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SAFETY TECHNICAL REGULATION OF SPECIAL EQUIPMENT

TSG R0009-2009

Gas Cylinder Safety and Technical Supervision Regulation for Vehicles

车用气瓶安全技术监察规程

Issued on: May 08, 2009

Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of PRC

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Gas Cylinder Safety and Technical Supervision Regulation for Vehicles

Clause 1 General

Article 1 This Regulation is formulated for the purposes of strengthening and standardizing the safety supervision and management of the gas cylinder for vehicles, and ensuring the safety use of gas cylinder for vehicles, in accordance with *Regulation on Safety Supervision of Special Equipment* and *Supervision Regulation on Safety for Gas Cylinder*.

Article 2 This Regulation is applicable to, under the $-40^{\circ}\text{C}\sim 60^{\circ}\text{C}$ ambient temperature, the gas cylinder for vehicles filling gas fuels or liquefied gas fuels with nominal working pressure greater than or equal to 0.2MPa (gauge pressure, the same below), and the product of pressure and volume greater than or equal to 1.0MPa•L.

This Regulation is also applicable to the safety accessories of gas cylinder for vehicles, such as gas cylinder valves, safety valves, fusible plugs, rupture discs, liquid limit valves, etc.

Article 3 The design, manufacture, installation, filling, use and inspection of the gas cylinder for vehicles used in the territory of the PRC. Shall meet the requirements of this Regulation. If this Regulation is not specified, it shall meet the requirements of *Supervision Regulation on Safety for Gas Cylinder*.

Article 4 The General Administration of Quality Supervision, Inspection and Quarantine (hereinafter referred to as AQSIQ) is responsible for the safety supervision of the gas cylinder for vehicles throughout the country. The local quality and technical supervision departments at or above the county level are responsible for the safety supervision of the gas cylinder for vehicles within their respective administrative regions.

Clause 2 Design and Manufacture

Article 5 The gas cylinder for vehicles shall be designed and manufactured in accordance with this Regulation, relevant safety technical specifications and their corresponding national standards and industry standards (hereinafter referred to as standard). If there is no standard for the time being, it can be designed and manufactured according to the enterprise standards through technical approval.

Article 11 The manufacturing organization of the gas cylinder for vehicles shall carry out reinspection on chemical composition of the metal materials of the gas cylinder body in accordance with the furnace-tank number; perform the reinspection on the mechanical properties in accordance with batch number of materials; perform non-destructive testing and macrostructure reinspection in accordance with the provisions of the corresponding standards. If the mechanical properties of the materials are changed through heat treatment during the manufacturing of the gas cylinder, the reinspection on mechanical properties of the used materials during reinspection period can be neglected.

The manufacturing organization of the gas cylinder for vehicles shall confirm the quality of the non-metallic materials of the gas cylinder body; if necessary, reinspect the materials; ensuring the quality meet the requirements.

Article 12 The research and development of the gas cylinder and its safety accessories shall be carried out the type inspection in accordance with the relevant technical specifications and relevant standards. If changing the original design and main manufacturing process, or re-producing after more than 6-month shutdown, the type inspection shall be repeated.

Article 13 Personnel engaged in the welding of gas cylinder for vehicles must obtain the corresponding qualification certificate for special equipment operator. Personnel engaged in non-destructive testing of gas cylinder for vehicles must obtain the corresponding qualification certificate for inspection and testing personnel of special equipment.

Article 14 The manufacturing process of the gas cylinder for vehicles shall be supervised and inspected one by one according to the requirements of safety performance supervision and inspection rules by the inspection and testing institutions approved by the AQSIQ (hereinafter referred to as inspection agencies); issue the supervision and inspection certificates in batches. The gas cylinder for vehicles that have not been supervised and inspected qualified shall not leave the factory or be delivered for use.

Article 15 When the gas cylinder for vehicles leaves the factory, the manufacturing organization shall number and issue a product certificate one by one according to the relevant regulations; issue the batch quality certificate according to the batch; and make a clear and firm mark on the cylinder body. The format and content of the certificate, product quality certificate and mark shall conform to the relevant regulations.

Clause 3 Installation

Article 16 The installation organization of the gas cylinder for vehicles (hereinafter referred to as installation organization) shall be responsible for the safety of the

Article 22 The contents of the supervision and inspection for the installation of the gas cylinder for vehicles include the supervision and inspection of safety performance items during involved in the installation process of the gas cylinder for vehicles (containing safety accessories and fixtures), and the supervision and inspection for the operation of the installation quality management system. The items and requirements for the supervision and inspection of installation can refer to Appendix A *Guidelines for the Supervision and Inspection of Installation of Gas Cylinder for Vehicles* (hereinafter referred to as *Guidelines for Supervision and Inspection*) and Appendix B *Forms for the Supervision and Inspection of Installation of Gas Cylinder for Vehicles* (hereinafter referred to as *Forms for Supervision and Inspection*).

The supervision and inspection of the installation of gas cylinder for vehicles shall be carried out on the basis of the self-inspection of the installation organization. The items for supervision and inspection of the installation can be divided into Class-A and Class-B:

- (I) Class-A supervision and inspection items: the inspectors shall, according to the requirements of *Guidelines for Supervision and Inspection*, carry out data verification, on-site supervision, physical inspection (generally spot checking, the same below) in accordance with the provisions to determine whether they meet the requirements. The items that have not been confirmed through the supervision and inspection or have been confirmed unqualified through the supervision and inspection shall not be transferred to the next process.
- (II) Class-B supervision and inspection items: the inspectors shall, according to the requirements of *Guidelines for Supervision and Inspection*, carry out data verification, on-site supervision, physical inspection in accordance with the provisions or randomly to confirm the results and determine whether they meet the requirements.

For the data verification, on-site supervision, physical inspection in the supervision and inspection of the installation, the personnel engaged in the supervision and inspection of the relevant agencies (hereinafter referred to as personnel of supervision and inspection) shall confirm by signature on the corresponding design documents, work witnesses (inspection reports, test reports, record form, card, etc.; the same below) provided by the installation organization. According to different modes of the supervision and inspection, when the personnel of supervision and inspection confirms by the signature on the work witness information, he/she shall indicate the confirmation modes of the supervision and inspection (data verification, on-site supervision, physical inspection), specific contents, and date of signature.

Article 23 The supervision and inspection agency shall be responsible for the quality of the supervision and inspection work of installation of gas cylinder for vehicles. During the supervision and inspection period, the personnel of supervision and inspection shall make records, and fill in *Supervision and Inspection Item Form* according to the

The filling organization shall publicize the quality of the filled gas to the public in a prominent position in the filling place.

Article 30 Before filling the gas cylinder for vehicles, the filling organization shall strictly inspect the gas cylinder for vehicles, and make records. In case one of the following situations, the gas cylinder for vehicles is prohibited from filling:

- (I) Not registered for use; or inconsistent with the use registration certificate;
- (II) Exceeding the inspection period;
- (III) Unqualified in the periodic inspection or rejected;
- (IV) First-time filling the new gas cylinder or gas cylinder that has been inspected, without replacement or vacuum-pumping treatment;
- (V) Having doubts about the safety of gas cylinder and its gas systems;
- (VI) The service life exceeds the design life;
- (VII) When the gas vehicle driver or passengers have not left the vehicle or have other safety hazards.

Article 31 The filling organization shall make a record for filling, the content of which shall include at least the license plate number, the use and registration number of gas cylinder, inspection results before and after filling, filling amount, filling personnel, filling time, etc. The retention period of the filling record shall be no less than 1 month.

Article 32 The filling organization shall strengthen the safety training and education for gas cylinder management personnel and filling personnel; formulate the emergency rescue plans for accidents in the filling process of gas cylinder for vehicles; equip with necessary equipment and protective articles; and conduct regular drills.

Clause 5 Use

Article 33 The user organization shall establish and improve the file of gas cylinder for vehicles; the file contents shall include gas cylinder exit-factory document, installation certificate, supervision and inspection certificate of installation, use registration information, etc.

Article 34 The user organization shall, in accordance with provisions of the relevant safety technical specifications, carry the vehicle gas cylinder exit-factory data, installation certificate, supervision and inspection certificate of installation, etc. to the municipal quality and technical supervision department (hereinafter referred to as registration authority) in the district where the user organization is located according to

must pass the inspection before it is put into use.

Clause 6 Periodic Inspection

Article 40 The inspection agency that undertakes the periodic inspection of the gas cylinder for vehicles shall be approved by the AQSIQ before being engaged in the periodic inspection of gas cylinder for vehicles within the approved scope.

The personnel engaged in the periodic inspection of the gas cylinder for vehicles shall, according to the provisions of relevant safety technical specifications, obtain the qualification for inspecting the gas cylinder before being engaging in the periodic inspection of the gas cylinder for vehicles.

Article 41 The periodic inspection cycle, inspection items, and assessment requirements of the gas cylinder for vehicles shall conform to the provisions of relevant safety technical specifications and corresponding standards or local standards. When there is no standard for the time being, the inspection agency may formulate an inspection plan with reference to the corresponding local standard of the gas cylinder or the enterprise standard that has been technically reviewed.

Article 42 The gas cylinder inspector shall make a record for the inspection; after the inspection is completed, issue the inspection report; and put a permanent inspection stamp on the specified part of the gas cylinder body in accordance with relevant regulations. The original inspection records shall be kept for at least 1 inspection cycle.

The inspection agency is responsible for conspicuously paint the gas cylinder registration number and the next inspection date on the qualified gas cylinder. The painting position shall be conducive to the inspection before filling.

Article 43 The inspection agency of the gas cylinder for vehicles shall destructively dispose of the rejected gas cylinder that fails to pass the inspection; it is forbidden to deliver the rejected gas cylinder for vehicles that has not been destructively disposed to others or serve it as the gas cylinder vehicles again.

Article 44 The inspection agency of the gas cylinder shall, according to relevant regulations, report to the quality and technical supervision department about the inspection situations and safety conditions of the gas cylinder at that year.

Clause 7 Supplementary Provisions

Article 45 Encourage the dynamic supervision and management of the gas cylinder for vehicles by means of electronic labeling and other means of information in the links of manufacturing, use, filling, etc.

Appendix A

Guidelines for the Supervision and Inspection of Installation of Gas Cylinder for Vehicles

A1 Review on document of gas cylinder

- (1) Check whether the product certificate, quality certificate and supervision and inspection certificate of the gas cylinder and its safety accessories meet the requirements;
- (2) Check whether the gas cylinder for vehicles in use are periodically inspected; whether the periodic inspection report is within the validity period.

A2 Review on installation data

- (1) Check whether the installation license qualification of the installation organization meet the requirements;
- (2) Check whether the design drawings of the gas cylinder for vehicles conform to the relevant regulations;
- (3) Check whether the approval procedures for the change in design drawings (including the material substitution) of the gas cylinder for vehicles meet the requirements.

A3 Appearance quality inspection of gas cylinder

Check whether the appearance quality of the gas cylinder for vehicles conform to the regulations.

A4 Inspection of installation quality

- (1) Check whether the installation of the gas cylinder for vehicles is consistent with the installation design drawings; whether the installation position meet the requirements;
- (2) Check whether the brackets, bolts and rubber pads, etc. meet the requirements; whether they are firm;
- (3) Check whether the first port of the valve on the gas cylinder meets the requirements.

A5 Leakage test

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