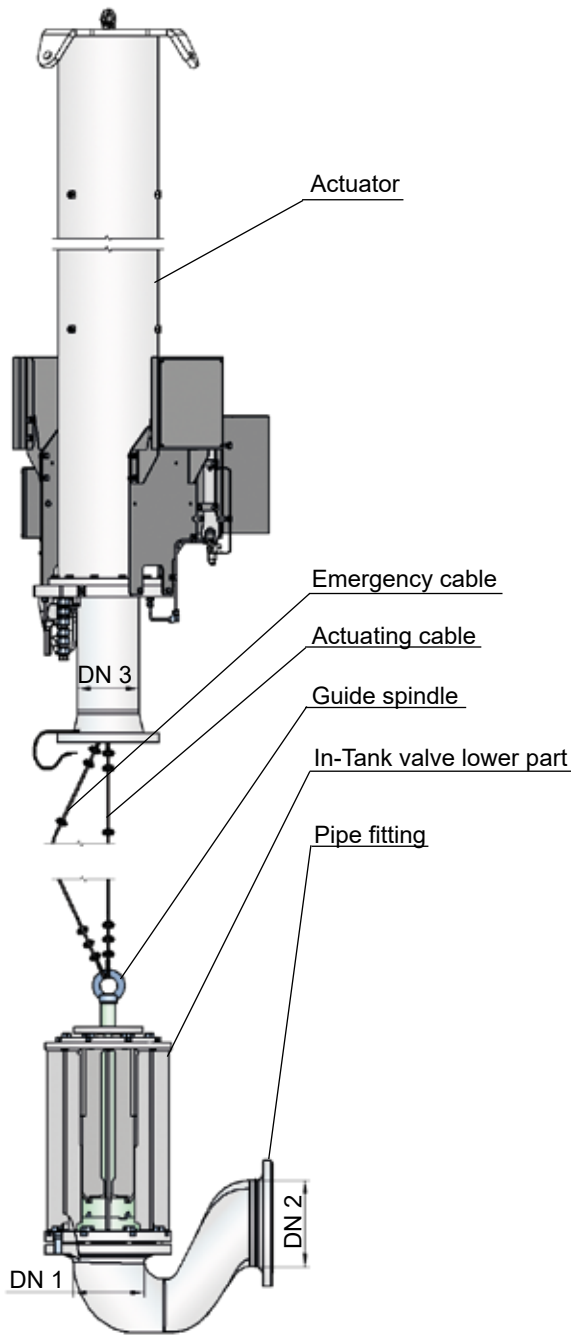




In-Tank valve lower part
from PROTEGO® ITV



In-Tank valve lower part
from PROTEGO® ITV-S

Function and Description

PROTEGO® ITV-S and ITV in-tank valves are used in storage tanks for cryogenic liquids in order to seal off discharge lines in the event of an accident or emergency. These devices meet the requirements of API 625.

The PROTEGO® ITV-S and ITV consist of a valve guide unit with elbow and valve seat which is mounted on the inside of the tank wall. This unit accommodates the valve piston and guides it over the entire lift stroke. The seal between the valve seat and the valve disk is ensured by finely lapped surfaces and achieves maximum tightness.

The actuating unit, installed on the tank roof, is specifically designed for the requirements of the application and connected to the valve unit installed in the tank via suitable cables.

During normal operation, the valves are kept in the open position. The bottom valve is only closed in an emergency. In the event of an energy drop, the valve piston, due to its own weight, falls onto the valve seat which closes the bottom valve (fail safe concept).

The PROTEGO® ITV-S and ITV design provide the tank designer and the user with the following benefits:

- Very light and compact design
- Connection to the tank wall via flange connection
- No support or guidance required in the tank
- Low forces required for lifting the valve piston
- Extremely high tightness due to metallic sealing surfaces



In-Tank Valves ITV-S
(Flyer pdf)



In-Tank Valves
(Flyer pdf)

Design and Specification

The standard PROTEGO® ITV-S and PROTEGO® ITV versions are manufactured in stainless steel. Other materials are available upon request and depending on the operating data. The design is custom made for each project.

Available sizes: DN150/6" to DN600/24".

Table 1: Nominal size ITV-S and ITV

DN1	DN2*	DN3
150 / 6"	100 / 4"	150 / 6"
150 / 6"	150 / 6"	150 / 6"
200 / 8"	200 / 8"	150 / 6"
250 / 10"	250 / 10"	150 / 6"
300 / 12"	300 / 12"	250 / 10"
400 / 16"	350 / 14"	250 / 10"
400 / 16"	400 / 16"	250 / 10"
500 / 20"	500 / 20"	250 / 10"
600 / 24"	600 / 24"	250 / 10"

*only for ITV-S

Table 2: Flange connection type DN

EN 1092-1; Form B1	Other types upon request.
ASME B16.5; 150 lbs RFSS	

Application example:



for safety and environment



Questionnaire for In-Tank Valves

PROTEGO® ITV-S and ITV

Project:

Engineering:

End-user:

PROTEGO® ITV (bottom penetration)	☐	
PROTEGO® ITV-S (shell penetration)	☐	

Tank Standard:		
Storage Concept:		
Number of In-Tank Valves		TAG No:
Nominal size:		Process connection:

Process and design data

Media		
Product density at storage temperature		
Tank design temperature		
Operating storage temperature		
Tank design pressure/vacuum		
Operating pressure/vacuum		
Design Pressure ITV / back pressure		
Ambient temperature		
Instrument air supply pressure		
Environmental condition		

Available project documents

Tank General Arrangement Drawing	☐
Nozzle elevation and orientation	☐
P&ID Storage Tank Instruments	☐
Process safety basis of design	☐
Instrument Specification	☐
Painting specification	☐
Documentation requirement list	☐
Further project specifications	

Fill in and ☐ check, if applicable.

signature:	Date:
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