TATA

SUPPLEMENT FOR INDICA eV2 XETA CNG

This supplement should be read in conjunction with
Indica eV2 Xeta Owner's Manual & Service Book

TATA MOTORS

CNG KIT REGISTRATION CARD (CUSTOMER'S COPY)

Owner name: .....

Address: .....

Vehicle Reg. No: .....

Engine No. : .....

VIN: .....

Regulator No: ......

Cylinder No : ……**Cylinder Retesting Date:** .....

Kms Reading: ..... **Date of installation**. .....

Dealer Name: ..... **Dealer Code** .....

Address: .....

Seal & Signature of the Dealer

TATA INDICA eV2 XETA CNG

SUPPLEMENT

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TATA MOTORS
Passenger Car Business Unit
Pune

CONTENTS

	DESCRIPTION	PAGE NO.
1	Introduction to CNG	3
2	Safety precautions	3
3	Starting the engine	6
4	How to shift the fuelling modes	7
5	Instrument cluster	8
	5.1 Fuel gauge	9
	5.2 Multifunctional LCD,Odometer, Tripmeter & Dimmer	10
6	Engine compartment	12
7	CNG filling	13
8	Safety regulations	13
9	In case of blown fuse	14
10	Spare wheel removal	17
11	Technical Specifications	18
12	Maintenance	19
13	Troubleshooting	19
14	Warranty policy	19
15	Service schedule	20

1. INTRODUCTION TO CNG :

CNG (COMPRESSED NATURAL GAS) is obtained by compressing purified natural gas to less than 1% of its volume at standard atmospheric pressure. CNG is a colorless, odorless, non-toxic but inflammable and lighter than air.

BENEFITS OF CNG :

- CNG is principally comprised of methane. Due to low density it is compressed at a pressure of around 200 bars to improve the vehicle on board capacity.
- Lower maintenance costs when vehicles run on CNG.
- With rising petrol costs, CNG has seen the competitive edge with its lower price and high availability.
- Vehicle life-span can be prolonged since there is no carbon generated during combustion and hence, engine and the oil in the engine are much cleaner.
- Due to its low hydro-carbon emissions, CNG is widely considered to be an environmentally viable alternative to petrol.

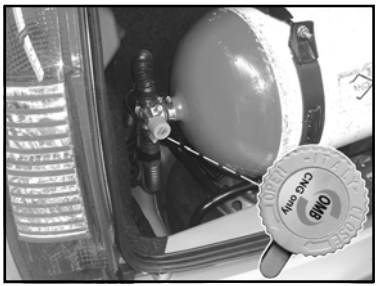
2. SAFETY PRECAUTIONS

To get the best out of CNG fuel, the engine must be tuned and regularly serviced (both as regards to the mechanical and the electrical parts) in addition to routine maintenance required by the vehicle.

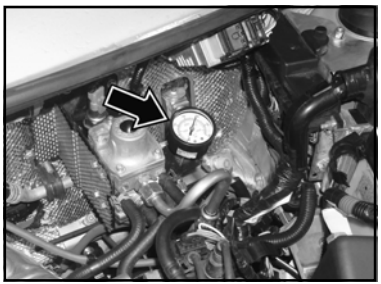
DO'S:

- Never carry out any repair work on your own or from any other personnel. Always get the car repaired / serviced at **TATA authorized service centre** only.
- Ensure that the Battery Ground terminal is disconnected before start of any repairs. Re-connect it once the repair activity is completed.
- Check CNG system components periodically for leakage.
- If you smell other than natural gas when refueling or if you hear a hissing sound, follow these directions:
  a. Do not panic. Park your vehicle in a well ventilated area and apply the parking brake. Roll down all the windows and keep the doors fully open for ventilation.
  b. Turn the ignition switch to LOCK (0) position.

c. Switch off ignition switch and manual shut off knob located on cylinder valve before servicing / repairing of any parts in the CNG circuit. Also ensure CNG gas pressure at pressure gauge is Zero. For doing so, we can run vehicle in CNG mode after shutting off cylinder valve. Do not run the vehicle until leakage is rectified.



CNG cylinder OPEN / CLOSE knob in boot space



CNG Pressure Gauge in Engine Compartment

d. Immediately contact nearest **TATA authorized service centre** for further assistance.

NOTE: In case of gas leakage, ECU will automatically switch the fuel mode from CNG to Petrol. The ECU will not allow you to switch to CNG mode until the leakage is rectified.

- Get CNG Cylinder checked after every 5 years at Govt. approved test Agency. Never fill CNG cylinder with air, LPG or any fuel except CNG.
- Keep the car away from any Fire source.
- Remove the CNG tank during the welding/brazing work on the Car.
- Check/replace air filter as per service schedule mentioned. Clean it during every service.

NOTE:

- ***It is essential to have at least 10 liters of petrol AT ALL TIMES to ensure trouble free operation in case of empty CNG tank.***
- ***Run your car in petrol mode for at least 10kms after every 300kms covered in CNG mode* to keep the petrol system in good condition.**

DON'TS

- Do not install an LPG, Propane or any other cylinder in place of CNG cylinder. It is illegal and unsafe.
- Never alter CNG system confugration. Do not adjust / tamper CNG system settings. Never place inflammable, explosive, corrosive material and sharp objects near CNG cylinder.
- Never place inflammable, explosive, corrosive material near CNG cylinder.
- While loading or unloading particulars near boot area, take extra precaution for preventing any damage to cylinder and cylinder valve.
- Don't smoke inside or near the CNG vehicle.
- Over filling the CNG cylinder can cause safety issues like gas leakage. Please DO NOT over fill the tank beyond its capacity.
- Never use naked flame/fire to check gas leakages.
- Do not use high pressure washer fluid/water jets at electrical devices & their connectors during washing. This is to prevent malfunction / failure of electrical system due to water ingress.
- Do not jump start your vehicle if you suspect any CNG leak.
- Do not drive your vehicle in case of CNG leak. CNG is flammable and highly explosive. You could be killed or seriously injured if leaking gas is ignited.

3. STARTING THE ENGINE

NOTE:

Your Engine can start either in gas mode or in petrol mode but it is always advisable to start in petrol mode and then switch to gas mode.

- *To start, turn the ignition key to "IGN" position. Ensure the "MIL" lamp turns "ON".*
- *Select the desired fuel operating mode by pressing the Fuel Selector Switch.*
- *Keep the clutch pedal fully pressed and crank the engine. DO not press the accelerator pedal.*
- *If the engine cranks but fails to start then repeat the above procedure. Release the key as soon as the engine starts. Ensure that the "MIL" lamp is "OFF".*

NOTE:

- *Irrespective of the position of the fuel selector switch (Petrol or CNG), your car's engine will start using petrol when the engine / coolant temperature is below 10°C (especially in cold winter) and later switch over automatically to CNG (if CNG mode is selected). Once the engine warms up, your car's engine will start using CNG, if CNG mode is selected.*
- *During normal ambient (summer and other months), you car's engine will start in CNG, if CNG mode is selected.*
- *Starting time in CNG will be longer than in petrol (approx 1 sec longer than petrol starting time) due to the physical characteristics of the fuel.*
- *Ensure that your car has sufficient petrol in the tank as petrol is used for starting until the engine warms up.*
- *Ensure that you run your car in "PETROL" mode for at least 10kms for every 300kms covered in "CNG" mode to ensure proper working of petrol fuel supply system.*

4. HOW TO SHIFT THE FUELLING MODES

You can switch from PETROL to CNG and vice versa by operating fuel selector switch located on right hand side of dashboard near steering wheel. See below picture.

A. PETROL to CNG mode

You can shift to CNG fuel mode by pressing the fuel selector switch. The “CNG” lamp on the instrument cluster starts flashing during the changeover to CNG mode and glows permanently after changing to CNG mode indicating that the car is running on CNG.

B. CNG to PETROL mode

Similarly you can switch to PETROL fuel mode by pressing the fuel selector switch. After successful transition to PETROL mode, the green “CNG” lamp goes OFF. This indicates that the car is running on petrol.

CNG LAMP :

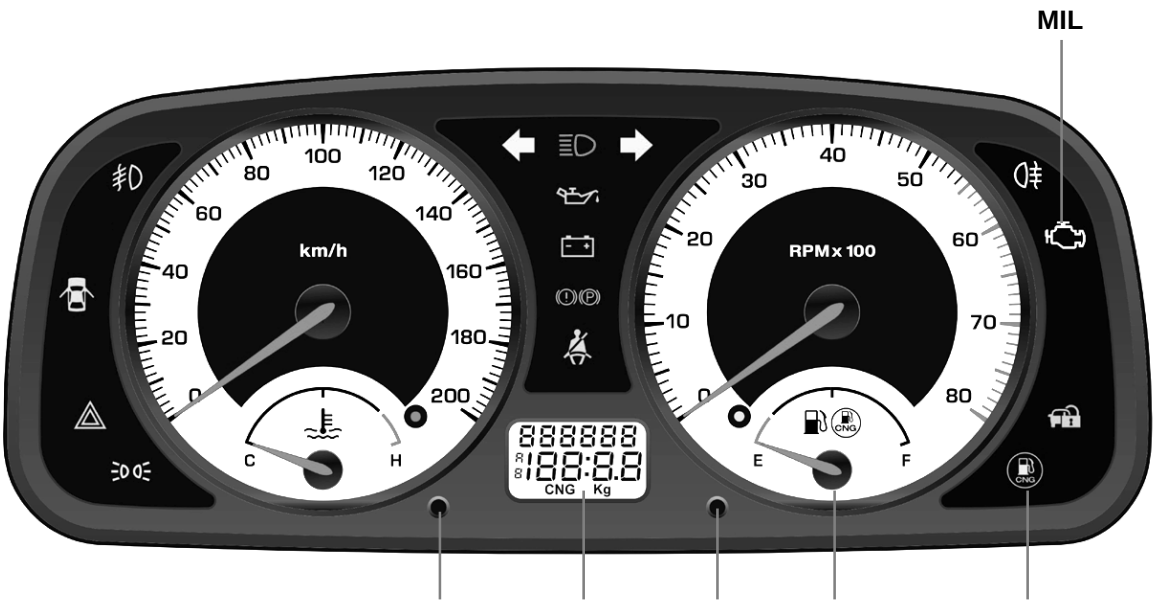
This lamp glows when you select the CNG fuel mode. This lamp will not glow when you select petrol fuel mode.

IMPORTANT:

In case of fuel mode switching from PETROL to CNG mode during normal running, initially the CNG lamp toggles indicating the transition and when the CNG lamp glows permanently, this indicates the completion of the transition to the required fuel mode.

- ***Fast flashing of the’ CNG’ lamp on instrument cluster indicates the fault in CNG system. Car will automatically switch to Petrol mode. Get the car checked / repaired at the nearest Authorized TATA service center.***
- ***Very Slow flashing of the’ CNG’ lamp indicates the empty tank / NO CNG supply (loss of pressure). Get the CNG tank re-filled.***

5. INSTRUMENT CLUSTER



5.1 FUEL GAUGE:

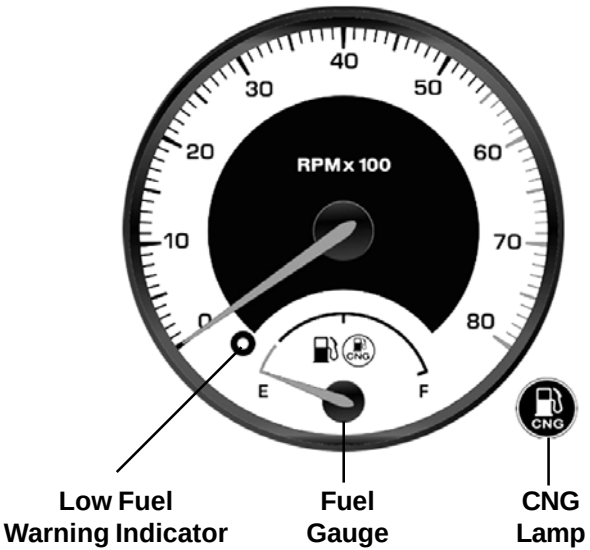
The fuel gauge indicates the approximate fuel level in the tank.

When the engine is in Petrol mode, the gauge shows the level of petrol and when it is in CNG mode the green “CNG” lamp in the instrument cluster glows and shows the CNG level. When the needle touches the red band (indicating reserve capacity has been reached.), a visual warning indication (amber coloured) comes ‘ON’ indicating the fuel level is low. Refill the fuel tank at the earliest.

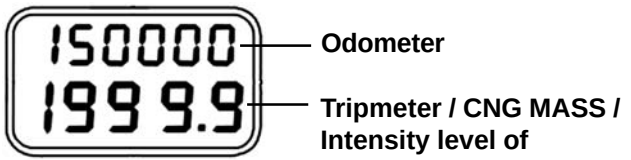
Sr. No.	CNG pressure (bar)	Fuel gauge indication
1	15	Empty low
2	100	1/2
3	150	3/4
4	200	Full

NOTE:

The gauge may show slightly more or less than the actual amount. The tank temperature, filling method and ambient conditions may affect the pressure and temperature of the natural gas.



5.2 MULTIFUNCTIONAL LCD, ODOMETER, TRIPMETER AND DIMMER:



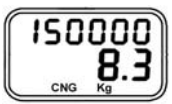
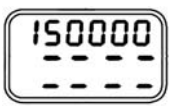
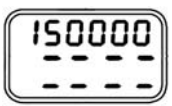
The speedometer indicates the car speed in km/hr. The odometer records the total distance the car have been driven. The tripmeter can be used to measure the distance travelled on each trip or between fuel fillings.

LCD has two line display. The first line displays the Odometer count. The second line displays either of Tripmeter A, Trip meter B, CNG MASS (in kg) and Intensity level of panel illumination.

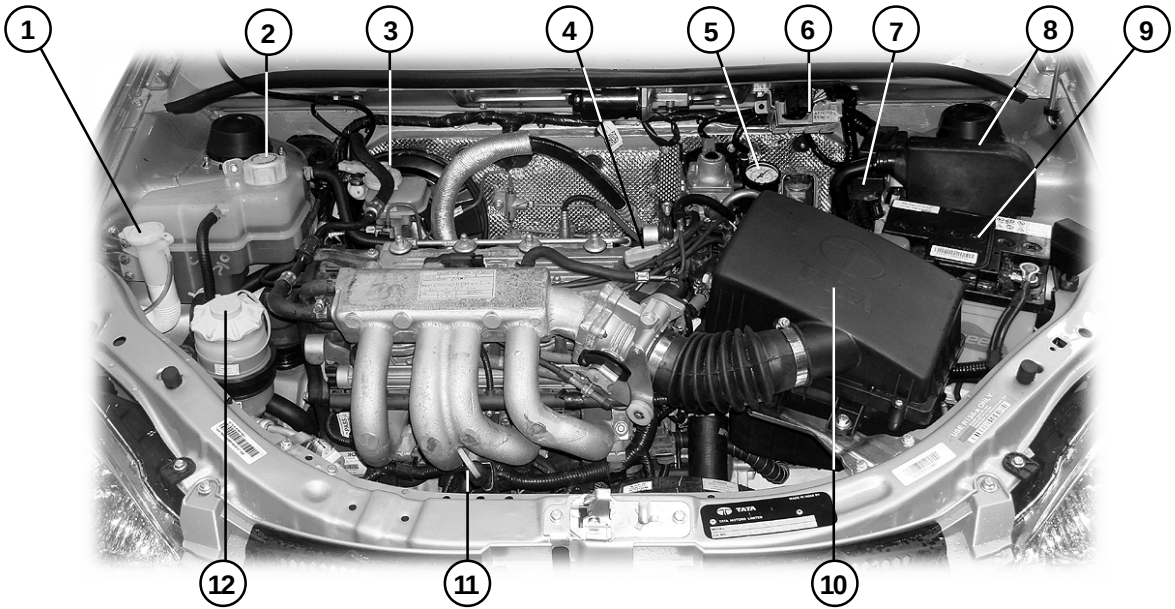
The selection and control of functions are done through ‘MODE’ and ‘SET’ pushbuttons (knobs) provided on either side of the LCD.

The ’MODE’ knob is used to select one of Tripmeter A, Tripmeter B, CNG MASS or Intensity level of panel illumination. Switching among the above functions can be done by pressing the MODE knob.

DISPLAY SELECTION BY “MODE” AND “SET” KNOBS:

Sr. No.	Indication on LCD	With “MODE” knob pressed	With “SET” knob pressed
1	ODOMETER	Display changes to TRIP ‘A’ 	————
2	TRIP A	Display changes to TRIP ‘B’ 	Resets TRIP ‘A’ distance
3	TRIP B	Display changes to CNG MASS 	Resets TRIP ‘B’ distance
4	CNG MASS	Display changes to DIMMER 	————
5	DIMMER	Display changes to ODOMETER 	Adjusts dimming level

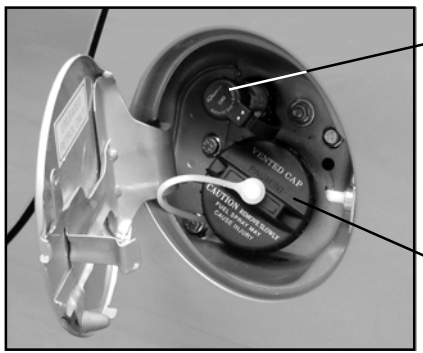
6. ENGINE COMPARTMENT



1.	Windshield Washer Filling Cap	5.	CNG Pressure Gauge	9.	Battery
2.	Engine Coolant Tank	6.	CNG ECU	10.	Air Filter
3.	Brake Fluid Container	7.	Fuse Box & Relay	11.	Dip Stick
4.	Engine Oil Filler Cap	8.	Petrol ECU	12.	Power Steering Oil Container

7. CNG FILLING :

CNG filler valve is used to fill CNG in the cylinder. It is fitted near petrol filling location. CNG should be filled by gas filling nozzle at filling station.



CNG tank capacity: 60 liters of Water capacity

IMPORTANT:

- ***Keep the Ignition switch in "OFF" condition during CNG refilling.***
- ***Do not use your mobile phones when you are at a Filling station.***

8. SAFETY REGULATION :

FIRE EXTINGUISHER :

A fire extinguisher is provided on the car near driver seat

Method of operation :

1. Check if the pressure gauge needle in green zone.
2. Hold upright ,pull the pin and press the lever.
3. Direct discharge at base of flame with rapid sweeping motion.

Maintenance :

Check pressure on the gauge every week, needle should remain in green region. If it comes to red region, please send for recharging. **The Fire Extinguisher is to be refilled every three years even if it is not used.**

Location of Fire Extinguisher

CNG KIT / CMVR NUMBERING PLATE :

CMVR (Compliance to Motor Vehicle Rules) plate is installed near to filler valve with CNG kit identification and installation date.

Your car's CNG cylinder needs to be recertified every five years as per CMVR (AIS 24, 25 and 26). Please ensure that it is done by a TATA Authorized Service centre and the new date is engraved on the plate.

CMVR Plate

9. IN CASE OF BLOWN FUSE

Your car's CNG system is protected against short circuit / overload by a fuse (15A) fitted in the fuse box.

To replace a blown fuse:

- Open fuse box cover.
- Identify blown fuse from its melted wire.
- Remove the blown fuse and replace with one of similar amperage.

Take your car to a TATA Authorized service centre to find out the reason for the fuse to blow & repair the problem.

NOTE:

Fuse replacement should preferably be done only at TATA Authorized service centre

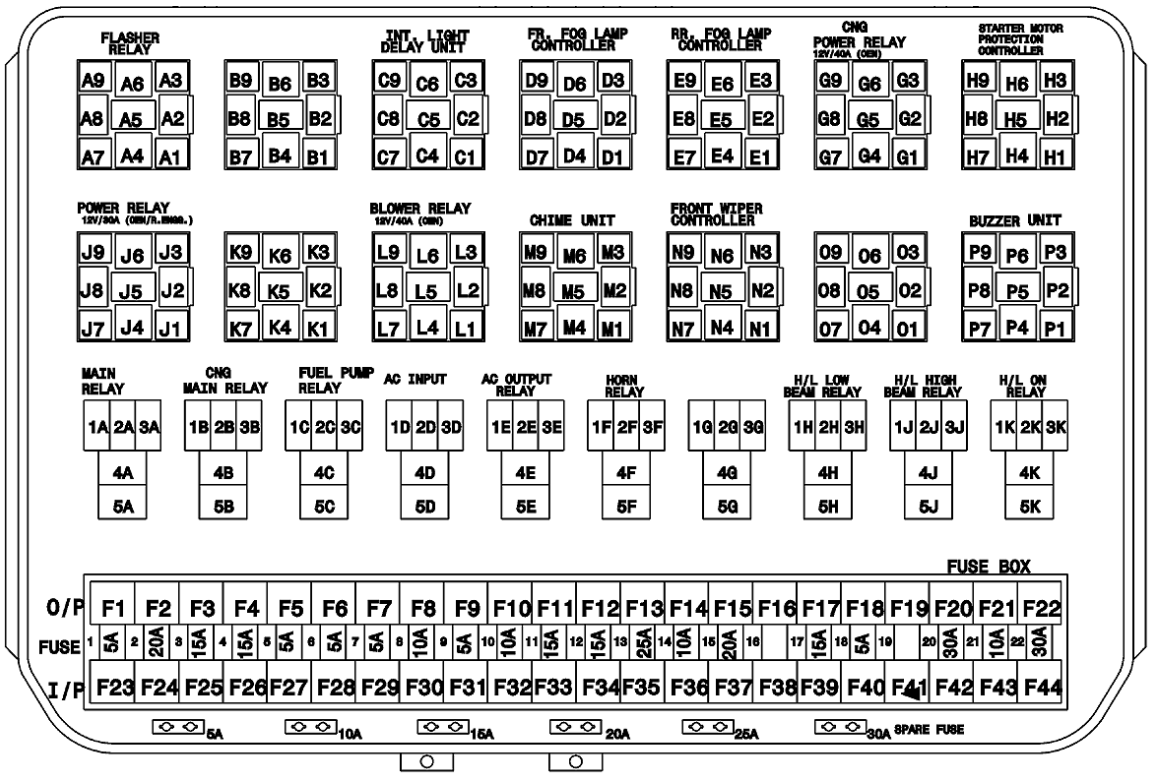
When the fuse blows OFF, the following may occur:

- If your car is running in CNG mode when fuse blows OFF, the CNG system will shut down and will automatically shift to Petrol mode.
- In such a case, you can start the car only in Petrol mode
- If your car is running in Petrol mode when fuse blows OFF it will keep running in the Petrol mode.

WARNING:

Always replace blown fuse with a fuse of correct amperage. Never use a substitute like aluminum coil or wire to replace a blown fuse. When you replace a fuse and the new fuse also blows OFF instantly, have the car inspected at a TATA authorized service centre.

FUSE BOX IN CABIN



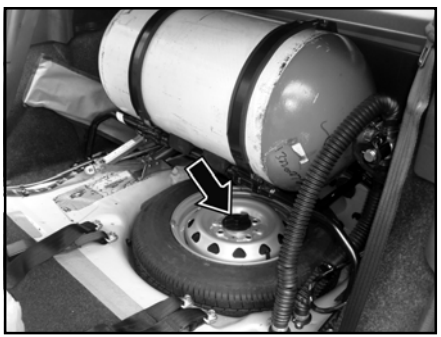
FUSE BOX

Fuse No.	Function	Fuse Rating
F1	Starter protection circuit	5A
F2	Front and rear fog lamp	20A
F3	Fuel pump	15A
F4	CNG power relay	15A
F5	Position lamp RH	5A
F6	Position lamp LH	5A
F7	Blower + W/W + Horn relay coil	5A
F8	Indicator lamps	10A
F9	Music system and chime key in	5A
F10	A/C controls	10A
F11	Head lamp low beam relay	15A
F12	Head lamp high beam relay	15A
F13	Wash & wipers	25A
F14	Instrument cluster	10A
F15	Reverse lamp, clock and cigarette lighter	20A
F16	Blank	
F17	Music system, clock and instrument cluster	15A
F18	Roof, engine and load area lamp	5A
F19	Blank	
F20	C.D.L. and Immobilizer	30A
F21	Stop lamp and H.M.S.L.	10A
F22	Ventilation motor	30A

10. SPARE WHEEL REMOVAL :

- Remove the cover and take out the jack. Release the latch provided on the rear seat back and somersault the seat back to access the spare wheel.

- Unscrew spare wheel mounting nut.



- Once this nut is removed, the wheel can be lifted and taken out.

NOTE:

- ***Always use only the recommended size of wheel rims & tyres. Use of non-recommended rims and tyres may have an adverse effect on car safety.***
- ***Once the spare wheel is repaired and is ready to be refitted, keep the direction of the air filling nozzle outwards for easy air filling.***

11. TECHNICAL SPECIFICATIONS

ENGINE (Bi-fuel: Petrol + CNG)	
Model	TATA 475 SI 70
Type	Water cooled, Multi Point Injection, Single overhead camshaft Engine
No. of cylinders	4 inline
Bore X Stroke	75 mm x 67.5 mm
Capacity	1193 cc
Max. Engine output	CNG Mode : 55 Ps at 5000 rpm
Max. Torque	CNG Mode : 90 Nm at 2600 rpm
Compression ratio	10 : 1
Firing order	1 - 3 - 4 - 2
Fuel system	Sequential Injection with close loop Air / Fuel control
Emission compliance	BS IV
Cooling system capacity	6.0 Liters

ELECTRICAL SYSTEM	
System Voltage	12 Volts -ve earth
Battery	12V, DIN 55
Alternator	90A

FUEL TANK CAPACITY	
Fuel Tank Capacity	**PETROL :** 37 Litres / **CNG :** 60 LITRES of WATER CAPACITY

12. MAINTENANCE :

Please use only genuine engine oils, coolants, lubricants, anti rust & sound deadening coats, windscreen sealant, adhesives & fuel additives, spark plugs branded by TATA MOTORS for optimum performance of your car.

SR. NO.	ITEM	GRADE	COMPANY	QTY.
1	Engine oil	Gas oil Minimum API-SL/CH4 specification	Castrol - Magnetec 10W40 EXXON MOBIL - Super 1000 TM 15W40	4.0 Liters

SR. NO.	ITEM	COMPANY	GAP
1	Spark Plugs	BOSCH FR6 DE0	0.7 to 0.8mm

13. TROUBLESHOOTING :

SR. NO.	PROBLEM	POSSIBLE CAUSE	REMEDIES
1	Engine cranks but does not start - CNG mode	No CNG	Refill CNG
		CNG filter / fuel lines choked.	Get CNG filter replaced at TATA Athorized service centre
		Inertia switch tripped	Contact TATA authorized service centre
		Safety solenoids not operating.	Contact TATA authorized service centre
		ECU faulty	Contact TATA authorized service centre
2	MIL continuous to glow OR CNG lamp fast blinking, even after start.	Some faults are detected by the fuel injection and ignition system	Get the vehicle checked and rectified at TATA authorised service centre.

14. WARRANTY POLICY : WARRANTY POLICY will remain same as given for respective PETROL car.

15. SERVICE SCHEDULE :

SR. NO.	OPERATION	FREQUENCY	1000 - 1500	5000 - 5500	10000 - 10500	20000 - 20500	30000 - 30500	40000 - 40500	50000 - 50500	60000 - 60500	70000 - 70500	80000 - 80500	90000 - 90500	100000 - 100500
		Month	**1**	**6**	**12**	**24**	**36**	**48**	**60**	**72**	**84**	**96**	**108**	**120**
1	Check CNG Pipe joints (Leakage)	At every service	•	•	•	•	•	•	•	•	•	•	•	•
2	Check Mountings of filler valve, sensor,Pressure gauge, Regulator assembly, Cylinder Cradle	At every service	•	•	•	•	•	•	•	•	•	•	•	•
3	Check all joints in low pressure line,CNG rail hoses for leakage.	At every service	•	•	•	•	•	•	•	•	•	•	•	•
4	Replace the high pressure filter Cartridge with 'O' ring	50000							•					•
5	Drain oil from high pressure filter body	10000			•	•	•	•	•	•	•	•	•	•
6	Replace the filler valve O-ring	10000			•	•	•	•	•	•	•	•	•	•
7	Check Pressure gauge working	At every service	•	•	•	•	•	•	•	•	•	•	•	•
8	Replace the pressure regulator's filter, O-ring & both Diaphragms	100,000												•
9	Change engine oil	10000			•	•	•	•	•	•	•	•	•	•
10	Replace spark plugs	30000					•			•			•	
11	Check for DTC if any	At every service	•	•	•	•	•	•	•	•	•	•	•	•
12	Recertification of tank	Every 5 Years												
13	Check tappet clearance and adjust	First at 10000 km subsequently at every 20,000 km			•		•		•		•		•	

LIST OF APPROVED CNG CYLINDER TESTING STATION

M/S UTTAM SPECIAL GASES PVT. LTD.
F-90/5 OKHALA INDUSTRIAL AREA, PHASE-1
NEW DELHI - 110020

M/S ASCO INDUSTRIAL CORPORATION
7A, INDUSTRIAL ESTATE, SONIPAT - 131001
(HARYANA)

M/S GAS AUTHORITY OF INDIA LTD.
BHIKAJI CAMA PLACE, R K PURAM,
NEW DELHI - 110066

M/S BHARAT PUMP AND COMPRESSORS LTD.
NAINI, ALLAHABAD (U.P.)

M/S TEESTA CONSTRUCTION PVT. LTD.
687 (G), SECTOR - 28, GAUTAM BUD NAGAR
NOIDA - 201303 (U.P.)

M/S MARUTI KOATSU CYLINDER PVT. LTD.
1402, GIDC, INDUSTRIAL ESTATE,
DIST : PANCHMAHAL, HALOL -389351
(GUJARAT)

M/S ASLATIC OXYGEN AND GASES LTD.
POKHRAN ROAD, THANE

M/S S.V. TANKS AND VESSELS LTD.
PLOT NO. C/100, MIDC INDUSTRIAL AREA,
TURBHE, NEW MUMBAI - 400613

M/S JARAKAHI AUTOMOBILE PVT. LTD.
SAMRAT SILK MILL COMPOUND, LBS MARG,
VIKROLI (W), MUMBAI -400079

M/S GREEN GLOBE TECHNICAL SERVICE
PLOT. NO. 151, BRICK FACTORY COMPOUND,
SHASTRI NAGAR, MULUND COLONY, MULUND (W)
MUMBAI -400082

M/S METRO CYLINDER TESTING CO. LTD.
72-10, 26 KM STONE, ROHTAK ROAD,
MUNDKA UDHYOG NAGAR, GHEVRA EXTN.,
NEW DELHI-110041

M/S HI-TECH CNG CYLINDER TEST HOUSE
30, NETAJI SUBHASH MARG, NEW DELHI-110002

M/S JIOLAT AUTO GAS INDUSTRIES
2094/G-5, GALI NO. PREM NAGAR (ZAKHIRA)
NEW DELHI - 110008

M/S JBM INDUSTRIES LTD.
PLOT NO. 269, SECTOR-24, FARIDABAD - 121005

M/S MARUTI KOATSU CYLINDER PVT. LTD.
1402, GIDC, INDUSTRIAL AREAR, HALOL - 389350
(GUJARAT)

M/S SATYAM CNG CYLINDER TEST HOUSE
KHASARA NO. 21/1, JHARODA MAJRA BURARI, DELHI-84

5402 5840 99 01

TATA MOTORS

Designed & Developed by : LDC , Customer Support-PCBU, Pune