

No.PR-16016/232/CNG/Prov/2010  
Government of India/Bharat Sarkar  
Ministry of Home Affairs/ Grih Mantralaya

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26, Man Singh Road, Jaisalmer House  
New Delhi, dated, the 5<sup>th</sup> December, 2011

To

*14/09 - 04/2012 CAG*  
**The DsG: AR/BSF/CRPF/CISF/ITBP/NSG/SSB - 09/09**

**Sub:- QRs/Specifications of CNG Buses (Heavy Category- 52 Seaters & Medium Category – 32 Seaters)**

Sir,

I am directed to forward the QRs/Specifications for the CNG Buses (Heavy category-52 Seaters & Medium Category - 32 Seaters), as per annexure, approved by the competent authority for further needful.



(S.B. Nanda)

Under Secretary (Prov-I)

Copy to:-

- 1. DD(Procurement)

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Copy for information to:-

- 1. PS to JS(PM)

Copy also to:-

- 1. NIC, MHA, North Block, for publishing in MHA, website.

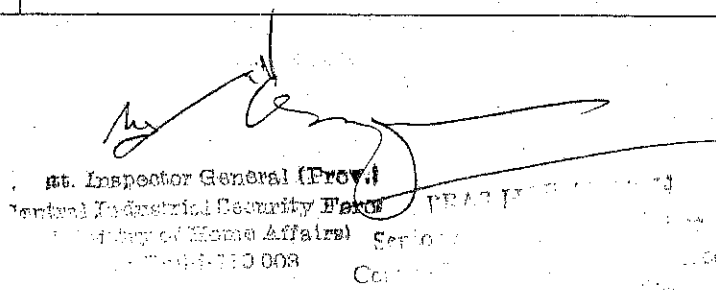
**Qualitative requirement for CNG Buses(Heavy Category), 52 Seater**

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Sl.No	Parameter	Specifications
1.	Chassis/Engine	6 cylinder BS-IV CNG engine, displacement (in Ltrs) 5.7 to 6 with catalytic converter, 5 speed synchromesh gear box and long chassis for comfortable 55 seats.
2.	CNG Fitments	a) Cylinder : to ensure CNG cylinder is safely mounted following aspects shall be ensured:-
		i) Validity certificate of "Directorate of Explosives- DOE.
		ii) Non Corrosive CNG components/mounting of gas circuit.
		iii) Cylinder should be securely mounted within the vehicle and tightness of nuts and bolts of the clamps as per applicable norms
		iv) Distance between fuel line and exhaust source should be safe - complaint with laid down standards (not less than 75 mm)
		v) Distance between cylinder valve (s) and bus body extremities should be safe- complaint with laid down standard.
		b) <u>Cylinder valves:</u>
		i) Approval from DOE
		ii) Valve protection cover be provided
		c) <u>Refilling valve:</u>
i) Proper dust cap/plug should be provided.		
ii) Fuel system to be provided with fuel fills engine start lock.		
3.	Steering	Integral powered steering; Two wheel hydraulic power steering on front wheels with anti-vibration hydraulic assistance to the wheels.
4.	Body structure with dimensions	M S structure tubular structure 60X40X2.5 mm, flooring to be channel 100X50X50/3 mm complete structure to be welded by Co2
5.	Exterior paneling	GI sheet 1.25 m thick, GP panels, CI sheet 01 mm should be in two pcs, centre Co2 welded.
6.	Interior paneling	Inner complete panels to GI sheet 0.80mm to 0.90mm duly painted. All panels painted with better finish
7.	Flooring	1.2mm chequered plate over 15mm Plywood Marine & fire retardant. The floors sandwich should use suitable insulating material to minimize heat transmission to cabin.
8.	Passenger door	Two doors front & rear. Front door jack knife door with half glass. Front door pneumatically operated, rear door manually operated.
9.	Passenger Seats	52 nos high back (3X2) seats with head rest, all seats fire setardent rexine printed rexine pillow.
10.	Co- driver seat	Co- driver seat with battery compartment



**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)



Deputy Inspector General (Prov.)  
Central Industrial Security Force  
Ministry of Home Affairs  
Serial No. 003  
Co- driver seat

11.	Seat upholstery	Good quality rexine with printed upholstery colour choice of user
12.	Driver seat	Fully adjustable driver seat with seat belt.
13.	Front wind screen	Single piece suits front face free from night glare with bigger size double arm wipers.
14.	Rear wind screen	Single piece suits rear face.
15.	Sun visor	Two nos shutter type ( one for driver & one for co-driver (good quality) as well as 02 nos fixed sunvisor for driver & co-driver
16.	Outer RVM's	Two RVM's to be provided in front, overhang type manually operated both side i.e driver and co-driver side RVM's arm/support should be free from any kind of vibrations while driving the vehicle one RVM's to be provided back side or rear wind screen. (as per car)
17.	Inner RVM's	Large convex mirror manually operated. To be provided in the driver cabin.
18.	Front bumper	MS sheet single piece 3.15 mm thickness
19.	Rear Bumper	MS Sheet single piece 3.15 mm thickness
20.	Driver partition	Half portion fitted with glass (thickness 5 mm), MS pipe construction, powder coated and connection with yellow structure using good looking bracket
21.	Grab rail	MS tubular construction with PVC sleeve, standing pillar 03 nos are to be provided thickness, 50mm with PVC sleeve and mounted in good quality bracket to be provided in passenger compartment, powder coated with hand straps 06 nos and mounted with bracket height to be ascertained 25mm thickness.
22.	Hat racks	MS tubular with padded covered by rexine similar to seat cover rexine
23.	Tool Box	To be provided left hand side near front gate size (3'X2') with proper lock and inner side with 15 mm plywood with PVC sheet floor to roof with MS construction
24.	First aid box	Doctor suitcase type provided in back side of the driver seat
25.	Fire extinguisher	03 nos (02 KGS each) be provided one on driver cabin and 02 in passenger cabin near front and rear door as per CNG guide line.
26.	Electrical	Internal light (07 nos) rectangular, projected, tube lights, roof marker lamps 02 red & 02 white (front & rear) 08 nos fan in driver and passenger compartment as per suitable place. All electrical wiring used should be fire retardant.
27.	Wheel hubs	To be provided in all wheels (good quality)
28.	Emergency exits	Right side behind rear axle with siding window. One hammer with brackets to be provided for breaking glass in case of emergency.
29.	CNG	Complete CNG kit to be provided as per manufacturer/ISI standard
30.	Roof luggage Carrier & Ladder	Combination of tube an MS sheet mounted on top with special bracket arrangement MS tubular ladder at rear to climb on top of roof (Full roof).

**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

Deputy Inspector General (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

Central Industrial Security Force  
New Delhi-110 008

30.	Window	Complete window frames to be aluminum section duly powder coated and approved by indenter
31.	Paint	As approved by indenter
32.	Radio & Speakers	Good quality radio with FM and 03 nos speakers to be provided at appropriate place in passenger compartment duly approved by indenter.
33.	Ventilators	One ventilator to be provided in driver cabin duly approved by indenter
34.	Engine Coved Insulation	The Engine cover will be insulated with sound deadener pads to reduce noise pollution in the driver cabin.
35.	Side box for spare	The side box for spare wheel to be provided or under frame mounted type.
36.	Dashboard	Dashboard should be in fiber reinforced plastic
37.	Electrical buzzer	One electric buzzer near the seat of driver and operated by at least three push buttons placed at suitable locations in passenger compartments, out of which one would be next to the door.
38.	Horns	Normal as well as reversing horn to be provided
39.	Rear view mirrors	Two outside rear view and one inside view mirror to be provided outside rear view mirrors should not obstruct driver's vision
40.	Tow	A tow hook of adequate capacity to be securely welded to the front & rear of the bus
41.	Announcing system	There should be adequate provisions for announcing system in bus i.e., Microphone + Speaker.
42.	Illuminated instrument panel	To provide speedo meter, air pressure gauges for pneumatic system of brakes and suspensions, oil pressure gauge, CNG indicator, engine temperature gauge, turn indicator, headlight indicators, switches for internal lights, door operation switches, warning light for various safeties (e.g., hand breaks on etc
43.	Safety	1. Starter Interlock (Starter to be inoperative when engine is running) 2. Hi engine temperature warning for main engine 3. Low engine oil pressure 4. Gas detector and warning system for main engine 5. Electrical system must have battery isolation switch near the operator to switch off the circuit in case of emergency
44.	Warranty	Minimum 2 years from the date of commissioning against all material/workmanship defects for the units as well as for the bought out items

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**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

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Asst. Inspector General (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110 008

*Prathap*

**PRATHAP**

Deputy Inspector General (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110 008

45.	Other fitments	1. Towing hook in front cut out of bumper
		2. Battery cut off switch supplied by manufacturer covered by FRP cover
		3. Spare wheel carrier
		4. Mud flaps
		5. Document box provided in front of the co-driver seat
		6. Curtain rail to be provided for fixing curtain.
		7. One handle and foot rest to be provided in front bumper for cleaning of front wind screen glass.
		8. One good quality grip handle to be provided on driver side gate.
		9. Heavy duty washes & wipe system to be provided for cleaning wind screen glass.
		10. Fog lamps (yellow glass) to be provided on the front bumper.
		11. All marking on vehicle body to be provided ( as per directions of users at the time of placing order).
		12. Good quality curtain to be provided, quality (colour and clothes ) will be approved by indenter

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**SANJEEV RAJ RATHORE, IPS**  
 Deputy Inspector General (Adm. & Prov.)  
 Central Industrial Security Force  
 (Ministry of Home Affairs)

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 Deputy Inspector General (Prov.)  
 Central Industrial Security Force  
 (Ministry of Home Affairs)

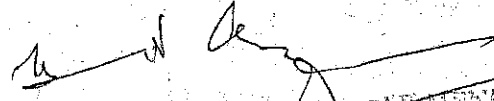
**FRATHEE JAYARAM**  
 Senior Inspector  
 Central Industrial Security Force  
 (Ministry of Home Affairs)  
 New Delhi

Sl. No.	Particulars	Specifications
1.	Chassis/Engine	4 cylinder BS-IV CNG engine, displacement (in Ltrs) 3.4 to 4.00 with catalytic converter, 5 speed synchromesh gear box and long chassis for comfortable 35 seats.
2.	CNG Fitments	<p>a) Cylinder : to ensure CNG cylinder is safely mounted following aspects shall be ensured:-</p> <p>i) Validity certificate of "Directorate of Explosives- DOE.</p> <p>ii) Non Corrosive CNG components/mounting of gas circuit.</p> <p>iii) Cylinder should be securely mounted within the vehicle and tightness of nuts and bolts of the clamps as per applicable norms</p> <p>iv) Distance between fuel line and exhaust source should be safe - complaint with laid down standards (not less than 75 mm)</p> <p>v) Distance between cylinder valve (s) and bus body extremities should be safe- complaint with laid down standard.</p> <p>b) <u>Cylinder valves:</u></p> <p>i) Approval from DOE</p> <p>ii) Valve protection cover be provided</p> <p>c) <u>Refilling valve:</u></p> <p>i) Proper dust cap/plug should be provided.</p> <p>ii) Fuel system to be provided with fuel fills engine start lock.</p>
3.	Steering	Integral powered steering; Two wheel hydraulic power steering on front wheels with anti-vibration hydraulic assistance to the wheels.
4.	Body structure with dimensions	M.S structure tubular structure 60X40X2.5 mm, flooring to be channel 100X50X50/3 mm complete structure to be welded by Co2
5.	Exterior paneling	GI sheet 1.25 mm thick, GP panels, CI sheet 01 mm should be in two pcs, centre Co2 welded.
6.	Interior paneling	Inner complete panels to GI sheet 0.80mm to 0.90mm duly painted. All panels painted with better finish
7.	Flooring	1.2mm chequered plate over 15mm Plywood Marine & fire retardant. The floors sandwich should use suitable insulating material to minimize heat transmission to cabin.
8.	Passenger door	Two doors front & rear. Front door jack knife door with half glass front door pneumatically operated, rear door manually operated.
9.	Passenger Seats	32 nos high back (2X2) seats with head rest, all seats fire retardant. Rexene printed; Rexene pillow.
10.	Co- driver seat	Co- driver seat with battery compartment

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**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

  
**Prakash Chandra**  
Joint Director (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110 002

11.	Seat upholstery	Good quality Rexene with printed upholstery. Color choice of user
12.	Driver seat	Fully adjustable driver seat with seat belt.
13.	Front wind screen	Single piece suits front face free from night glare with bigger size double arm wipers.
14.	Rear wind screen	Single/Multiple piece wind screen.
15.	Sun visor	Two nos shutter type ( one for driver & one for co-driver (good quality) as well as 02 nos fixed sunvisor for driver & co-driver
16.	Inner RVM's	Large convex mirror manually operated. To be provided in the driver cabin.
17.	Front bumper	MS sheet single piece 3.15 mm thickness
18.	Rear Bumper	MS Sheet single piece 3.15 mm thickness
19.	Driver partition	Half portion fitted with glass (thickness 5. mm), MS pipe construction, powder coated and connection with yellow structure using good looking bracket.
20.	Grab rail	MS tubular construction with PVC sleeve, standing pillar 03 nos are to be provided thickness, 50mm with PVC sleeve and mounted in good quality bracket to be provided in passenger compartment rail should be on the center, powder coated with hand straps 03 nos and mounted with bracket height to be ascertained 25mm thickness.
21.	Hat racks	MS tubular with padded covered by rexine similar to seat cover rexine
22.	Tool Box	To be provided left hand side near front gate size (2'X1') with proper lock and inner side with 09 mm plywood with PVC sheet floor to roof with MS construction
23.	First aid box	Doctor suitcase type provided in back side of the driver seat
24.	Fire extinguisher	02 nos (02 KGS each) be provided one on driver cabin and 01 in passenger cabin as per CNG guide line.
25.	Electrical	Internal light (05 nos) rectangular, projected, tube lights, roof marker lamps 02 red & 02 white (front & rear) 05 nos fan in driver and passenger compartment as per suitable place. All electrical wiring used should be fire retardant.
26.	Wheel hubs	To be provided in all wheels (good quality)
27.	Emergency exits	Right side behind rear axle with siding window one hammer with brackets to be provided for breaking glass in case of emergency.
28.	CNG	Complete CNG kit to be provided as per manufacturer/ISI standard
29.	Roof luggage Carrier & Ladder	Combination of tube an MS sheet mounted on top with special bracket arrangement MS tubular ladder at rear to climb on top of roof (Full roof).

**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

**Pratibha Bhatnagar**  
Mt. Inspector General (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110 003

**Pratibha Bhatnagar**  
Deputy Inspector General (Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110 003

31.	Window	Complete window frames to be aluminum section duly powder coated and approved by indenter
32.	Paint	As approved by indenter
33.	Radio & Speakers	Good quality radio with FM and 05 nos speakers to be provided at appropriate place in passenger compartment duly approved by indenter
34.	Ventilators	One ventilator to be provided in driver cabin duly approved by indenter
35.	Bonnet insulation	The bonnet will be insulated with sound deadener pads to reduce noise pollution in the driver cabin. It should be carved out of fiber reinforced plastic (FRP)
36.	Side box for spare	The side box for spare wheel to be provided
37.	Dashboard	Dashboard should be in fiber reinforced plastic
38.	Electrical buzzer	One electric buzzer near the seat of driver and operated by at least four push buttons placed at suitable locations in passenger compartments should be provided
39.	Bell switch	A bell switch positioned next to the door for prompting the driver to stop the vehicle should be provided
40.	Horns	Normal as well as reversing horn to be provided
41.	Tow	A tow hook of adequate capacity to be securely welded to the front & rear of the bus
42.	Announcing system	There should be adequate provisions for announcing system in bus i.e., Microphone + Speaker.
43.	Illuminated instrument panel	To provide speedo meter, air pressure gauges for pneumatic system of brakes and suspensions, oil pressure gauge, CNG indicator, engine temperature gauge, turn indicator, headlight indicators, switches for internal lights, door operation switches, warning light for various safeties (e.g. hand breaks on etc).
44.	Safety	1. Starter interlock (starter to be inoperative when engine is running).
		2. Hi- engine temperature warning for main engine
		3. Low engine oil pressure
		4. Gas detector and warning system for main engine
		5. Electrical system must have battery isolation switch near the operator to switch off the circuit in case of emergency
45.	Warranty	Minimum 2 years from the date of commissioning against all material/workmanship defects for the units as well as for the bought out items

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**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

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Asst. Inspector General (Prov.)  
Central Industrial Security Force  
Ministry of Home Affairs  
New Delhi-110 008

HAT MUMBAI  
Central Industrial Security Force  
New Delhi-110 008



46.	Other fitments	1. Towing hooks in front cut out of bumper
		2. Battery cut off switch supplied by manufacturer covered by FRP cover
		3. Spare wheel carrier
		4. Mud flaps
		5. Document box provided in front of the co-driver seat
		6. Curtain rail to be provided for fixing curtain
		7. One handle and foot rest to be provided in front bumper for cleaning of front wind screen glass
		8. One good quality grip handle to be provided in driver side gate
		9. Heavy duty washes & wipe system to be provided for cleaning wind screen glass.
		10. Fog lamps (yellow glass) to be provided on the front bumper.
		11. All marking on vehicle body to be provided ( as per directions of users at the time of placing order).
		12. Good quality curtain to be provided, quality (colour and clothes ) will be approved by indenter

*SR*

**SANDEEP RAI RATHORE, IPS**  
Deputy Inspector General (Adm. & Prov.)  
Central Industrial Security Force  
(Ministry of Home Affairs)

*[Signature]*  
**Mr. Inspector General (Prov.)**  
Central Industrial Security Force  
(Ministry of Home Affairs)  
New Delhi-110003.