# General Information

## Fundamental procedures

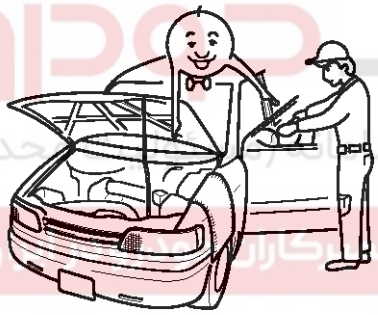
### NOTICES, CAUTIONS AND WARNINGS

As you read through the various procedures, you will encounter Notices, Cautions and Warnings. Each one is there for a specific purpose. Notices give you added information that will assist you in completing a particular procedure.Cautions prevent you from making an error that could damage the vehicle.Warnings remind you to be especially careful in specific areas where carelessness can cause personal injury.

The following items contain general procedures you should always follow when working on a vehicle:

### PROTECTION OF VEHICLE

Always cover fenders, seats, and floor areas before starting work. Operate the engine only in a well-ventilated area to avoid carbon monoxide poisoning.



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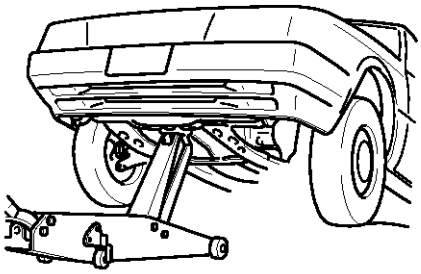
### A WORD ABOUT SAFETY

The following precautions must be followed when jacking up the vehicle:

1. Block the wheels.
2. Use only the specified jacking positions.
3. Support the vehicle with safety stands.

The engine compartment must be clear of tools and people before starting the engine.



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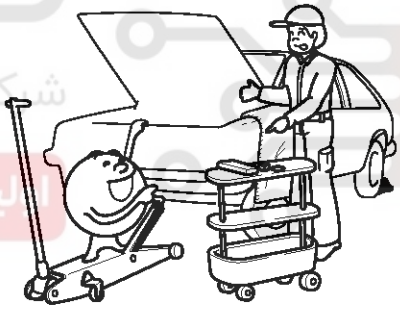
### PREPARATION OF TOOLS AND MEASURING EQUIPMENT

All necessary tools and measuring equipment should be available before starting any work.



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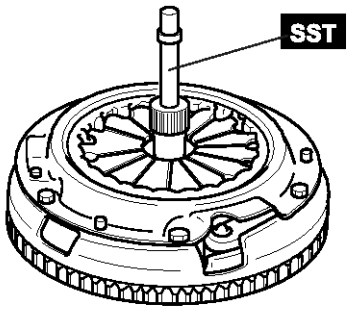
### SPECIAL SERVICE TOOLS (SST'S)

Use special service tools when they are required. SST's can be found under"preparation"prior to any procedure requiring them.

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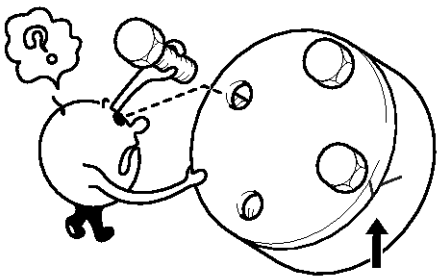
## REMOVAL OF PARTS

Begin work only after first learning which parts and subassemblies must be removed and disassembled for replacement or repair.



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## INSPECTION OF PARTS

When removed, each part should be carefully inspected for malfunction, deformations, damage, or other problems.

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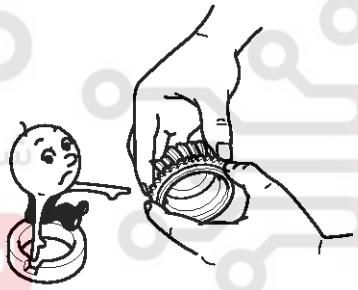
## DISASSEMBLY

If the disassembly procedure is complex, requiring many parts to be disassembled, all parts should be disassembled in a way that will not affect their performance or external appearance. Additionally, these parts should be identified so that reassembly can be done easily and efficiently.



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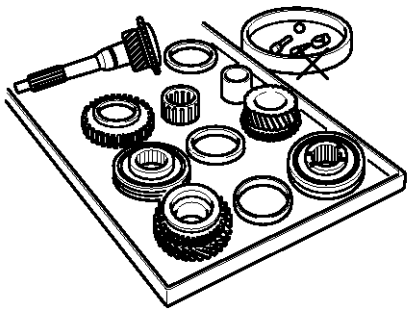
## Arrangement of parts

All disassembled parts should be carefully arranged for reassembly. Separate or otherwise identify the parts to be replaced from those that will be reused.



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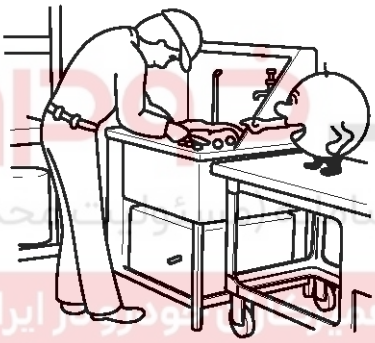
## CLEANING PARTS FOR REUSE

All parts that will be reused should be carefully and thoroughly cleaned using appropriate methods.



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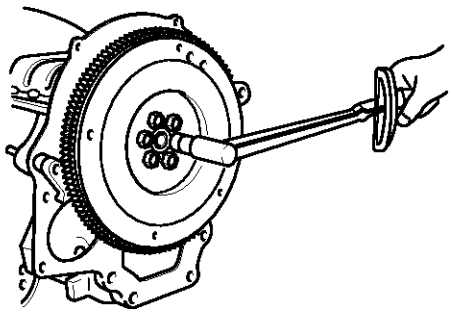
## REASSEMBLY

Standard values, such as torques and certain adjustments, must be strictly observed in the reassembly of all parts. If removed, the following parts should be replaced with new ones:

1. Oil seals
2. O-rings
3. Cotter pins
4. Gaskets
5. Lock washers
6. Nylon nuts



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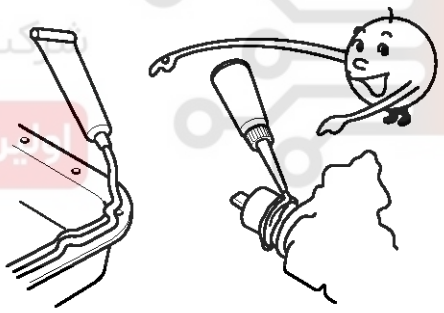
## DEPENDING ON LOCATION:

1. Sealant should be applied or new gaskets installed.
2. Oil should be applied to the moving components of parts.
3. Specified oil or grease should be applied at the appropriate locations (such as oil seals) before reassembly.



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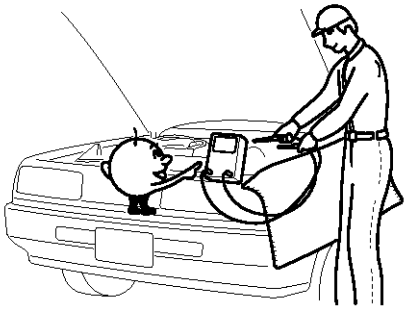
## Adjustments

Use appropriate gauges and/or testers when making adjustments.



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### Rubber parts and tubing

Prevent gasoline or oil from contacting rubber parts or tubing.

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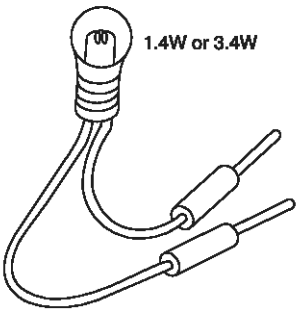
### Electrical troubleshooting tools (Test Light)

The test light, as shown in figure, uses a 12V bulb. The two lead wires should be connected to probes.

The test light is used for simple voltage checks and in checking for short circuits.

**⚠CAUTION**

**When checking the engine control module (ECM), never use a bulb exceeding 3.4W.**

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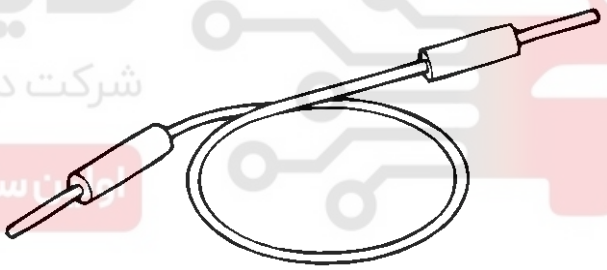
### Electrical troubleshooting tools(Jumper wire)

The jumper wire is used for testing by shorting across switch terminals ground connections.

**⚠CAUTION**

**Do not connect a jumper wire from the power source line to a body ground. Such a connection may cause damage to harnesses or electronic components.**



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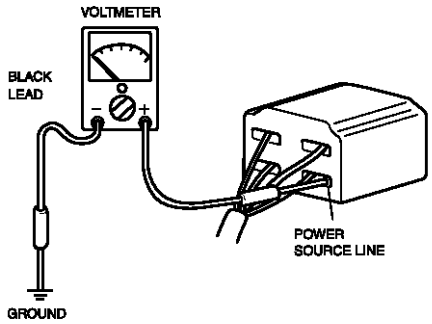
### VOLTMETER

The DC voltmeter measures circuit voltage. A voltmeter with a range of 15V or more is used by connecting the positive (+) probe (red lead wire) to the point where voltage is be measured, and the negative (-) probe (black lead wire)to a bodyground.

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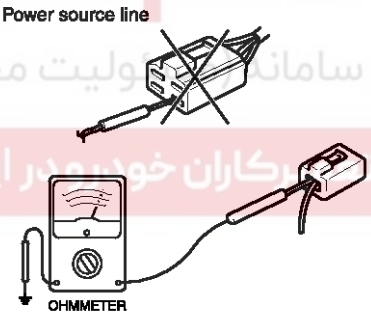
### OHMMETER

The ohmmeter is used to measure the resistance between two points in circuit and also to check for continuity and the diagnosis of short circuits.

**⚠CAUTION**

**Do not attempt to connect the ohmmeter to any circuit in which voltage is applied. Such a connection may damage the ohmmeter.**

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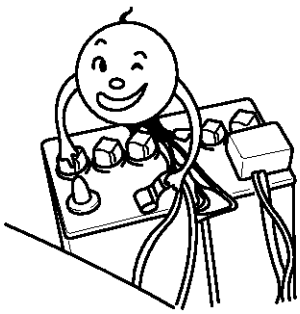
### Electrical parts

### Battery cable

Before disconnecting connectors or replacing electrical parts, disconnect the negative battery cable.



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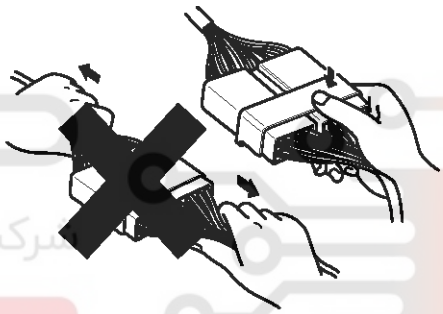
### Connectors(Removal of connector)

1. Never pull on the wiring harness when disconnecting connectors.



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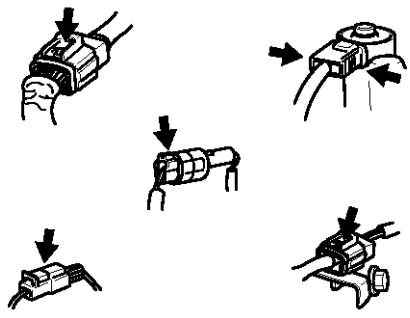
2. Connectors can be removed by pressing or pulling lock lever.



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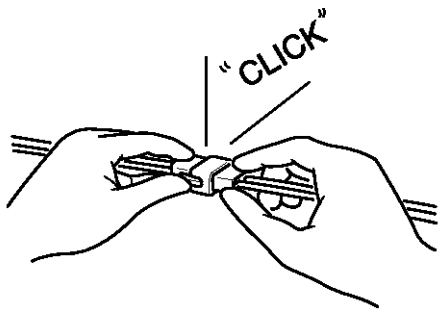
### Connectors(Locking a connector)

Listen for a click when locking connectors. This sound indicates that they are securely locked.

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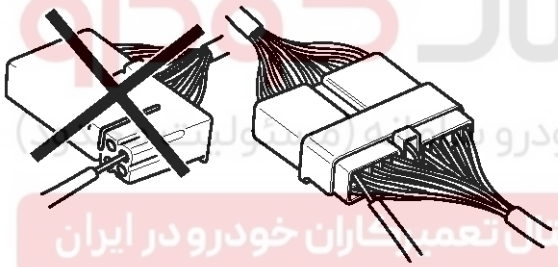
### Connectors(Inspection)

1. When a tester is used to check for continuity or to measure voltage, insert tester probe from wire harness side.



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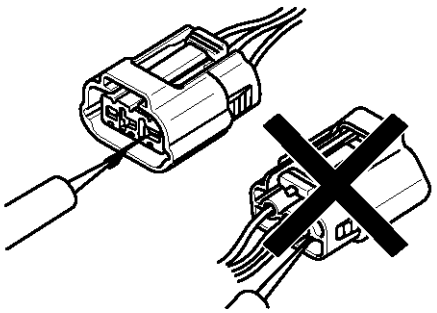
2. Check terminals of waterproof connectors from connector side because they cannot be accessed from harness side.

**NOTICE**

- *Use a fine wire to prevent damage to the terminal.*
- *Do not damage the terminal when inserting the tester lead.*



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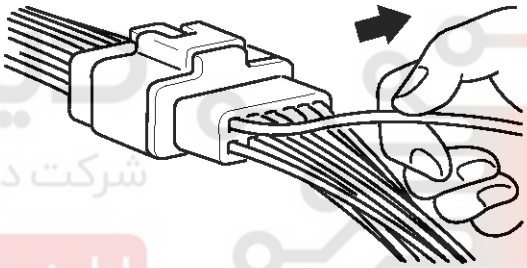
### Terminals(Inspection)

Pull lightly on individual wires to ensure that they are secured in the terminal.



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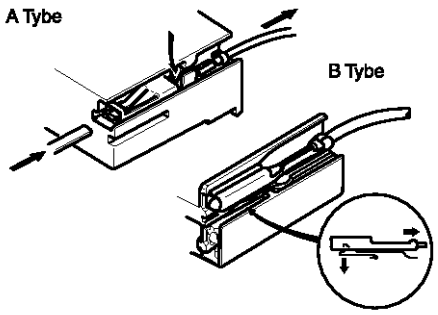
### REPLACEMENT OF TERMINALS

Use appropriate tools to remove terminal as shown. When installing the terminal, insert it until it locks securely.

### FEMALE

Insert a thin piece of metal from the terminal side of the connector, and then, with the terminal locking tab pressed down, pull the terminal out of the connector.

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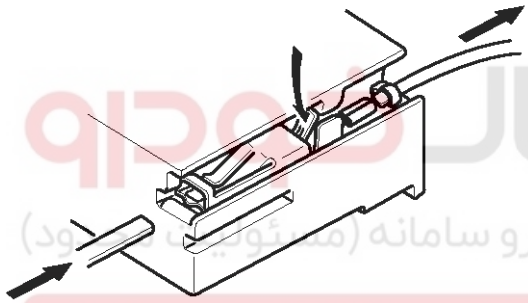
**MALE**

Follow the same procedure as female-type terminal.

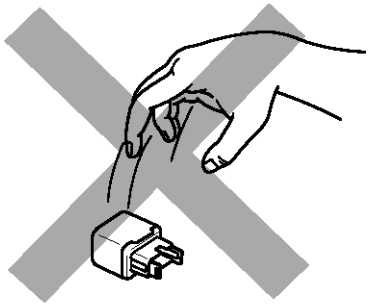


BA2C015M

**SENSORS, SWITCHES, AND RELAYS**

Always handle sensors, switches and relays carefully.

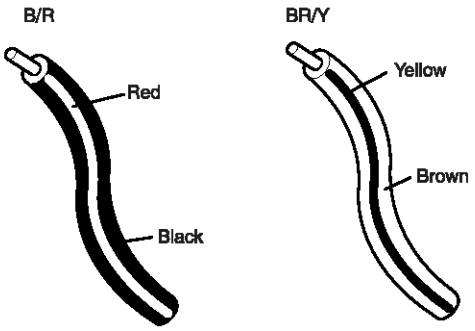
Do not drop them or accidentally strike them against other parts.



BA2C015N

**WIRING COLOR CODES**

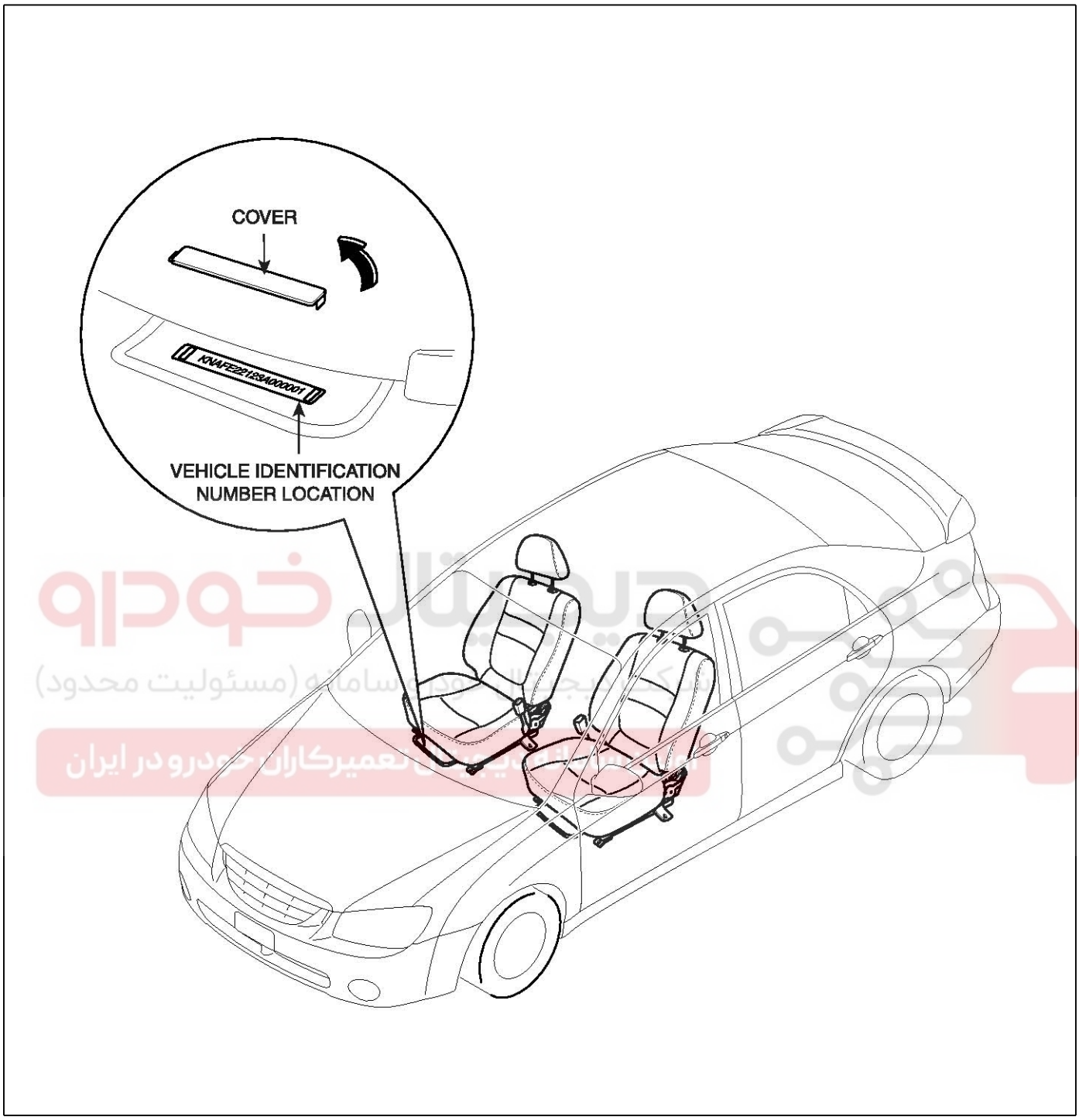
Two-color wires are indicated by a two-color code symbol. The firstcolor indicates the base color of the wire; the second color indicates the color of the stripe.




BA3C011A

| CODE | COLOR | CODE | COLOR |
|---|---|---|---|
| B | BLACK | P | PINK |
| BR | BROWN | R | RED |
| G | GREEN | S | SILVER(LIG-HT BLUE) |
| GY | GRAY | T | TAWNY |
| L | BLUE | V | VIOLET |
| LG | LIGHT GRE-EN | W | WHITE |
| O | ORANGE | Y | YELLOW |

## VEHICLE IDENTIFICATION NUMBER LOCATION




BAGE001A

## VEHICLE IDENTIFICATION NUMBER DESCRIPTION EXCEPT EUROPE

| VEHICLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 N/B 1.6 GASOLINE M/T | K | N | A | F | E | 2 | 2 | 2 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 N/B 1.6 GASOLINE A/T | K | N | A | F | E | 2 | 2 | 2 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 N/B 2.0 GASOLINE M/T | K | N | A | F | E | 2 | 2 | 3 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 N/B 2.0 GASOLINE A/T | K | N | A | F | E | 2 | 2 | 3 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5 H/B 1.6 GASOLINE M/T | K | N | A | F | E | 2 | 4 | 2 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5 H/B 1.6 GASOLINE A/T | K | N | A | F | E | 2 | 4 | 2 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5 H/B 2.0 GASOLINE M/T | K | N | A | F | E | 2 | 4 | 3 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5 H/B 2.0 GASOLINE A/T | K | N | A | F | E | 2 | 4 | 3 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5 H/B 2.0 DIESEL M/T | K | N | A | F | E | 2 | 4 | 4 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |

1 - 3 : Make / Vehicle type
- KNA = Kia Passenger Car

4 - 5 : Vehicle Line / Series
- FE = LD (SPECTRA)

6 - 7 : Body type
- 22 = 4Door Notchback (Sedan)
- 24 = 5Door Hatchback

8 : Engine type
- 2 = 1.6 Gasoline
- 3 = 2.0 Gasoline
- 4 = 2.0 Diesel

9 : Transmission type or Check digit
- 2 = 5 speed manual
- 3 = Automatic
- To be calculated

10 : Model year
- 4 = 2004, 5 = 2005

11 : Plant location
- 5 = Hwasung plant

12 - 17 : Sequential number
- 000001 ~ 999999

## VEHICLE IDENTIFICATION NUMBER DESCRIPTION FOR EUROPE

| VEHICLE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 N/B 1.6 GASOLINE M/T | - | K | N | E | F | E | 2 | 2 | 2 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 4 N/B 1.6 GASOLINE A/T | - | K | N | E | F | E | 2 | 2 | 2 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 4 N/B 2.0 GASOLINE M/T | - | K | N | E | F | E | 2 | 2 | 3 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 4 N/B 2.0 GASOLINE A/T | - | K | N | E | F | E | 2 | 2 | 3 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 4 N/B 2.0 DIESEL M/T | - | K | N | E | F | E | 2 | 2 | 4 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 5 H/B 1.6 GASOLINE M/T | - | K | N | E | F | E | 2 | 4 | 2 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 5 H/B 1.6 GASOLINE A/T | - | K | N | E | F | E | 2 | 4 | 2 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 5 H/B 2.0 GASOLINE M/T | - | K | N | E | F | E | 2 | 4 | 3 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 5 H/B 2.0 GASOLINE A/T | - | K | N | E | F | E | 2 | 4 | 3 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |
| 5 H/B 2.0 DIESEL M/T | - | K | N | E | F | E | 2 | 4 | 4 | 2 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | - |

1 - 3 : Make / Vehicle type
- KNE = Kia Passenger Car

4 - 5 : Vehicle Line / Series
- FE = LD (SPECTRA)

6 - 7 : Body type
- 22 = 4Door Notchback (Sedan)
- 24 = 5Door Hatchback

8 : Engine type
- 2 = 1.6 Gasoline
- 3 = 2.0 Gasoline
- 4 = 2.0 Diesel

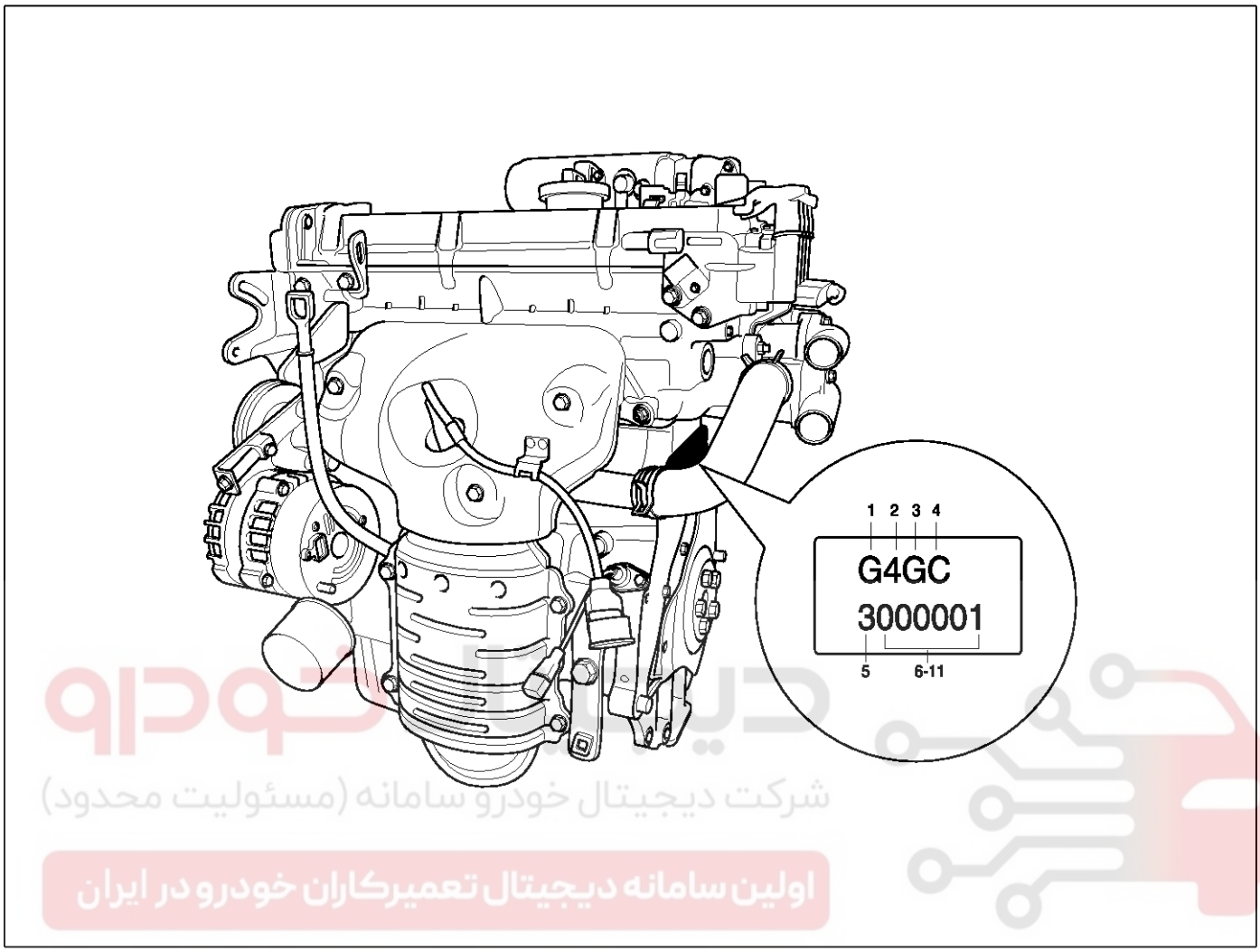
9 : Transmission type
- 2 = 5 speed manual
- 3 = Automatic

10 : Model year
- 4 = 2004, 5 = 2005

11 : Plant location
- 5 = Hwasung plant

12 - 17 : Sequential number
- 000001 ~ 999999

## ENGINE IDENTIFICATION NUMBER LOCATION (GASOLINE)




BAGE005A

## ENGINE IDENTIFICATION NUMBER DESCRIPTION

| MODEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BETA ENGINE (2.0) | G | 4 | G | C | 4 | 0 | 0 | 0 | 0 | 0 | 1 |
| ALPHA ENGINE (1.6) | G | 4 | E | D | 4 | 0 | 0 | 0 | 0 | 0 | 1 |

1 : Engine fuel
- G = Gasoline

2 : Engine range
- 4 = 4 Cycle 4 cylinder

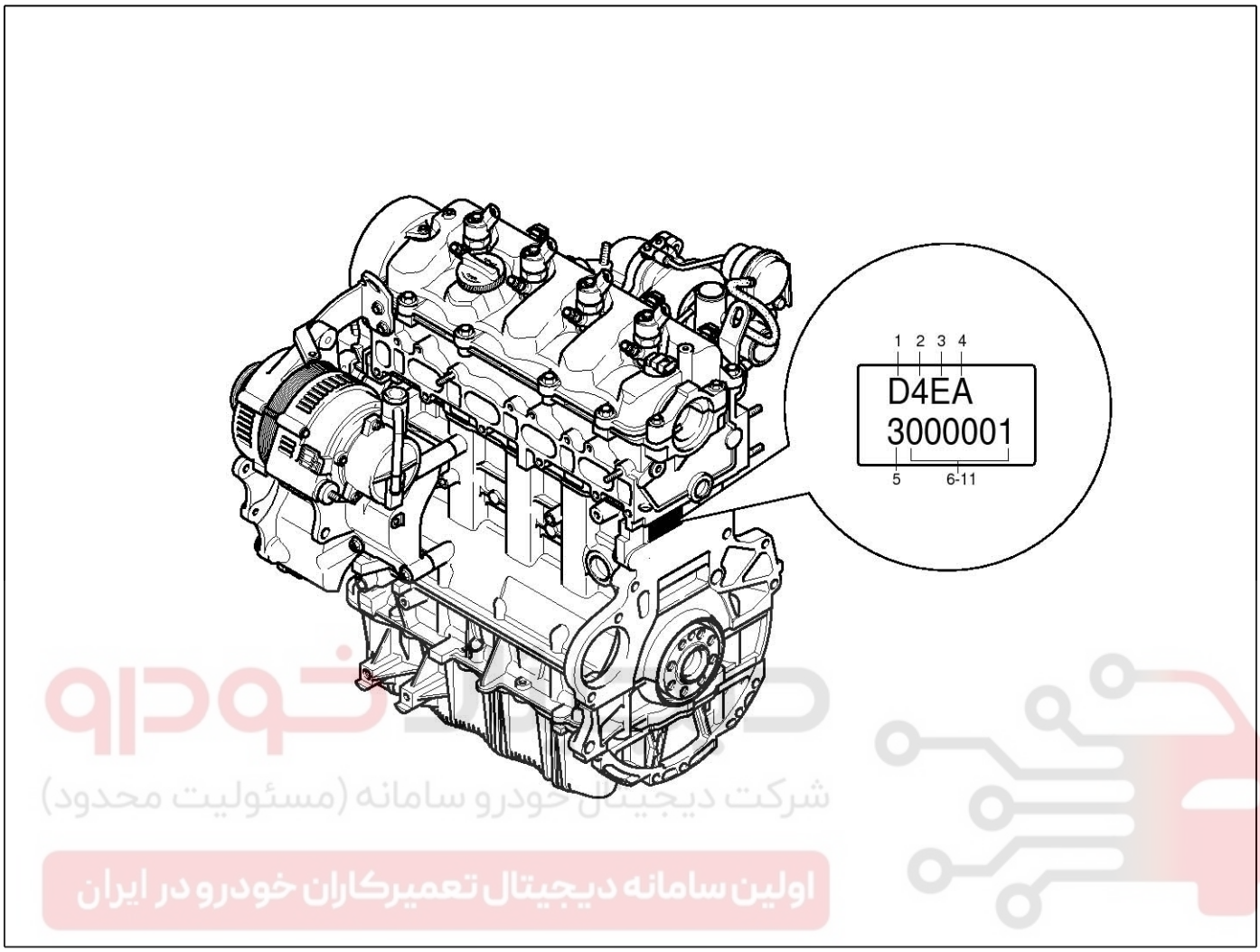
3 : Engine development order
- G = BETA Engine
- E = ALPHA Engine

4 : Engine capacity
- C = 1,975cc
- D = 1,599cc

5 : Production year
- 4 = 2004, 5 = 2005

6 - 11 = Engine production sequence number
- 000001 ~ 999999

## ENGINE IDENTIFICATION NUMBER LOCATION (DIESEL)




LAGE001A

## ENGINE IDENTIFICATION NUMBER DESCRIPTION

| MODEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D2.0 C/R ENGINE | D | 4 | E | A | 4 | 0 | 0 | 0 | 0 | 0 | 1 |

1. Engine fuel
- D = Diesel

2. Engine range
- 4 = 4 cycle 4 cyclinder

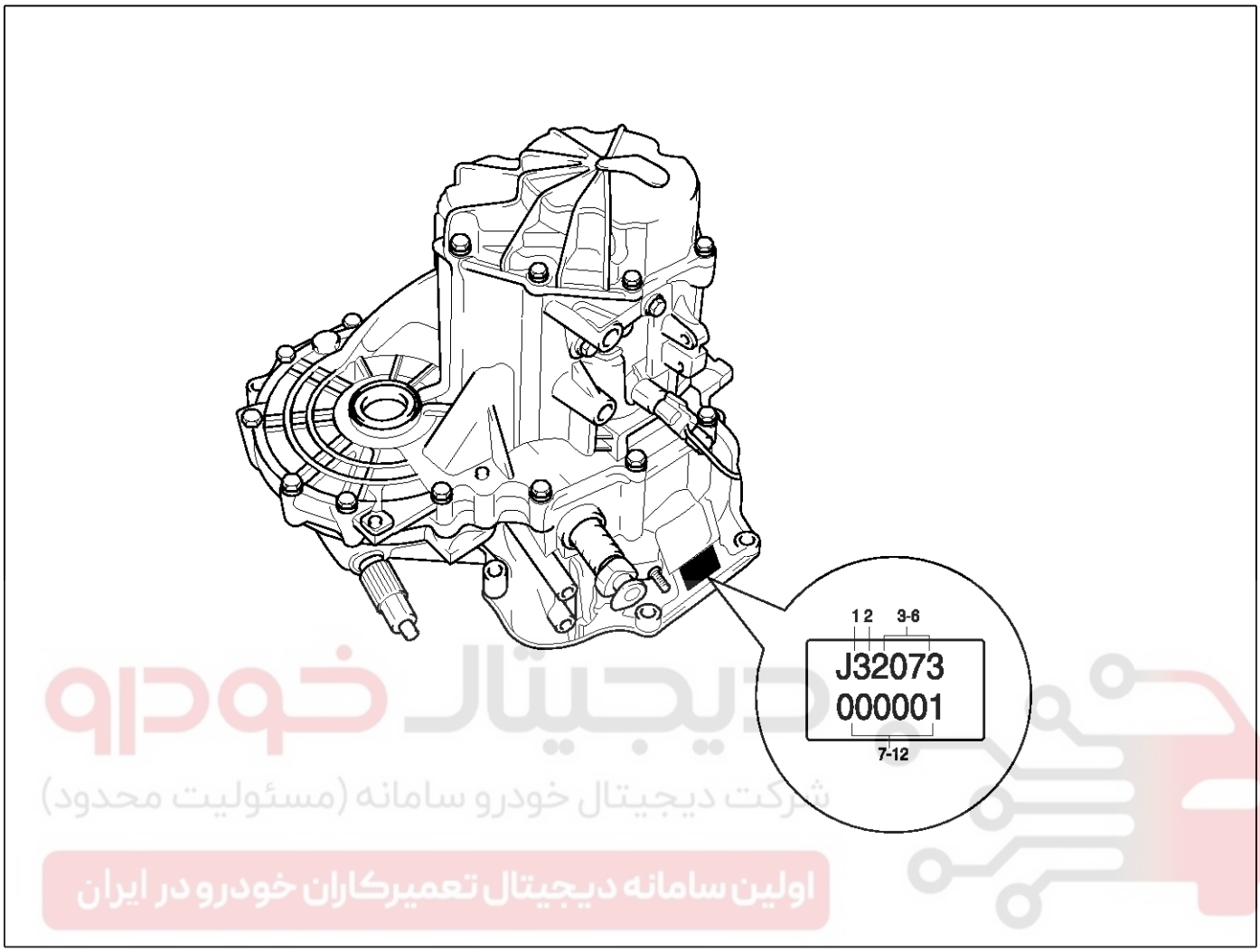
3. Engine development order
- E = D - engine

4. Engine capacity
- A = 1991 cc

5. Production year
- 4 = 2004, 5 = 2005

6 - 11 : Engine production sequence number
- 000001 ~ 999999

## MANUAL TRANSAXLE IDENTIFICATION NUMBER LOCATION




AAGE003A

## MANUAL TRANSAXLE IDENTIFICATION NUMBER DESCRIPTION

| MODEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M5BF2 | J | 3 | 2 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 1 |

1 : Model

- J = F5BF2

2 : Production year

- 4 = 2004, 5 = 2005

3 - 6 : Gear ratio (Tooth number)

<3 - 4 : Output shaft gear tooth number, 5 - 6 : Differantial drive gear tooth number>

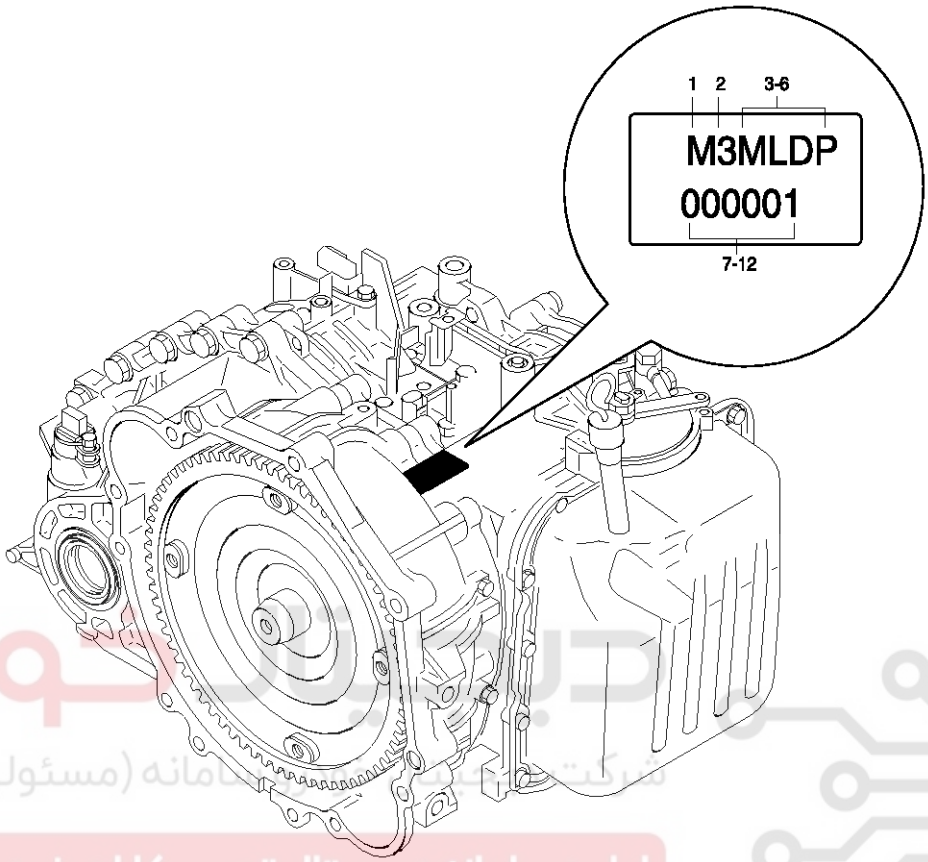
- 2073 = 73/20 = 3.650
- 1973 = 73/19 = 3.842
- 1873 = 73/18 = 4.056

7 - 12 : Production sequence number

- 000000 ~ 999999

## AUTOMATIC TRANSAXLE IDENTIFICATION NUMBER LOCATION

■ F4A42




AAGE005A

## AUTOMATIC TRANSAXLE IDENTIFICATION NUMBER DESCRIPTION

| MODEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F4A42 | M | 3 | M | L | D | - | 0 | 0 | 0 | 0 | 0 | 1 |

1 : Model
- M = F4A42-1

2 : Production year
- 4 = 2004, 5 = 2005

3 : Gear ratio
- M = 3.770

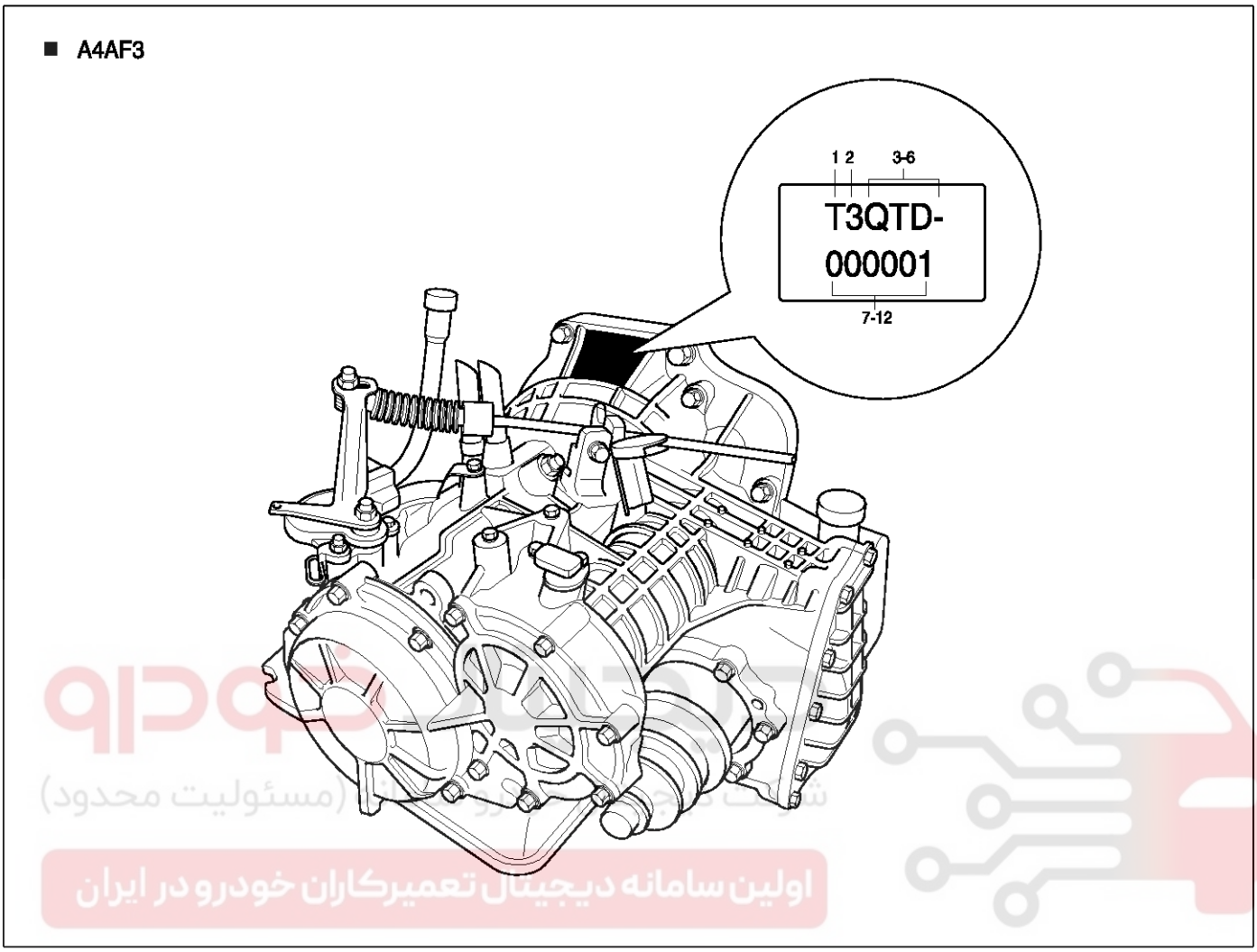
4 - 5 : Detailed classification
- LD = SPECTRA (2.0)

6 : Spare

7 - 12 : Production sequence number
- 000001 ~ 999999

## AUTOMATIC TRANSAXLE IDENTIFICATION NUMBER LOCATION

■ A4AF3




AAGE004A

## AUTOMATIC TRANSAXLE IDENTIFICATION NUMBER DESCRIPTION

| MODEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4AF3 | T | 3 | N | S | D | - | 0 | 0 | 0 | 0 | 0 | 1 |

1 : Model
- T = A4AF3

2 : Production year
- 4 = 2004, 5 = 2005

3 : Gear ratio
- N = 4.041

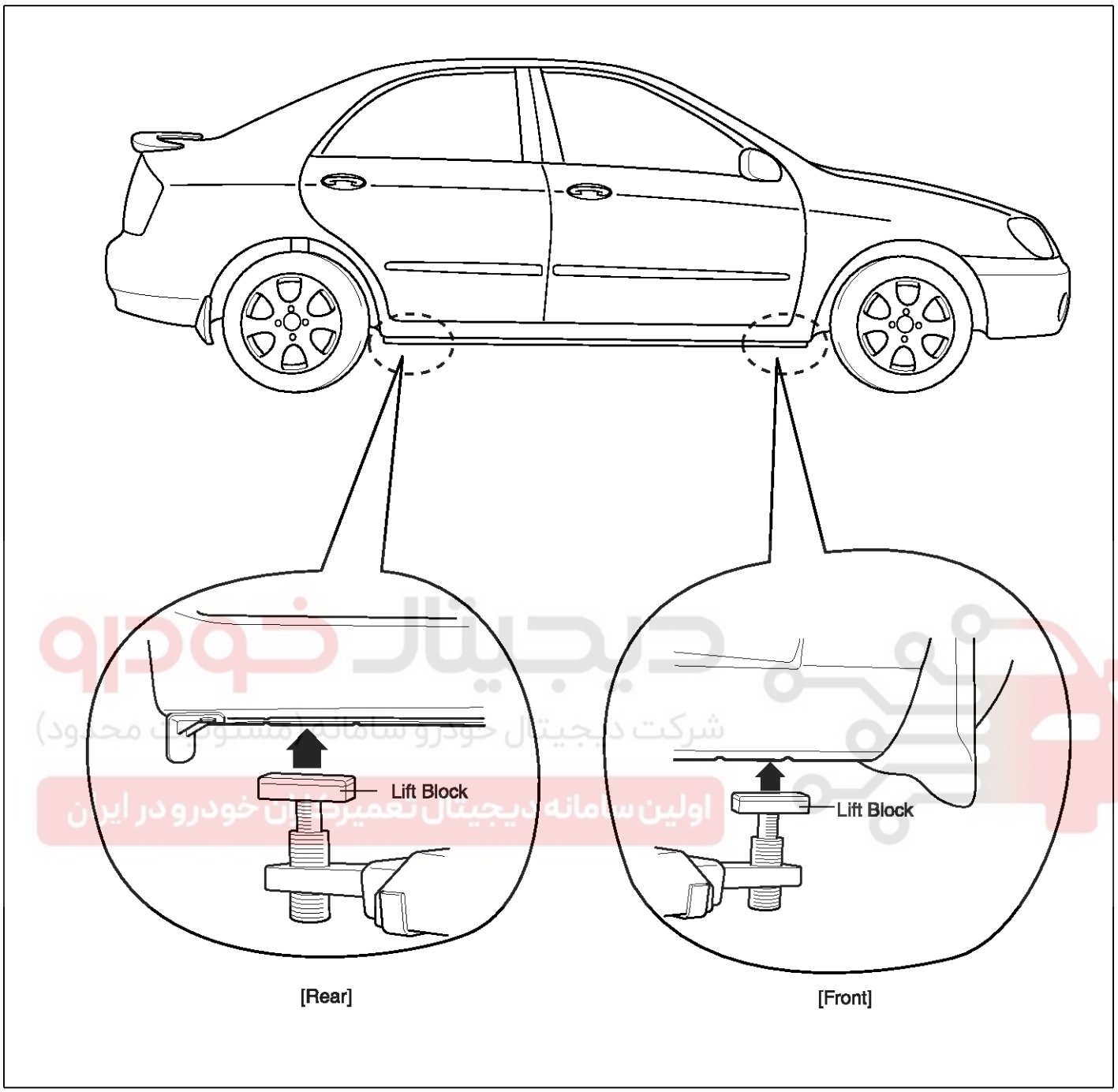
4 - 5 : Detailed classification
- SD = SPECTRA (1.6)

6 : Spare

7 - 12 : Production sequence number
- 000001 ~ 999999

## LIFT SUPPORT POINT

1. Place the lift blocks under the support points as shown in the illustration.
2. Raise the hoist a few inches and rock the vehicle to be sure it is firmly supported.
3. Raise the hoist to full height to inspect the lift points for secure support.

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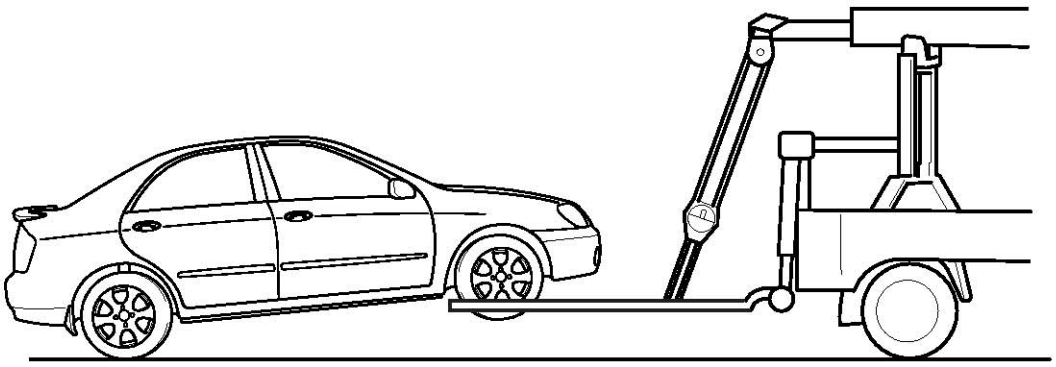
**TOWING**

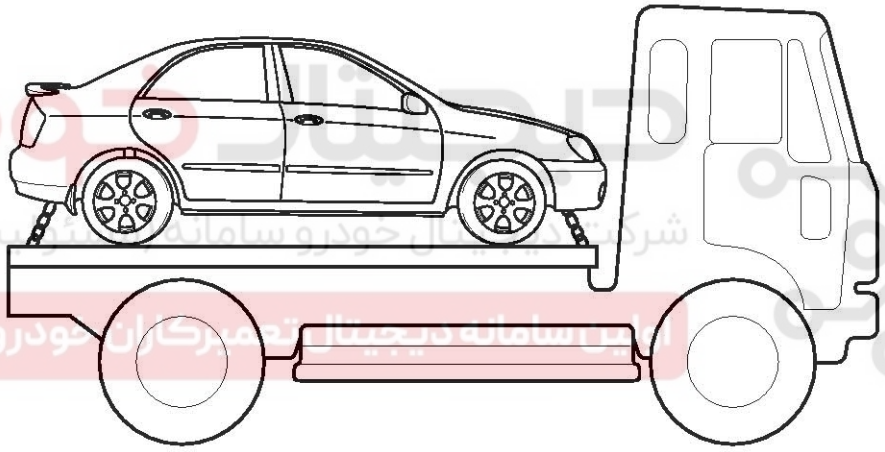
If the vehicle needs to be towed, a wheel lift or as flat-bed method is recommended.

**⚠CAUTION**

**Never tow the vehicle by the method of a suspension (front or rear) lift.**



[Wheel lift]



[Flat - bed]

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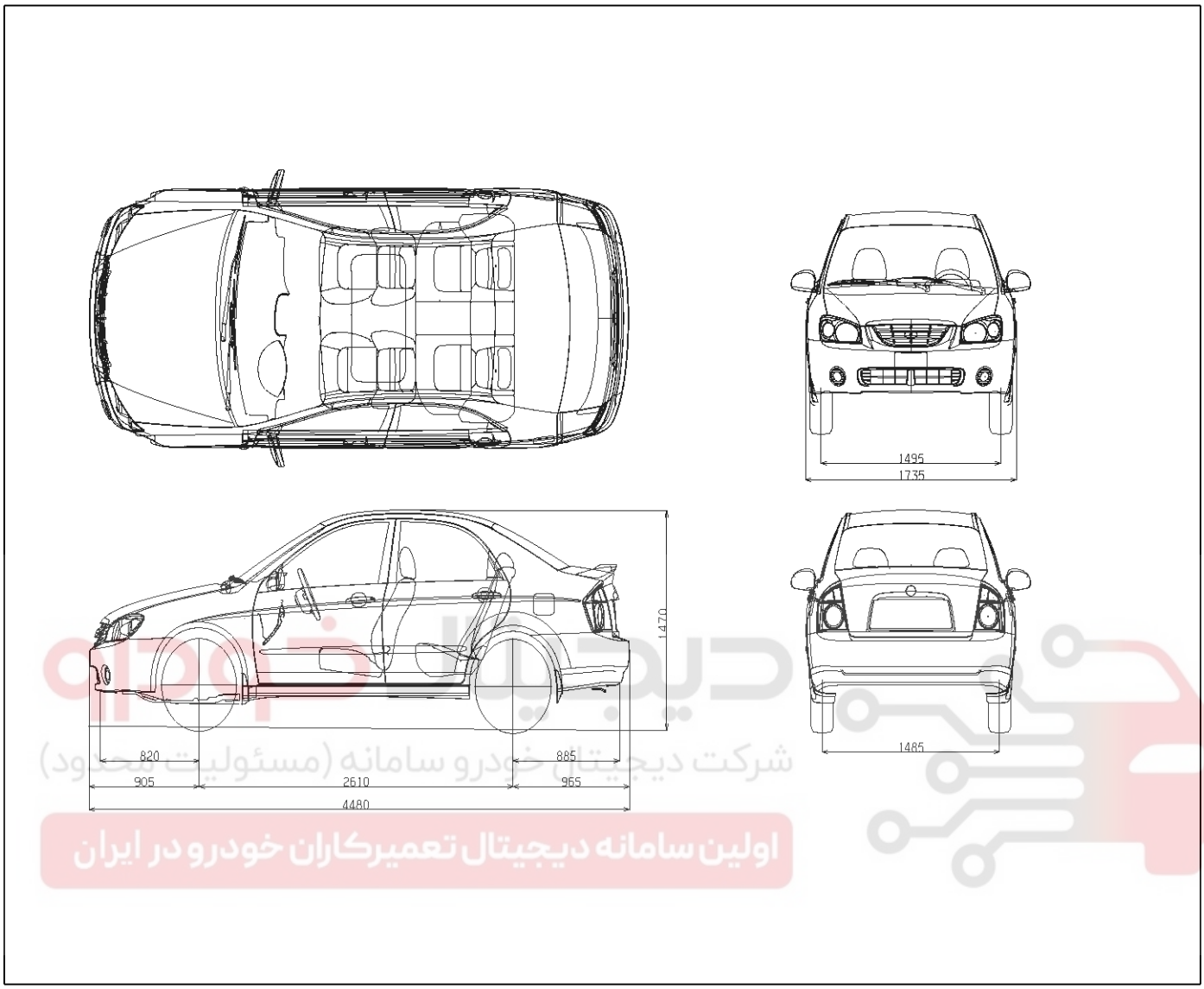
## OVERALL BODY DIMENSION

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## ENGLISH/METRIC CONVERSION TABLE

| Multiply | by | to get equivalent number or : |
|---|---|---|
| | **Length** | |
| Inch (in) | 25.4 | millimeters (mm) |
| Foot (ft) | 0.3048 | meters (m) |
| Yard | 0.9144 | meters (m) |
| Mile | 1.609 | kilometers (km) |
| | **Area** | |
| Inch$^2$ (in$^2$) | 645.2 | millimeters$^2$ (mm$^2$) |
| | 6.45 | centimeters$^2$ (cm$^2$) |
| Foot (ft$^2$) | 0.0929 | meters$^2$ (m$^2$) |
| Yard | 0.8361 | meters$^2$ (m$^2$) |
| | **Volume** | |
| Inch$^3$ (in$^3$) | 16387 | mm$^3$ |
| | 16.387 | cm$^3$ |
| | 0.0164 | liters (l) |
| Quart (qt) | 0.9464 | liters (l) |
| Gallon | 3.7854 | liters (l) |
| Yard | 0.7646 | meters$^3$ (m$^3$) |
| | **Mass** | |
| Pound (lb) | 0.4536 | Kilograms (kg) |
| Ton | 907.18 | Kilograms (kg) |
| | **Force** | |
| Kilogram | 9.807 | newtons (N) |
| Ounce (oz) | 0.2780 | newtons (N) |
| Pound (lb) | 4.448 | newtons (N) |

| Multiply | by | to get equivalent number or : |
|---|---|---|
| | **Acceleration** | |
| Foot/sec$^2$ | 0.3048 | meter/sec$^2$ (m/s$^2$) |
| Inch/sec$^2$ | 0.0254 | meter/sec$^2$ (m/s$^2$) |
| | **Torque** | |
| Inch-pound | 0.11298 | newton-meters (N·m) |
| Foot-pound | 1.3558 | newton-meters (N·m) |
| | **Power** | |
| Horsepower (HP) | 0.746 | kilowatts (kw) |
| | **Pressure** | |
| Pounds/inch$^2$ (psi) | 6.895 | kilopascals (kPa) |
| | **Energy** | |
| Foot-pound | 1.3558 | joules (J) |
| Kilowatt-hour | 3,600,000 | joules (J) |
| | **Fuel performance** | |
| Miles/gal (mpg) | 0.4251 | kilometers/liter (km/l) |
| | **Velocity** | |
| Miles/hour (mph) | 1.6093 | kilometers/hour |

**Temperature**

To convert fahrenheit temperature to celsius temperature, use formula :
C = 5/9 (F-32)

To convert celsius temperature to fahrenheit temperature, use formula :
F = 9/5 C + 32

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## UNITS

| | |
|---|---|
| ft-lb or in-lb (N·m) | Torque |
| rpm | Rotational speed |
| A | Amperes |
| V | Volts |
| Ω | Resistance (OHMS) |
| psi (kPa) | Pressure |
| inHg (mmHg) | Pressure (usually negative vacuum) |
| W | Watts (electrical power) |
| US qt (liters) | Volume |
| in (mm) | Length |

## ABBREVIATIONS

ABDC ---------- After bottom dead center
ABS ---------- Anti-lock braking system
A/C ---------- Air conditioner
ACC ---------- Accessories
A/T ---------- Automatic transaxle
ATDC ---------- After top dead center
ATF ---------- Automatic transmission fluid
BBDC ---------- Before bottom dead center
BTDC ---------- Before top dead center
CMP ---------- Camshaft position sensor
CKP ---------- Crankshaft position sensor
DIS ---------- Distributorless ignition system
DLC ---------- Data link connector
DOHC ---------- Dual overhead Camshaft
EBD ---------- Electronic brake-force distribution
ECM ---------- Engine control module
ECT ---------- Engine coolant temperature
E/L ---------- Electrical load
EX ---------- Exhaust
GND ---------- Ground
HLA ---------- Hydraulic lash adjuster
$HO_2S$ ---------- Heated oxygen sensor
IAT ---------- Intake air temperature
IGN ---------- Ignition
IN ---------- Intake
INT ---------- Intermittent

LA6C015A

IAC ---------- Idle air control
LH ---------- Left hand
M ---------- Motor
MAF ---------- Mass air flow
MIL ---------- Malfunction indicator light
M/S ---------- Manual steering
M/T ---------- Manual transaxle
OBD ---------- On-board diagnosis
OFF ---------- Switch off
ON ---------- Switch on
PCV ---------- Positive crankcase ventilation
P/S ---------- Power steering
PRC ---------- Pressure regulator control
P/W ---------- Power window
RH ---------- Right hand
SFI ---------- Sequential fuel injection system
SST ---------- Special service tool
SW ---------- Switch
TCM ---------- Transaxle control module
TCS ---------- Traction control unit
TDC ---------- Top dead center
TNS ---------- Tail number side
TPS ---------- Throttle position sensor
TWC ---------- Three way catalyst
WU-TWC ---------- Warm-up three-way catalyst

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## MAINTENANCE SCHEDULE

### SCHEDULE 1 - NORMAL MAINTENANCE

| MAINTENANCE INTERVALS / MAINTENANCE ITEM | | Number of months or driving distance, whichever comes first | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Months | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 |
| | Milesx1,000 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Kmx1,000 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 |
| Drive belts[1] | Gasoline | I | I | I | I | I | I | I | I |
| | Diesel | | I | | I | | R | | I |
| Engine oil and Engine oil filter[2] | Gasoline | R | R | R | R | R | R | R | R |
| | Diesel | R | R | R | R | R | R | R | R |
| Engine timing belt | Gasoline | | | | I | | R | | |
| | Diesel | | | | I | | | | R |
| Air cleaner element | | I | R | I | R | I | R | I | R |
| Spark plugs (Gasoline) | For Europe | | R | | R | | R | | R |
| | Except Europe | Replace every 40,000 km (25,000 miles) | | | | | | | |
| Valve clearance | 2.0L Gasoline | Inspect every 90,000 km (60,000 miles) or 48 months | | | | | | | |
| Vapor hose and fuel filler cap | | | I | | I | | I | | I |
| Vacuum and crankcase ventilation hoses | | | I | | I | | I | | I |
| Fuel filter | Gasoline | | | | R | | | | R |
| | Diesel | | R | | R | | R | | R |
| Fuel lines and hoses | | I | I | I | I | I | I | I | I |
| Cooling system | | Inspect "Coolant level adjustment and leak" every day<br>Inspect "Water pump" when replacing the drive belt or timing belt | | | | | | | |
| Engine coolant | For Europe[3] | At first, replace at 90,000 km (60,000 miles) or 60 months;<br>after that, replace every 45,000 km (30,000 miles) or 24 months | | | | | | | |
| | Except Europe | Replace every 45,000 km (30,000 miles ) or 24 months | | | | | | | |
| Battery condition | | I | I | I | I | I | I | I | I |
| All electrical systems | | | I | | I | | I | | I |
| Brake lines, Hoses and connections | | I | I | I | I | I | I | I | I |
| Brake pedal, Clutch pedal | | | I | | I | | I | | I |
| Parking brake | | | I | | I | | I | | I |
| Brake / Clutch fluid | For Europe | I | R | I | R | I | R | I | R |
| | Except Europe | I | I | I | I | I | I | I | I |
| Disc brakes and pads | | I | I | I | I | I | I | I | I |
| Drum brakes and linings | | | I | | I | | I | | I |
| Power steering fluid and hoses | | | I | | I | | I | | I |
| Steering gear rack, Linkage and boots | | I | I | I | I | I | I | I | I |
| Drive shaft and boots | | | I | | I | | I | | I |
| Tire (Pressure & Tread wear) | | I | I | I | I | I | I | I | I |
| Front suspension ball joints | | I | I | I | I | I | I | I | I |
| Bolt and nuts on chassis and body | | I | I | I | I | I | I | I | I |
| Air conditioner refrigerant (If equipped) | | I | I | I | I | I | I | I | I |
| Air conditioner compressor (If equipped) | | I | I | I | I | I | I | I | I |
| Air conditioner air filter (If equipped) | | R | R | R | R | R | R | R | R |
| Manual transaxle fluid | | I | I | I | I | I | I | I | I |
| Automatic transaxle fluid | For Europe | I | I | I | I | I | R | I | I |
| | Except Europe | I | I | I | I | I | I | I | I |

I : Inspect and if necessary, adjust, correct, clean or replace. R : Replace or change

1) Adjust alternator and power steering (and water pump drive belt) and air conditioner drive belt (If equipped). Inspect and if necessary correct or replace.
2) Check the engine oil level and leak every 500 km (350 miles) or before starting a loong trip.
3) When adding coolant, use only a qualified coolant additive for your vehicle and never mix hard water in the coolant filled at the factory. An improper coolant mixtrue can result in serious malfuction or engine damage.

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## SCHEDULE 2 - SEVERE MAINTENANCE

The following items must be serviced more frequently on cars mainly used under severe driving conditions.
Refer to the chart below for the appropriate maintenance intervals.

| MAINTENANCE ITEM | | Maintenance operation | Maintenance intervals | Driving condition |
|---|---|---|---|---|
| Engine oil and Engine oil filter | GASOLINE | R | Every 7,500 km (5,000 miles) or 6 moths | A, B, C, F, G |
| | DIESEL | R | Every 7,500 km (5,000 miles) or 6 moths | A, B, C, F, H |
| Air cleaner element | | I | Inspect more frequently depending on the condition | C, E |
| Spark plug | GASOLINE | I | Inspect more frequently depending on the condition | B, H |
| Engine timing belt | GASOLINE | R | Every 60,000 km (40,000 Miles) or 48 months | D, E, F, G |
| | DIESEL | R | Every 60,000 km (40,000 Miles) or 48 months | |
| Manual transaxle fluid | For Europe | R | Every 90,000 km (60,000 Miles) | A,C,D,E,F,G,H,I,J |
| | Except Europe | R | Every 100,000 km (62,000 Miles) | |
| Automatic transaxle fluid | For Europe | R | Every 45,000 km (30,000 Miles) | A, C, E, F, G, H, I |
| | Except Europe | R | Every 40,000 km (25,000 Miles) | |
| Steering gear rack, linkage and boots | | I | Inspect more frequently depending on the condition | C, D, E, F, G |
| Front suspension ball joints | | I | Inspect more frequently depending on the condition | C, D, E, F, G |
| Disc brakes and pads, calipers and rotors | | I | Inspect more frequently dependiing on the condition | C, D, E, G, H |
| Drum brakes and linings | | I | Inspect more frequently depending on the condition | C, D, E, G, H |
| Parking brake | | I | Inspect more frequently depending on the condition | C, D, G, H |
| Drive shaft and boots | | I | Inspect more frequently depending on the condition | C, D, E, F |
| Air conditioner air filter (if equipped) | | R | Replace more frequently depending on the condition | C, E |

I : Inspect and if necessary, adjust, correct, clean or replace
R : Replace

**Severe Driving Conditions**

A : Repeated short distance driving
B : Extensive idling
C : Driving in dusty, rough roads
D : Driving in areas using salt or other corrosive materials or in very cold weather
E : Driving in sandy areas
F : More than 50% driving in heavy in heavy city traffic during hot weather above 32°C (90°F)
G : Driving in mountainous arears.
H : Towing a trailer
I : Driving for patrol car, taxi, commercial car or vehicle towing
J : Driving over 170 km/h (106 mile/h)

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