN40 PN10/16	16	aluminium	FPM/ FKM	-	-		
	MK-DDC-T230B1101	DN50 PN10/16							
	MK-DDC-T255B1101	1.1/2" ASA 150						brass	
	MK-DDC-T257B1101	2" ASA 150							
	MK-DDC-T227B2201	DN40 PN10/16							
	MK-DDC-T228B2201	DN40 PN25/40							
	MK-DDC-T255B2201	1.1/2" ASA 150							
	MK-DDC-T256B2201	1.1/2" ASA 300							
	MK-DDC-T230B2201	DN50 PN10/16							
	MK-DDC-T231B2201	DN50 PN25/40							
	MK-DDC-T257B2201	2" ASA 150							
	MK-DDC-T258B2201	2" ASA 300							
	MK-DDC-T227B4401	DN40 PN10/16		25				AISI 316	
	MK-DDC-T228B4401	DN40 PN25/40							
	MK-DDC-T255B4401	1.1/2" ASA 150							Hastelloy
	MK-DDC-T256B4401	1.1/2" ASA 300							
	MK-DDC-T230B4401	DN50 PN10/16							
	MK-DDC-T231B4401	DN50 PN25/40							
	MK-DDC-T257B4401	2" ASA 150							
	MK-DDC-T258B4401	2" ASA 300							
	MK-DDC-T227A7701	DN40 PN10/16							
	MK-DDC-T228A7701	DN40 PN25/40							
	MK-DDC-T255A7701	1.1/2" ASA 150							
	MK-DDC-T256A7701	1.1/2" ASA 300							
	MK-DDC-T230A7701	DN50 PN10/16							
	MK-DDC-T231A7701	DN50 PN25/40							
	MK-DDC-T257A7701	2" ASA 150							
	MK-DDC-T258A7701	2" ASA 300							
	MK-DDC-T227A9901	DN40 PN10/16	6	PEEK					
	MK-DDC-T255A9901	1.1/2" ASA 150							
	MK-DDC-T230A9901	DN50 PN10/16							
	MK-DDC-T257A9901	2" ASA 150							




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Tank unit - size 2" (Ø 70)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-C200E2202	-	-	composite	NBR	-	-
	MK-DDC-C200A1101			aluminium	FPM/FKM		
	MK-DDC-C200B4401			AISI 316			
	MK-DDC-C200D1300			NBR/PVC			
Repair kit set of O-rings	MK-DDC-O-T2-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1196-09	1.1/2" BSP	-	PUR	-	-	0.002
	MK-1196-06			PTFE			0.003
	MK-1052-09	2" BSP		PUR			0.004
	MK-1052-06			PTFE			
Set of spare parts	MK-DDC-S-T2-11	-	16	aluminium	-	-	-
	MK-DDC-S-T2-22		brass				
	MK-DDC-S-T2-44		25	AISI 316			



Hose unit - size 2" (Ø 70)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S207A1101B	1.1/2" BSP	16	aluminium	FPM/FKM	PUR	-
	MK-DDC-S210A1101B	2" BSP					
	MK-DDC-S207A2201B	1.1/2" BSP		brass			
	MK-DDC-S210A2201B	2" BSP					
	MK-DDC-S207A4401A	1.1/2" BSP	25	AISI 316	PTFE		
	MK-DDC-S210A4401A	2" BSP					
	MK-DDC-S207A7701A	1.1/2" BSP		Hastelloy			
	MK-DDC-S210A7701A	2" BSP					
	MK-DDC-S207A9901A	1.1/2" BSP	6	PEEK			
	MK-DDC-S210A9901A	2" BSP					
	MK-DDC-S278A1101	2" BSP	16	aluminium	FPM/FKM	-	-
	MK-DDC-S278A2201	2" BSP		brass			
	MK-DDC-S278A4401	2" BSP	25	AISI 316			
	MK-DDC-S227A1101	DN40 PN10/16	16	aluminium	FPM/FKM	-	-
	MK-DDC-S230A1101	DN50 PN10/16					
	MK-DDC-S255A1101	1.1/2" ASA 150					
	MK-DDC-S256A1101	1.1/2" ASA 300					
	MK-DDC-S227A2201	DN40 PN10/16					
	MK-DDC-S228A2201	DN40 PN25/40					
	MK-DDC-S255A2201	1.1/2" ASA 150					
	MK-DDC-S256A2201	1.1/2" ASA 300					
	MK-DDC-S230A2201	DN50 PN10/16					
	MK-DDC-S231A2201	DN50 PN25/40					
	MK-DDC-S257A2201	2" ASA 150					
	MK-DDC-S258A2201	2" ASA 300					
	MK-DDC-S227A4401	DN40 PN10/16	25	AISI 316			
	MK-DDC-S228A4401	DN40 PN25/40					
	MK-DDC-S255A4401	1.1/2" ASA 150					
	MK-DDC-S256A4401	1.1/2" ASA 300					
	MK-DDC-S230A4401	DN50 PN10/16					
	MK-DDC-S231A4401	DN50 PN25/40					
MK-DDC-S257A4401	2" ASA 150						
MK-DDC-S258A4401	2" ASA 300						




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Hose unit - size 2" (Ø 70)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S227A7701	DN40 PN10/16	25	Hastelloy	FPM/ FKM	-	-
	MK-DDC-S228A7701	DN40 PN25/40					
	MK-DDC-S255A7701	1.1/2" ASA 150					
	MK-DDC-S256A7701	1.1/2" ASA 300					
	MK-DDC-S230A7701	DN50 PN10/16					
	MK-DDC-S231A7701	DN50 PN25/40					
	MK-DDC-S257A7701	2" ASA 150					
	MK-DDC-S258A7701	2" ASA 300					
	MK-DDC-S227A9901	DN40 PN10/16	6	PEEK	-	-	
	MK-DDC-S255A9901	1.1/2" ASA 150					
	MK-DDC-S230A9901	DN50 PN10/16					
MK-DDC-S257A9901	2" ASA 150						
	MK-DDC-P200A2201	-	-	composite	FPM/ FKM	-	-
	MK-DDC-P200A1101			aluminium			
	MK-DDC-P200A4401			AISI 316			
Repair kit set of O-rings	MK-DDC-O-S2-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1196-09	1.1/2 BSP	-	PUR	-	-	0.002
	MK-1196-06			PTFE			0.003
	MK-1052-09	2" BSP		PUR			0.004
	MK-1052-06			PTFE			0.004
Set of spare parts	MK-DDC-S-S2-11	-	16	aluminium	-	-	-
	MK-DDC-S-S2-22		brass				
	MK-DDC-S-S2-44		25	AISI 316			



Tank unit - size 2.1/2" (Ø 105)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T312D1101B	2.1/2" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-T314D1101B	3" BSP					
	MK-DDC-T312D2201B	2.1/2" BSP	16	bronze			
	MK-DDC-T314D2201B	3" BSP					
	MK-DDC-T312B4401A	2.1/2" BSP	25	AISI 316		PTFE	
	MK-DDC-T314B4401A	3" BSP					
	MK-DDC-T312A7701A	2.1/2" BSP					
	MK-DDC-T314A7701A	3" BSP	6	PEEK			
	MK-DDC-T312A9901A	2.1/2" BSP					
MK-DDC-T314A9901A	3" BSP						
	MK-DDC-T380A1101	2.1/2" BSP	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T382A1101	3" BSP					
	MK-DDC-T380A2201	2.1/2" BSP	16	brass			
	MK-DDC-T382A2201	3" BSP					
	MK-DDC-T380A4401	2.1/2" BSP	25	AISI 316			
	MK-DDC-T382A4401	3" BSP					
	MK-DDC-T333D1101	DN65 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T336D1101	DN80 PN10/16					
	MK-DDC-T359D1101	2.1/2" ASA 150					
	MK-DDC-T361D1101	3" ASA 150	16	bronze			
	MK-DDC-T333D2201	DN65 PN10/16					
	MK-DDC-T334D2201	DN65 PN25/40					
	MK-DDC-T336D2201	DN80 PN10/16					
	MK-DDC-T337D2201	DN80 PN25/40					
	MK-DDC-T359D2201	2.1/2" ASA 150					



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Tank unit - size 2.1/2" (Ø 105)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T360D2201	2.1/2" ASA 300	16	bronze	FPM/ FKM	-	-
	MK-DDC-T361D2201	3" ASA 150					
	MK-DDC-T362D2201	3" ASA 300					
	MK-DDC-T367D2201	TTMA 3"					
	MK-DDC-T368D2201	TTMA 4"					
	MK-DDC-T333B4401	DN65 PN10/16	25	AISI 316			
	MK-DDC-T334B4401	DN65 PN25/40					
	MK-DDC-T336B4401	DN80 PN10/16					
	MK-DDC-T337B4401	DN80 PN25/40					
	MK-DDC-T359B4401	2.1/2" ASA 150					
	MK-DDC-T360B4401	2.1/2" ASA 300					
	MK-DDC-T361B4401	3" ASA 150					
	MK-DDC-T362B4401	3" ASA 300					
	MK-DDC-T367B4401	TTMA 3"					
MK-DDC-T368B4401	TTMA 4"						
	MK-DDC-C300E2202	-	-	composite	NBR	-	-
	MK-DDC-C300B1101			aluminium	FPM/ FKM		
	MK-DDC-C300B4401			AISI 316	FPM/ FKM		
Repair kit set of O-rings	MK-DDC-O-T3-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1181-09	2.1/2" BSP	-	PUR	-	-	0.005
	MK-1181-06			PTFE			0.006
	MK-1110-09	3" BSP		PUR			0.007
	MK-1110-06			PTFE			
Set of spare parts	MK-DDC-S-T3-11	-	10	aluminium	-	-	-
	MK-DDC-S-T3-22		16	brass			
	MK-DDC-S-T3-44		25	AISI 316			




Hose unit - size 2.1/2" (Ø 105)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]	
					O-ring	thread		
	MK-DDC-S312B1101B	2.1/2" BSP	10	aluminium	FPM/ FKM	-	-	
	MK-DDC-S314B1101B	3" BSP						
	MK-DDC-S312B2201B	2.1/2" BSP	16	bronze				PUR
	MK-DDC-S314B2201B	3" BSP						
	MK-DDC-S312B4401A	2.1/2" BSP	25	AISI 316				PTFE
	MK-DDC-S314B4401A	3" BSP						
	MK-DDC-S312A7701A	2.1/2" BSP						
	MK-DDC-S314A7701A	3" BSP						
	MK-DDC-S312A9901A	2.1/2" BSP	6	PEEK				
	MK-DDC-S314A9901A	3" BSP						
	MK-DDC-P300A2201	-	-	composite	FPM/ FKM	-	-	
	MK-DDC-P300A1101			aluminium				
	MK-DDC-P300A4401			AISI 316				
Repair kit set of O-rings	MK-DDC-O-S3-01	-	-	FPM/FKM	-	-	-	
Repair kit flat seal	MK-1181-09	2.1/2" BSP	-	PUR	-	-	0.005	
	MK-1181-06			PTFE			0.006	
	MK-1110-09	3" BSP		PUR			0.007	
	MK-1110-06			PTFE				
Set of spare parts	MK-DDC-S-S3-11	-	10	aluminium	-	-	-	
	MK-DDC-S-S3-22		16	brass				
	MK-DDC-S-S3-44		25	AISI 316				

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC




Tank unit - size 3" (Ø 119)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T414D1101B	3" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-T414D2201B	3" BSP	16	bronze			
	MK-DDC-T414B4401A	3" BSP	25	AISI 316		PTFE	3.06
	MK-DDC-T414A7701A	3" BSP		Hastelloy			-
	MK-DDC-T414A8701A	3" BSP		PVDF Hastelloy			
	MK-DDC-T414A9901A	3" BSP	6	PEEK			
	MK-DDC-T433D1101	DN65 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T436D1101	DN80 PN10/16					
	MK-DDC-T461D1101	3" ASA 150					
	MK-DDC-T467D1101	TTMA 3"					
	MK-DDC-T468D1101	TTMA 4"					
	MK-DDC-T433D2201	DN65 PN10/16	16	bronze			
	MK-DDC-T434D2201	DN65 PN25/40					
	MK-DDC-T436D2201	DN80 PN10/16					
	MK-DDC-T437D2201	DN80 PN25/40					
	MK-DDC-T461D2201	3" ASA 150					
	MK-DDC-T462D2201	3" ASA 300					
	MK-DDC-T467D2201	TTMA 3"					
	MK-DDC-T468D2201	TTMA 4"					
	MK-DDC-T433B4401	DN65 PN10/16	25	AISI 316			
	MK-DDC-T434B4401	DN65 PN25/40					
	MK-DDC-T436B4401	DN80 PN10/16					
	MK-DDC-T437B4401	DN80 PN25/40					
	MK-DDC-T461B4401	3" ASA 150					
	MK-DDC-T462B4401	3" ASA 300					
	MK-DDC-T467B4401	TTMA 3"					
	MK-DDC-T468B4401	TTMA 4"					
	MK-DDC-T436A9901	DN80 PN10/16	6	PEEK			
	MK-DDC-T461A9901	3" ASA 150					
MK-DDC-T467A9901	TTMA 3"						
MK-DDC-T468A9901	TTMA 4"						
	MK-DDC-C400E2202	-	-	composite	NBR	-	-
	MK-DDC-C400A1101			aluminium	FPM/ FKM		
	MK-DDC-C400B4401			AISI 316			
	MK-DDC-C400D1300			NBR/PVC			
Repair kit set of O-rings	MK-DDC-O-T4-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1110-09	3" BSP	-	PUR	-	-	0.006
	MK-1110-06			PTFE	-	-	0.007
Set of spare parts	MK-DDC-S-T4-11	-	10	aluminium	-	-	-
	MK-DDC-S-T4-22		16	brass			
	MK-DDC-S-T4-44		25	AISI 316			



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Hose unit - size 3" (Ø 119)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S414B1101B	3" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-S414B2201B	3" BSP	16	bronze			
	MK-DDC-S414B4401A	3" BSP	25	AISI 316		PTFE	8.65
	MK-DDC-S414A7701A	3" BSP		Hastelloy			
	MK-DDC-S414A8701A	3" BSP	PVDF/Hast.				
	MK-DDC-S414A9901A	3" BSP	6	PEEK			
	MK-DDC-S436B1101	DN80 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-S461B1101	3" ASA 150					
	MK-DDC-S467B1101	TTMA 3"					
	MK-DDC-S468B1101	TTMA 4"					
	MK-DDC-S436B2201	DN 80 PN10/16	16	bronze			
	MK-DDC-S437B2201	DN 80 PN25/40					
	MK-DDC-S461B2201	3" ASA 150					
	MK-DDC-S462B2201	3" ASA 300					
	MK-DDC-S467B2201	TTMA 3"	25	AISI 316			
	MK-DDC-S468B2201	TTMA 4"					
	MK-DDC-S436B4401	DN80 PN10/16					
	MK-DDC-S437B4401	DN80 PN25/40					
	MK-DDC-S461B4401	3" ASA 150	6	PEEK			
	MK-DDC-S462B4401	3" ASA 300					
	MK-DDC-S467B4401	TTMA 3"					
	MK-DDC-S468B4401	TTMA 4"					
MK-DDC-S436A9901	DN80 PN10/16						
MK-DDC-S461A9901	3" ASA 150						
	MK-DDC-P400A2201	-	-	composite	FPM/ FKM	-	-
	MK-DDC-P400A1101			aluminium			
	MK-DDC-P400A4401			AISI 316			
Repair kit set of O-rings	MK-DDC-O-S4-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1110-09	3" BSP	-	PUR	-	-	0.006
	MK-1110-06			PTFE			0.007
Set of spare parts	MK-DDC-S-S4-11	-	10	aluminium	-	-	-
	MK-DDC-S-S4-22		16	brass			
	MK-DDC-S-S4-44		25	AISI 316			


Tank unit - size 4" (Ø 164)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T516A1101B	4" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-T516D2201B	4" BSP	16	bronze			
	MK-DDC-T516B4401A	4" BSP	25	AISI 316		PTFE	
	MK-DDC-T539D1101	DN100 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T563D1101	4" ASA 150					
	MK-DDC-T568D1101	TTMA 4"					
	MK-DDC-T539D2201	DN100 PN10/16					
	MK-DDC-T540D2201	DN100 PN25/40	16	bronze			
	MK-DDC-T563D2201	4" ASA 150					
	MK-DDC-T564D2201	4" ASA 300					
	MK-DDC-T568D2201	TTMA 4"					
	MK-DDC-T539B4401	DN100 PN10/16	25	AISI 316			
	MK-DDC-T540B4401	DN100 PN25/40					
	MK-DDC-T563B4401	4" ASA 150					
	MK-DDC-T564B4401	4" ASA 300					
MK-DDC-T568B4401	TTMA 4"						

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Tank unit - size 4" (Ø 164)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-C500E2202	-	-	composite	NBR	-	-
	MK-DDC-C500B1101			aluminium	FPM/ FKM		
	MK-DDC-C500C4401			AISI 316			
Repair kit set of O-rings	MK-DDC-O-T5-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1295-09	4" BSP	-	PUR	-	-	0.010
	MK-1295-06			PTFE	-	-	0.009
Set of spare parts	MK-DDC-S-T5-11	-	10	aluminium	-	-	-
	MK-DDC-S-T5-22		16	brass			
	MK-DDC-S-T5-44		25	AISI 316			




Hose unit - size 4" (Ø 164)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S516B1101B	4" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-S516B2201B	4" BSP	16	bronze			
	MK-DDC-S516B4401A	4" BSP	25	AISI 316			
	MK-DDC-S539B1101	DN100 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-S563B1101	4" ASA 150					
	MK-DDC-S568B1101	TTMA 4"					
	MK-DDC-S539B2201	DN100 PN10/16	16	bronze			
	MK-DDC-S540B2201	DN100 PN25/40					
	MK-DDC-S563B2201	4" ASA 150					
	MK-DDC-S564B2201	4" ASA 300	25	AISI 316			
	MK-DDC-S568B2201	TTMA 4"					
	MK-DDC-S539B4401	DN100 PN10/16					
	MK-DDC-S540B4401	DN100 PN25/40					
	MK-DDC-S563B4401	4" ASA 150					
	MK-DDC-S564B4401	4" ASA 300					
MK-DDC-S568B4401	TTMA 4"						
Hose unit blank plug	MK-DDC-P500B2201	-	-	composite	FPM/ FKM	-	-
	MK-DDC-P500B1101			aluminium			
	MK-DDC-P500B4401			AISI 316			
Repair kit set of O-rings	MK-DDC-O-S5-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1295-09	4" BSP	-	PUR	-	-	0.010
	MK-1295-06			PTFE	-	-	0.009
Set of spare parts	MK-DDC-S-S5-11	-	10	aluminium	-	-	-
	MK-DDC-S-S5-22		16	brass			
	MK-DDC-S-S5-44		25	AISI 316			




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Tank unit - size 6" (Ø 238)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T6110B1101B	6" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-T6110B4401A	6" BSP	16	AISI 316		PTFE	
	MK-DDC-T645B1101	DN150 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T6100B1101	6" ASA 150					
	MK-DDC-T645B4401	DN150 PN10/16	16	AISI 316			
	MK-DDC-T6100B4401	6" ASA 150					
	MK-DDC-C600A1101	-	-	aluminium	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DDC-O-T6-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1963-09	6" BSP	-	PUR	-	-	0.016
	MK-1963-06			PTFE			
Set of spare parts	MK-DDC-S-T6-11	-	10	aluminium	-	-	-
	MK-DDC-S-T6-44		16	AISI 316			



Hose unit - size 6" (Ø 238)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S6110B1101B	6" BSP	10	aluminium	FPM/ FKM	PUR	-
	MK-DDC-S6110B4401A	6" BSP	16	AISI 316		PTFE	
	MK-DDC-S645B1101	DN150 PN10/16	10	aluminium	FPM/ FKM	-	-
	MK-DDC-S6100B1101	6" ASA 150					
	MK-DDC-S645B4401	DN150 PN10/16	16	AISI 316			
	MK-DDC-S6100B4401	6" ASA 150					
	MK-DDC-P600A1101	-	-	aluminium	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DDC-O-S6-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1963-09	6" BSP	-	PUR	-	-	0.016
	MK-1963-06			PTFE			
Set of spare parts	MK-DDC-S-S6-11	-	10	aluminium	-	-	-
	MK-DDC-S-S6-44		16	AISI 316			



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DDC

Tank unit - size 8" (Ø 272)

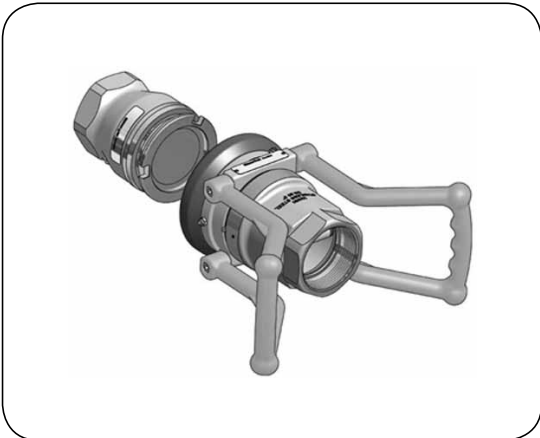
picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-T8102A1101	DN200 PN10	10	aluminium	FPM/ FKM	-	-
	MK-DDC-T8103A1101	DN200 PN16					
	MK-DDC-T8105A1101	8" ASA 150					
	MK-DDC-T8102A4401	DN200 PN10	16	AISI 316			
	MK-DDC-T8103A4401	DN200 PN16					
	MK-DDC-T8105A4401	8" ASA 150					
	MK-DDC-C800A1101	-	-	aluminium	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DDC-O-T8-01	-	-	FPM/FKM	-	-	-
Set of spare parts	MK-DDC-S-T8-11	-	10	aluminium	-	-	-
	MK-DDC-S-T8-44		16	AISI 316			

Hose unit - size 8" (Ø 272)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DDC-S8102A1101	DN200 PN10	10	aluminium	FPM/ FKM	-	-
	MK-DDC-S8103A1101	DN200 PN16					
	MK-DDC-S8105A1101	8" ASA 150					
	MK-DDC-S8102A4401	DN200 PN10	16	AISI 316			
	MK-DDC-S8103A4401	DN200 PN16					
	MK-DDC-S8105A4401	8" ASA 150					
	MK-DDC-P800A1101	-	-	aluminium	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DDC-O-S8-01	-	-	FPM/FKM	-	-	-
Set of spare parts	MK-DDC-S-S8-11	-	10	aluminium	-	-	-
	MK-DDC-S-S8-44		16	AISI 316			

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DGC



Material: AISI 316
(bronze / brass version available)

Seals: O-ring: FPM (Viton), NBR
Flat seal: PTFE
(other materials on request)

Connections: BSP, NPT thread; DIN, ASA flanges
(ACME, Whitworth thread available).

Working temp.: From -20°C up to +80°C

The acceptable working temperature ranges from -50°C up to +200°C, but as it depends on the medium, confirm the working temperature of each application with Technical Department of TUBES INTERNATIONAL®.

Operation

A hose unit (coupler) and a tank unit (adapter) of DGC type (Dry Gas Coupling) are both equipped with piston valves which can be opened only after the coupling is connected and closed before it is disconnected. It prevents spillage. The head of the hose unit is rotary (360°). To allow medium flow both units must be coupled by rotating the head of the hose unit about 100° clockwise. During rotation the coupling locks, the valve of the hose unit slides towards the tank unit and the medium starts to flow. To stop the flow, turn the head of the hose unit anticlockwise so the valves close and the coupling disconnects.

Application

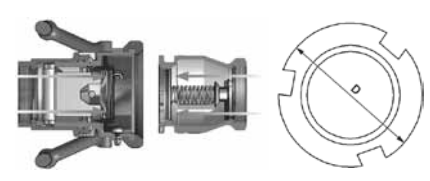
Dry disconnect couplings of DGC type (Dry Gas Couplings) are designed for gas transfer, LPG in particular. They are widely used in road, rail, water and air transport, in petrochemical, chemical and pharmaceutical industry. They meet all requirements for safe, reliable and environment friendly transfer of hazardous, toxic or valuable fluids.

Standards

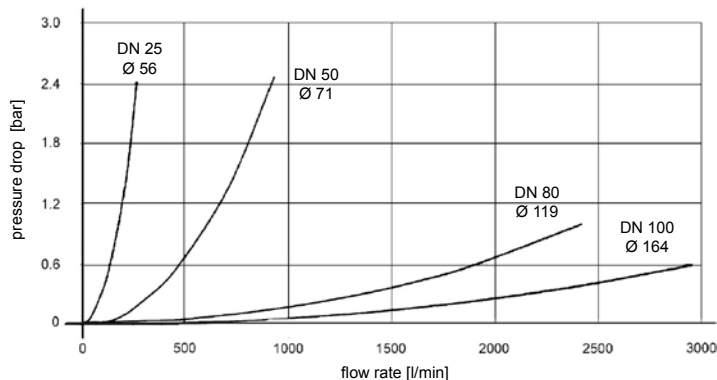
Meet the requirements of ATEX, TDT, ADR, RID, IMDG, Pressure Equipment Directive 97/23/EC (PED).

Flow rate, maximum spillage at disconnection

size [inch]	1	2	3	4
DN [mm]	25	50	80	100
plug diameter [mm]	56	71	119	164
max. spillage [ml]	0.2	0.3	0.7	1.6



Pressure drop vs. flow rate






Test parameters:

Medium: n-paraffin
Temperature: +20°C
Density: 0.75 kg/dm³
Viscosity: 1.75 mm²/s
Stanag 3756. annex E




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DGC

Tank unit - size 1" (Ø 56)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-L101A4401A	3/4" BSP	25	AISI 316	FPM/ FKM	PTFE	0.70
	MK-DGC-L102A4401	3/4" NPT				-	0.80
	MK-DGC-L103A4401A	1" BSP				PTFE	0.70
	MK-DGC-L104A4401	1" NPT				-	0.80
	MK-DGC-L105A4401A	1.1/4" BSP				PTFE	0.70
	MK-DGC-L106A4401	1.1/4" NPT				-	0.80
	MK-DGC-L150A4401	3/4" ASA 300	25	AISI 316	FPM/ FKM	-	1.30
	MK-DGC-L124A4401	DN25 PN25/40					1.40
	MK-DGC-L152A4401	1" ASA 300					1.50
	MK-DGC-L126A4401	DN32 PN25/40					
	MK-DGC-L154A4401	1.1/4" ASA 300					
	MK-DGC-CG100A2201	-	-	composite	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DGC-O-L1-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1498-06	3/4"	-	PTFE	-	-	0.001
	MK-1220-06	1"					0.002
Set of spare parts	MK-DGC-S-L1-44	-	25	AISI 316	-	-	-




Hose unit - size 1" (Ø 56)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-M101A4401A	3/4" BSP	25	AISI 316	FPM/ FKM	PTFE	0.70
	MK-DGC-M102A4401	3/4" NPT				-	0.80
	MK-DGC-M103A4401A	1" BSP				PTFE	0.70
	MK-DGC-M104A4401	1" NPT				-	0.80
	MK-DGC-M105A4401A	1.1/4" BSP				PTFE	0.70
	MK-DGC-M106A4401	1.1/4" NPT				-	0.80
	MK-DGC-M150A4401	3/4" ASA 300	25	AISI 316	FPM/ FKM	-	
	MK-DGC-M124A4401	DN25 PN25/40					
	MK-DGC-M152A4401	1" ASA 300					
	MK-DGC-M126A4401	DN32 PN25/40					
	MK-DGC-M154A4401	1.1/4" ASA 300					
	MK-DGC-V100A2201	-	-	composite	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DGC-O-M1-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1498-06	3/4"	-	PTFE	-	-	0.001
	MK-1220-06	1"					0.002
Set of spare parts	MK-DGC-S-M1-44	-	25	AISI 316	-	-	-




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DGC

Tank unit - size 2" (Ø 71)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-L207A4401A	1.1/2" BSP	25	AISI 316	FPM/ FKM	PTFE	1.50
	MK-DGC-L208A4401	1.1/2" NPT				-	1.60
	MK-DGC-L210A4401A	2" BSP				PTFE	1.20
	MK-DGC-L211A4401	2" NPT				-	1.30
	MK-DGC-L228A4401	DN40 PN25/40	25	AISI 316	FPM/ FKM	-	2.80
	MK-DGC-L256A4401	1.1/2" ASA 300					3.20
	MK-DGC-L231A4401	DN50 PN25/40					3.50
	MK-DGC-L258A4401	2" ASA 300					
	MK-DGC-C200D1300	-	-	PVC/NBR	-	-	-
Repair kit set of O-rings	MK-DGC-O-L2-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1196-06	1.1/2	-	PTFE	-	-	0.003
	MK-1052-06	2					0.004
Set of spare parts	MK-DGC-S-L2-44		25	AISI 316	-	-	-




Hose unit - size 2" (Ø 71)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-M207A4401A	1.1/2" BSP	25	AISI 316	FPM/ FKM	PTFE	3.10
	MK-DGC-M208A4401	1.1/2" NPT				-	3.20
	MK-DGC-M210A4401A	2" BSP				PTFE	2.90
	MK-DGC-M211A4401	2" NPT				-	3.00
	MK-DGC-M228A4401	DN40 PN25/40	25	AISI 316	FPM/ FKM	-	5.30
	MK-DGC-M256A4401	1.1/2" ASA 300					5.70
	MK-DGC-M231A4401	DN50 PN25/40					6.10
	MK-DGC-M258A4401	2" ASA 300					
	MK-DGC-V200A2201	-	-	composite	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DGC-O-M2-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1196-06	1.1/2	-	PTFE	-	-	0.003
	MK-1052-06	2					0.004
Set of spare parts	MK-DGC-S-M2-44		25	AISI 316	-	-	-




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DGC

Tank unit - size 3" (Ø 119)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-L414B4401A	3" BSP	25	AISI 316	FPM/FKM	PTFE	3.00
	MK-DGC-L415B4401	3" NPT				-	
	MK-DGC-L434B4401	DN65 PN25/40	25	AISI 316	FPM/FKM	-	5.00
	MK-DGC-L460B4401	2.1/2" ASA 300					
	MK-DGC-L437B4401	DN80 PN25/40					
	MK-DGC-L462B4401	3" ASA 300					5.50
	MK-DGC-C400E2202	-	-	composite	NBR	-	-
Repair kit set of O-rings	MK-DGC-O-L4-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1110-06	3"	-	PTFE	-	-	0.006
Set of spare parts	MK-DGC-S-L4-44	-	25	AISI 316	-	-	-




Hose unit- size 3" (Ø 119)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-M412B4401A	2.1/2" BSP	25	AISI 316	FPM/FKM	PTFE	8.80
	MK-DGC-M413B4401	2.1/2" NPT				-	9.10
	MK-DGC-M414B4401A	3" BSP				PTFE	8.10
	MK-DGC-M415B4401	3" NPT				-	8.40
	MK-DGC-M434B4401	DN65 PN25/40	25	AISI 316	FPM/FKM	-	12.60
	MK-DGC-M460B4401	2 1/2" ASA 300					13.30
	MK-DGC-M437B4401	DN80 PN25/40					13.20
	MK-DGC-M462B4401	3" ASA 300					15.10
	MK-DGC-V400A2201	-	-	composite	FPM/FKM	-	-
Repair kit set of O-rings	MK-DGC-O-M4-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1181-06	2.1/2"	-	PTFE	-	-	0.006
	MK-1110-06	3					0.007
Set of spare parts	MK-DGC-S-M4-44	-	25	AISI 316	-	-	-




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DGC

Tank unit - size 4" (Ø 164)

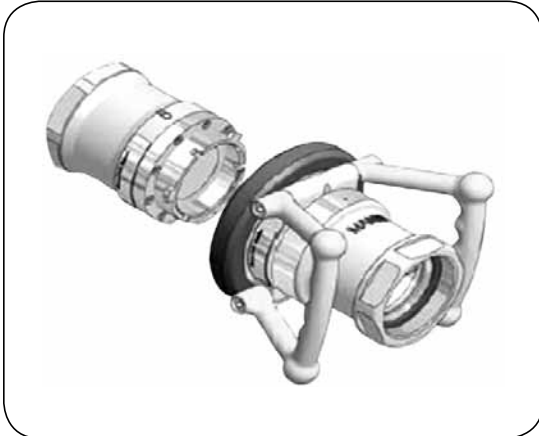
picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-L516B4401A	4" BSP	25	AISI 316	FPM/ FKM	PTFE	6.10
	MK-DGC-L517B4401	4" NPT				-	6.30
	MK-DGC-L540B4401	DN100 PN25/40	25	AISI 316	FPM/ FKM	-	9.30
	MK-DGC-L564B4401	4" ASA 300					
	MK-DGC-C500E2202	-	-	composite	NBR	-	-
Repair kit set of O-rings	MK-DGC-O-L5-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1295-06	4"	-	PTFE	-	-	0.009
Set of spare parts	MK-DGC-S-L5-44	-	25	AISI 316	-	-	-

Hose unit - size 4" (Ø 164)

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DGC-M516B4401A	4" BSP	25	AISI 316	FPM/ FKM	PTFE	15.70
	MK-DGC-M517B4401	4" NPT				-	16.00
	MK-DGC-M540B4401	DN100 PN25/40	25	AISI 316	FPM/ FKM	-	20.80
	MK-DGC-M564B4401	4" ASA 300					
	MK-DGC-P500B2201	-	-	composite	FPM/ FKM	-	-
Repair kit set of O-rings	MK-DGC-O-M5-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1295-06	4"	-	PTFE	-	-	0.009
Set of spare parts	MK-DGC-S-M5-44	-	25	AISI 316	-	-	-

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DAC



Material: Aluminium (AISI 316 version available).
Seals: O-ring: FPM (Viton), NBR, for low working temperature, FQM
Flat seal: PTFE.
(other materials on request)
Connections: BSP, NPT thread,
DIN, ASA, TW and TTMA flanges.
Working temp.: From -20°C up to +60°C

A wider working temperature range is acceptable, but as it depends on the medium, confirm the working temperature of each application with Technical Department of TUBES INTERNATIONAL®.

Operation

A hose unit (coupler) and a tank unit (adapter) of DAC type (Dry Aviation Coupling) are both equipped with piston valves which can be opened only after the coupling is connected and closed before it is disconnected. It prevents spillage. The head of the hose unit is rotary (360°). To allow fluid flow both units must be coupled by rotating the head of the hose unit about 100° clockwise. During rotation the coupling locks, the valve of the hose unit slides towards the tank unit and the medium starts to flow. To stop fluid flow, turn the head of the hose unit anticlockwise so the valves close and the coupling disconnects.

Application

DAC couplings are designed for jet fuel transfer. They are widely used in road and air transport. They meet all requirements for safe, reliable and environment friendly transfer of hazardous, toxic or valuable products. Not suitable for underwing refuelling. It can be mounted on a flexible hose assembly on the side of a tank truck or storage container.

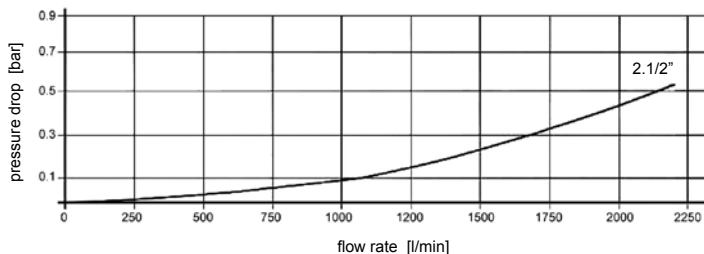
Standards

Meet the requirements of ATEX, ADR, TDT, Pressure Equipment Directive 97/23/EC (PED). Compatible with aviation couplings according to NATO STANAG 3105. Manufactured according to ISO 45, MS24484, British Aerospace Spec. 2C14.

Spillage

Once DAC 2.1/2" coupling is disconnected, the spillage amounts to 1.1 ml.

Pressure drop vs. flow rate






Test parameters:

Medium: n-paraffin
Temperature: +20°C
Density: 0.75 kg/dm³
Viscosity: 1.75 mm²/s
Stanag 3756. annex E




INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DAC

Tank unit- size 2.1/2"

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DAC-G312A1401B	2.1/2" BSP	10	aluminium	FPM/ FKM	PUR	2.30
	MK-DAC-G314A1401B	3" BSP					
	MK-DAC-G313A1401	2.1/2" NPT					
	MK-DAC-G315A1401	3" NPT					
	MK-DAC-G333D1401	DN65 PN10/16	10	aluminium	FPM/ FKM	-	2.80
	MK-DAC-G336D1401	DN80 PN10/16					3.00
	MK-DAC-G359D1401	2.1/2" ASA 150					2.70
	MK-DAC-G361D1401	3" ASA 150					2.90
	MK-DAC-G367D1401	3" TTMA					2.40
	MK-DAC-G368D1401	4" TTMA					2.60
	MK-DAC-G365D1401	TW 1 (DIN 28459)					2.50
	MK-DAC-G366D1401	TW 3 (DIN 28459)					2.90
	MK-DAC-K300A1101	-	-	aluminium	FPM/ FKM	-	0.50
	MK-DAC-K300A2201			composite			0.20
Repair kit set of O-rings	MK-DAC-O-G3-01	-	-	FPM/FKM	-	-	--
Repair kit flat seal	MK-1181-09	2.1/2" BSP	-	-	PUR	-	0.005
Set of spare parts	MK-DAC-S-G3-14	2.1/2"	10	aluminium	-	-	--

Hose unit - size 2.1/2"

picture	code	connection	work. press. [bar]	material	seal		weight [kg]
					O-ring	thread	
	MK-DAC-F312B1101B	2.1/2" BSP	10	aluminium	FPM/ FKM	PUR	3.40
	MK-DAC-F314B1101B	3" BSP					3.50
	MK-DAC-F313B1101	2.1/2" NPT					3.40
	MK-DAC-F315B1101	3" NPT					3.50
	MK-DAC-F333B1101	DN65 PN10/16	10	aluminium	FPM/ FKM	-	
	MK-DAC-F336B1101	DN80 PN10/16					
	MK-DAC-F359B1101	2.1/2" ASA 150					
	MK-DAC-F361B1101	3" ASA 150					
	MK-DAC-F367B1101	3" TTMA					
	MK-DAC-F368B1101	4" TTMA					
	MK-DAC-F365B1101	TW 1 (DIN 28459)					
	MK-DAC-F366B1101	TW 3 (DIN 28459)					
	MK-DAC-I300A1101	-	-	aluminium	FPM/ FKM	-	0.40
	MK-DAC-I300A2201			composite			0.20
Repair kit set of O-rings	MK-DAC-O-F3-01	-	-	FPM/FKM	-	-	-
Repair kit flat seal	MK-1181-09	2.1/2" BSP	-	-	PUR	-	0.005
Set of spare parts	MK-DAC-S-F3-11	2.1/2"	10	aluminium	-	-	--

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-DIS TR



Material:	SS (AISI 316 / AISI 316Ti) Ms - brass, PP - polypropylene (handwheel, blank plug/cap)
Seals:	Viton - valves
Connections:	BSP female thread
Seal:	PTFE for SS couplings PUR for Ms couplings
Working press.:	Up to 25 bar
Max. conn. press.:	6 bar
Working temp.:	From 0°C up to +150°C (Ms up to +60°C)

Operation

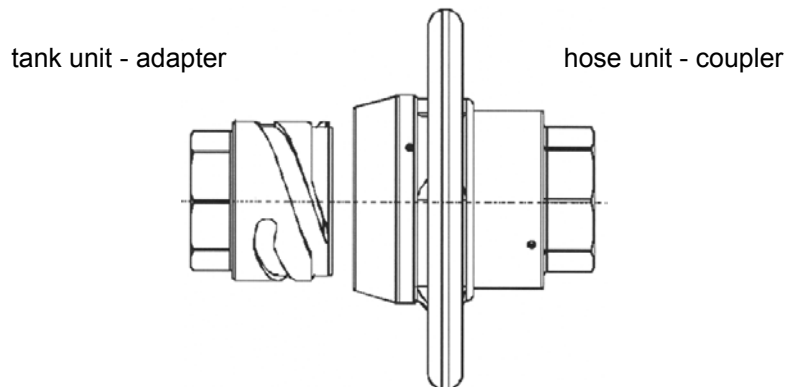
A hose unit (coupler) and a tank unit (adapter) of DRY-DIS TR coupling are both equipped with piston valves which can be opened only after the coupling is connected and closed before it is disconnected. It prevents spillage. The head of the hose unit, sizes DN 40 upwards, with polypropylene handwheel facilitates connection. The coupling is connected by sliding the hose unit over the tank unit and turning the handwheel by 10° clockwise. To allow fluid flow both units must be secured by further rotation up to 120° clockwise. To stop fluid flow, turn the head of the hose unit anticlockwise so the valves close and the coupling disconnects. A coded version of the coupling is also available. It prevents connecting the hose unit to the wrong tank unit, conveying other fluid.

Application

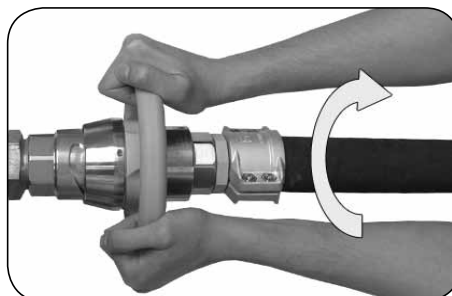
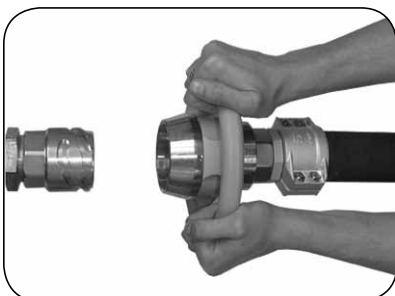
They are widely used in chemical, pharmaceutical, petrochemical, food industry and in reloading applications. They meet all requirements for safe, reliable and environment friendly transfer of hazardous, toxic or valuable fluids and gases. They come in a wide range of sizes (DN 25, 32, 40, 50, 65, 80 and 100 mm).

Standards

Manufactured according to the standards of the producer (Roman Seliger, Germany). Compliant with the Pressure Equipment Directive (CE marking) and the ATEX Directive for operation in potentially explosive atmospheres.

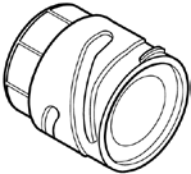
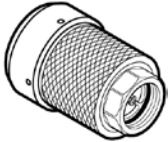

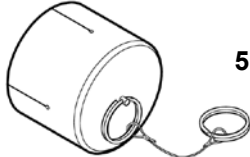


To connect:



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-DIS TR

picture	code	size		material	weight [kg]	pic.	
		DN	thread				
 <p>TRV tank unit - adapter</p>	RS-558025100120	25	1" BSP	SS	0.28	1	
	RS-558025100130			Ms	0.30	1	
		RS-558032125120	32	1.1/4" BSP	SS	0.50	1
		RS-558032125130			Ms	0.53	1
		RS-558040150120	40	1.1/2" BSP	SS	0.75	1
		RS-558040150130			Ms	0.79	1
		RS-558050200120	50	2" BSP	SS	1.20	1
		RS-558050200130			Ms	1.28	1
		RS-558065250120	65	2.1/2" BSP	SS	1.70	1
		RS-558065250130			Ms	1.82	1
 <p>TRM hose unit - coupler</p>	RS-558080300120	80	3" BSP	SS	3.20	1	
	RS-558080300130			Ms	3.45	1	
		RS-558100400120	100	4" BSP	SS	5.10	1
		RS-558100400130			Ms	5.45	1
		RS-561025100120	25	1" BSP	SS	0.85	2
		RS-561025100130			Ms	0.91	2
		RS-561032125120	32	1.1/4" BSP	SS	1.50	2
		RS-561032125130			Ms	1.62	2
		RS-561040150120	40	1.1/2" BSP	SS	2.00	3
		RS-561040150130			Ms	2.15	3
	RS-561050200120	50	2" BSP	SS	3.90	3	
	RS-561050200130			Ms	4.20	3	
	RS-561065250120	65	2.1/2" BSP	SS	5.10	3	
	RS-561065250130			Ms	5.50	3	
 <p>TRS hose unit blank plug</p>	RS-561080300120	80	3" BSP	SS	6.20	3	
	RS-561080300130			Ms	6.70	3	
		RS-561100400120	100	4" BSP	SS	11.50	3
		RS-561100400130			Ms	12.35	3
		RS-564025000500	25		PP	0.03	4
		RS-564032000500	32		PP	0.05	4
		RS-564040000500	40		PP	0.07	4
		RS-564050000500	50		PP	0.11	4
		RS-564065000500	65		PP	0.14	4
		RS-564080000500	80		PP	0.22	4
	RS-564100000500	100		PP	0.32	4	
 <p>TRK tank unit blank cap</p>	RS-567025000500	25		PP	0.05	5	
	RS-567032000500	32		PP	0.07	5	
	RS-567040000500	40		PP	0.10	5	
	RS-567050000500	50		PP	0.14	5	
	RS-567065000500	65		PP	0.21	5	
	RS-567080000500	80		PP	0.28	5	
	RS-567100000500	100		PP	0.50	5	

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-LINK



Material: AISI 316
Seal: PTFE, Viton, EPDM, Chemraz
Connections: BSP or NPTF female thread
Working press.: 14.3 bar - for 1" and 1.1/2"
 10.3 bar - for 2"
 8.3 bar - for 3"
Vacuum: Up to 0.95 bar
Working temp.: From -30°C up to +110°C (Viton, EPDM, Chemraz)
 From -7°C up to +110°C (PTFE)

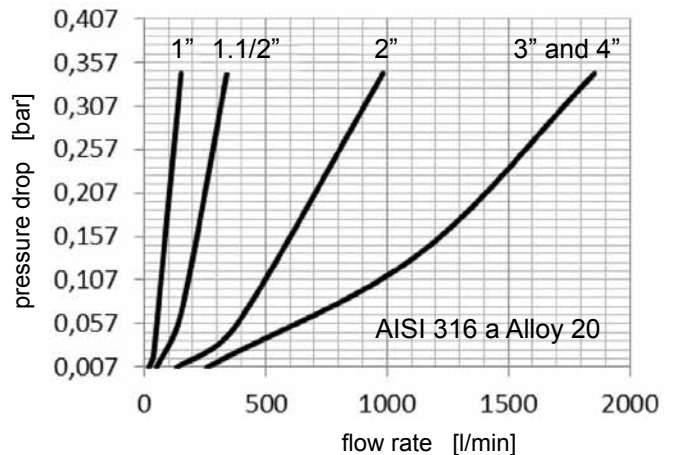
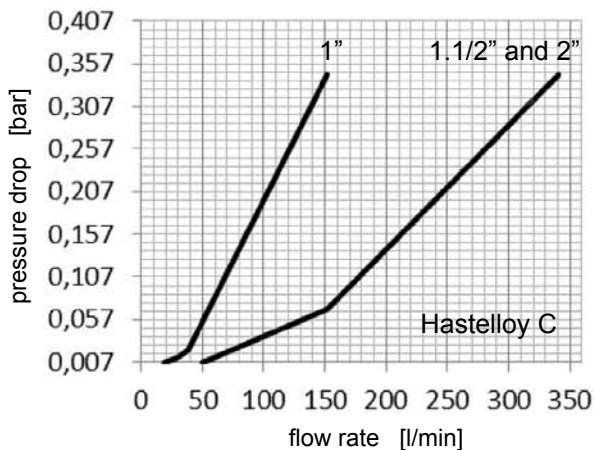
Operation

A coupler (hose unit) and an adapter (tank unit) of DRY-LINK coupling are both equipped with butterfly valves. The units connect when the coupler slides over the adapter and locking arm is pushed down. To allow fluid flow the locking arm must be secured by turning the handle of the valve by 90°. Advantages of the coupling: light weight, very little pressure drop and easy operation. Mechanical interlock (locking arm) prevents accidental opening.

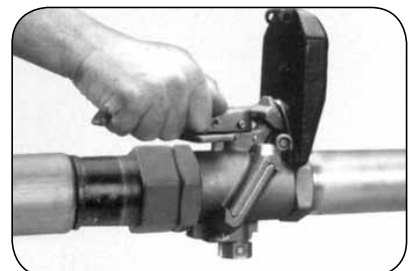
Application

DRY LINK couplings are designed for safe and spill free connection within installation (spillage is too small to be measured). Widely used in petrochemical, pharmaceutical and food industry. They meet the most demanding requirements for safe handling and environment protection. Perfectly suited for high viscosity fluids. Available with ASA flanges, TRICLOVER or weld-in fittings, as a polished hygienic version or made of Alloy 20 or Hastelloy C for highly corrosive applications.

Pressure drop vs. flow rate

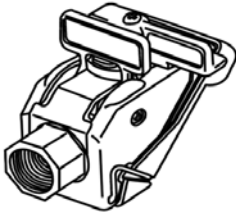
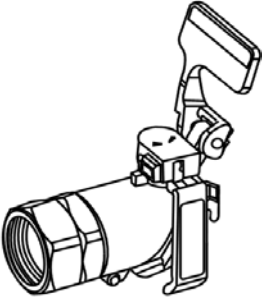

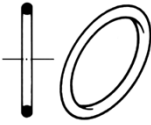


To connect:



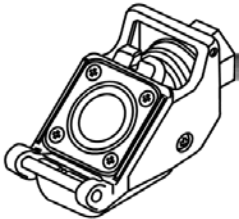
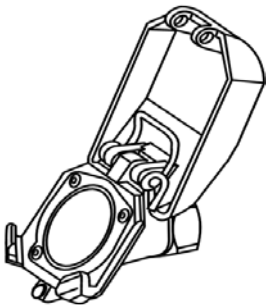

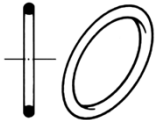
INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-LINK

picture	code	connection	working press. [bar]	material	seal	weight [kg]	
	AC-DLF-100-T-BSP	1" BSP female	14.3	AISI 316	PTFE	0.90	
	AC-DLF-100-T-NPT	1" NPT female				1.50	
	AC-DLF-150-T-BSP	1.1/2" BSP female				1.50	
	AC-DLF-150-T-NPT	1.1/2" NPT female			1.50		
	AC-DLF-100-V-BSP	1" BSP female			Viton	0.90	
	AC-DLF-100-V-NPT	1" NPT female				1.50	
	AC-DLF-150-V-BSP	1.1/2" BSP female				1.50	
	AC-DLF-150-V-NPT	1.1/2" NPT female			1.50		
	AC-DLF-100-E-BSP	1" BSP female			EPDM	0.90	
	AC-DLF-100-E-NPT	1" NPT female				1.50	
	AC-DLF-150-E-BSP	1.1/2" BSP female				1.50	
	AC-DLF-150-E-NPT	1.1/2" NPT female			1.50		
	AC-DLF-100-C-BSP	1" BSP female			Chemraz	0.90	
	AC-DLF-100-C-NPT	1" NPT female				1.50	
	AC-DLF-150-C-BSP	1.1/2" BSP female				1.50	
AC-DLF-150-C-NPT	1.1/2" NPT female	1.50					
	AC-DLF-200-T-BSP	2" BSP female	10.3	AISI 316	PTFE	2.30	
	AC-DLF-200-T-NPT	2" NPT female			Viton		
	AC-DLF-200-V-BSP	2" BSP female			EPDM		
	AC-DLF-200-V-NPT	2" NPT female			Chemraz		
	AC-DLF-200-E-BSP	2" BSP female			PTFE		6.40
	AC-DLF-200-E-NPT	2" NPT female			Viton		
	AC-DLF-200-C-BSP	2" BSP female	EPDM				
	AC-DLF-200-C-NPT	2" NPT female	Chemraz				
	AC-DLF-300-T-BSP	3" BSP female	8.3	AISI 316	PTFE	7.70	
	AC-DLF-300-T-NPT	3" NPT female			Viton		
	AC-DLF-300-V-BSP	3" BSP female			EPDM		
	AC-DLF-300-V-NPT	3" NPT female			Chemraz		
	AC-DLF-300-E-BSP	3" BSP female			PTFE		
	AC-DLF-300-E-NPT	3" NPT female			Viton		
	AC-DLF-300-C-BSP	3" BSP female	EPDM				
	AC-DLF-300-C-NPT	3" NPT female	Chemraz				
	AC-DLF-400-T-BSP	4" BSP female	8.3	AISI 316	PTFE	7.70	
	AC-DLF-400-T-NPT	4" NPT female			Viton		
	AC-DLF-400-V-BSP	4" BSP female			EPDM		
	AC-DLF-400-V-NPT	4" NPT female			Chemraz		
	AC-DLF-400-E-BSP	4" BSP female			PTFE		
	AC-DLF-400-E-NPT	4" NPT female			Viton		
	AC-DLF-400-C-BSP	4" BSP female	EPDM				
	AC-DLF-400-C-NPT	4" NPT female	Chemraz				
	AC-DL-K010250131	1"	-	PTFE	-	-	
	AC-DL-K015250131	1.1/2"					
	AC-DL-K020250131	2"		Viton			
	AC-DL-K030250131	3"					
	AC-DL-K020250201	2"		EPDM			
	AC-DL-K030250201	3"					
	AC-DL-K010250A3B	1"		-			
	AC-DL-K014250A3B	1.1/2"					
	AC-DL-K020250301	2"					
	AC-DL-K030250301	3"					
AC-DL-K010250121	1"	Chemraz					
AC-DL-K015250121	1.1/2"						
AC-DL-K020250121	2"	PTFE					
AC-DL-K030250121	3"						
AC-DL-K020250221	2"	Viton					
AC-DL-K030250221	3"						
AC-DL-K020250321	2"	EPDM					
AC-DL-K030250321	3"						
	AC-DL-K010250121	1"	-	Chemraz	-	-	
	AC-DL-K015250121	1.1/2"					
	AC-DL-K020250121	2"		PTFE			
	AC-DL-K030250121	3"					
	AC-DL-K020250221	2"		Viton			
	AC-DL-K030250221	3"					
	AC-DL-K020250321	2"		EPDM			
	AC-DL-K030250321	3"					

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-LINK

picture	code	connection	working press. [bar]	material	seal	weight [kg]													
	AC-DLM-100-T-BSP	1" BSP female	14.3	AISI 316	PTFE	0.80													
	AC-DLM-100-T-NPT	1" NPT female				Viton	1.40												
	AC-DLM-150-T-BSP	1.1/2" BSP female					EPDM	0.80											
	AC-DLM-150-T-NPT	1.1/2" NPT female						Chemraz	1.40										
	AC-DLM-100-V-BSP	1" BSP female							0.80										
	AC-DLM-100-V-NPT	1" NPT female								1.40									
	AC-DLM-150-V-BSP	1.1/2" BSP female			0.80														
	AC-DLM-150-V-NPT	1.1/2" NPT female				1.40													
	AC-DLM-100-E-BSP	1" BSP female					0.80												
	AC-DLM-100-E-NPT	1" NPT female						1.40											
	AC-DLM-150-E-BSP	1.1/2" BSP female							0.80										
	AC-DLM-150-E-NPT	1.1/2" NPT female								1.40									
	AC-DLM-100-C-BSP	1" BSP female			0.80														
	AC-DLM-100-C-NPT	1" NPT female				1.40													
	AC-DLM-150-C-BSP	1.1/2" BSP female					0.80												
AC-DLM-150-C-NPT	1.1/2" NPT female	1.40																	
	AC-DLM-200-T-BSP		2" BSP female	10.3				AISI 316	PTFE		1.40								
	AC-DLM-200-T-NPT		2" NPT female							Viton		4.10							
	AC-DLM-200-V-BSP		2" BSP female		EPDM								5.90						
	AC-DLM-200-V-NPT		2" NPT female			Chemraz													
	AC-DLM-200-E-BSP		2" BSP female				PTFE												
	AC-DLM-200-E-NPT	2" NPT female	4.10																
	AC-DLM-200-C-BSP	2" BSP female			5.90														
	AC-DLM-200-C-NPT	2" NPT female				Chemraz													
	AC-DLM-300-T-BSP	3" BSP female							8.3	AISI 316				PTFE	4.10				
	AC-DLM-300-T-NPT	3" NPT female														Viton	5.90		
	AC-DLM-300-V-BSP	3" BSP female																EPDM	Chemraz
	AC-DLM-300-V-NPT	3" NPT female																	
	AC-DLM-300-E-BSP	3" BSP female		5.90															
	AC-DLM-300-E-NPT	3" NPT female						Chemraz											
	AC-DLM-300-C-BSP	3" BSP female									PTFE								
	AC-DLM-300-C-NPT	3" NPT female										4.10							
	AC-DLM-400-T-BSP	4" BSP female					8.3						AISI 316	PTFE		5.90			
	AC-DLM-400-T-NPT	4" NPT female	Viton															Chemraz	
	AC-DLM-400-V-BSP	4" BSP female			EPDM														
	AC-DLM-400-V-NPT	4" NPT female				PTFE													
	AC-DLM-400-E-BSP	4" BSP female							5.90										
	AC-DLM-400-E-NPT	4" NPT female	Chemraz																
	AC-DLM-400-C-BSP	4" BSP female			PTFE														
	AC-DLM-400-C-NPT	4" NPT female				5.90													
	AC-DL-K010250141	1"		-						PTFE				-	-				
	AC-DL-K015250141	1.1/2"						Viton											
	AC-DL-K020250141	2"									EPDM								
	AC-DL-K030250141	3"																	
	AC-DL-K020250201	2"																	
	AC-DL-K030250201	3"																	
	AC-DL-K010260B3B	1"					-	-		-									
	AC-DL-K014260B3B	1.1/2"																	
	AC-DL-K020250301	2"																	
	AC-DL-K030250301	3"																	
AC-DL-K010250121	1"	-	-	-															
AC-DL-K015250121	1.1/2"				Chemraz														
AC-DL-K020250121	2"					PTFE													
AC-DL-K030250121	3"						Viton												
AC-DL-K020250221	2"				EPDM														
AC-DL-K030250221	3"																		
AC-DL-K020250321	2"																		
AC-DL-K030250321	3"																		
	AC-DL-K010250121	1"	-	-		-	-												
	AC-DL-K015250121	1.1/2"																	
	AC-DL-K020250121	2"																	
	AC-DL-K030250121	3"																	
	AC-DL-K020250221	2"																	
	AC-DL-K030250221	3"																	
	AC-DL-K020250321	2"																	
AC-DL-K030250321	3"																		

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - EPSILON



Coupling: AISI 316, AISI 316L
(Hastelloy C-276 available)

Seal: TFM (PFA available)

Connections: BSP or NPT female thread,
DIN or ASA flanges, TRICLOVER, weld-in

Working press.: 30 bar

Under pressure: Full vacuum

Working temp.: From -30°C up to +120°C (PFA)
From -30°C up to +230°C (TFM)

Max. spillage: 0.7 ml (1"), 0.8 ml (2"), 2 ml (3")

Flow factor c_v : 42 (1"), 160 (2"), 240 (3")

Operation

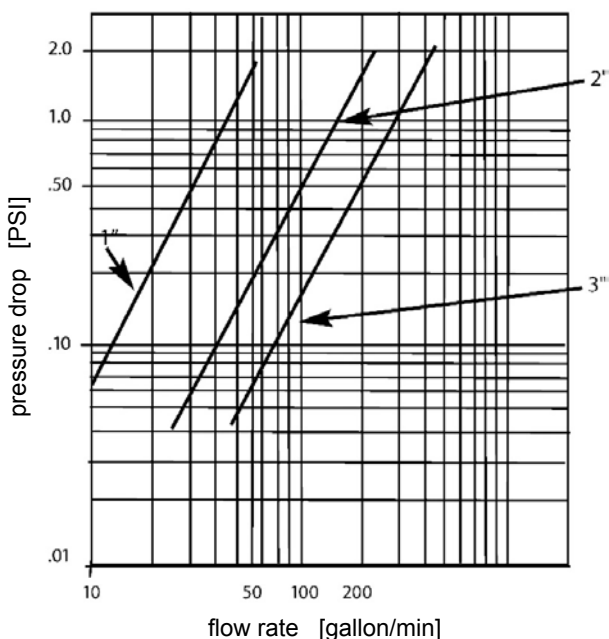
The connection between halves is possible when ramped lug and flange interfaces are aligned, connected with a push, followed by 90° turn. To allow fluid flow the valves of the coupling must be opened in correct order - first the valve of the coupler and the valve of the adapter second (order marked on the handles). The valves cannot be opened when the coupling halves are disconnected. The design of the coupling, a ball valve in each half, provides an unrestricted flow path. EPSILON is a dry disconnect coupling of the highest quality and highest working parameters. The fluid path is made of AISI 316/316L steel or Hastelloy C-276 (a coupling entirely made of Hastelloy C-276 is available). Each U-Cup seal, made of modified PTFE (TFM or PFA) is energized with a Hastelloy C-276 spring to provide initial sealing, including high, low and full vacuum. EPSILON couplings ensure the lowest spillage rates at connection/disconnection and reduced emission of volatile organic compounds - less than 25 ppm at operator exposable distance. Available with polyethylene blank plugs/caps as a standard. Stainless steel pressure dust cups are available on request.

Application

Widely used in chemical, pharmaceutical, petrochemical industry for industrial processes and reloading of valuable and hazardous media.

Standards

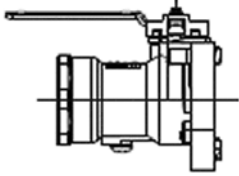
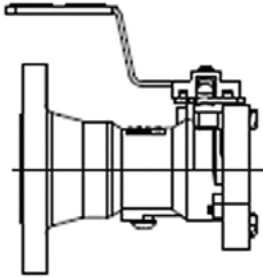
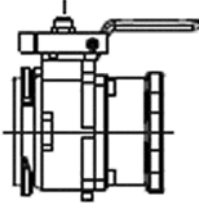
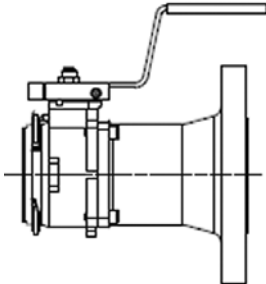
Approved by TSSA (Technical Standards and Safety Authority), AAR (Association of American Railroads), TÜV.



valve size	connection size
1"	3/4", 1", DN20, DN25
2"	1.1/2", 2", DN40, DN50
3"	3", DN80

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - EPSILON

picture	code	connection	working press. [bar]	material	seal	weight [kg]	
	OW-ZE16HS12A-01101	3/4" NPT female	30	AISI 316	TFM	1.40	
	OW-ZE16HS12B-01101	3/4" BSP female					
	OW-ZE16HS16A-01101	1" NPT female					
	OW-ZE16HS16B-01101	1" BSP female				2.70	
	OW-ZE32HS24A-01101	1.1/2" NPT female					
	OW-ZE32HS24B-01101	1.1/2" BSP female					
	OW-ZE32HS32A-01101	2" NPT female				25	8.60
	OW-ZE32HS32B-01101	2" BSP female					
	OW-ZE48HS48A-01101	3" NPT female					
OW-ZE48HS48B-01101	3" BSP female						
	OW-ZE16HS12J-01101	DN20 PN16	16	AISI 316	TFM	-	
	OW-ZE16HS12D-01101	3/4" 150PSI	30				
	OW-ZE16HS12L-01101	DN20 PN40	16				
	OW-ZE16HS16J-01101	DN25 PN16	16				
	OW-ZE16HS16D-01101	1" 150PSI	30				
	OW-ZE16HS16L-01101	DN25 PN40	16				
	OW-ZE32HS24J-01101	DN40 PN16	16				
	OW-ZE32HS24D-01101	1.1/2" 150PSI	30				
	OW-ZE32HS24L-01101	DN40 PN40	16				
	OW-ZE32HS32J-01101	DN50 PN16	16				
	OW-ZE32HS32D-01101	2" 150PSI	30				
	OW-ZE32HS32L-01101	DN50 PN40	16				
	OW-ZE48HS48J-01101	DN80 PN16	16				
	OW-ZE48HS48D-01101	3" 150PSI	25				
OW-ZE48HS48L-01101	DN80 PN40						
	OW-ZE16AS12A-01101	3/4" NPT female	30	AISI 316	TFM	1.20	
	OW-ZE16AS12B-01101	3/4" BSP female					
	OW-ZE16AS16A-01101	1" NPT female					
	OW-ZE16AS16B-01101	1" BSP female				1.80	
	OW-ZE32AS24A-01101	1.1/2" NPT female					
	OW-ZE32AS24B-01101	1.1/2" BSP female					
	OW-ZE32AS32A-01101	2" NPT female				25	7.30
	OW-ZE32AS32B-01101	2" BSP female					
	OW-ZE48AS48A-01101	3" NPT female					
OW-ZE48AS48B-01101	3" BSP female						
	OW-ZE16AS12J-01101	DN20 PN16	16	AISI 316	TFM	-	
	OW-ZE16AS12D-01101	3/4" 150PSI	30				
	OW-ZE16AS12L-01101	DN20 PN40	16				
	OW-ZE16AS16J-01101	DN25 PN16	16				
	OW-ZE16AS16D-01101	1" 150PSI	30				
	OW-ZE16AS16L-01101	DN25 PN40	16				
	OW-ZE32AS24J-01101	DN40 PN16	16				
	OW-ZE32AS24D-01101	1.1/2" 150PSI	30				
	OW-ZE32AS24L-01101	DN40 PN40	16				
	OW-ZE32AS32J-01101	DN50 PN16	16				
	OW-ZE32AS32D-01101	2" 150PSI	30				
	OW-ZE32AS32L-01101	DN50 PN40	16				
	OW-ZE48AS48J-01101	DN80 PN16	16				
	OW-ZE48AS48D-01101	3" 150PSI	25				
OW-ZE48AS48L-01101	DN80 PN40						

INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-MATE SS



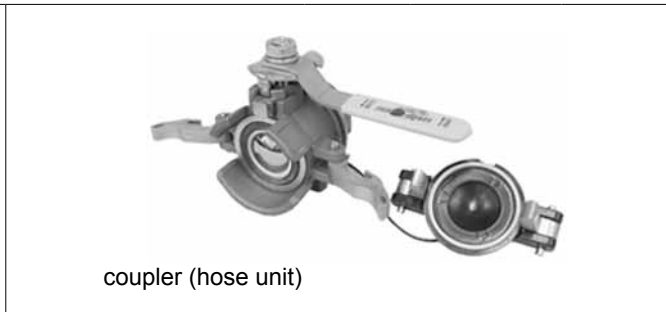
Material: AISI 316
Seal: PTFE - valve
 Viton - coupling
 (EPDM and Kalrez available)
Connections: BSP or NPT female thread
 (thread seal)
Working press.: Up to 7 bar
Working temp.: Up to +150°C
Max. spillage: 1 ml (1") and 2 ml (1.1/2" and 2")

Operation

The halves of the coupling connect similar to CAMLOCK coupling - cam levers must be closed. When the valves of the connected coupling are being opened, the locking yoke automatically interlocks the cam levers - prevents disconnection. The adapter must always be assembled on the side where pressure is supplied. The design of the coupling, a ball valve in each half, provides an unrestricted flow path 1.1/2" (38 mm). The valves cannot be opened when the coupling halves are disconnected.

Application

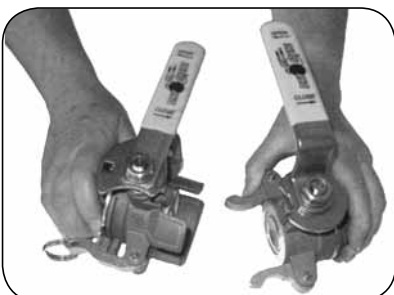
DRY-MATE SS is a user-friendly coupling designed for safe, virtually spill-free connection within installation. DRY-MATE SS couplings are used in chemical and pharmaceutical industry, in agriculture. Not suitable for gaseous media.



code	DN [mm]	thread	weight [kg]	code	DN [mm]	thread	weight [kg]
AC-DMA100-SS-BSP	25	1" BSP	1.00	AC-DMD100-SS-BSP	25	1" BSP	1.15
AC-DMA100-SS-NPT	25	1" NPT	1.00	AC-DMD100-SS-NPT	25	1" NPT	1.15
AC-DMA150-SS-BSP	38	1.1/2" BSP	2.70	AC-DMD150-SS-BSP	38	1.1/2" BSP	3.05
AC-DMA150-SS-NPT	38	1.1/2" NPT	2.70	AC-DMD150-SS-NPT	38	1.1/2" NPT	3.05
AC-DMA200-SS-BSP	38	2" BSP	2.60	AC-DMD200-SS-BSP	38	2" BSP	3.05
AC-DMA200-SS-NPT	38	2" NPT	2.60	AC-DMD200-SS-NPT	38	2" NPT	3.05

Adapters and couplers are supplied with polypropylene blank caps/plugs as a standard.

To connect:



INDUSTRIAL FITTINGS - couplings

Dry disconnect couplings - DRY-MATE PP



Material: Body - polypropylene reinforced with fibre glass
Ball - PTFE
CAMLOCK levers - AISI 316

Seal: PTFE - valve
Viton - coupling
(EPDM and Kalrez available)

Connections: BSP or NPT female thread
(thread seal)

Working press.: Up to 7 bar (21°C)

Working temp.: Up to +66°C (working press. 5 bar)

Max. spillage: 2 ml

Operation

The halves of the coupling connect similar to CAMLOCK coupling - cam levers must be closed. When the valves of the connected coupling are being opened, the locking yoke automatically interlocks the cam levers - prevents disconnection. The adapter must always be assembled on the side where pressure is supplied. The design of the coupling, a ball valve in each half, provides an unrestricted flow path 1.1/2" (38 mm). The valves cannot be opened when the coupling halves are disconnected.

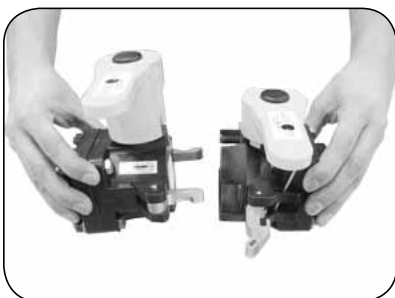
Application

DRY-MATE PP is a lightweight, user friendly coupling designed for safe, virtually spill free connection within installation. DRY-MATE PP couplings are used in chemical and pharmaceutical industry, in agriculture. Not suitable for gaseous media and fluids with low ignition point.

<p>adapter (tank unit)</p>				<p>coupler (hose unit)</p>			
code	DN [mm]	thread	weight [kg]	code	DN [mm]	thread	weight [kg]
AC-DMA150-PP-BSP	38	1.1/2" BSP	1.20	AC-DMD150-PP-BSP	38	1.1/2" BSP	1.20
AC-DMA150-PP-NPT	38	1.1/2" NPT	1.20	AC-DMD150-PP-NPT	38	1.1/2" NPT	1.20
AC-DMA200-PP-BSP	38	2" BSP	1.20	AC-DMD200-PP-BSP	38	2" BSP	1.20
AC-DMA200-PP-NPT	38	2" NPT	1.20	AC-DMD200-PP-NPT	38	2" NPT	1.20

Adapters and couplers are supplied with polypropylene blank caps as a standard.

To connect:

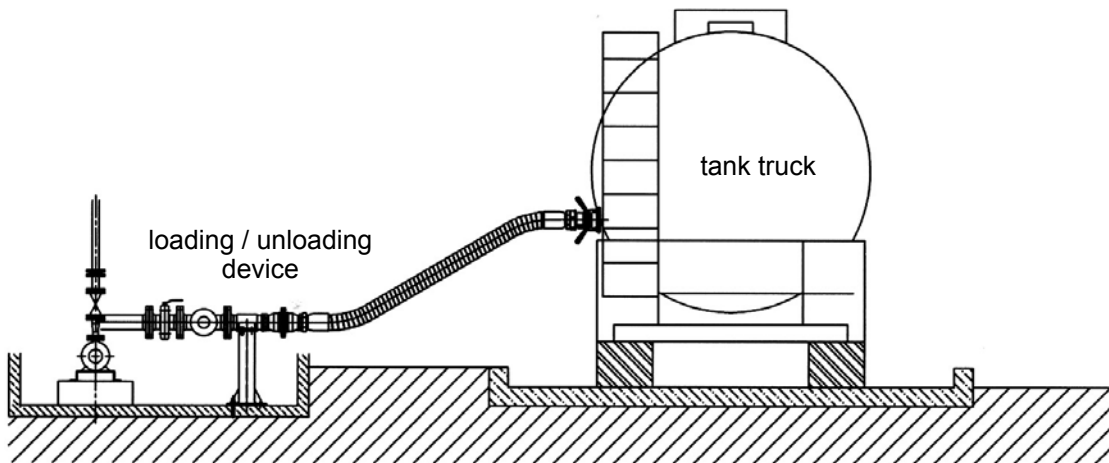


Emergency couplings - operation and types

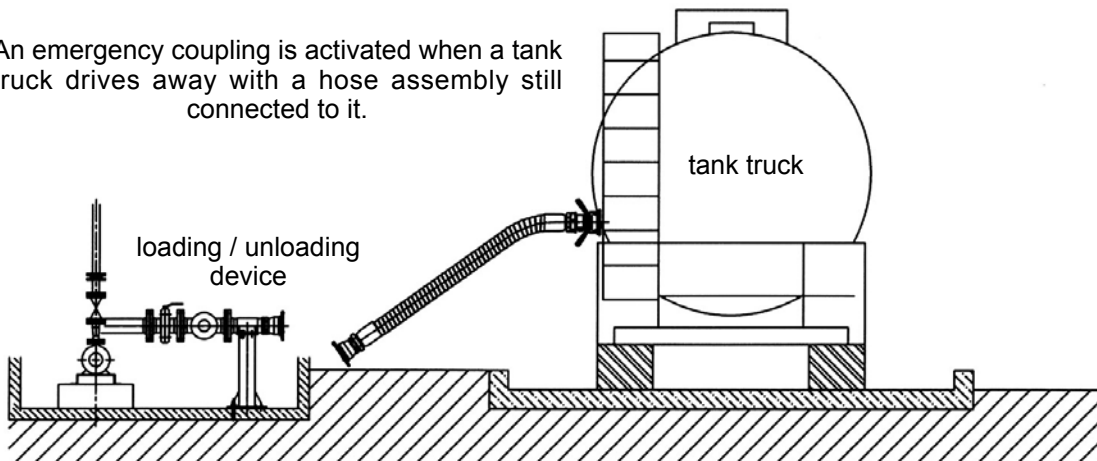
An emergency coupling protects against the consequences of accidental, excessive strain of a flexible hose assembly. It is required wherever driveaway incidents may occur - a tank truck rolls away though the assembly is still connected. Then, not able to resist the pull force, the hose breaks causing spillage of a hazardous product.

There are two basic methods utilized to activate the breakaway couplings - breaking pins or a cable. The coupling with breaking pins is designed to transmit the load of the strained hose to the breaking bolts. The bolts are broken before the hose and its fittings collapse, and the coupling disconnects. Simultaneously spring valves in both coupling halves lock so the transferred medium is not released to the atmosphere. The coupling contains three breaking pins. After emergency situation which caused disconnection of the coupling and breaking of bolts, the coupling can be easily connected using a new set of bolts. However before it is reused, the coupling always requires thorough inspection.

The second type of couplings - 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.



An emergency coupling is activated when a tank truck drives away with a hose assembly still connected to it.



INDUSTRIAL FITTINGS - couplings

Emergency couplings - SBC



- Material:** Aluminium, brass, AISI 316
- Seals:** Viton - O-ring
PTFE - flat seal of the connection side (other also available)
- Connections:** As a standard: BSP or NPT thread, PN EN1092-1, ANSI B16.5 or TTMA flanges (other also available)
- Working press.:** 25 bar (optionally 40 bar)
- Working temp.:** From -25°C up to +80°C (the acceptable working temperature ranges from -54°C up to +250°C for proper coupling material and seals, after written confirmation for application with a particular medium from the manufacturer).

Operation

A coupling designed to transmit a load of a strained hose to breaking bolts. The bolts are broken before the hose and its fittings collapse. The coupling disconnects. Simultaneously spring valves in both coupling halves lock, so the transferred medium is not released to the atmosphere. The coupling contains three breaking pins. After emergency situation which caused disconnection of the coupling and breaking of bolts, the coupling can be easily connected using a new set of bolts. However before it is reused, the coupling always requires thorough inspection. The breaking load can be set at a lower level, accordingly, the maximum working pressure is lower as well. The seal made of EPDM, NBR, Chemraz or Kalrez is also available.

Application

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



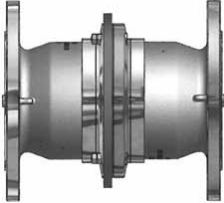
Standards

The couplings meet the requirements of ATEX, ADR, RID, IMDG, Pressure Equipment Directive 97/23/EC (PED).

INDUSTRIAL SBC	MARINE SBC
<p>The couplings disconnect at an angle ranging from 0° to 90°. The coupling is assembled on the installation at one end, and hose assembly at the other.</p>	<p>The coupling is disconnected by a straight (0°) pull only. Any bending of the coupling is not transmitted to the breaking bolts. The coupling is assembled between two hose lengths.</p>


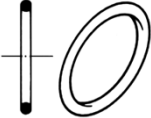
INDUSTRIAL FITTINGS - couplings

Emergency couplings - SBC

picture	code	connection	break. force [kN]	work. press. [bar]	material	seal		weight [kg]	
						O-ring	thread		
	MK-SBC-N103D1101B	1" BSP female	3.2	16	aluminium	FPM/ FKM	PUR	-	
	MK-SBC-N210D1101B	2" BSP female	9					0.90	
	MK-SBC-N312D1101B	2.1/2" BSP female	10					2.50	
	MK-SBC-N414D1101B	3" BSP female	15	10				2.90	
	MK-SBC-N516D1101B	4" BSP female	24					5.30	
	MK-SBC-N6110D1101B	6" BSP female	54					15.90	
	MK-SBC-N103D2201B	1" BSP female	3.2	16	brass			-	
	MK-SBC-N210D2201B	2" BSP female	9					-	
	MK-SBC-N312D2201B	2.1/2" BSP female	16					-	
	MK-SBC-N414D2201B	3" BSP female	24	25				AISI 316	-
	MK-SBC-N516D2201B	4" BSP female	38						-
	MK-SBC-N103D4401A	1" BSP female	4.8						1.70
	MK-SBC-N210D4401A	2" BSP female	13	2.60					
	MK-SBC-N312D4401A	2.1/2" BSP female	22	7.40					
	MK-SBC-N414D4401A	3" BSP female	33	8.50					
	MK-SBC-N516D4401A	4" BSP female	52	15.50					
	MK-SBC-N6110D4401A	6" BSP female	92	46.80					
		MK-SBC-N104D1101	1" NPT female	3.2	16			aluminium	FPM/ FKM
MK-SBC-N211D1101		2" NPT female	9	0.90					
MK-SBC-N313D1101		2.1/2" NPT female	10	2.50					
MK-SBC-N415D1101		3" NPT female	15	10	2.90				
MK-SBC-N517D1101		4" NPT female	24		5.30				
MK-SBC-NV124D1101		5" NPT female	37		12.00				
MK-SBC-N6111D1101		6" NPT female	54	15.90					
MK-SBC-N104D2201		1" NPT female	3.2	16	brass	-			
MK-SBC-N211D2201		2" NPT female	9			-			
MK-SBC-N313D2201		2.1/2" NPT female	16			-			
MK-SBC-N415D2201		3" NPT female	24	25		AISI 316	-		
MK-SBC-N517D2201		4" NPT female	38				1.70		
MK-SBC-N104D4401		1" NPT female	4.8				2.60		
MK-SBC-N211D4401		2" NPT female	13	7.40					
MK-SBC-N313D4401		2.1/2" NPT female	22	8.50					
MK-SBC-N415D4401		3" NPT female	33	15.50					
MK-SBC-N517D4401		4" NPT female	52	32.00					
MK-SBC-NV124D4401		5" NPT female	81	46.80					
MK-SBC-N6111D4401	6" NPT female	92	-						
MK-SBC-N8117D4401	8" NPT female	165	-						
	MK-SBC-N123D1101	DN25 PN10/16	3.2	16	aluminium	FPM/ FKM	-	-	
	MK-SBC-N230D1101	DN50 PN10/16	9					2.50	
	MK-SBC-N333D1101	DN65 PN10/16	10					4.50	
	MK-SBC-N436D1101	DN80 PN10/16	15	10				5.10	
	MK-SBC-N539D1101	DN100 PN10/16	24					7.00	
	MK-SBC-N645D1101	DN150 PN10/16	54					19.60	
	MK-SBC-N123D2201	DN25 PN10/16	3.2	16	brass			-	
	MK-SBC-N230D2201	DN50 PN10/16	9					-	
	MK-SBC-N333D2201	DN65 PN10/16	16					-	
	MK-SBC-N436D2201	DN80 PN10/16	24	25				AISI 316	-
	MK-SBC-N539D2201	DN100 PN10/16	38						4.20
	MK-SBC-N123D4401	DN25 PN10/16	4.8						7.30
	MK-SBC-N230D4401	DN50 PN10/16	13	13.20					
	MK-SBC-N333D4401	DN65 PN10/16	22	15.10					
	MK-SBC-N436D4401	DN80 PN10/16	33	20.70					
	MK-SBC-N539D4401	DN100 PN10/16	52	57.60					
	MK-SBC-N645D4401	DN150 PN10/16	92	71.00					
	MK-SBC-N8103D4401	DN200 PN16	165	16					

INDUSTRIAL FITTINGS - couplings

Emergency couplings - SBC

picture	code	connection	breaking force [kN]	material
	MK-SBC-S-N1D-44-3.2	1" BSP female	3.2	AISI 316
	MK-SBC-S-N1D-44-4.8	1" BSP female	4.8	
	MK-SBC-S-N2D-44-9.0	2" BSP female	9	
	MK-SBC-S-N2D-44-13.0	2" BSP female	13	
	MK-SBC-S-N3D-44-10.0	2.1/2" BSP female	10	
	MK-SBC-S-N3D-44-16.0	2.1/2" BSP female	16	
	MK-SBC-S-N3D-44-22.0	2.1/2" BSP female	22	
	MK-SBC-S-N4D-44-15.0	3" BSP female	15	
	MK-SBC-S-N4D-44-24.0	3" BSP female	24	
	MK-SBC-S-N4D-44-33.0	3" BSP female	33	
	MK-SBC-S-N5D-44-24.0	4" BSP female	24	
	MK-SBC-S-N5D-44-38.0	4" BSP female	38	
	MK-SBC-S-N5D-44-52.0	4" BSP female	52	
	MK-SBC-S-NVD-44-37.0	5" BSP female	37	
	MK-SBC-S-NVD-44-81.0	5" BSP female	81	
	MK-SBC-S-N6D-44-54.0	6" BSP female	54	
MK-SBC-S-N6D-44-92.0	6" BSP female	92		
MK-SBC-S-N8D-44-165.0	8" BSP female	165		
	MK-SBC-O-N1D-01	1" BSP female	-	FPM/FKM
	MK-SBC-O-N2D-01	2" BSP female	-	
	MK-SBC-O-N3D-01	2.1/2" BSP female	-	
	MK-SBC-O-N4D-01	3" BSP female	-	
	MK-SBC-O-N5D-01	4" BSP female	-	
	MK-SBC-O-NVD-01	5" BSP female	-	
	MK-SBC-O-N6D-01	6" BSP female	-	
	MK-SBC-O-N8D-013	8" BSP female	-	
Spanner	MK-SBC-TOOL020	1.1/2" - 4"	-	-
Set of spare O-rings	MK-SBC-TOOL001	-	-	-

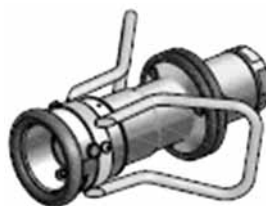
SBC coupling versions



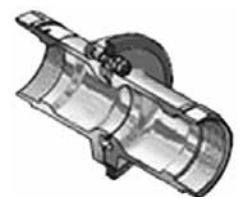
with swivel joint



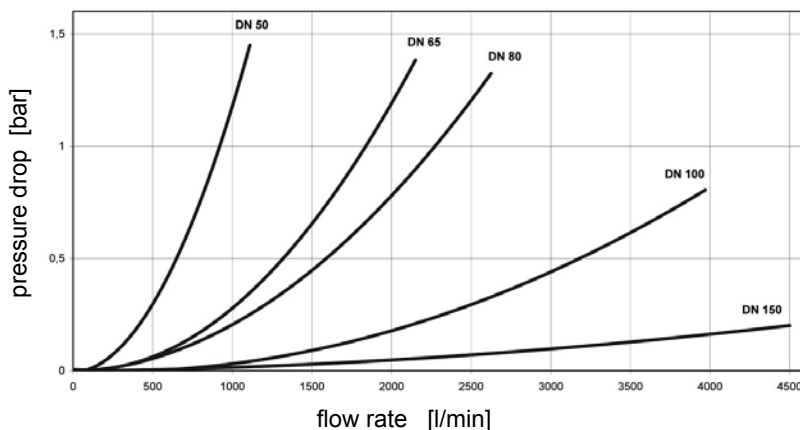
with DDC coupler



with DGC coupler



without valves



Test parameters:

Medium: n-paraffin
 Temperature: +20°C
 Density: 0.75 kg/dm³
 Viscosity: 1.75 mm²/s

INDUSTRIAL FITTINGS - couplings

Emergency couplings - ABV



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

Seal: Viton - O-ring
PTFE - for SS couplings,
PUR - for Al couplings
(other also available)

Connections: BSP female thread

Working press.: 16 bar (10 bar for Al)

Working temp.: From -40°C up to +150°C (for SS)
From -40°C up to +60°C (for Al)

Operation

A coupling designed to transmit a load of a strained hose to breaking bolts. The bolts are broken before the hose and its fittings collapse. The coupling disconnects. Simultaneously spring valves in both coupling halves lock so the transferred medium is not released to the atmosphere. The coupling contains three breaking pins that ensure even distribution of axial load. 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°. After emergency situation which caused disconnection of the coupling and breaking of bolts, the coupling can be easily connected using a new set of bolts. However before it is reused, the coupling always requires meticulous inspection.

Application

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

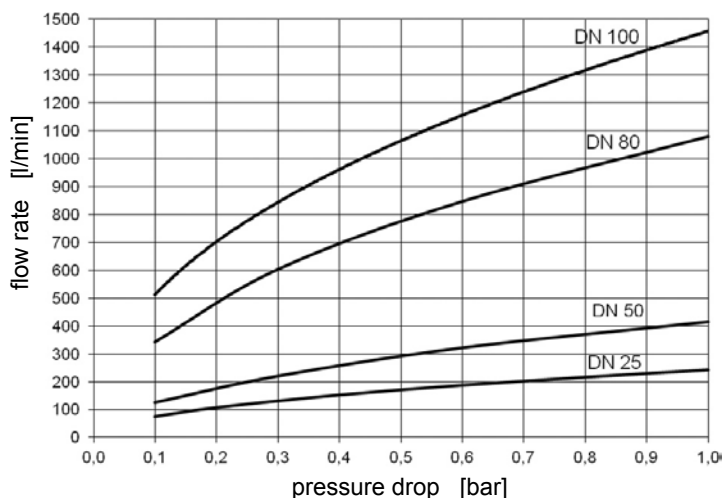
Standards

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

Axial force (P) breaking a coupling without pressure

DN [mm]	25	50	80	100
P [kG]	320	1000	2000	2800

Pressure drop in ABV and ABV-S couplings



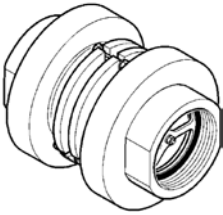
Test parameters:


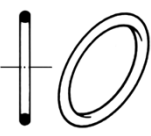
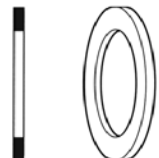
Medium: water
Temperature: +20°C
DIN EN 60534-2-3

Resistance of a flexible hose assembly (a hose with fittings) to axial mechanical load must be at least 1.3 times bigger than the force breaking a coupling.

INDUSTRIAL FITTINGS - couplings

Emergency couplings - ABV

picture	code	connection	break. force [kN]	work. press. [bar]	material	seal		weight [kg]
						O-ring	thread	
	RS-555100100141	1" BSP female	3.2	10	aluminium		PUR	-
	RS-555200200141	2" BSP female	10					1.20
	RS-555300300141	3" BSP female	20					3.40
	RS-555400400141	4" BSP female	28					5.20
	RS-555100100121	1" BSP female	3.2		AISI 316Ti		Viton	1.20
	RS-555200200121	2" BSP female	10					2.40
	RS-555300300121	3" BSP female	20					5.90
	RS-555400400121	4" BSP female	28					10.00
	RS-55510010012174	1" BSP female	3.2		AISI 316Ti /C4 ECTFE		PTFE	-
	RS-55520020012174	2" BSP female	10					2.40
	RS-55530030012174	3" BSP female	20					5.90
	RS-55540040012174	4" BSP female	28					10.00
	RS-55510010012109	1" BSP female	3.2		AISI 316		EPDM	1.20
	RS-55520020012109	2" BSP female	10					2.40
	RS-55530030012109	3" BSP female	20					5.90
	RS-55540040012109	4" BSP female	28					10.00
	RS-55510010012179	1" BSP female	3.2		AISI 316Ti /C4 ECTFE		EPDM	-
	RS-55520020012179	2" BSP female	10					2.40
RS-55530030012179	3" BSP female	20	5.90					
RS-55540040012179	4" BSP female	28	9.80					

picture	code	connection	breaking force [kN]	material
	RS-550006025042	1"	3.2	AISI 316
	RS-550006025102	2"	10	
	RS-550006025202	3"	20	
	RS-550008035282	4"	28	
	RS-06502300300402	1"	-	Viton
	RS-06501800200402			
	RS-06503900300402	2"		
	RS-06506500400401	3"		
	RS-06508000400401	4"		
RS-06508500400401				
	RS-010200000102	2"	-	PUR
	RS-010300000102	3"		
	RS-010400000102	4"		
	RS-010100000106	1"		PTFE
	RS-010200000106	2"		
	RS-010300000106	3"		
	RS-010400000106	4"		

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°).

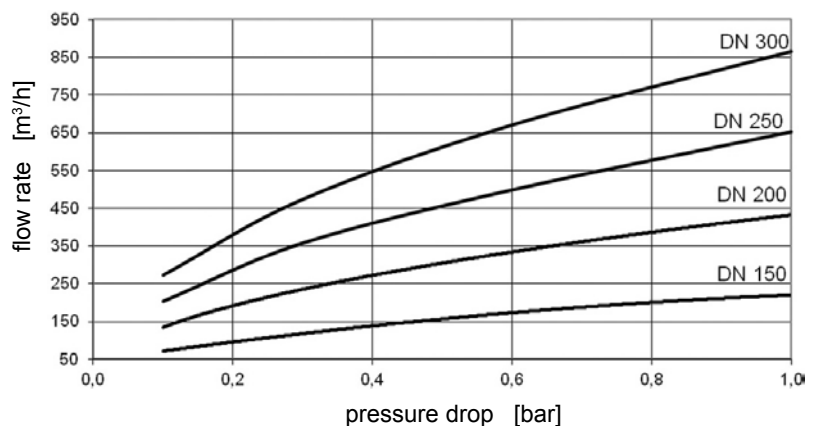
Standards

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



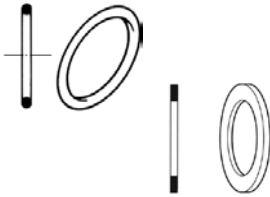
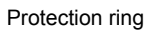


Test parameters:

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

INDUSTRIAL FITTINGS - couplings

Emergency couplings - ABV-S

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.

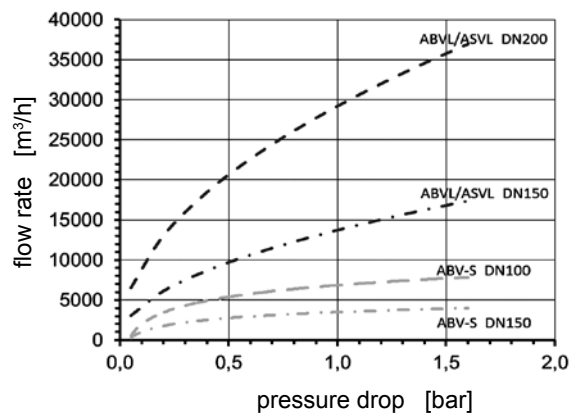
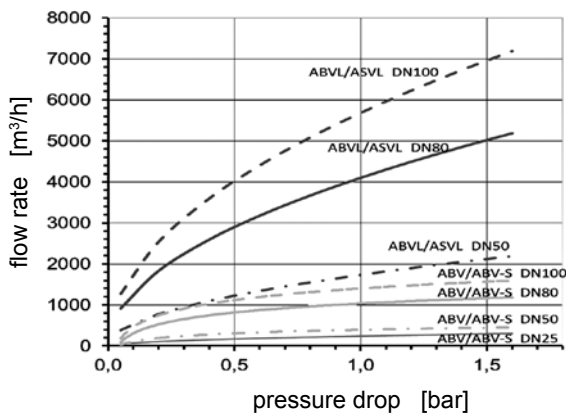
Standards:

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

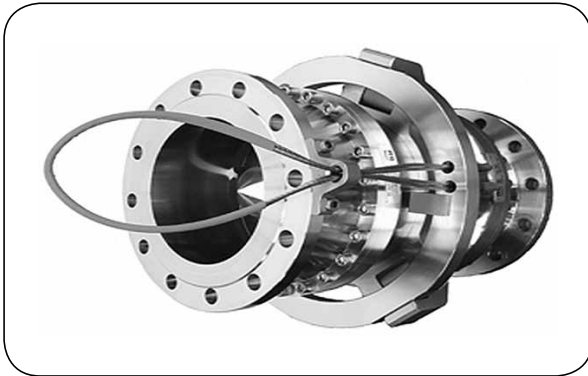
Comparison of pressure drop in ABVL/ASVL and ABV/ABV-S emergency couplings



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.

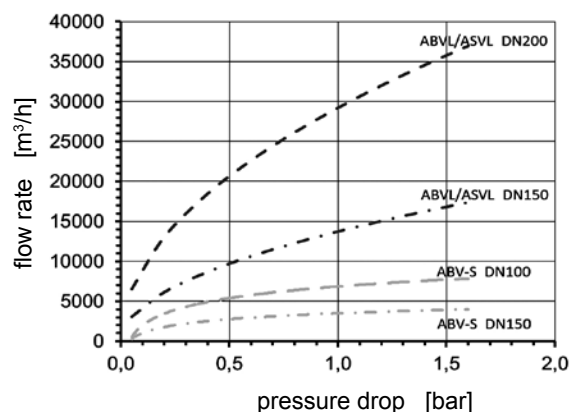
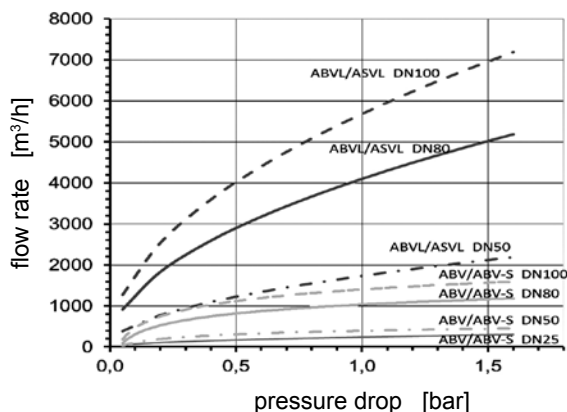
Application

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.

INDUSTRIAL FITTINGS - couplings

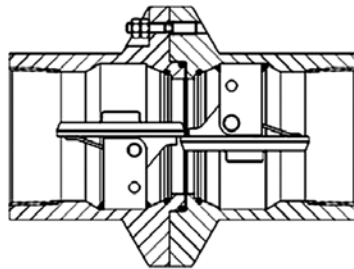
Emergency couplings - KLAW



Material:	Stainless steel, carbon steel, aluminium
Seal:	Viton, PTFE
Connections:	BSP or BSPT thread, flanges, weld-in connectors
Sizes:	From 1" to 12"
Working press.:	Up to 40 bar (depends on a size)

Operation

KLAW emergency couplings protect against consequences of accidental, excessive strain of a flexible hose assembly connected to an installation. The coupling with breaking pins is designed to transmit the load of the strained hose to the pre-determined breaking bolts. The bolts are broken before the hose and its fittings collapse. The coupling disconnects. Simultaneously flap valves (Flip-Flap) in both coupling halves lock so the transferred medium is not released to the atmosphere. The coupling contains three breaking pins that ensure even distribution of axial load. 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°. After emergency situation which caused disconnection of the coupling and breakage of bolts, the coupling can be easily connected using a new set of bolts. However before it is reused, the coupling always requires meticulous inspection.



Available versions:

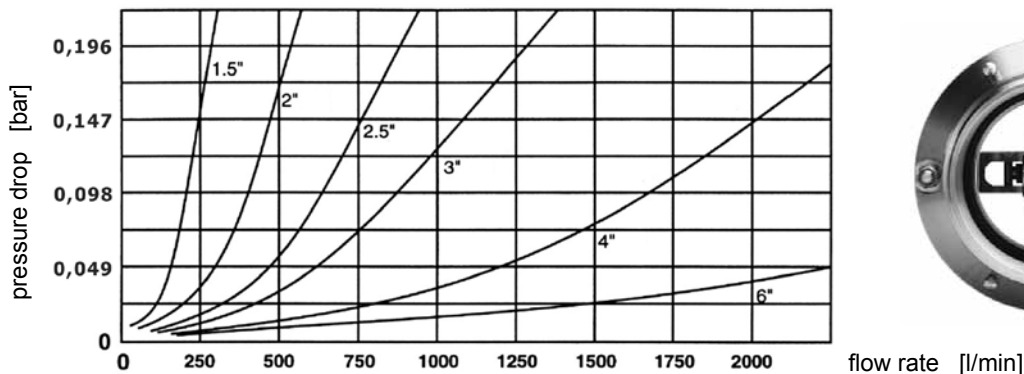
- MARINE - reloading in marine applications, assembled between two hose lengths,
- ERC - coupling with a cable, used with loading arms and other applications
- CRYOGENIC - for cryogenic media (down to -196°C - LNG, liquid oxygen, ethylene, propylene, ethane).

Application

KLAW 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, zone 1.

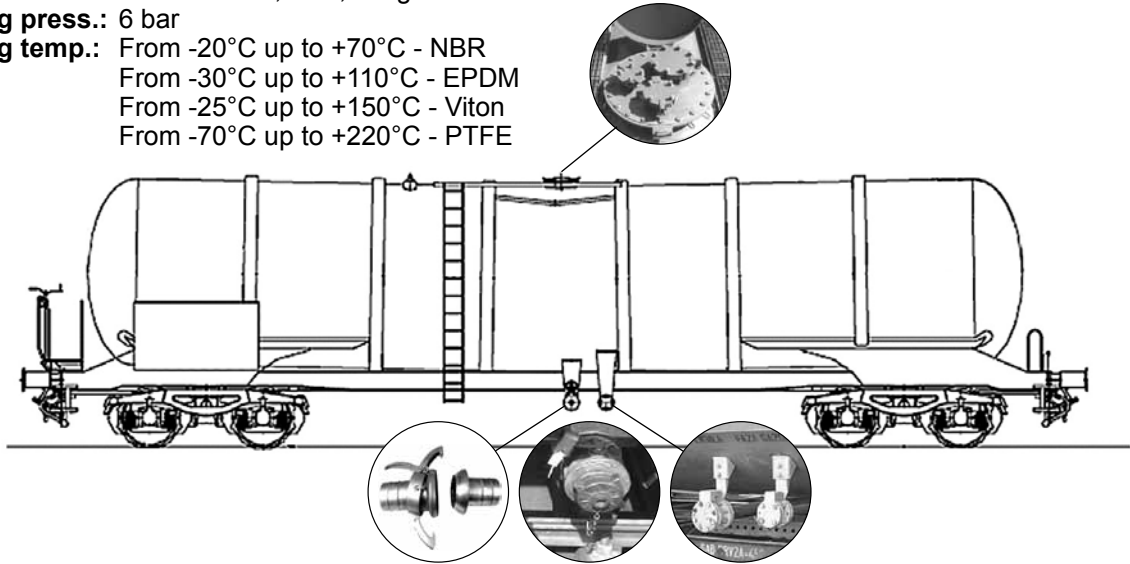






INDUSTRIAL FITTINGS - couplings

Rail tanker couplings

To allow bottom loading and unloading of e.g. fuel, rail tankers are equipped with pipe stubs finished with M130x6, M130x9 or M140x10 male thread (at the bottom part of a rail tanker) or with lever couplings e.g. PERROT for dry goods transfer. To allow top loading and unloading they include flange pipe stubs (the upper part of a rail tanker – under a hatch). Flange connectors serve as vapour recovery units.



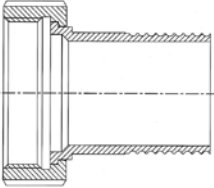
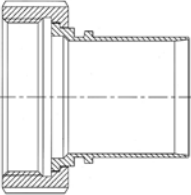
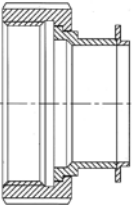
- Seal:** NBR (EPDM, Viton, PTFE available)
Connection: Metric thread, BSP, flanges
Working press.: 6 bar
Working temp.: From -20°C up to +70°C - NBR
 From -30°C up to +110°C - EPDM
 From -25°C up to +150°C - Viton
 From -70°C up to +220°C - PTFE



picture	code	size	material	description
	ZK-N-130-06-A	M130x6 female	aluminium	Rail tanker nut (with seal). Stainless steel version (for adjustable spanner) available on request.
	ZK-N-130-06-M		brass	
	ZK-N-130-09-A	M130x9 female	aluminium	
	ZK-N-130-09-M		brass	
	ZK-NHD-130-06-A	M130x6 female	aluminium	Rail tanker Heavy Duty nut (with seal). Stainless steel version (for adjustable spanner) available on request.
	ZK-NHD-130-06-M		brass	
	ZK-NHD-130-09-A	M130x9 female	aluminium	
	ZK-NHD-130-09-M		brass	
	ZK-NHD-140-10-A	M140x10 female	aluminium	
	ZK-NHD-140-10-M		brass	
	ZK-TG-075-A	DN 75	aluminium	Spigot for rail tanker nut (without seal). Stainless steel version available on request.
	ZK-TG-075-M		brass	
	ZK-TG-100-A	DN 100	aluminium	
	ZK-TG-100-M		brass	
	ZK-TD-075-A	DN 75	aluminium	Spigot (for composite hoses) for rail tanker nut (without seal). Stainless steel version available on request.
	ZK-TD-075-M		brass	
	ZK-TD-100-A	DN 100	aluminium	
	ZK-TD-100-M		brass	



INDUSTRIAL FITTINGS - couplings

Rail tanker couplings

picture	code	size	material	description
 <p style="text-align: right;">TK</p>	ZK-TK-075-A	DN 75	aluminium	Adapter - spigot for rail tanker nut (without seal) / A type CAM-LOCK coupling. Stainless steel version available on request.
	ZK-TK-075-M		brass	
 <p style="text-align: right;">TS</p>	ZK-TS-075-A	DN 75	aluminium	Spigot for rail tanker nut (without seal). Stainless steel version available on request.
	ZK-TS-075-M		brass	
	ZK-TS-100-A	DN 100	aluminium	
	ZK-TS-100-M		brass	
 <p style="text-align: right;">KGWK</p>	ZK-KGWK-130-06-100-SS	DN 100 M130x6	AISI 316	Fitting with rail tanker nut for composite hose (without seal). M140x10 nut is available only as version with two lugs welded on (no version for hook wrench).
	ZK-KGWK-130-06-075-SS	DN75 M130x6		
	ZK-KGWK-130-09-100-SS	DN100 M130x9		
	ZK-KGWK-130-09-075-SS	DN75 M130x9		
	ZK-KGWK-140-10-100-SS	DN100 M140x10		
	ZK-KGWK-140-10-075-SS	DN75 M140x10		
 <p style="text-align: right;">KGWR</p>	ZK-KGWR-130-06-100-SS	DN 100 M130x6	AISI 316	Fitting with rail tanker nut M130x6 female thread for rubber hose (without seal). M140x10 nut is available only as version with two lugs welded on (no version for hook wrench).
	ZK-KGWR-130-06-075-SS	DN75 M130x6		
	ZK-KGWR-130-09-100-SS	DN100 M130x9		
	ZK-KGWR-130-09-075-SS	DN75 M130x9		
	ZK-KGWR-140-10-100-SS	DN100 M140x10		
	ZK-KGWR-140-10-075-SS	DN75 M140x10		
 <p style="text-align: right;">KGWS</p>	ZK-KGWS-130-06-100-SS	DN 100 M130x6	AISI 316	Fitting with rail tanker nut M130x6 female thread for steel hose (without seal). M140x10 nut is available only as version with two lugs welded on (no version for hook wrench).
	ZK-KGWS-130-06-075-SS	DN75 M130x6		
	ZK-KGWS-130-09-100-SS	DN100 M130x9		
	ZK-KGWS-130-09-075-SS	DN75 M130x9		
	ZK-KGWS-140-10-100-SS	DN100 M140x10		
	ZK-KGWS-140-10-075-SS	DN75 M140x10		


INDUSTRIAL FITTINGS - couplings

Rail tanker couplings

picture	code	size	material	description
 <p style="text-align: right;">NSGZ</p>	ZK-NSGZ-130-06-075-A	M130x6 female / 3" male	aluminium	Adapter - female tread with seal / male thread. Stainless steel version available on request.
	ZK-NSGZ-130-06-075-M		brass	
	ZK-NSGZ-130-09-075-A	M130x9 female / 3" male	aluminium	
	ZK-NSGZ-130-09-075-M		brass	
	ZK-NSGZ-130-06-100-A	M130x6 female / 4" male	aluminium	
	ZK-NSGZ-130-06-100-M		brass	
	ZK-NSGZ-130-09-100-A	M130x9 female / 4" male	aluminium	
	ZK-NSGZ-130-09-100-M		brass	
 <p style="text-align: right;">NSK</p>	ZK-NSK-130-06-075-A	M130x6 female / DN 75	aluminium	Adapter - female thread with seal / A type CAM-LOCK coupling. Stainless steel version available on request.
	ZK-NSK-130-06-075-M		brass	
	ZK-NSK-130-09-075-A	M130x9 female / DN 75	aluminium	
	ZK-NSK-130-09-075-M		brass	
	ZK-NSK-130-06-100-A	M130x6 female / DN 100	aluminium	
	ZK-NSK-130-06-100-M		brass	
	ZK-NSK-130-09-100-A	M130x9 female / DN 100	aluminium	
	ZK-NSK-130-09-100-M		brass	
 <p style="text-align: right;">ZKK</p>	ZK-ZKK-CA-100-A	DN100	aluminium	ZKK rail tanker coupling / A type CAMLOCK coupling
	ZK-ZKK-GZ-100-A	4" male	aluminium	ZKK rail tanker coupling / male thread.

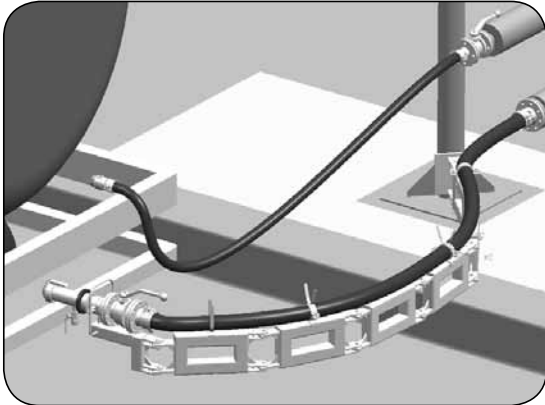
INDUSTRIAL FITTINGS - couplings

Sight glasses

picture	code	size	material	description
 <p style="text-align: center;">FLGZ</p>	ZP-P-FLGZ2-A	DN 50 / 2" BSP male	aluminium	Sight glass - flange / female. Seal: NBR (made of Viton available).
	ZP-P-FLGZ2-M		brass	
	ZP-P-FLGZ2-SS		AISI 316	
	ZP-P-FLGZ3-A	DN 80 / 3" BSP male	aluminium	
	ZP-P-FLGZ3-M		brass	
	ZP-P-FLGZ3-SS		AISI 316	
	ZP-P-FLGZ4-A	DN 100 / 4" BSP male	aluminium	
	ZP-P-FLGZ4-M		brass	
ZP-P-FLGZ4-SS	AISI 316			
 <p style="text-align: center;">FLFL</p>	ZP-P-FLFL2-A	DN 50	aluminium	Sight glass - 2 x flange. Seal: NBR (made of Viton available).
	ZP-P-FLFL2-M		brass	
	ZP-P-FLFL2-SS		AISI 316	
	ZP-P-FLFL3-A	DN 80	aluminium	
	ZP-P-FLFL3-M		brass	
	ZP-P-FLFL3-SS		AISI 316	
	ZP-P-FLFL4-A	DN 100	aluminium	
	ZP-P-FLFL4-M		brass	
ZP-P-FLFL4-SS	AISI 316			
 <p style="text-align: center;">GWGW</p>	ZP-P-GWGW2-A	2" BSP female	aluminium	Sight glass - 2 x female. Seal: NBR (made of Viton available).
	ZP-P-GWGW2-M		brass	
	ZP-P-GWGW2-SS		AISI 316	
	ZP-P-GWGW3-A	3" BSP female	aluminium	
	ZP-P-GWGW3-M		brass	
	ZP-P-GWGW3-SS		AISI 316	
	ZP-P-GWGW4-A	4" BSP female	aluminium	
	ZP-P-GWGW4-M		brass	
ZP-P-GWGW4-SS	AISI 316			
 <p style="text-align: center;">GZGZ</p>	ZP-P-GZGZ2-A	2" BSP male	aluminium	Sight glass - 2 x male. Seal: NBR (made of Viton available).
	ZP-P-GZGZ2-M		brass	
	ZP-P-GZGZ2-SS		AISI 316	
	ZP-P-GZGZ3-A	3" BSP male	aluminium	
	ZP-P-GZGZ3-M		brass	
	ZP-P-GZGZ3-SS		AISI 316	
	ZP-P-GZGZ4-A	4" BSP male	aluminium	
	ZP-P-GZGZ4-M		brass	
ZP-P-GZGZ4-SS	AISI 316			
 <p style="text-align: center;">GWGZ</p>	ZP-P-GWGZ2-A	2" female / 2" BSP male	aluminium	Sight glass - male / female. Seal: NBR (made of Viton available).
	ZP-P-GWGZ2-M		brass	
	ZP-P-GWGZ2-SS		AISI 316	
	ZP-P-GWGZ3-A	3" female / 3" BSP male	aluminium	
	ZP-P-GWGZ3-M		brass	
	ZP-P-GWGZ3-SS		AISI 316	
	ZP-P-GWGZ4-A	4" female / 4" BSP male	aluminium	
	ZP-P-GWGZ4-M		brass	
ZP-P-GWGZ4-SS	AISI 316			
 <p style="text-align: center;">FLK</p>	ZP-P-FLK2-A	DN 50	aluminium	Sight glass - flange / CAM- LOCK A. Seal: NBR (made of Viton available).
	ZP-P-FLK2-M		brass	
	ZP-P-FLK2-SS		AISI 316	
	ZP-P-FLK3-A	DN 80	aluminium	
	ZP-P-FLK3-M		brass	
	ZP-P-FLK3-SS		AISI 316	
	ZP-P-FLK4-A	DN 100	aluminium	
	ZP-P-FLK4-M		brass	
ZP-P-FLK4-SS	AISI 316			
 <p style="text-align: center;">GWK</p>	ZP-P-GWK2-A	2" female / DN 50	aluminium	Sight glass - male 2" / CAM- LOCK A. Seal: NBR (made of Viton available).
	ZP-P-GWK2-M		brass	
	ZP-P-GWK2-SS		AISI 316	
	ZP-P-GWK3-A	3" female / DN 80	aluminium	
	ZP-P-GWK3-M		brass	
	ZP-P-GWK3-SS		AISI 316	
	ZP-P-GWK4-A	3" female / DN 100	aluminium	
	ZP-P-GWK4-M		brass	
ZP-P-GWK4-SS	AISI 316			

INDUSTRIAL FITTINGS - couplings

Loading arm SGA



Material:	Stainless steel (1.4301/1.4401) Carbon steel 1.0037 RAL 5002 Galvanized carbon steel 1.0037
Assembly location:	Wall, foot (support) or other type
Reloading:	Bottom or top
Length:	From 2 to 6 m
Bending radius:	From 150 to 450 mm

Operation

A loading arm is designed to carry a flexible hose assembly and thus facilitate work of its operator. Depending on the size the loading arm consists of several segments joined together with bolts. Slide bearings enable rotary movement. There is a flexible hose assembly attached to the loading arm. This hose assembly has an emergency brakeaway coupling at its end on the tank truck side. In an emergency incident (a tank truck rolls away though the assembly is still connected) breaking bolts connecting coupling halves are broken and the coupling disconnects. Simultaneously spring valves in both coupling halves lock so the transferred medium is not released to the atmosphere. The loading arm protects the hose against pulling forces.

Advantages

- a hose assembly is not dragged over the ground and consequently damaged (longer service life),
- easy handling - an operator does not lift the assembly - it is crucial when heavier assemblies DN 80, DN 100 are used,
- time efficiency.

Selection

In order to select a proper hose loading arm, a customer must fill in an information form (a form is supplied by one of the TUBES INTERNATIONAL® employees).

Application

The loading arms are used in industrial installations and reloading systems, to handle chemicals, fuels and gases. The loading arms in different lengths and P-SGA version for food and pharmaceutical application are also available.

Standards

Manufactured according to the standards of the producer (Roman Seliger, Germany).

picture	DN	code	length [m]	material
	25	RS-SGA025350190	3.5	galvanized steel
		RS-SGA025350160		stainless steel
	50	RS-SGA050350190		galvanized steel
		RS-SGA050350160		stainless steel
	80	RS-SGA080350190		galvanized steel
		RS-SGA080350160		stainless steel
	100	RS-SGA100350190		galvanized steel
		RS-SGA100350160		stainless steel