



Ministère des Transports

L-2938 Luxembourg

Registre de Commerce: B 27180

L-52/11 Sandweiler



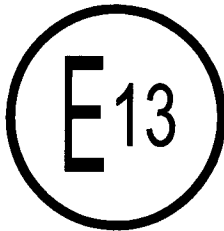
Référence: E13*67R00*67R01*0299*00

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Sandweiler, le 13 octobre 2008

Communication concernant ¹⁾:

Communication concerning ¹⁾:



- **la délivrance d'une homologation**
approval granted
- **l'extension d'une homologation**
approval extended
- **le refus d'une homologation**
approval refused
- **le retrait d'une homologation**
approval withdrawn
- **l'arrêt définitif de la production**
production definitively discontinued

d'un type d'équipement GPL en application du Règlement N° 67
of a type of LPG equipment pursuant to regulation N° 67


Numéro d'homologation:

Approval number:

E13*67R00*67R01*0299*00

Marque d'homologation:

Approval mark:

 67R-010299 CLASS 1

1. Equipement GPL ¹⁾:
LPG equipment considered ¹⁾:

Réservoir:

Container:

not applicable

Accessoires fixés au réservoir:

Accessories fitted to the container:

- 80 % stop valve
- level indicator
- pressure relief valve (discharge valve)
- pressure relief device
- remotely controlled service valve with excess flow valve

- Bloc multivannes, y compris les accessoires suivants:**
Multivalve, including the following accessories:
- gas-tight housing
 - power supply bushing (pump/actuators)
 - fuel pump
 - vaporizer/pressure regulator
 - shut-off valve
 - non-return valve
 - gas-tube pressure relief valve
 - service coupling
 - flexible hose
 - remote filling unit
 - gas injection device or injector
 - fuel rail
 - gas dosage unit
 - gas mixing piece
 - electronic control unit
 - pressure/temperature sensor
 - LPG filter unit
2. **Marque de fabrique ou de commerce:**
Trade name or mark: FARO
- Type:*
Type: H2
- Variantes/versions:*
Variants/versions: see: Page(s) 2 & 3 of technical report
N° LCA 54 0721 002 08
3. **Nom et adresse du fabricant:**
Manufacturer's name and address: FARO S.R.L.
Via Rose di Sotto 38/c
I-25126 Brescia
4. **Le cas échéant, nom et adresse du mandataire du fabricant:**
If applicable, name and address of manufacturer's representative: not applicable
5. **Equipement présenté à l'homologation le:**
Submitted for approval on: 14.06. – 22.06.2007
6. **Autorité déléguée:**
Assigned authority: Société Nationale de Certification et d'Homologation
L-5201 Sandweiler
- Service technique chargé des essais d'homologation:**
Technical service responsible for conducting approval tests: Luxcontrol SA
B.P. 349
L-4004 Esch-sur-Alzette
7. **Date du procès-verbal délivré par ce service:**
Date of report issued by that service: 10.10.2008
8. **Numéro du procès-verbal:**
Number of report issued by that service: LCA 54 0721 002 08
9. **L'homologation est:**
Approval: granted
10. **Raisons de l'extension (éventuellement):**
Reason(s) for extension (if applicable): not applicable

11. **Lieu:**
Place: Sandweiler
12. **Date:**
Date: 13 octobre 2008
13. **Signature:**
Signature:

Pour le Ministre des Transports



Handwritten signature of Marco Feltes.

Marco FELTES
Inspecteur Principal

Pour la SNCH



Handwritten signature of Claude Liesch.

Claude LIESCH
Conseiller de Direction

14. **Des copies soumis dans le dossier d'homologation ou d'extension de l'homologation peuvent être obtenues sur demande.**

The documents filed with the application or extension of approval can be obtained upon request.

see: INDEX to TYPE-APPROVAL REPORT

APPENDICE 1 (réservoirs uniquement)
APPENDIX 1 (containers only)

1. Caractéristiques du réservoir de base (config. 00)
Container characteristics from the parent container (configuration 00)

- a) Marque de fabrique ou de commerce:**
a) Trade name or mark: not applicable
- b) Forme:**
b) Shape: not applicable
- c) Matériau:**
c) Material: not applicable
- d) Ouvertures:**
d) Openings: not applicable
- e) Epaisseur de la paroi:**
e) Wall thickness: not applicable
- f) Diamètre (réservoir cylindrique):**
f) Diameter (cylindrical container): not applicable
- g) Hauteur (forme de réservoir spéciale):**
g) Height (special container shape): not applicable
- h) Surface externe:**
h) External surface: not applicable
- i) Configuration des accessoires fixés au réservoir (voir tableau 1):**
i) Configuration of accessories fitted to container (see table 1):

Tableau 1:

Table 1:

N° N°	Accessoires Item	Type Type	N° d'homologation Approva N°	N° d'extension Extension N°
a)	Limiteur de remplissage à 80%: 80% stop valve:	-	-	-
b)	Jauge: Level indicator:	-	-	-
c)	Soupape de surpression: Pressure relieve valve:	-	-	-
d)	Vanne d'isolement avec limiteur de débit: Remotely controlled service valve with excess valve:	-	-	-
e)	Pompe à GPL: Fuel pump:	-	-	-
f)	Bloc multivannes: Multi-valve:	-	-	-
g)	Enceinte étanche: Gas-tight housing:	-	-	-
h)	Raccord électrique d'alimentation: Power supply bushing:	-	-	-
i)	Soupape antiretour: Non return valve:	-	-	-
j)	Dispositif de surpression: Pressure relief device:	-	-	-

2. **Liste des réservoirs de la même famille (les listes des réservoirs de la même famille indiquent le diamètre, la capacité, la surface externe et la (les) configuration(s) possible(s) des accessoires fixés au réservoir):**

List of container family (The lists of the container family indicate the diameter, capacity, external surface and the possible configuration(s) of the accessories fitted to the container):

Tableau 2:

Table 2:

N° N°	Type Type	Diamètre/hauteur Diameter/height [mm]	Capacité Capacity [l]	Surface externe External surface [cm ²]	Configuration des accessoires Configuration of accessories [codes] ¹
-	-	-	-	-	-
-	-	-	-	-	-

3. **Listes des configurations possibles des accessoires fixés au réservoir (indiquer la liste des accessoires possibles, qui diffèrent de la configuration essayée (code 00) et qui peuvent être fixés au type de réservoir en question. Pour tous les accessoires, préciser le type, le numéro d'homologation et le numéro d'extension, en indiquant pour chacun son propre code de configuration):**

Lists of the possible configurations of accessories fitted to the container (Specify a list of the possible accessories, which differ from the tested configuration of accessories (code 00) and which may be fitted to the type of container. Specify for all accessories, type, approval number and extension number, indicating its own configuration code):

Tableau 3:

Table 3:

N° N°	Accessoires Accessories	Type Type	N° d'homologation Approval N°	N° d'extension Extension N°	Configuration des accessoires [code] Configuration of accessories [code]
a)	-	-	-	-	-

¹⁾ **Biffer les mentions inutiles.**
Strike out what does not apply.



Ministère des Transports

L-2938 Luxembourg

Registre de Commerce: B 27180

L.-5201 Sandweiler



Référence: E13*67R00*67R01*0299*00

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Sandweiler, le 13 octobre 2008

INDEX DU DOSSIER D'HOMOLOGATION
INDEX TO TYPE-APPROVAL REPORT

	Numéro d'homologation: Approval number:	E13*67R00*67R01*0299*00
	Révision: Revision:	00
	Marque de fabrique ou de commerce: Trade name or mark:	FARO
	Type: Type:	H2
1.	Procès-verbal d'essai: Test report:	N° LCA 54 0721 002 08
	- Technical report:	Page(s) 1 to 9;
	- Index:	Annex A - Page(s) 1.
2.	Dossier du constructeur: Report of the manufacturer:	N° OM07E163
	- Manufacturer's information document:	Page(s) 1 to 18.
3.	Autres documents annexés: Other documents annexed:	not applicable
4.	Date de délivrance de l'homologation initiale: Date of issue of initial type approval:	13.10.2008
5.	Date de la dernière délivrance de pages révisées: Date of last issue of revised pages:	not applicable
6.	Date de la dernière délivrance d'une homologation révisée: Date of last extension:	not applicable

TECHNICAL REPORT

No.: LCA 54 0721 002 08

Inspection concerning the

**Specific equipment of motor vehicles using
liquefied petroleum gases in their propulsion
system**

performed according to

ECE – Regulation No. 67

Type: **H2**
Manufacturer: **FARO S.r.L.**
Via Rose di sotto 38/c
I-25126 Brescia

Extension -- to ECE Type Approval no.: not applicable

Index:

1. General	E13*67R00*67R01*0299*00	Page 2
2. Inspections and their results	Société Nationale de Certification et d'Homologation L-5201 SANDWEILER (Luxembourg)	Page 4
3. Evaluation of test results	Organisme accrédité OLAS EN 45011 Accréditation N° 5/001 (Portée communiquée sur demande)	Page 8
4. Statement of compliance		Page 9
5. Annex (beginning with an index)		

A reproduction of this report and its annexes, except in full, is prohibited without the written permission of Luxcontrol s.a.

...



1. General

1.1. Test Provisions

The inspection was carried out according to the requirements of ECE-Regulation No. 67 including Supplement 8 to the 01 series of amendments, which entered into force on February 3, 2008.

1.2. Information concerning the vehicle type and the requested approval

The statements below apply to the previous ECE type-approval as referred to on page 1.

1.2.1. [] Numbering according to the communication concerning the approval of ECE-R67

[1.] LPG equipment considered:

Synthetic hose and couplings

- type: **H2**

Variants:

a: synthetic hose with internal diameter 5 mm

b: synthetic hose with internal diameter 6.5 mm

Versions:

- 1: steel fitting for int. Ø 5 mm hoses & same interface of 6 mm copper pipe
- 2: brass fitting for int. Ø 5 mm hoses & same interface of 6 mm copper pipe
- 3: steel fitting for int. Ø 5 mm hoses & same interface of 8 mm copper pipe
- 4: brass fitting for int. Ø 5 mm hoses & same interface of 8 mm copper pipe
- 5: steel fitting for int. Ø 6.5 mm hoses & same interface of 6 mm copper pipe
- 6: brass fitting for int. Ø 6.5 mm hoses & same interface of 6 mm copper pipe
- 7: steel fitting for int. Ø 6.5 mm hoses & same interface of 8 mm copper pipe
- 8: brass fitting for int. Ø 6.5 mm hoses & same interface of 8 mm copper pipe
- 9: steel fitting for int. Ø 5 mm hoses & interface of 6 mm copper pipe
- 10: brass fitting for int. Ø 5 mm hoses & interface of 6 mm copper pipe
- 11: steel fitting for int. Ø 5 mm hoses & interface of 8 mm copper pipe
- 12: brass fitting for int. Ø 5 mm hoses & interface of 8 mm copper pipe
- 13: steel fitting for int. Ø 6.5 mm hoses & interface of 6 mm copper pipe
- 14: brass fitting for int. Ø 6.5 mm hoses & interface of 6 mm copper pipe
- 15: steel fitting for int. Ø 6.5 mm hoses & interface of 8 mm copper pipe
- 16: brass fitting for int. Ø 6.5 mm hoses & interface of 8 mm copper pipe
- 17: steel fitting for int. Ø 5 mm hoses & interface for int. flare con. ½-20 UNF
- 18: brass fitting for int. Ø 5 mm hoses & interface for int. flare con. ½-20 UNF
- 19: steel fitting for int. Ø 6.5 mm hoses & interface for int. flare con. ½-20 UNF
- 20: brass fitting for int. Ø 6.5 mm hoses & interface for int. flare con. ½-20 UNF
- 21: steel fitting for int. Ø 6.5 mm hoses & interface for ext. con. M10x1 flare
- 22: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M10x1 flare
- 23: steel fitting for int. Ø 5 mm hoses & interface for ext. con. M10x1 flare
- 24: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M10x1 flare
- 25: steel fitting for int. Ø 6.5 mm hoses & interface for ext. con. M12x1 flare
- 26: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M12x1 flare
- 27: steel fitting for int. Ø 5 mm hoses & interface for ext. con. M12x1 flare

Société Nationale de Certification et d'Homologation

L-5201 SANDWEILER (Luxembourg)

Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)



- 28: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M 12x1 flare
- 29: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M10x1 flare 90°
- 30: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M10x1 flare 135°
- 31: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M 10x1 flare 90°
- 32: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M 10x1 flare 135°
- 33: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M12x1 flare 90°
- 34: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. M12x1 flare 135°
- 35: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M12x1 flare 90°
- 36: brass fitting for int. Ø 5 mm hoses & interface for ext. con. M12x1 flare 135°
- 37: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. M10x1 flare 90°
- 38: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. M10x1 flare 135°
- 39: brass fitting for int. Ø 5 mm hoses & interface for int. con. M10x1 flare 90°
- 40: brass fitting for int. Ø 5 mm hoses & interface for int. con. M10x1 flare 135°
- 41: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. M12x1 flare 90°
- 42: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. M12x1 flare 135°
- 43: brass fitting for int. Ø 5 mm hoses & interface for int. con. M12x1 flare 90°
- 44: brass fitting for int. Ø 5 mm hoses & interface for int. con. M12x1 flare 135
- 45: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. 1/2-20 UNF flare 90°
- 46: brass fitting for int. Ø 6.5 mm hoses & interface for ext. con. 1/2-20 UNF flare 135°
- 47: brass fitting for int. Ø 5 mm hoses & interface for ext. con. 1/2-20 UNF flare 90°
- 48: brass fitting for int. Ø 5 mm hoses & interface for ext. con. 1/2-20 UNF flare 135°
- 49: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. 1/2-20 UNF flare 90°
- 50: brass fitting for int. Ø 6.5 mm hoses & interface for int. con. 1/2-20 UNF flare 135°
- 51: brass fitting for int. Ø 5 mm hoses & interface for int. con. 1/2-20 UNF flare 90°
- 52: brass fitting for int. Ø 5 mm hoses & interface for int. con. 1/2-20 UNF flare 135°
- 53: brass fitting for int. Ø 5 mm hoses & same interface of 6 mm copper pipe at 90°
- 54: brass fitting for int. Ø 5 mm hoses & same interface of 6 mm copper pipe at 135°
- 55: brass fitting for int. Ø 6.5 mm hoses & same interface of 6 mm copper pipe at 90°
- 56: brass fitting for int. Ø 6.5 mm hoses & same interface of 6 mm copper pipe at 135°
- 57: brass fitting for int. Ø 5 mm hoses & same interface of 8 mm copper pipe at 90°
- 58: brass fitting for int. Ø 5 mm hoses & same interface of 8 mm copper pipe at 135°
- 59: brass fitting for int. Ø 6.5 mm hoses & same interface of 8 mm copper pipe at 90°
- 60: brass fitting for int. Ø 6.5 mm hoses & same interface of 8 mm copper pipe at 135°

[2.] Trade name or mark:

FARO

[3.] Manufacturer's name and address:

FARO S.r.L.
Via Rose di sotto 38/c
I-25126 Brescia

[4.] If applicable, name and address of manufacturer's representative:

not applicable

[5.] Submitted for approval on: **14/06/2007-22/06/2007**

[10.] Reason(s) of extension:

not applicable

E13*67R00*67R01*0299*00

Société Nationale de Certification et d'Homologation

L-5201 SANDWEILER (Luxembourg)

Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)



2. Inspections and their results

2.1. Version of the tested equipment

The following variants have been used for testing (if not stated in part 1.2.1. of this report):

- all variants

2.2. Inspection items

	Inspectors	Location of test:	Date of receipt of test item:	Date of test:
Main	D. Durazzi	CSI – v.le Lombardia, 20 I-20021 Bollate (MI)	21/05/2007	14/06/2007- 22/06/2007

2.2.1. General

The marking requirements according to item 4.1. and 4.2. of Part I of the Regulation are fulfilled.

Every material of the equipment in contact with LPG is compatible with it.

Electromagnetic compatibility requirements according to Regulation R10.02 or equivalent are not applicable.

The device has parts of class 1.



2.2.2. Inspections: (according to Annex 8; Class I device – high pressure synthetic hose with coupling)

Tests	Test results	Line item
General specifications	The hose can withstand a maximum operating pressure of 3000 kPa and temperatures between -25°C and +125°C	Annex 8, par. 3.1
Hose construction	Requirements are fulfilled for tube and cover. The interlayers are protected against corrosion by a cover. The lining and the cover are free from pores, holes or strange elements.	Annex 8, par. 3.2
Specification and tests for the lining	Material: polyamide 6 elastomer. Requirements for tensile strength, elongation, resistance to n-pentane and ageing are fulfilled (see item 2.2.2.1 of this report)	Annex 8, par. 3.3.2
Specification and test methods for the cover	Material: Polyurethane elastomer. Requirements for tensile strength, elongation, resistance to n-hexane, to ageing and ozone are fulfilled (see item 2.2.2.2. of this report)	Annex 8, par. 3.4
Specification for uncoupled hose	Requirements for gas-tightness, permeability, resistance to low temperature, high temperature, bend test, leakage test and minimum burst pressure are fulfilled (see item 2.2.2.3. of this report)	Annex 8, par. 3.5
Couplings	Requirements fulfilled	Annex 8, par. 3.6
Assembly of hose and couplings	Requirements fulfilled	Annex 8, par. 3.7.1
Gas-tightness	Requirements fulfilled	Annex 8, par. 3.7.2
Markings	Requirements fulfilled	Annex 8, par. 3.8.

E13*67R0)*67R01*0299*00
 Société Nationale de Certification et d'Homologation
 L-5201 SANDWEILER (Luxembourg)
 Organisme accrédité OLAS EN 45011
 Accréditation N° 5/001 (Portée communiquée sur demande)



2.2.2.1. Specifications and tests for the lining (Annex 8, § 3.3)

2.2.2.1.1. Tensile strength and elongation at break (Annex 8, § 3.3.2.1)

All tests according to ISO 527-2

	Measured	Required	Unit
Tensile strength	48,7	≥ 20	Mpa
Elongation at break	384	≥ 50	%

2.2.2.1.2. Resistance to n-pentane (Annex 8, § 3.3.2.2)

All tests according to ISO 1817:2005

	Measured	Required	Unit
Change to tensile strength	-10,0	≥-10 & ≤10	%
Change to elongation at break	-1,8	≥-10 & ≤10	%
Change to volume	+0,1	≥-2 & ≤2	%
Change to mass (*)	-0,4	≥ -5	%

(*) after storage in air with a temperature of 40°C for 48 hours

2.2.2.1.3. Resistance to ageing (Annex 8, § 3.3.2.3)

All tests according to ISO 188:1998

	Measured	Required	Unit
Change to tensile strength	+7,5	≥-35 & ≤35	%
Change to elongation at break	-1,2	≥-25 & ≤25	%

2.2.2.2. Specifications and test method for the cover (Annex 8, § 3.4)

2.2.2.2.1. Tensile strength and elongation at break (Annex 8, § 3.4.1.1)

All tests according to ISO 37:2005

	Measured	Required	Unit
Tensile strength	39,8	≥20	Mpa
Elongation at break	913	≥250	%

2.2.2.2.2. Resistance to n-hexane (Annex 8, § 3.4.1.2)

All tests according to ISO 1817:2005

	Measured	Required	Unit
Change to tensile strength	+4,8	>-35 & <35	%
Change to elongation at break	+11,8	>-35 & <35	%
Change to volume	+1,6	>-30 & <30	%

2.2.2.2.3. Resistance to ageing (Annex 8, § 3.4.1.3)

All tests according to ISO 188:1998

	Measured	Required	Unit
Change to tensile strength	-6,5	>-25 & <25	%
Change to elongation at break	-22,6	>-30 & <+10	%

E13*67R00*67R01*0299*00

Société Nationale de Certification et d'Homologation

L-5201 SANDWEILER (Luxembourg)

Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)



- 2.2.2.2.4. Resistance to ozone (Annex 8, § 3.4.2)
All tests according to ISO 1431/1: No cracking appeared.
- 2.2.2.3. Specification for uncoupled hose (Annex 8, § 3.5)
- 2.2.2.3.1. Gas-tightness, permeability (Annex 8, § 3.5.1)
All tests according to ISO 4080:1996
With an internal test pressure of 450 kPa, the leakage through the wall is less than 95 cm³ of vapour per metre of hose per 24 hours.
- 2.2.2.3.2. Resistance at low temperature (Annex 8, § 3.5.2)
All tests according to ISO 4672-1978 method B: No cracking or rupture appeared.
- 2.2.2.3.3. Resistance at high temperature (Annex 8, § 3.5.3)
A piece of hose of at least 0.5 m was pressurized at 3000 kPa during 24 hours at +125°C , and then pressurised at 6750 kPa during 10 mn:
No leakage occurred during both operations.
- 2.2.2.3.4. Bending test (Annex 8, § 3.5.4)
After having undergone the bending test, the hose withstood the test pressure of 6750 kPa without any leakage.
- 2.2.2.3.5. Hydraulic test pressure and determination of the minimum burst pressure (Annex 8, § 3.5.5)
All tests according to ISO 1402:
During the leakage test, both hoses resisted the test pressure for ten minutes without leaking.
Both hoses underwent a burst test with the following results:

	Measured	Required	Unit
Burst pressure	53 950	>10 000	kPa

- 2.2.2.4. Couplings (Annex 8, § 3.6)
requirements fulfilled
- 2.2.2.5. Assembly of hose and couplings (Annex 8, § 3.7)
requirements fulfilled

2.3. Remarks

Inspection results are only applicable to items, which have been tested.



2.4. Test facilities

Calibration of measuring and test equipment used to carry out the inspections is in accordance with the EEC-Directive and/or ECE-Regulation stated in 1.1. of this report and with ISO 17025.

Inspectors stated under 2.2. of this report were in charge of performing and/or evaluating the tests.

3. Evaluation of test results

3.1. Variants and equipment covered

The tests carried out cover the following variations as far as these are relevant for the gas device:

- coupling versions as stated in the information document
- hose diameters as stated in the information document

3.2. Remarks

3.2.1. Main report:

not applicable



4. **Statement of compliance**

The inspections items and measurements carried out have shown the compliance of the vehicle type described in this report and the attached Annex with the requirements of ECE-Regulation No. 67 including Supplement 8 to the 01 series of amendments, which entered into force on February 3, 2008.

Esch-sur-Alzette, October 10, 2008

Luxcontrol s.a.
Service Homologation-automobile

David Durazzi
Ingénieur-Inspecteur

Mauro Moscardelli
Ingénieur-Inspecteur

Annex



FARO S.R.L.
Via Rose di Sotto 38/C
25126 BRESCIA – ITALY
VAT7P.IVA: IT03209420177, Reg.soc.Trib. BS 50887, CCIAA 34293

***FITTINGS AND
SYNTHETIC HOSES
FOR
LPG USE
H2 Type***

E13*67R00*67R01*0299*00
Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)
Ref.-no 0721 002 08 - Page 1



FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia
(BS) Italy
TEL.: 0039-030-3195801 FAX: 0039-030-3732872
E-MAIL: faro@omb-saleri.it
VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887,
CCIAA 342936
Capitale Sociale 16.000. € i.v.
Società Controllata dalla ditta OMB Saleri S.p.A.

Our Reference: OM07E163
Brescia 10/12/07

TECHNICAL SPECIFICATIONS

FITTINGS AND SYNTHETIC HOSES FOR LPG VEHICLES TYPE H2

E13*67R00*67R01*0299*00

Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)

SUMMARY

1. INTRODUCTION	2
2. VARIANT VERSIONS	3
3. COMPONENTS CLASSIFICATION	5
4. SYNTETIC HOSES	6
5. CONNECTION (BETWEEN HOSE AND FITTING)	6
6. HOSES MARKING	6
7. FITTING MARKING	6

	<p>FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia (BS) Italy TEL.: 0039-030-3195801 FAX: 0039-030-3732872 E-MAIL: faro@omb-saleri.it VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887, CCIAA 342936 Capitale Sociale 16.000. € i.v. Società Controllata dalla ditta OMB Saleri S.p.A.</p>	
---	--	--

1. INTRODUCTION

Fittings made of steel or brass and hose made of synthetic material by **FARO** (H2 type), described in the following lines, are due to be used in LPG installations.

Components, in compliance with 67R-01 regulation, are the following:

- Cut-cone
- Fitting
- Nut
- Synthetic hose

Components will be supplied with the following trade marks:

- FARO

In the next lines a short description of components.

E13*67R00*67R01*0299*00
Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

	<p>FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia (BS) Italy TEL.: 0039-030-3195801 FAX: 0039-030-3732872 E-MAIL: faro@omb-saleri.it VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887, CCIAA 342936 Capitale Sociale 16.000. € i.v. Società Controllata dalla ditta OMB Saleri S.p.A.</p>	
---	--	--

2. VARIANT VERSIONS

FARO H2 hoses will be supplied with the following features:

- a. SYNTHETIC HOSE WITH INTERNAL DIAMETER 5 mm
- b. SYNTHETIC HOSE WITH INTERNAL DIAMETER 6.5 mm

(SEE DRAWINGS 393TS000 AND 394TS000)

FARO H2 fittings will be supplied with the following versions:

1. Steel Fitting for 5mm internal diameter hoses with same interface of 6 mm copper pipe
2. Brass Fitting for 5mm internal diameter hoses with same interface of 6 mm copper pipe
3. Steel Fitting for 5mm internal diameter hoses with same interface of 8 mm copper pipe
4. Brass Fitting for 5mm internal diameter hoses with same interface of 8 mm copper pipe
5. Steel Fitting for 6.5mm internal diameter hoses with same interface of 6 mm copper pipe
6. Brass Fitting for 6.5mm internal diameter hoses with same interface of 6 mm copper pipe
7. Steel Fitting for 6.5mm internal diameter hoses with same interface of 8 mm copper pipe
8. Brass Fitting for 6.5mm internal diameter hoses with same interface of 8 mm copper pipe
9. Steel Fitting for 5mm internal diameter hoses with interface for 6 mm copper pipe
10. Brass Fitting for 5mm internal diameter hoses with interface for 6 mm copper pipe
11. Steel Fitting for 5mm internal diameter hoses with interface for 8 mm copper pipe
12. Brass Fitting for 5mm internal diameter hoses with interface for 8 mm copper pipe
13. Steel Fitting for 6.5mm internal diameter hoses with interface for 6 mm copper pipe
14. Brass Fitting for 6.5mm internal diameter hoses with interface for 6 mm copper pipe
15. Steel Fitting for 6.5mm internal diameter hoses with interface for 8 mm copper pipe
16. Brass Fitting for 6.5mm internal diameter hoses with interface for 8 mm copper pipe
17. Steel Fitting for 5mm internal diameter hoses with interface for internal flare connection ½-20 UNF
18. Brass Fitting for 5mm internal diameter hoses with interface for internal flare connection ½-20 UNF
19. Steel Fitting for 6.5mm internal diameter hoses with interface for internal flare connection ½-20 UNF
20. Brass Fitting for 6.5mm internal diameter hoses with interface for internal flare connection ½-20 UNF
21. Steel Fitting for 6.5mm internal diameter hoses with interface for external connection M10x1 flare
22. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M10x1 flare
23. Steel Fitting for 5 mm internal diameter hoses with interface for external connection M10x1 flare
24. Brass Fitting for 5mm internal diameter hoses with interface for external connection M10x1 flare

E13*67R0)*67R01*0299*00

Société Nationale de Certification et d'Homologation

L-5201 SANDWEILER (Luxembourg)

Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)



FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia
(BS) Italy
TEL.: 0039-030-3195801 FAX: 0039-030-3732872
E-MAIL: faro@omb-saleri.it
VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887,
CCIAA 342936
Capitale Sociale 16.000. € i.v.
Società Controllata dalla ditta OMB Saleri S.p.A.

25. Steel Fitting for 6.5mm internal diameter hoses with interface for external connection M12x1 flare
26. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M12x1 flare
27. Steel Fitting for 5 mm internal diameter hoses with interface for external connection M12x1 flare
28. Brass Fitting for 5mm internal diameter hoses with interface for external connection M12x1 flare
29. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M10x1 flare at 90°
30. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M10x1 flare at 135°
31. Brass Fitting for 5mm internal diameter hoses with interface for external connection M10x1 flare at 90°
32. Brass Fitting for 5mm internal diameter hoses with interface for external connection M10x1 flare at 135°
33. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M12x1 flare at 90°
34. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection M12x1 flare at 135°
35. Brass Fitting for 5mm internal diameter hoses with interface for external connection M12x1 flare at 90°
36. Brass Fitting for 5mm internal diameter hoses with interface for external connection M12x1 flare at 135°
37. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection M10x1 flare at 90°
38. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection M10x1 flare at 135°
39. Brass Fitting for 5mm internal diameter hoses with interface for internal connection M10x1 flare at 90°
40. Brass Fitting for 5mm internal diameter hoses with interface for internal connection M10x1 flare at 135°
41. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection M12x1 flare at 90°
42. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection M12x1 flare at 135°
43. Brass Fitting for 5mm internal diameter hoses with interface for internal connection M12x1 flare at 90°
44. Brass Fitting for 5mm internal diameter hoses with interface for internal connection M12x1 flare at 135°
45. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection ½-20 UNF flare at 90°
46. Brass Fitting for 6.5mm internal diameter hoses with interface for external connection ½-20 UNF flare at 135°



FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia
(BS) Italy
TEL.: 0039-030-3195801 FAX: 0039-030-3732872
E-MAIL: faro@omb-saleri.it
VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887,
CCIAA 342936
Capitale Sociale 16.000. € i.v.
Società Controllata dalla ditta OMB Saleri S.p.A.

47. Brass Fitting for 5mm internal diameter hoses with interface for external connection 1/2-20 UNF flare at 90°
48. Brass Fitting for 5mm internal diameter hoses with interface for external connection 1/2-20 UNF flare at 135°
49. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection 1/2-20 UNF flare at 90°
50. Brass Fitting for 6.5mm internal diameter hoses with interface for internal connection 1/2-20 UNF flare at 135°
51. Brass Fitting for 5mm internal diameter hoses with interface for internal connection 1/2-20 UNF flare at 90°
52. Brass Fitting for 5mm internal diameter hoses with interface for internal connection 1/2-20 UNF flare at 135°
53. Brass Fitting for 5mm internal diameter hoses with same interface of 6 mm copper pipe at 90°
54. Brass Fitting for 5mm internal diameter hoses with same interface of 6 mm copper pipe at 135°
55. Brass Fitting for 6.5mm internal diameter hoses with same interface of 6 mm copper pipe at 90°
56. Brass Fitting for 6.5mm internal diameter hoses with same interface of 6 mm copper pipe at 135°
57. Brass Fitting for 5mm internal diameter hoses with same interface of 8 mm copper pipe at 90°
58. Brass Fitting for 5mm internal diameter hoses with same interface of 8 mm copper pipe at 135°
59. Brass Fitting for 6.5mm internal diameter hoses with same interface of 8 mm copper pipe at 90°
60. Brass Fitting for 6.5mm internal diameter hoses with same interface of 8 mm copper pipe at 135°.

All the configurations are represented in DRAWING 1. Connection between pipe and link, described in the point 5, it is the same one for all the versions.

E13*67R0)*67R01*0299*00

Société Nationale de Certification et d'Homologation

L-5201 SANDWEILER (Luxembourg)

Organisme accrédité OLAS EN 45011

Accréditation N° 5/001 (Portée communiquée sur demande)

3. COMPONENTS CLASSIFICATION

- **SYNTHETIC HOSES**

Functional features

Components classification:

class 1

Max working pressure:

3000 kPa

Working temperature:

-25°C ÷ +125°C

- **CONNECTIONS**

Functional features

Components classification:

Class 1

Max working pressure:

3000 kPa

Working temperature:

-25°C ÷ +125°C

	<p>FARO S.R.L. Via Rose di Sotto 38/C, - 25126 Brescia (BS) Italy TEL.: 0039-030-3195801 FAX: 0039-030-3732872 E-MAIL: faro@omb-saleri.it VAT/P.IVA: IT03209420177, Reg. soc. Trib. BS 50887, CCIAA 342936 Capitale Sociale 16.000. € i.v. Società Controllata dalla ditta OMB Saleri S.p.A.</p>	
---	--	--

4. SYNTETIC HOSES

Syntetic hose with 6,5 mm internal diameter (drawing 393TS000) is composed of one linig made with Thermoplastic elastomer (Polyamide), two braid of wire reinforcement made with polyester and one cover provided with intentionally puncture made with thermoplastic elastomer (Polyurethane). Syntetic hose with 5 mm internal diameter (drawing 394TS000) is composed of one linig made with Thermoplastic elastomer (Polyamide), one braid of wire reinforcement made with polyester and one cover provided with intentionally puncture made with thermoplastic elastomer (Polyurethane). Hoses may be supplied with trade mark FARO .

5. CONNECTION (between hose and fitting)

The wiring of hose with fitting is made by crushing of hose between fitting and cut-cone. Nut tighten cut-cone around hose. Fittings are made with brass or galvanized steel, cut-cones are made with brass and nuts are made with brass or galvanized steel. (see *DRAWING 1*)

6. HOSES MARKING

Hoses marking versions is represented in the *DRAWING 2_1 and DRAWING 2_2*. The fittings and nuts can be marked with homologation number and the producer's mark.

7. FITTING MARKING

Nut marking may be:

- 67R-01 XXXX FARO TUBO 12,2x6,5 (where XXXX will be homologation number)
- 67R-01 XXXX FARO (where XXXX will be homologation number)
- Only part of marking up specified.
- No one marking.

Fitting marking may be:

- 67R-01 XXXX (where XXXX will be homologation number) 67R01*0299*00
 - FARO 67R
 - No one marking.
- Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)