

VIP HOSE

VACUUM-INSULATED

VACUUM-INSULATED
PIPING VIP

VIP
HOSE

VIP
COUPLINGS

GAS VENT

PHASE
SEPARATOR



APPLICATION

Vacuum-insulated hoses are used to transport cryogenic gases – nitrogen, oxygen, helium, argon, LNG, CO₂.

Vacuum-insulated hoses are used wherever it is necessary to compensate the length of vacuum-insulated piping (VIP), with moving machinery and in places which are difficult to access or have an irregular shape.

Wide application, mainly in the gas, food, pharmaceutical, laboratory, shipbuilding, machinery, and metallurgical industries.

DESIGN AND BENEFITS

Vacuum-insulated hoses consist of two hoses arranged coaxially relative to each other.

The internal hose, which is in contact with the medium, is designed to work in high hygiene areas.

The external hose, which is a vacuum jacket, remains at the ambient temperature, providing excellent protection against cold burns.

The hoses are made of stainless steel with a wave profile, parallel waves. A single braid is used.

High vacuum in the space between the hoses.

The use of a special insulation design (vacuum + MLI) limits the inflow of heat to the medium.

Independent vacuums in prefabricated sections protect against complete loss of vacuum in the whole system in the event of a failure.

Small jacket diameter compared with standard insulation.

Option of vacuum regeneration.

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AVAILABLE COUPLINGS

Johnston bayonet couplings (screwed together)

Sleeve coupling – welded

Mixed couplings

MATERIALS

Hose: EN 1.4541

Single braid : EN 1.4301

Insulation: MLI + vacuum

Sealing: bimetallic, O-rings

Hose diameter		Temperature range	Pressure at 20 °C	Bending radius	
Int.	Ext.	[°C]	[barg]	Rst [mm]	Rb [mm]
DN6	DN25	-270 to +600	167	64	180
DN10	DN32	-270 to +600	130	79	210
DN16	DN50	-270 to +600	85	120	280
DN20	DN65	-270 to +600	65	150	330
DN25	DN80	-270 to +600	50	180	460
DN32	DN80	-270 to +600	40	180	460
DN40	DN80	-270 to +600	40	180	460
DN50	DN125	-270 to +600	40	315	800

Rst - rare exposure of the hose to bending (several times a day with a stable force and radius)
Rb - Frequent exposure of the hose to bending

Diameter	Int. pipe [mm]	Ext. pipe [mm]	Capacity* [l/h]	Inflow of heat*				
				Pipe [W/m]	Hose [W/m]	Bayonet coupling [W]	Sleeve coupling [W]	
1/2"	DN15	21,3 x 1,6	60,3 x 2,0	500 - 1000	0,5	1,2	1,6	-
3/4"	DN20	26,9 x 1,6	76,1 x 2,0	1000 - 2000	0,6	1,5	2,1	-
1"	DN25	33,7 x 2,0	76,1 x 2,0	2000 - 3000	0,7	1,6	2,3	-
1 1/4"	DN32	42,4 x 2,0	88,9 x 2,0	3000 - 4000	0,8	1,7	3,0	3,2
1 1/2"	DN40	48,3 x 2,0	101,6 x 2,0	3000 - 4500	0,8	1,9	4,1	3,4
2"	DN50	60,3 x 2,0	114,3 x 2,0	4000 - 6000	1,0	2,0	4,5	3,9
3"	DN80	88,9 x 2,0	154 x 2,0	-	1,6	3,0	5,4	5,1

* - estimated value for liquid nitrogen

TECHNICAL SPECIFICATION

OPTIONS

Can be applied with different cryogenic media.

Other sizes on request.

Other types of hose braids (use with different pressures).

Different lengths and shapes of couplings.

MANUFACTURE

Pipes and materials according to EN standards.

PED 2014/68/EU directive conformity.

Welding processes according to ISO 3834-2 quality management system.

Maximum permissible leak: $1 \cdot 10^{-9}$ mbar • l/s - verified with a helium leak detector according to PN-EN ISO 20485.

Vacuum level $\leq 10^{-4}$ mbar

VIP HOSES PARAMETERS

STANDARD PARAMETERS