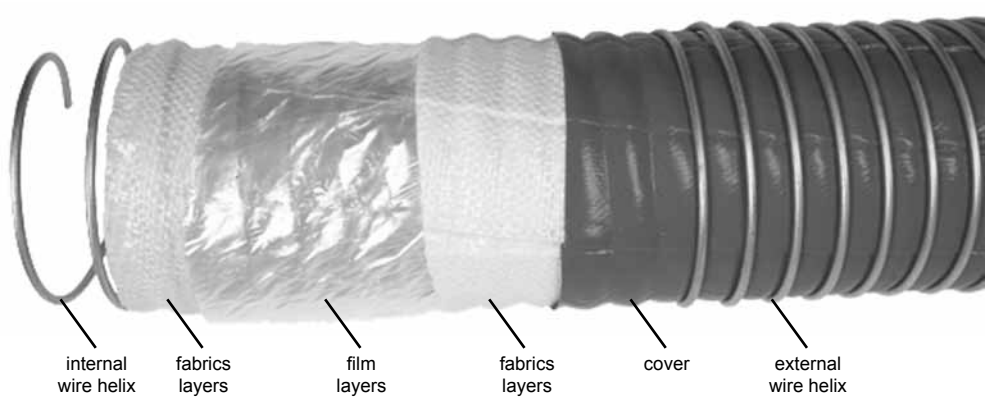
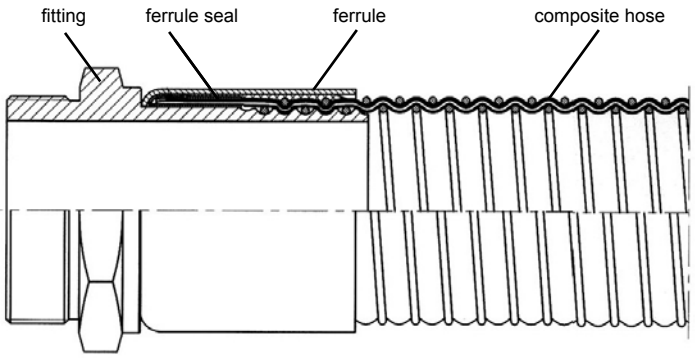
Characteristics
Composite hoses are very lightweight and very flexible, they feature unique, multi-layer construction. The unique hose design includes several fabric and film layers made of various materials and as strips helically wound between two steel wire helices: internal and external. Depending on foil and fabric material (polypropylene, polyamide, ECTFE, polyester, glass fibre or aramid fibre) and wire helix (zinc-plated steel, stainless steel, aluminium, polypropylene-coated steel), the hoses can be used to convey chemicals (also aggressive), petrochemical products, liquid gas, concentrated alcohols etc. They are used in industrial installations, but first of all, for loading and unloading of tank trucks or rail tankers and in marine transport. The hoses are used and supplied as complete hose assemblies, pressure tested, with various fittings. The composite hose assemblies intended for loading/unloading operations are produced according to the requirements of Transportation Technical Supervision and supplied with appropriate quality certificates. The loading composite hose assemblies are frequently mounted on loading and unloading equipment in loading terminals, including marine loading systems.

Construction
The construction of composite hoses is unique and very complex. The internal wire helix provides resistance to vacuum. For sealing and reinforcement, the hose is covered with layers of fabric and film, which are made of various materials depending on a hose version. The proper selection of these materials ensures resistance to chemicals, temperature and pressure. The external wire helix binds the layers tightly together and protects the hose against abrasion and mechanical damage. The material of the wire which makes external and internal helices is chosen according to the application.

Hose construction



Hose assembly construction



Due to their unique construction and complex assembly technology, the composite hoses are supplied as complete hose assemblies only.

Composite hose materials

code marking	material of internal wire helix	material of external wire helix
GG	galvanized steel	galvanized steel
AG	aluminium	galvanized steel
PG	polypropylene-coated steel	galvanized steel
NG	nylon-coated steel	galvanized steel
SG	AISI 316 steel	galvanized steel
PS	polypropylene-coated steel	AISI 316 steel
SS	AISI 316 steel	AISI 316 steel
PP	polypropylene-coated steel	polypropylene-coated steel

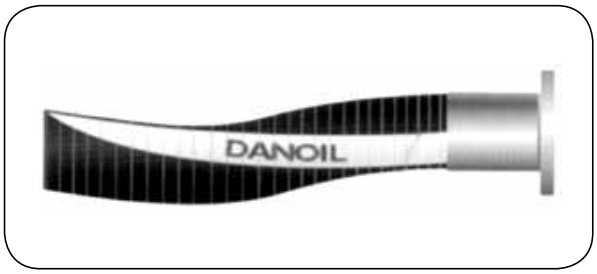
material of fabric and film
polypropylene
polyamide
PTFE
ECTFE
polyester
aramid fibre
glass fibre

Electrical conductivity
Electrical conductivity is obtained by the contact of internal and external wire helix with a fitting (direct, through a ferrule, antistatic wire, conductive rubber seal). According to EN 13765:2010, the electrical resistance between fittings does not exceed 1 Ω/m (2.5 Ω/m for DN <50). For hoses transferring liquefied gas it does not exceed 10 Ω according to EN 13766:2003.

Initial hose selection
The working pressure of a hose given in the table is its maximum working pressure. Safety factor 4:1 at +20°C temperature (HEAVY DUTY hose type, CRYOGENIC, FUELSTAR and CHEMSTAR hoses: 5:1). The higher the working temperature, the lower the working pressure. Application at the temperature above +60°C requires approval. It is not recommended to use a hose assembly at its minimum and maximum working pressure, temperature or bending radius. The proper and final selection of the hose for the particular application should always be confirmed in writing by Sales or Technical Department of TUBES INTERNATIONAL®.

Quality
All composite hose assemblies supplied by TUBES INTERNATIONAL® are tested with adequate test pressure and checked for electrical conductivity.

Repairs
Frequently it is possible to repair a hose assembly by reassembling the fittings. This service should always be done by the hose supplier - TUBES INTERNATIONAL®.



DANOIL TRANSPORT

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of petrol, diesel oil, and other petrochemical products (with aromatic content up to 50%) in standard working conditions. Internal and external wire helix is made of zinc-plated steel. Safety factor 4:1.
Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.
Standards: EN 13765:2010+A1:2015 (type 2).
Available versions: GG - black, red colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
DT-DANOILTR-050	50	10.5	0.9	150	1.60	30
DT-DANOILTR-075	75	10.5	0.9	205	2.50	30
DT-DANOILTR-100	100	10.5	0.9	265	3.60	30

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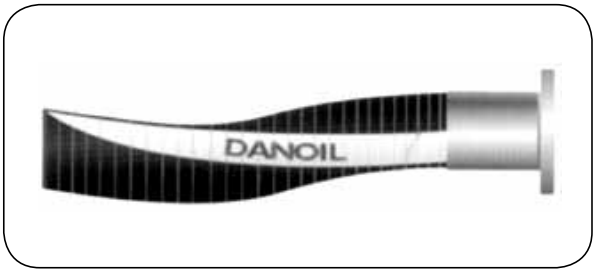
FUELSTAR

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: Polyester-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of petrochemical products including: fuel, petrol, diesel oil, lubricating oil, kerosene and other products with aromatic content (up to 100%) in standard working conditions. Internal wire helix and external wire helix are made of zinc-plated steel. Safety factor 5:1.
Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.
Standards: EN 13765:2010+A1:2015 (type 2).
Available versions: GG - blue colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
SO-FUELSTAR-050	50	10	0.7	150	1.66	40
SO-FUELSTAR-075	75	10	0.7	250	2.05	40
SO-FUELSTAR-100	100	10	0.7	300	4.10	40

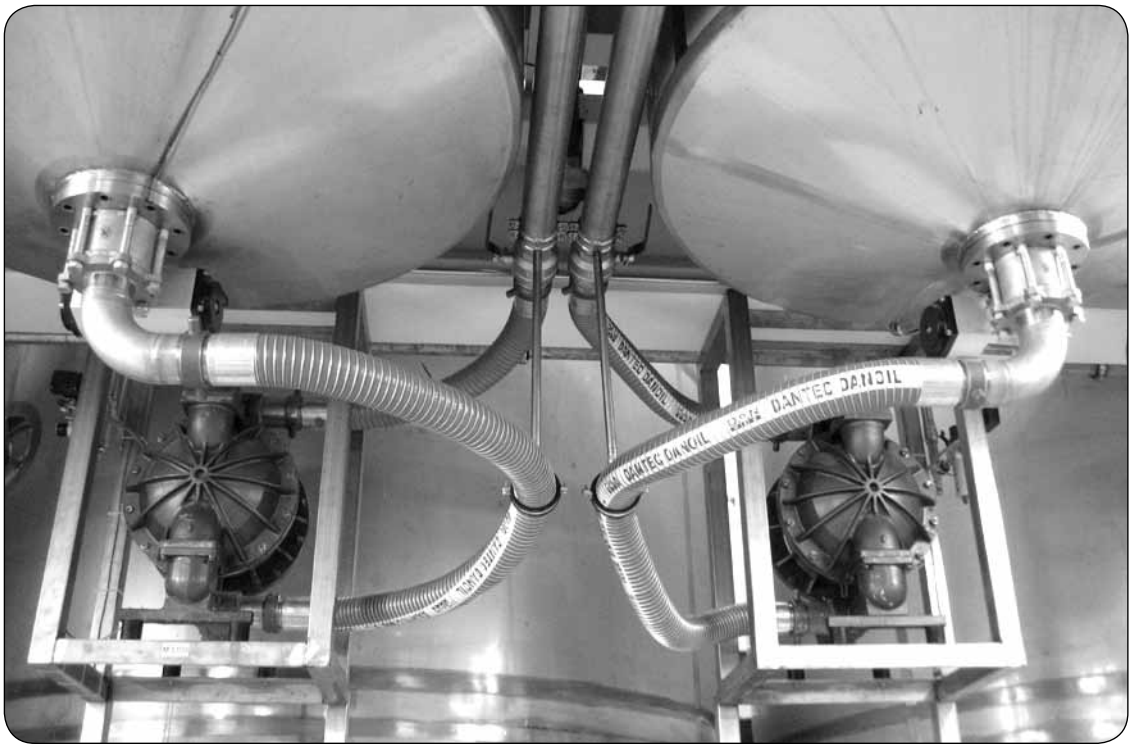


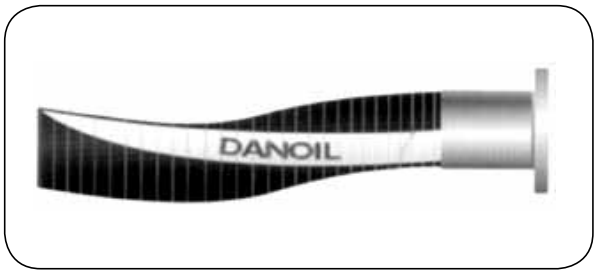
DANOIL 3

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +100°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of mineral oils and vegetable oils, petrol, diesel oil and other petrochemical products (with aromatic content up to 50%) in standard working conditions. Safety factor 4:1. AG version (aluminium internal wire helix) and AA version (aluminium internal and external wire helix) are much lighter (about 30%) so they significantly facilitate handling.
Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.
Standards: EN 13765:2010+A1:2015 (type 2).
Available versions: GG - green colour, AG - orange colour, AA.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
GG version						
DT-DANOIL3GG-025	25	10	0.9	100	0.80	25
DT-DANOIL3GG-038	38	10	0.9	125	1.10	25
DT-DANOIL3GG-050	50	10	0.9	150	1.60	30
DT-DANOIL3GG-065	65	10	0.9	180	2.10	25
DT-DANOIL3GG-075	75	10	0.9	205	2.50	30
DT-DANOIL3GG-100	100	10	0.9	265	3.60	30
AG version						
DT-DANOIL3AG-065	65	10.5	0.9	180	1.60	25
DT-DANOIL3AG-075	75	10.5	0.9	205	1.70	30
DT-DANOIL3AG-100	100	10.5	0.9	265	2.40	30





DANOIL 7

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +100°C

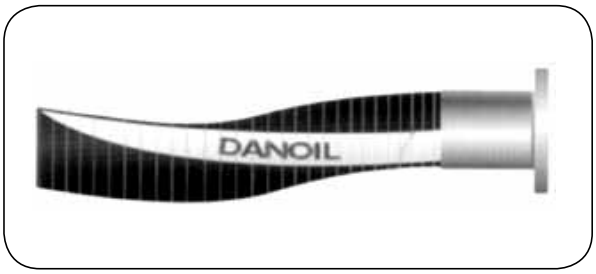
Characteristics: Suction-delivery hose designed for transfer, loading and unloading of petrol, diesel oil, vegetable oil and other petrochemical products (with aromatic content up to 50%) in heavy duty working conditions. Safety factor 4:1 (HD - Heavy Duty version - 5:1). AG version (aluminium internal wire helix) is much lighter (about 30%) so it significantly facilitates handling.

Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.

Standards: EEN 13765:2010+A1:2015 (type 3), meets the requirements of IMO (International Maritime Organisation) and IBC Code as well as USCR (United States Coastguard Requirements).

Available versions: GG, GS, AG - black colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
GG, GS version						
DT-DANOIL7...-025	25	14	0.9	100	0.80	25
DT-DANOIL7...-038	38	14	0.9	140	1.20	25
DT-DANOIL7...-050	50	14	0.9	180	1.90	30
DT-DANOIL7...-065	65	14	0.9	205	2.50	25
DT-DANOIL7...-075	75	14	0.9	280	3.00	30
DT-DANOIL7...-100	100	14	0.9	395	5.20	30
HEAVY DUTY version						
DT-DANOIL7...HD-100	100	14	0.9	405	6.40	30
DT-DANOIL7...HD-150	150	14	0.9	510	10.70	30
DT-DANOIL7...HD-200	200	14	0.9	760	15.00	30
DT-DANOIL7...HD-250	250	10.5	0.9	915	20.50	30
AG version						
DT-DANOIL7AG-065	65	14	0.9	180	1.60	25
DT-DANOIL7AG-075	75	14	0.9	205	1.70	30
DT-DANOIL7AG-100	100	14	0.9	265	2.40	30



DANOIL 9

Internal layer: Polyamide (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +100°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of petrol, diesel oil and other petrochemical products in heavy duty working conditions. Particularly recommended for fuel with aromatic content over 50%, unleaded petrol and biodiesel, MTBE - methyl tert-butyl ether - fuel additive, jet fuel. Safety factor 4:1 (HD - Heavy Duty version - 5:1). AG version (aluminium internal wire helix) is much lighter (about 30%) so it significantly facilitates handling.
Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.
Standards: EEN 13765:2010+A1:2015 (type 3), meets the requirements of IMO (International Maritime Organisation) and IBC Code as well as USCR (United States Coastguard Requirements).
Available versions: GG, GS, SG, SS, AG, AS - blue colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
GG, GS, SG, SS version						
DT-DANOIL9...-025	25	14	0.9	100	0.80	25
DT-DANOIL9...-038	38	14	0.9	140	1.20	25
DT-DANOIL9...-050	50	14	0.9	180	1.90	30
DT-DANOIL9...-065	65	14	0.9	205	2.50	25
DT-DANOIL9...-075	75	14	0.9	280	3.00	30
DT-DANOIL9...-100	100	14	0.9	395	5.20	30
HEAVY DUTY version						
DT-DANOIL9...HD-100	100	14	0.9	405	6.40	30
DT-DANOIL9...HD-150	150	14	0.9	510	10.70	30
DT-DANOIL9...HD-200	200	14	0.9	760	15.00	30
DT-DANOIL9...HD-250	250	10.5	0.9	915	20.50	30
AG, AS version						
DT-DANOIL9...-065	65	14	0.9	180	1.60	25
DT-DANOIL9...-075	75	14	0.9	205	1.70	30
DT-DANOIL9...-100	100	14	0.9	265	2.40	30

Selecting composite hose assemblies for biofuels

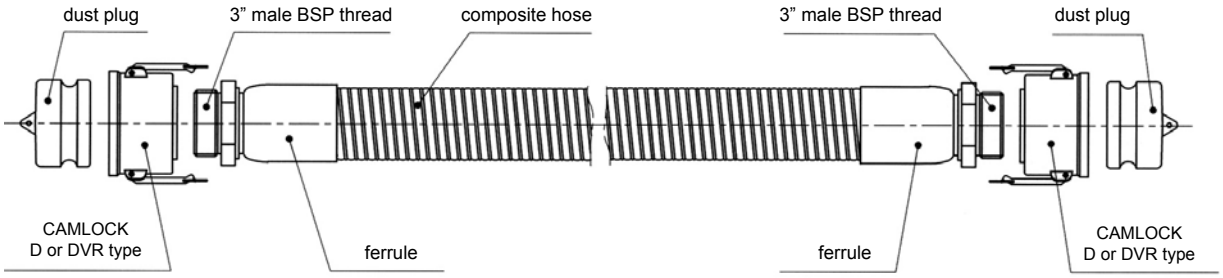
Due to increasing biofuel consumption it is very important to match the right hose with this application.
It is biodiesel in particular which contains esterified vegetable oils that damage elastomers and plastic used in the production of the hoses and seals (nitrile, polypropylene, PVC and other). On the other hand some metals used in the production of fittings and accessories may have negative impact on the properties of fuel conveyed. Brass, bronze, copper, lead, tin and zinc can accelerate the process of fuel oxidation and combined with fuel components, create insoluble sediments or gels. For these reasons, fittings made of copper alloys, soldered or zinc plated should not be used. However couplings and accessories made of aluminium, stainless steel or carbon steel (but not zinc-plated) are highly recommended.
DANOIL9 AG, AS, SS, SG perfectly suits the biofuel application.

Hose assemblies for fuel road tankers

Internal layer: Polypropylene (film, fabric)
Reinforcement: PVC-coated fabric resistant to abrasion and weather conditions
Fittings: Aluminium
Ferrule: Aluminium
Working press.: Up to 10 bar
Vacuum: Up to 0.9 bar
Working temp.: From -30°C up to +80°C

Characteristics: Suction-delivery complete hose assemblies DN 75 (3") designed for loading and unloading of petrochemical products (with aromatic content up to 50%). The hose assembly is produced using DANOIL TRANSPORT or FUELSTAR hose. Available in three versions - as hose assemblies for product transfer (CAMLOCK couplings at both ends) or vapour recovery (CAMLOCK vapour recovery coupling with a probe at one or at both ends). These hose assemblies are delivered with TDT certificate.
Applications: Equipment of fuel road tankers.
Available versions: GG - black colour (product), red colour (vapour).

Hose assembly construction



sample code*	fitting side „A"	fitting side „B"
DT-CP-XXXX	CAMLOCK D 3" + dust plug DP 3"	CAMLOCK D 3" + dust plug DP 3"
DT-CO-XXXX	CAMLOCK D 3" + dust plug DP 3"	CAMLOCK DVR 3" + dust plug DP 3"
DT-DO-XXXX	CAMLOCK DVR 3" + dust plug DP 3"	CAMLOCK DVR 3" + dust plug DP 3"

* - XXXX stands for the length of a hose assembly given in millimeters - tolerance +0 / -100 mm.

DANCHEM

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +100°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of chemicals (acids, bases, solvents, petrochemical products etc.). Safety factor 4:1 (HD - Heavy Duty version - 5:1). A special version - DANCHEM SS NC (Nylon Cover) coated with polyamide fabric is intended for applications where the hose must be immersed in a container with petrochemical products - hoses draining water from floating roofs.

Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.

Standards: EN 13765:2010+A1:2015 (type 3), meets the requirements of IMO (International Maritime Organisation) and IBC Code as well as USCR (United States Coastguard Requirements).

Available versions: PG, GS, SG, SS - grey colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
PG, GS, SG, SS version						
DT-DANCHEM...-025	25	14	0.9	100	0.80	25
DT-DANCHEM...-038	38	14	0.9	140	1.20	25
DT-DANCHEM...-050	50	14	0.9	180	1.90	30
DT-DANCHEM...-065	65	14	0.9	205	2.50	25
DT-DANCHEM...-075	75	14	0.9	280	3.00	30
DT-DANCHEM...-100	100	14	0.9	395	5.20	30
HEAVY DUTY version						
DT-DANCHEM...HD-100	100	14	0.9	405	6.40	30
DT-DANCHEM...HD-150	150	14	0.9	510	10.70	30
DT-DANCHEM...HD-200	200	14	0.9	760	15.00	30
DT-DANCHEM...HD-250	250	10.5	0.9	915	20.50	30

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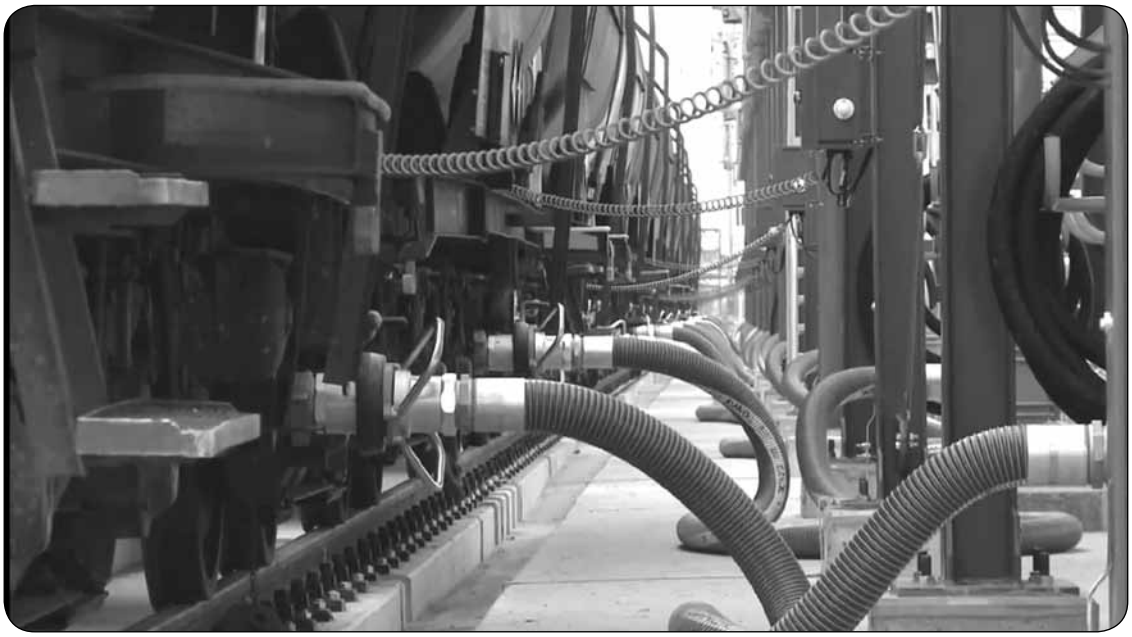
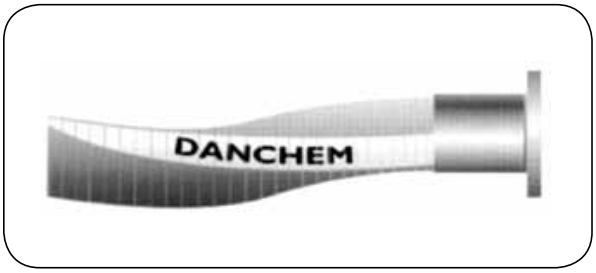
CHEMSTAR

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: Polyester-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of chemicals, acids, bases, solvents in standard working conditions. Internal wire helix is made of zinc-plated steel coated with polypropylene layer, external wire helix is made of zinc-plated steel. Safety factor 5:1.
Applications: Loading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, loading arms, industrial installations.
Standards: EN 13765:2010+A1:2015 (type 2).
Available versions: PG - green colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
SO-CHEMSTAR-PG-025	25	10	0.7	100	0.77	40
SO-CHEMSTAR-PG-038	38	10	0.7	140	1.33	40
SO-CHEMSTAR-PG-050	50	10	0.7	150	1.56	40
SO-CHEMSTAR-PG-065	65	10	0.7	200	1.87	40
SO-CHEMSTAR-PG-075	75	10	0.7	250	2.23	40
SO-CHEMSTAR-PG-100	100	10	0.7	300	3.62	40





DANCHEM CRYOGENIC

Internal layer: Film and thermoplastic fabric
Reinforcement: Internal/external wire helix, fabric layers
Cover: Polyamide-coated fabric resistant to abrasion and weather conditions
Working temp.: From -104°C up to +80°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of cryogenic substances (low temperature transfer) e.g. LPG, ammonia, carbon dioxide, ethylene. Internal and external wire helix is made of AISI 316 steel, internal layers of fabric and film made of thermoplastic material, resistant to low temperature. Safety factor 5:1.

Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.

Standards: EN 13766:2010; HD version also meets the requirements of USCG, IMO Code for marine application.

Available versions: SS - white colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
DT-DANCHEMPA-025	25	25	0.9	100	1.00	25
DT-DANCHEMPA-038	38	25	0.9	140	1.50	25
DT-DANCHEMPA-050	50	25	0.9	180	2.50	30
DT-DANCHEMPA-065	65	25	0.9	205	3.30	25
DT-DANCHEMPA-075	75	25	0.9	280	4.50	30
DT-DANCHEMPA-100	100	25	0.9	395	7.50	30
DT-DANCHEMPA-150	150	21	0.9	510	13.50	30
DT-DANCHEMPA-200	200	21	0.9	760	18.50	30
DT-DANCHEMPA-250	250	15	0.9	915	25.00	30

DANFLON

Internal layer: ECTFE film, polypropylene
Reinforcement: Internal/external wire helix, fabric layers (polyester)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C (+150°C)

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of highly aggressive chemicals, solvents, molten sulphur, bitumen. Internal layer made of ECTFE (ethylene chlorotrifluoroethylene- highly resistant to chemicals). Safety factor 4:1 (HD - Heavy Duty version - 5:1). A special hose version is resistant to high temperatures up to +150°C.

Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.

Standards: EN 13765:2010 +A1 2015 type 3 or 4 (special version intended for higher working temperatures), meets the requirements of IMO (International Maritime Organisation) and IBC Code as well as USCR (United States Coastguard Requirements).

Available versions: GG, SG, SS, GGA,SGA,SSA - blue colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
DT-DANFLON...-025	25	14	0.9	100	0.80	25
DT-DANFLON...-038	38	14	0.9	140	1.20	25
DT-DANFLON...-050	50	14	0.9	180	1.90	30
DT-DANFLON...-065	65	14	0.9	205	2.50	25
DT-DANFLON...-075	75	14	0.9	280	3.00	30
DT-DANFLON...-100	100	14	0.9	395	5.20	30
HEAVY DUTY version						
DT-DANFLON...HD-100	100	14	0.9	405	6.40	30
DT-DANFLON...HD-150	150	14	0.9	510	10.70	30
DT-DANFLON...HD-200	200	14	0.9	760	15.00	30
DT-DANFLON...HD-250	250	10.5	0.9	915	20.50	30

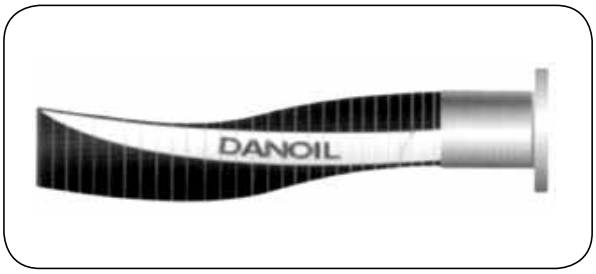
★★★★★

CHEMSTAR PTFE

Internal layer: ECTFE film, polypropylene
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: Polyester-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C

Characteristics: Suction-delivery hose designed for transfer, loading and unloading of highly aggressive substances in standard working conditions. Safety factor 5:1.
Applications: Loading/unloading systems, loading/unloading equipment, loading and unloading of road and rail tankers, road tanker equipment, industrial installations.
Standards: EN 13765:2010+A1:2015 (type 2).
Available versions: SS - blue colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
SO-CHEMSTAR-PTFE-SS-025	25	10	0.7	100	0.77	40
SO-CHEMSTAR-PTFE-SS-038	38	10	0.7	140	1.33	40
SO-CHEMSTAR-PTFE-SS-050	50	10	0.7	150	1.56	40
SO-CHEMSTAR-PTFE-SS-065	65	10	0.7	200	1.87	40
SO-CHEMSTAR-PTFE-SS-075	75	10	0.7	250	2.23	40
SO-CHEMSTAR-PTFE-SS-100	100	10	0.7	300	3.62	40

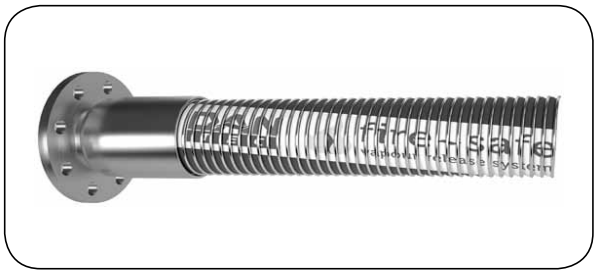


VAPOUR RECOVERY

Internal layer: Polypropylene (film, fabric)
Reinforcement: Internal/external wire helix, fabric layers (polypropylene)
Cover: PVC-coated fabric resistant to abrasion and weather conditions
Working temp.: From -30°C up to +80°C

Characteristics: A special version of DANOIL and DANCHEM hose designed to recover vapours during loading or unloading of petrochemical products. It is lighter and much more flexible when compared to a standard version. Safety factor 4:1.
Applications: Vapour recovery hose assemblies in loading/unloading systems, loading/unloading equipment, road tanker equipment, industrial installations.
Standards: EN 13765:2010 + A1 2015 (type 1).
Available versions: PG,PS, SG, SS - yellow colour.

code	I.D. [mm]	working pressure [bar]	vacuum [bar]	bending radius [mm]	weight [kg/m]	maximum length [m]
DT-DAN…VR…-075	75	7	0.5	205	2.40	30
DT-DAN…VR…-100	100	7	0.5	265	3.40	30
DT-DAN…VR…-150	150	7	0.5	485	8.30	30
DT-DAN…VR…-200	200	7	0.5	700	12.50	30
DT-DAN…VR…-250	250	7	0.5	880	20.50	30

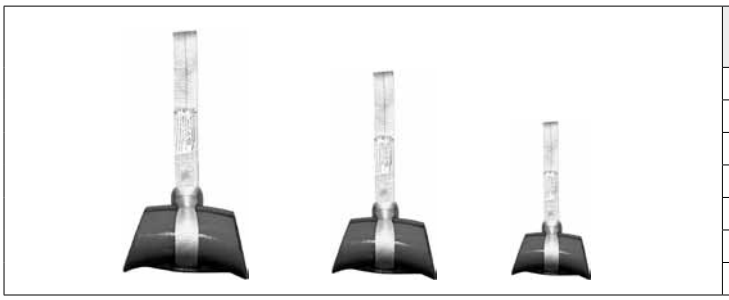


FIRESAFE

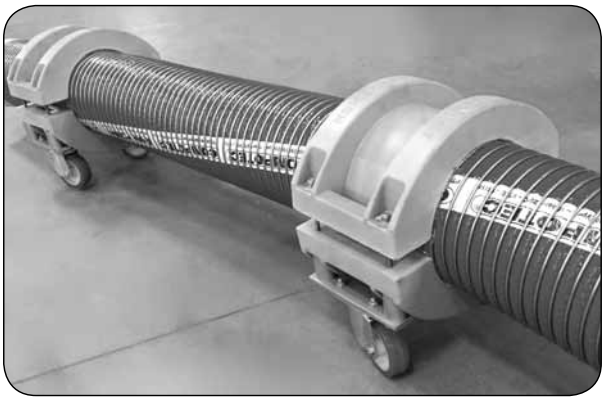
All composite hoses are available in a fire retardant version - FIRESAFE. Applying additional layers which repel heat and retard fire allows keeping the medium flowing and the system tight long enough to deal with the emergency situation and prevent further damage. When tested, the FIRESAFE hose filled with jet fuel is intact and tight for over 30 minutes in extreme fire conditions at +800°C and it still retards fire even at +1200°C. What is more, after this period, the wall of the hose does not burst abruptly but instead gradually releases the product through the wall and burns it off. Firefighting and rescue operations can be carried out safety.

HOSE BUN (support slings)

Special hose bun made of abrasion resistant polyurethane with slings. Used for lifting and suspension of all types of hoses during loading/unloading. HOSE BUN protects against the collapse and premature failure of the hose. Recommended for composite hoses in particular. Its construction enables installation onto already connected hoses. A vivid red colour of the bun makes the hose clearly visible during handling. Supplied with slings made of nylon as a standard.



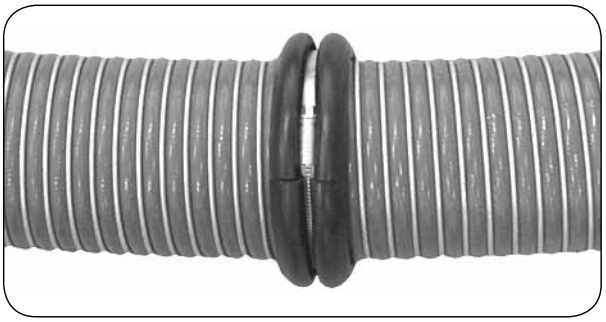
code	hose DN [mm]
DT-HB-025	25
DT-HB-038	38
DT-HB-050	50
DT-HB-075	75
DT-HB-100	100
DT-HB-150	150
DT-HB-200	200



TROLLEY (hose trolley)

code	hose O.D. [mm]
DT-TROLL-075	80 ÷ 90
DT-TROLL-100	100 ÷ 110
DT-TROLL-150	150 ÷ 165
DT-TROLL-200	195 ÷ 225
DT-TROLL-250	250 ÷ 275
DT-TROLL-300	300 ÷ 325

Trolleys are designed for easy and comfortable carrying of composite hoses (or hoses made of other materials). The use of trolleys protects the hoses against mechanical damage caused by carrying or dragging acoss the floor. The trolley comes with two swivel wheels as a standard (a version with four wheels is available to special order). Holders made of polyurethane are mounted on a steel base. Due to this combination of materials, the trolley is rigid, durable and relatively lightweight. The wheels can be easily screwed off and replaced. The wheels come in two diameters 100 or 125 mm, depending on the size of the trolley.



Protection rings

Rubber protection rings protect against abrasion wherever dragging of the hose across the floor cannot be avoided. They are made of oil-resistant, extruded rubber strip which is cut for required length and mounted on the hose using worm drive clamps. A silicone version is approved for contact with food according to FDA 177 260 and BGA XV.

strip code	material	width [mm]	thickness [mm]	working temp. [°C]	hardness [°ShA]
DT-SS40-N	NBR	42	19	from -25 up to +100	65
DT-SS40-E	EPDM	39	16	from -30 up to +120	70
DT-SS40-S	silicone	38	16	from -50 up to +200	70

hose DN	rubber strip		clamp code	
	strip code	length [mm]	zinc plated steel	stainless steel
25	DT-SS40-N DT-SS40-E DT-SS40-S	155	AB-03009004	AB-03017738
38		200	AB-03009006	AB-03017535
50		235	AB-03009007	AB-03017543
65		286	AB-03009009	AB-03017560
75		325	AB-03009010	AB-03017578
100		410	AB-03009013	AB-03017607
150		565	AB-03009017	AB-03017640
200		770	AB-03009024	AB-03017690

Fittings for composite hoses

Composite hoses are supplied as complete hose assemblies. The assembly process is very complex and requires special machines and equipment. Each composite hose assembly consists of: composite hose, fitting, ferrule and seal. These elements must be chosen very carefully and correctly for the whole hose assembly to work properly. After the specific hose is picked, one must consider which ferrule to choose from - made of either aluminium, stainless steel or carbon steel, and match the seal to come underneath the ferrule. Both elements are not in direct contact with the medium, however, if chosen well, they will improve e.g. the service life of the whole hose assembly. The stainless steel ferrules are used when the hose assembly is permanently exposed to weather conditions or operates in chemical plants, where the concentration of corrosive substances in the air is elevated. The aluminium ferrules are used in fuel applications - in petrochemical industry, whereas the ferrules made of carbon steel (zinc-plated) are the best choice whenever economy is the key factor. Fittings suitable for the composite hoses are limited to a few basic types: male or female thread fittings, fixed or swivel flange, fitting integrated with CAMLOCK coupling - coupler or adapter. The fittings are primarily made of: carbon steel, stainless steel or aluminium. However, other options of the fitting material are also available. The most popular solution is to use a male thread fitting with an adequate coupling screwed on it, e.g.: TW (tankwagen), CAMLOCK, STORZ, dry disconnect couplings and emergency breakaway couplings.

picture	hose DN	code (carbon steel)	code (AISI316L)	code (AISI304)	code (aluminium)
Ferrule 	25	DT-T-025	DT-T-025-SS	DT-T-025-SS304-SO	-
		DT-T-025-SO			
	38	DT-T-038	DT-T-038-SS	DT-T-050-SS304-SO	-
		DT-T-038-SO			
	50	DT-T-050	DT-T-050-SS	DT-T-050-SS304-SO	DT-T-050-A-SO
		DT-T-050-SO			
	65	DT-T-065	DT-T-065-SS	DT-T-065-SS304-SO	DT-T-065-A-SO
		DT-T-065-SO			
	75	DT-T-075	DT-T-075-SS	DT-T-075SS304-SO	DT-T-075-A
		DT-T-075A-SO			DT-T-075-A-SO
	100	DT-T-100	DT-T-100-SS	DT-T-075-SS304-SO	DT-T-100-A
		DT-T-100-SO	DT-T-100-HD-SS		DT-T-100-A-SO
		DT-T-100-HD			
	150	DT-T-150-HD	DT-T-150-HD-SS	-	-
	200	DT-T-200-HD	DT-T-200-HD-SS	-	-

picture	hose DN	code (NBR)	code (Viton)	code (EPDM)
Seal 	25	DT-UT-025-N	DT-UT-025-V	DT-UT-025-E-SO
		DT-UT-025-N-SO	DT-UT-025-V-SO	
	38	DT-UT-038-N	DT-UT-038-V	DT-UT-038-E-SO
		DT-UT-038-N-SO	DT-UT-038-V-SO	
	50	DT-UT-050-N	DT-UT-050-V	DT-UT-050-E-SO
		DT-UT-050-N-SO	DT-UT-050-V-SO	
	65	DT-UT-065-N	DT-UT-065-V	DT-UT-065-E-SO
		DT-UT-065-N-SO	DT-UT-065-V-SO	
	75	DT-UT-075-N	DT-UT-075-V	DT-UT-075-E-SO
		DT-UT-075-N-SO	DT-UT-075-V-SO	
	100	DT-UT-100-N	DT-UT-100-V	DT-UT-100-E-SO
		DT-UT-100-N-SO	DT-UT-100-V-SO	
	150	DT-UT-150-N	DT-UT-150-V	-
	200	DT-UT-200-N	DT-UT-200-V	-

Fittings for composite hoses

picture	hose DN	code (carbon steel)	code (stainless steel)	code (aluminium)	code (UHMWPE)	code (bronze / brass)
BSP male thread fitting 	25	DT-KGZ-025-SO	DT-KGZ-025-SS	-	DT-KGZ-025-P	DT-KGZ-025-B
			DT-KGZ-025-SS-SO			
			DT-KGZ-025-SS304-SO			
			DT-KGZ-025-SSE*			
	38	DT-KGZ-038-SO	DT-KGZ-038-SS	-	DT-KGZ-038-P	DT-KGZ-038-B
			DT-KGZ-038-SS-SO			
			DT-KGZ-038-SS304-SO			
			DT-KGZ-038-SSE*			
	50	DT-KGZ-050-SO	DT-KGZ-050-SS	DT-KGZ-050-A	DT-KGZ-050-P	DT-KGZ-050-B
			DT-KGZ-050-SS-SO			DT-KGZ-050-M
			DT-KGZ-050-SS304-SO			
			DT-KGZ-050-SSE*			
	65	DT-KGZ-065-SO	DT-KGZ-065-SS	DT-KGZ-065-A	DT-KGZ-065-P	DT-KGZ-065-B
			DT-KGZ-065-SS-SO			
			DT-KGZ-065-SS304-SO			
			DT-KGZ-065-SSE*			
	75	DT-KGZ-075-SO	DT-KGZ-075-SS	DT-KGZ-075-A	DT-KGZ-075-P	DT-KGZ-075-B
			DT-KGZ-075-SS-SO			DT-KGZ-075-M
			DT-KGZ-075-SS304-SO			
			DT-KGZ-075-SSE*			
	100	DT-KGZ-100-SO	DT-KGZ-100-SS	DT-KGZ-100-A	DT-KGZ-100-P	DT-KGZ-100-B
			DT-KGZ-100-SS-SO	DT-KGZ-100-A-SO	-	DT-KGZ-100-M
			DT-KGZ-100-SS304-SO			DT-KGZ-100-M-SO

* - ECTFE-coated fitting

picture	hose DN	code (carbon steel)	code (AISI316)	code (AISI304)
BSPT male thread fitting 	25	DT-KGZT-025-SO	DT-KGZT-025-SS	DT-KGZT-025-SS304-SO
			DT-KGZT-025-SS-SO	
	38	DT-KGZT-038-SO	DT-KGZT-038-SS	DT-KGZT-038-SS304-SO
			DT-KGZT-038-SS-SO	
	50	DT-KGZT-050-SO	DT-KGZT-050-SS	DT-KGZT-050-SS304-SO
			DT-KGZT-050-SS-SO	
	65	DT-KGZT-065-SO	DT-KGZT-065-SS-SO	DT-KGZT-065-SS304-SO
	75	DT-KGZT-075-SO	DT-KGZT-075-SS	DT-KGZT-075-SS304-SO
			DT-KGZT-075-SS-SO	
	100	DT-KGZT-100-SO	-	-

Fittings for composite hoses

picture	hose DN	code (carbon steel)	code (AISI316)	code (AISI304)
NPT male thread fitting 	25	DT-KGZN-025-SO	DT-KGZN-025-SS-SO	DT-KGZN-025-SS304-SO
	38	DT-KGZN-038-SO	DT-KGZN-038-SS-SO	DT-KGZN-038-SS304-SO
	50	DT-KGZN-050-SO	DT-KGZN-050-SS-SO	DT-KGZN-050-SS304-SO
	65	DT-KGZN-065-SO	DT-KGZN-065-SS-SO	DT-KGZN-065-SS304-SO
	75	DT-KGZN-075-SO	DT-KGZN-075-SS-SO	DT-KGZN-075-SS304-SO

picture	hose DN	code (AISI316)	code (aluminium)	code (bronze / brass)
CAMLOCK C coupler 	25	DT-KCC-025-SS	-	-
	38	DT-KCC-038-SS	DT-KCC-038-A	-
	50	DT-KCC-050-SS	DT-KCC-050-A	DT-KCC-050-B
	65	-	-	DT-KCC-065-B
	75	DT-KCC-075-SS	DT-KCC-075-A	DT-KCC-075-B
	100	DT-KCC-100-SS	DT-KCC-100-A	-

picture	hose DN	code (AISI316)	code (aluminium)	code (bronze / brass)
CAMLOCK E adapter 	25	DT-KCE-025-SS	-	-
	38	DT-KCE-038-SS	-	-
	50	DT-KCE-050-SS	DT-KCE-050-A	DT-KCE-050-B
	75	DT-KCE-075-SS	DT-KCE-075-A	DT-KCE-075-B
	100	DT-KCE-100-SS	DT-KCE-100-A	-

Fittings for composite hoses

picture	hose DN	code (stainless steel)	code (aluminium)	code (bronze / brass)
BSP female thread fitting 	25	DT-KGW-025-SS-N DT-KGW-025-SS-W DT-KGWU-025-T	-	DT-KGW-025-B-N DT-KGW-025-B-W DT-KGWU-025-T
	38	DT-KGW-038-SS-N DT-KGW-038-SS-W DT-KGWU-038-T	-	DT-KGW-038-B-N DT-KGW-038-B-W DT-KGWU-038-T
	50	DT-KGW-050-SS-N DT-KGW-050-SS-W DT-KGWU-050-T	DT-KGW-050-A-W DT-KGWU-050-T	DT-KGW-050-B-N DT-KGW-050-B-W DT-KGWU-050-T
				DT-KGW-050-M-N DT-KGW-050-M-W DT-KGWU-050-T
	65	DT-KGW-065-SS-N DT-KGW-065-SS-W DT-KGWU-065-T	-	DT-KGW-065-B-N DT-KGW-065-B-W DT-KGWU-065T
	75	DT-KGW-075-SS-N DT-KGW-075-SS-W DT-KGWU-075-T	DT-KGW-075-A-W DT-KGWU-075-T	DT-KGW-075B-N DT-KGW-075-B-W DT-KGWU-075-T
				DT-KGW-075-M-N DT-KGW-075-M-W DT-KGWU-075-T
	100	DT-KGW-075-SS-N DT-KGW-075-SS-W DT-KGWU-100-T	DT-KGW-100-A-N DT-KGW-100-A-W DT-KGWU-100-T	DT-KGW-100-B-N DT-KGW-100-B-W DT-KGWU-100-T
				DT-KGW-100-M-N DT-KGW-100-M-W DT-KGWU-100-T

A complete fitting consists of three elements: nut (N), insert (W) and seal (T).
Example of a set of codes for the stainless steel fitting, size DN 75": DT-KGZ-075-SS-N + DT-KGW- 075-SS-W + DT-KGW-075-T.

picture	hose DN	code (carbon steel)	code (stainless steel)	code (UHMWPE)
Fixed flange fitting according to DIN 	25	DT-KKS-025	DT-KKS-025-SS	DT-KKS-025-P
		DT-KKS-025-SO	DT-KKS-025-SS304-SO	
			DT-KKS-025-SS316-SO	
	38	DT-KKS-038	DT-KKS-038-SS	DT-KKS-038-
			DT-KKS-038-SS304-SO	
		DT-KKS-038-SO	DT-KKS-038-SS316-SO	
	50	DT-KKS-050	DT-KKS-050-SS	DT-KKS-050-P
			DT-KKS-050-SS304-SO	
		DT-KKS-050-SO	DT-KKS-050-SS316-SO	
			DT-KKS-050-SSE*	
	65	DT-KKS-075	DT-KKS-065-SS	DT-KKS-065-P
		DT-KKS-075-SO	DT-KKS-065-SS304-SO	
			DT-KKS-065-SS316-SO	
	75	DT-KKS-075	DT-KKS-075-SS	DT-KKS-075-P
			DT-KKS-075-SS304-SO	
		DT-KKS-075-SO	DT-KKS-075-SS316-SO	
			DT-KKS-075-SSE*	
	100	DT-KKS-100	DT-KKS-100-SS	DT-KKS-100-P
		DT-KKS-100-SO	DT-KKS-100-SS304-SO	
			DT-KKS-100-SS316-SO	
	150	DT-KKS-150	DT-KKS-150-SS	-
	200	DT-KKS-200	DT-KKS-200-SS	-

* - ECTFE-coated fitting.

Fittings for composite hoses

picture	hose DN	code (carbon steel)	code (stainless steel)	code (UHMWPE)
Swivel flange fitting according to DIN 	25	DT-KKO-025 DT-KKO-025-W	DT-KKO-025-SS DT-KKO-025-SS-W	DT-KKO-025-P-W
			DT-KKO-025-SS304-SO*	
		DT-KKO-025-SO	DT-KKO-025-SS316-SO*	
	38	DT-KKO-038 DT-KKO-038-W	DT-KKO-038-SS DT-KKO-038-SS-W	DT-KKO-038-P-W
			DT-KKO-038-SS304-SO*	
		DT-KKO-038-SO*	DT-KKO-038-SS316-SO*	
	50	DT-KKO-050 DT-KKO-050-W	DT-KKO-050-SS DT-KKO-050-SS-W	DT-KKO-050-P DT-KKO-050-P-W
			DT-KKO-050-SS304-SO*	
		DT-KKO-050-SO*	DT-KKO-050-SS316-SO*	
			DT-KKO-050-SSE-W	
	65	DT-KKO-065 DT-KKO-065-W	DT-KKO-065-SS DT-KKO-065-SS-W	DT-KKO-065-P-W
		DT-KKO-065-SO*	DT-KKO-065-SS304-SO*	
			DT-KKO-065-SS316-SO*	
	75	DT-KKO-075 DT-KKO-075-W	DT-KKO-075-SS DT-KKO-075-SS-W	DT-KKO-075-P-W
		DT-KKO-075-SO*	DT-KKO-075-SS304-SO*	
			DT-KKO-075-SS316-SO*	
			DT-KKO-075-SSE-W	
	100	DT-KKO-100 DT-KKO-100-W	DT-KKO-100-SS DT-KKO-100-SS-W	DT-KKO-100-P-W
		DT-KKO-100-SO*	DT-KKO-100-SS-SO*	
			DT-KKO-100-SS304-SO*	
	150	DT-KKO-150 DT-KKO-150-W	DT-KKO-150-SS DT-KKO-150-SS-W	-
	200	DT-KKO-200 DT-KKO-200-W	DT-KKO-200-SS DT-KKO-200-SS-W	-

A complete fitting consists of two elements: flange and insert (W).
Example for DN 75: DT-KKO-075-SS + DT-KKO-075-SS-W.
* - codes DT-KKO-...SO - complete fitting.

material marking:

A -	aluminium	N -	NBR
B -	bronze	V -	Viton
P -	polyethylene (UHMWPE)	T -	PTFE
SS -	stainless steel	S -	leather

no marking - carbon steel