

LNG 13 + LNG 25

EN ISO 21012:2018 + EN ISO 10380:2012



LNG Fill and Vent Lines INSTALLATION AND OPERATING MANUAL

english

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Please read this manual carefully before installation or operation with hose assemblies.

Be sure all instructions are understood. Correct installation, use and maintenance are essential. In case of doubt or question, please contact your service contractor or the manufacturer.

DESCRIPTION

The hose assemblies LNG 13 and LNG 25 are used for the venting or refuelling of heavy vehicles with LNG (Liquefied Natural Gas) and equipped with a venting interface to EN ISO 16924:2018 and a refuelling interface to EN ISO 12617:2017.

They are designed acc. to EN ISO 21012 (nominal pressure PN 40) and are suitable for installation with nozzle, vent coupling or safety break. The LNG hoses are optionally equipped with flexible cover hoses CH-LNG 46 (fill line). CH-LNG: only for LNG refuelling and for short-term use with liquid nitrogen for calibration purposes.

APPROVALS / OPERATING CONDITIONS

LNG 13 and LNG 25 are designed and tested to EN ISO 21012:2018 and EN ISO 10380:2012. Usable with a low temperature down to -196° C. The flow rate is up to 50 GPM (190 l/min) for the fill line and up to 10 GPM (38 l/min) for the vent line. The maximum working pressure is 3.4 MPa (34 bar).

Each hose assembly is factory tested and labelled with the prescribed marking.

Media compatibility	LNG, LN2, Methane
Nominal flow	LNG 13: 38 l/min (10 GPM) LNG 25: 190 l/min (50 GPM)
Working pressure (max.)	3.4 MPa (34 bar)
Burst pressure	> 4 times of working pressure (max.)
Media temperature (min.)	-196° C
Ambient temperature	-40° C up to +85° C
Connection to fill and vent line	LNG 13: 7/8"-14 SAE J512 45° female LNG 25: 1 5/16"-12 SAE J514 37° JIC female
Weight	LNG 13: approx. 0,76 kg/m LNG 25: approx. 1,35 kg/m
Length (max.)	5 m

GENERAL INFORMATION / WARNINGS

LNG is a cryogenic liquid fuel that is transported and stored under pressure at temperatures down to -164° C. When LNG is exposed to the atmosphere, its aggregate state changes to gaseous natural gas (visible white vapour).

Cryogenic gases or the handling equipment can cause serious harm to both infrastructure and personnel if safety precautions are not followed.

A small gas release upon uncoupling is normal – but uncontrolled gas release to the atmosphere must be avoided. If you suspect a leakage: stop refueling immediately, use the emergency button to shut off the dispenser, immediately evacuate the area and inform station personnel.



• LNG is extremely flammable:

→ **Open fires, smoking, sources of static electricity and the use of mobile phones or other electric devices is prohibited in the area of gas transfer. Turn off vehicle engine before refuelling.**



• Failure or improper use of this product can cause death, personal injury and property damage.

→ LNG is extremely cold, also when released to the atmosphere.

SAFETY

Caution: Please follow the safety instructions. Disregard can lead to serious injuries or death.

Personal protective equipment ('PPE') is required during the refuelling process.

The PPE consists of:



Cryogenic Smock



Full Face Shield



Solid Shoes Capable of withstanding Cryogenic Media



Cryogenic Thermal Gloves

- Do not operate LNG equipment if there is any visible damage
- Stop refuelling process immediately if a permanent, uncontrolled release of LNG occurs (see also chapter 'Troubleshooting')
- Read the manual of the LNG vehicle and follow regulations from local authorities
- Keep area clear to avoid accidents

INSTALLATION

Ensure the system is clean of debris, **vented** and **isolated** before any installation or servicing work is carried out.

The hose assemblies are delivered ready for use. This installation must only be done by an authorised service engineer who is trained to ensure compliance with all relevant national regulatory conditions.

The hose assemblies are designed for the connection 7/8"-14 SAE J512 45° female (vent line) and 1 5/16"-12 SAE J514 37° JIC female (fill line) and must not be used with any NPT or other thread sealing adapters. The designated connections **do not** require thread sealants.

LNG 13 and LNG 25 comply with EN ISO 21012: 2018 and EN ISO 10380:2012 and must meet its installation requirements.



Needed Tools

Vent line LNG 13:

- 1 x Wrench (22 mm for Elaflex vent coupling VC-LNG)
- 1 x Wrench EW M 30 (30 mm for Elaflex LNG hose assembly)
- 1 x Foaming agents or spray bottle with snoop or soapy water

Fill line LNG 25:

- 1 x Wrench EW M 30 (30 mm for Elaflex nozzle)
- 1 x Wrench EW M 36/41 (41 mm for Elaflex LNG hose assembly)
- 1 x Foaming agents or spray bottle with snoop or soapy water

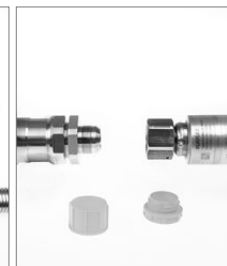
Safety Breaks SB-LNG 13 and SB-LNG 25:

- 1 x Wrench (50 mm for Elaflex Safety Break SB-LNG)

Assembling of Vent Coupling (LNG 13) and Safety Breaks (LNG 13 or LNG 25)



Remove caps.



Check sealing surfaces of connections as well as the hose assemblies.



Check if connections correspond in type and size: LNG 13 vent coupling or Safety Break: 7/8"-14 SAE J512 45° male / female



Connection LNG 25 to Safety Break: 1 5/16"-12 SAE J514 37° JIC male / female

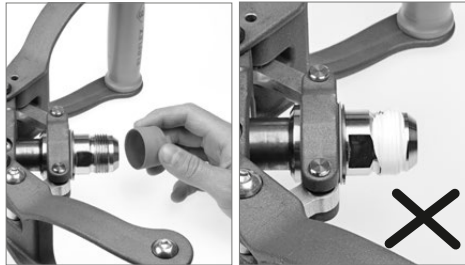


Connect hose to vent coupling.
Connect the hose to the vent coupling. Torque to the hose coupling suppliers recommended tightening torque. For ELAFLEX hose assemblies: LNG 13: 60 Nm, LNG 25: 150 Nm.
Do not use pliers.



Note:
When **bolting hose to the Safety Break**, it is essential to lock the opposite side to prevent pre-damage of the **breaking bolts EB 544**.

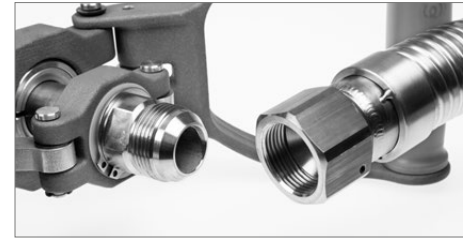
Assembling of Nozzle (LNG 25)



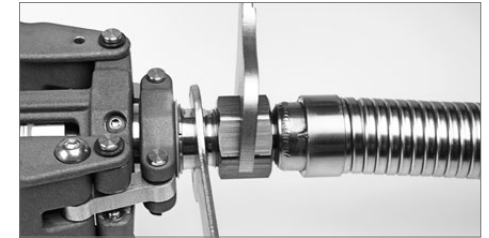
Remove caps from nozzle and hose assembly.
Note:
Therefore, **do not use PTFE** sealing tape or liquid seal for any sealing as electrical conductivity may be insufficient and particles of the tape commonly become loose and could clog the LNG components.



Check sealing surfaces of connections at the nozzle and hose assemblies.



Check if connections correspond in type and size, e.g. 1 5/16"-12 SAE J514 37° JIC male / female



Connect hose to the nozzle. Torque to the hose coupling suppliers recommended tightening torque. For ELAFLEX hose assemblies LNG 25: 150 Nm.
Do not use pliers.

Assembly Inspections

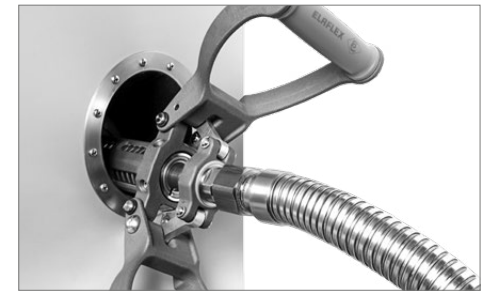
After connecting to the hose assembly, an operational test shall be performed. It is essential to examine that the vent coupling or nozzle and hose connections are tight under pressure and do not leak – e.g. by external application of foaming agents.

→ **NOTE : Pressurise system gradually while checking for leaks.**
Do not use pressurised water.



Always put back the vent coupling or nozzle into the nozzle holder.

→ **ATTENTION: Do not drop.**
Do not leave on the floor.



HANDLING INSTRUCTIONS

- **Assembling**
 - Hose assemblies must be installed in such a way that they are accessible at any time and not hindered in their natural position and movement.
 - Before commissioning the detachable connections must be checked for tightness.
 - If there is any visible external damage the hose assembly must not be put into operation.
 - Check for electrical conductivity.

- **Intended Use**

- Do not exceed the maximum working pressure (according to catalog information).
- Hose assemblies must not be subjected to tension, torsion or compression during operation through external influences, unless they are specially designed for this. In particular kinking behind the connection on the nozzle side should be avoided and the hose assembly should be relieved as much as possible using appropriate devices e.g. a hose balancer.
- The materials must be resistant to the medium under operating conditions. Do not fall below the minimum permissible temperature (-196 °C) depending on the medium.
- To ensure safe operation, technical and organisational protective measures must be implemented. If not all hazards can be avoided in this way, effective personal protective equipment must be provided and used, see chapter 'Safety'.

- **Storage**

- Store hoses in a cool, dry and dust-free place; avoid direct sunlight or UV radiation; shield nearby heat sources; hose assemblies must not come into contact with substances that could cause damage.
- Hoses and hose assemblies must be stored flat and free of tension and kinks. When stored in coils the bending radius of 300 mm must not be undercut.
- Protective caps must be used to protect the hose assembly and thread. No water may enter the hose assembly.
- Only store as many hose coils on top of each other that no damaging deformation of the lower hoses occurs.
- Permissible ambient temperature range -30° C up to +30° C

- **Maintenance**

- It must be done by an authorised service engineer who is trained to ensure compliance with all relevant national regulatory conditions.

TROUBLESHOOTING

- **Leakage**

- **If uncontrolled and / or permanent gas release to the atmosphere occurs, immediately stop venting or refuelling.** Push emergency button of dispenser immediately, leave area and inform station personnel.

If self-service is not possible, please contact a service company specialised and certified in LNG Service Station installations.

MAINTENANCE

LNG 13 and LNG 25 hose assemblies are corrugated metal hose assemblies made of stainless steel that may become inoperative due to wear, corrosion and ageing of components. Regular inspections and maintenance are essential for a safe operation.

Daily visual inspections of the hose assembly by trained personnel should be carried out to ensure proper function.

The hose assembly condition shall be thoroughly checked during the annual pump maintenance by competent personnel. Applicable laws, regulations and Codes of Practice have to be followed.

Hose assemblies in unfit condition for use must be immediately replaced.

CONDITIONS OF USE

Failure to comply with any warnings, instructions, procedures or any other common sense procedures may result in injury, equipment damage, property damage or poor performance of the equipment.

Elaflex Hiby accepts no liability for direct, indirect, incidental, special, or consequential damages resulting from failure to follow any warnings, instructions and procedures in this manual, or any other common sense procedures generally applicable to equipment of this type. The foregoing limitation extends to damages to person or property caused by the unit or damages resulting from the inability to use the unit including loss of profits, loss of products, loss of power supply, the cost of arranging an alternative power supply, and loss of time, whether incurred by the user or their employees, the installer, the commissioner, a service technician, or any third party.

The manufacturer reserves the right to change the specifications of its products or the information in this manual without necessarily notifying its users.

Variations in installation and operating conditions may affect the unit's performance. Elaflex Hiby has no control over each installation's unique operating environment. Hence, no representations or warranties concerning the performance of the unit under the actual operating conditions prevailing at the installation are made. A technical expert of your choosing should validate all operating parameters for each application.

Elaflex Hiby has made every effort to explain all servicing procedures, warnings, and safety precautions as clearly and completely as possible. However, due to the range of operating environments, it is not possible to anticipate every issue that may arise. This manual is intended to provide general guidance. For specific guidance and technical support, contact your authorized supplier or specialist service contractor.

Only approved original parts shall be used and no unauthorized modifications to the hardware shall be made. The use of non-approved parts or modifications will void all warranties and approvals. The use of non-approved parts or modifications may also constitute a safety hazard.

Information in this manual shall not be deemed a warranty, representation, or guarantee. For warranty provisions applicable to this unit, please refer to the warranty provided by the supplier.

Every effort has been made to ensure the accuracy of this document. However, it may contain technical inaccuracies or typographical errors. Elaflex Hiby assumes no responsibility for and disclaims all liability of such inaccuracies, errors or emissions in this.

WARRANTY

Elaflex Hiby guarantees against defective materials and manufacturing for 18 months from date of supply. If the delivery date cannot be established, the production date applies. The production date is marked on the hose assembly.

Excluded are hose assemblies and parts subjected to wear and tear and damages caused by improper use, for example the use with unsuitable media. Furthermore excluded are indirect damages and costs, such as travelling related to exchange and repair work. We refuse any liability for consequential loss or damage resulting from the use of our hose assembly.