



<i>Technical Report No:</i>	09-00099-UA-GBM-00	2009-04-23
<i>Manufacturer:</i>	SSP Fittings Corp.	AM-UAA1/GAR-bb
<i>Type:</i>	Various CNG Fittings	Page 1 of 8

TECHNICAL REPORT

No.: 09-00099-UA-GBM-00

About the Tests of Various CNG Fittings, Class 0, for CNG-Vehicles
According:

ECE-Regulation No. 110

- „UNIFORM PROVISIONS CONCERNING THE APPROVAL OF:
I. SPECIFIC COMPONENTS OF MOTOR VEHICLES USING COMPRESSED NATURAL GAS
(CNG) IN
THEIR PROPULSION SYSTEM;
II. VEHICLES WITH REGARD TO THE INSTALLATION OF SPECIFIC COMPONENTS
OF AN APPROVED TYPE FOR THE USE OF COMPRESSED NATURAL GAS (CNG)
IN THEIR PROPULSION SYSTEM“

dated 2000-12-28, incl. supplement 7, revision 1





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1. General

1.	Make:	SSP Fittings, Inc.
2.	Article:	Various CNG Fittings
3.	Type:	Duolok, Griplok & Soft Seal SAE offered in various end types and sizes
4.	Operating conditions:	Class 0, Service Pressure 25 & 35 MPa (3,625 & 5,076 psig) at 15°C (size dependant) Working Pressure 32,5 & 45,5 MPa (4,713 & 6,598 psig) (size dependant) Operating Temperatures -40°C to 85°C Maximum number of pressure cycles: 50000
5.	Name and address of the manufacturer:	SSP Fittings Corp. 8250 Boyle Parkway Twinsburg, OH 44087
6.	Name and address of the manufacturing plant:	Same as Manufacturer
7.	Test specification:	ECE-Regulation No. 110 in force since 2000-12-28, incl. supplement 7, revision 1.





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2. Technical Description of the CNG Fittings

1.	Article:	Various CNG Fittings
2.	Material:	See Annex 2 "Fitting materials and tube sizes"
3.	Dimensions:	See Annex 3 "Fitting end types and sizes"
4.	Other:	<p>The purpose of this qualification program is to certify the various families (Duolok, Griplok and Soft Seal SAE) of SSP Fittings Corp. CNG fittings offered in various end types and sizes.</p> <p>The Duolok are double ferrule tube fittings interchangeable with the Swagelok and Parker A lok brand.</p> <p>The Griplok are double ferrule tube fittings interchangeable with the Hoke and Gyrolok brand.</p> <p>The Soft Seal SAE fittings are SAE tube fittings.</p> <p>Complete description of the various CNG fittings included within the scope of this approval can be found in Annexes 4 through 8.</p> <p>Due to the multitude of different components which are part of this approval, and the various possibilities of different combinations of these components respectively, a sample plan was developed which takes into account various sizes and types of components. Complete description of the various CNG fittings tested under this approval can be found in Annexes 9 through 11.</p>





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3. Application Documents

Not applicable.

4. Test samples

See "Annex 1 of Technical Report No.: 09-00099-UA-GBM-00 - Test results", dated 2009-04-07, for the tests performed on various CNG Fittings according to ECE-Regulation No.:110, Part 1, Annex 5.

5. Performed Tests

The tests performed are marked as "X" in the following table in accordance with ECE-R 110, annex 5, table 5.1.





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ECE-R 110 Annex 5	Test description	Performed on fittings within scope
5A	Overpressure test (strength test)	X
5B	External leakage test	X
5D	CNG compatibility test	X
5E	Corrosion resistance test	X
5F	Resistance to dry heat test	X
5G	Ozone ageing test	X
5L	Durability test	X
5N	Vibration resistance test	X





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6. Test results

The test results are summarized in Annex 1: "Annex 1 of Technical Report Nr. 09-00099-UA-GBM-00 - Test Results", dated 2009-04-07.

7. Summarizing confirmation

The components described in chapter 2 and the documentation submitted meet the requirements of the test specification.

Garching, 2009-04-23
TÜV SÜD Automotive GmbH


The inspector
Dipl.-Ing. Karim Kortländer





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List of Annexes

1. Annex 1 of Technical Report No.: 09-00099-UA-GBM-00 – Test Results, dated 2009-04-07
2. Annex 2 - Fitting materials and tube sizes of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
3. Annex 3 - Fitting end types and sizes of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
4. Annex 4 – Duolok 350 bar fittings of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
5. Annex 5 – Duolok 250 bar fittings of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
6. Annex 6 – Griplik 350 bar fittings of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
7. Annex 7 – Griplik 250 bar fittings of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
8. Annex 8 – Soft Seal SAE 350 bar fittings of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
9. Annex 9 – Duolok 250 / 350 bar fittings – Parts tested of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
10. Annex 10 – Griplik 250 / 350 bar fittings – Parts tested of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A
11. Annex 11 – Soft Seal SAE 350 bar – Parts tested of Technical Report No.: 09-00099-UA-GBM-00 Rev. N/A.

