

1-3 [G5A1]**GENERAL INFORMATION****5. Recommended Fuel, Lubricants, Sealants and Adhesives****5. Recommended Fuel, Lubricants, Sealants and Adhesives****A: FUEL****1. FUEL OCTANE RATING**

SUBARU engines are designed to use only unleaded gasoline with an octane rating of 87 AKI or higher. [This octane rating is the average of the Research Octane and Motor Octane numbers and is commonly referred to as the Anti-Knock Index (AKI).] Using a gasoline with a lower octane rating can cause persistent and heavy knocking, which can damage the engine. Do not be concerned if SUBARU vehicle sometimes knocks lightly when you drive up a hill or when you accelerate. See your dealer or a qualified service technician if you use a gasoline with the specified octane rating and SUBARU vehicle knocks heavily or persistently.

2. UNLEADED GASOLINE

The neck of the fuel filler pipe is designed to accept only an unleaded gasoline filler nozzle. Under no circumstances should leaded gasoline be used since it will damage the emission control system and may impair driveability and fuel economy.

3. GASOLINE FOR CALIFORNIA-CERTIFIED LEV

SUBARU vehicle is a California-certified Low Emission Vehicle (LEV). It is designed to optimize engine and emission control system performance with gasolines that meet California specifications.

B: FUELS CONTAINING ALCOHOL

Your use of gasoline with detergent additives will help prevent deposits from forming in your engine and fuel system. This helps keep your engine in tune and your emission control system working properly, and is a way of doing your part for cleaner air.

Many gasolines are now blended with materials called oxygenates. Use of these fuels can also help keep the air cleaner. SUBARU approves the use of oxygenated blend fuels, such as MTBE (Methyl Tertiary Butyl Ether) or ethanol (ethyl or grain alcohol). These blended fuels should contain no more than 15% MTBE or 10%

ethanol for the proper operation of your SUBARU.

In addition, some gasoline suppliers are now producing reformulated gasolines, which are designed to reduce vehicle emissions. SUBARU approves the use of reformulated gasoline.

If you are not sure what the fuel contains, you should ask your service station operators if their gasolines contain detergents and oxygenates and if they have been reformulated to reduce vehicle emissions.

As additional guidance, only use fuels suited for your vehicle as explained below.

- Fuel should be unleaded and have an octane rating no lower than that specified in this manual.
- Methanol (methyl or wood alcohol) is sometimes mixed with unleaded gasoline. Methanol can be used in your vehicle **ONLY** if it does not exceed 5% of the fuel mixture **AND** if it is accompanied by sufficient quantities of the proper cosolvents and corrosion inhibitors required to prevent damage to the fuel system. Do not use fuel containing methanol **EXCEPT** under these conditions.
- If undesirable driveability problems are experienced and you suspect they may be fuel related, try a different brand of gasoline before seeking service at your SUBARU dealer.
- Fuel system damage or driveability problems which result from the use of improper fuel are not covered under the SUBARU Limited Warranty.

CAUTION:

Take care not to spill fuel during refueling. Fuels containing alcohol may cause paint damage.

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5. Recommended Fuel, Lubricants, Sealants and Adhesives

C: LUBRICANTS

| Lubricants | Specifications | Remarks |
|--|---|--|
| <ul style="list-style-type: none"> Engine oil | <ul style="list-style-type: none"> API Classification: SJ or SH with the words "Energy Conserving II" New API Certified CCMC Specification: G4 or G5 ACEA Specification: A1, A2 or A3 | <ul style="list-style-type: none"> For SAE viscosity number, refer to the following table. If it is impossible to get SJ or SH grade, you may use SG grade. |
| <ul style="list-style-type: none"> Transmission and differential gear oil AWD rear differential gear oil | <ul style="list-style-type: none"> API Classification: GL-5 | <ul style="list-style-type: none"> For SAE viscosity number, refer to the following table. |
| <ul style="list-style-type: none"> Automatic transmission fluid | <ul style="list-style-type: none"> DEXRON II, IIE or III type | — |
| <ul style="list-style-type: none"> Power steering fluid | <ul style="list-style-type: none"> DEXRON II, IIE or III type | — |
| <ul style="list-style-type: none"> Coolant | <ul style="list-style-type: none"> Genuine SUBARU Coolant (Part No. 000016218) (Anti-freeze, anti-corrosive ethylene glycol base) | <ul style="list-style-type: none"> For further coolant specifications, refer to the following table. |
| <ul style="list-style-type: none"> Brake fluid | <ul style="list-style-type: none"> DOT3 or DOT4 | <ul style="list-style-type: none"> FMVSS No. 116 Avoid mixing brake fluid of different brands to prevent the fluid performance from degrading. When brake fluid is added, be careful not to allow any dust into the reservoir. |
| <ul style="list-style-type: none"> Clutch fluid | <ul style="list-style-type: none"> DOT3 or DOT4 | <ul style="list-style-type: none"> FMVSS No. 116 Avoid mixing brake fluid of different brands to prevent the fluid performance from degrading. When clutch fluid is added, be careful not to allow any dust into the reservoir. |

| Lubricants | Recommended | Application | Equivalent |
|--|--|---|------------|
| <ul style="list-style-type: none"> Spray lubricants | SUBARU CRC (P/N 004301003) | O ₂ sensor | — |
| <ul style="list-style-type: none"> Grease | SUNLIGHT 2 (P/N 003602010) | Steering shaft bearing, bushing for manual transmission gear shift system | — |
| | Valiant grease M-2 (P/N 003608001) | Steering gearbox | — |
| | Niglube RX-2 (P/N 003606000 or 725191040) | Piston boot of disc brake and sliding pin | — |
| | Molykote No. 7439 (P/N 725191460) | Contacting surfaces of drum brake shoes and shoe clearance adjuster | — |
| | Molylex No.2 (P/N 723223010) | BJ of rear axle shaft | — |
| | VU-3A702 (P/N 23223GA050) | DOJ of rear axle shaft | — |
| | NTG2218 (P/N 28093AA000) | BJ of front axle shaft | — |
| | SSG-6003 (P/N 28093TA000) | SFJ of front axle shafts | — |
| | FX clutch grease (P/N 000040901) | Splines of transmission main shaft | — |
| | Slicolube G-30M (P/N 004404002) | Control cables and throttle linkages subject to cold weather, water-pump impeller, door latch, striker, battery terminals, etc. | — |
| | Slicolube G-40M (P/N 004404003) | Clutch master cylinder push rod end | — |
| Molykote AS-880N (P/N 26298AC000) | Contacting surfaces of brake pad and shoe inner shim | — | |

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GENERAL INFORMATION

5. Recommended Fuel, Lubricants, Sealants and Adhesives

D: FLUID

CAUTION:


- Each oil manufacturer has its base oil and additives. Thus, do not mix two or more brands (Except engine oil).
- When replenishing oil, it does not matter if the oil to be added is a different brand from that in the engine; however, use oil having the API classification and SAE viscosity No. designated by SUBARU.

NOTE:

If vehicle is used in desert areas with very high temperatures or for other heavy duty applications, the following viscosity oils may be used:

API classification: SJ or SH

SAE Viscosity No: 30, 40, 10W-50, 20W-40, 20W-50

| ITEM | API Classification | New API Certification Mark (Star burst mark) | CCMC Specification | ACEA Specification | SAE Viscosity No. and Applicable Temperature | | | | | | | | | | | |
|---|---|---|--------------------|--------------------|--|-----|-----|----|----|----|-----|-----------------|--|--|-----|--------|
| | | | | | (°C) -30 | -20 | -15 | 0 | 15 | 30 | 40 | | | | | |
| Engine oil | SJ or SH with the words "Energy Conserving or Energy Conserving II" |  | G4 or G5 | A1, A2 or A3 | (°F) -22 | -4 | 5 | 32 | 59 | 86 | 104 | | | | | |
| | | | | | | | | | | | | 10W-30, 10W-40 | | | | |
| | | | | | | | | | | | | 5W-30 PREFERRED | | | | |
| •Transmission gear oil | GL-5 | — | — | — | | | | | | | | 90 | | | | |
| •AWD rear differential gear oil | | | | | | | | | | | | | | | 85W | |
| | | | | | | | | | | | | | | | | 80W |
| | | | | | | | | | | | | | | | | 75W-90 |
| •Front differential gear oil for automatic transmission | GL-5 | — | — | — | | | | | | | | 90 | | | | |
| | | | | | | | | | | | | | | | 85W | |
| | | | | | | | | | | | | | | | | 80W |
| | | | | | | | | | | | | | | | | 80W-90 |

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GENERAL INFORMATION**[G5G0] 1-3**

5. Recommended Fuel, Lubricants, Sealants and Adhesives

E: COOLANT**CAUTION:**

- Avoid using any coolant or only water other than this designated type to prevent corrosion.
- SUBARU's engine is aluminum alloy, and so special care is necessary.

| Coolant Specifications | | | | | | | |
|--|---|-----------------------|----------------|----------------|-----------------|-----------------|----------------|
| Lowest anticipated atmospheric temperature | SUBARU coolant-to-*water ratio (Volume) % | Specification gravity | | | | | Freezing point |
| | | at 10°C (50°F) | at 20°C (68°F) | at 30°C (86°F) | at 40°C (104°F) | at 50°C (122°F) | |
| Above -30°C (-22°F) | 50 — 50 | 1.084 | 1.079 | 1.074 | 1.068 | 1.062 | -36°C (-33°F) |
| Above -15°C (5°F) | 30 — 70 | 1.050 | 1.049 | 1.042 | 1.037 | 1.032 | -16°C (3°F) |

*: It is recommended that distilled water be used.

F: SEALANTS

| | Recommended | Application | Equivalent |
|---------|-----------------------------------|---|------------------------|
| Sealant | Three Bond 1105 (P/N 004403010) | Rear differential oil drain plug, retainer bolts, etc. | Dow Corning's No. 7038 |
| | Three Bond 1215 (P/N 004403007) | Matching surface of oil pump, oil pan, oil pressure switch, transmission case, etc. Flywheel and drive plate tightening bolts, etc. | Dow Corning's No. 7038 |
| | Starcalking B-33A (P/N 000018901) | Sealing against water and dust entry through weatherstrips, grommets, etc. | Butyl Rubber Sealant |
| | Three Bond 1102 (P/N 004403006) | Steering gear box adjust screw | — |
| | Three Bond 1280B | Matching surface of SOHC engine cam cap | — |

G: ADHESIVES

| | | | |
|----------|----------------------------------|--|---|
| Adhesive | Cemedine 5430L | Weatherstrips and other rubber parts, plastics and textiles except soft vinyl parts. | 3M's EC-1770 EC-1368 |
| | Cemedine 540 | Soft vinyl parts, and other parts subject to gasoline, grease or oil, e.g. trim leather, door inner remote cover, etc. | 3M's EC-776 EC-847 EC-1022 (Spray Type) |
| | Cemedine 3000 | Bonding metals, glass, plastic and rubber parts. Repairing slightly torn weatherstrips, etc. | Armstrong's Eastman 910 |
| | Essex Chemical Crop's Urethane E | Windshield to body panel. | Sunstar 580 |