

GENERAL

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2.0 KNOW YOUR INDICA VISTA

Your INDICA VISTA comes from a family of new cars that are being rolled out from the Tata Motors' stables. It is the outcome of research & development by Tata Motors Limited. The INDICA VISTA incorporates all the advanced features of Tata Motors precision and advanced technology.



The INDICA VISTA is a hatchback having five doors with an ergonomically designed cab with added features like collapsible and adjustable power steering, central locking, power windows, sophisticated HVAC system, multi adjustable Driver and co-driver seats having provision for lumbar as well as head restraint adjustment. The INDICA VISTA is provided with a set of rear swept stylish head lamps which are biggest in it's class

The INDICA VISTA is powered by new generation engines that have been designed to deliver consistent and optimum performance under the toughest conditions.

The INDICA VISTA has vacuum assisted independent hydraulic brakes with disc brakes in front and drum brakes for the rear wheels. The suspension has been designed to provide a comfortable ride. This design incorporates solutions to eliminate vibrations caused due to road undulations and provide better stability in all driving conditions coupled with reduced noise levels in the car.

In addition to all these, TATA vehicles are backed by a well established service network with trained and skilled manpower that ensures proper maintenance.



2.1 GOOD WORKSHOP PRACTICES & SAFETY PRECAUTIONS :

- Always ensure that all the repair / maintenance work carried out should be as per the instructions provided in the workshop manual.
- Use protective clothing, apron, hand gloves, and safety shoes while working in the workshop. Do not wear watch, rings and belt while serving the vehicle.
- Keep your work area, equipment and tools clean at all times.
- Make sure you use the proper tool for the job and use it the right way. The improper tool or its incorrect use can damage the part you are working on or cause injury or both.
- Never keep the tools on the floor/vehicle. The tools should be kept in the tool box after use.
- Cover fenders, seats, steering wheel and any other parts those are likely to get scratched/soiled before starting any service work (Fig. 1).

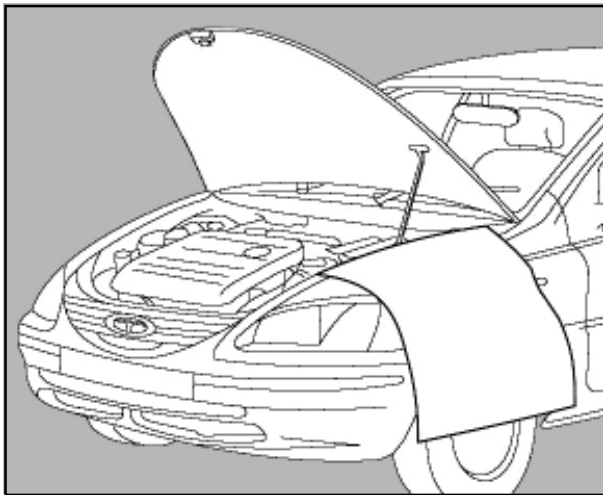


Fig. 1

- While servicing the vehicle in engine running condition make sure that the gear shifting lever is in neutral position and parking brake is fully applied. Never run the engine without proper ventilation and adequate means of getting rid of

exhaust gases.

- Prior to removing or disassembling parts, they must be inspected carefully to isolate the cause

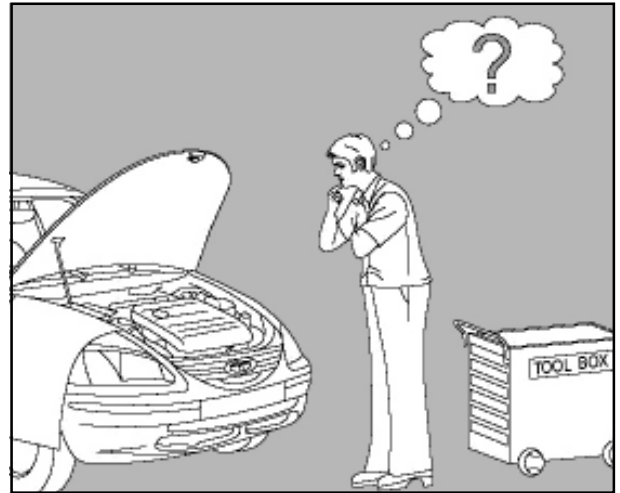


Fig. 2

for which the service is called for (Fig. 2).

- All the reusable dismantled components must be kept in a clean enamel coated white tray sequentially in an orderly manner to facilitate their

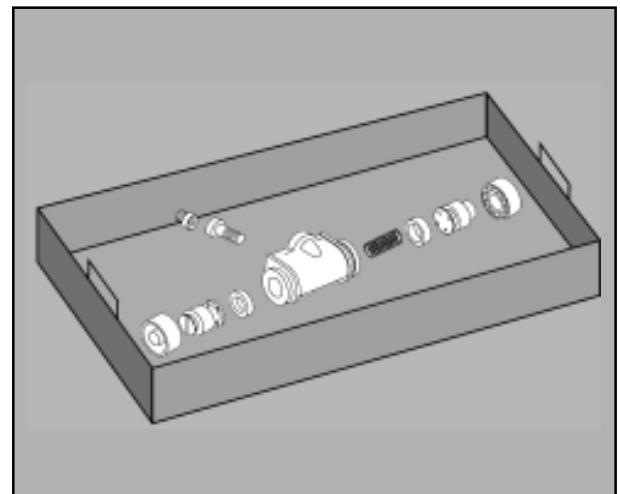


Fig. 3

accurate and proper reinstallation (Fig. 3).

- Never reuse the parts like oil seals, gaskets, packing, O-rings, locking washers, split pins, self locking nuts and certain other parts.
- Plug the ports / openings of aggregates such as FIP / Injectors, TMC, etc., whenever removed from the car.

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- For correct reinstallation of vacuum fuel hoses attach tag describing the correct positions (Fig. 4).

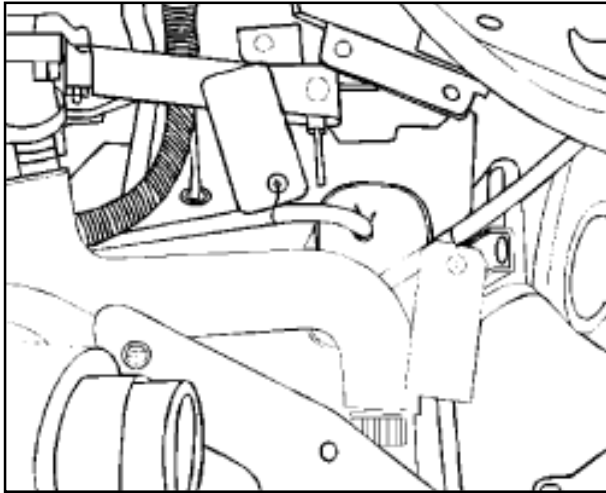


Fig. 4

- Make sure only the branded lubricants, coolant, corrosion protection coatings and sealants are used.
- Check all the lines for leaks related to the systems like fuel, oil, coolant, vacuum, exhaust and brakes after servicing (Fig. 5).

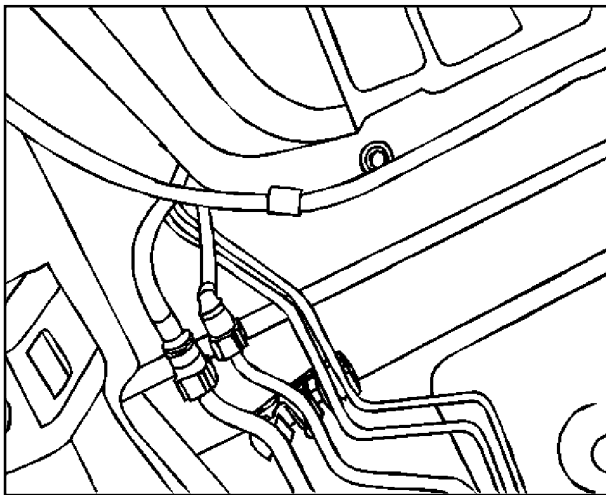


Fig. 5

- For vehicles equipped with fuel injection systems do not disconnect the fuel line between the injector and the fuel pump without releasing the fuel pressure or fuel can be sprayed out under pressure (for diesel).

Precaution for Catalytic Converter (MPFI Petrol Engine) :

Caution : If large amount of unburnt fuel goes into the converter, it may overheat and create a FIRE hazard.

To prevent this, observe the following precautions :

- Use only unleaded gasoline.
- Engine compression checks should be carried out within the shortest possible time.
- If necessary then only conduct a spark jump test within the shortest possible time.
- Do not run the engine when the fuel tank is nearly empty to avoid engine misfire and damage to catalytic converter.

NOTE :

For details on the catalytic converter precautions please refer to exhaust system of this manual.

2.2 PRECAUTION FOR ELECTRICAL CIRCUIT SERVICE :

- Disconnect the negative cable of the battery while servicing the electrical parts that do not require battery power and insulate the negative terminal

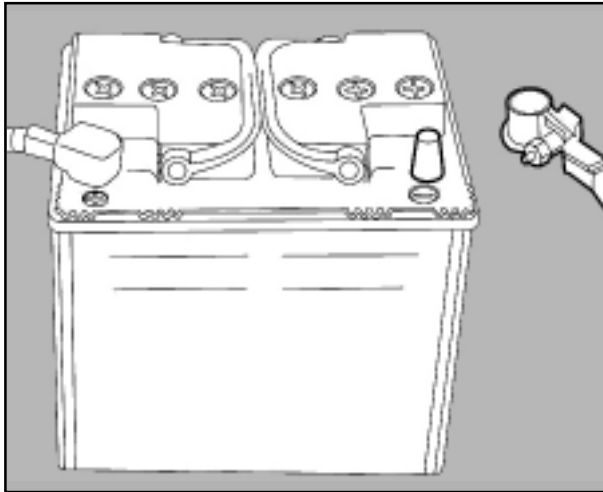


Fig. 6

properly (Fig. 6).

- While removing the battery first disconnect the negative cable and then the positive cable. While reinstalling the battery, first connect the positive cable and then negative cable.
- Be sure to turn the ignition switch off before

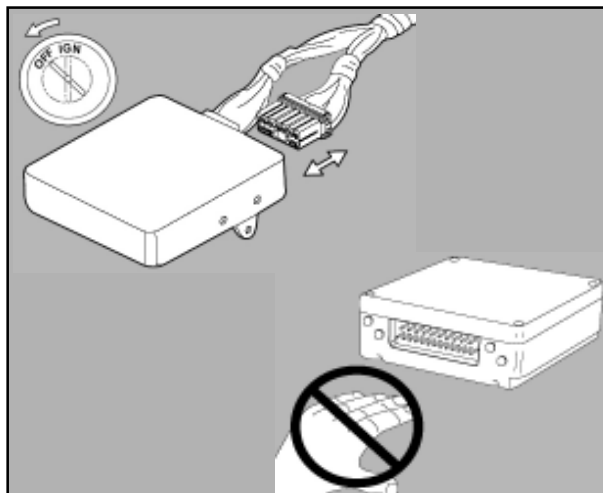


Fig.7

disconnecting and connecting coupler to avoid electronic parts damage (Fig. 7).

- Do not touch the electrical terminals of parts which use microcomputers (e.g. electronic control units like ECM etc.) to avoid damage to these parts from static electricity from your body (Fig. 8)
- Always use the correct voltmeter, ohmmeter for taking measurement to avoid damage to the electronic control unit and sensors.
- Make sure to insert the probe from wire harness side of the connector for taking measurement.
- Make sure the connector halves are mating

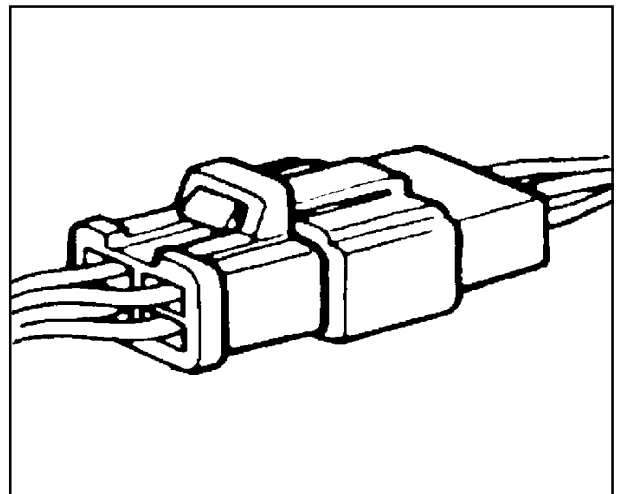


Fig. 8

properly and terminals seating precisely in the connector body (Fig. 8)

- Dirt / corroded terminals result in improper contact. The terminals should be cleaned carefully.
- Improper contact pressure between mating terminals disturbs the connectivity between them.
- Replace the damaged connector body to avoid exposure of the terminals in case of inadequate contact pressure.

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- Ensure proper connection between the terminal to the wire. Rectify the loose connection by repairing / replacing the wire harness (Fig. 9)

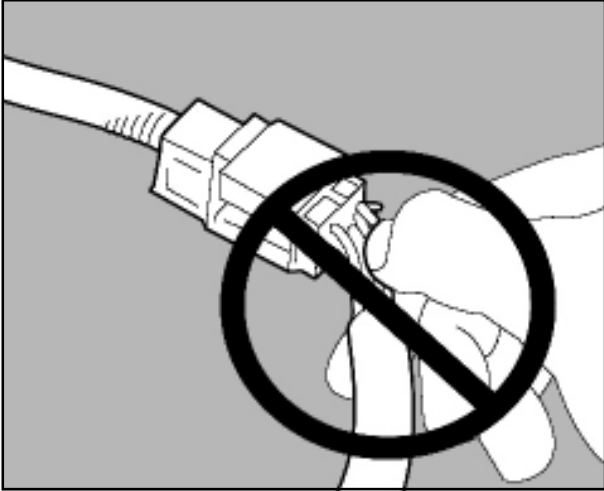


Fig. 9

- Worn out insulation of the wire may result in short circuit.
- Avoid water entering the connectors.

2.3 LIFTING, JACKING, TOWING POINTS USING THE TWO POST LIFT

Make sure you follow the manufacturer's instructions while lifting the car on two post lift as shown in (Fig10).

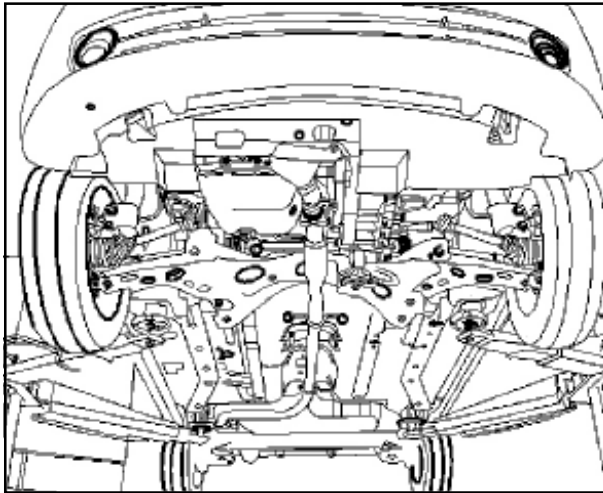


Fig. 10

Always ensure vehicle balance in service while applying two post lift to under body.

Care should be taken that the two post lift arm is not in contact with the bracket, brake or fuel pipes etc.

Before servicing, make sure to lock the lift after the vehicle is lifted up.

Following fig shows the front and the rear jacking points by two post lift

FRONT JACKING POINTS

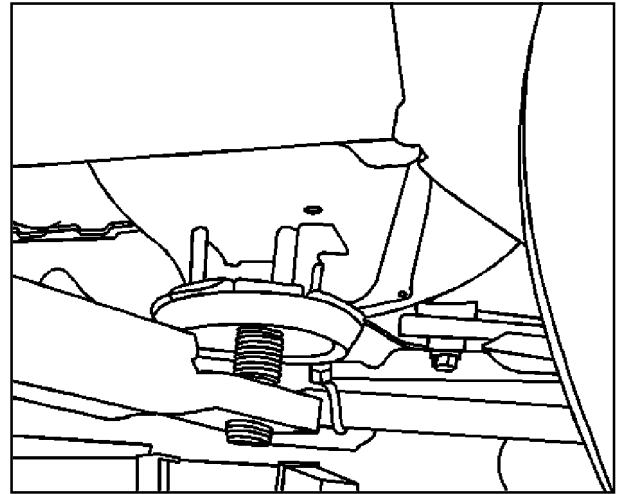


Fig. 11

REAR JACKING POINTS

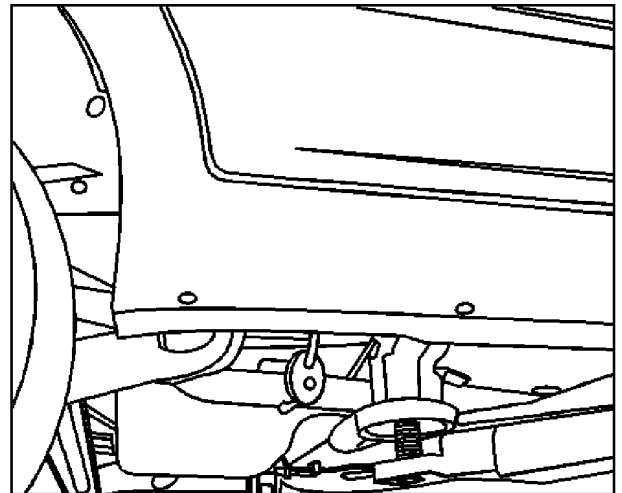


Fig. 12

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USING THE FLOOR JACK:

Use the jacks at the locations as shown in the figs. 13 a, 13 b

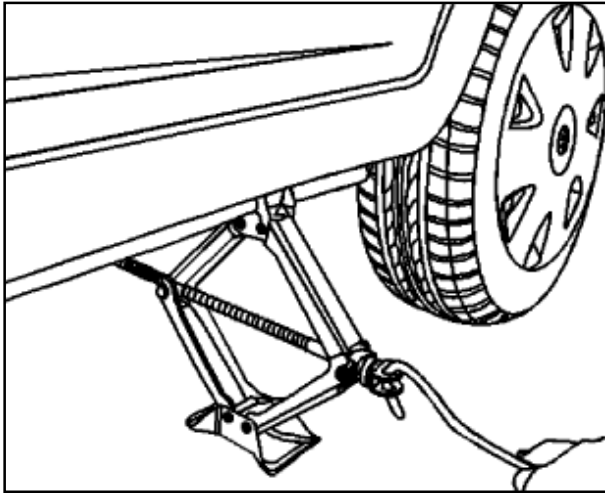


Fig. 13 a

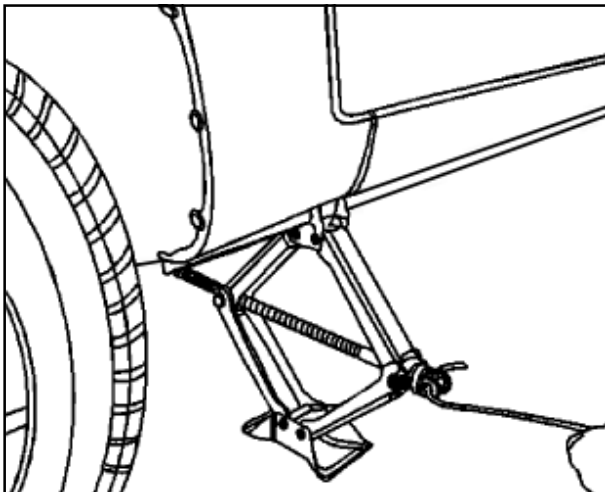


Fig. 13 b

Do not apply the jack against any part which may get deformed.

If front end or rear end of the vehicle is to be jacked ensure the wheels on ground and the parking brake is applied.

TOWING THE VEHICLE : (Fig. 14)

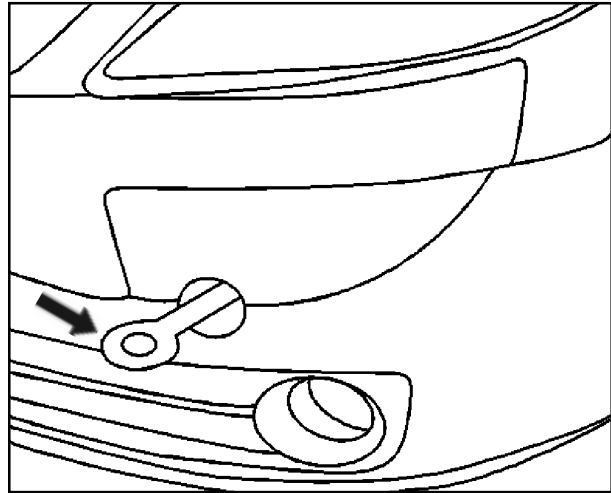


Fig. 14

- For towing a car, the best way is to use a wrecker. Alternatively use a rigid tow bar.
- Avoid using a flexible cable or rope as your car may crash into the car towing your car when it stops suddenly.
- Switch 'ON' the hazard warning signals of both the cars to warn other road users.
- Where possible, keep the engine idling so that power steering assistance and brake vacuum are available.
- Limit the speed to 20-30 Kmph.
- In case of brake failure, use the parking brake to control the car.

REAR TOW HOOK : (Fig. 15)

- Boltable tow hook is provided in the toolkit.
- Remove cover on rear bumper.
- Bolt the tow hook (ensure proper fitment).
- Whenever tow hook is not required unscrew the tow hook and keep it in toolkit.
- Press the cover to close the hole for tow hook in rear bumper.

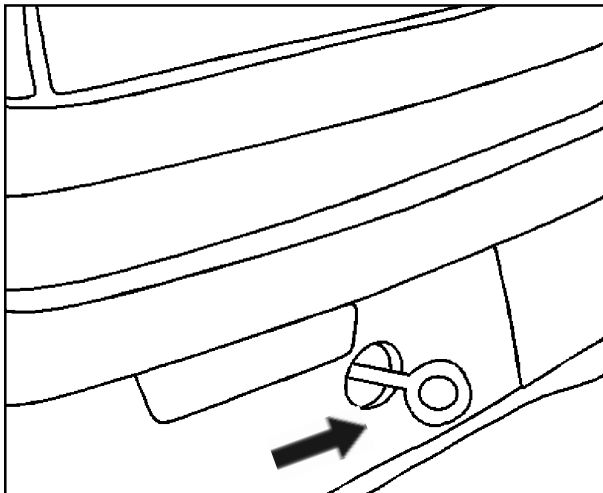


Fig. 15

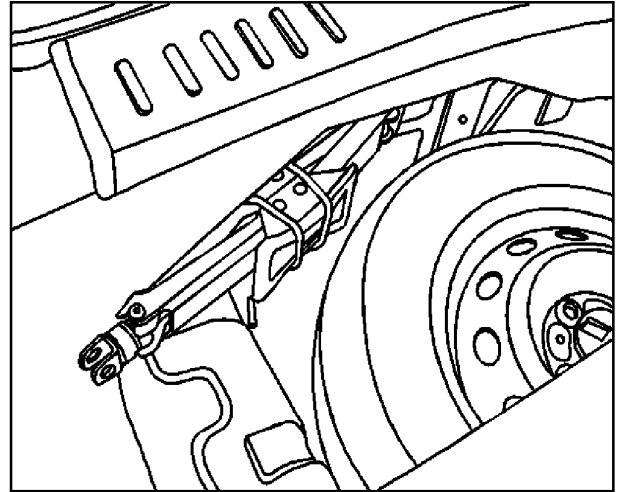
2.4 JACK AND TOOL BAG LOCATION IN VEHICLE:

Fig. 16 (Near spare wheel)

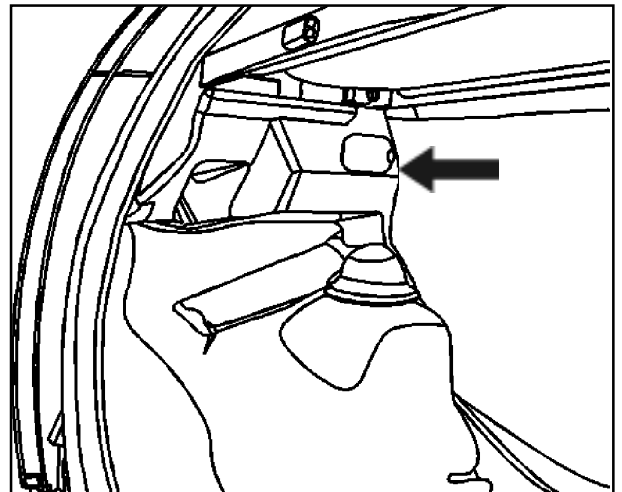
1. JACK LOCATION :**2. TOOL BAG LOCATION :**

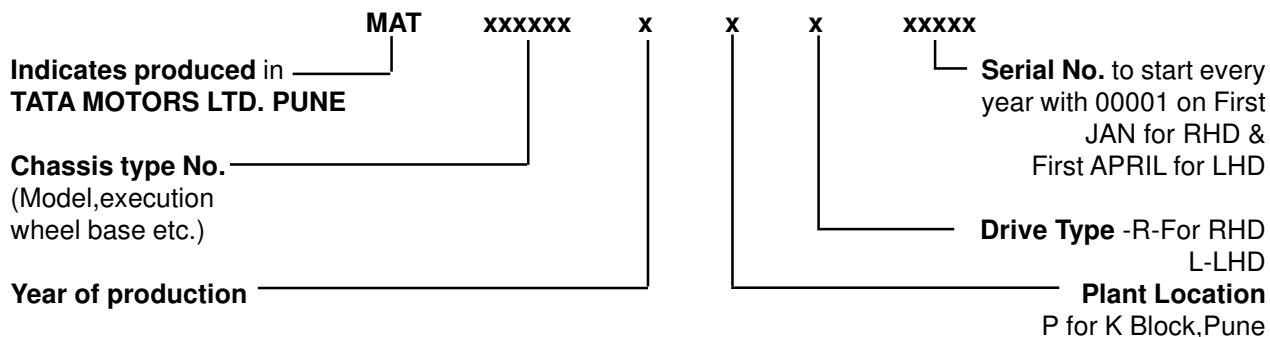
Fig. 17 (Below parcel shelf, near suspension tower)

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2.5 NUMBERING SYSTEM :

2.5.1 CHASSIS NUMBERING SYSTEM

Chassis number consists of 15 digits (6 barrels) as given below :

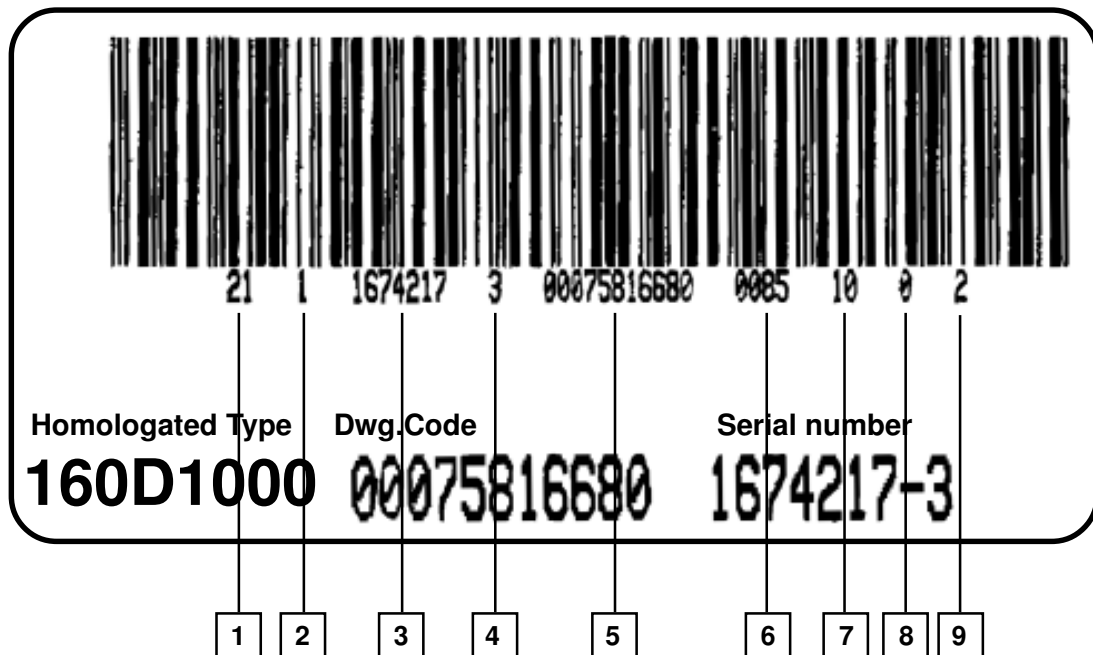


YEAR	CODE (ISO 3779)
1.1.2008 to 31.12.2008	8
1.1.2009 to 31.12.2009	9
1.1.2010 to 31.12.2010	A
1.1.2011 to 31.12.2011	B
1.1.2012 to 31.12.2012	C
1.1.2013 to 31.12.2013	D
1.1.2014 to 31.12.2014	E

2.5.2 CHASSIS TYPE & SALES DESIGNATION :

Chassis no	Sales Designation	Model Description	EC Whole Vehicle Type Approval Number (ECWVTA)
611248	Tata Indica Vista High	TATA INDICA VISTA HIGH 1.4L SAFIRE 75PS, EURO -V,LHD	e11*2007/46*0052
611271	Tata Indica Vista Aura	TATA INDICA VISTA AURA 1.4L SAFIRE 75PS EURO-V LHD	e11*2007/46*0052

2.5.3 AGGREGATE NUMBERING - NUMBERING FOR SAFIRE ENGINES:

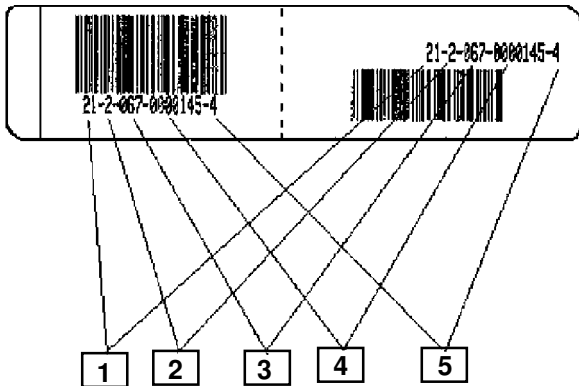


The Label gives the following information :

1. Supplier identification code - 2 Numerical Digits
2. Assembly Code - 1 Numerical Digit
3. Engine number plate - 7 Numerical Digits
4. Engine number plate check digit - 1 Numerical Digit
5. Engine drawing number - 11 Numerical Digits
6. Engine type code - 4 Numerical Digits
7. Production line code - 2 Numerical Digits
8. Filler - 1 Numerical Digit set to fixed zero to uniform the label to the standards.
9. Label check digit - 1 Numerical Digit

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TRANSAXLE (C 549)



THE LABEL GIVES THE FOLLOWING CODES :

1. Supplier identification code - 2 numerical digits
2. Production line code - 1 numerical digit
3. Transmission type code - 3 numerical digits
4. Transmission number plate - 7 numerical digits
5. Check digit - 1 numerical digit

BODY SHELL NUMBERING :

XX X X XXXXX
 1 2 3 4

Barrel 1 - Indicates, Basic model

Barrel 2 - Indicates year of production

Year	Code	Year	Code
2004	4	2010	Z
2005	5	2011	A
2006	6	2012	B
2007	7	2013	C
2008	8	2014	D
2009	9	2015	E

Barrel 3 - Indicates plant location P for K Block Pune

Barrel 4 - Indicates cumulative serial number to start every year with 00001 on first January.

2.4 LOCATION OF CHASSIS AND AGGREGATE NUMBERS :

CHASSIS NUMBER

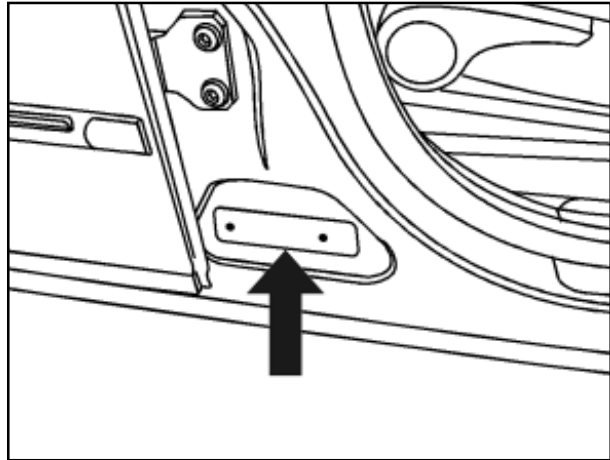


Fig. 18

ENGINE (SAFIRE)

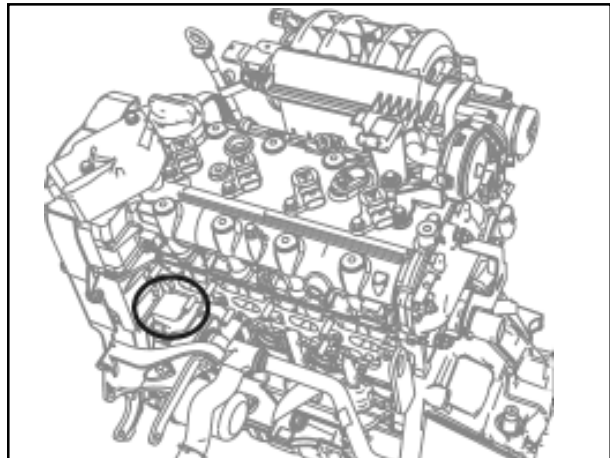


Fig. 20

TRANSAXLE (C-549)

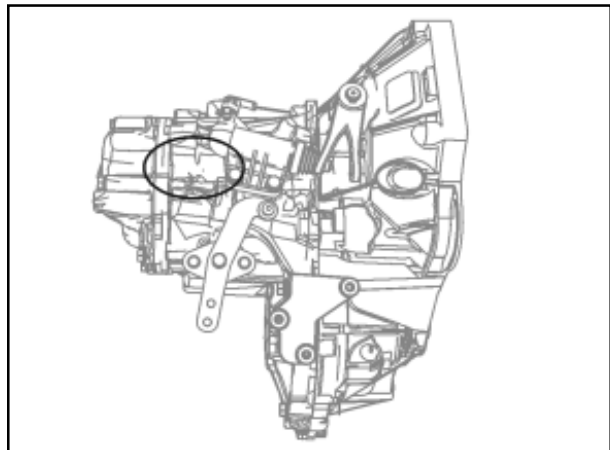


Fig. 21

2.6 TECHNICAL SPECIFICATION FOR TATA INDICA VISTA

ENGINE

ENGINE (PETROL)	SAFIRE (75PS)
Model / Type	Water Cooled Multi-point Fuel Injection Petrol Engine
No. Of Cylinders	4 Inline
Bore / Stroke	72 mm X 84 mm
Capacity	1368 cc
Max. Engine Output	55 Kw @ 6000 rpm
Max. Torque	114 Nm @ 3250 rpm
Compression Ratio	10 : 1
Firing Order	1 - 3 - 4 - 2

CLUTCH

CLUTCH	
Model / Type	Single Plate Dry Friction Diaphragm type
Outside dia of clutch lining	200 mm
Friction Area	324 mm

TRANSAXLE

TRANSAXLE	
	Front Wheel Drive Through Constant Velocity Joints
Model / Type	Synchromesh with over drive
No. of gears	5 Forward and 1 Reverse
Gear Raio s	1st - 4.273
	2nd - 2.238
	3rd - 1.520
	4th - 1.156
	5th - 0.872
	Rev. - 3.909
Final drive ratio	3.733
Gear shift	Floor mounted with international 'H' pattern with Fifth & Reverse inline

REAR AXLE

REAR AXLE	
Model / Type	Non driven type Twist Beam Suspension

SUSPENSION

SUSPENSION	
Front	Driven type Independently Suspended with McPherson Strut
Rear	Semi-independent, Twist Beam with coil Springs and Hydraulic Shock Absorbers
Anti-roll bar	At Front

STEERING

STEERING	
Type	Power assisted Rack & Pinion - Hydraulic
Steering Wheel	380 mm

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BRAKES

BRAKES	
Service brake	Mechanical Brake assist booster, Vacuum assisted independent dual circuit , Diagonal split Hydraulic Brake on Front & Rear through tandem cylinder acting on all 4 wheels with Automatic wear adjuster, Foot operated with ABS
Front brakes / Rear brakes	Front : 240 mm Dia. Disc Brake / Rear : 200 mm Dia. Drum Brake
Parking brakes on	Lever type, Console mounted, Cable operated mechanical linkage acting rear wheels

WHEELS & TYRES

WHEELS & TYRES	
Tyres	Radial Tubeless 175/65 R14 82T
Wheel rims	5J X 14
No. of wheels	Front - 2, Rear - 2, Spare -1

FUEL TANK

FUEL TANK	
Capacity	44 Litres

BODY

BODY	
Model / Type	hatch-back, Five Door, Steel Monocoque Passenger Car

ELECTRICAL

ELECTRICAL	
System voltage	12V
Battery	DIN44L
Alternator	12V 90A

MAIN CHASSIS DIMENSION (IN MM NOMINAL)

MAIN CHASSIS DIMENSION	
Wheel Base	2470
Track Front	1450
Track Rear	1440
Front Overhang	785
Rear Overhang	540
Overall Length	3795
Max. Width	1695 (Over Body)
Overall Height (Unladen/Laden)	1550 (Unladen)
Min. Turning Circle Dia.	10 m
Min. Turning Clearance Circle	10.6 m
Ground Clearance	155 (Unladen)

WEIGHT (KG)

WEIGHT	
Complete vehicle kerb weight	1225 Euro ENCAP / 1125 Non ENCAP
Gross vehicle weight	1625 Euro ENCAP / 1625 Non ENCAP
Payload	400 Euro ENCAP / 500 Non ENCAP

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PASSENGER CAPACITY

PASSENGER CAPACITY	
Capacity	2 Front + 3 Rear

LUGGAGE SPACE

LUGGAGE SPACE	
Net inside loading space	232 Litres

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2.7 TIGHTENING TORQUES OF STANDARD BOLTS & NUTS

Wherever the tightening torques are not specified use the following values for these fasteners.

Grade	Bolt or Nut Size	Pitch (mm)	Torque N-m	Torque kg-m	
Bolt 8.8 Nut 8.0	M6	1.0	8.5 - 10	0.85 - 1.0	
	M8	1.25	21 - 25	2.1 - 2.5	
	M10	1.5	41 - 51	4.1 - 5.1	
		1.0	46 - 56	4.6 - 5.6	
	M12	1.75	72 - 88	7.2 - 8.8	
		1.5	75 - 91	7.5 - 9.1	
Bolt 10.9 Nut 10.0	M14	2.0	113 - 138	11.3 - 13.8	
		1.5	126 - 154	12.6 - 15.4	
	M16	2.0	176 - 215	17.6 - 21.5	
		1.5	189 - 231	18.9 - 23.1	
	Bolt 8.8 Nut 8.0	M6	1.0	12 - 14	1.2 - 1.4
		M8	1.25	29 - 35	2.9 - 3.5
1.0			32 - 39	3.2 - 3.9	
M10		1.5	58 - 70	5.8 - 7.0	
		1.0	64 - 78	6.4 - 7.8	
Bolt 10.9 Nut 10.0		M12	1.75	99 - 121	9.9 - 12.1
	1.5		104 - 127	10.4 - 12.7	
	M14	2.0	162 - 198	16.2 - 19.8	
		1.5	176 - 215	17.6 - 21.5	
M16	2.0	248 - 303	24.8 - 30.3		
	1.5	266 - 325	26.6 - 32.5		

1. This standard is applicable to the bolts having the following marks embossed on the bolt head and punch mark on the nut head.

Note : Always use the calibrated torque wrenches.

2. Nyloc nuts and copper washer should not be reused.

Grade

- 8.8 For the Bolt
- 10.9 For the Bolt
- 8 For the Nut
- 10 For the Nut

2.8 RECOMMENDED LUBRICANTS & COOLANTS

ITEM	SPECIFICATION	QTY
ENGINE OIL SAFIRE 75 PS (PETROL)	SAE 5W 40 MEETING ACEA C3	2.9 Litres
COOLANT (Antifreeze agent + Soft water 50 : 50 ratio)	Class II / JIS K2234	5.4 Litres
TRANSAXLE	Semi Synthetic SAE 75W80 GL4	2.2 Litres
POWER STEERING OIL	ATF Dexron III	1.0 Litres
BRAKE / CLUTCH FLUID	SAE J 1703, DOT 3	As required

FUEL (PETROL) : Unleaded regular grade petrol conforming to EC specification for **Euro-V** and octane rating not less than EN 228/ RON 95 (RON stands for Research Octane Number) is recommended to be used as fuel.

CAUTION

Do not use petrol with lead in a car fitted with catalytic converter. Even single fill of leaded petrol will seriously damage the catalytic converter.

Recommended grade of Engine Oil conforming to **SAE 5W40 engine oil meeting ACEA C3** specification for ambient temp. ranging from -20 to + 40 degree C. For ambient temp. Below -20 degree C use lower viscosity grade oil.

LUBRICANTS AND OILS :

Please use only recommended grades for good performance.

DO NOT mix grease of different brands and optional grades. Replace old grease completely. The oil change periods recommended in maintenance schedule should be adhered.

Recommended grades of engine oil for range of ambient temperature :

Ambient Temp 0CGrade	Engine Oil
- 5 and above	SAE 15W/40
- 10 to 0	SAE 5W30
- 20 and -10	SAE 0W30

Transaxle : Semi Synthetic SAE 75W80 GL4.

Grease for axle bearings : Lithium base grease IPOL IPLEX LC Grease 2

Brake fluid : SAE J 1703, DOT 3

Power Steering : ATF Dexron III

COOLANTS

Qty : Approx. 5.4 Litres

Presence of dirt in coolant chokes up passages in radiator, cylinder head and crankcase, thereby causing overheating of engine.

To prevent rust formation and freezing of coolant inside the passages of radiator, crankcase and cylinder head use premixed coolant as recommended.

It is recommended that the entire cooling system should be drained and filled with fresh premixed coolant.

Engine coolant antifreeze coolant as per class II/JIS K2234.

Windscreen Washer Antifrost

Make - Antifrost- K

Concentration - 1 : 5 For 0°C

1 : 1 For 10°C

2 : 5 For 16°C

1 : 0 For 37°C

NOTE :

We strongly recommend to refill your car's engine coolant only at aTATA Authorised service centre.

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2.9 VEHICLE DIMENSIONS :

