

## EC TYPE-APPROVAL CERTIFICATE

Communication concerning:

- EC type-approval
- ~~extension of EC type approval~~
- ~~refusal of EC type approval~~
- ~~withdrawal of EC type approval~~

Of a type of Hydrogen component  
with regard to Regulation (EC) No 79/2009, as implemented by Regulation (EU) No 406/2010

EC Type-approval No: ***e24\*79/2009\*406/2010\*0033\*00***

Reason for extension: ***-N/A***

### SECTION I

- |       |   |   |
|-------|---|---|
| 0.1   | Make (trade name of manufacturer's):  | <b><i>DK-Lok Corporation</i></b>  |
| 0.2   | Type:   | <b><i>DK-Lok Fittings</i></b>   |
| 0.3   | Means of identification of type, if marked on the component:  | <b><i>N/A.</i></b>  |
| 0.3.1 | Location of that marking:   | <b><i>N/A.</i></b>  |
| 0.5   | Name and address of manufacturer:   | <b><i>DK-Lok Corporation<br/>7, Golden root-ro 129beon- gil,<br/>Juchon-myeon Gimhae-si,<br/>Gyeongsangnam-do 50969<br/>Republic of Korea</i></b> |
| 0.7   | In the case of components and separate technical units,<br>location and method of affixing of the EC approval mark: | <b><i>On the fittings and done via laser<br/>marking</i></b>  |
| 0.8   | Address(es) of assembly plant(s):   | <b><i>DK-Lok Corporation<br/>7, Golden root-ro 129beon- gil,<br/>Juchon-myeon Gimhae-si,<br/>Gyeongsangnam-do 50969<br/>Republic of Korea</i></b> |

EC Type-approval No:

**e24\*79/2009\*406/2010\*0033\*00**

0.9 Name and address of the manufacturer's representative (if any):

**Timm Dagenbach,  
DK-Lok GmbH  
Leon – Rot, D-68789 Germany**

## **SECTION II**

1. Additional information (where applicable):

**See Addendum.**

2. Technical service responsible for carrying out the tests:

**TÜV SÜD Auto Service GmbH,  
Westendstraße 199,  
D-80686 München,  
Germany.**

3. Date of test report:

**16.05.2019**

4. Number of test report:

**19-00005-IS-MUC-00**

5. Remarks (if any):

**See Appendix.**

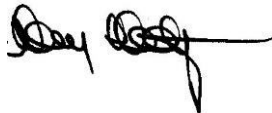
6. Place:

**Dublin.**

7. Date:

**10<sup>th</sup> June, 2019.**

8. Signature:



Attachments:

- Information package.
- Test report.

## Addendum

to EC Type Approval Certificate No.: e24\*79/2009\*406/2010\*0033\*00  
relating to EC component type-approval of a hydrogen component or system.

- |        |  |   |
|--------|--|---|
| 1.     | Additional information   |   |
| 1.1.   | <del>Hydrogen system designed to use liquid hydrogen / Hydrogen system designed to use compressed (gaseous) hydrogen / Hydrogen component designed to use liquid hydrogen / Hydrogen component designed to use compressed (gaseous) hydrogen</del> |   |
| 2.     | Specifications and test results:   | <b><i>See technical report<br/>19-00005-IS-MUC-00 and<br/>manufacturer's documentation.</i></b> |
| 2.1.   | Containers designed to use compressed (gaseous) hydrogen:  | <b><i>N/A.</i></b>  |
| 2.1.1. | Container material specifications:   | <b><i>N/A.</i></b>  |
| 2.1.2. | Container material test result:  | <b><i>N/A.</i></b>  |
| 2.1.3. | Container test results:  | <b><i>N/A.</i></b>  |
| 3.     | Restriction of use of the device (if any):   | <b><i>See technical report<br/>19-00005-IS-MUC-00 and<br/>manufacturer's documentation.</i></b> |
| 4.     | Remarks:   | <b><i>N/A.</i></b>  |

## **Index to the Information Package**

Date of issue: ***10<sup>th</sup> June, 2019.***

Date of latest amendment: ***N/A.***

Reason for extension/revision: ***N/A***

1. Additional conditions, and advisory  
notes on legal alternatives

2. Test report(s)

- numbers(s): ***19-00005-IS-MUC-00***

- date of issue: ***16.05.2019***

- date of latest amendment: ***N/A***

3. Information document

- number(s): ***Extension 00***

- date of issue: ***08.04.2019***

- date of latest amendment: ***N/A***

Documentation: ***152 pages***

**Appendix: Additional conditions, and advisory notes on legal alternatives**

**A: Additional conditions:**

1. The attached technical report, with any of its attachments, forms part of this Type Approval certificate.
2. Each type from series production shall be to the measurements specified in the attached drawings, and shall be manufactured only from the materials specified in the Approval documents.
3. Changes in the type are permitted only with the explicit permission of NSAI. Breaches of this requirement will lead to a withdrawal of the Type Approval, and in addition may be subject to criminal prosecution.
4. At regular intervals, any tests or associated checks prescribed by the applicable legislation to verify continued conformity with the approved type shall be carried out. The manufacturer shall demonstrate compliance with this by submitting to NSAI evidence of adequate arrangements and documented control plans for each type approved.
5. Any set of samples or test pieces showing evidence of non-conformity shall give rise to further sampling and testing and all steps shall be taken to restore conformity of production.
6. This Type Approval will expire when it is surrendered by the holder, or withdrawn by NSAI, or when the approved type no longer conforms to legal requirements. The recall of the Type Approval can be issued by NSAI when the conditions required for the issuing or continuation of the Type Approval are no longer current, or when the Approval holder is in breach of the duties attached to the Type Approval, or when it is established that the approved type no longer meets the requirements of traffic safety.
7. Changes in the company name, address or manufacturing site, as well as in any of the sales or other agents specified in the issuing of the approval must immediately be notified to NSAI.
8. The duties imposed by the issuing of this certificate are not transferable. The legal protection of third parties is not affected by this certificate.
9. When the manufacture or sale of the system, component or separate technical unit has not been started within one year of the date of issue of this certificate, then NSAI is to be informed. This requirement also applies when the manufacture or sale has been halted for more than one year, or when it ought to have been halted for more than one year. The initial commencement of manufacture or sale, or the resumption of manufacture or sale, shall then be notified to NSAI within one month of commencement or resumption.

**B: Legal Options:**

Any objection to the requirements set out in this certificate shall be made within one month of the date of issue. The objection shall be made, in writing, to NSAI in Dublin.



Test Report No.: 19-00005-IS-MUC-00  
Manufacturer: DK-Lok Corporation  
Type: Fittings, DK-Lok Fittings

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## TEST REPORT

No.: 19-00005-IS-MUC-00

About the Tests of Fittings Type DK-Lok Fittings,  
Class 0, for Hydrogen-Powered Motor Vehicles

According to:

### REGULATION (EC) No 79/2009

OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 14 January 2009  
on type-approval of hydrogen-powered motor vehicles,  
and amending Directive 2007/46/EC

and

Commission Regulation (EU) No 406/2010 of 26 April 2010

implementing Regulation (EC) No 79/2009 of the European Parliament and of the Council on type approval of hydrogen-powered motor vehicles

Approval status	
<input checked="" type="checkbox"/> Granting of a type approval no	
<input type="checkbox"/> Extension/correction to type approval no	



Test Report No.: 19-00005-IS-MUC-00  
Manufacturer: DK-Lok Corporation  
Type: Fittings, DK-Lok Fittings

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## 0. Reasons for Extension:

N/A. This is an initial Type Approval.

## I. General and Description

The Specific Component:

1.	H2-component considered <input checked="" type="checkbox"/> Designed to use CGH <input type="checkbox"/> Designed to use LH2	Fittings
2.	Make:	DK-Lok Corporation
3.	Type: Versions of Variants:	DK-Lok Fittings See "Scope of Approval - Description of fitting variants" in DO2019.04.08_DK-Lok_19-00005-IS-MUC-00_DK-Lok Fittings_Dwg of this report.
4.	Location of type marking	On the fittings and done via laser marking
5.	Name and address of the manufacturer:	DK-Lok Corporation 7, Golden root-ro 129beon-gil, Juchon-myeon Gimhae-si, Gyeongsangnam-do 50969 Republic of Korea
6.	Location and method of affixing of the EC-approval mark	On the fittings and done via laser marking
7.	Name and address of the manufacturer's representative (if any):	Timm Dagenbach ( <a href="mailto:Timm.dagenbach@dklok.de">Timm.dagenbach@dklok.de</a> ) DK-Lok GmbH Leon – Rot, D-68789 Germany
8.	Name and Address of Manufacturing plant:	DK-Lok Corporation 7, Golden root-ro 129beon-gil, Juchon-myeon Gimhae-si, Gyeongsangnam-do 50969 Republic of Korea
9.	Operating Conditions:	Nominal working pressure: 35,0 & 70,0 MPa @ 15°C (Class 0) – See DO2019.04.08_DK-Lok_19-00005-IS-MUC-00_DK-Lok Fittings_Dwg for specific pressure ratings.  Maximum allowable working pressure: 47,95 MPa & 95,90 MPa  Operating temperature: -40°C to +120°C
10.	Filling or Duty cycles (as appropriate)	50.000 duty cycles





Test Report No.: 19-00005-IS-MUC-00  
Manufacturer: DK-Lok Corporation  
Type: Fittings, DK-Lok Fittings

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was tested according to the requirements of Regulation (EC) No 79/2009 and Commission Regulation (EU) No 406/2010 of 26 April 2010.

## II. Information Folder

This Test Report is based on the following information:

- Application for the issue of a type approval by DK-Lok Corporation, Republic of Korea, *VG2019.04.08\_DK-Lok Fittings\_19-00005-IS-MUC-00\_DK-Lok Fittings*, dated 2019-02-15
- Declaration by the Manufacturer by DK-Lok Corporation, Republic of Korea, *DO2019.04.08\_DK-Lok Fittings\_19-00005-IS-MUC-00\_DK-Lok Fittings, decl by-manuf*, dated 2019-02-15
- Annex 1 to test report 19-00005-IS-MUC-00: *PB2019.04.08\_DK-Lok\_19-00005-IS-MUC-00\_DK-Lok Fittings*, dated 2019-04-08 – Test Results
- Information Document acc. to Regulation (EU) 406/2010, Annex II, Part I: *BB2019.04.08\_DK-Lok\_19-00005-IS-MUC-00\_DK-Lok Fittings*, dated 2019-04-08
- Scope of Approval-Drawings: *DO2019.04.08\_DK-Lok\_19-00005-IS-MUC-00\_DK-Lok Fittings\_Dwg* - Description of all fitting variants.

## III. Test Samples, Performed Tests and Test Results

The test samples, the performed tests and the test results are described and summarized in Annex 1 – Test Results.

## IV. Approval History (in case of extension)

	Content	Report No. and Date
Initial Component Testing	DK-Lok Fittings	19-00005-IS-MUC-00, 2019-04-08.





Test Report No.: 19-00005-IS-MUC-00  
Manufacturer: DK-Lok Corporation  
Type: Fittings, DK-Lok Fittings

2019-04-08  
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## V. Statement of Conformity

The information folder as mentioned under item II and the type described therein are in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".

The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.

This test report provides a summary of, and covers the full scope of, type testing, including the documentation of the vehicle/vehicle component.

Designated as Technical Service by:

Approval authority	Country	Registration-number	Actual scope list
Kraftfahrt-Bundesamt (KBA)	Deutschland/ Germany	KBA-P 00100-10	www.kba.de
Vehicle Certification Agency (VCA)	Vereintes Königreich/ United Kingdom	VCA-TS-006	http://ec.europa.eu/enterprise/sectors/automotive/approval-authorities-technical-services/technical-services/index_en.htm
Approval Authority of the Netherlands (RDW)	Niederlande/ The Netherlands	RDWT-082-XX	
National Standards Authority of Ireland (NSAI)	Irland/ Ireland	Technical Service Number: 49	
Vehicle Safety Certification Center (VSCC)	Taiwan/ Taiwan	DE04-06-2	http://www.vsc.org.tw/English/Default.aspx

Munich, 2019-05-16



Stefanie Schiefer  
The Authorized Signatory

### Annexes (see chapter II):

- Annex 1 – Test Results
- Annex 2 – Information Folder