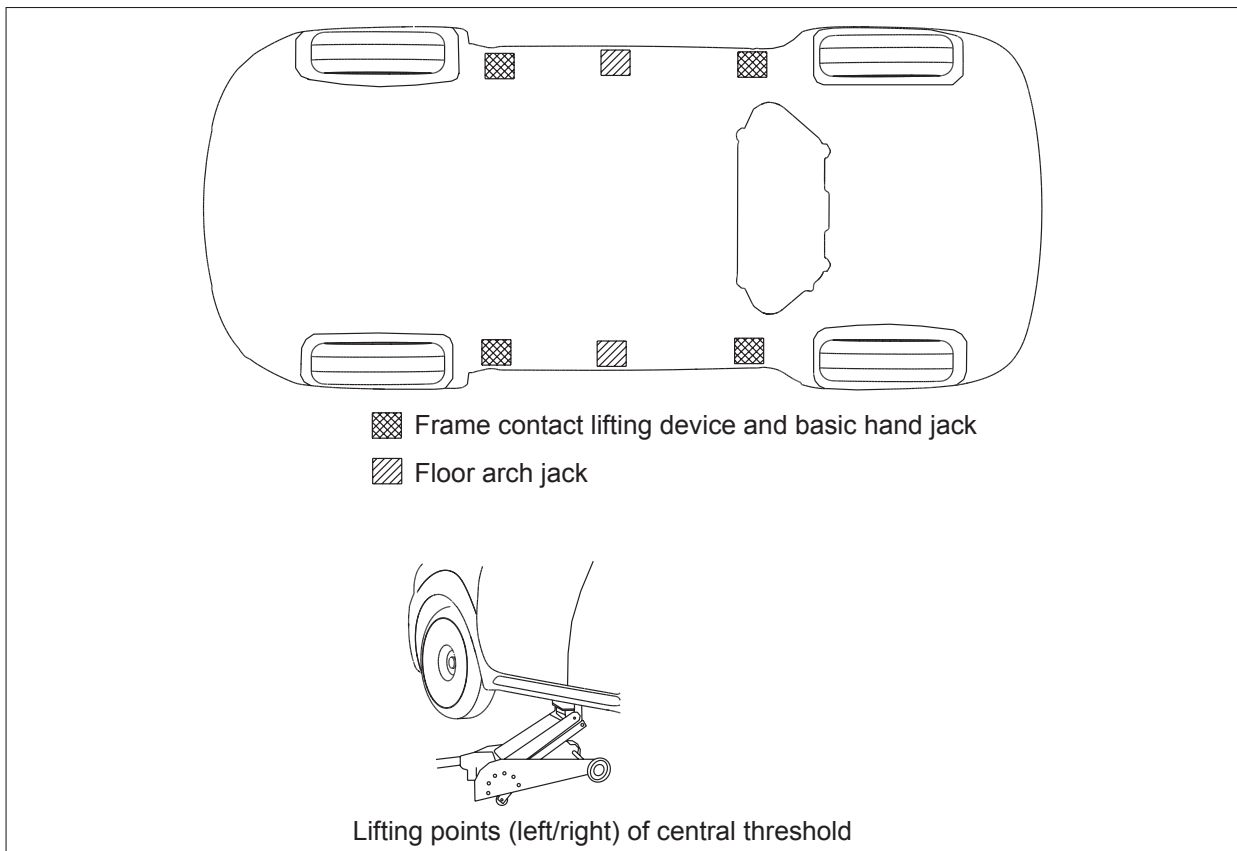


## General Repair Methods and Operations

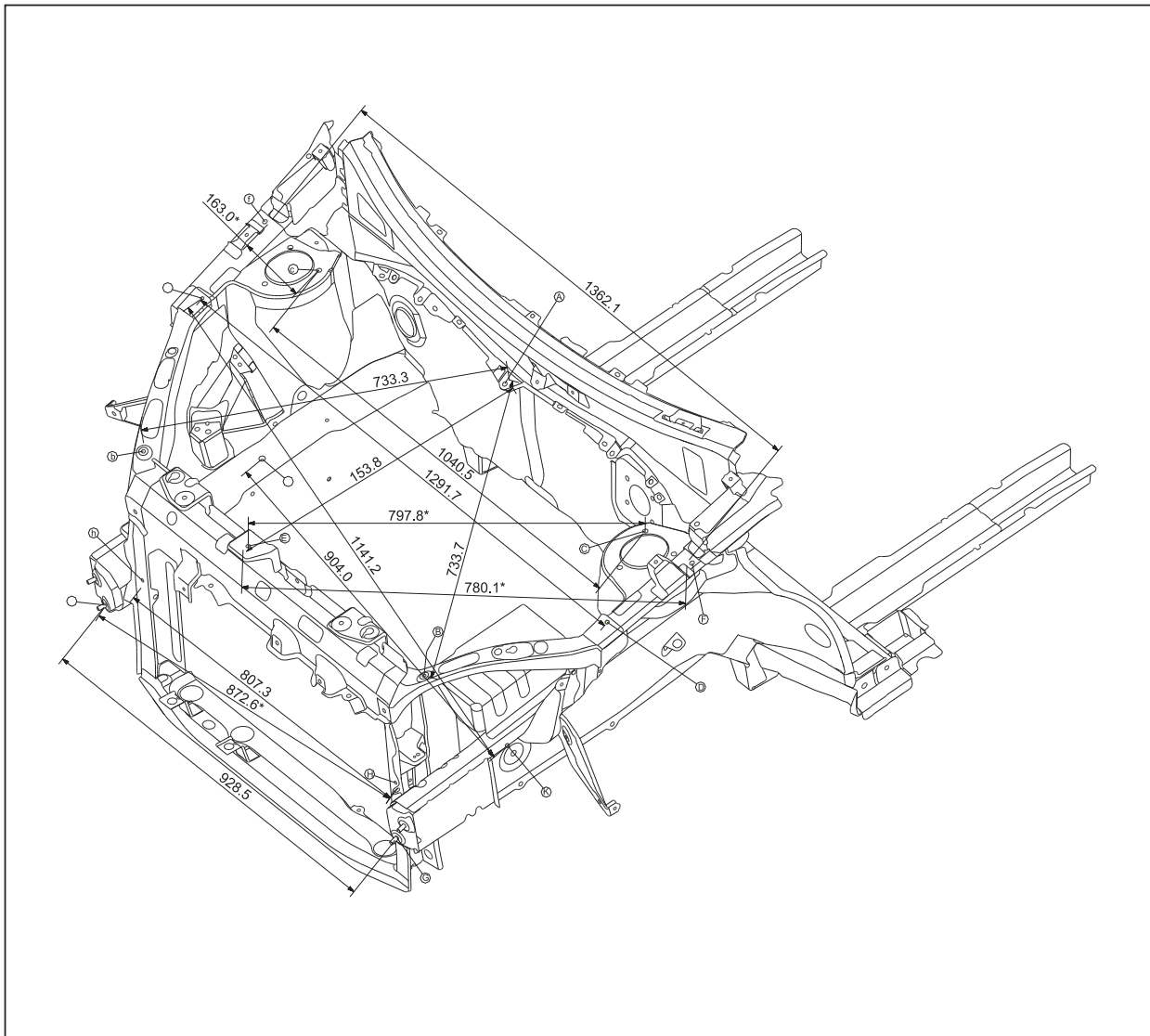
1. If a jack is needed, please kindly comply to the safety procedures listed below.
2. Park the vehicle on a flat surface, stabilize the front and the back wheels using any fixed object or tool, jack up the vehicle, support it with the chassis, and then start the maintenance.
3. Disconnect the battery's negative cable before maintenance, in order to reduce the possibility of damaging and burning out the cable due to a short circuit.
4. Cover the vehicle body, seats, and floor to prevent them from being damaged and polluted.
5. Handle brake fluid and antifreeze fluid carefully, because it may damage the vehicle's surface paint and its surroundings.
6. Using the proper tools or basic tools that have been recommended and are purchasable is very important in guaranteeing an effective and reliable maintenance result.
7. Dispose the used dowel pins, gaskets, O-rings, oil seals, lock washers, and self-locking nuts. Prepare new parts for installation. Normal functions are not guaranteed if these parts are reused.
8. Store the removed parts in order and in groups to make reassembly more convenient.
9. Store bolts and nuts separately, because their hardness levels and designs are different according to the installation locations.
10. Clean parts before they are inspected or reassembled. In addition, parts that come in contact with engine oil also need to be cleaned, as well as checked for blockage by using compressed air.
11. Before installation, use engine oil or grease to lubricate the rotating and sliding sides of the necessary parts.
12. When necessary, use sealant on gaskets to avoid leakage.
13. Please carefully comply to all tightening torque specifications of bolts and nuts.
14. After maintenance, check to make sure whether the repairs were performed correctly and whether the malfunctions have been fixed.

## Vehicle Lifting/Lowering Procedures

When lifting the vehicle, the lifter must be placed at the indicated spots. Using these indicated spots incorrectly can lead to permanent deformation of the vehicle body. Many vehicle service stations have autolifts that raise vehicles by supporting certain vehicle parts. If using other types of lifts, be careful to prevent damages to the fuel tank, oil filler, or the base of the vehicle body.

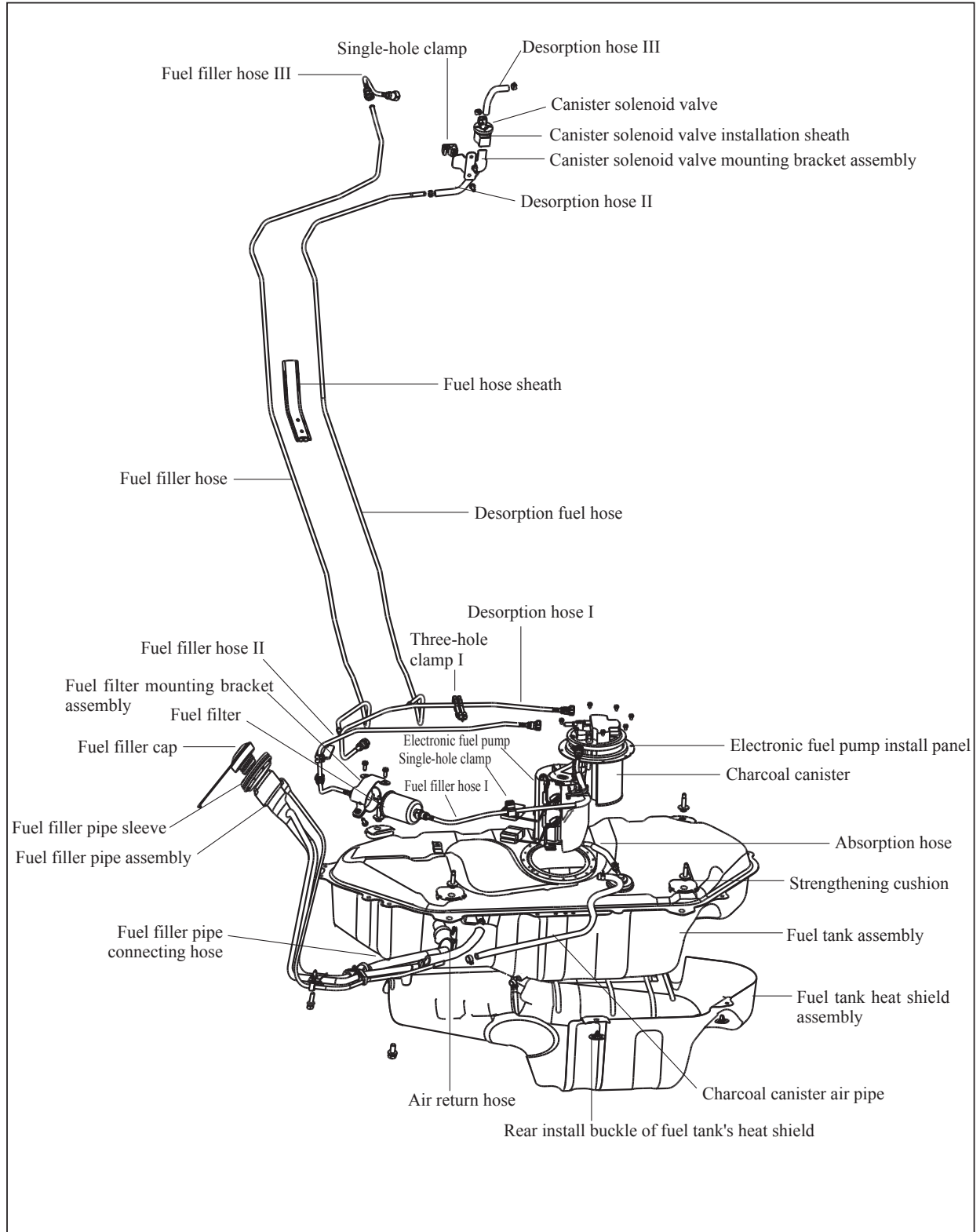


## Engine Compartment



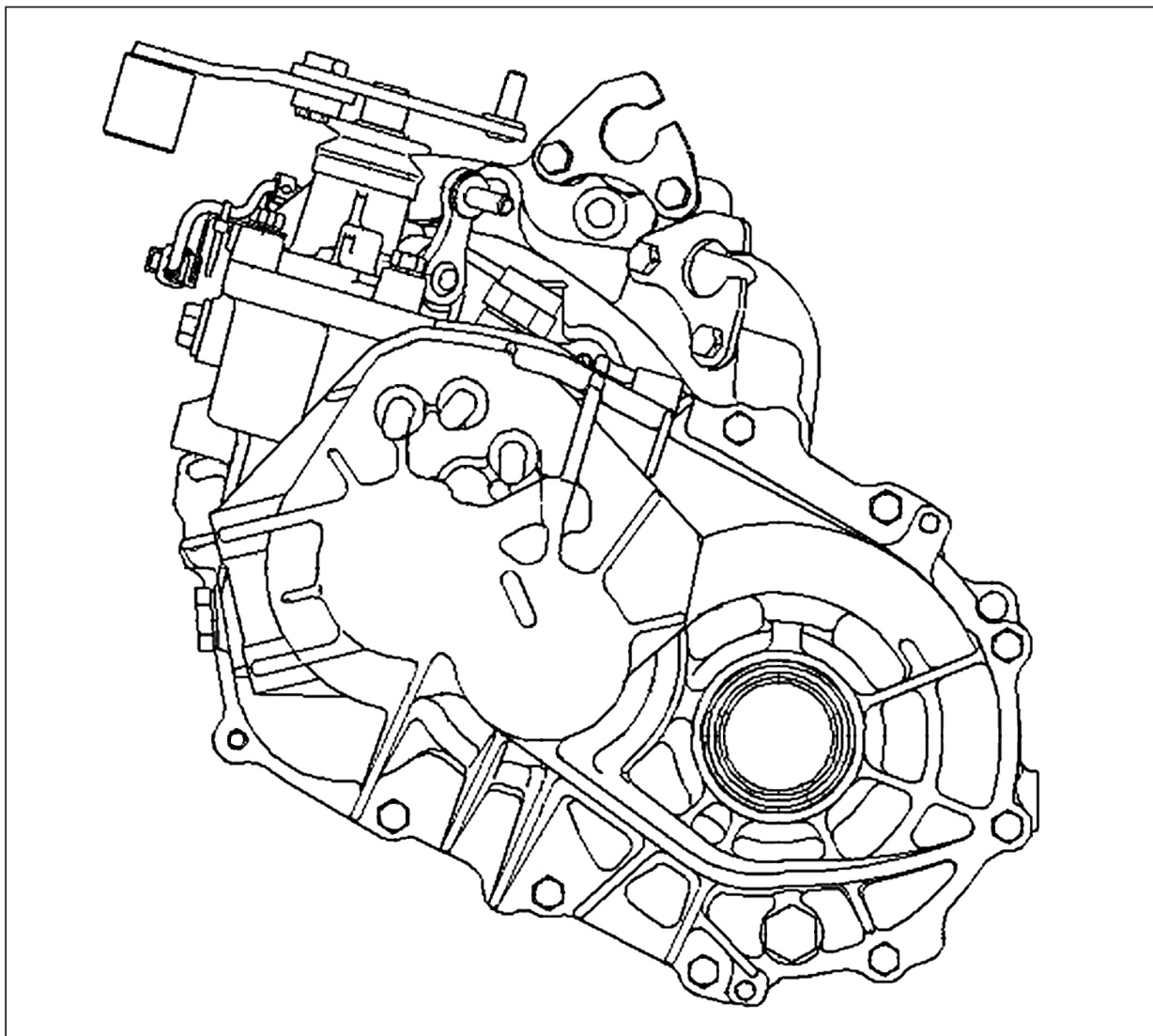
Mark	Axis (X, Y, Z)	Diameter (mm)	Mark	Axis (X, Y, Z)	Diameter (mm)
A	(115.2, 0.4, 701.5)	Φ10	B	(-461.2, -447.6, 627.7)	Φ8
C	(56.5, -520.3, 698.8)	Φ11	D	(-143.9, -645.9, 690.9)	Φ8
E	(-506.2, -45.0, 679.1)	Φ9	F	(-52.3, -681.0, 725.3)	Φ10
G	(-606.8, -464.3, 290.6)	Φ8.5	H	(-548.7, -403.6, 359.8)	Φ8
J	(-188.4, 467.5, 387.9)	Φ13	K	(-319.0, -425.0, 327.5)	Φ14

## Fuel Supply System Components



## 037A Transmission's Overall External Schematics

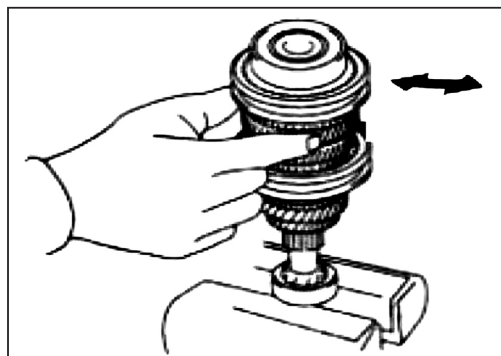
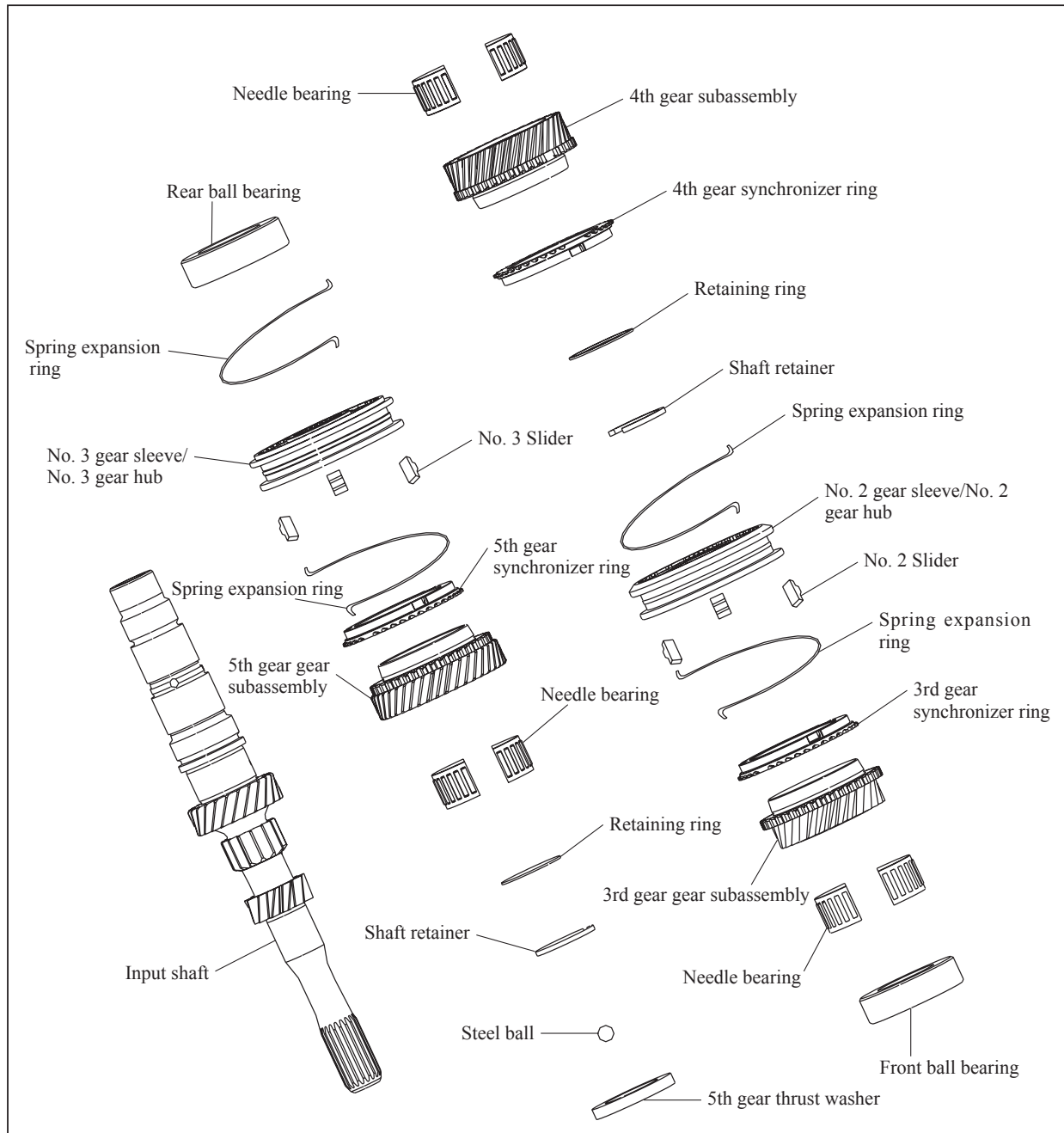
The 037A transmission is a step mechanical transmission with differential, two-shaft front wheel drive application. The forward gear has adopted the inertia synchronizer gear-shifting mechanism, which offers smooth and easy gear shifting, reduces noise dramatically, and improves the service life of the gear - important in achieving the overall economical efficiency. Regarding its control mechanism, the set steel ball and spring allow the shifting gear to be quick, accurate with solid handling. The 5th gear transmission is equipped with an interlocking mechanism to prevent accidental switching to reverse, to improve driving comfort and reliability.



### Main Technical Parameters

Basic parameters of the 037A transmission						
Max. input torque	115 N·m/4400-5200 rpm					
Speed ratio for each gear	I	II	III	IV	V	R
	3.545	1.913	1.310	0.973	0.804	3.214
Main deceleration ratio	3.944					
Odometer speed ratio	31/35 (currently no driven gear)					
Center distance (mm)	65					
Lubricant capacity (L)	1.8					
Control method	Remote cable control					
Netweight (kg)	28					
Match engine	GW413EF					

## Disassembling the Input Shaft Subassembly Components



1. Remove the input shaft's ball bearing.

## Suspension System Technical Parameters

### Main technical parameters

Suspension type and composition	Front suspension type	McPherson independent suspension
	Front suspension components	Coil spring, hydraulic telescopic shock absorber, stabilizer bar, lower swing arm
	Rear suspension type	Compound trailing arm semi-independent suspension
	Rear suspension components	Coil spring, hydraulic cylinder damper, & twist beam welded components
Wheel positional parameters (no load)	Front wheel camber	-0° 43' ±30'
	Front wheel kingpin angle	+10° 21' ±30'
	Front wheel kingpin caster	+1° 49' ±30'
	Front wheel toe-in	-0° 01' ±15'
	Rear wheel camber	-0° 43' ±30'
	Rear wheel toe-in	+0° 14' ±15'

### Tightening torque

Part	Code	Assembly locations for standard components	Tightening torque (N-m)	Quantity	Glue	Grade
Front suspension	Q1861455TF2 (M14×1.5) + Q402 (d2=32 t=5) FD	Subframe & vehicle body (rear)	145±15	2	Red glue	10.9
	Q1861275TF2 (M12×1.25) + Q402 (d2=32) FD	Subframe & vehicle body (front)	120±10	2	Red glue	10.9
	Q1401020 (M10×1.25) FD	Subframe strut bar mounting bolt	49±5	4	Red glue	10.9
	2904011-S08	Swing arm & steering knuckle	98±10	2	Red glue	
	Q1401495 (t=4) (M14×1.5) FD	Swing arm & subframe (front)	180±10	2	Red glue	10.9
	Q1401280 (M12×1.25) FD	Swing arm & subframe (rear)	120±10	2	Red glue	10.9
	2904013-S08	Swing arm & subframe (rear)	/	2	————	————
	2905011-S08	Front shock upper assembly location	40±5	6	————	————
	Q32014 (M14×1.5) FD	Front shock lower assembly location	132±10	4	Red glue	10.9
	Q1400830 (d2=13.5)	Front stabilizer bar mounting bracket	37±4	4	Red glue	
Q32608	Front stabilizer bar hanger rod	16±2	4	————	————	
Rear suspension	Q151B12110TF2+Q402 (d2=35 t=5) FD	Twist beam & vehicle body	80±10	2	Red glue	10.9 grade with guide
	Q32012T13F2 (M12×1.25) FD	Rear shock absorber & twist beam	120±10	2	Red glue	10 grade
	Q341C10	Rear shock absorber & vehicle body	64±5	4	————	————
Wheel	3101014-K00	Wheel nut (M12×1.25)	110±10	16	————	————
	Q30612FD (M12×1.25)	Wheel nut cone nut	110±10	16	————	————

### Wheel and tire parameters

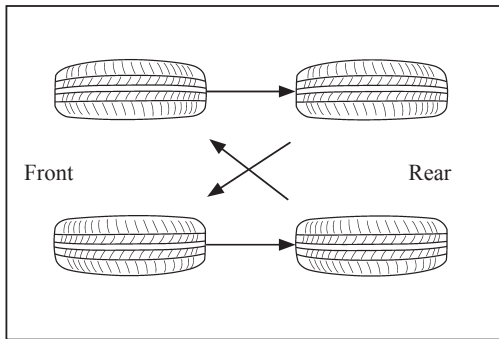
Tire specifications: 15 × 6J (For 185/65R15 tires), 16 × 4T (For T125/70R16 tires)

Tire specification: 185/65 R15 88H

Spare tire specification: T125/70R16 96M

Tire pressure must be gauged when the tire is cool: Tire inflation pressure: 200±10 KPa

Spare tire inflation pressure: 420±10 KPa



**Tire rotation**

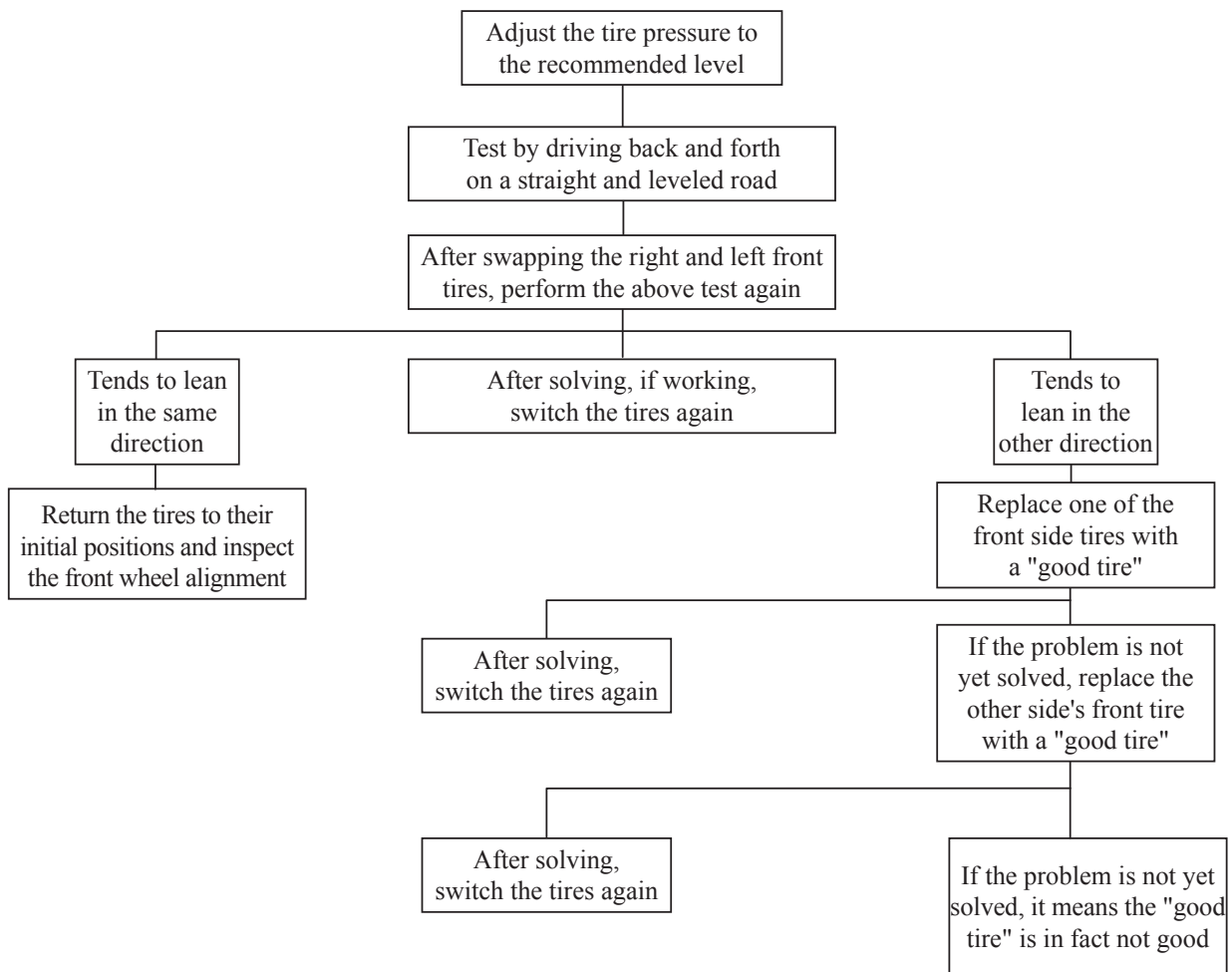
For equal wear or tear for the tires, please rotate the tire positions timely. Swapping principle shown on the left. Radial tires should be regularly switched, and add pressure according to the regulations.

**Caution:**

Due to structural reasons, radial tires usually quickly receive most of its wear on the shoulders, especially the front tires. Do a tire rotation per 8000-12000 km, and the tire life can increase by 20%. This makes regular tire rotation especially useful.

**Deviation judging methods**

"Deviation" means that, when no one is in control of the steering, the vehicle does not move in a straight line while driving on a straight and leveled surface.

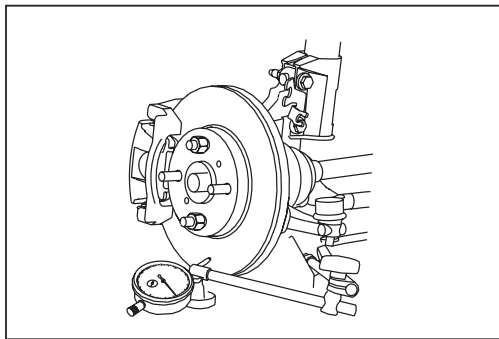
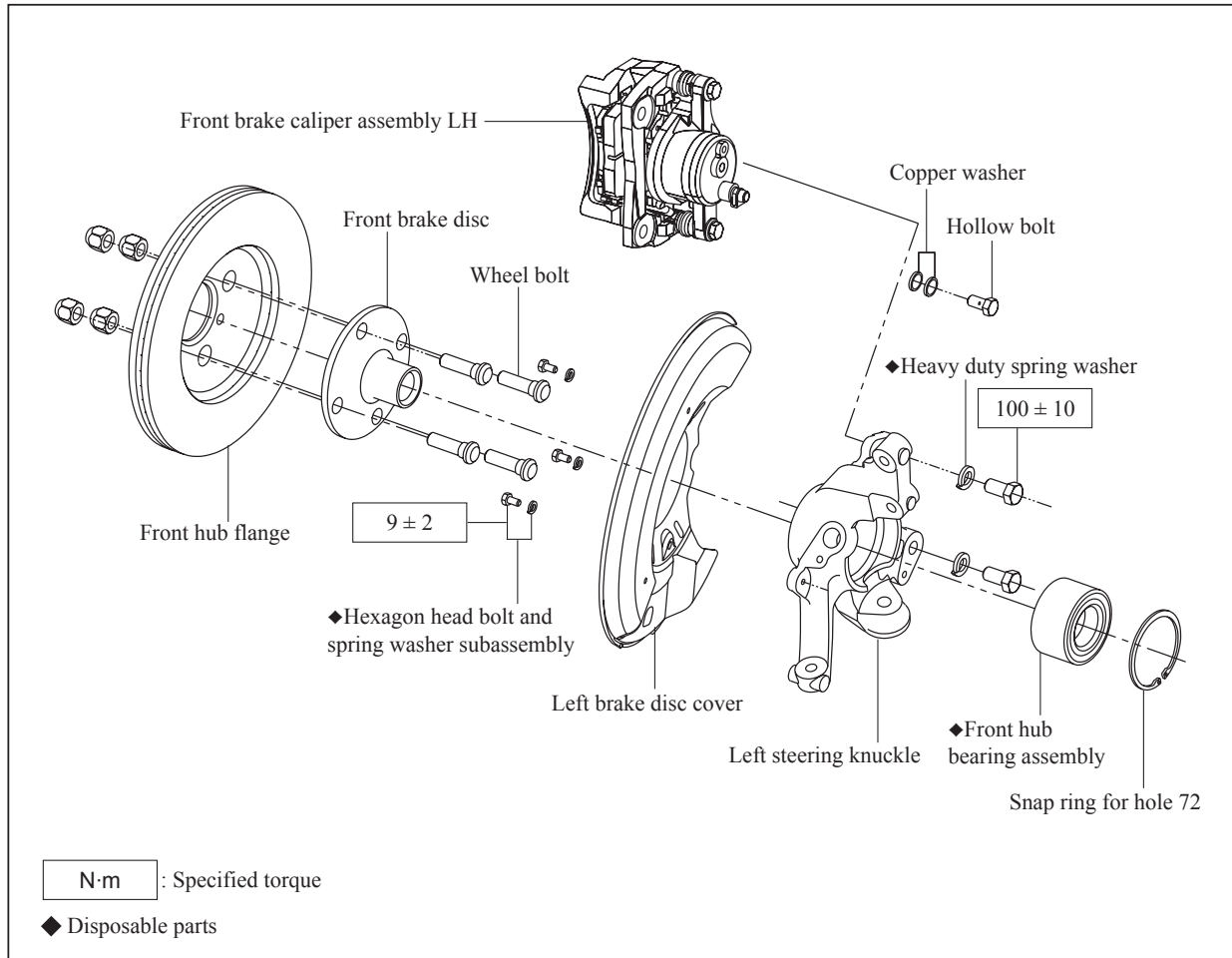


**Deviation causes:**

- Incorrect tire and front wheel alignment,
- Braking force is not even,
- Tire structure problems.

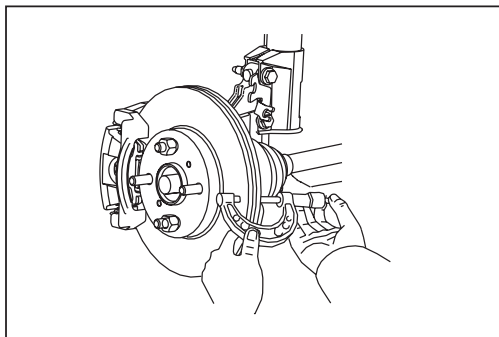
Tire production and manufacturing methods can also lead to vehicle deviation. For example, the arrangement of the tires inner steel wire belt. A steel wire belt which is inside the radial tire deviating from the tires centerline can create lateral force when the tires are rolling in a straight line. If one of the tire's diameter is larger than the other, the tire will tend to roll to that side, this also creates lateral force (a tapering effect) leading to vehicle deviation. When the front wheel alignment is found to be correct and in proper order, the above process is also applicable in judging tire deviation. Rear tires cannot cause deviation.

## Steering Knuckle and Hub Brake Assembly Components



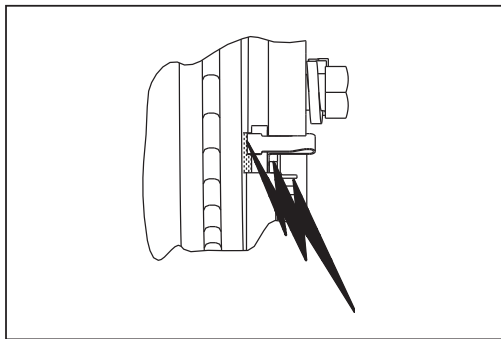
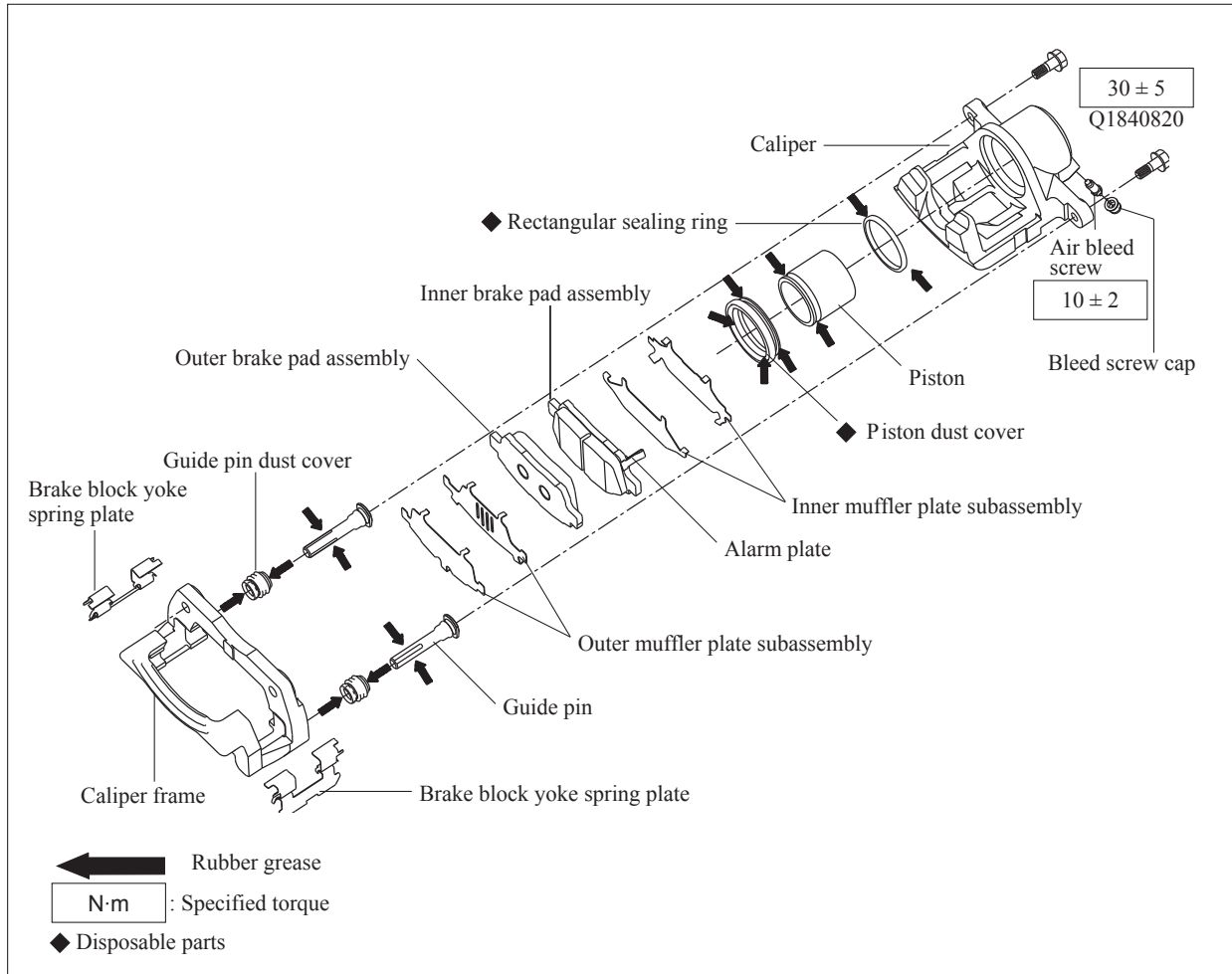
### Steering knuckle and hub brake assembly examination and disassembly

1. Hoist the vehicle and remove the wheels.
2. Loosen the riveted areas of the front drive shaft nut and remove the nut.
3. Inspect the front brake disc plate surface runout.  
When measuring, tighten the two wheel nuts' symmetrical locations. The front brake disc's brake linings runout on the two sides should be no more than 0.11 mm. If oversized, they should be repaired or replaced.
4. Inspect front brake disc thickness.  
Standard thickness: 22.0 mm  
Minimum thickness: 20.0 mm  
The brake disc must be changed when it reaches the minimum level of thickness.





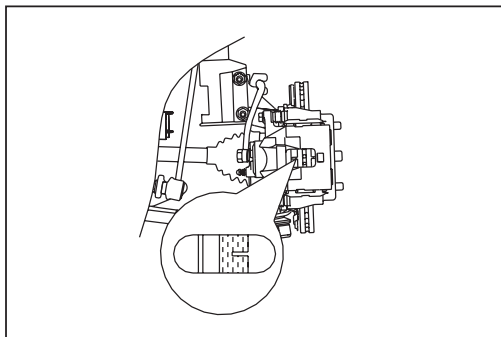
## Front Brake Caliper Components



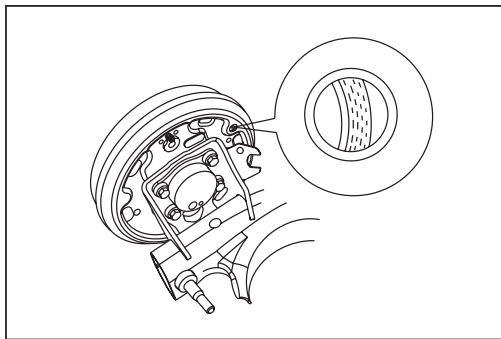
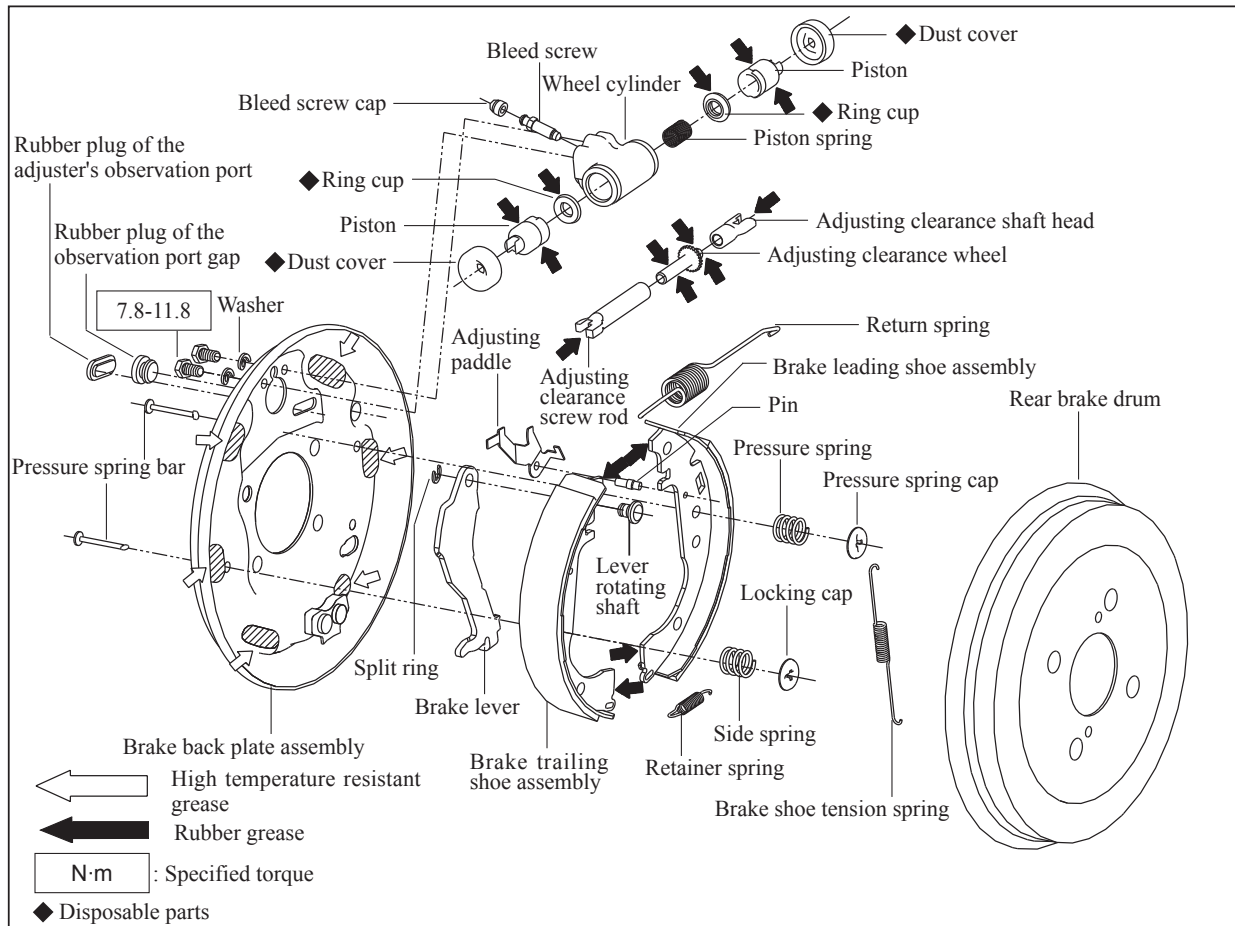
### Inner and outer brake pad assembly re- placement

Remark: When applying the brake while driving, if the front tires makes a continuous screeching sound, inspect the inner and outer brake pad and friction limit alarm plate. If there are traces of rubbing from the brake disc on the alarm plate, the inner and outer brake pad assembly should be replaced.

1. Remove the front wheel.
2. Inspect the inner and outer brake pad's friction material thickness.  
By looking through the caliper's observation ports, inspect the inner and outer brake pad friction material thickness. If it is no longer within the specified range, it should be replaced.  
Minimum thickness: 2.0 mm



## Rear Brake Components



### Rear brake removal

1. Inspecting the brake's friction plate thickness.

Remove the rubber plug of the observation port gap and examine the friction plate thickness via the observation port. If it's smaller than the minimum value, the brake's leading and trailing shoe assemblies should be replaced.

Minimum thickness: 1.0 mm

2. Remove the rear wheel.
3. Release the brake fluid.

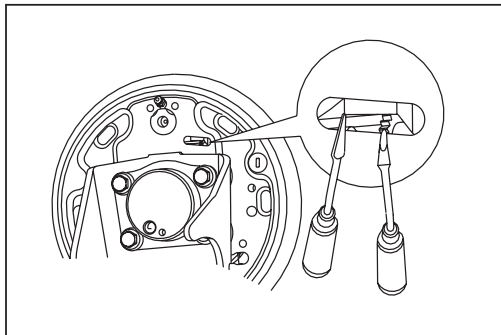
**Caution:** Be sure not to spill the brake fluid onto the paint's surface. Otherwise it must be immediately cleaned.

4. Remove the rear brake drum.

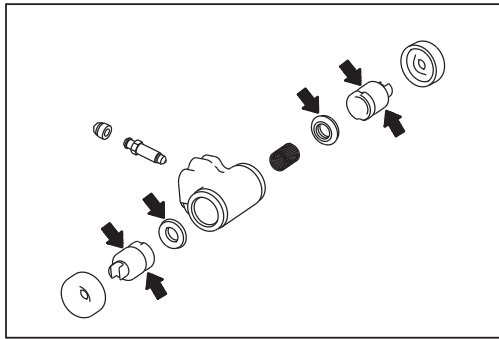
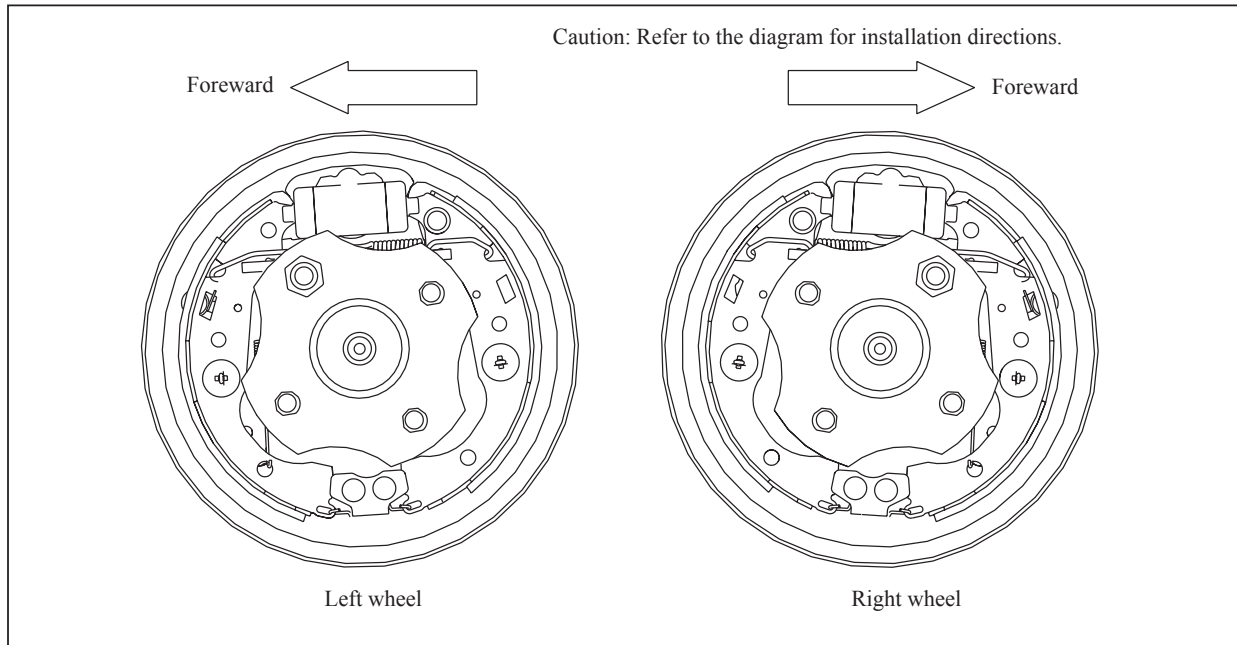
**Remark:** If it is difficult to remove the rear brake drum, follow the steps below:

Method one:

- (a) Remove the rubber plug of the adjuster's observation port, and insert a slotted screwdriver into the brake's back plate assembly hole, and pry off the adjusting paddle from the adjusting clearance wheel.
- (b) Use another slotted screwdriver to toggle the adjusting clearance wheel and loosen the brake's leading and trailing shoe assembly's tension on the rear brake drum.



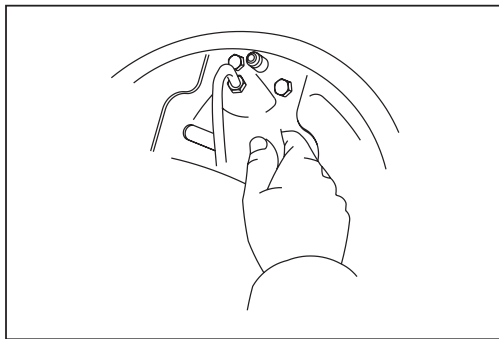
## Rear Brake Installation



### 1. Install the brake wheel cylinder.

- (a) Apply a small amount of lithium grease onto two piston assemblies.
- (b) Install the wheel cylinder assembly.
  - Install two dust covers onto the two piston assemblies.
  - Install a piston spring and two piston components in the wheel cylinder body.

Remark: Refer to the diagram for precise installation directions.



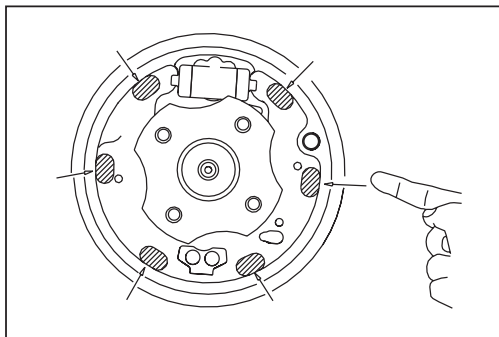
### 2. Install the wheel cylinder assembly.

- (a) Use two bolts to install the wheel cylinder assembly onto the brake back plate assembly.

Tightening torque: 7.8-11.8 N·m

- (b) Connect the brake line to the wheel cylinder assembly.

Tightening torque: 16 N·m



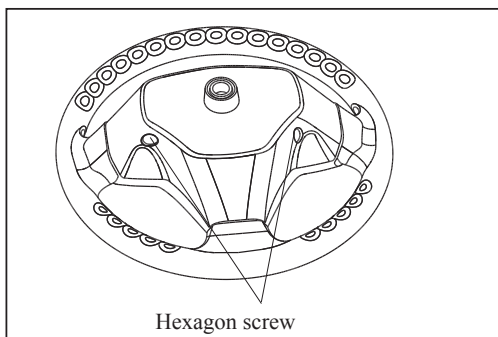
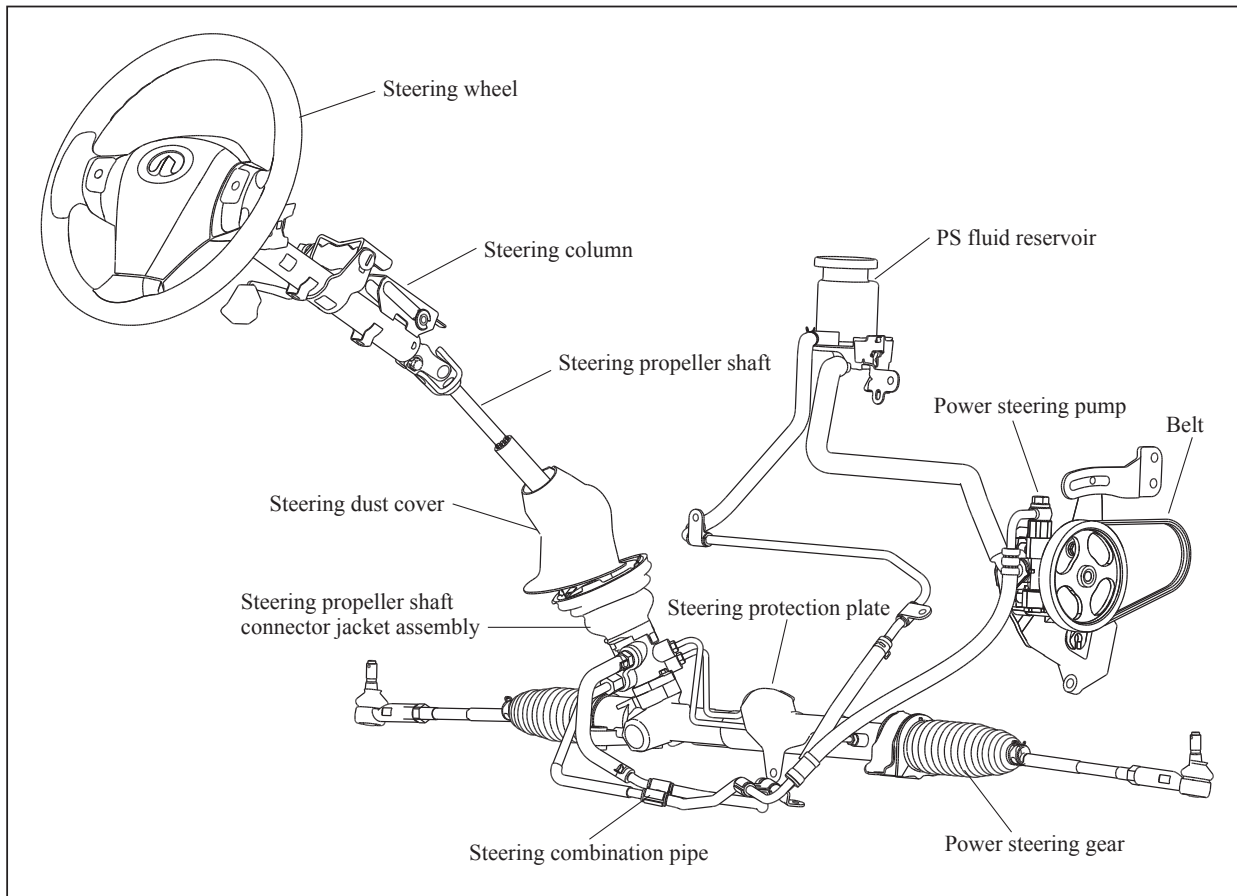
### 3. Apply an appropriate amount of grease to the following parts.

- (a) Apply a small amount of high temperature resistant grease on the brake back plate assembly and the brake shoe connection's six convex plate surface.

## Steering System Maintenance

### Structure Introduction

The steering wheel has an airbag module which should only be inspected and repaired by a professional. The steering column's upper section adopts a steel deformation and energy absorbing crumple structure which ensures collision protection for the driver. The lower section uses a high precision sliding spline structure, which can effectively eliminate structural interference caused by body deformation. The steering column angle is adjustable, which can more easily adapt to the driver, and at the same time possesses reasonable reverse efficiency to ensure the driver has a good feel for the road. Steering system is as shown below:



### Steering column assembly removal and installation

1. Remove the airbag.
  - (a) Disconnect the battery's negative cable, and wait for one minute before canceling the airbags function in order to avoid unnecessary injury.
  - (b) To ensure steering column's proper installation, during the entire removal process, the front tires must keep straight.
  - (c) Remove the two hexagon screws and the airbag module.

Double-colored wire: Primary color is Red, secondary color is Blue, marked as RBI.  
 0.5BrGr means Brown wire with a Gray fine wire, and sectional area is 0.5 mm<sup>2</sup>.

### Areas of importance in circuit maintenance

1. Before operating any electronic devices, and when tools or maintenance devices may easily make contact with an uncovered electronic terminal, please make sure to turn the ignition switch to the LOCK position, and then disconnect the battery's negative cable to avoid injury or vehicle damage. When the ignition switch is on the ON position, please do not disconnect the battery's connecting wire or take out the power's fuse, regardless if the engine is running or not. Otherwise it would seriously damage the ECU and related microelectronic devices such as sensors.
2. When changing the fuse, please make sure that the new fuse possesses the proper current rating, and is not above or below this rating.
3. When repairing the wire harnesses of the airbag and pretensioner, only specified contact points, plugs, and wires are allowed to be used.
4. Before repairing the wire harness, make sure to eliminate any factor that might cause damage, for example, the edge of a vehicle body part is too sharp, or the used electronics are damaged or corroded.
5. Shielded wire should not be repaired, it must be replaced entirely once it is damaged.
6. Unless it is specified during the test, please do not use an analog multimeter to test the ECU and sensor, instead use a high-impedance digital multimeter (internal resistance should be ≥10 kΩ) or a vehicle multimeter for inspection.
7. When inspecting the connector with a digital multimeter, take the waterproof rubber cover off the connector, and tightly insert the test pen along the connecting terminal. Don't use too much force, as to avoid cracking the connector.

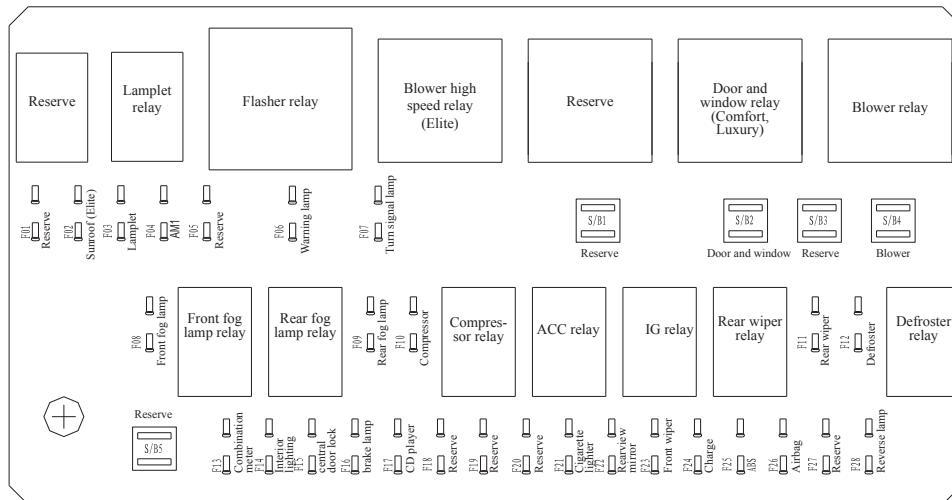
### Circuit inspection steps

The principle of troubleshooting is to confirm the "possible cause". Once the possible cause is confirmed, the components that need to be inspected are limited to the components that are related to the possible cause. The confirmed possible cause should be based on theory and be supported by facts, but not just by intuition. If one tries to solve the problem but does not adopt the proper troubleshooting steps, it may make the problem worse. Then the possible cause not only can't be confirmed, but also maintenance can't be performed properly. Troubleshooting should adhere to the four steps below:

1. Observe the symptoms carefully, inspect if there is anything else abnormal, and record it.
2. While confirming the possible causes, study the circuit diagram carefully, and regard it as a whole system in order to understand the circuit. Thorough knowledge of switches, relays, and other electronic components is obligatory for proper analysis.
3. Inspect and eliminate the problems one by one until the cause is found.
4. After the malfunction is fixed, make sure to check if the inspected system is working properly, and also check if the maintenance may have caused any new problems.

## Fuse Box

### Cab No.1 fuse box

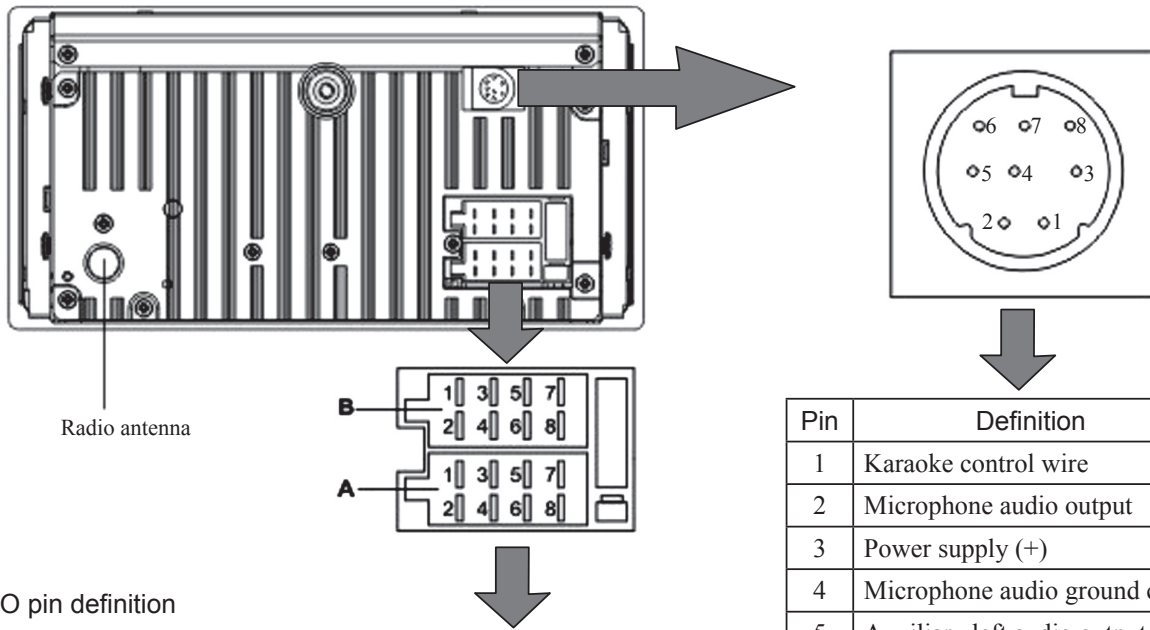


Symptoms	Causes	Solutions
The sound quality is poor or distorted	Speaker's connection wire touches the vehicle body	Check the speaker's connection wire
	"MUTE" wire touches the metal parts of the vehicle body	Ensure the telephone silence control wire is insulated from the vehicle body
	A connection error between the ignition coil ACC and positive power line "BATT"	Please refer to the "Eelectrical connection diagram" to correct the connection

Trouble code

Display character	Malfunction	Solutions
ERR3	Disc is placed upside down	Eject the disc and reload
ERR4	Incompatible disc file or format	Check the disc format
ERR1	Disc structure error	Eject the disc and replay
ERR1		

Electrical connection diagram



ISO pin definition

Pin	Function	
	A	B
1	Linear control ground cable	Rear horn RH (+) (Violet)
2	Mute (Pink)	Rear horn RH (-) (Violet/Black striped)
3	Linear control	Front horn RH (+) (Grey)
4	Connected ignition swith (Red)	Front horn RH (-) (Grey/Black striped)
5	Automatic antenna (Blue/White)	Front horn LH (+) (White)
6	Lighting wire (Brown)	Front horn LH (-) (White/Black striped)
7	to engine battery positive (+) (Yellow)	Rear horn LH (+) (Green)
8	Ground cable (Black)	Rear horn LH (-) (Green/Black striped)

Pin	Definition
1	Karaoke control wire
2	Microphone audio output
3	Power supply (+)
4	Microphone audio ground cable
5	Auxiliary left audio output
6	Auxiliary right audio output
7	Auxiliary audio ground cable
8	Power supply ground cable

## Front Bumper Components

