SECTION 6 – 3

SERVICE PROCEDURES AND SPECIFICATIONS

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SPECIFICATIONS (GS430)

– AUTOMATIC TRANSMISSION

Fluid capacity Drain and refill	 1.8 L (1.9 qt., 1.5 lmp.qt.)
Fluid type	**Automatic transmission fluid Type T – IV***

– DIFFERENTIAL

Oil capacity	1.35 L (1.42 qt., 1.19 lmp.qt.)
Oil type	Hypoid gear oil API GL–5
Oil viscosity	Above –18°C (0°F): SAE 90 Below –18°C (0°F): SAE 80W or SAE 80W–90

*Change automatic transmission fluid only as necessary. Generally, it is necessary to change automatic transmission fluid only if your vehicle is driven under one of the Special Operating Conditions listed in your “Owner’s Manual Supplement / Maintenance Schedule”. When changing the automatic transmission fluid, use only Toyota Genuine ATF Type T–IV (ATF JWS3309 or NWS6500) to aid in assuring optimum transmission performance.

NOTICE

Using automatic transmission fluid other than Toyota Genuine ATF Type T–IV may cause deterioration in shift quality, locking up of your transmission accompanied by vibration, and ultimately damage the automatic transmission of your vehicle.

– BRAKES

Pedal clearance *1	93 mm (3.7 in.) Min.
Pedal free play	0.2 – 2 mm (0.008 – 0.08 in.)
Brake pad wear limit	1.0 mm (0.04 in.)
Parking brake lining wear limit	1.0 mm (0.04 in.)
Parking brake adjustment *2	7 – 9 clicks
Fluid type	SAE J1703 or FMVSS No. 116 DOT 3

*1Minimum pedal clearance when depressed with the force of 196 N (20 kgf, 44 lbf.) with the engine running

*2Parking brake adjustment when depressed with the force of 294 N (30 kgf, 66.1 lbf.)

– STEERING

Free play	Less than 30 mm (1.2 in.)
Power steering fluid	Automatic transmission fluid DEXRON®II or III

– TIRES AND WHEELS

Tire size	Type A: 225/55R16 94V Type B: 235/45ZR17
Tire inflation pressure Recommended cold tire inflation pressure 225/55R16 94V 235/45ZR17	 Front 220 kPa (2.2 kgf/cm^2 or bar, 32 psi) Rear 220 kPa (2.2 kgf/cm^2 or bar, 32 psi) Front 230 kPa (2.3 kgf/cm^2 or bar, 33 psi) Rear 230 kPa (2.3 kgf/cm^2 or bar, 33 psi) For sustained high speeds above 160 km/h (100 mph), in countries where such speeds are permitted by law, add 70 kPa (0.8 kgf/cm^2, 0.7 bar, 10 psi) to the front tires and rear tires, but never exceed the maximum cold tire pressure molded on the tire sidewall.
Wheel size	Type A: 16 x 7 1/2 JJ Type B: 17 x 8 JJ
Wheel nut torque	103 N·m (10.5 kgf·m, 76 ft·lbf.)

NOTE: For complete information on tires (e.g. replacing tires or replacing wheels), see “Checking tire pressure” through “Aluminum wheel precautions” on page 271 through 277.

SPECIFICATIONS (GS300)

– AUTOMATIC TRANSMISSION

Fluid capacity Drain and refill	 2.0 L (2.1 qt., 1.8 lmp.qt.)
Fluid type	**Automatic transmission fluid Type T – IV***

– DIFFERENTIAL

Oil capacity	1.35 L (1.42 qt., 1.19 lmp.qt.)
Oil type	Hypoid gear oil API GL–5
Oil viscosity	Above –18°C (0°F): SAE 90 Below –18°C (0°F): SAE 80W or SAE 80W–90

*Change automatic transmission fluid only as necessary. Generally, it is necessary to change automatic transmission fluid only if your vehicle is driven under one of the Special Operating Conditions listed in your "Owner's Manual Supplement / Maintenance Schedule". When changing the automatic transmission fluid, use only Toyota Genuine ATF Type T–IV **(**ATF JWS3309 or NWS6500) to aid in assuring optimum transmission performance.

NOTICE

Using automatic transmission fluid other than Toyota Genuine ATF Type T–IV may cause deterioration in shift quality, locking up of your transmission accompanied by vibration, and ultimately damage the automatic transmission of your vehicle.

CHASSIS

– BRAKES

Pedal clearance *1	93 mm (3.7 in.) Min.
Pedal free play	0.2 – 2 mm (0.008 – 0.08 in.)
Brake pad wear limit	1.0 mm (0.04 in.)
Parking brake lining wear limit	1.0 mm (0.04 in.)
Parking brake adjustment *2	7 – 9 clicks
Fluid type	SAE J1703 or FMVSS No. 116 DOT 3

*1Minimum pedal clearance when depressed with the force of 196 N (20 kgf, 44 lbf.) with the engine running

*2Parking brake adjustment when depressed with the force of 294 N (30 kgf, 66.1 lbf.)

– STEERING

Free play	Less than 30 mm (1.2 in.)
Power steering fluid	Automatic transmission fluid DEXRON® II or III

– TIRES AND WHEELS (Type A)

Tire size	P215/60R16 94V
Tire inflation pressure	
Recommended cold tire inflation pressure	Front 210 kPa (2.1 kgf/cm^2 or bar, 30 psi)
P215/60R16 94V	Rear 210 kPa (2.1 kgf/cm^2 or bar, 30 psi)
	For sustained high speeds above 160 km/h (100 mph), in countries where such speeds are permitted by law, add 90 kPa (1.0 kgf/cm^2, 0.9 bar, 13 psi) to the front tires and rear tires, but never exceed the maximum cold tire pressure molded on the tire sidewall.
Wheel size	16 x 7 1/2 JJ
Wheel nut torque	103 N·m (10.5 kgf·m, 76 ft·lbf.)

NOTE: For complete information on tires (e.g. replacing tires or replacing wheels), see “Checking tire pressure” through “Aluminum wheel precautions” on page 271 through 277.

– TIRES AND WHEELS (Type B)

Tire size	225/55R16 94V
Tire inflation pressure Recommended cold tire inflation pressure 225/55R16 94V	 Front 220 kPa (2.2 kgf/cm^2 or bar, 32 psi) Rear 220 kPa (2.2 kgf/cm^2 or bar, 32 psi) For sustained high speeds above 160 km/h (100 mph), in countries where such speeds are permitted by law, add 80 kPa (0.9 kgf/cm^2, 0.8 bar, 12 psi) to the front tires and rear tires, but never exceed the maximum cold tire pressure molded on the tire sidewall.
Wheel size	16 x 7 1/2 JJ
Wheel nut torque	103 N·m (10.5 kgf·m, 76 ft·lbf.)

NOTE: For complete information on tires (e.g. replacing tires or replacing wheels), see “Checking tire pressure” through “Aluminum wheel precautions” on page 271 through 277.

CHECKING BRAKE FLUID

To check the fluid level, simply look at the see–through reservoir. The level should be between the ”MAX” and ”MIN” lines on the tank.

It is normal for the brake fluid level to go down slightly as the brake pads wear or when the fluid level in the accumulator is high.

If the reservoir needs frequent refilling, it may indicate a serious mechanical problem.

If the level is low, add FMVSS No.116 DOT 3 or SAE J1703 brake fluid to the brake reservoir.

Refilling brake fluid:

1. Turn the ignition switch off.
2. Depress the brake pedal more than 40 times.
3. Remove the reservoir cap by hand. Add brake fluid up to the ”MAX” line.

If you do not follow the procedure above, the reservoir may overflow.

Use only newly opened brake fluid. Once opened, brake fluid absorbs moisture from the air, and excess moisture can cause a dangerous loss of braking efficiency.

⚠ CAUTION

Take care when filling the reservoir because brake fluid can harm your hands or eyes and damage painted surfaces. If fluid gets in your eyes, flush your eyes with clean water immediately. If you still feel uncomfortable with your eyes, go to the doctor.

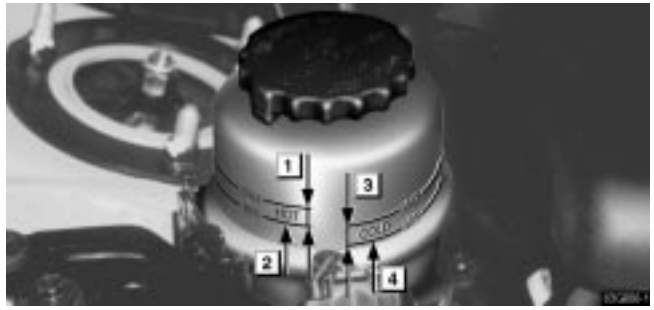
NOTICE

If you spill some of the fluid, be sure to wipe it off to prevent it from damaging the parts or paintwork.

CHECKING POWER STEERING FLUID (GS430)

Check the fluid level through the reservoir. If necessary, add automatic transmission fluid DEXRON®II or III.

If the vehicle has been driven around 80 km/h (50 mph) for 20 minutes (a little more in frigid temperatures), the fluid is hot (60°C – 80°C or 140°F – 175°F). You may also check the level when the fluid is cold (about room temperature, 10°C – 30°C or 50°F – 85°F) if the engine has not been run for about five hours.



▶ *1 If hot O.K. 2 If hot add 3 If cold O.K. 4 If cold add*

Clean all dirt off the reservoir and look at the fluid level. If the fluid is cold, the level should be in the "COLD" range. Similarly, if it is hot, the fluid level should be in the "HOT" range. If the level is at the low side of the appropriate range, add automatic transmission fluid DEXRON®II or III to bring the level within the range.

To remove the reservoir cap, turn it counterclockwise and lift up. To reinstall it, turn it clockwise. After replacing the reservoir cap, visually check the steering box case, vane pump and hose connections for leaks or damage.

⚠ CAUTION

The reservoir may be hot so be careful not to burn yourself.

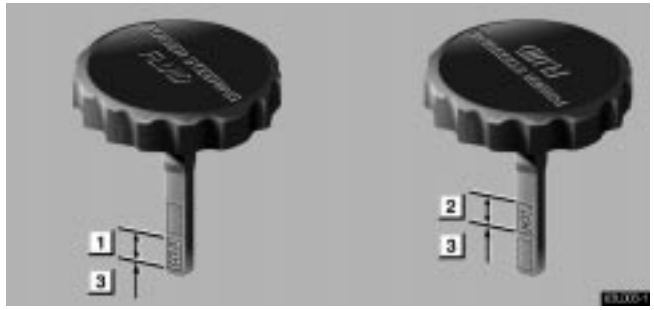
NOTICE

Avoid overfilling, or the power steering could be damaged.

CHECKING POWER STEERING FLUID (GS300)

Check the fluid level on the dipstick. If necessary, add automatic transmission fluid DEXRON®II or III.

If the vehicle has been driven around 80 km/h (50 mph) for 20 minutes (a little more in frigid temperatures), the fluid is hot (60°C – 80°C or 140°F – 175°F). You may also check the level when the fluid is cold (about room temperature, 10°C – 30°C or 50°F – 85°F) if the engine has not been run for about five hours.



▶ 1 *If cold O.K.* 2 *If hot O.K.* 3 *Add fluid*

1. Clean all dirt off the reservoir.

2. Remove the reservoir cap by turning it counterclockwise and wipe the dipstick clean.

3. Reinstall the reservoir cap.

4. Remove the reservoir cap again and look at the fluid level. If the fluid is cold, the level should be in the ”COLD” range on the dipstick. Similarly, if it is hot, the fluid level should be in the ”HOT” range. If the level is at the low side of either range, add automatic transmission fluid DEXRON® II or III to bring the level within the range.

5. After replacing the reservoir cap, visually check the steering box case, vane pump and hose connections for leaks or damage.

⚠ CAUTION

The reservoir may be hot so be careful not to burn yourself.

NOTICE

Avoid overfilling, or the power steering could be damaged.

CHECKING TIRE PRESSURE

The recommended cold tire pressures, tire size and the vehicle capacity weight are given on the label.

You should check the tire pressures every two weeks, or at least once a month. And don't forget the spare! The pressure for the spare tire should be the same with that for the standard tire. (See page 262 or 265.) Incorrect tire pressure can reduce tire life and make your vehicle less safe to drive.

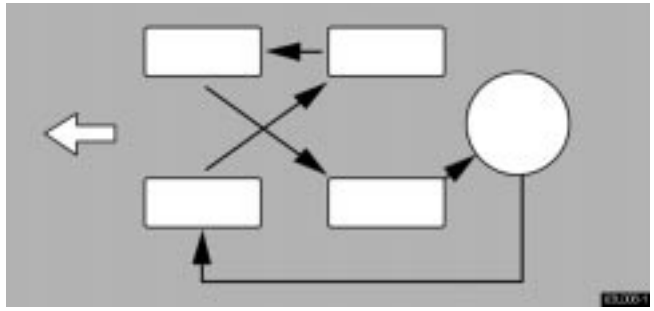
Low tire pressure results in excessive wear, poor handling, reduced fuel economy, and the possibility of blowouts from overheated tires. Also, low tire pressure can cause poor sealing of the tire bead. If the tire pressure is excessively low, there is the possibility of wheel deformation and/or tire separation. So keep your tire pressures at the proper level. If a tire needs frequent refilling, have it checked by your Lexus dealer.

High tire pressure produces a harsh ride, handling problems, excessive wear at the center of the tire tread, and a greater possibility of tire damage from road hazards.

The following instructions for checking tire pressure should be observed:

- **The pressure should be checked only when the tires are cold.** If your vehicle has been parked for at least 3 hours and has not been driven for more than 1.5 km or 1 mile since, you will get an accurate cold tire pressure reading.
- **Always use a tire pressure gauge.** The appearance of the tire can be misleading. Besides, tire pressures that are even just a few pounds off can degrade ride and handling.
- **Do not bleed or reduce tire pressure after driving.** It is normal for the tire pressure to be higher after driving.
- **Never exceed the vehicle capacity weight.** The passengers and luggage weight should be located so that the vehicle is balanced.
- **Be sure to reinstall the tire valve caps.** Without the valve caps, dirt or moisture could get into the valve core and cause air leakage. If the caps have been lost, have new ones put on as soon as possible.

ROTATING TIRES



To equalize tire wear and help extend tire life, Lexus recommends that you rotate your tires according to the maintenance schedule. (For scheduled maintenance information, please refer to the "Owner's Manual Supplement" or "Maintenance Schedule".) However, the most appropriate timing for tire rotation may vary according to your driving habits and road surface conditions.

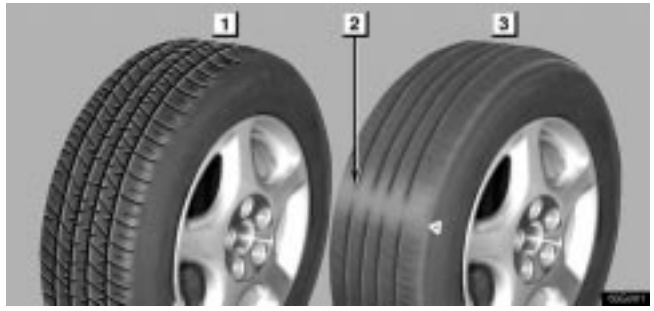
The wheel assemblies must be rotated as illustrated above.

When rotating tires, check for uneven wear and damage. Abnormal wear is usually caused by incorrect tire pressure, improper wheel alignment, out–of balance wheels, or severe braking.

Before storing radial, snow or studded tires, mark the direction of rotation and be sure to install them in the same direction when using them again. Tires should be stored in a cool dry place.

CHECKING AND REPLACING TIRES

When to replace your tires



▶ 1 *New tread* 2 *Tread wear indicator*
3 *Worn tread*

Replace the tires when the tread wear indicators show. The location of the tread wear indicators is shown by the "TWI" or "△" marks molded on the sidewall of each tire.

The tires on your Lexus have built–in tread wear indicators to help you know when the tires need replacement. When the tread depth wears to 1.6 mm (0.06 in.) or less, the indicators will appear. If you can see the indicators in two or more adjacent grooves, the tire should be replaced.

Vehicles equipped with 235/45ZR17 tires: Your Lexus has been fitted with specially developed tires which provide exceptional dynamic performance under general road conditions. However your riding comfort may worsen a little and road noise may increase during driving. You may also notice that your tires will wear more rapidly and tire grip performance will be reduced on the snowy and/or icy roads when compared to standard tires. Be sure to have snow tires or tire chains on the snowy and/or icy roads and drive carefully with the speed appropriate for road conditions.

The effectiveness of snow tires is lost if the tread wears down below 4 mm (0.16 in.).

If you have tire damage such as cuts, splits, cracks deep enough to expose the fabric, or bulges indicating internal damage, the tire should be replaced.

If a tire often goes flat or cannot be properly repaired due to the size or location of a cut or other damage, it should be replaced. If you are not sure, consult with your Lexus dealer.

If an air loss occurs while driving, do not continue driving with a deflated tire. Driving even a short distance can damage a tire beyond repair.

Any tires which are over 6 years old must be checked by a qualified technician even if damage is not obvious.

Tires deteriorate with age even if they have never or seldom been used.

This also applies to the spare tire and tires stored for future use.

Uniform tire quality grading

This information has been prepared in accordance with regulations issued by the National Highway Traffic Safety Administration of the U.S. Department of Transportation. It provides the purchasers and/or prospective purchasers of Lexus vehicles with information on uniform tire quality grading.

Your Lexus dealer will help answer any questions you may have as you read this information.

DOT quality grades – All passenger vehicle tires must conform to Federal Safety Requirements in addition to these grades. Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example: Treadwear 200 Traction AA Temperature A

Treadwear – The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and a half (1 – 1/2) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

Traction AA, A, B, C – The traction grades, from highest to lowest, are AA, A, B and C, and they represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

Warning: The traction grade assigned to this tire is based on braking (straight ahead) traction tests and does not include cornering (turning) traction.

Temperature A, B, C – The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Warning: The temperature grades for this tire are established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Tire selection

When replacing a tire, use only the same size and construction as originally installed and with the same or greater load capacity.

Using any other size or type of tire may seriously affect handling, ride, speedometer/odometer calibration, ground clearance, and clearance between the body and tires or snow chains.

Do not mix radial, belted, or conventional tires on your vehicle.

Do not use tires or wheels other than the manufacturer's recommended size.

It can cause dangerous handling characteristics, resulting in loss of control. If you need to change from conventional tires to radial tires or vice versa, replace them as a set.

INSTALLING SNOW TIRES AND CHAINS

When to use snow tires or chains

Snow tires or chains are recommended when driving on snow or ice.

On wet or dry roads, conventional or radial tires provide better traction than snow or studded tires.

Snow tire selection

If you need snow tires, select the same size, construction and load capacity as the original tires on your Lexus.

Do not use tires other than stated above. Since your vehicle has radial tires as original equipment, make sure your snow tires also have radial construction. Do not install studded tires without first checking local regulations for possible restrictions.

Snow tire installation

Snow tires should be installed on all wheels.

Installing snow tires on the rear wheels only can lead to an excessive difference in road grip capability between the front and rear tires which could cause loss of vehicle control.

⚠ CAUTION

- **Do not drive with the snow tires incorrectly inflated.**
- **Never drive over 120 km/h (75 mph) with any type of snow tires.**

Tire chain selection

Regulations regarding the use of tire chains vary according to location or type of road. Always check the local regulations before installing chains.

Use SAE Class ”S” type radial tire chains, with the exception of radial cable chains or V–bar type chains.

Chain installation

Install the chains on the rear tires as tightly as possible. Do not use tire chains on the front tires. Retighten chains after driving 0.5 – 1.0 km (1/4 – 1/2 mile).

When installing chains on your tires, carefully follow the instructions of the chain manufacturer.

⚠ CAUTION

- **Do not exceed 50 km/h (30 mph) or the chain manufacturer's recommended speed limit, whichever is lower.**
- **Drive carefully avoiding bumps, holes, and sharp turns, which may cause the vehicle to bounce.**
- **Avoid sharp turns or locked–wheel braking, as use of chains may adversely affect vehicle handling.**
- **When driving with chains installed, be sure to drive carefully. Slow down before entering the curves to avoid losing control of the vehicle. Otherwise an accident may occur.**

REPLACING WHEELS

When to replace your wheels

If you have wheel damage such as bends, cracks or heavy corrosion, the wheel should be replaced.

If you fail to replace damaged wheels, the tire may slip off the wheel or cause loss of handling control.

Replacement with used wheels is not recommended as they may have been subjected to rough treatment or high mileage and could fail without warning. Also, bent wheels which have been straightened may have hidden structural damage and therefore should not be used. Never use an inner tube in a leaking wheel which is designed for a tubeless tire.

Wheel selection

When replacing wheels, care should be taken to ensure that they are equivalent to those removed in load capacity, diameter, rim width, and offset.

Correct replacement wheels are available at your Lexus dealer.

A wheel of a different size or type may adversely affect handling, wheel and bearing life, brake cooling, speedometer/odometer calibration, stopping ability, headlight aim, bumper height, vehicle ground clearance, and tire or snow chain clearance to the body and chassis.

ALUMINUM WHEEL PRECAUTIONS

- When installing aluminum wheels, check that the wheel nuts are tight after driving your vehicle the first 1600 km (1000 miles).
- If you have rotated, repaired, or changed your tires, check that the wheel nuts are still tight after driving 1600 km (1000 miles).
- When using tire chains, be careful not to damage the aluminum wheels.
- Use only the Lexus wheel nuts and wrench designed for your aluminum wheels.
- When balancing your wheels, use only Lexus balance weights or equivalent and a plastic or rubber hammer.
- As with any wheel, periodically check your aluminum wheels for damage. If damaged, replace immediately.

SUSPENSION AND CHASSIS

⚠ CAUTION

Do not modify the suspension/chassis with lift kits, spacers, springs, etc. It can cause dangerous handling characteristics, resulting in loss of control.