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मानक

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Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 15717 (2006): Road vehicles - Compressed natural gas (CNG) fuel system components - Petrol valve (Automatic/manual) [TED 26: Automotive vehicles on NCES]



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Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 15717 : 2006
Reaffirmed - 2011

भारतीय मानक

सड़क वाहन — संपीड़ित प्राकृतिक गैस (सीएनजी)
ईंधन प्रणाली के घटक — पेट्रोल वाल्व (आटोमैटिक/मैनुअल)

Indian Standard

ROAD VEHICLES — COMPRESSED NATURAL GAS
(CNG) FUEL SYSTEM COMPONENTS — PETROL
VALVE (AUTOMATIC/MANUAL)

ICS 43.060.40

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

December 2006

Price Group 2

Automotive Vehicles Running on Non-conventional Energy Sources Sectional Committee, TED 26

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Vehicles Running on Non-conventional Energy Sources Sectional Committee had been approved by the Transport Engineering Division Council.

In the formulation of this standard considerable assistance has been derived from the following AIS Standards issued by the Automobile Research Association of India:

AIS 024 (Amd 4 to version 3) — Safety and procedural requirements for type approval of CNG operated vehicles

AIS 028 (Version 3) — Code of practice for use of CNG fuel in internal combustion engine vehicles

This standard is one of the series of Indian Standards published on CNG onboard fuel system components. Other standards in this series are:

<i>IS No.</i>	<i>Title</i>
15710 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — General requirements and definitions
15711 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Performance and general test methods
15712 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Automatic valve (solenoid valve)
15713 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Pressure regulator
15714 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Gas/air mixer
15715 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Conduit (ventilation hose)
15716 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — CNG high pressure fuel line (rigid) with end connections [having pressure exceeding 2.15 MPa (21.5 bar)]
15718 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — CNG high pressure fuel line (flexible hose) with end connections [having service pressure exceeding 2.15 MPa (21.5 bar)]
15719 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Electrical wiring kit
15720 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Compartments/sub-compartments
15721 : 2006	Road vehicles — Compressed natural gas (CNG) — Fire retardant material for seat, upholstery, roof and side lining
15722 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — CNG low pressure flexible fuel line with end connections [CNG fuel line having pressure not exceeding 2.15 MPa (21.5 bar)]
15723 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — Current limiting devices

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 2 JUNE 2012
TO
IS 15717 : 2006 ROAD VEHICLES — COMPRESSED
NATURAL GAS (CNG) FUEL SYSTEM
COMPONENTS — PETROL VALVE
(AUTOMATIC/MANUAL)

(First cover page and page 1) — Substitute the following for the existing title:

‘भारतीय मानक

सड़क वाहन — संपीडित प्राकृतिक गैस (सीएनजी)/द्रवित पेट्रोलियम गैस
(एलपीजी) ईंधन प्राणाली के घटक — पेट्रोल वाल्व (आटोमैटिक/मैन्युल)

Indian Standard

ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG)/
LIQUEFIED PETROLEUM GAS (LPG) FUEL SYSTEM
COMPONENTS — PETROL VALVE (AUTOMATIC/MANUAL)’

(Second cover page, Foreword) — Add the following at the end of second para:

‘AIS 025: Safety and procedural requirements for type approval of LPG operated vehicles

AIS 026: Code of practice for the use of LPG fuel in internal combustion engine to power 4 wheeled vehicles and heavy motor vehicles

AIS 027: Code of practice for the use of LPG fuel in internal combustion engine to power 2 and 3 wheeled vehicles’

(Page 1, clause 1.1) — Substitute ‘CNG/LPG’ for ‘CNG’

(Page 1, clause 1.1.1) — Substitute ‘CNG/LPG’ for ‘CNG’ and ‘compressed natural gas/liquefied petroleum gas’ for ‘compressed natural gas’.

Amend No. 2 IS 15717 : 2006

[Page 1, clause 1.1.2(d)] — Substitute ‘CNG/LPG’ for ‘CNG’

(Page 1, clause 4.1) – Add the words ‘for 2 min’ after ‘room temperature’.

(Page 1, clause 4.2.2) — Substitute the following for the existing:

‘Immediately after the endurance test, the leakage test shall be conducted as per 4.1.’

(Page 1, clause 5.1) — Substitute the following for the existing:

‘5.1 Each petrol valve shall be legibly and indelibly marked with the following:

- a) Manufacturers name, trade-mark or symbol;
- b) Part number or unique identification mark; and
- c) Inlet or outlet or direction of flow markings.’

[Page 2, clause 7(h)] — Substitute the following for the existing:

‘Drawings with relevant dimensions and materials.’

(TED 26)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 1 APRIL 2008
TO
IS 15717 : 2006 ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG) FUEL
SYSTEM
COMPONENTS — PETROL VALVE (AUTOMATIC/MANUAL)

(Page 1, clause 6) — Substitute the following for the existing:

‘6 TYPE TEST AND ACCEPTANCE TEST

6.1 Type Test (Type Approval)

For type approval petrol valve (automatic/manual) shall meet the requirements as specified in this standard.

6.2 Acceptance Test (Conformity of Production)

For the purpose of acceptance test, each petrol (Automatic/Manual) solenoid valve manufactured shall conform to leakage test requirements as specified in **4.1.**’

Indian Standard

ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG) FUEL SYSTEM COMPONENTS — PETROL VALVE (AUTOMATIC/MANUAL)

1 SCOPE

1.1 This Indian Standard specifies definitions, test methods and requirements of petrol valve (automatic/manual) of CNG onboard fuel system components, intended for use on motor vehicles defined in IS 14272 (Part 1), two wheelers, construction equipment vehicles (CEV).

1.1.1 This standard is applicable to CNG fuel system components intended to use on vehicles using compressed natural gas (bi-fuel applications).

1.1.2 It is not applicable to the following:

- a) Liquefied natural gas (LNG) fuel system components located upstream of, and including, the vapourizer;
- b) Fuel containers;
- c) Stationary gas engines; and
- d) CNG fuel systems components for the propulsion of marine craft.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
14272 (Part 1) : 1995	Automotive vehicles — Types — Terminology: Part 1 Three and four wheelers
15710 : 2006	Road vehicles — Compressed natural gas (CNG) fuel system components — General requirements and definitions

3 DEFINITIONS

For the purpose of this standard definition as given in IS 15710 shall apply.

4 TESTS

4.1 Leakage Test

The leakage test shall be conducted at 1.5 times the

working pressure by immersing the device under test in water at room temperature. The outlet of the device shall not be plugged during the test. The device shall be bubble free.

4.2 Endurance Test

Petrol valve (automatic/manual) shall meet the following requirements.

4.2.1 It shall be subjected to the endurance test by operating for 6 000 'ON' and 'OFF' cycles. The cycle rate shall not be faster than 10 cycles/min. During the test, the device under test shall be pressurized to 1.5 times its working pressure.

4.2.2 Immediately after the endurance test, the leakage test shall be conducted at 1.5 times the working pressure by immersing the device under test in water at room temperature. The outlet of the device shall not be plugged during the test. The device shall be bubble free.

5 MARKING

5.1 Each petrol valve (automatic/manual) shall bear the following markings permanently embossed/engraved on it:

- a) Manufacturers name, trade-mark or symbol,
- b) Part number or unique identification mark,
- c) Inlet and outlet markings,
- d) Direction of flow, and
- e) IS No. of this standard.

5.2 BIS Certification Marking

Each petrol valve (automatic/manual) may also be marked with the Standard Mark.

5.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 TYPE TEST (TYPE APPROVAL)

For type approval petrol valve (automatic/manual) shall meet the requirements as specified in this standard.

IS 15717 : 2006

7 TECHNICAL INFORMATION TO BE SUBMITTED BY THE COMPONENT MANUFACTURER

Technical information to be submitted by the component manufacturer for component type approval/type test shall contain at least following information:

- a) Name of the manufacturer,
- b) Manufacturing plant address,
- c) Part number or unique identification mark,
- d) Type No./Model No.,
- e) Working pressure,
- f) Rated voltage of the solenoid coil (if any),
- g) Operating temperature, and
- h) *Drawings* — Detailed dimensional assembly drawing in A3 size in duplicate shall contain information like drawing No., revision No., Part No., bill of material comprising part

numbers of individual items, grade for metallic parts, generic name and compound number for non-metallic parts used in the petrol valve (automatic/manual)), details of the marking on the component with proper authentication.

8 NUMBER OF SAMPLES FOR TESTING

Minimum 2 numbers of petrol valve (automatic/manual) assemblies shall be submitted to the test agency for testing.

9 CHANGES IN TECHNICAL SPECIFICATIONS OF A TYPE APPROVED COMPONENT AND EXTENSION OF APPROVAL

Any modification in technical specification of already type approved component shall require re-type test/extension of approval at the discretion of test agency, based on the justification provided by the component manufacturer and reviewed by the test agency, which has granted type approval.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Automotive Vehicles Running on Non-conventional Energy Sources Sectional Committee, TED 26

<i>Organization</i>	<i>Representative(s)</i>
In personal capacity (<i>D-35, Hauz Khas, New Delhi 110016</i>)	SHRI B. BHANOT (<i>Chairman</i>)
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<i>Organization</i>	<i>Representative(s)</i>
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Mahanagar Gas Ltd, Mumbai	SHRI R. S. PRABHU SHRI A. UDEY KIRAN (<i>Alternate</i>)
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In personal capacity (D-606, Vashi Plaza, Sector 17, Vashi, Navi Mumbai 400705)	SHRI ALOK CHANDRA GUPTA
BIS Directorate General	SHRI P. C JOSHI, Scientist 'E' and Head (TED) [Representing Director General (<i>Ex-officio</i>)]

Member Secretary
SHRI P. S. MUJRAL
Scientist 'E' (TED), BIS

Bureau of Indian Standards

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Amendments Issued Since Publication

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

website : www.bis.org.in

Regional Offices:

	Telephones
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 7617 2323 3841
Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	{ 260 3843 260 9285
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

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