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FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

INTRODUCTION TO CNG:

CNG (Compressed Natural Gas) is principally constituted by methane. CNG is considered as clean burning fuel. Due to low density of CNG, it is compressed at a pressure of around 200 bars to enhance the vehicle on-board storage capacity.

CAUTION

In case of any symptom of CNG leakage or releasing noise or any external damage to CNG piping or during accident, do not panic.

- **Stop the vehicle and switch off the engine, roll down the windows and open all the doors.**
- **Ensure to close manual shut off valve.**
- **Contact Maruti Suzuki authorized workshop immediately for further assistance.**

SAFETY PRECAUTIONS (Do's)

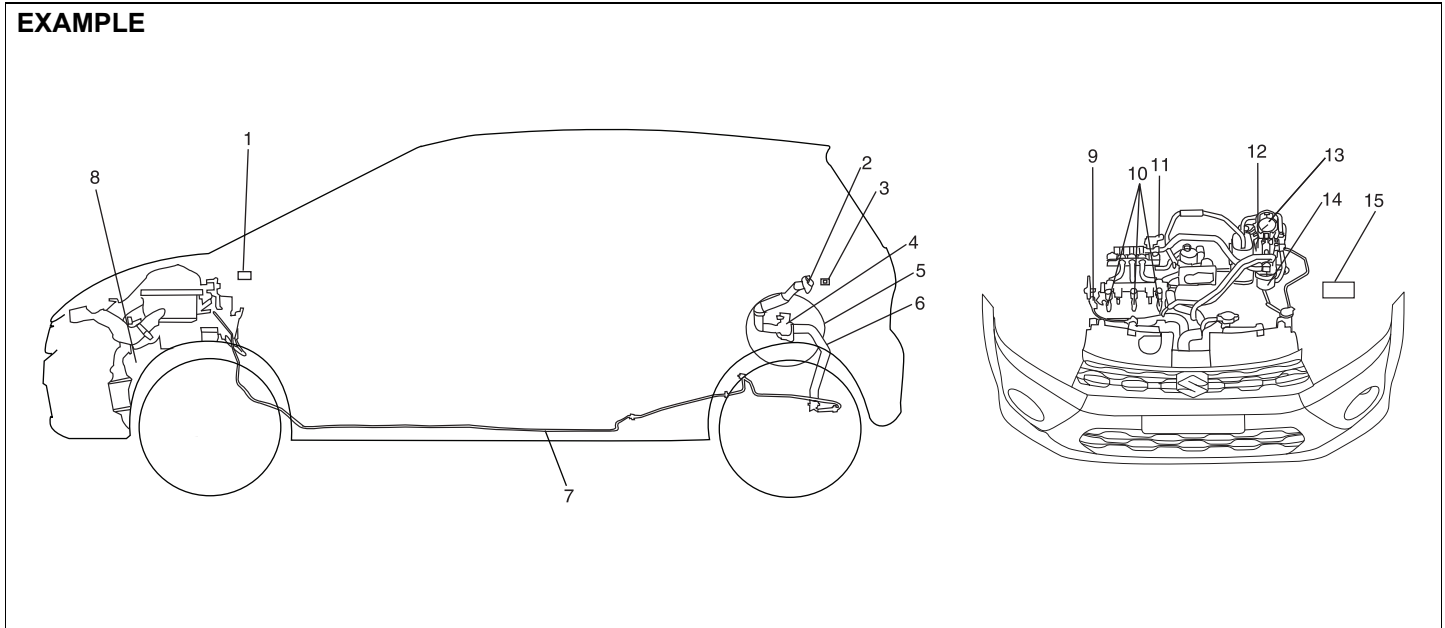
1. If any service or body repair is to be carried out, turn the manual shut off valve on CNG cylinder valve to close position prior to commencement of the repair work.
2. Get the CNG cylinder tested every three (3) years from the date of last testing / retesting of cylinder by government authorized CNG cylinder testing agency.
3. If the vehicle does not changeover to CNG in AUTO MODE, then have your vehicle checked by Maruti Suzuki authorized workshop at the earliest.
4. Switch "OFF" engine while fuel filling (CNG/Petrol).
5. After refueling CNG or Petrol, ensure that the fuel filler lid is closed. (Otherwise vehicle cannot be started)
6. In AUTO MODE, It is programmed to start the vehicle in petrol and automatically shift to CNG based on the engine temperature etc. Do not press the accelerator pedal to change from petrol to CNG.

SAFETY PRECAUTIONS (Don'ts):

1. Do not change/modify the configuration, settings or the components from CNG system.
2. The CNG cylinder should not be repaired under any circumstances, in case of any problem, consult with Maruti Suzuki authorized workshop.
3. Do not adjust setting of CNG system.
4. Never install LPG or any other gas cylinder in place of CNG cylinder.
5. Avoid carrying inflammable material near the CNG cylinder.
6. Do not fill any other type of gas other than CNG.
7. Do not press the accelerator pedal to change from petrol to CNG MODE.

LAYOUT OF THE CNG SYSTEM

EXAMPLE



- 1 Changeover switch
- 2 Receptacle
- 3 Fuel lid switch
- 4 CNG cylinder valve
- 5 CNG cylinder

- 6 Vent hose
- 7 High pressure pipe
- 8 Engine
- 9 Water hose
- 10 CNG injectors

- 11 Low pressure & temperature sensor
- 12 Pressure regulator
- 13 High pressure gauge
- 14 CNG filter
- 15 CNG controller

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

FUEL MODES

There are three fuel modes in the vehicle (Petrol, Auto and Forced CNG) which are selectable by pressing the selector switch (1) located on the right side of the steering wheel on the dashboard.

⚠ WARNING

Make sure that the parking brake is applied fully and the transmission is in Neutral before attempting to start the engine.

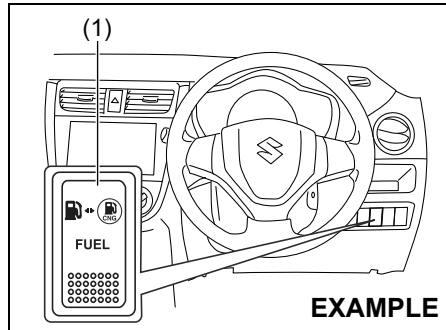
⚠ CAUTION

- Stop turning the starter immediately after the engine has started or the starter system can be damaged.
- Do not crank the engine for more than 15 seconds at a time. If the engine doesn't start on the first try, wait about 15 seconds before trying again.

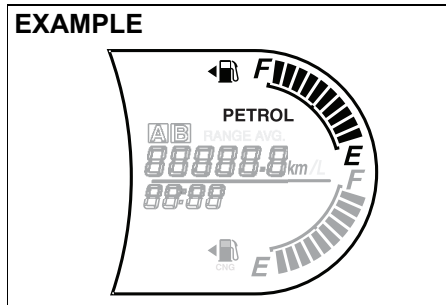
NOTE:

- Do not press the accelerator pedal to changover from petrol to CNG mode.
- With ignition switch "ON" and engine not running, blinking of CNG malfunction warning lamp indicates that fuel lid is open. Vehicle will not start in this condition.

SELECTOR SWITCH POSITION



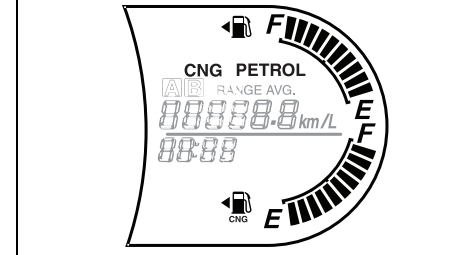
PETROL MODE



In this mode vehicle starts in petrol and continue running in petrol mode. In this mode, petrol indicator is continuously displayed and CNG indicator will remain "OFF".

AUTO MODE

EXAMPLE



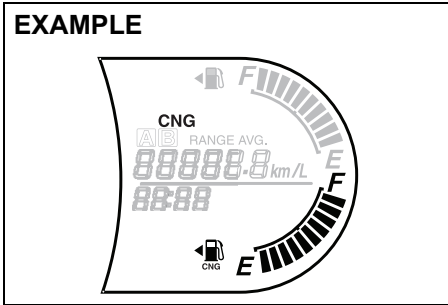
In this mode engine starts in petrol mode and then automatically changes to CNG mode after reaching programmed warming up condition. With ignition switch ON and vehicle started in "AUTO MODE", CNG indicator blinks on the display and PETROL indicator is displayed. After change-over to CNG, CNG indicator will be displayed and Petrol indicator will switch OFF automatically.

NOTE:

It is always recommended to start the vehicle in AUTO MODE or Petrol MODE to enhance the engine life.

FORCED CNG MODE

EXAMPLE



This is emergency mode and may be used in cases where there is no petrol in petrol tank. In this mode vehicle starts in CNG mode and continues running in CNG mode. With ignition "ON" and engine not running, press and hold the changeover switch till only CNG indicator is displayed. In this mode, CNG indicator is displayed and Petrol indicator remains "OFF".

NOTE:

It is recommended to keep sufficient amount of petrol in the petrol tank.

AUTOMATIC CHANGEOVER FROM CNG MODE TO PETROL MODE

If CNG is finished while the engine is running, vehicle will automatically change over from CNG mode to Petrol mode & CNG malfunction warning lamp will start blinking. Petrol indicator will glow continuously and CNG indicator will switch OFF automatically.

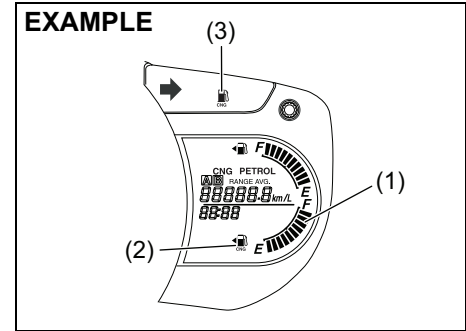
To acknowledge this information, press the changeover switch once. The CNG malfunction warning lamp will stop blinking after the changeover switch is pressed and Petrol indicator will glow continuously. However the CNG malfunction indicator lamp will continue to blink after every subsequent Ignition ON - Ignition OFF condition until the vehicle is refilled with CNG.

NOTE:

- *It is recommended to keep sufficient amount of petrol in the petrol tank to prevent engine stalling during automatic changeover from CNG mode to Petrol mode.*
- *In case the CNG malfunction warning lamp does not stop blinking after pressing the changeover switch, have the vehicle inspected at the nearest MARUTI SUZUKI workshop.*

CNG LEVEL INDICATOR

EXAMPLE



CNG level indicator (1) is built into the display. When the ignition switch is in the "ON" position, this gauge gives an approximate indication of the quantity of fuel in the CNG tank. "F" stands for full and "E" stands for empty.

If the CNG level meter indicator shows only one segment to "E" refill the CNG tank as soon as possible.

NOTE:

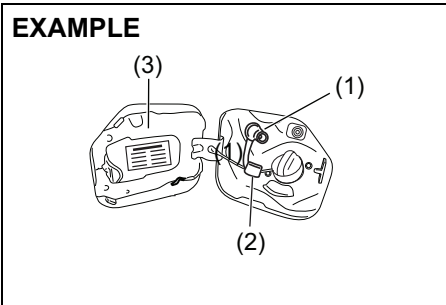
If the last segment blinks, it means that the fuel is almost empty.

If the CNG low fuel warning light (3) comes on, fill the CNG tank immediately.

The mark (2) indicates that the fuel filler door is located on the left side of the vehicle.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

CNG FILLER VALVE



The CNG filler valve is integrated in fuel box next to petrol filling area.

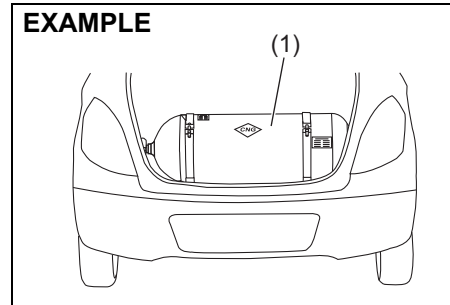
CNG filler valve (1) can be uncovered by pulling out the filler valve cover (2) and it can be covered by simply pushing it back.

Filling automatically gets cut off when the cylinder pressure becomes equal to dispenser pressure. After CNG filling, ensure that the filler valve cover (2) and fuel filler lid (3) is closed.

NOTE:

- If the Fuel filler lid (3) is kept open, you will not be able to start the vehicle.
- Engine will stop if the fuel filler lid (3) is opened in vehicle stationary condition.

CNG CYLINDER

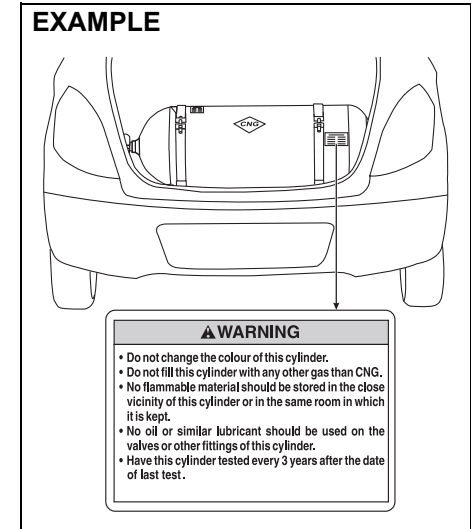


CNG cylinder (1) is installed in the luggage compartment.

⚠ CAUTION

Do not place any luggage or load over cylinder as it may damage the cylinder, pipe, hose, valve etc.

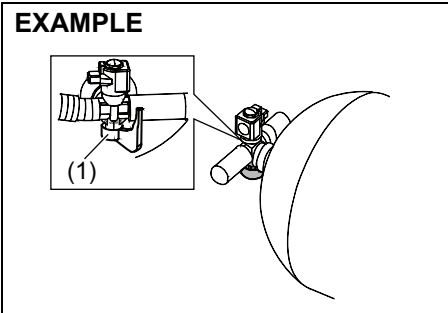
CNG CYLINDER WARNING LABEL



You may find this label on the CNG cylinder.

MANUAL SHUT-OFF VALVE

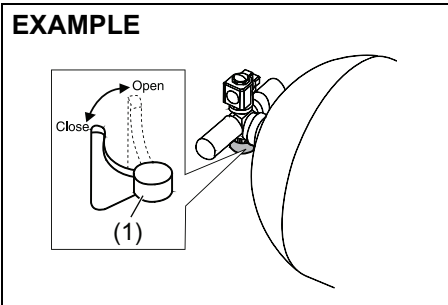
EXAMPLE



Manual shut-off valve (1) is located on the left hand side of the CNG cylinder.

MANUAL SHUT-OFF VALVE OPERATION

EXAMPLE



CNG supply can be switched off by closing the manual shut-off valve.

Valve closing: Turn the knob completely in anti-clockwise direction to close the CNG supply to Engine.

Valve opening: Turn the knob completely in clockwise direction to open the CNG supply to Engine.

NOTE:

- If the manual shut-off valve is not opened fully, then the engine may not run properly.
- If the manual shut-off valve is in closed condition, it is not possible to fill CNG into the cylinder.

NOTE:

- As per Government regulation, CNG cylinder needs to be tested and certified every three (3) years from the date of initial testing as mentioned on the CNG cylinder identification plate.
- Customer has to present the vehicle to a government approved testing agency.
- Failure to test the cylinder may result in denying of CNG filling by the CNG dispensing stations or may result in confiscating the vehicle by enforcement authorities.
- All the expenses for CNG cylinder testing has to be borne by the customer.
- As per Government regulation, CNG cylinder has to be discarded at 20 years from the date of initial testing as men-

tioned in the CNG cylinder identification plate.

- Customer has to discard the cylinder at his / her expense through government approved scrap agencies.
- No person shall refill any cylinder, which has been repaired under sub-rule (2) with any gas unless a full report on the repairs and test carried out on the cylinder, accompanied by the repairer's certificate of testing are furnished to the Chief Controller and his permission is obtained for its refilling.

⚠ WARNING

- **Never remove the cylinder valve from the cylinder assembly. For any assistance consult Maruti Suzuki authorized workshop.**
- **Never try to clean the cylinder. In case of any problem, contact Maruti Suzuki authorized workshop.**
- **Do not reuse the cylinder valve, once it is replaced / removed from cylinder assembly.**

⚠ WARNING

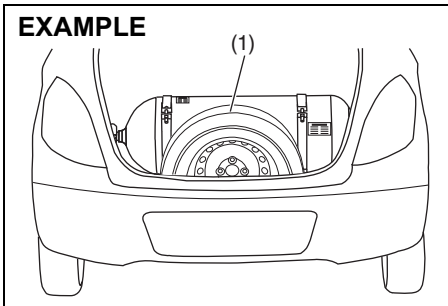
Even if the CNG from the cylinder is consumed till engine stops, some amount of CNG will be left out in the tank under pressure.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

LIST OF APPROVED CNG CYLINDERS TESTING STATIONS

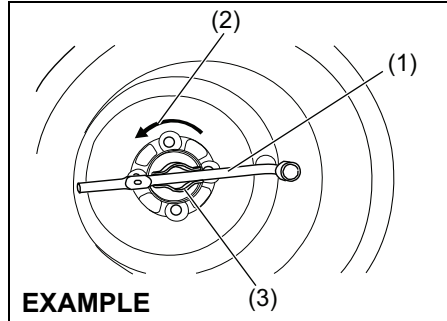
To obtain testing stations information visit the following internet website address: "www.peso.gov.in"

SPARE WHEEL LOCATION

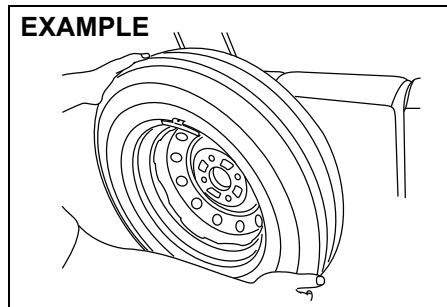


Spare wheel is located behind the CNG cylinder and secured with help of a mounting knob.

SPARE WHEEL REMOVAL PROCEDURE

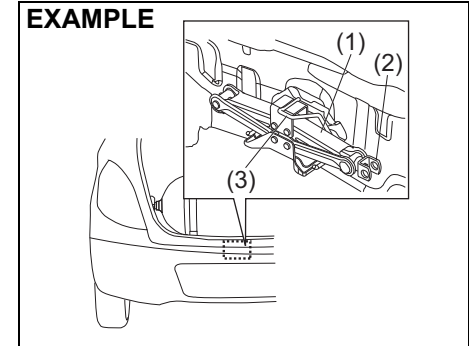


- Use wheel wrench provided in tool kit to dismount spare wheel.
- Place the wrench (1) as show above and rotate in anti-clockwise direction (2) to unlock the mounting knob (3).



- Take out the spare wheel.
- Reverse the above procedure for mounting the spare wheel in its position.

JACK REMOVAL PROCEDURE



Jack (1) is located between spare wheel and vehicle rear as shown in the illustration.

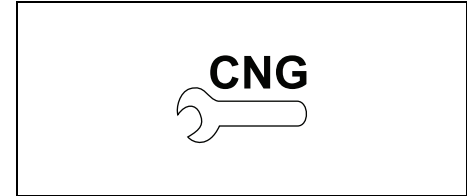
NOTE:

While mounting the jack assembly (1) back into the bracket (3), make sure that the knob (2) is placed towards left side of vehicle and tightened by rotating the knob in clockwise direction.

INSTRUMENT CLUSTER

- | | |
|-----------------------------|---|
| 1) Speedometer | 6) Trip meter selector knob |
| 2) Tachometer (if equipped) | 7) Indicator selector knob |
| 3) Fuel gauge (Petrol) | 8) Warning and indicator lights |
| 4) Fuel gauge (CNG) | 9) CNG malfunction warning indicator lamp |
| 5) Information display | 10) CNG low fuel indicator light |

CNG MALFUNCTION WARNING LAMP



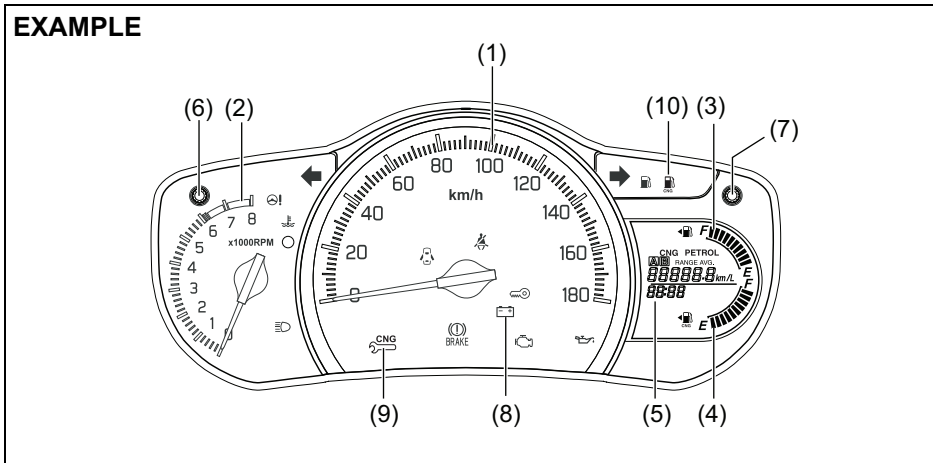
When the ignition switch is turned "ON", this CNG malfunction warning lamp comes on briefly, to check that the CNG malfunction lamp is trouble free.

- If CNG malfunction warning lamp glows continuously, with ignition "ON" there is some problem with the CNG system. Immediately get your vehicle checked by Maruti Suzuki authorized workshop.
- If CNG malfunction warning lamp blinks during engine running, it means there is some problem in CNG system in which vehicle cannot continue running in CNG-MODE and automatically switchover to petrol mode. Have your vehicle checked at Maruti Suzuki authorized workshop.

NOTE:

With ignition switch "ON" and engine not running, blinking of CNG lamp indicates that fuel lid is open. Vehicle will not start in this condition. Close the lid order to start the vehicle.

EXAMPLE

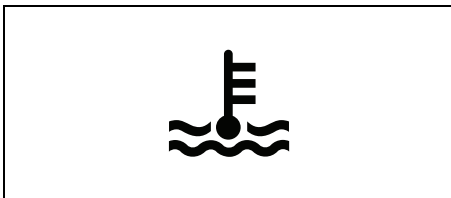


NOTE:

- At the time engine is running on Auto mode or Forced CNG mode, Instantaneous fuel consumption, Average fuel consumption and Driving range information will not be displayed on information display (5).
- If CNG mode is changed to Petrol mode, Instantaneous fuel consumption will appear after few second, whereas Average fuel consumption and Driving range will appear immediately, depending on the display selected.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

HIGH ENGINE COOLANT TEMPERATURE WARNING LIGHT (RED COLOR)



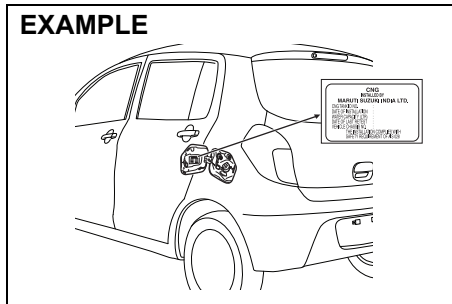
When the ignition switch is turned to the "ON" position, this light comes on briefly so you can check that the light is working. If this light blinks while driving, it means the engine is running hot. Avoid driving conditions that may lead to actual overheating. If the light stays on without blinking, then the engine is overheating. Follow the instructions in the "If the Engine Overheats" of "EMERGENCY SERVICE" section.

CAUTION

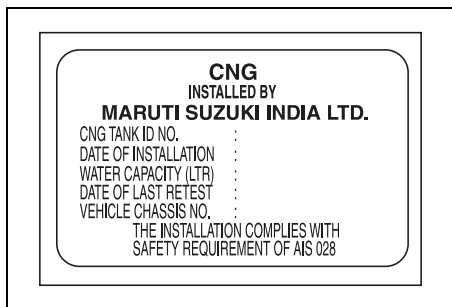
Continuing to drive the vehicle when engine overheating is indicated can result in severe engine damage.

CNG KIT IDENTIFICATION

EXAMPLE



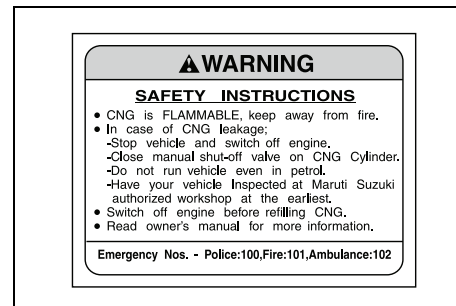
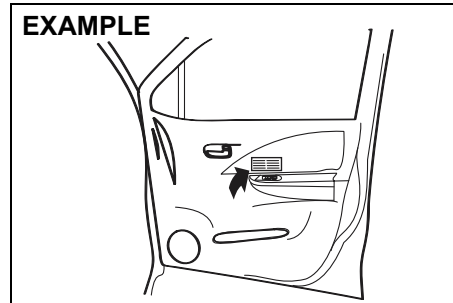
CNG cylinder identification number and CNG kit installation date is located inside the fuel filler lid.



CNG WARNING LABEL

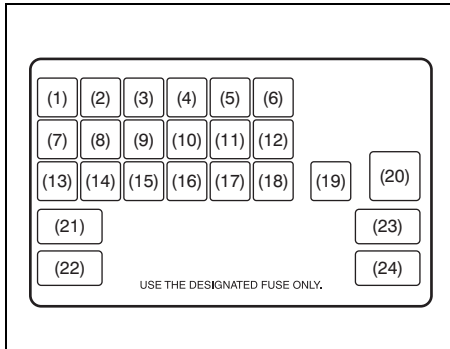
Front Driver Door

EXAMPLE



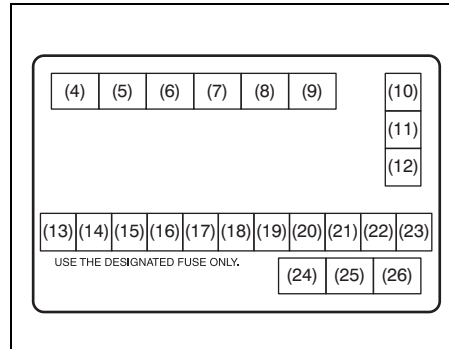
CNG warning label is located on front right door.

FUSE BOX (Under Dashboard)



(21) 7.5 A - CNG

FUSE BOX (Engine Compartment)



(6) CNG Valve relay
(14) 7.5 A - CNG Valve

For other fuses, refer “Inspection and maintenance” section in the main owner's manual.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

PERIODIC MAINTENANCE SCHEDULE

Kms (1 x 1000) Month	1	5	10	20	30	40	50	60	70	80	90	100
	1	6	12	24	36	48	60	72	84	96	108	120
All Joints (Gas leakage)	I	I	I	I	I	I	I	I	I	I	I	I
Coolant Hoses (Leakage, Damage)	I	I	I	I	I	I	I	I	I	I	I	I
All Fasteners Torque values	T	T	T	T	T	T	T	T	T	T	T	T
CNG low pressure filter cartridge with O-Ring	-	-	-	R	-	R	-	R	-	R	-	R
CNG cylinder leak testing and certification	Every 3 years from the date of initial testing by govt. approved testing agency											
CNG filler receptacle O-Ring	Replace every 4 years or 300,000 Km, whichever comes earlier											

TTighten to Specified Torque

I Inspect and correct or replace if necessary

R Replace

NOTE:

- This table includes services as scheduled up to 100,000 km mileage. Beyond 100,000 km, carry out the same services at the same intervals respectively.
- For other maintenance details refer "Inspection & Maintenance" section in main Owner's Manual.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

SPECIFICATIONS

Mass (Weight) (Kgs)		
Kerb Weight	920 - 925 Kgs	
Gross Weight	1350 Kgs	
Permissible Maximum Axle Weight	Front	680 Kgs
	Rear	710 Kgs
Seating Capacity	5 persons	
Fuel Capacity (litres)		
Petrol	35 L	
CNG (Water Filling Capacity)	60 L	

NOTE:

Specifications are subject to change without notice.

NOTE:

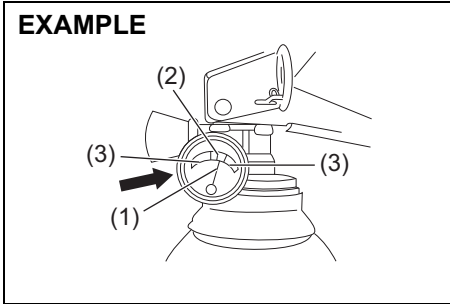
- 1) It is recommended to run the vehicle on petrol mode for 5~10 kms after every 300~500 km run in CNG mode to keep fuel system in good condition.*
- 2) Always keep minimum 5 litres of petrol in your petrol tank.*

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

FIRE EXTINGUISHER (if equipped)

Do's and Don'ts

EXAMPLE



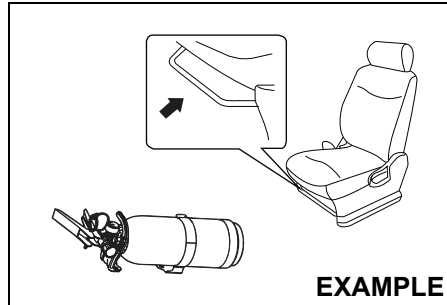
Do's

1. Check pressure gauge periodically. Max charging pressure is 15Kgf/cm² (in green zone (2)).
2. When pressure drops, indicator needle (1) will shift to the red zone (3). Immediately contact the fire extinguisher manufacturer as per the information provided on the fire extinguisher.
3. Get the fire extinguisher serviced only through the manufacturer service centre. Refer the information provided on the fire extinguisher to locate the nearest service centre.
4. Ensure that the Fire extinguisher is always kept at its prescribed position in the vehicle.
5. Refill the fire extinguisher immediately after use.

Don't

- Do not use water for cleaning fire extinguisher (Use clean cloth for removing dust).
- Do not rely on used or discharged fire extinguisher.

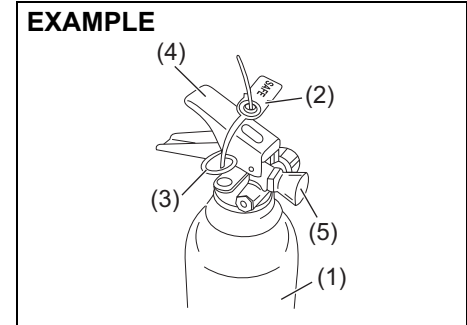
LOCATION



Fire extinguisher is located below co passenger's seat.

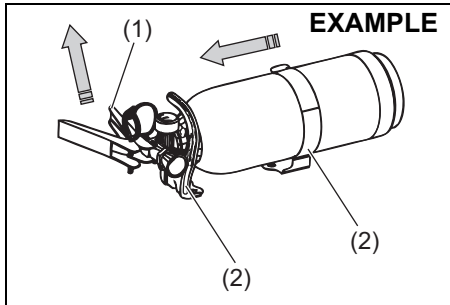
PARTS DESCRIPTION

EXAMPLE



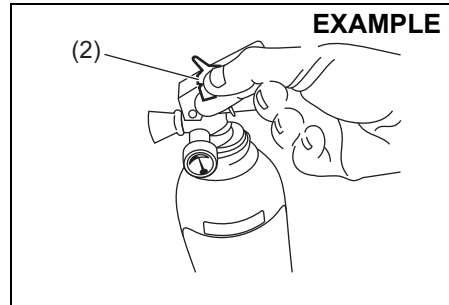
- (1) Fire extinguisher cylinder
- (2) Seal
- (3) Safety Pin
- (4) Lever
- (5) Nozzle

REMOVAL PROCEDURE



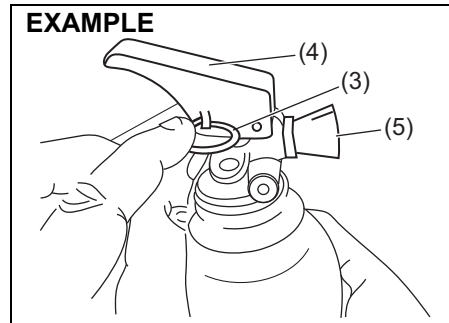
Lift Lever (1) of fire extinguisher slightly upwards and pull the fire extinguisher in the direction as shown in the figure, in order to disengage it from clamps (2).

PROCEDURE OF OPERATION



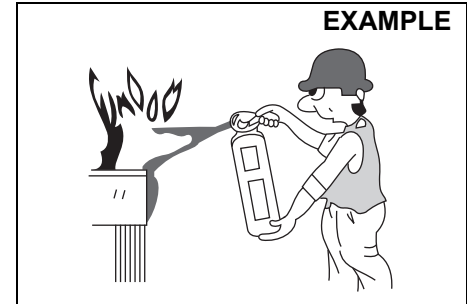
74LM0027

1. Hold the fire extinguisher (1) upright.
2. Break seal (2) by rotating the safety pin (3).



3. Pull Safety pin (3).
4. Squeeze lever (4) and direct the jet from nozzle (5) towards the near edge

of the fire with a rapid (fast) sweeping motion.



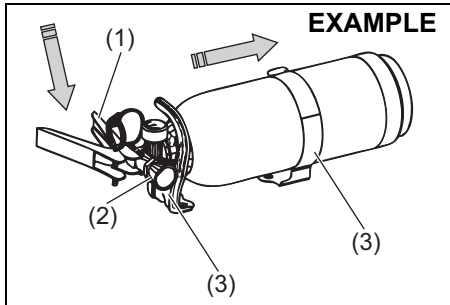
5. Drive the fire towards the far edge until flames are extinguished.

NOTE:

Fire extinguisher is only meant for small fire caused in vehicle by external source only.

FOR VEHICLES FITTED WITH CNG FUEL SYSTEM

FITMENT PROCEDURE



Insert the body of fire extinguisher (1) in to the clamps (3) and place the nozzle (2) carefully downwards, on the clamp.

NOTE:

Ensure that the nozzle of fire extinguisher is properly seated on the clamp.

REFILLING SCHEDULES

1. Refilling is necessary after every use.
2. Fire extinguisher needs refilling after every 3 years even if it is not used.
3. Inspect every 6 months by the manufacturer authorised service center.