Instructions for Use
Rev. 1

of ANSI NGV 2-2007
Type 1
Seamless Steel Cylinders

NGV2_LA4-1212

CNG ONLY... NOT USE AFTER 04/2029
MANUFACTURED IN: 04/2014
DOT FMVSS 304 / NGV 2-07 / TYPE 1
SERVICE PRESSURE: 2,098 lb/sq in (146 bar) / 29 F (21°C)

FOR USE ONLY WITH THE CONTAINER MANUFACTURER'S
APPROVED PRESSURE RELIEF DEVICE AND VALVES

THIS CONTAINER SHOULD BE VISUALLY INSPECTED AFTER A
MOTOR VEHICLE ACCIDENT, OR FIRE, AND AT LEAST EVERY 36
MONTHS OR 36,000 MILES, WHICHEVER COMES FIRST,
FOR DAMAGE AND DETERIORATION.

IF THERE IS A QUESTION ABOUT THE PROPER USE,
INSTALLATION OR MAINTENANCE OF THIS CONTAINER,
CONTACT:

CNG cylinders international
2331 Sturgis Road
Oxnard, CA 93036
Phone: +1 (805) 278-8060
Fax: +1 (805) 278-8090
info@cng.us.com
www.cng.us.com
Instructions for Use
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of ANSI NGV 2-2007
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Ladies and Gentlemen:

**CNG cylinders international** is a distributor for **VÍTKOVICE** brand cylinders in the US.

Please review the “**Instructions for Use**” manual for general information, installation and handling procedure.

Please contact us with any cylinder inspection questions or concerns you may have that may not be covered in the manual.

Our contact information is:

**CNG cylinders international LP**
2331 Sturgis Road
Oxnard, CA 93030

Phone: +1-805-278-8060
Fax: +1-805-278-8090

Email: safety@cng.us.com
Web: www.cng.us.com

Sincerely,

Siegfried Rivalta
President
**CNG cylinders international**
1. General

Cylinder drawing number: LA4-1212 rev. 0

Serial numbers of cylinder to which these Instructions for Use apply: xx-yy

Approved valve type which can be used for the cylinders specified above:

- EMER – Mark 552 type with 4,500 psi (310 MPa / 310 bar) maximum working pressure equipped with pressure relief device (PRD) with 230 °F ± 18 °F (110 °C ± 10 °C) activating temperature
- ROTAREX Eagle – 721-84209 type with 4,500 psi (310 MPa / 310 bar) maximum working pressure equipped with pressure relief device (PRD) with 230 °F ± 9 °F (110 °C ± 5 °C) activating temperature
- OMB Saleri – E2-BETA New type with 4,500 psi (310 MPa / 310 bar) maximum working pressure equipped with pressure relief device (PRD) with 226.4 °F ± 10.8 °F (108 °C ± 6 °C) activating temperature

Other valve type can be used only subject to additional fire testing in accordance with ANSI NGV 2 2007, section 16.9. The additional fire testing of the valve can be ordered by the user from VÍTKOVICE CYLINDERS a.s.

- These Instructions for Use are binding on holders and distributors of the cylinders specified above, car manufacturers, installation companies and car users by whom the cylinders are used as CNG tanks of fuel systems.
- The cylinders are designed for use as CNG fuel tanks in motor vehicles and shall not be used for any other purpose without the manufacturer’s consent.
- The installation of cylinders may be executed only by an authorized organization being a holder of licence for CNG fuel system installation or organization encharged by it. If the installation is not executed by an authorized organization the car conversion to CNG shall be subsequently approved by a competent authority in accordance with applicable legislation of the country where the vehicle is used.
(The cylinders are designed for installation in vehicles in accordance with ANSI/NFPA 52 Compressed Natural Gas Vehicular Fuel Systems Code, FMVSS No. 303 (49CFR571.303) Fuel System Integrity of Compressed Natural. Gas Vehicles and FMVSS No. 304 (49CFR671.304) Compressed Natural Gas Fuel Container Integrity or other equivalent standards.)

- It is prohibited to repair the cylinders by welding, heat the cylinder materials to temperatures higher than 300 °C, modify the cylinder construction or stamp or make any other cylinder modifications without the manufacturer’s consent.
- The manufacturer cannot be held responsible for any damage caused by the user’s failure to observe applicable regulations of the country where the vehicle is used or to follow these Instructions for Use.

2. Distribution

- The cylinder holder/distributor is obliged to provide the cylinder(s) together with these Instructions for Use. It is permitted by the manufacturer to make the necessary number of copies for this purpose.
- The car manufacturer / CNG fuel system installation company by which the cylinders are used is obliged to incorporate these Instructions for Use into its instruction manual for the motor vehicle / vehicle conversion to CNG.

3. References to Technical Standards and Regulations

- The cylinders are designed in accordance with ANSI NGV2-2007 and fabricated / tested in accordance with ANSI NGV2-2007. The inspection of cylinder installation and periodical inspections of the cylinders are subject to ANSI NGV2-2007, part 2.1.3; part 2.1.4 and CGA C - 6.4.
Cylinder marking

Znak a název výrobce
Manufacturer’s identity

Datum výroby
Manufacture date

Měsíční kód
Monthly code

Nominální objem
Nominal capacity

Typ láhví
Cylinder type

Sériové číslo a označení skupiny hutí
Serial number and marking of manufacturing plant

Kód značky láhve (listy)
Tube marking code (list)

Kód značky láhví
Cylinder marking code

Výrobí číslo a označení skupiny
Heat treatment number and marking of heat treatment group

NGV2_LA4-1212
4. Markings on Self-Adhesive Label

CNG ONLY – DO NOT USE AFTER 02/2029
MANUFACTURED IN - 02/2014
DOT FMVSS 304 / NGV 2-07 / TYPE 1
SERVICE PRESSURE: 24820 kPa (3600 psi) / 70° F (21° C)

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APPROVED PRESSURE RELIEF DEVICE AND VALVES

THIS CONTAINER SHOULD BE VISUALLY INSPECTED AFTER A
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OR MAINTENANCE OF THIS CONTAINER, CONTACT:

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www.cng.us.com
safety@cng.us.com

VÍTKOVICE CYLINDERS a. s.
Ruská 24/83, 709 00 OSTRAVA
CZECH REPUBLIC
Phone:+420 596 664 666
www.vitkovicecylinders.cz
info@vitkovicecylinders.cz
5. Cylinder Handling

The cylinders shall be secured, stored, handled and used in a manner preventing:
- cylinder fall, damage or change in shape which can impair their safety (scratches, cavities, etc.);
- valve damage or striking off during handling (if the valve is mounted);
- protective paint damage;
- damage caused by excessive surface or pitting corrosion;
- contamination of internal surface by dust, dirt, etc.;
- direct exposure to atmosphere effects;
- direct exposure to sunlight.

To avoid any damage during the cylinder handling before installation, it is recommended to transport and store the cylinders using a palette to which the cylinders are properly fastened. Cylinders without the valve mounted shall be fitted with protective plug and their coat shall be protected by a screen.

Before the valve mounting (if not mounted by the cylinder manufacturer) the cylinder interior shall be checked for any dirt or foreign particles (which shall be removed).

6. Cylinder Installation

The cylinder installation shall be executed in accordance with valid licence for CNG fuel system installation, ANSI NGV2-2007 agreement and applicable technical regulations of the country where the vehicle is used. The following rules shall, in particular, be met:

**Installation principles**

The cylinder shall be positioned so that it is not directly exposed to aggressive environment, fire, chemicals or mechanical contacts. The installation shall be performed taking into account vehicle body movements and cylinder extension/shrinkage under various pressure and temperature conditions. The installation shall under no circumstances affect the cylinder properties and structure.

It is prohibited to:
- weld any fastening part to the cylinder;
- fix the cylinder by screws driven in the cylinder body;
- make any attachment which would affect the cylinder wall thickness or damage the cylinder surface or coat.

The cylinder installation may be executed only by an authorized organization being a holder of licence for CNG fuel system installation or organization encharged by it.
The cylinder location and fixing in vehicle shall comply with the requirements specified in ANSI NGV2-2007; part 8.9 with respect to the installation of special structural parts of a type certified for application of compressed natural gas in their fuel system.

The fuel system shall be equipped with a safety device, i.e. not only valve with thermal fuse but also pressure equalizer (pressure fuse).

7. Cylinder Application

Operating conditions
The cylinders are designed for filling with natural gas as a fuel at stabilized 3,600 psi (24,800 kPa / 248 bar) pressure, stabilized 70 °F (21 °C) temperature and 4,500 psi (31,000 kPa / 310 bar) maximum filling pressure.

The cylinder application is subject to the following operating conditions:
- 3,600 psi (24,800 kPa / 248 bar) pressure stabilized at 70 °F (21 °C)
- Maximum pressure upon filling not exceeding 4,500 psi (31,000 kPa / 310 bar) regardless of the filling conditions or temperature
- Number of filling cycles per year not exceeding 750 and/or 11,500 filling cycles for the cylinder’s nominal service life
- Stabilized internal gas temperature between -40 °F (-40 °C) and +135 °F (+57 °C)
- Cylinder material temperature between -40 °F (-40 °C) and +185 °F (+85 °C) with temperatures above +135 °F (+57 °C) being local or short-term ones so that the internal gas temperature does not exceed +135 °F (+57 °C). The temperatures developed by gas during filling and discharging can exceed the range from -40 °F (-40 °C) to +135 °F (+57 °C).

The cylinders shall not be continuously exposed to:
- mechanical effects caused by, for instance, improper protection against displacement, vibrations and impacts during transport;
- contacts with abrasive surface of inappropriate or heavily damaged roads;
- chemical effects such as permanent exposure to leaking transported aggressive fluids, etc.
The cylinders can be inadvertently exposed to:
- water through casual immersion or splashes from road;
- salt in case of vehicle operation close to sea or where salt is used to remove frost deposits;
- gravel impacts;
- solvents, acids, alkalis or fertilizers;
- car fills including petrol, hydraulic fluids, §§accumulator acids, glycol and oils;
- exhaust gases.

Requirements for fuel
The cylinders may be filled only with gas meeting the requirements of ANSI NGV2-2007 (ANSI NGV 2 2a-2012), part 2.5. Methanol or glycol shall not be deliberately added to natural gas.

8. Cylinder Inspections during Operation

Each cylinder shall be visually inspected in 36 months’ or shorter interval [ANSI NGV2-2007 (ANSI NGV 2 2a-2012), part 2.1.4] and/or at the dates for technical inspections applicable in the country where the motor vehicle, in which the cylinder is installed, is used and at every new installation with respect to external damage or deterioration including the areas under fixing yokes.

The visual inspection shall be performed in accordance with CGA C-6.4 technical standard by a competent authority approved or recognized by the regulation office of the country where the vehicle is used.

The purpose of visual inspection shall be to identify, in particular:
- any external mechanical damage of the cylinder which can be caused by, for instance, moving road parts, cylinder contact with road, unstable cylinder fixing, etc.
- any external chemical damage of the cylinder which can be caused by chemicals in the road surface;
- any cylinder corrosion;
- if the cylinder marking integrity is maintained;
- any expiration of the cylinder’s 15 years’ nominal service life (see month and year of service life expiration in the cylinder marking).

Any cylinders which have not successfully passed the periodical visual inspections or suffer corrosion or mechanical/chemical damage shall be put out of operation. If the cylinders are to be returned to operation they shall be subjected to periodical inspection and testing prior to the installation. The periodical inspection and testing shall be conducted in accordance with CGA C-6.4 technical standard by an authority authorized to perform the inspections.
The cylinders without stamp containing the obligatory information or with stamp containing the obligatory information which is illegible shall be put out of operation in any case. If the cylinder can be positively identified by serial number the stamp can be replaced so that the cylinder can remain in operation.

Any cylinders which have been involved in a traffic accident shall be tested by an authorized inspection authority. The cylinders which have not suffered any damage in the crash can be returned to operation, otherwise they shall be returned to the manufacturer for appraisal.

Any cylinders which have been exposed to fire shall be tested by an authorized inspection authority or rejected and put out of operation.

It is prohibited to use any cylinders:
- not subjected to periodical inspection due;
- with expired service life;
- with leaking or damaged fuel system parts;
- with illegible, incomplete or missing stamp.

Any cylinders to be discarded shall be physically destroyed so that their further use is prevented. They shall not contain gas before the physical destruction; they shall be deaerated. They can be destructed by flattening or drilling a hole in the cylinder body and breaking the thread. The cylinder material – low-alloyed steel – is fully recyclable. The cylinders can be returned to the manufacturer to be discarded.

Date: 21 February, 2014