



RDW

Centrum voor voertuigtechniek en informatie

N E D E R L A N D
(THE NETHERLANDS)



COMMUNICATION

Concerning: ~~APPROVAL GRANTED~~
~~APPROVAL EXTENDED~~
~~APPROVAL REFUSED~~
~~APPROVAL WITHDRAWN~~
~~PRODUCTION DEFINITELY DISCONTINUED~~

of a type of LPG equipment pursuant to Regulation No. 67

Approval No.: E4-67R-0192006

Extension No.:06

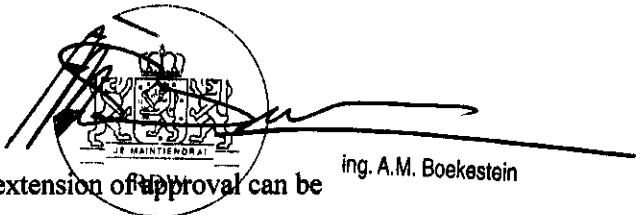
1. LPG equipment considered :

~~Container including the configuration of accessories fitted to the container, as laid down in appendix 1 to this annex~~
~~-80 per cent stop valve~~
~~-Level indicator~~
~~-Pressure relief valve (discharge valve)~~
~~- Pressure relief device~~
~~-Remotely controlled service valve with excess flow~~
~~-Multivalve, 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 couplings~~
~~-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~~




Approval No.: E4-67R-0192006

Extension: 06

2. Trade name or mark : LOVATO, model RG80, and RGE92
LOVTEC, model RE02, and RE01
3. Manufacturer's name and address : Officine Lovato S.p.A.
Strada Casale, 175
36100 Vicenza
Italy
4. If applicable, name of the manufacturer's representative : -
5. Submitted for approval on : September 2002
6. Technical service responsible for conducting approval tests : GASTEC Certification BV
P.O.Box 137
7300 AC Apeldoorn
the Netherlands
7. Date of report issued by that service : October 2002
8. No. of report issued by that service : 119196, 161897, 120548, 120712, 120712/1, 120712/1,
120712/1
9. Approval : ~~granted/refused/extended/withdrawn/~~
10. Reason(s) of extension (if applicable) : The previous tested Models RGE92 and RE02 are extended with type Super HP
11. Place : Zoetermeer
12. Date : 28.OKT 2002
13. Signature : 
14. The documents filed with the application or extension of approval can be obtained upon request. ing. A.M. Boekestein


Documentation: 2 drawings

Date: 31-10-2000	HEADING SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: HS 1/00

Report contents:

<u>Sheet</u>	<u>Chapter</u>	<u>Pages</u>	
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Certificate	4	E4 67R0192006	
Declaration sheets	5	DS 1/00	- DS 1/00
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Correspondence sheets	10	N.A.	
Gastec files	10	GF 1/00	- GF 2/00
(included in Gastec report only)			

	Initials: 
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Date: 31-10-2000	HEADING SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: HS 2/00

Responsible Test House : GASTEC NV
Address : Wilmersdorf 50
7327 AC Apeldoorn
P.O. Box 137
7300 AC Apeldoorn
The Netherlands
Telephone : + 31 555 393 393
Facsimile : + 31 555 393 685
E-mail : post@gastec.nl.

Name of the applicant : Officine Lovato S.p.A.
Address of the applicant : Strada Casale, 175
36100 Vicenza
Italy
Telephone: : +39 0444 218911
Facsimile: : +39 0444 501540


Name of the Manufacturer : Officine Lovato S.p.A.
Address of the Manufacturer : Strada Casale, 175
36100 Vicenza
Italy
Telephone: : +39 0444 218911
Facsimile: : +39 0444 501540

Test report of the examination of the:

VAPORIZER/PRESSURE REGULATORS,
Model RG92

Tested and examined to: REGULATION No. 67.01, dated 16 February 1999. (Equipment for liquefied petroleum gas)

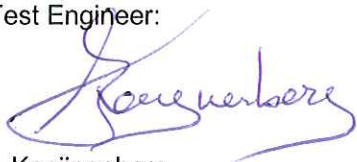
	Initials: 
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Date: 31-10-2000	HEADING SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: HS 3/00

Report history:

Date:	Description:	Project no:	Test engineer(s):
Earlier test reports related to this product are based on regulation 67-00 and no are longer relevant			
Oct. 2000	New (re-examined to R67-01)	120712	Kon

Signed by Test Engineer:



Name : H. Konijnenberg

Date : 31-10-2000


Signed by Project manager:

Name : Ing. R.M. van Aerde



Date : 01-11-2000

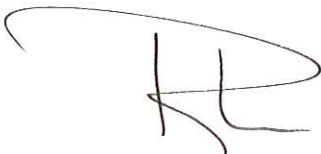
		Initials: 
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Date: 31-10-2000	SUMMARY SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: SS 1/00

The Vaporizer/Pressure regulators, made by Officine Lovato S.p.A., model RG 92 meet the requirements REGULATION No. 67.01, dated 16 February 1999. (Equipment for liquefied petroleum gas)

{ See the Identification Sheet for all available types.}


Signed in Acceptance:



Ing. R. Karel
Manager Controls and Distribution Systems
Unit Certification
Gastec N.V.

Date: 2 November 2000

		Initials:
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Date: 31-10-2000	IDENTIFICATION SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page IS 1/00


List of all available types

Vaporizer/Pressure regulator, model RG92 (Trade name LOVATO)

Code 704701	type Riduttore GPL92 Elettr. Mimimo Separato
Code 704702	type Riduttore GPL92 Super Elettr. Minimo Sep.
Code 704801	type Riduttore GPL92 Elettr. Major Turbo
Code 704902	type Riduttore GPL92 Super/Major Elettr. Minimo Sep

Vaporizer/Pressure regulator, model RE02 (Trade name LOVTEC)

Code L203002	type Riduttore GPL Elettr. Mimimo Separato
Code L203001	type Riduttore GPL Super Elettr. Minimo Sep.
Code L203004	type Riduttore GPL Elettr. Major Turbo
Code L203004	type Riduttore GPL Super/Major Elettr. Minimo Sep


Date: 31-10-2000	DECLARATION SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: DS 1/00

DECLARATION

Reference
Rubber parts

Date
19 September 2000

Author
Mr. Fabris

		Initials: 
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Mr. Herman Konijnenberg
GASTEC NV
P.O. Box 137
7300 AC Apeldoorn
The Netherlands
Wilmersdorf 50
7327 AC Apeldoorn

Vicenza, September the 19th, 2000

DECLARATION

Herewith we declare that rubber parts fitted on :


- Reducer vaporizer RG92 ,project 163242
- Multivalve MV 305, project 163061
- Minireducer 306, project 162854

Are made by VITON in place of NBR.

Furthermore, VITON chemical and mechanical characteristics are exactly the same of sample already sent you last July, the 12th 2000 (plate 200x200x2 mm)

Officine Lovato S.p.A.
Technical Executive
Giuliano Fabris



Date: 31-10-2000	TEST SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: TS 1/00

Test results of the examination of the:

VAPORIZER/PRESSURE REGULATORS, Vaporizer/Pressure regulators, Model 91 and 96
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Tested and examined to:
REGULATION No. 67.01, dated 16 February 1999. (Equipment for liquefied petroleum gas)

Sample designation:

704701	reference no:	000358A/B	Date intake:	Aug 2000
704702 (super)	reference no:	000359A/B	Date intake:	Aug 2000
704801 (turbo)	reference no:	000360A/B	Date intake:	Aug 2000
704901	reference no:	000361A/B	Date intake:	Aug 2000

Remarks on condition of sample(s) at intake:

NONE

Modifications to the samples (as a result of the testing described in this report):

NONE

Key to Test Sheets

YES	YES
NO	NO
NA	NOT APPLICABLE
NT	NOT TESTED

Note: When filling in test sheets, answers are crossed out which are not applicable with that clause. When there is no reference given to a result sheet there are no related result sheets.


For example:

YES ~~NA~~ ~~NO~~ ~~NT~~

Note:

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

		Initials: <i>Ken</i>
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Date: 31-10-2000	TEST SHEETS	
Report Number: 120712	VAPORIZER/PRESSURE REGULATORS	Page: TS 2/00

UN R67.01 VAPORIZER/PRESSURE REGULATORS	
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	Annex 7/1 VAPORIZER/PRESSURE REGULATORS	
2.2	Component classification : Class 1	YES-NA-NT-NO
2.3	Classification pressure 3.000kPa	YES-NA-NT-NO
2.4	Design temperatures -20°C to 120°C	YES-NA-NT-NO
2.5	General design rules -meets paragraph 6.14.2 -meets paragraph 6.14.3.1. -meets paragraph 6.14.4 -meets paragraph 6.14.5 -meets paragraph 6.14.6.2	YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO
2.6	The component meet the applicable test procedures: - Over pressure test Annex 15, para. 4 - External leakage Annex 15, para. 5 - High temperature Annex 15, para. 6 - Low temperature Annex 15, para. 7 - Seat leakage Annex 15, para. 8 - Endurance test Annex 15, para. 9 - LPG compatibility Annex 15, para. 11 - Corrosion resistance Annex 15, para. 12 - Resistance to dry heat Annex 15, para. 13 - Ozone ageing Annex 15, para. 14 - Creep Annex 15, para. 15 - Temperature cycle Annex 15, para. 16	YES-NA-NT-NO <i>R51/00 to 4/00</i> YES-NA-NT-NO <i>R55/00 to 9/00</i> <i>R514/00</i> YES-NA-NT-NO <i>R55/00 to 9/00</i> YES-NA-NT-NO <i>R55/00 to 9/00</i> <i>R514/00</i> YES-NA-NT-NO <i>R512/00</i> YES-NA-NT-NO <i>R513/00</i> YES-NA-NT-NO <i>conside report see table</i> YES-NA-NT-NO <i>R510/00</i> YES-NA-NT-NO <i>T No report</i> YES-NA-NT-NO <i>T No report</i> YES-NA-NT-NO YES-NA-NT-NO

	Initials: <i>Ken</i>
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Date: 31-10-2000	HYDROSTATIC STRENGTH	GASTEC
Report Number: 120712		Page: RS 1/00

Type/Sample No.:	704701
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	4		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Hydraulic pressure equipment	109917	NA	✓
Pressure gauge, when tested pneumatically	100666/00148	✓	✓
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders,, reference CP16-3.			
		Complies (✓)	N.A. (✓)
- Test is to be performed before and after the corrosion test;		✓	
- The samples are filled with water and slowly pressurised;			✓
- The samples surface show no visible cracks as a result of this test;		✓	
- Retest a new sample with a pressure gauge with accuracy +5%, if samples have failed			✓

Test Results	Requirement				sample no.: 600352A		sample no.: 600352B		sample no.:	
Moment of test	Before/after Corrosion *				before	After	before	after	before	after
Classification of component*	1	2	2A	3	1		2A			
Test pressure (kPa) *	6750	1015	270	6750	6750		270			
Test time	≥ 1min				5		5			
Rupture	No				No		No			
Permanent distortion	No				No		No			
Test dated	To be monitored				5-3-00		5-3-00			

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

* Cross out which is not applicable

Document: WV_NL-LPG.010, dated	Initials: Van
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Date: 31-10-2000	HYDROSTATIC STRENGTH	
Report Number: 120712		Page: RS 2/00

Type/Sample No.:	704702 (super)
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	4		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Hydraulic pressure equipment	109917	NA	✓
Pressure gauge, when tested pneumatically	100666 10848	✓	✓
Stopwatch			
Test Conditions			
Safety precautions: - safety rules for high pressures Gastec reference HP1 - safety rules for use of gas cylinders,, reference CP16-3.			
		Complies (✓)	N.A. (✓)
- Test is to be performed before and after the corrosion test;		✓	
- The samples are filled with water and slowly pressurised;			✓
- The samples surface show no visible cracks as a result of this test;		✓	
- Retest a new sample with a pressure gauge with accuracy ±5%, if samples have failed			✓

Test Results	Requirement				sample no. 600359A		sample no. 600359B		sample no.:	
	Before/after Corrosion *				before	After	before	after	before	after
Moment of test										
Classification of component*	1	2	2A	3	1		2A			
Test pressure (kPa) *	6750	1015	270	6750	6750		270			
Test time	≥ 1min				5		5			
Rupture	No				No		No			
Permanent distortion	No				No		No			
Test dated	To be monitored				5-9-00		5-9-00			

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

* Cross out which is not applicable

Document: WV_NL-LPG.010, dated	Initials: <i>Kern</i>
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Date: 31-10-2000	HYDROSTATIC STRENGTH	GASTEC
Report Number: 120712		Page: RS 3/00

Type/Sample No.:	704801 (Turbo)
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	4		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Hydraulic pressure equipment	109917	NA	✓
Pressure gauge, when tested pneumatically	100666/102148	✓	✓
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders,, reference CP16-3.			
		Complies (✓)	N.A. (✓)
- Test is to be performed before and after the corrosion test;		✓	✓
- The samples are filled with water and slowly pressurised;			✓
- The samples surface show no visible cracks as a result of this test;		✓	
- Retest a new sample with a pressure gauge with accuracy +5%, if samples have failed			✓

Test Results	Requirement				sample no.: 600360A		sample no.: 600360B		sample no.:	
Moment of test	Before/after Corrosion *				before	After	before	after	before	after
Classification of component*	1	2	2A	3	1	1	2A	2A		
Test pressure (kPa) *	6750	1015	270	6750	6750	6750	270	270		
Test time	≥ 1min				5	5	5	5		
Rupture	No				No	No	No	No		
Permanent distortion	No				No	No	No	No		
Test dated	To be monitored				5-9-00	2-10-00	5-9-00	2-10-00		

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

* Cross out which is not applicable

Document: WV_NL-LPG.010, dated	Initials: Ken
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Date: 31-10-2000	HYDROSTATIC STRENGTH	
Report Number: 120712		Page: RS 4/00

Type/Sample No.:	704902
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	4		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Hydraulic pressure equipment	109917	N/A	✓
Pressure gauge, when tested pneumatically	100666/2848	✓	✓
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders,, reference CP16-3.			
		Complies (✓)	N.A. (✓)
- Test is to be performed before and after the corrosion test;		✓	
- The samples are filled with water and slowly pressurised;			✓
- The samples surface show no visible cracks as a result of this test;		✓	
- Retest a new sample with a pressure gauge with accuracy +5%, if samples have failed			✓

Test Results	Requirement				sample no. 600361A		sample no. 600361B		sample no.:	
Moment of test	Before/after Corrosion *				before	After	before	after	before	after
Classification of component*	1	2	2A	3	1	1	2A	2A		
Test pressure (kPa) *	6750	1015	270	6750	6750	6750	270	270		
Test time	≥ 1min				5	5	5	5		
Rupture	No				No	No	No	No		
Permanent distortion	No				No	No	No	No		
Test dated	To be monitored				5-9-00	2-10-00	5-9-00	2-10-00		

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

* Cross out which is not applicable

Test date:	Document: WV_NL-LPG.010, dated	Initials: Ken
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120712		Page: RS 5/00

Type/Sample No.:	704701
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638	✓	✓
Cooler	200444 / 820	✓	✓
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement		sample no.: 6000352A					
Test temperature			room temperature		65°C/120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance / cycle test		before	after	before	after	before	after
Classification of component *	1	2	2A	3	1	1	1	1
Test pressure (kPa) *	4500	675	180	6750	4500	4500	4500	4500
External leakage	≤ 15cc/h		0	0	0	0	0	0
Test date	To be monitored		5-9-00	2-10-00	6-9-00		5-9-00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		
After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

Document: WV_NL_LPG.020 dated	Initials: Ken
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120712		Page: RS 6/00

Type/Sample No.:	704701
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638	✓	✓
Cooler	2004447 820	✓	✓
Pressure gauge	100666 / 108148	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bumble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement				sample no.: C000358B					
Test temperature					room temperature		65°C / 120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance test				before	after	before	after	before	after
Classification of component *	1	2	2A	3	2A		2A		2A	
Test pressure (kPa) *	4500	675	180	6750	180		180		180	
External leakage	≤ 15cc/h				0		0		0	
Test date	To be monitored				5-9-00		6-9-00		5-9-00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		
After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

:	Document: WV_NL_LPG.020 dated	Initials: Vem
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120712		Page: RS 7/00

Type/Sample No.:	704702 (super)
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638	✓	✓
Cooler	200444 / 820	✓	✓
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;			
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;			
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;			
- When air bumble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			

Test Results	Requirement				sample no.: 6000359 A					
Test temperature					room temperature		-65°C / 120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance test				before	after	before	after	before	after
Classification of component *	1	2	2A	3	1		1		1	
Test pressure (kPa) *	4500	675	180	6750	4500		4500		4500	
External leakage	≤ 15cc/h				0		0		0	
Test date	To be monitored				5-9-00		6-9-00		5-9-00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		
After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

:	Document: WV_NL_LPG.020 dated	Initials: low
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120712		Page: RS 8/00

Type/Sample No.:	704801 (Turbo)
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638	✓	✓
Cooler	.200444 / 820	✓	✓
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bumble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement				sample no.: C000360A			
Test temperature					room temperature		-65°C / 120°C *	
Moment of test *	Corrosion /-creep /-endurance test				before	after	before	after
Classification of component *	1	2	2A	3	1	1	1	1
Test pressure (kPa) *	4500	675	180	6750	4500	4500	4500	4500
External leakage	≤ 15cc/h				0	0	0	0
Test date	To be monitored				5-9-00	2-10-00	6-9-00	3-10-00

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks: After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

:	Document: WV_NL_LPG.020 dated	Initials: Van
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120712		Page: RS 9/00

Type/Sample No.:	704902
------------------	--------

Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638	✓	✓
Cooler	2004447 820	✓	✓
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement				sample no.: 6000361 A					
Test temperature					room temperature		65°C / 120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance test				before	after	before	after	before	after
Classification of component *	1	2	2A	3	1	1	1	1	1	1
Test pressure (kPa) *	4500	675	180	6750	4500	4500	4500	4500	4500	4500
External leakage	≤ 15cc/h				0	0	0	0	0	0
Test date	To be monitored				5-9-00	2-10-00	6-9-00	3-10-00	5-9-00	4-10-00

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		
After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

:	Document: WV_NL_LPG.020 dated	Initials: K
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Date: 31-10-2000	CORROSION TESTS (Salt spray)	GASTEC
Report Number: 120712		Page RS 10/00

Type/Sample No.:	704801 // 704902
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	12.1		
Operating instructions*:			
Task instructions*:	ISO 9227		
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Salt spray equipment			✓
Stopwatch			
Thermometer	100717/101947	✓	✓
Test Conditions			
Safety precautions:-			
		Complies (✓)	N.A. (✓)
- Before testing the sample is cleaned and dried at ambient temperatures < 40 °C		✓	
- All connections and openings are closed		✓	
- During testing the sodium chloride concentration is 50±5gr/L		✓	
- The average rate of collection of solution is checked (1-2ml/h/80cm ²)		✓	
- After testing the sample is cleaned and dried at ambient temperatures < 40 °C		✓	

Test results	Requirement	Sample no.: 360A/B	Sample no.: 361A/B
Date and time starting the test	Timing aspects to be monitored	Sept 00	Sept 00
Date and time stopping the test	Timing aspects to be monitored	Sept 00	Sept 00
Salt spray testing time	144 h	144	144
Ambient temperature during testing	35±2°C	35	35
Store time at room temperature	0,5-1h	1	1
Test to be performed after the endurance test are:			
Hydrostatic strength	According to 15.4	See page RS3.100	See page RS4.100
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RS8.100	See page RS9.100

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

* Cross out which is not applicable

Document: WV_NL_LPG.060	Initials: <i>Ve</i>
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Date: 31-10-2000	HEAT EXCHANGE MEDIUM, Leak tightness and compability	GASTEC
Report Number: 120712		Page: RS 11/00

Type/Sample No.:	704701 / 704702
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:			
Article:			
General design rule:	6.15.4, Pressure test		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)
Pressure gauge		884	✓
Test Conditions			
		Complies (✓)	N.A. (✓)
- The samples are slowly pressurised;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement	sample no.: 358A	sample no.: 359A	sample no.:
Test pressure (kPa) *	200	200	200	
Test time	≥ 1min	1	1	
Leakage	No	No	No	


General design rule:	6.15.4, Fluid compatibility			
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)	Operation OK (✓)
Balance		101489		
Test Conditions				
		Complies (✓)	N.A. (✓)	
- After each test zero point of the balance is checked				
- When the test sample is provided with inlayers, these inlayers shall not affect the weight of the test sample.				

Test Results	Weight before Immersion	Weight after immersion 72 h in Glycocol at 120°C	Weight loss	Decohesion Yes/No*
Sample description				
1				
2				
3				

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

* Cross out which is not applicable

Test date:		Initials: <i>Ken</i>
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Date: 31-10-2000	SEAT LEAKAGE	
Report Number: 120712		Page: RS 12/00

Type/Sample No.:	704701 / 704702 / 704801
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	8		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Flow meter (for metal to metal seat only)			
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- Safety rules for high pressures Gastec reference HP1			
- Safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- Seat leakage is tested after testing the external leakage;		✓	
- The sample is submerged in water (metal to metal seats excluded) and slowly pressurised;		✓	
- The test is performed at room temperature		✓	
- The test time is at least 120 sec, preferred is 900 sec;		✓	
- When air bumble(s) are detected after 120 sec, seat leakage is considered to be above the limits (for metal to metal seats leakage shall be less than 500 cc/h, as indicated below).			✓

Test Results	Requirement			sample no.: 358A		sample no.: 359A		sample no.: 360A	
Moment of test	Endurance test			before	after	before	after	before	after
Test pressure (kPa) *	0- 3000	50-3000	0-2300	0-3000	0-3000	0-3000		0-3000	
Seat leakage *	No air bubble(s) / < 500 cc/h			0	0	0		0	
Test date	To be monitored			5-9-00	2-10-00	5-9-00		5-9-00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks: After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

Document: WV_NL_LPG.030 dated	Initials: <i>Ken</i>
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Date: 31-10-2000	Endurance test	GASTEC
Report Number: 120712		Page: RS 13/00

Type/Sample No.:	704701
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	9		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Robot			
Life test device			✓
Pressure gauge	100666	✓	✓
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The test is performed at a rate of no more than 10 times per minute;		✓	
- For a shut-off valve the outlet is plugged, the samples are filled with n-hexane and the inlet is subjected to 3.000 kPa;			✓
- A separator is used to prevent mixture of the n-hexane with the test pressure (air);			✓

Test Results	Requirement				sample no.: 358A	sample no.:	sample no.:
Classification of component *	1	2	2A	3	1		
Test pressure (kPa) *	3.000	450	120	3000	3000		
Date & time starting the test	To be monitored				Sept-2000		
Date & time stopping the test	To be monitored				Sept 2000		
Actual cycles performed *	Test cycles > 6.000 times Test cycles > 20.000 times				20.000		
Test to be performed after the endurance test are:							
External leakage	According to annex 15.5		See RS 5.00		See RS/.	See RS/.	
Seat leakage	According to annex 15.8		See RS 12.00		See RS/.	See RS/.	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks: endurance test shut-off valve		

* Cross out which is not applicable

Document: WV_NL_LPG.040 dated	Initials: Ven
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Date: 31-10-2000	EXTERNAL LEAKTIGHTNESS LPG COMPONENTS, including high and low temperature	GASTEC
Report Number: 120 712		Page: RS 14/00

Type/Sample No.:	704701
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Tested in accordance with:			
Approval requirement:	Regulation 67 01: January 1999		
Annex:	15		
Article:	5, 6, 7		
Operating instructions*:			
Task instructions*:			
Interpretations*:			
Testing Equipment (when no accuracy is specified the Gastec standard applies)	Gastec no.	Calibrated (✓)	Operation OK (✓)
Oven	1638		
Cooler	200444 / 820	✓	✓
Pressure gauge	100666	✓	✓
Leakage gauge			
Stopwatch			
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature;		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bumble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement		sample no.: 0000 358 C					
Test temperature			room temperature		65°C / 120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance / cycle test		before	after	before	after	before	after
Classification of component *	1	2	2A	3			1	
Test pressure (kPa) *	4500	675	180	6750			4500	
External leakage	≤ 15cc/h						0	
Test date	To be monitored						12-10-00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks: New sample with only Viton rubber parts After the endurance test, leakage testing is only needed at room temperature.		

* Cross out which is not applicable

Document: WV_NL_LPG.020 dated	Initials: Ven
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TNO Industrie

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GASTEC N.V.

t.a.v. de heer Rob van Aerde

Postbus 137

7300 AC APELDOORN

Doorkiesnummer

015 2694710

Datum

12 september 2000

Faxnummer

055-5393685

Ons nummer

BU4.00/038204-1/DM

Onderwerp

Beperkte beoordeling van een monster rubberen plaatmateriaal

Opdrachtnummer: 007.50240/01.46.01

Uw brief

AE/04G/00

Geachte heer Van Aerde,

Hierbij ontvangt u de resultaten van een onderzoek aan rubberplaatmateriaal bestemd voor LPG-toepassingen volgens Regulation 67.01 annex 15 § 13 (resistance to dry heat) en annex 15 § 14 (ageing).

Monsters

TNO monsternummer

00.0744/1

00.0744/2

omschrijving

1 monster rubberen proefplaten, Viton, fabricaat Lovato

1 monster rubberen proefplaten, NBR, fabricaat Lovato

Datum ontvangst monster:

24 juli 2000

Resultaten

De resultaten zijn samengevat in de tabel op bladzijde 2.

Conclusie

Monster 00.0744/1 voldoet op de onderzochte punten aan de gestelde eisen;

Monster 00.0744/2 voldoet op de onderzochte punten niet aan de gestelde eisen omdat de verandering van de rek bij breuk na veroudering te groot is.

Wij vertrouwen u hiermee van dienst te zijn geweest.

Met vriendelijke groet,
Divisie Productonderzoek

Dirk-Jan Molenaar
Technical Consultant Rubber

Aantal pagina's 2

Jaap Havinga
Werkgroepleider Rubber

Nederlandsche Organisatie voor toegepast-
natuurwetenschappelijk onderzoek

Op opdrachten aan TNO zijn van toepassing de Algemene
Voorwaarden voor onderzoekopdrachten aan TNO
zoals gedeponeerd bij de Afdeling Registratie
Kamer van Koophandel te 's-Gravenhage.

TNO Industrie is een fusie van TNO Kunststoffen en
Rubber Instituut/Branchecentra, TNO Metaal Instituut
en TNO Produktcentrum.

Tabel 1 Resultaten

Eigenschap	Methode	Resultaat		Eis
		00.0744/1	00.0744/2	
Treksterkte [MPa]	ISO 37			
- als ontvangen		7,0	15,5	
- na 168 uur bij 120 °C	ISO 188	7,0	17,0	
verandering [%]		0	+10	max. +25
Rek bij breuk [%]	ISO 37			
- als ontvangen		380	350	
- na 168 uur bij 120 °C	ISO 188	345	125	
verandering [%]		-9	-64	max. +10/-30
Ozonbestendigheid 120 uur, 40 °C, 50 pphm	ISO 1431/1	geen aantasting	geen aantasting	geen aantasting

* note: only Viton will be used, see declaration intetabs



CERISIE

Laboratorio per la Certificazione e Ricerca
sui Sistemi Elastomerici
con il patrocinio del C.N.R.

Spett.Le

TUMEDEI S.p.A.

Via Bolzano, 12

Data 4 luglio 2000
RP n° 312/F
Rif. PP/kp - 15.06.2000

38061 ALA (TN)

Ricevuto il 16.06.2000 Data inizio prove: 16.06.2000 Data fine prove: 04.07.2000 Pag. 1 di 1

R A P P O R T O D I P R O V A

Oggetto: PROVE FISICO-MECCANICHE SU UN CAMPIONE DI TESSUTO GOMMATO PER LA VERIFICA DELLA CONFORMITA' AL REGOLAMENTO 67 (COMPONENTI PER GPL) E AL R. 67/02 (COMPONENTI PER LIQUIDO REFRIGERANTE)

TESSUTO GOMMATO

NN 200 47 B 236N

Metodi di prova

NBR/NYLON a spessore 2 mm

Compatibilità al GPL

ISO 1817/99

- | | | |
|--|---|-------|
| • variazione di volume dopo immersione in n.pentano per 72 ore 23°C | % | +3,96 |
| • variazione di massa dopo immersione in n.pentano per 72 ore 23°C e successivo essiccamento per 48 ore a 40°C | % | -3,09 |

Resistenza al caldo secco per 168 ore a 120°C

ISO 188/98

Variazione della resistenza a rottura

ASTM D 751/95

- | | | |
|-----------------------|---|-----|
| • senso longitudinale | % | +10 |
| • senso trasversale | % | +5 |

Variazione dell'allungamento a rottura

ASTM D 751/95

- | | | |
|-----------------------|---|-----|
| • senso longitudinale | % | -14 |
| • senso trasversale | % | -19 |

CERISIE

Laboratorio per la Certificazione e Ricerca
sui Sistemi Elastomerici
con il patrocinio del C.N.R.

Data, 4 luglio 2000

RP n° 312/F

Pag. 2 di 2

R A P P O R T O D I P R O V A

TESSUTO GOMMATO

NBR/NYLON a spessore 2 mm

NN 200 47 B 236N

Metodi di
prova

Compatibilità con il liquido refrigerante
(acqua/glicole etilenico 50/50 v/v)

ISO 1817/99

- | | | |
|---|---|-------|
| • variazione di massa dopo immersione nel liquido refrigerante per 168 ore a 90°C | % | +4,38 |
| • variazione di volume dopo immersione nel liquido refrigerante per 168 ore a 90°C | % | +3,46 |
| • variazione della resistenza a rottura dopo immersione in liquido refrigerante per 168 ore a 90°C e successivo essiccamento per 48 ore a 40°C | | |
| - senso longitudinale | % | -3 |
| - senso trasversale | % | -5 |
| • variazione dell'allungamento a rottura dopo immersione in liquido refrigerante per 168 ore a 90°C e successivo essiccamento per 48 ore a 40°C | | |
| - senso longitudinale | % | -4 |
| - senso trasversale | % | -6 |

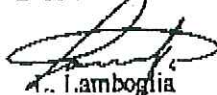
ASTM D
751/95ASTM D
751/95

Commento: Sulla base dei risultati ottenuti si attesta che il campione di tessuto gommano denominato NN 200 47 B 236N è conforme al Regolamento 67 (componenti per gas petrolio liquefatto) paragrafi 11 e 13 dell'Allegato n° 15 nonché alla proposta di test di invecchiamento in liquido refrigerante.

I risultati ottenuti si riferiscono esclusivamente al campione provato

Il presente rapporto di prova non può essere riprodotto parzialmente salvo approvazione del Laboratorio

L'OPERATORE

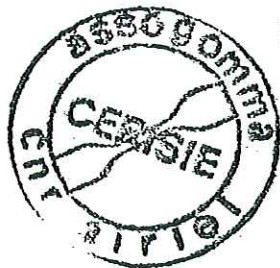

A. Lamboglia


IL DIRETTORE


F. Casa

CERISIE

Laboratorio per la Certificazione e Ricerca
sui Sistemi Elastomerici
con il patrocinio del C.N.R.



Spett.Le

TUMEDEI S.p.A.

Via Bolzano, 12

38061 ALA (TN)

Data, 3 febbraio 2000
RP n° 012
Rif. PP/kp del 14.01.2000

Ricevuto il 17.01.2000 Data inizio prove: 24.01.2000 Data fine prove: 01.02.2000 Pag. 1 di 1

R A P P O R T O D I P R O V A

Oggetto: PROVE FISICO-MECCANICHE SU UN CAMPIONE DI TESSUTO GOMMATO PER VERIFICA CONFORMITA' AL REGOLAMENTO 67 (COMPONENTI PER GPL)

TESSUTO GOMMATO

CTG PP 2016 B186 E

Metodi di prova

Compatibilità al GPL

ISO 1817/99

- variazione di volume dopo immersione in n.pentano per 72 ore 23°C % +9,33
- variazione di massa dopo immersione in n.pentano per 72 ore 23°C e successivo essiccamento per 48 ore a 40°C % -4,24

Resistenza all'ozono

nessuna screpolatura
visibile a 2 X

ISO 1431/1/89

(50 ppcm, 40°C, 20% All. 120 ore)

Resistenza al caldo secco per 168 ore a 120°C

ISO 188/98

Prova di trazione

ASTM D 751/95

- Senso longitudinale
 - variazione della resistenza a rottura % +1
 - variazione dell'allungamento a rottura % +6
- Senso trasversale
 - variazione della resistenza a rottura % +1
 - variazione dell'allungamento a rottura % +3

Commento: Sulla base dei risultati ottenuti si attesta che il tessuto gommato a codice TUMEDEI CTG PP2016B186E è conforme al Regolamento 67 (componenti per gas petrolio liquefatto) paragrafi 11 - 13 - 14 dell'Allegato n° 15.

I risultati ottenuti si riferiscono esclusivamente al campione provato.

Il presente rapporto di prova non può essere riprodotto parzialmente salvo approvazione del Laboratorio.

L'OPERATORE

L. Lamboglia

IL DIRETTORE

F. Casa



CERISIE

Laboratorio per la Certificazione e Ricerca
sui Sistemi Elastomerici
con il patrocinio del C.N.R.

Spett.Le

TUMEDEI S.p.A.

Via Bolzano, 12

38061 ALA (TN)

Data, 4 luglio 2000
RP n° 312/B
Rif. PP/kp - 15.06.2000

Ricevuto il 16.06.2000 Data inizio prove: 16.06.2000 Data fine prove: 04.07.2000 Pag. 1 di 1

R A P P O R T O D I P R O V A

Oggetto: COMPATIBILITA' CON IL GPL DI UN CAMPIONE DI GOMMA VULCANIZZATA PER LA VERIFICA DELLA CONFORMITA' AL REGOLAMENTO 67 (COMPONENTI PER GPL)

GOMMA VULCANIZZATA
VITON 70-75 ShA

10.002 LN

Metodi di prova

Compatibilità al GPL

ISO 1817/99

- | | | |
|--|---|-------|
| • variazione di volume dopo immersione in n.pentano per 72 ore 23°C | % | +0,70 |
| • variazione di massa dopo immersione in n.pentano per 72 ore 23°C e successivo essiccamento per 48 ore a 40°C | % | +0,06 |

Commento: Sulla base dei risultati ottenuti si attesta che il campione di gomma vulcanizzata denominato VITON 70-75 ShA 10.002 LN è conforme al Regolamento 67 (componenti per gas petrolio liquefatto) paragrafo 11 dell'Allegato n° 15.

I risultati ottenuti si riferiscono esclusivamente al campione provato.

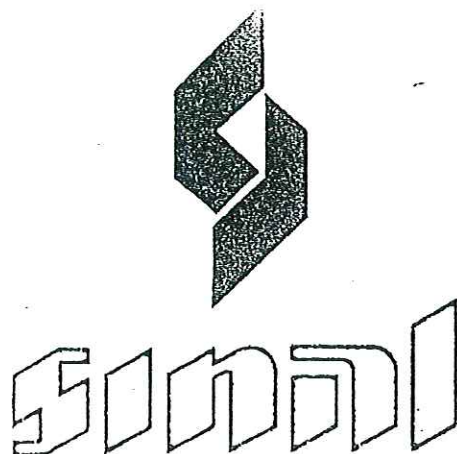
Il presente rapporto di prova non può essere riprodotto parzialmente salvo approvazione del Laboratorio.

L'OPERATORE

L. Lamboglia

IL DIRETTORE

P. Casa



Sistema Nazionale per l'Accreditamento di Laboratori

CERTIFICATO DI ACCREDITAMENTO

Numero di Accreditamento

0 0 4 8

Si certifica che

**Il Laboratorio CERISIE - CERTIFICAZIONE E
RICERCA SISTEMI ELASTOMERICI**

Via Privata Cadore 13 - 20098 S. Giuliano Mil. - MI

è accreditato dal SINAL per l'esecuzione delle prove il cui dettaglio è riportato nelle schede che accompagnano questo certificato e che riportano il numero di accreditamento sopra citato. Le schede possono subire variazioni nel corso del tempo.

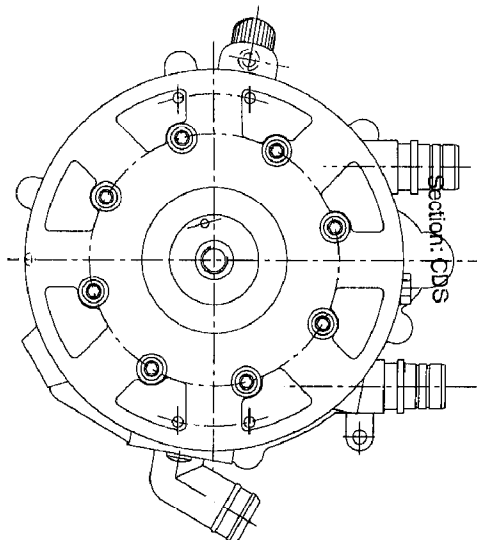
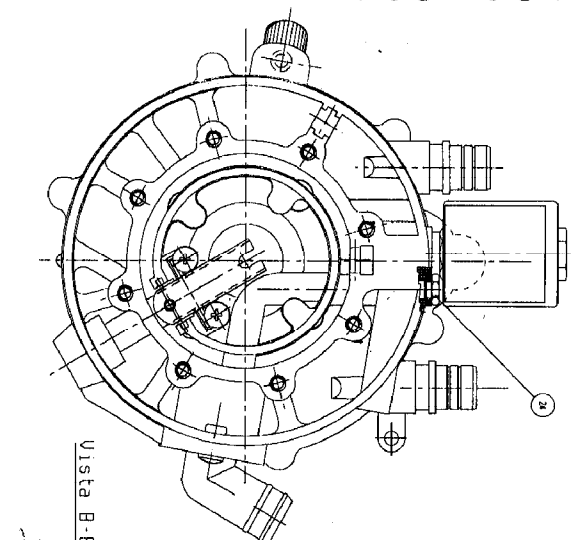
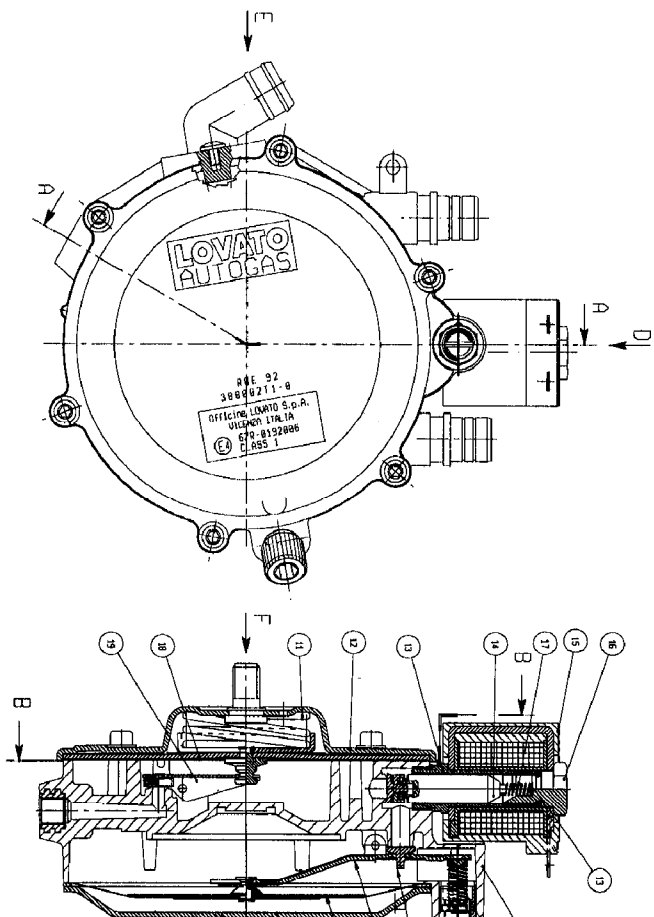
L'accREDITAMENTO comporta la verifica della competenza tecnica del Laboratorio relativamente alle prove accreditate e del suo Sistema Qualità, in conformità alle prescrizioni della norma UNI CEI EN 45001 e ai criteri applicabili delle norme UNI EN ISO serie 9000.

L'accREDITAMENTO resta in vigore fino a Marzo 2001 come previsto dalla convenzione stipulata fra il SINAL ed Laboratorio in oggetto sempre che il Laboratorio conservi la conformità alle prescrizioni del Regolamento generale e delle regole particolari SINAL applicabili alla fattispecie.

Il Direttore

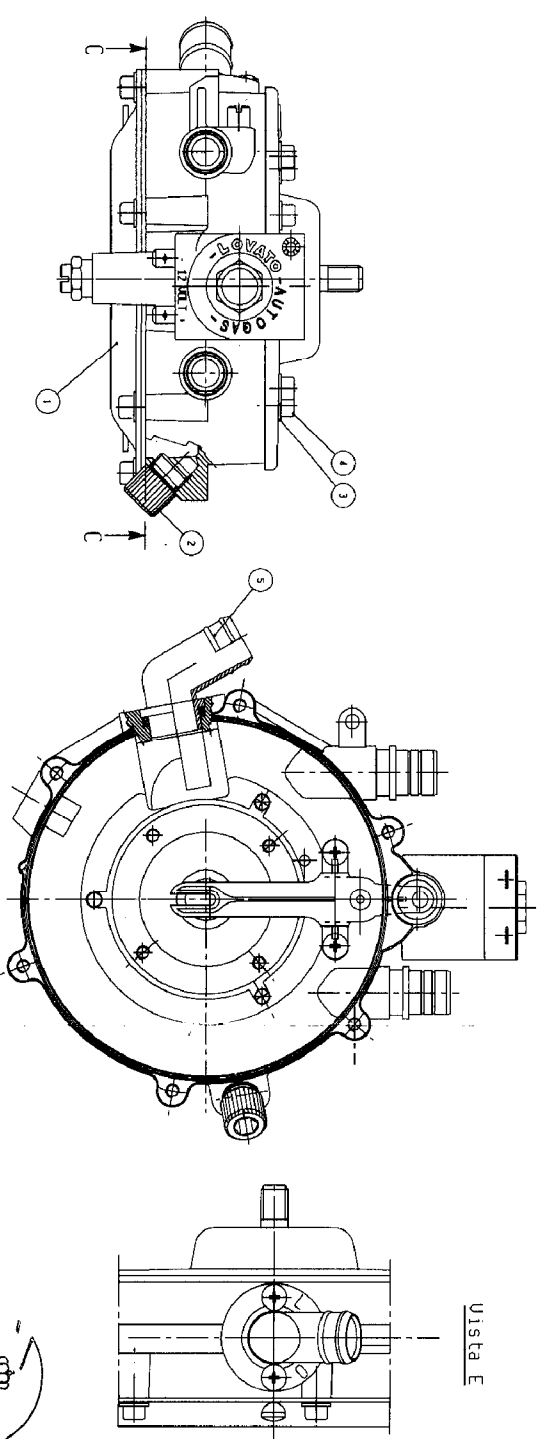
Il Presidente

SEZ. A-A



Vista F

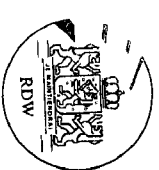
LOVATO
AUTOGAS
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Vista D

Vista C-C

Vista E

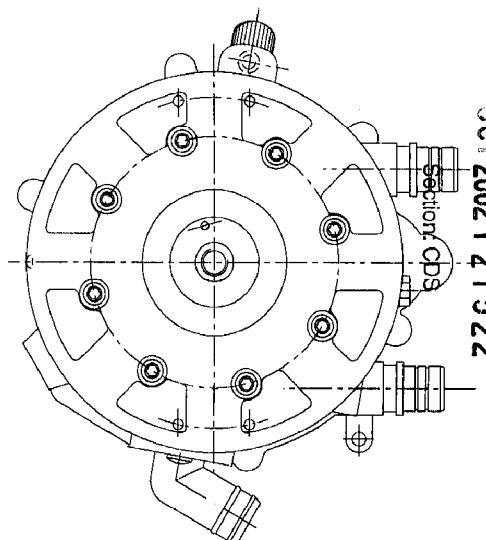
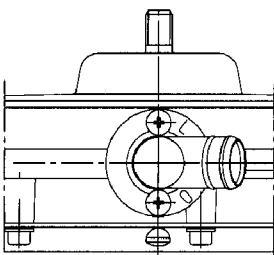


Pos.	Descrizione	Quantità	Unità	Materiali	Disegnato	Verificato	Approvato
24	48/866K	1	NO	1			
23	421566K	1	NO	1			
22	321512	1	NO	1			
21	321518	1	NO	1			
20	48/819K	1	NO	1			
19	321832	1	NO	1			
18	421555	1	NO	1			
17	321589	1	NO	1			
16	423871K	1	NO	1			
15	521515	1	NO	1			
14	421576	1	NO	1			
13	421556K	1	NO	1			
12	421571	1	NO	1			
11	321517	1	NO	1			
10	421556	1	NO	1			
9	521581	1	NO	1			
8	138023	1	NO	1			
7	132326	1	NO	1			
6	421528K	1	NO	1			
5	421528K	1	NO	1			
4	132482	1	NO	1			
3	132229	1	NO	1			
2	421527K	1	NO	1			
1	321558K	1	NO	1			
Disegnato: RDW							
Verificato: RDW							
Approvato: RDW							

LOVATO
AUTOGAS
RIDIUTORE GPL SUPER HP 66/R1
MODELLO
604912K
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Section: PDS

Wista F

Vista C-C

Vista D



Pos.	Codice	Descrizione	Unit
2	1497096K	TAPPO CHIAVIURA ATT. D'OPERA. C/OP	NR
3	21421596K	MENBRANA 2-ST. R/G 688 CM.	NR
2	32321512	COMP.BIL. 21 ST. R/688 21CM40	NR
2	32321512	PASTIGLIA BILANC. 2-ST. 96 RINE.	NR
26	48481919K	VAL. REGISTRATO MINIMO COMP. SUPERMINI40 C/OP	NR
15	32321032	MOLLA REC. MINIMO DI 0.58 CL/8	NR
16	42321555	COMP. ROE.92 SUPER MIN.	NR
17	32321555	MOLLA ELETTRON. REC. SUPERMINI40	NR
18	42321555	MOLLA ELETTRON. REC. SUPERMINI40 C/OP	NR
19	32321575	MOLLA ST.92 REC. 400.100	NR
13	42321555K	MOLLA 1000. DEP. EL. ANST. COM	NR
13	42321555K	COMPONENTE ELETTRON. 96 C/OP	NR
12	42321571	MOLLA ELETTRON. 1 ST. 65CM4 COMP.21H	NR
11	32321572	COMP. REC. 3	NR
11	32321572	MOLLA EL. ST. R/6580 DEP. 0.3	NR
18	42321556	MENBRANA 1-ST.100CM. COMPL. REC. 94	NR
9	521501	BILANCIERE 11ST. COMPL. R/6580	NR
7	1338923	PESSO SENZA TESTA	PZ
6	1337326	UTILE TC. C/TESTA DI 9.5 ANSILI	NR
5	4232598K	PIPA USCITA GAS ROES 0.9 C/OP	NR
4	1337407	UTILE TCEI H5X14.1MM 5931	NR
3	1337229	ROSETTA C/OP.0.5X11X1H20CM.	NR
2	4232527K	TAPPO SCARICO OLIO 10X11X1CM	NR
1	1337658K	COERCHIO 2-ST.10D. P/6580 DMS5	NR
Pos.	Codice	Descrizione	Unit

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CASTLE
JUL 2002 12 15 22

Section: CDS

RIDUTTORE GPL SUPER HP E67R1 LOVTEC MOD. RE-02

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