

ILLUSTRATED SERVICE & PARTS GUIDE



Engine



Driveline



Tires



Alignment



Brake



Miscellaneous

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Overview of Mitsubishi Services

Mitsubishi Motors' top quality engineering and manufacturing operations make your vehicle one of the best built in the industry. However, quality cannot eliminate the need for proper scheduled maintenance.



Your Warranty and Maintenance Manual specifies that maintenance must be completed at certain times and mileages

- To maintain the high level of performance that has been engineered into your vehicle (Maintain original performance of vehicle)
- To guard against major repair expenses that may result from neglect (Prevent high repair cost)
- To assure the proper functioning of the engine control system. (Good for environment and fuel economy)

*Damage resulting from lack of, or improper maintenance (including use of non-genuine parts) is not covered under warranty.

By regularly performing the required maintenance on your vehicle, you will continue to protect your investment for many years to come.

Your authorized Mitsubishi Dealership is in the best position to provide ongoing service to your vehicle by qualified technicians.

Your Dealership will assist you in matching a maintenance schedule with your driving habits and local driving conditions, to make certain it meets your specific needs. They are committed to your complete satisfaction.

Thank you for purchasing one of our quality products. We look forward to helping you take care of your Mitsubishi.



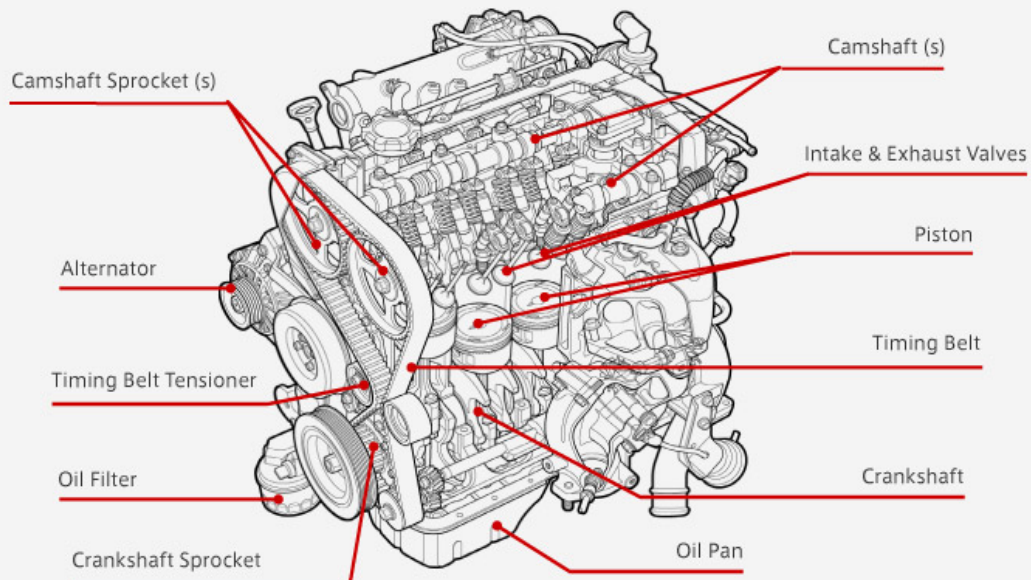
To Top



Engine



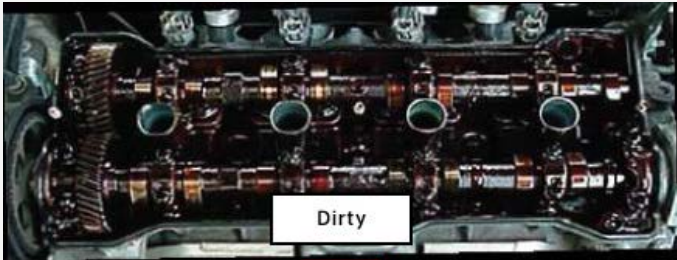
Engine Assembly

[Next Page](#)[To Top](#)

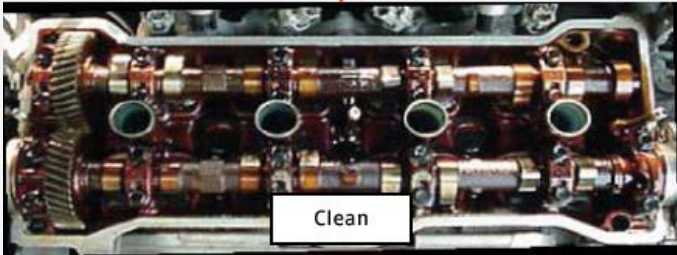
Engine



Engine Lubrication



Engine Flushing
(Cleaning)



Merit!

- Restores engine start-ability
- Stabilizes idling
- Reduces engine noise
- Restores acceleration performance
- Better rotation gain at high rotation speed

When oil changes are extended beyond recommended intervals, engine sludge can form. (Sludge obstructs oil passages and restricts oil flow, leading to premature engine damage.)

The engine oil and Genuine Mitsubishi filter are the key ingredients to engine performance and longevity.

Regular oil and filter changes prevent excessive engine wear; keep the engine cool; and ensure long term reliability.



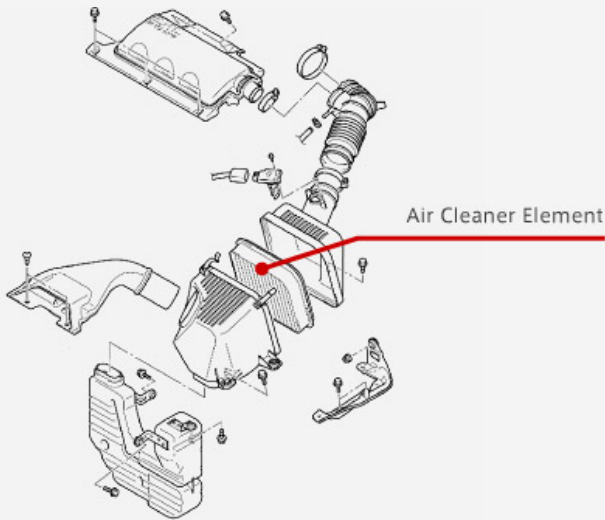
Mitsubishi Genuine Parts & Oil

*The repair of damage caused by the parts or services not prescribed by the Warranty and Maintenance Manual (such as using non-genuine parts or excessive oil change intervals), is not covered under warranty.

Engine



Air Cleaner Element



An air cleaner is vital to engine performance. As outside air travels through the intake on its way to the engine, it passes through the air cleaner element. Dirt and debris, harmful to an engine, are trapped in the air cleaner element.

Over time, as more material is trapped, the air flow rate decreases, restricting the air that the engine needs.

If the air cleaner element is not replaced, engine power, acceleration and fuel economy are reduced.

Using a non-genuine element may cause irreparable damage inside the engine.



New (Clean)



Used (Need to be replaced)



Mitsubishi Genuine Parts

Engine



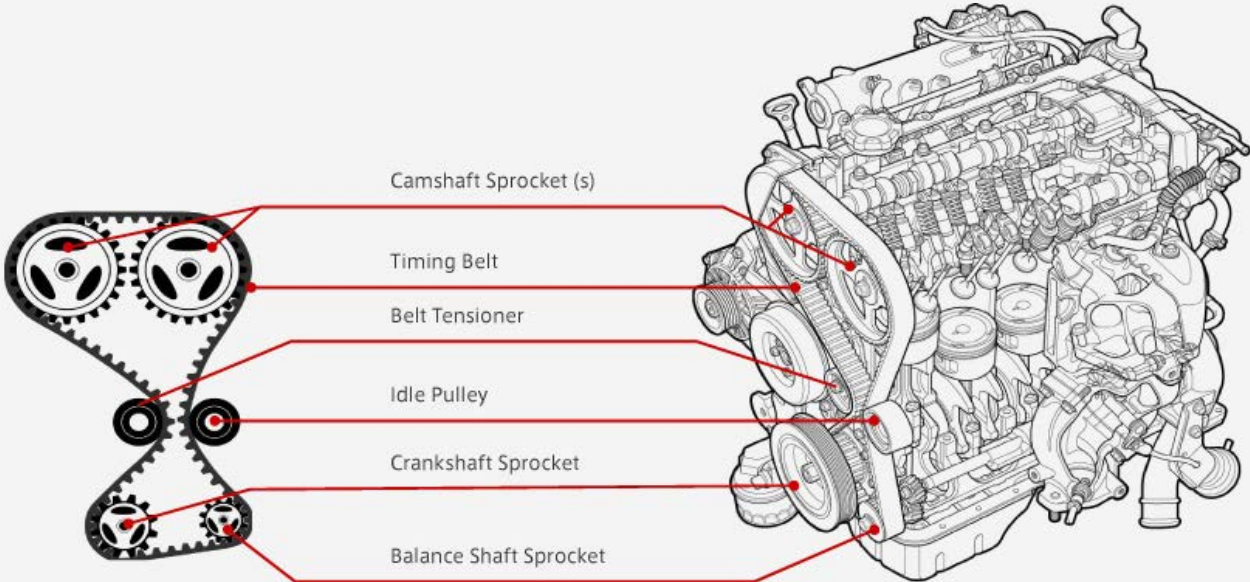
Timing Belt

The engine's timing belt drives the camshaft (s) ("top end") from the rotation of the crankshaft ("bottom end").

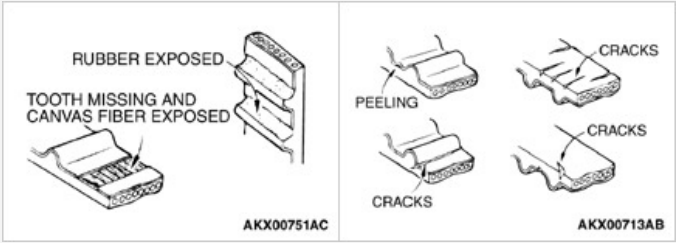
The belt keeps the piston and valves in "time" during operation.

Serious internal engine damage can occur when the piston and valves come into contact with each other "out-of-time" caused by a damaged belt etc.

In the worst case, the engine assembly will need to be replaced.



Failure to replace the timing belt at the recommended interval may lead to belt fatigue and breakage, which can result in costly engine repairs.



Engine



Drive Belt



Drive Belt



Mitsubishi Genuine Part

The drive belt (including fan belt, power steering belt, A/C belt) is a consumable part that is very important to the efficient operation of engine accessory components such as the alternator, power steering, air conditioner, engine cooling system etc.

In the worst case of a damaged or cut drive belt,

- The battery will be discharged and will result in an inability to start the engine
- Hard and heavy steering wheel operation
- Insufficient Air Conditioning System

A symptom of deterioration of the drive belt is a squeaking sound from the engine. The drive belt (s) should be inspected before serious damage could occur.



New Drive Belt

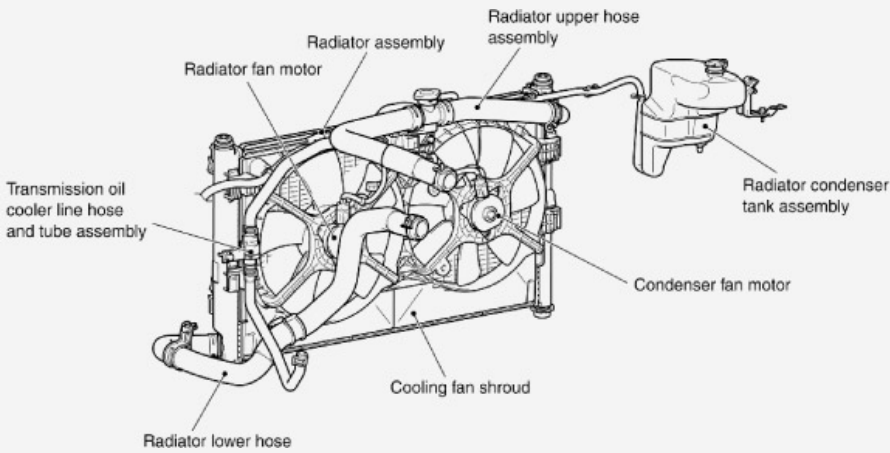


Used (Damaged: Need to be replaced)

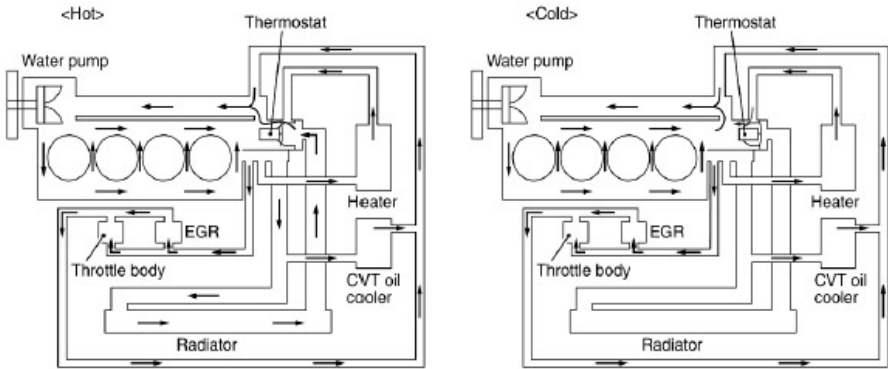
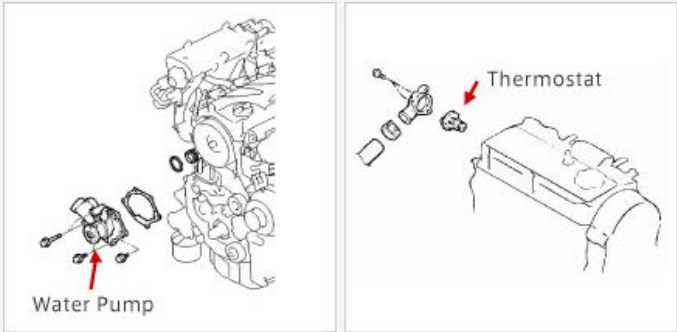
Engine



Engine Cooling System



Excessive heat is detrimental to the engine. The key components of the cooling system (radiator, water pump, thermostat and hoses) transfer heat away from the engine through the circulation of coolant. This maintains the normal operating temperature of the engine.



AK603624AB

Water Flow

Engine



Super Long Life Coolant (SLLC)



30% Pre-Mixed



50% Pre-Mixed

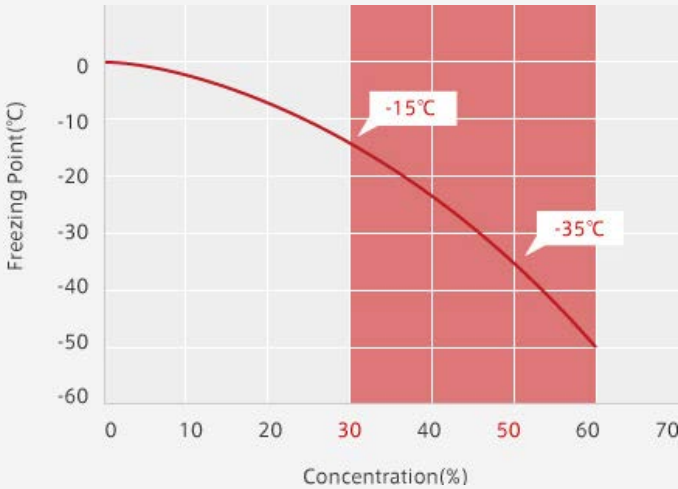


MITSUBISHI SUPER LONG LIFE COOLANT achieves excellent performance that is required:

- Lasts longer
- Minimum Replacement Interval - 4 Years or 60,000km
- Prevents metal corrosion of the cooling system for a long period of time.
- Prevents overheating
- Antifreeze
- Usable in all vehicles manufactured by MITSUBISHI MOTORS.

To avoid any problems caused by the conventional method with poor dilution mixing with water, Pre-mixed SLLC is specified for your vehicle.

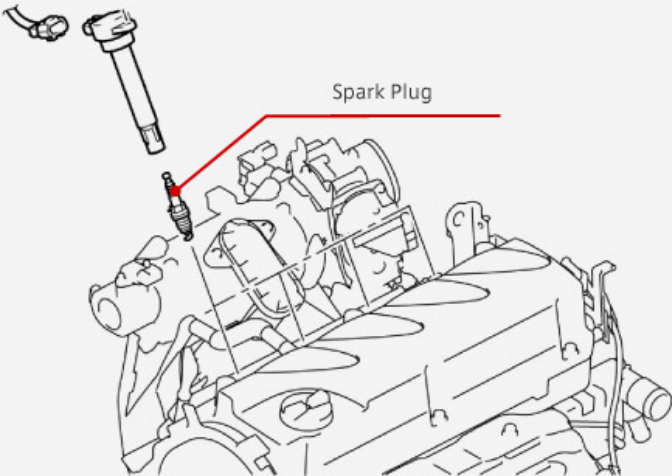
Prevention Performance		
	Cavitations	Rust
With SLLC		
Non-SLLC		



Engine



Spark Plugs



Spark plugs carry a high voltage into the engine's combustion chamber and convert it into a spark, igniting the air/fuel mixture. This generates the power that keeps the engine running. Even at idle, each spark plug fires 375 times per minute.

Over time, the spark plug's tip (electrode) wears out.

The outer shell (insulation) may even crack or separate allowing the voltage to exit the plug where it is not intended.

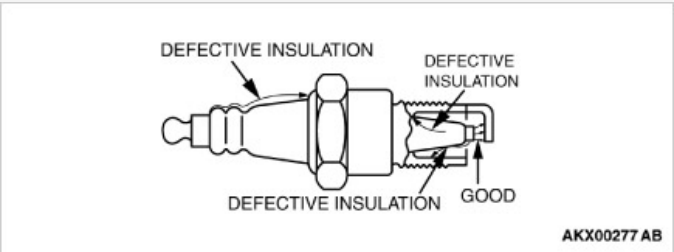
Misfire results, which causes the engine to run rough and lowers fuel economy.



New



Worn Spark Plugs (Need to be replaced)



Engine



Fuel Cleaner



Genuine Parts provide confidence

The Mitsubishi Genuine FUEL SYSTEM CLEANER is designed to be the best fit for Mitsubishi vehicles.

- Eliminates engine hesitation & rough idling
- Restores lost power & acceleration
- Prevents engine knocking
- Keeps fuel system clean
- Reduces fuel consumption



For Gasoline
(Petrol) Engine



For Diesel Engine



[Back Page](#)

[To Top](#)



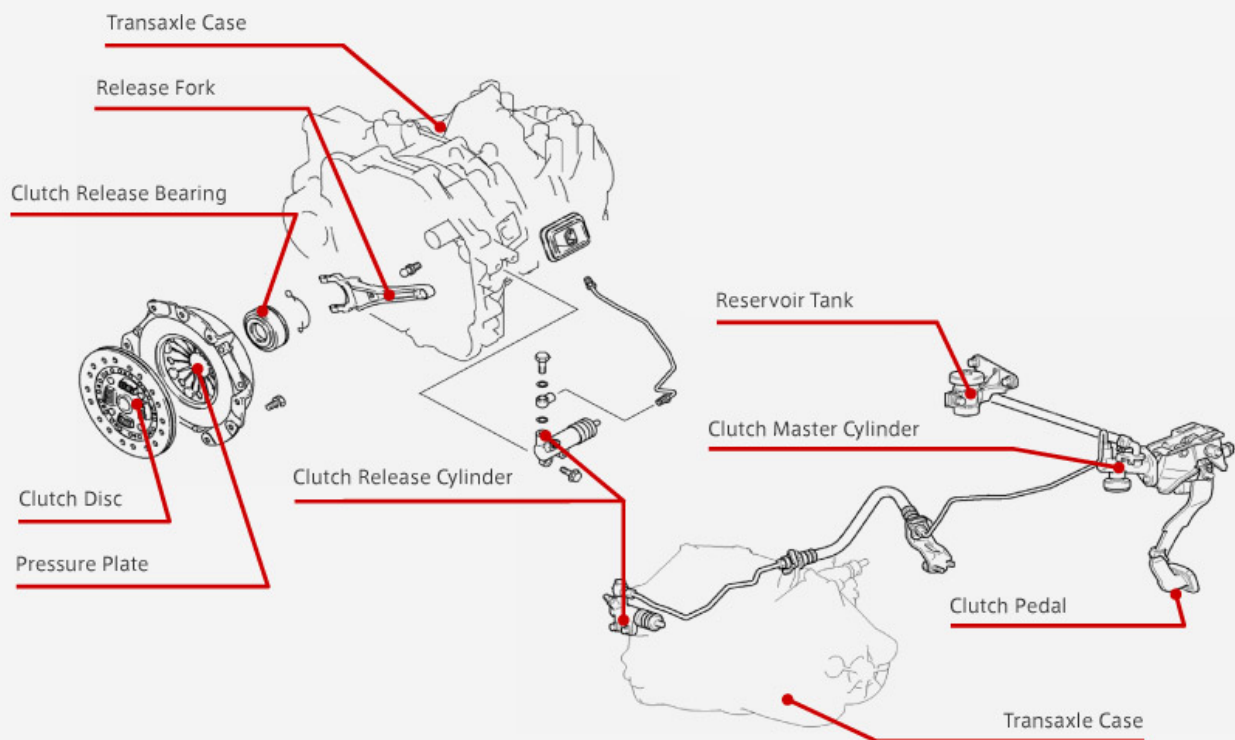
Driveline



Clutch System (Manual Transmission [M/T])

Clutches are designed to slip when engaged so the vehicle doesn't jerk or lurch forward when taking off.

Once the clutch pedal is fully released, the clutch should hold firm and not chatter, slip, or catch and provide a solid coupling between the engine and transmission. If this doesn't occur, investigation is required.


[Next Page](#)
[To Top](#)

Driveline



Clutch Disc (Manual Transmission [M/T])

New M/T Clutch Disc



Slipping or chatter are most noticeable when the engine is under load, as when the vehicle is travelling at low speed in a high gear, when driving up a hill, when accelerating to overtake another vehicle, or when towing a trailer.

Slippage increases friction and produces heat which leads to hot spots on the pressure plate. The hotter the clutch gets, the less able it is to maintain its grip, and the more it slips. The vicious cycle that results can burn the clutch facings and damage the flywheel and pressure plate.

Worn out M/T Clutch Disc



Damaged Pressure Plate
(By Worn Clutch Disc)



Back Page

Next Page



To Top



Driveline



Transmission



New (Clean)



Used (Dirty: Need to be replaced)

Due to the need for good performance of Transmission operation, lubrication of transmission is one of the most important maintenance items. This is required for two types of transmissions.

The repair of damage, that is caused because incorrect parts or services being used were not prescribed by the Warranty and Maintenance Manual, will result in the vehicle not being covered under warranty.

Manual Transmission Fluid (MTF)

For smooth gear rotation and change, a sufficient quantity of manual transmission fluid is necessary.

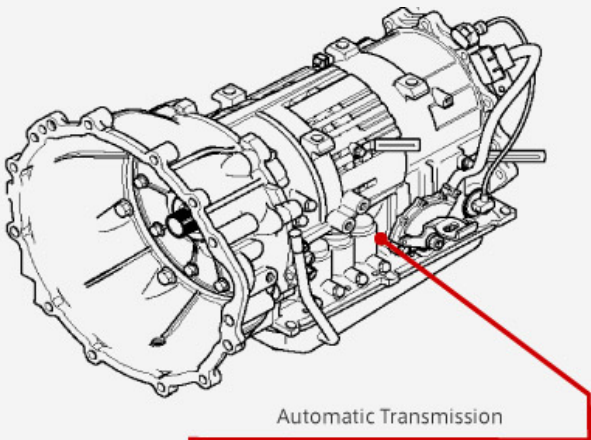
If the same transmission fluid is used longer than recommended, in the worst case, the following symptoms might occur:

- Gear shifting noise
- Damage or breakage to gears

To avoid any potential mechanical problems and ensure reliable performance, MTF replacement of Mitsubishi Genuine Fluid is recommended with periodical maintenance schedules.



Mitsubishi Genuine MTF



New (Clean)



Used (Need to be replaced)

Automatic Transmission Fluid (ATF)

ATF is required to perform two functions.

- Lubricant oil (lubrication, cooling and cleaning)
- Hydraulic oil (power transmission)

If the same transmission fluid is used longer than recommended, in the worst case, the following symptoms could occur:

- Harder automatic shifting shock
- Increased fuel consumption
- Damage or breakage of gears

To avoid any potential mechanical problems and ensure reliable performance, ATF replacement of Mitsubishi Genuine Fluid is recommended with periodical maintenance schedules.

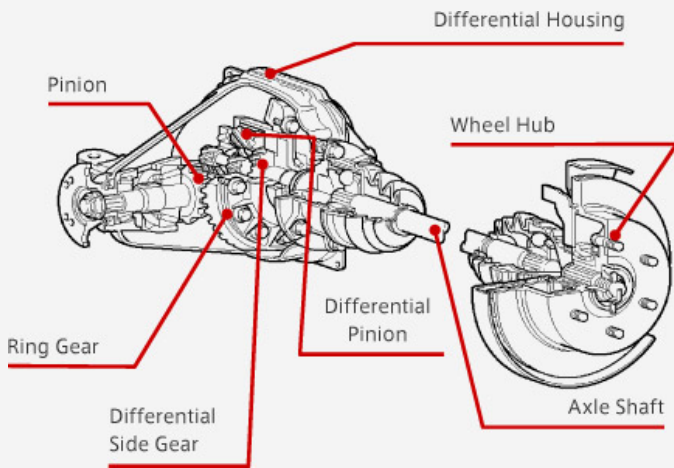


Mitsubishi Genuine ATF

Driveline



Differential



The differential gear is designed to deliver smooth turning right or left of your vehicle with effective engine power distribution to tires.

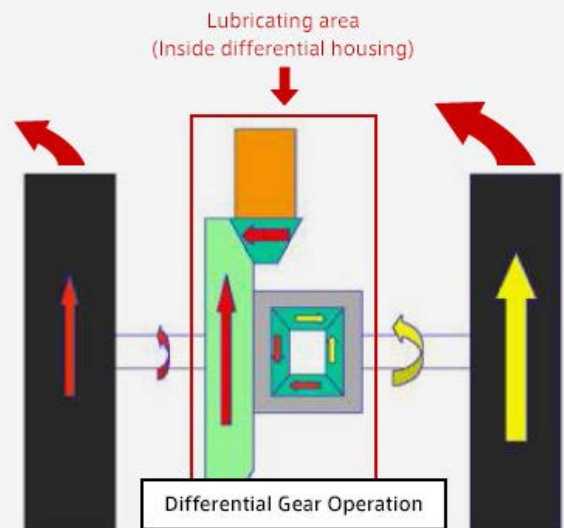
Due to gear operation, axle fluid (differential gear oil) is required to be replaced periodically to avoid any problems such as abnormal wear of gears, bearing wear or breakage, axle lock-up and so forth.



New (Clean)



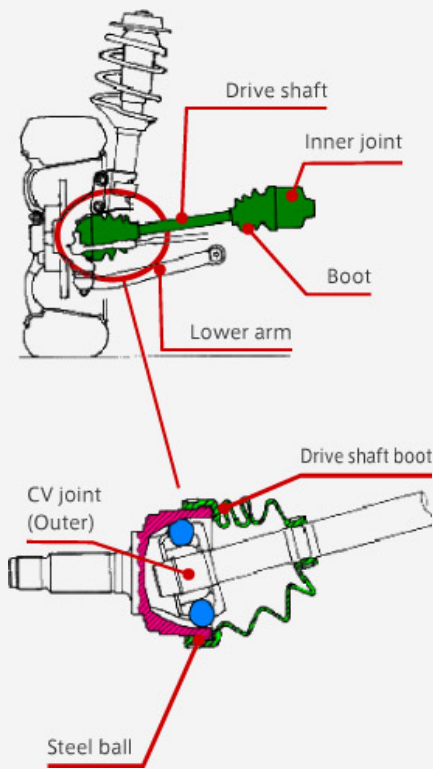
Used (Need to be replaced)



Driveline



Driveshaft Boots



Role of drive shaft CV joint & boot (CV Joint : Constant Velocity Joint)

– The CV Joint transmits the power of the engine to the wheels.

Bearings are used in the CV Joint as it transmits rotation and absorbs vibration while driving or movement by steering the wheels.

– Drive shaft boots are an important part that protect the joint of the axle (CV Joint) from dirt, water and contaminants.

Time for replacement of driveshaft boots

– Boots should be replaced before they tear.

Otherwise a expensive repair such as replacement of the driveshaft may be required.

		New	Recommended condition to replace	Expensive repair is needed
Material Type	Rubber			
	Resin			



Back Page

Next Page



To Top



Driveline



VSP Drive Shaft Split Boots



For Replacement

Advantages of using VSP Drive Shaft Split Boots

- Quick replacement;
As no unit disassembly is required, replacement only takes 30 minutes.
- Lower costs for the customer from preventative maintenance;
The ability to replace boots quickly means labor charges can be considerably reduced and the expensive repair such as replacement of the driveshaft can be prevented.

Please insert here the sample of replacement price in your market

	Vehicle	Parts Price	Labor Charge	Total Charge
VSP				
Original Equipment Parts				

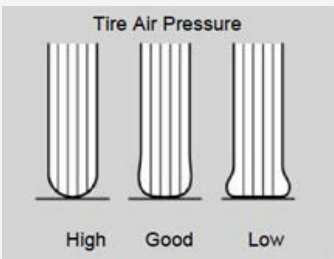
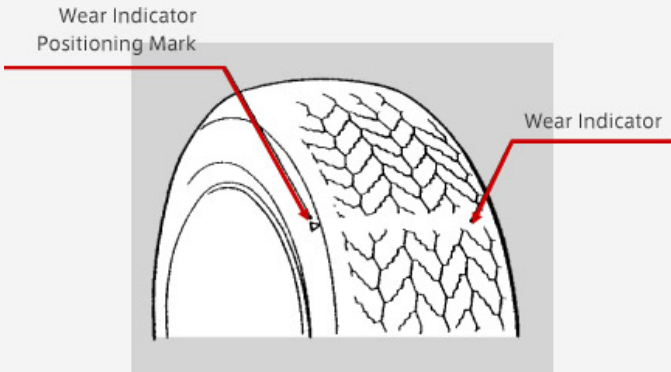
Back Page

To Top

Tires



Tires



Importance of tire function

Tires are very important for vehicle performance in the areas of:

- Sustaining vehicle weight (Load performance)
- Transmission of drive & braking force (Traction & braking performance)
- Control of driving direction on straight roads or while turning (Stability performance)
- Absorbing of vibration from the road (Comfort ability performance)

Proper maintenance is required to secure maximum tread life, tire durability and fuel economy.

Tire Inflation

All tires build up heat when in motion. Air pressure may increase by approximately 15% from a cold state to a warm state during operation.

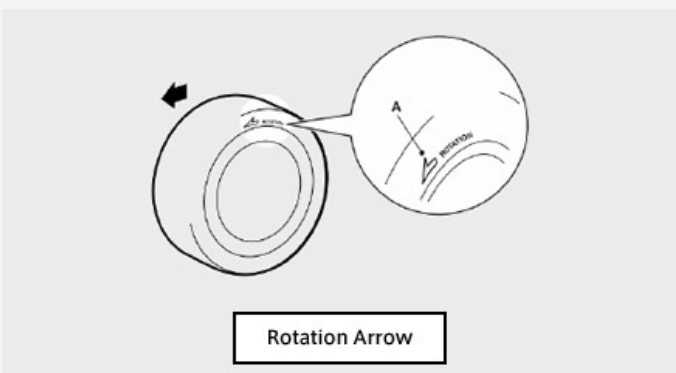
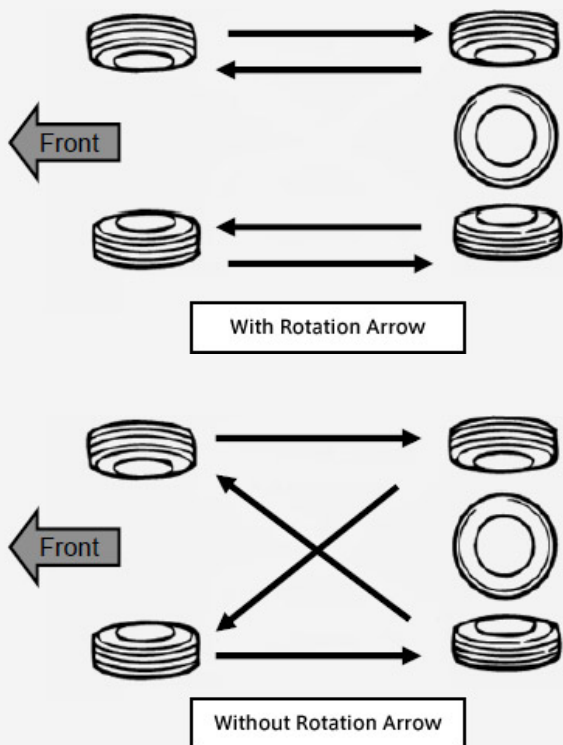
Always check and adjust air pressure when a tire is cold to obtain accurate readings.

Sample photo of Low Tire Air Pressure



Abnormal Wear : Caused By Improper Pressure

Symptom		Probable cause		Remedy
Rapid wear at shoulders	 ACX00923AB	Under-inflation or lack of rotation	 ACX00924AB	Need tire air pressure maintenance
Rapid wear at centre	 ACX00925AB	Over-inflation or lack of rotation	 ACX00926AB	
Cracked treads	 ACX00927AB	Under-inflation		



Tire Rotation

In order to help even out different wear and maximize tire life, proper tire rotation is needed.

Wheel Balance

Weight of each position of tires is not even, so that wheel should be balanced.

An unbalanced wheel causes bald spots on the tread due to uneven wear.

An unbalanced wheel can also cause steering shake whilst driving.

Abnormal Wear : Caused By Improper Wheel balance

Symptom		Probable cause		Remedy
Bald spots	 ACX00932AB	Unbalanced wheel	 ACX00933	Balance the wheel


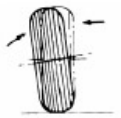

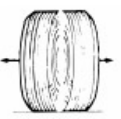

Alignment



Wheel Alignment

Abnormal Wear : Caused By Wheel Alignment

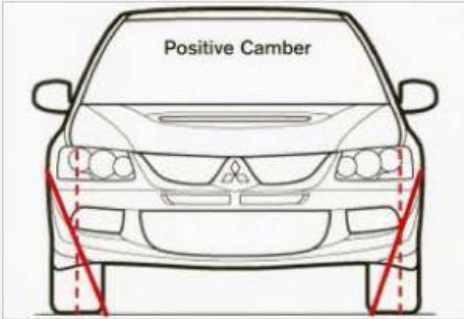
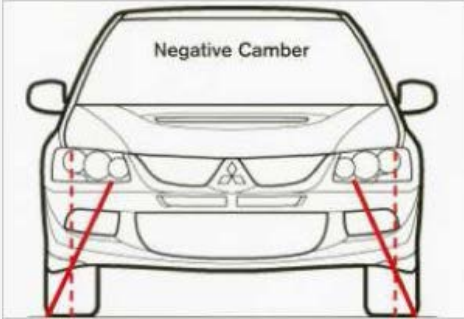


Symptom	Probable cause	Remedy
Wear on one side  ACX00928 AB	Excessive camber  ACX00929 AB	Check the camber
Feathered edge  ACX00930 AB	Incorrect toe-in  ACX00931 AB	Adjust the toe-in
Scalloped Wear  ACX00934	Lack of rotation of tire or worn or out-of-alignment suspension	Rotate the tire, and check the front suspension alignment

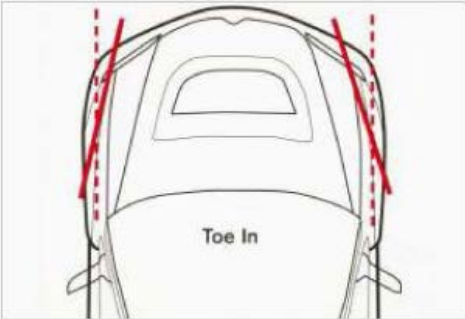
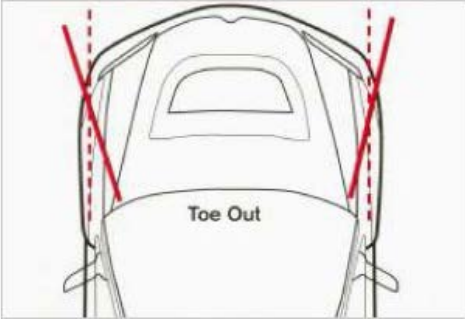
Wheel alignment consists of adjusting the angles of the wheels so that they are set to the vehicle manufacturer's specification.

The purpose of these adjustments is to maximise tread life and drive stability along straight and level roads, crowned roads, as well as correct racking when driving on turns.

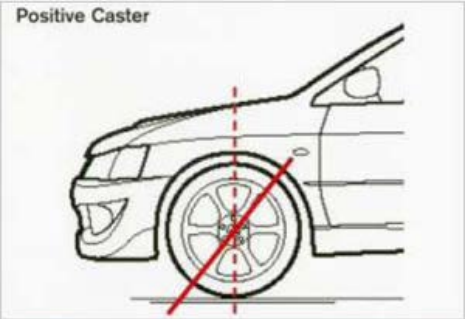
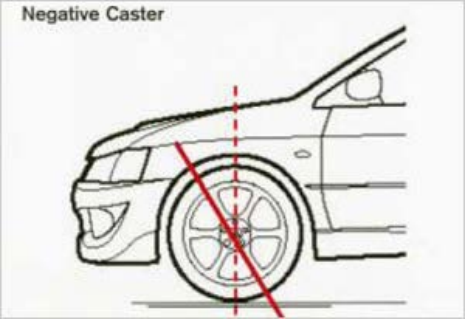
Camber

Toe

Caster

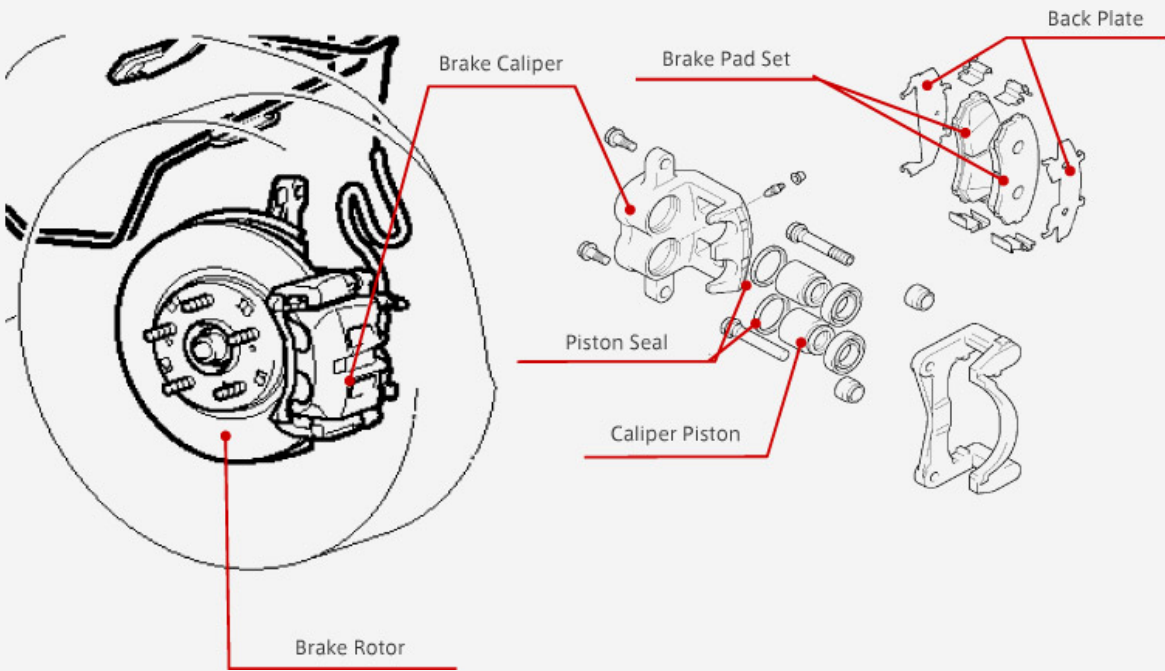
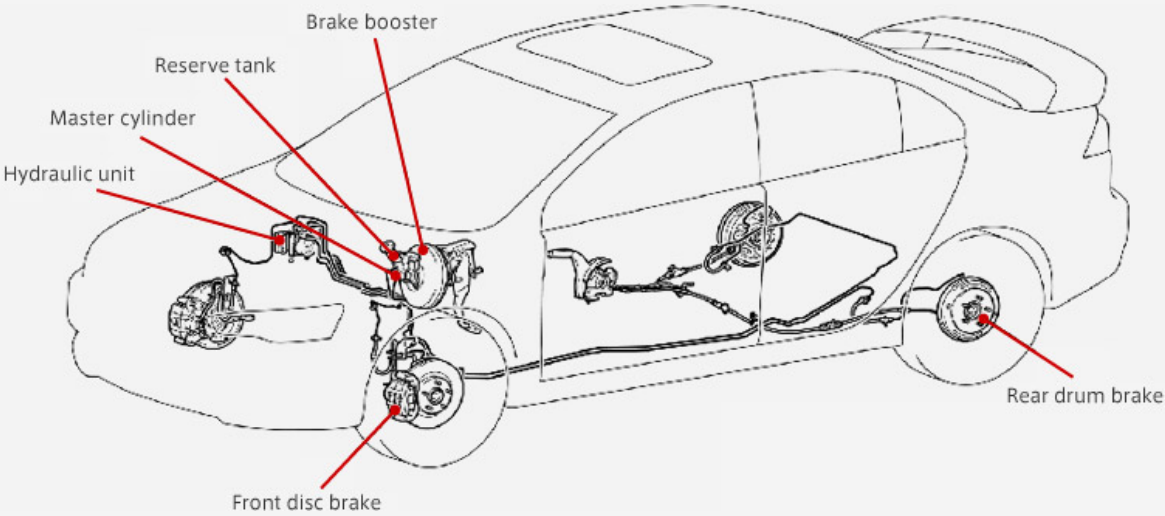





Brake



Brake System



Next Page



To Top



Brake



Brake Fluid



Mitsubishi Genuine Brake Fluid

Brake fluid is very important to ensure the correct and safe operation of the vehicle's braking system.

Brake fluid is the oil used to transmit the hydraulic pressure produced by the driver and boosted by a brake booster to each brake caliper or brake drum.

Brake fluid easily absorbs moisture which lowers the boiling temperature of the brake fluid.

Deteriorated brake fluid may not transmit the hydraulic pressure to each wheel.

Moisture absorbed in brake fluid can also cause rust inside the brake system leading to cylinder and piston malfunction.

Periodical replacement of brake fluid is recommended.

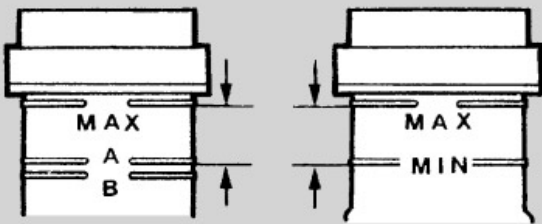


Brake Warning Lamp

When this lamp is illuminated,

- Brake fluid level is too low
- Parking brake is still working
- ABS Failure

are possible causes. Check as soon as possible at a Mitsubishi dealer.



Brake Fluid Level (Should be between MAX. and MIN.)

Brake



Brake Pad



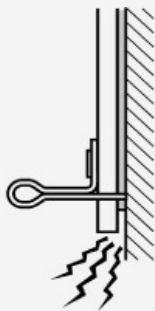
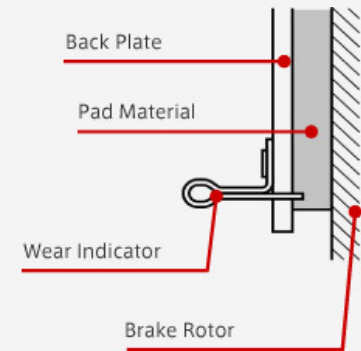
New (Enough Thickness)



Worn (Need to be replaced)

When the brake pad thickness becomes **2mm or less**, metal wear indicators will emit a squealing sound to warn the driver to replace the brake pads. If you drive your vehicle with worn brake pads and brake rotors the following problems may occur:

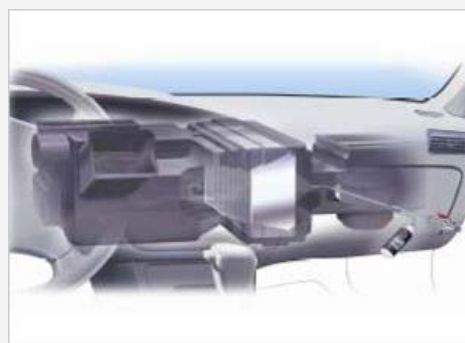
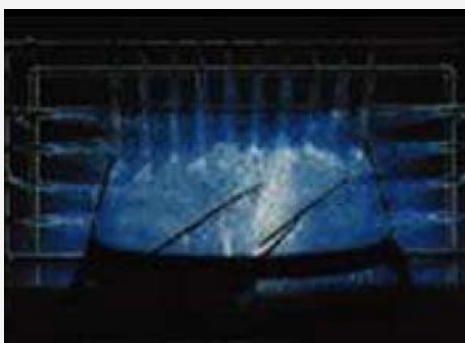
- metal-to-metal contact between pads and rotors may result in costly repairs
- the brake system will not function properly and can result in a serious accident.



Squealing Sound



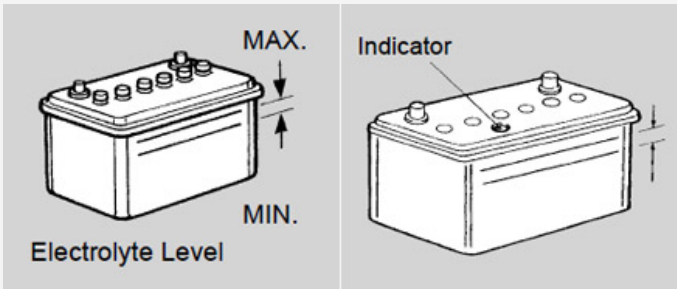
Miscellaneous

[Next Page](#)[To Top](#)

Miscellaneous



Battery



Check the electrolyte level
Electrolyte is most important for battery performance and needs to be maintained between max and min lines.
If the electrolyte level is lower than the minimum line, it should be refilled using distilled water.
In the case of an equipped indicator on the battery, check the battery condition with the correct procedure of the battery manufacturer.



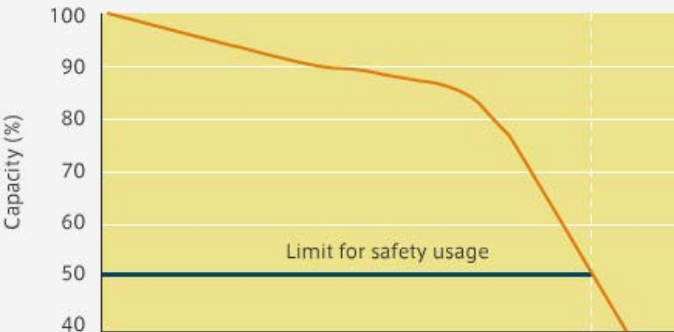
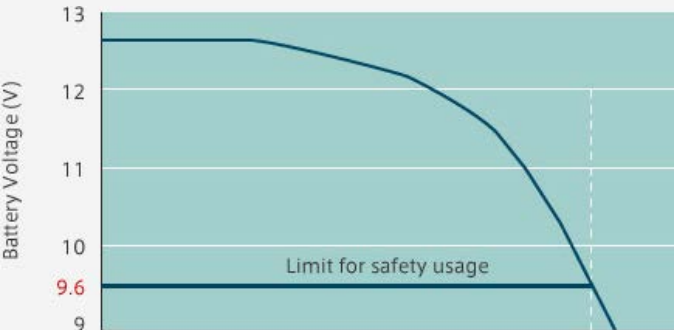
Battery terminal condition
Check Looseness, Corrosion



Battery Tester

For a total battery performance check, an approved battery tester is available at Mitsubishi dealers. Battery performance levels can be checked with accurate results.

Deterioration of Battery performance



Miscellaneous



Wiper Blade Rubber



New (Clear Wiping)



Need to be replaced



The wiper blade rubber is a consumable part required for effective driving visibility.

The rubber blades need to be replaced if the wiping condition on the front windscreen is not clear due to deterioration.

The rubber can deteriorate from dust and debris, sunshine and general use over time.

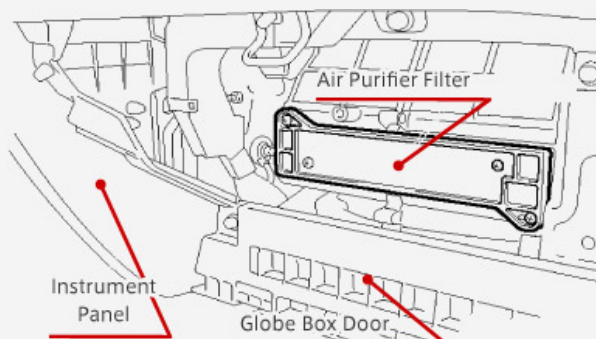
Before the changing of seasons that bring conditions such as rain or hot and dry weather, it is a good opportunity to check the wiper blade condition at a Mitsubishi Authorized Dealer.

Genuine wiper blade rubbers are the best fit for your Mitsubishi vehicle. If your wiper blade is jumping or fluctuating on the windscreen it is a good time to have them replaced.

Miscellaneous



Air Conditioning System

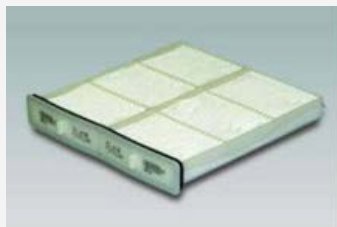


A cabin air purifier filter is recommended to be replaced periodically.

Similar in function to an engine air cleaner element, the cabin air filter helps capture circulating dust and unwanted air particles before they enter the cabin of the vehicle.

These unwanted air particles can affect the comfort and health of the driver and passengers alike.

Keep the air inside your vehicle fresh and clean by replacing the filter as recommended.



New (Clean)



Used (Dirty: Need to be replaced)



[Back Page](#)

[Next Page](#)



[To Top](#)



Miscellaneous

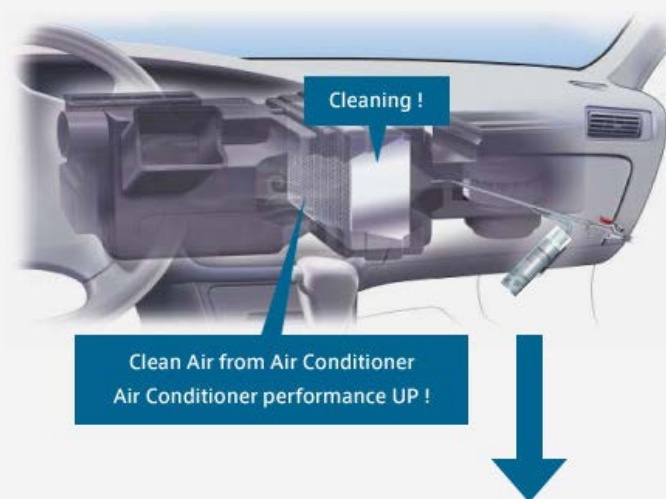


Evaporator Cleaner



On the evaporator surface condensation occurs and a thin film of moisture is formed. Gradually dust and other particles in the air build up on this film, causing poor circulation efficiency, bad smells and the cooling effectiveness of the air-conditioner is reduced.

MITSUBISHI Genuine Evaporator Cleaner removes the cause of unpleasant odors and maintains a comfortable car environment.



Mitsubishi Genuine Evaporator Cleaner



[Back Page](#)

[To Top](#)



Quick Inspection

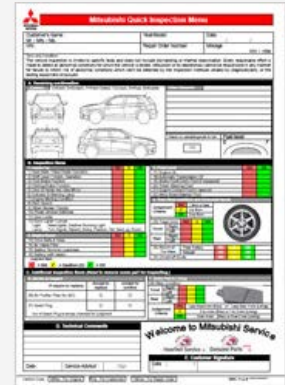
We, Mitsubishi Motors, offers better-equaed quality after-sales-service to all Mitsubishi valued customers in accordance with Mitsubishi Motors Corporate Philosophy.

Mitsubishi Motors recommends quick inspection at Mitsubishi authorized dealers to offer safety, comfort and long-time usage.

Attached Quick Inspection Guide is guideline rolled-out all Mitsubishi Motor's distributors and dealers worldwide.

This guideline contains 28 items of car parts for quick inspection to recognize current vehicle condition and consultation by service advisor.

* Note: This is global guideline only and subject to vary or change exact inspection contents by country by car dealers.

[PDF Download](#)[To Top](#)