

THE NETHERLANDS

(NEDERLAND)





COMMUNICATION

Concerning⁽¹⁾:

- approval granted

- approval extended
- approval refused
- approval withdrawn
- production definitely discontinued

of a type of LPG equipment pursuant to Regulation number 67.

Approval number: E4-67R-010267

Approval mark:

1. LPG equipment considered ⁽¹⁾:

- Container including the configuration of accessories fitted to the container, as laid down in Appendix 1 to this annex.
- 80% stop valve
- Level indicator
- Pressure relief valve (discharge valve)
- Pressure relief device
- Remotely controlled service valve with excess flow valve
- Multi-valve, including the following accessories:
- Gas tight housing
- Power supply bushing (pump/actuators)
- Fuel pump
- Vaporiser/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



P.O. Box 777 2700 AT Zoetermeer The Netherlands Tel. + 31 (0)79 345 81 43 Fax + 31 (0)79 345 80 43 www.rdw.nl Vehicle Approval and Information

Page 1 of 4

Extension number: 00

Approval number: E4-67R-010267

2.	Trade name or mark	: Prins High Pressure Fuel rail (-40°C)
3.	Manufacturer's name and address	: Prins Autogassystemen b.v. Jan Hilgersweg 22 5657 ES Eindhoven The Netherlands
4.	If applicable, name and address of manufacturer's representative	:
5.	Submitted for approval on	: December 2009
6.	Technical service responsible for conducting approval tests	: Kiwa Nederland b.v. P.O.Box 137 7300AC Apeldoorn The Netherlands
7.	Date or report issued by that service	: 09-08-2012
8.	Number of report issued by that service	: 125445
9.	Approval	: granted/refused/extended/withdrawn ⁽¹⁾
10.	Reason(s) of extension (if applicable)	:
11.	Place	: Zoetermeer
12.	Date	: 17-AUG-2012
13.	Signature	Tement

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

R.F.R. Clement

⁽¹⁾ Strike out what does not apply.

APPENDIX 1 (containers only)

:

1. Container characteristics from the ratent container (Configuration 00).
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- (a) Trade name or mark
- (b) Shape :
- (c) Material :
- (d) Openings : see drawing
- (e) Wall thickness mm. : (f) Diameter (cylindrical container) : mm. Height (special container shape) (g) : mm. cm^2 External surface (h) :

(i) Configuration of accessories fitted to container: see table 1.

Table 1:

Number	Item	Туре	Approval number	Extension number
а	80% stop valve			
b	Level indicator			
с	Pressure relief valve			
d	Remotely controlled			
	service valve with			
	excess valve			
e	Fuel pump			
f	Multi-valve			
g	Gas-tight housing			
h	Power supply bushing			
i	Non return valve			
j	Pressure relief device			

2. List of the 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.

Table 2:

Number	Туре	Diameter/ height (mm)	Capacity (L)	External surface (cm ²)	Configuration of accessories (codes) ⁽¹⁾
01					
02					

⁽¹⁾ Code 00 and, if applicable, same code(s) from Table 3.

3. List of the possible configurations of accessories fitted to the container:



Approval number: E4-67R-010267

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.

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Table	- X +
rabic	э.

Number	Accessories	Туре	Approval number	Extension number	Configuration of accessories (codes) ⁽¹⁾
а					
b					
с					
d					



1	HEADING	SHEETS	(report contents	;)
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2 SUMMARY SHEETS

3 IDENTIFICATION SHEETS

4 DECLARATION SHEETS

5 TEST SHEETS

6 **RESULT SHEETS**

7 DRAWING AND TECHNICAL DESCRIPTION SHEETS

8 CORRESPONDENCE SHEETS

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9 KIWA NEDERLAND BV FILES (if applicable, included in KIWA NEDERLAND BV report only)

10 UPDATES (if applicable)

August 2012

LPG Test Report

LPG Components Type HP Fuel rail including Injector Prins Autogassystemen B.V. Eindhoven The Netherlands Report number: 125445

CERTIFICATION



Kiwa Nederland BV, P.O. Box 137, 7300 AC Apeldoorn, telephone: +31 555 393 393

File Issue: 011	HEADING SHEETS	Rivva Partner for progress
Report Number: 125445	LPG Components	Page: HS 1/00

Report contents:

<u>Sheet</u>		Chapter	<u>Code</u>	<u># Pages</u>
Heading Sheets		1	HS	2
Summary Sheets			SS	1
E4-67R-010267	Certificate + Identification Sheets	3	IS	2
Declaration She	ets	4	DS	2
Test Sheets:	Regulation 67-01	5	ТМ	1
Result Sheets:	Identification of EUT	6	RID	1
	Regulation 67-01	6	RM	7
Drawing and Te	chnical Description Sheets	7	DR	6
Correspondence	e Sheets	8	CS	1
Kiwa Nederland BV Files			GF	-
(if applicable, in	cluded in Kiwa Nederland BV report only)			
Updates (if appl	icable as identified in the Report History Sheets)	10		

Note: The revision number of each page of this report is identified in the right heading of the page by means of the last 2 digits in the page number (e.g. HS 1/00, Heading Sheet page 1, revision 00).

Report history:

Date:	Description:	Report No:	Job Ref:	
09-08-2012	New (initial report)	125445	125445	
Any modification and/or extension made to this report shall be recorded in a Report History Sheet and be				
inserted as a first page when opening this report. This sheet shall detail the modification and/or extension				
applicable to this initial report and shall clearly state where these details can be found. A copy of this sheet				
shall also be	provided to the applicant/manufacturer, in order to keep the reports i	dentical.		

Signed by Test Engineer:

Name: Edwin Brandwagt

Elize

Date: August 2012

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Joh	Reference:	125445
JUD		123443

File Issue: 011	HEADING SHEETS	Partner for progress
Report Number: 125445	LPG Components	Page: HS 2/00

Responsible Test House: Address: Telephone: Facsimile: E-mail:	Kiwa Nederland BV Wilmersdorf 50 7327 AC Apeldoorn P.O. Box 137 7300 AC Apeldoorn The Netherlands + 31 555 393 393 + 31 555 393 685 automotive@kiwa.nl
Name of the Applicant: Address:	Prins Autogassystemen B.V. Jan Hilgersweg 22 5657 ES, Eindhoven The Netherlands
Name of the Manufacturer: Address:	Prins Autogassystemen B.V. Jan Hilgersweg 22 5657 ES, Eindhoven

Test report of the examination of the:

Ι.

LPG Components

Type HP Fuel rail Including Injector

Tested and examined to:

Regulation 67-01

Revision 2, 29 March 2006

Uniform provisions concerning:

The Netherlands

Approval of specific equipment of motor vehicles using liquefied petroleum gases in their propulsion system.

Including Revision 2 Correction 1 Revision 2 Amendment 1 Revision 2 Amendment 2 Revision 2 amendment 3

Job Reference: 125445	

File Issue: 011	SUMMARY SHEETS	Partner for progress
Report Number: 125445	LPG Components	Page: SS 1/00

The LPG Component, Type HP Fuel rail including injector made by Prins Autogassystemen B.V., meet(s) the requirements of:

Regulation 67-01 Revision 2, 29 March 2006 Uniform provisions concerning: II. Approval of specific equipment of motor vehicles

Approval of specific equipment of motor vehicles using liquefied petroleum gases in their propulsion system.

Including Revision 2 Correction 1 Revision 2 Amendment 1 Revision 2 Amendment 2 Revision 2 amendment 3

See the Identification Sheets for all available types.

Signed in Acceptance:

12)

Paul Dijkhof Date: 09-08-2012

Project Manager Automotive Systems. Kiwa Nederland BV

Notes: The described test results are only valid for the tested materials and objects

	initials: Dijknpa
Job Reference: 125445	

File Issue: 011	IDENTIFICATION SHEETS	Partner for progress
Report Number: 125445	LPG Components	Page: IS 1/00

Type break down (including specifications):

HP Fuel rail including injector E4-67R-010267

Working pressure:20MPaTemperature range:-40°C up to 120°C

	Initials: Dijkhpa
Job Reference: 125445	

File Issue: 011	DECLARATION SHEETS	Partner for progress
Report Number: 125445	LPG Components	Page: DS 1/00

Manufacturer's declaration(s):

Declaration title	Date
Declaration sheet rubber material	
Declaration sheet product classification	-
Declaration sheet compliance with general design rules	-

	Initials: Dijkhpa
Job Reference: 125445	

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LPG Components

DECLARATION SHEET RUBBER MATERIAL

This is to declare that the rubber material used in the component(s) mentioned in this report:

Make:	Prins Autogassystemen B.V	
Туре:	High pressure pump	

is exactly the same as the rubber material used for the component(s) mentioned in Kiwa Nederland BV report: 121190

A cross list of drawing numbers should be enclosed to this declaration.

Name:R.ExaltoJob title:R&D EngineerCompany:Prins Autogassystemen B.V.Address:Eindhoven, The NetherlandsDate:11-05-2010

	Initials: Dijkhpa
Job Reference: 125445	

File Issue: 011	RESULT SHEETS IDENTIFICATION OF EUT	Partner for progress
Report Number: 125445	LPG Components	Page: RID 1/00

Sample designation:

Description	Reference no.	Date intake
HP Fuel Rail including injectors	C100084	25-02-2010
HP Fuel Rail including injectors	C100085	25-02-2010
HP Fuel Rail including injectors	C100086	25-02-2010

	Initials: Dijkhpa
Job Reference: 125445	

File Issue: 001	RESULT SHEET R67-01 LPG EQUIPMENT R67-01	kiwa Partner for progress
Report Number: 125445	Fuel rail	Page: TM 01/00

Annex 11: GAS INJECTION DEVICE, OR GAS MIXING PIECES, OR INJECTORS AND THE FUEL

Key to Test Sh	neets:	YES = YES	NA = Not Applicable	NT = Not Tested	NO = NO	Example:	YES-NA-NT-NO
Notes: Whe	Notes: When filling in Test Sheets, answers are crossed out which are not applicable for that clause.						
	Annex	x 11/3 Fuel rail					
3.2	Comp	onent classificatio	n: Class 1				YES- NA-NT-NO
			Class 2				YES-NA-NT-NO
			Class 2A				YES-NA-NT-NO
3.3	Class	ification pressure 3	3.000 kPa				YES-NA-NT-NO
			450 kPa				YES-NA-NT-NO
			120 kPa				¥ES-NA-NT-NO
3.4	Desig	n temperatures –4	0 °C to 120 °C				YES-NA-NT-NO
3.5	Gene	ral design rules					
	Not us	sed					YES-NA-NT-NO
3.6.1	The c	omponent of Class	a 1 meets the applicable to	est procedures:			
	- Ove	r pressure test	Annex 15, pa	ır. 4			YES-NA-NT-NO
	- Exte	rnal leakage	Annex 15, pa	ır. 5			YES- NA-NT-NO
	- High	temperature	Annex 15, pa	ar. 6			YES-NA-NT-NO
	- Low	temperature	Annex 15, pa	ar. 7			YES- NA-NT-NO
	- LPG	compatibility	Annex 15, pa	ar. 11			YES - <mark>NA</mark> -NT-NO
	- Corr	osion resistance	Annex 15, pa	ar. 12			YES- NA-NT-NO
	- Resi	istance to dry heat	Annex 15, pa	ır. 13			¥ES- <mark>NA</mark> -NT-NO
	- Ozo	ne ageing	Annex 15, pa	r. 14			YES - <mark>NA</mark> -NT-NO
	- Cree	ep	Annex 15, pa	ar. 15			YES- NA-NT-NO
	- Tem	perature cycle	Annex 15, pa	ır. 16			YES-NA-NT-NO
3.6.2	The c	omponent of Class	s 2 and / or 2A meets the	applicable test procedure	es:		
	- Ove	r pressure test	Annex 15, pa	ır. 4			YES -NA -NT-NO
	- Exte	ernal leakage	Annex 15, pa	ır. 5			YES-NA-NT-NO
	- High	temperature	Annex 15, pa	ar. 6			YES-NA-NT-NO
	- Low	temperature	Annex 15, pa	ar. 7			YES-NA-NT-NO
	- LPG	compatibility	Annex 15, pa	ar. 11			YES-NA-NT-NO
	- Corrosion resistance Annex 15, par. 12					YES-NA-NT-NO	

Temperature range is tested on -40°C instead of -20°C on request of the client.

NA The rubber compounds are not tested but declared. See declaration sheet.

Job Reference: 125445		Initials: Dijkhpa
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Product:	High Pressure Fuel Line

Tested in accordance with:				
Approval requirement:	Regulation 67-01			
Annex:	15			
Article:	4			
Testing Equipment (when no accur	racy is specified the Kiwa standard applies)	Kiwa no.	Calibrated (✓)	Operation OK (✓)
Hydraulic pressure equipment		111322	✓	1
Pressure gauge, when tested pneumatically 100666				
Stopwatch	✓	1		
Test Conditions				
Safety precautions:				
- safety rules for high pressures	Kiwa reference HP1			
- safety rules for use of gas cylin	ders,, reference CP16-3.			
			Complies (✓)	N.A. (✓)
- Test is to be performed before	✓			
- The samples are filled with wat	✓			
- The samples surface shows no	✓			
- Retest a new sample with a pre		✓		

Test Results	Requirement			sample no.: sample no.: C100084 C100085		0.:	Sample no.:			
Moment of test	Before/after			before	after	before	after	Before	after	
		Corrosion test								
Classification of component*	1	2	2A	3	1	1	1	1		
Test pressure (MPa)	6750	1015	270	6750	30 MPa	30 MPa	30 MPa	30 MPa		
Test time		≥ 10 min			1	*	1	1		
Rupture		No			1	1	1	1		
Permanent distortion	No			✓	1	~	✓			
Test dated	To be monitored			10-02- 2010	01-03- 2010	10-02- 2010	23-02- 2010			

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	1	

Remarks:

The working pressure of the Fuel line is 20 MPa.

RESULT SHEET R67-01



Report Number: 125445 CORROSION TEST (SALT SPRAY)

Product:

High Pressure Fuel Line

Tested in accordance wi	th:			
Approval requirement:	Regulation 67-01			
clause:	15			
Article:	12.1			
Task instructions*:	ISO 9227			
Testing Equipment (when	no accuracy is specified the Kiwa standard applies)	Kiwa no.	Calibrated (✓)	Operation OK (✓)
Salt spray equipment		110930	✓	✓
Test Conditions				
Safety precautions:-				
			Complies (✓)	N.A. (✓)
- Before testing the sample	e is cleaned and dried at ambient temperatu	ures < 40 °C	✓	
- All connections and oper	ings are closed		✓	
- The salt solution shall co	nsist of 5% sodium chloride and 95% distille	ed water by weight	✓	
- The temperature of the te	est room is measured at $35^{\circ}C \pm 2^{\circ}C$	✓		
- The adjustment of nozzle	e is settled at 1.5 cm 3 /h ±0.5cm 3 /h	✓		
- The received salt solution has been checked every 24 h or 48 h			✓	
- After testing the sample i	s cleaned		✓	

Test results	Requirement	Sample no.: C100084	Sample no.:	
Date and time starting the test	Timing aspects to be monitored	16-02-2010		
Date and time stopping the test	Timing aspects to be monitored	22-02-2010		
Salt spray testing time	144 h	✓		
Ambient temperature during testing	Between 33 and 37°C	✓		
Store time at room temperature	0,5 –1h	4		
Test to be performed after the endurance test are:				
Hydrostatic strength	According to 15.4	See page RM 01/00	See page RM	
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RM 05/00	See page RM	

Conclusion		
Requirement	Complies (✓)	N.A. (✔)
Samples meet requirement	✓	

Remarks:



Product:	High Pressure Fuel Line	
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Tested in accordance with:								
Approval requirement:	Regulation 67-01							
Annex:	15							
Article:	12.2							
Task instructions*:	ISO 6957							
Testing equipment (when r	no accuracy is specified the Kiwa standard applies)	Kiwa no.	Calibrated (✓)	Operation OK (√)				
Ammonia test equipment								
Stopwatch								
Microscope								
Thermometer		100781	✓	1				
Test conditions								
Safety precautions:-								
			Complies (✓)	N.A. (✓)				
- Before testing the sample	e is cleaned and dried at ambient tempera	atures < 40 °C	✓					
- All connections and open	ings are closed	√						
- During testing the ammor	nia concentration is pH 10,0	✓						
- After testing the sample i	s cleaned and dried at ambient temperatu	ures < 40 °C	✓					

Test results	Requirement	Requirement Sample no.: C100085				
Date and time starting the test	Timing aspects to be monitored	25-02-2010				
Date and time stopping the test	Timing aspects to be monitored	26-02-2010				
Exposure time in ammonia	24 h	✓				
Ambient temperature during testing	25 <u>+</u> 6°C	✓				
Result at magnification of x10 to x15	No cracks	✓				
Test to be performed after the endurance test are:						
Hydrostatic strength	According to 15.4	See page RM 01/00	See page RM			
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RM 06/00	See page RM			

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	

Remarks:

File Issue: 004	RESULT SHEET R67-01	Rivva Partner for progress
Report Number: 125445	CREEP	Page RM 04/00

Tested in accordance with:								
Approval requirement:	Regulation 67-01							
Annex:	15							
Article:	15							
Testing equipment (when r	no accuracy is specified the Kiwa standard applies)	Calibrated (√)	Operation OK (✓)					
Hydraulic pressure equipm	nent	111322	1	✓				
Pressure gauge								
Stopwatch		111646	✓	✓				
Test conditions								
Safety precautions:								
- safety rules for high pres	sures Kiwa reference HP1							
		Complies (✓)	N.A. (✓)					
 The samples are filled with glycerine or other hydraulic fluid (based upon manufacturers indication) 			✓					

Test results	Requirement				Sample no.: C100086	Sample no.:	
Date and time starting the test	Timin	g aspects	to be mo	onitored	25-02-2010		
Date and time stopping the test	Timin	g aspects	to be mo	onitored	01-03-2010		
Test time	96 h				✓		
Ambient temperature during testing	120°C				✓		
Classification of component *	1	2	2A	3	1		
Test pressure *	6750	1015	270	6750	30 MPa		
Rupture		Ν	lo		✓		
Permanent distortion	No				✓		
Test to be performed after the endurance test are:							
External leakage at ambient, low and high temp	Accordin	ng to 15.5,	15.6 an	d 15.7	See page RM 07/00	See page RM	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	

Remarks:



Report Number: 125445

EXTERNAL LEAKTIGHTNESS Including high and low temperature

Page: RM 05/00

Product: High Pressure Fuel Line

Tested in accordance with:				
Approval requirement:	Regulation 67-01			
Annex:	15			
Article:	5, 6, 7			•
Testing Equipment (when no ac	curacy is specified the Kiwa standard applies)	Kiwa no.	Calibrated (✓)	Operation OK (✓)
Oven		001638	✓	✓
Cooler		109817	✓	✓
Pressure gauge		111655	✓	✓
Leakage gauge				
Stopwatch		111646	✓	✓
Test Conditions				
Safety precautions:				
- safety rules for high tempera	ture, Kiwa reference HT1			
- safety rules for high pressure	es, Kiwa reference HP1			
 safety rules for use of gas cy 	linders, reference CP16-3			
	Complies (✓)	N.A. (✓)		
- The sample has conditioned	✓			
- The sample is slowly pressur	✓			
- The test sample is submerge	✓			
- When air bubble(s) are detec	ed to be > 15 cc/h.		✓	

Test Results		Requi	rement		sample no.: C100084					
Test temperature			room ten	nperature	65°C / 120°C *		-40°C			
Moment of test *	Corrosion / creep / endurance / cycle test		before	after	before	after	before	after		
Classification of component *	1	2	2 A	3	1	1	1	1	1	1
Test pressure (kPa) *	4500	675	180	6750	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa
External leakage	< 15cc/h		✓	1	✓	*	1	1		
Test date	To be monitored			10-02- 2010	25-02- 2010	11-02- 2010	26-02- 2010	11-02- 2010	01-03- 2010	

Conclusion		
Requirement	Complies (√)	N.A. (✓)
Samples meet requirement	1	

Remarks:

The fuel line is including the non-return valve mounted on the high pressure fuel pump and injectors.

* Cross out which is not applicable

Job	Reference:	125445

Initials: EB

Rivea Partner for progress

Page: RM 06/00

EXTERNAL LEAKTIGHTNESS Including high and low temperature

Product:	High Pressure Fuel Line

Tested in accordance with:				
Approval requirement:	Regulation 67-01			
Annex:	15			
Article:	5, 6, 7			
Testing Equipment (when no ac	curacy is specified the Kiwa standard applies)	Kiwa no.	Calibrated (✓)	Operation OK (✓)
Oven		001638	✓	✓
Cooler		109817	✓	✓
Pressure gauge		111655	✓	✓
Leakage gauge				
Stopwatch		111646	1	✓
Test Conditions				
Safety precautions:				
- safety rules for high tempera	ture, Kiwa reference HT1			
- safety rules for high pressure	es, Kiwa reference HP1			
- safety rules for use of gas cy	linders, reference CP16-3			
			Complies (✓)	N.A. (✓)
- The sample has conditioned	1			
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;			✓	
- The test sample is submerge	d in the test fluid for at least 60 sec,	preferred is 900 sec;	✓	
- When air bubble(s) are detec	ted after 60 sec, leakage is consider	ed to be > 15 cc/h.		1

Test Results		Requi	rement		sample no.: C100085					
Test temperature					room ten	nperature	65°C /	120°C *	-4(0°C
Moment of test *	Corros	ion / cre cyck	ep / end > test	urance /	before	after	before	after	before	after
Classification of component *	1	2	2A	3	1	1	1	1	1	1
Test pressure (kPa) *	4 500	675	180	6750	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa
External leakage		<u><</u> 15cc/h		✓	1	1	1	1	1	
Test date	To be monitored			10-02- 2010	01-03- 2010	11-02- 2010	01-03- 2003	11-02- 2010	02-03- 2010	

Conclusion		
Requirement	Complies (√)	N.A. (✓)
Samples meet requirement	1	

Remarks:

The fuel line is including the non-return valve mounted on the high pressure fuel pump and injectors.

* Cross out which is not applicable

Job	Reference:	125445

Initials: EB

Rivea Partner for progress

EXTERNAL LEAKTIGHTNESS Including high and low temperature

Duradurate	Utak Branning Frielding
Product:	High Pressure Fuel Line

Tested in accordance with:				
Approval requirement:	Regulation 67-01			
Annex:	15			
Article:	5, 6, 7			
Testing Equipment (when no ac	curacy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven		001638	✓	✓
Cooler		109817	1	✓
Pressure gauge		111655	1	✓
Leakage gauge				
Stopwatch		111646	1	✓
Test Conditions				
Safety precautions:				
- safety rules for high tempera	ture, Gastec reference HT1			
- safety rules for high pressure	es, Gastec reference HP1			
- safety rules for use of gas cy	linders, reference CP16-3			
			Complies (✓)	N.A. (✓)
- The sample has conditioned	✓			
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;			1	
- The test sample is submerge	d in the test fluid for at least 60 sec, p	referred is 900 sec;	1	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.				✓

Test Results	Requirement			sample no.: C100086						
Test temperature					room ten	nperature	65°C /	120°C *	-4()°C
Moment of test *	Corros	i on / cre cyck	ep / end	urance /	before	after	before	after	before	after
Classification of component *	1	2	2A	3	1	1	1	1	1	1
Test pressure (kPa) *	4 500	675	180	6750	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa	30 MPa
External leakage		<u><</u> 15cc/h			✓	1	1	1	1	1
Test date	To be monitored			10-02- 2010	01-03- 2010	11-02- 2010	02-03- 2003	11-02- 2010	02-03- 2010	

Conclusion		
Requirement	Complies (✔)	N.A. (✓)
Samples meet requirement	1	

Remarks:

The fuel line is including the non-return valve mounted on the high pressure fuel pump and injectors.

* Cross out which is not applicable

File Issue: 011	DRAWING AND TECHNICAL DESCRIPTION SHEETS	Kiva Partner for progress
Report Number: 125445	LPG Components	Page: DR 1/00

Drawings and Technical Descriptions:

Description	# Pages	Date
Photo Sheets	3	
High pressure Fuel rail including Injector	1	
Label	1	13-01-2012

	Initials: Dijkhpa
Job Reference: 125445	

File Issue: 011	DRAWING AND TECHNICAL DESCRIPTION SHEETS	Partner for progress
Report Number: 125445	LPG Components	Page: DR 2/00

Photos of the HP fuel rail including Injectors tested:



	Initials: Dijkhpa
Job Reference: 125445	

File Issue: 011	DRAWING AND TECHNICAL DESCRIPTION SHEETS	Partner for progress
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High Pressure Fuel rail			
Nr.	Quantity	Description	
1	1	Fuel rail	
2	3	Injector clip	
3	3	O-ring	
4	3	High pressure injector	
5	3	Positioning / locking clip	





Label specifications: Material: Silver Pet Void Adhesive strength: Permanent Size: B:85mm x H:35mm Color: Silver





Project nr:			ALTERNATIVE		
Material:	Ur	iits: mm		PRINS AUTOGA	SSYSTEMEN
Hardness:	To	l:	Prins EINDHOVEN-HOLLAND		JLAND
Surface threat	ment:		All rights strictly reserved. Reproduction or issue to third partie	es in any form whatever is not permitted without th	e witten authority from the proprietor
Designed by	J.T.	19-04-10	Part_number: 099/670001		No sharp edges
Checked by	R.E.	19-04-10			
Approved by	B.T.B.	18-05-10	Part name: Label R67 D	irect Injection	
Revision by					- 44
	Name	Date	Scale: Custom Rev: A	Sheet: 1/1	Size: A4

Prins	Prins Autogassystemen B.V. R67 Identification Direct Injection		DIALET LIQUI MARCT LIQUI MARCT LIQUI
High pressure pump	E4-67R-010266	Service coupling FRU	E4-67R-010270
High pressure fuel rail	E4-67R-010267	Fuel lines low pressure	:E4-67R-010247
High pressure injector	E4-67R-010309	Fuel lines high pressure	:E4-67R-010262
Service coupling FSU	E4-67R-010269	ECU	E4-67R-010098
Pressure temp sensor	E4-67R-010051/	E4-67R-010295	

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Contents of correspondence sheets:

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<u>Author</u>

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