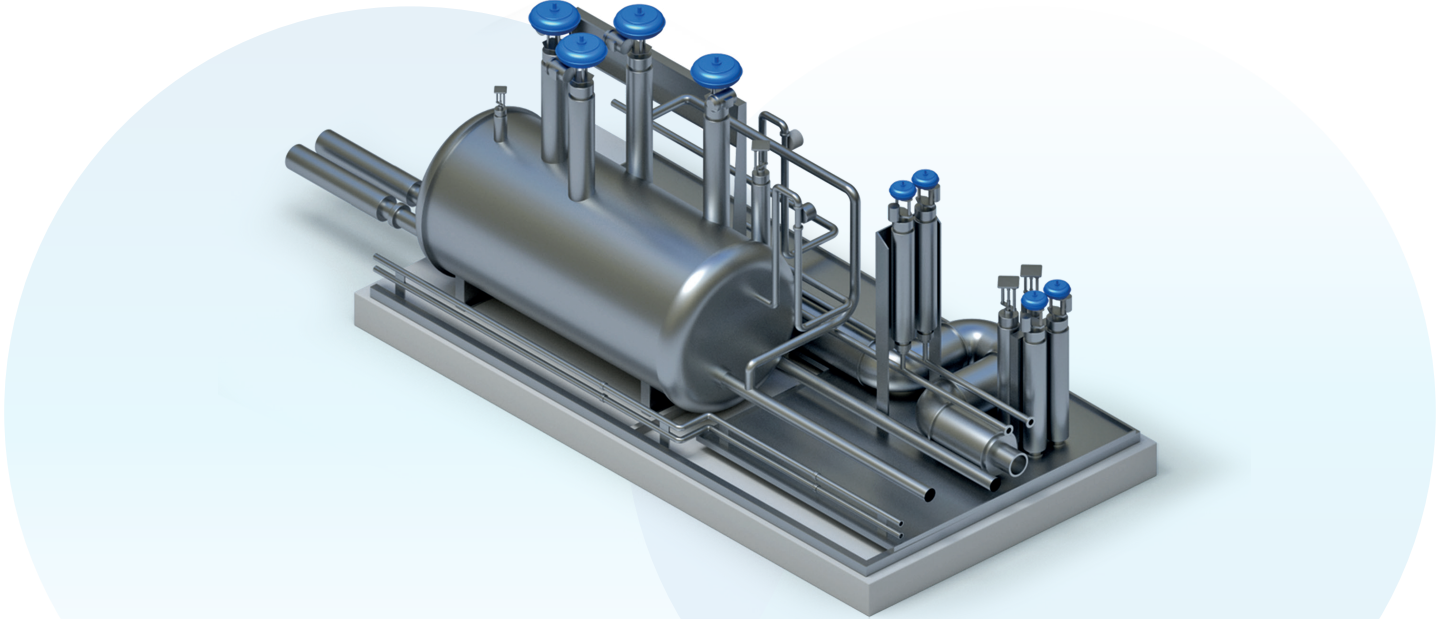


Transfer line	Coupling	Liquefier	Loading Bay ▼	Loading Arm
	Stationary	Mobile	Hydrogen Refuelling Station (HRS)	



The loading bay is the place where LH<sub>2</sub> is transported from the storage tank to the filling place for a truck or a ship for long distance transportation. The LH<sub>2</sub> is transported via vacuum insulated pipelines to the filling location in order to fill the tanks of the truck/ship in an efficient and safe method via the loading bay. A loading bay includes a number of valves, pressure safety relief valves, and measuring equipment. These products can be installed in a small vacuum insulated valve box, decreasing the overall costs of the system and increasing the efficiency.

### Benefits

- Due to outstanding insulation properties, thermal heat losses are kept to a minimum
- Stainless steel vacuum insulated pipelines
- High quality liquid hydrogen
- Increasing safety standard due to double containment (on request)
- No ice and oxygen condensation

### Applications

- Distributing liquid hydrogen
- Hydrogen liquefaction facility
- Transporting hydrogen from a storage tank to another location (break/bulk)
- Filling station
- Refuelling station

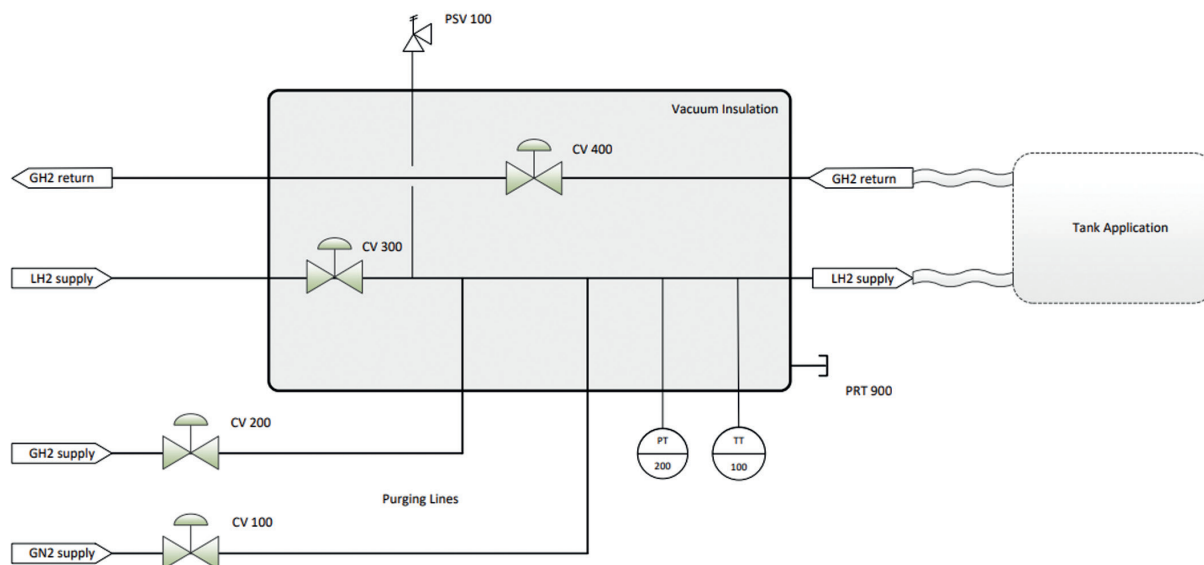
### Features

- All stainless steel
- High vacuum insulation
- Qualified welding to the highest standards (ISO 3834-2)
- Integrated contraction bellows
- Hydrogen purification (on request)
- Output and size according to customer request
- Nitrogen flushing to remove oxygen (inertisation)
- Skid mounted, stationary or mobile



# LH<sub>2</sub> Loading Bay

## Typical P&ID



## Interfaces

Johnston coupling

Welded couplings with vacuum insulation

Control system

Vacuum insulated flexible filling hose

Filling nozzle

## Materials

Process Pipe:

1.4401/1.4404~316/316L

Vacuum jacket:

1.4301/1.4306~304/304L

Optional:

1.4401/1.4404~316/316L

Spacers:

Epoxy-reinforced glass fibre

Multi-Layer Insulation:

Glass paper and aluminium foil

## Related documents

Safety guidelines:

D0061116

Manual:

On request

## Design specifications

Design according to Demaco standard based on EN13480

DNV approved for marine applications

Other design codes on request

Suitable for ambient temperatures -25 till +38 °C

Cleanliness level:

- Oil and grease-free

Static vacuum with Multi-Layer Insulation

Bellows: 1.000-10.000 cycles from +38 till -253 °C, calculated according to EN14917 or EJMA

Standard testing for each loading bay:

- Dimensional check
- Pressure testing (if applicable or on request)
- NDE by X-ray or PT (if applicable or on request)
- Helium leak test ( $<1 \times 10^{-9}$  mbarL/sec)
- Vacuum retention test after 24h at ambient temp (acceptance level  $<2 \times 10^{-4}$  mbar)
- Functional test (if applicable or on request)
- Cold shock test with LN<sub>2</sub> (if applicable or on request)

## Documentation

By default, a standard manufacturer data book record is part of each project and contains:

- General drawing
- Safety guidelines
- User manuals
- Declaration of conformity (if applicable)

Extended data books are available on request