

**1. 2-door Coupe**

**A: DIMENSIONS**

Model				2200		2500	
				AWD		AWD	
				L		RS	
Overall length		mm (in)	4,375 (172.2)				
Overall width		mm (in)	1,705 (67.1)				
Overall height		mm (in)	1,410 (55.5)				
Compartment	Leg room	Front Max.	mm (in)	1,094 (43.1)			
		Rear Min.	mm (in)	825 (32.5)			
	Head room	Front	mm (in)	995 (39.2)			
		Rear	mm (in)	933 (36.7)			
	Shoulder room	Front	mm (in)	1,335 (52.6)			
		Rear	mm (in)	1,325 (52.2)			
Wheelbase		mm (in)	2,520 (99.2)				
Tread		Front	mm (in)	1,460 (57.5)	1,470 (57.9)		
		Rear	mm (in)	1,450 (57.1)	1,460 (57.5)		
Minimum road clearance		mm (in)	145 (5.7)				

**B: ENGINE**

Model		2200		2500	
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine			
Valve arrangement		Overhead camshaft type			
Bore x Stroke		mm (in)	96.9 x 75.0 (3.815 x 2.953)	99.5 x 79.0 (3.917 x 3.110)	
Displacement		cm <sup>3</sup> (cu in)	2,212 (135.0)	2,457 (149.9)	
Compression ratio			10.0	9.7	
Firing order			1 — 3 — 2 — 4		
Idle speed at Park/Neutral position		rpm	700 ± 100		
Maximum output		kW (HP)/rpm	106 (142)/5,600	123 (165)/5,600	
Maximum torque		N.m (kg-m, ft-lb)/rpm	202 (20.6, 149)/3,600	225 (22.9, 166)/4,000	

## C: ELECTRICAL

Model		2200	2500
Ignition timing at idling speed		Except California spec.: 10°/700 (MT), 15°/700 (AT) California spec.: 15°/700 (MT), 15°/700 (AT)	10°/700 (MT) 15°/700 (AT)
	BTDC/rpm		
Spark plug	Type and manufacturer	CHAMPION: RC10YC4 (Standard) NGK: BKR5E-11	
Generator		12V — 75A	
Battery	Type	MT model: 55D23L, AT model: 75D23L	
	Reserve capacity	min	MT model: 99, AT model: 118
	Cold cranking amperes	amp.	MT model: 356, AT model: 520

**D: TRANSMISSION**

Model		AWD	
Transmission type		5MT*	4AT*
Clutch type		DSPD	TCC
Gear ratio	1st	3.545	2.785 (2200 cc model) 3.027 (2500 cc model)
	2nd	2.111	1.545 (2200 cc model) 1.619 (2500 cc model)
	3rd	1.448	1.000
	4th	1.088	0.694
	5th	0.780	—
	Reverse	3.333	2.272
Reduction gear (Front drive)	1st reduction	Type of gear	—
		Gear ratio	—
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900 (2200 cc model) 4.111 (2500 cc model)
Reduction gear (Rear drive)	Transfer reduction	Type of gear	Helical
		Gear ratio	1.000
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900 (2200 cc model) 4.111 (2500 cc model)

5MT\*: 5-forward speeds with synchromesh and 1-reverse – with center differential and viscous coupling

4AT\*: Electronically controlled fully-automatic, 4-forward speeds and 1-reverse – with hydraulically controlled transfer clutch

DSPD: Dry Single Plate Diaphragm

TCC: Torque Converter Clutch

**E: STEERING**

Type	Rack and Pinion
Turns, lock to lock	3.2
Minimum turning circle	m (ft) Curb to curb: 10.2 (33.5), Wall to wall: 11.0 (36.1)

**F: SUSPENSION**

Front	Macpherson strut type, Independent, Coil spring
Rear	Dual link strut type, Independent, Coil spring

**G: BRAKE**

Model	2200	2500
Service brake system	Dual circuit hydraulic with vacuum suspended power unit	
Front	Ventilated disc brake	
Rear	Drum brakes	Disc brakes
Parking brake	Mechanical on rear brakes	

## H: TIRE

Model	2200	2500
	AWD	AWD
	L	RS
Size	P195/60R15 87H	P205/55R16 87V
Type	Steel belted radial, Tubeless	

## I: CAPACITY

Model		AWD	
		5MT	4AT
Fuel tank	ℓ (US gal, Imp gal)	60 (15.9, 13.2)	
Engine oil	Upper level	ℓ (US qt, Imp qt) 4.0 (4.2, 3.5)	
	Lower level	ℓ (US qt, Imp qt) 3.0 (3.2, 2.6)	
Transmission gear oil	ℓ (US qt, Imp qt)	3.5 (3.7, 3.1)	—
Automatic transmission fluid	ℓ (US qt, Imp qt)	—	2200 cc model: 8.4 (8.9, 7.4) 2500 cc model: 9.3 (9.8, 8.2)
AT differential gear oil	ℓ (US qt, Imp qt)	—	1.2 (1.3, 1.1)
AWD rear differential gear oil	ℓ (US qt, Imp qt)	0.8 (0.8, 0.6)	
Power steering fluid	ℓ (US qt, Imp qt)	0.7 (0.7, 0.6)	
Engine coolant	ℓ (US qt, Imp qt)	5.8 (6.1, 5.1)	

## J: WEIGHT

### 1. AMERICA SPEC. VEHICLES

Model			2200		2500	
			AWD			
			L		RS	
			5MT	4AT	5MT*	4AT*
Curb weight (C.W.)	Front	kg (lb)	717 (1,580)	739 (1,630)	751 (1,655)	771 (1,700)
	Rear	kg (lb)	521 (1,150)	531 (1,170)	526 (1,160)	529 (1,165)
	Total	kg (lb)	1,238 (2,730)	1,270 (2,800)	1,277 (2,815)	1,300 (2,865)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)			
	Rear	kg (lb)	816 (1,800)			
	Total	kg (lb)	1,701 (3,750)			

\*: The weight of a vehicle with sunroof is 5 kg (10 lb) larger at the front, 7 kg (15 lb) larger at the rear and 12 kg (25 lb) larger in total.

**2. CANADA SPEC. VEHICLES**

Model			2500	
			AWD	
			RS	
			5MT*	4AT*
Curb weight (C.W.)	Front	kg (lb)	751 (1,655)	771 (1,700)
	Rear	kg (lb)	526 (1,160)	529 (1,165)
	Total	kg (lb)	1,277 (2,815)	1,300 (2,865)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)	
	Rear	kg (lb)	816 (1,800)	
	Total	kg (lb)	1,701 (3,750)	

\*: The weight of a vehicle with sunroof is 5 kg (10 lb) larger at the front, 7 kg (15 lb) larger at the rear and 12 kg (25 lb) larger in total.

## 2. 4-door Sedan

### A: DIMENSIONS

Model				2200
				AWD
				L
Overall length		mm (in)		4,375 (172.2)
Overall width		mm (in)		1,705 (67.1)
Overall height		mm (in)		1,410 (55.5)
Compartment	Leg room	Front Max.	mm (in)	1,094 (43.1)
		Rear Min.	mm (in)	825 (32.5)
	Head room	Front	mm (in)	995 (39.2)
		Rear	mm (in)	933 (36.7)
	Shoulder room	Front	mm (in)	1,335 (52.6)
		Rear	mm (in)	1,315 (51.8)
Wheelbase		mm (in)		2,520 (99.2)
Tread	Front	mm (in)		1,460 (57.5)
	Rear	mm (in)		1,450 (57.1)
Minimum road clearance		mm (in)		145 (5.7)

### B: ENGINE

Model		2200
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine
Valve arrangement		Overhead camshaft type
Bore x Stroke	mm (in)	96.9 x 75.0 (3.815 x 2.953)
Displacement	cm <sup>3</sup> (cu in)	2,212 (135.0)
Compression ratio		10.0
Firing order		1 — 3 — 2 — 4
Idle speed at Park/Neutral position	rpm	700 ± 100
Maximum output	kW (HP)/rpm	106 (142)/5,600
Maximum torque	N.m (kg-m, ft-lb)/rpm	202 (20.6, 149)/3,600

**C: ELECTRICAL**

Model		2200
Ignition timing at idling speed BTDC/rpm		Except California spec.: 10°/700 (MT), 15°/700 (AT) California spec.: 15°/700 (MT), 15°/700 (AT)
Spark plug	Type and manufacturer	CHAMPION: RC10YC4 (Standard) NGK: BKR5E-11
Generator		12V — 75A
Battery	Type	MT model: 55D23L, AT model: 75D23L
	Reserve capacity min	MT model: 99, AT model: 118
	Cold cranking amperes amp.	MT model: 356, AT model: 520

**D: TRANSMISSION**

Model		AWD	
Transmission type		5MT*	4AT*
Clutch type		DSPD	TCC
Gear ratio	1st	3.545	2.785
	2nd	2.111	1.545
	3rd	1.448	1.000
	4th	1.088	0.694
	5th	0.780	—
	Reverse	3.333	2.272
Reduction gear (Front drive)	1st reduction	Type of gear	—
		Gear ratio	—
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900
Reduction gear (Rear drive)	Transfer reduction	Type of gear	Helical
		Gear ratio	1.000
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900

5MT\*: 5-forward speeds with synchromesh and 1-reverse – with center differential and viscous coupling

4AT\*: Electronically controlled fully-automatic, 4-forward speeds and 1-reverse – with hydraulically controlled transfer clutch

DSPD: Dry Single Plate Diaphragm

TCC: Torque Converter Clutch

**E: STEERING**

Type	Rack and Pinion
Turns, lock to lock	3.2
Minimum turning circle	Curb to curb: 10.2 (33.5), Wall to wall: 11.0 (36.1)

**F: SUSPENSION**

Front	Macpherson strut type, Independent, Coil spring
Rear	Dual link strut type, Independent, Coil spring

**G: BRAKE**

Model	2200
Service brake system	Dual circuit hydraulic with vacuum suspended power unit
Front	Ventilated disc brake
Rear	Drum brake
Parking brake	Mechanical on rear brakes

**H: TIRE**

Model	2200
	AWD
	L
Size	P195/60R15 87H
Type	Steel belted radial, Tubeless



**I: CAPACITY**

Model		AWD	
		5MT	4AT
Fuel tank	ℓ (US gal, Imp gal)	60 (15.9, 13.2)	
Engine oil	Upper level ℓ (US qt, Imp qt)	4.0 (4.2, 3.5)	
	Lower level ℓ (US qt, Imp qt)	3.0 (3.2, 2.6)	
Transmission gear oil	ℓ (US qt, Imp qt)	3.5 (3.7, 3.1)	—
Automatic transmission fluid	ℓ (US qt, Imp qt)	—	8.4 (8.9, 7.4)
AT differential gear oil	ℓ (US qt, Imp qt)	—	1.2 (1.3, 1.1)
AWD rear differential gear oil	ℓ (US qt, Imp qt)	0.8 (0.8, 0.6)	
Power steering fluid	ℓ (US qt, Imp qt)	0.7 (0.7, 0.6)	
Engine coolant	ℓ (US qt, Imp qt)	5.8 (6.1, 5.1)	

**J: WEIGHT**

**1. AMERICA SPEC.VEHICLES**

Model		2200		
		AWD		
		L		
		5MT	4AT	
Curb weight (C.W.)	Front	kg (lb)	719 (1,585)	744 (1,640)
	Rear	kg (lb)	521 (1,150)	528 (1,165)
	Total	kg (lb)	1,240 (2,735)	1,272 (2,805)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)	
	Rear	kg (lb)	816 (1,800)	
	Total	kg (lb)	1,701 (3,750)	

**2. CANADA SPEC.VEHICLES**

Model		2200		
		AWD		
		L		
		5MT	4AT	
Curb weight (C.W.)	Front	kg (lb)	719 (1,585)	744 (1,640)
	Rear	kg (lb)	521 (1,150)	528 (1,165)
	Total	kg (lb)	1,240 (2,735)	1,272 (2,805)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)	
	Rear	kg (lb)	816 (1,800)	
	Total	kg (lb)	1,701 (3,750)	

### 3. Sport Wagon

#### A: DIMENSIONS

Model				2200		
				AWD		
				Brighton	L	OUTBACK
Overall length	mm (in)			4,375 (172.2)		
Overall width	mm (in)			1,705 (67.1)		
Overall height	mm (in)			1,410 (55.5)		1,430 (56.3)
Compartment	Leg room	Front Max.	mm (in)	1,094 (43.1)		
		Rear Min.	mm (in)	825 (32.5)		
	Head room	Front	mm (in)	995 (39.2)		
		Rear	mm (in)	950 (37.4)		
	Shoulder room	Front	mm (in)	1,335 (52.6)		
		Rear	mm (in)	1,315 (51.8)		
Wheelbase	mm (in)			2,520 (99.2)		
Tread	Front	mm (in)	1,460 (57.5)			
	Rear	mm (in)	1,450 (57.1)			
Minimum road clearance	mm (in)			145 (5.7)		165 (6.5)

#### B: ENGINE

Model		2200	
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine	
Valve arrangement		Overhead camshaft type	
Bore x Stroke	mm (in)	96.9 x 75.0 (3.815 x 2.953)	
Displacement	cm <sup>3</sup> (cu in)	2,212 (135.0)	
Compression ratio		10.0	
Firing order		1 — 3 — 2 — 4	
Idle speed at Park/Neutral position		rpm	700 ± 100
Maximum output		kW (HP)/rpm	106 (142)/5,600
Maximum torque		N.m (kg-m, ft-lb)/rpm	202 (20.6, 149)/3,600

**C: ELECTRICAL**

Model		2200
Ignition timing at idling speed BTDC/rpm		Except California spec.: 10°/700 (MT), 15°/700 (AT) California spec.: 15°/700 (MT), 15°/700 (AT)
Spark plug	Type and manufacturer	CHAMPION: RC10YC4 (Standard) NGK: BKR5E-11
Generator		12V — 75A
Battery	Type	MT model: 55D23L, AT model: 75D23L
	Reserve capacity min	MT model: 99, AT model: 118
	Cold cranking amperes amp.	MT model: 356, AT model: 520

## D: TRANSMISSION

Model		AWD	
Transmission type		5MT*	4AT*
Clutch type		DSPD	TCC
Gear ratio	1st	3.545	2.785
	2nd	2.111	1.545
	3rd	1.448	1.000
	4th	1.088	0.694
	5th	0.780	—
	Reverse	3.333	2.272
Reduction gear (Front drive)	1st reduction	Type of gear	—
		Gear ratio	—
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900
Reduction gear (Rear drive)	Transfer reduction	Type of gear	Helical
		Gear ratio	1.000
	Final reduction	Type of gear	Hypoid
		Gear ratio	3.900

5MT\*: 5-forward speeds with synchromesh and 1-reverse – with center differential and viscous coupling

4AT\*: Electronically controlled fully-automatic, 4-forward speeds and 1-reverse – with hydraulically controlled transfer clutch

DSPD: Dry Single Plate Diaphragm

TCC: Torque Converter Clutch

## E: STEERING

Type	Rack and Pinion	
Turns, lock to lock	3.2	
Minimum turning circle	m (ft)	Curb to curb: 10.2 (33.5), Wall to wall: 11.0 (36.1)

## F: SUSPENSION

Front	Macpherson strut type, Independent, Coil spring
Rear	Dual link strut type, Independent, Coil spring

## G: BRAKE

Model	2200
Service brake system	Dual circuit hydraulic with vacuum suspended power unit
Front	Ventilated disc brake
Rear	Drum brake
Parking brake	Mechanical on rear brakes

## H: TIRE

Model	2200		
	AWD		
	Brighton	L	OUTBACK
Size	P195/60R15 87H		P205/60R15 90S P205/60R15 90H
Type	Steel belted radial, Tubeless		

**I: CAPACITY**

Model		AWD	
		5MT	4AT
Fuel tank	ℓ (US gal, Imp gal)	60 (15.9, 13.2)	
Engine oil	Upper level ℓ (US qt, Imp qt)	4.0 (4.2, 3.5)	
	Lower level ℓ (US qt, Imp qt)	3.0 (3.2, 2.6)	
Transmission gear oil	ℓ (US qt, Imp qt)	3.5 (3.7, 3.1)	—
Automatic transmission fluid	ℓ (US qt, Imp qt)	—	8.4 (8.9, 7.4)
AT differential gear oil	ℓ (US qt, Imp qt)	—	1.2 (1.3, 1.1)
AWD rear differential gear oil	ℓ (US qt, Imp qt)	0.8 (0.8, 0.6)	
Power steering fluid	ℓ (US qt, Imp qt)	0.7 (0.7, 0.6)	
Engine coolant	ℓ (US qt, Imp qt)	5.8 (6.1, 5.1)	

**J: WEIGHT**

**1. AMERICA SPEC. VEHICLES**

Model			2200			
			AWD			
			L		OUTBACK	
			5MT	4AT	5MT	4AT
Curb weight (C.W.)	Front	kg (lb)	721 (1,590)	741 (1,635)	730 (1,610)	751 (1,655)
	Rear	kg (lb)	565 (1,245)	565 (1,245)	567 (1,250)	576 (1,270)
	Total	kg (lb)	1,286 (2,835)	1,306 (2,880)	1,297 (2,860)	1,327 (2,925)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)			
	Rear	kg (lb)	907 (2,000)			
	Total	kg (lb)	1,792 (3,950)			

**2. CANADA SPEC. VEHICLES**

Model			2200			
			AWD			
			Brighton		OUTBACK	
			5MT	4AT	5MT	4AT
Curb weight (C.W.)	Front	kg (lb)	703 (1,550)	723 (1,595)	730 (1,610)	753 (1,660)
	Rear	kg (lb)	558 (1,230)	561 (1,235)	567 (1,250)	571 (1,260)
	Total	kg (lb)	1,261 (2,735)	1,284 (2,830)	1,297 (2,860)	1,324 (2,920)
Gross vehicle weight (G.V.W.)	Front	kg (lb)	885 (1,950)			
	Rear	kg (lb)	907 (2,000)			
	Total	kg (lb)	1,792 (3,950)			

### 3. Vehicle Identification Numbers (V.I.N.)

#### A: APPLICABLE V.I.N. IN THIS MANUAL

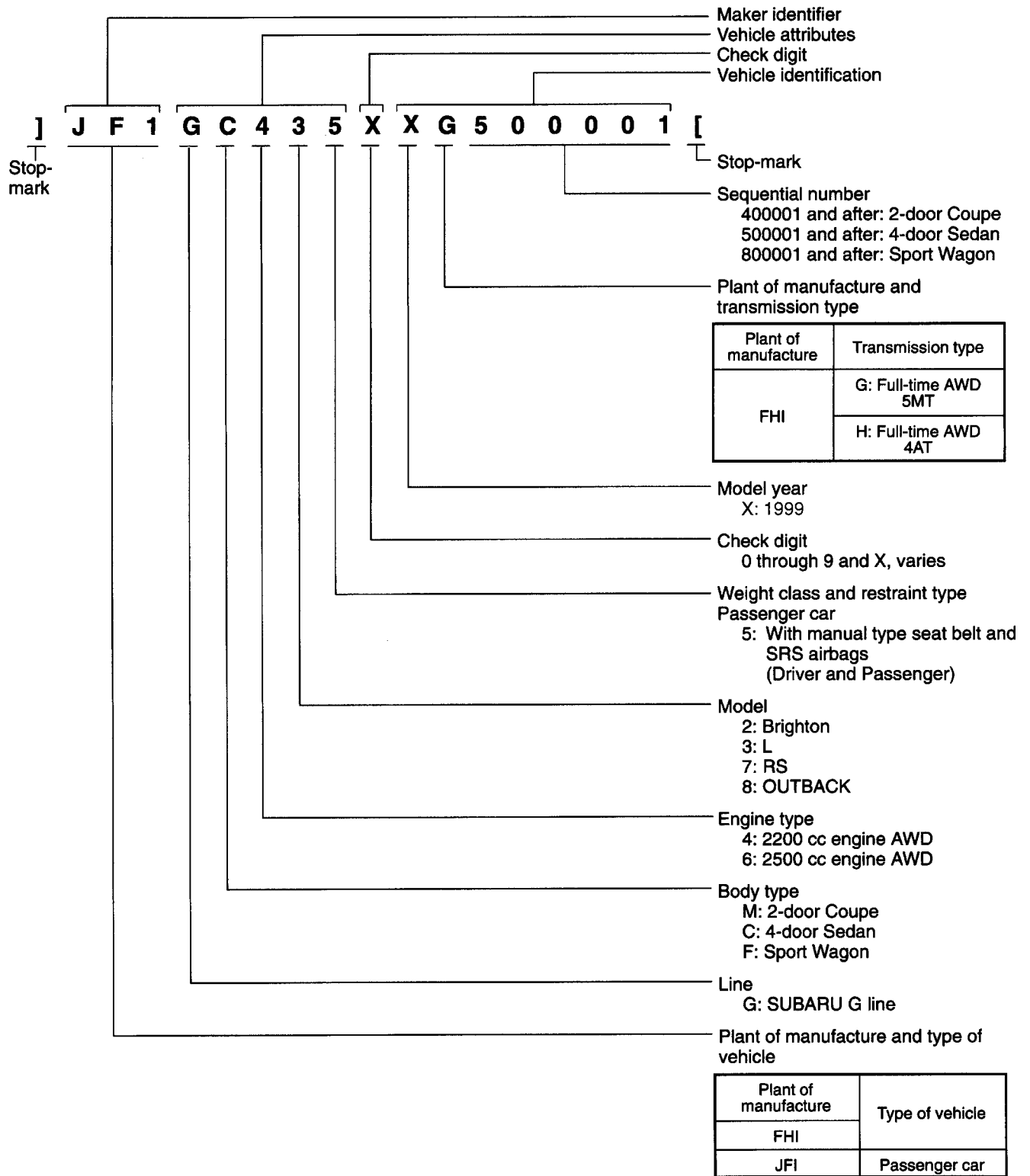
##### 1. AMERICA SPEC. VEHICLES

2-door Sedan	2200 cc engine	AWD L	5MT	J	F	1	G	M	4	3	5	X	X	G	4	0	0	0	0	1	and after
			4AT	J	F	1	G	M	4	3	5	X	X	H	4	0	0	0	0	1	and after
	2500 cc engine	AWD RS	5MT	J	F	1	G	M	6	7	5	X	X	G	4	0	0	0	0	1	and after
			4AT	J	F	1	G	M	6	7	5	X	X	H	4	0	0	0	0	1	and after
4-door Sedan	2200 cc engine	AWD L	5MT	J	F	1	G	C	4	3	5	X	X	G	5	0	0	0	0	1	and after
			4AT	J	F	1	G	C	4	3	5	X	X	H	5	0	0	0	0	1	and after
Sport Wagon	2200 cc engine	AWD L	5MT	J	F	1	G	F	4	3	5	X	X	G	8	0	0	0	0	1	and after
			4AT	J	F	1	G	F	4	3	5	X	X	H	8	0	0	0	0	1	and after
		AWD OUTBACK	5MT	J	F	1	G	F	4	8	5	X	X	G	8	0	0	0	0	1	and after
			4AT	J	F	1	G	F	4	8	5	X	X	H	8	0	0	0	0	1	and after

##### 2. CANADA SPEC. VEHICLES

2-door Sedan	2500 cc engine	AWD RS	5MT	J	F	1	G	M	6	7	5	X	X	G	4	0	0	0	0	1	and after
			4AT	J	F	1	G	M	6	7	5	X	X	H	4	0	0	0	0	1	and after
4-door Sedan	2200 cc engine	AWD L	5MT	J	F	1	G	C	4	3	5	X	X	G	5	0	0	0	0	1	and after
			4AT	J	F	1	G	C	4	3	5	X	X	H	5	0	0	0	0	1	and after
Sport Wagon	2200 cc engine	AWD Blighton	5MT	J	F	1	G	F	4	2	5	X	X	G	8	0	0	0	0	1	and after
			4AT	J	F	1	G	F	4	2	5	X	X	H	8	0	0	0	0	1	and after
		AWD OUTBACK	5MT	J	F	1	G	F	4	8	5	X	X	G	8	0	0	0	0	1	and after
			4AT	J	F	1	G	F	4	8	5	X	X	H	8	0	0	0	0	1	and after

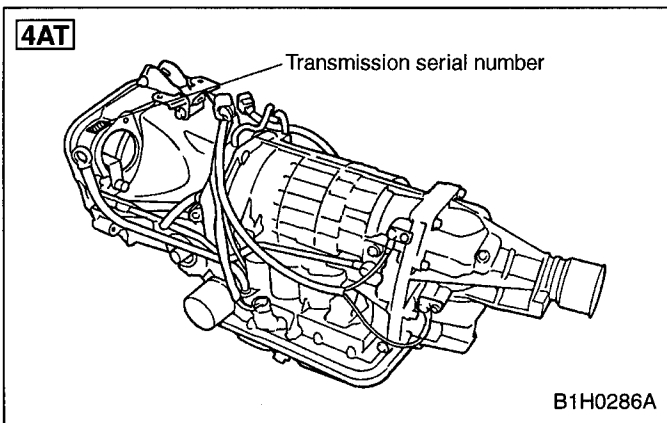
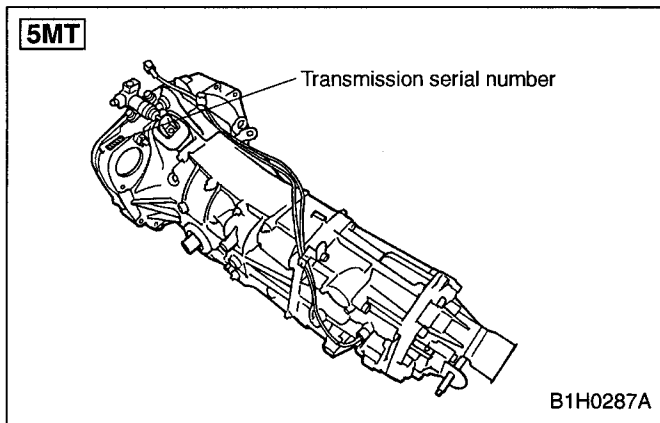
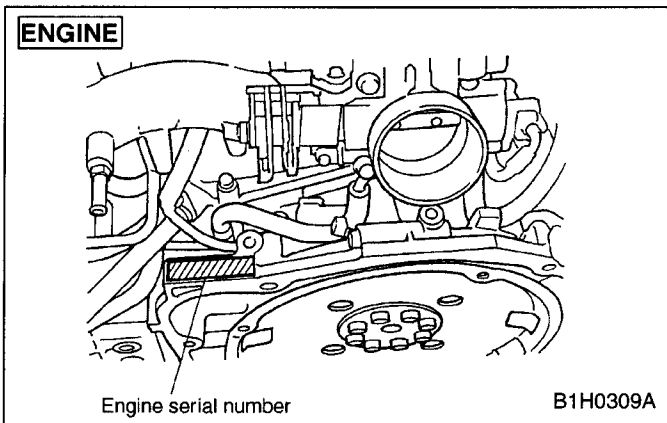
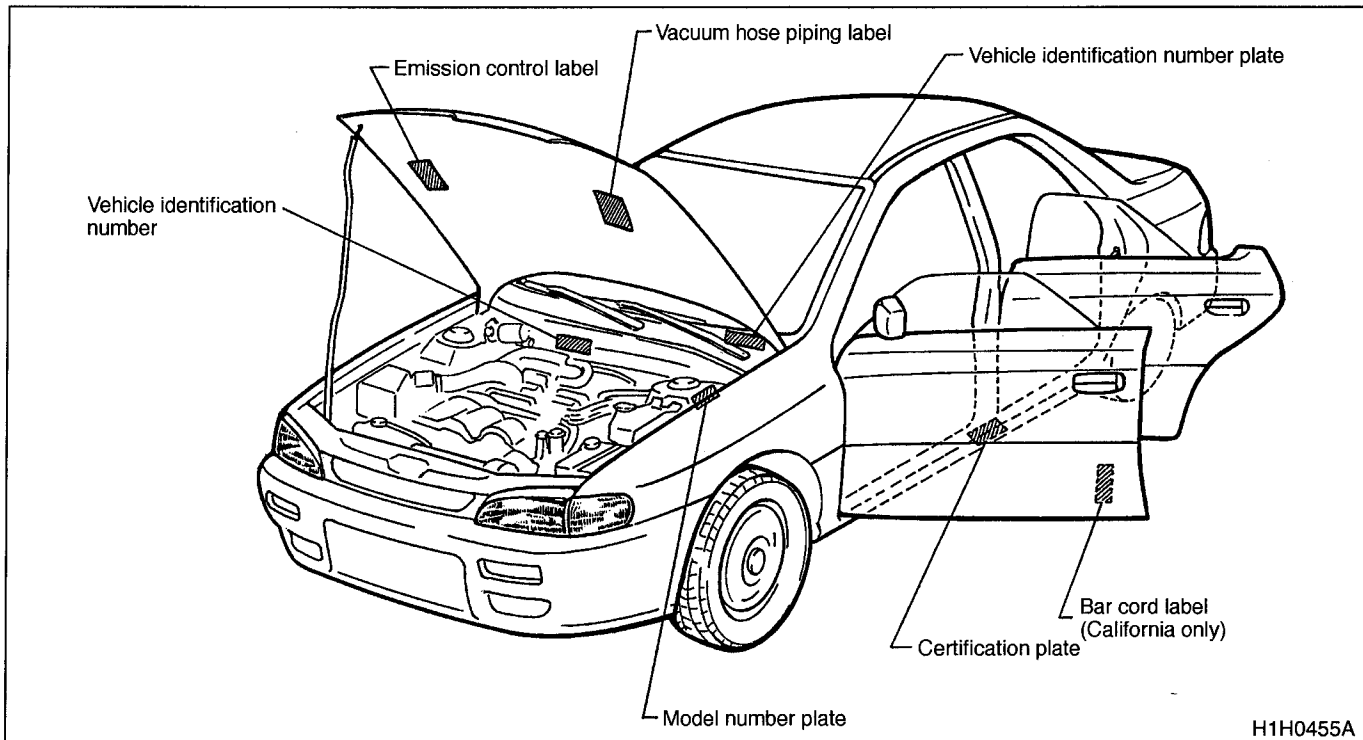
**B: THE MEANING OF V.I.N.**



H1H0493B

### 4. Identification Number and Label Locations

Engine, transmission and vehicle identification numbers are used for factory communications such as Technical Information, Service Bulletins and other information.





## 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 AND TLEV

If SUBARU vehicle is a California-certified Low Emission Vehicle (LEV) and Transitional Low Emission Vehicle (TLEV) as indicated on the underhood tune-up label, it is designed to optimize engine and emission control system performance with gasolines that meet California specifications. SUBARU vehicle will operate on gasoline meeting federal 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.**

## C: LUBRICANTS

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

Lubricants	Recommended	Application	Equivalent
<ul style="list-style-type: none"> <li>Spray lubricants</li> </ul>	SUBARU CRC (P/N 004301003)	O <sub>2</sub> sensor	—
<ul style="list-style-type: none"> <li>Grease</li> </ul>	SUNLIGHT 2 N: glube R (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 shafts	—
	VU-3A702 (P/N 23223GA050)	DOJ of rear axle shafts	—
	NTG2218 (CP/N 28093AA020)	BJ of front axle shafts	—
	SSG-6003 (P/N 28093TA000)	SFJ of front axle shaft	—
	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	—	

**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

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

\* For differential gear oil (AT)

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 or A2 or A3	(°F) -22	-4	5	32	59	86	104				
												10W-30, 10W-40			
												5W-30 PREFERRED			
•Transmission gear oil	GL-5	—	—	—								90			
												85W			
												80W			
												75W-90			
•AWD rear differential gear oil	GL-5	—	—	—								90			
															85W
•Front differential gear oil for automatic transmission															80W
					(°F)	15	23			77					
					(°C)	-26	-5			25		B1H0183A			

**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	1.053	1.049	1.044	1.039	1.034	-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 bolt, etc.	Dow Corning's No. 7038
	Three Bond 1215 (P/N 004403007)	Matching surface of oil pump, 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	—

**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

## 2. Pre-road Test Inspection

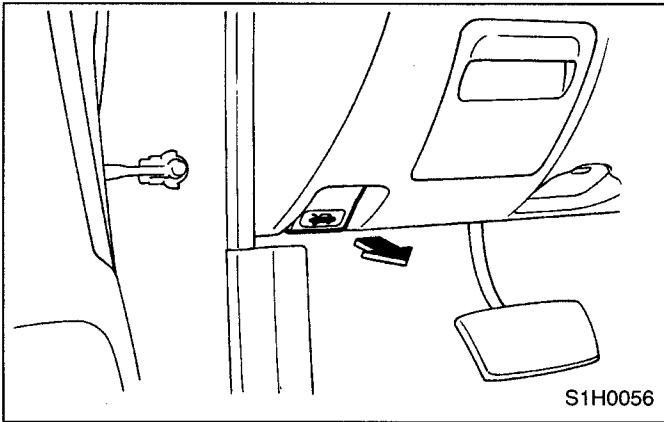
### A: HOOD OPERATION

#### CHECK POINTS

1. Operation of hood release and lock
2. Condition of lock
3. Fitting of hood

#### 1. CHECK THE OPENING, CLOSING AND LOCKING OF HOOD.

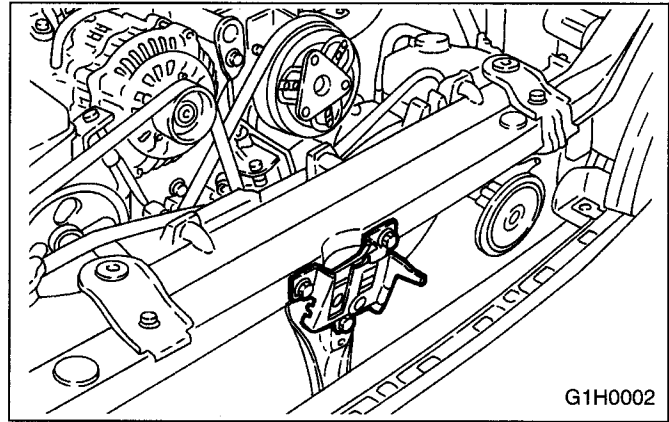
1) Make sure the wiper arms are folded down properly. Pull the hood lock release knob under the instrument panel. (The hood will lift a step.) Check if the cable moves easily and lightly without dragging.



2) Release the lock by pushing the lock lever while pushing the hood down with slight pressure.

Hold the hood open with the stay.

Check the way the safety lock mechanism is released and that the hood opens and closes without any abnormal noise and does not contact the body.

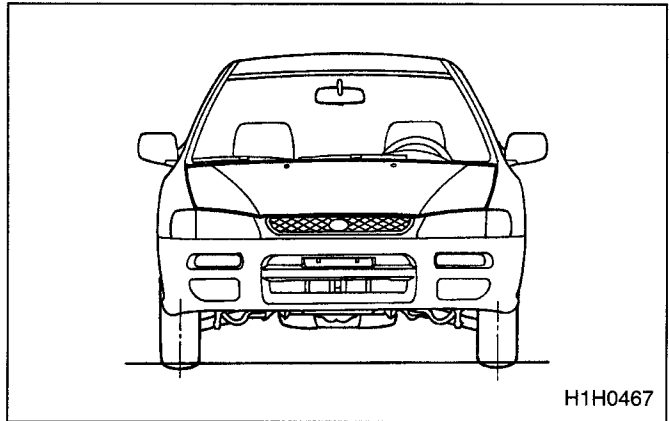


3) Remove the stay and lower the hood slowly. Rest the hood near the body and push down the front end of the hood to see if the lock functions properly.

4) Confirm by repeating the above steps beginning with the first one two or three times.

#### 2. CHECK THE INSTALLATION OF HOOD.

After having closed the hood, ensure the hood fits properly.



#### NOTE:

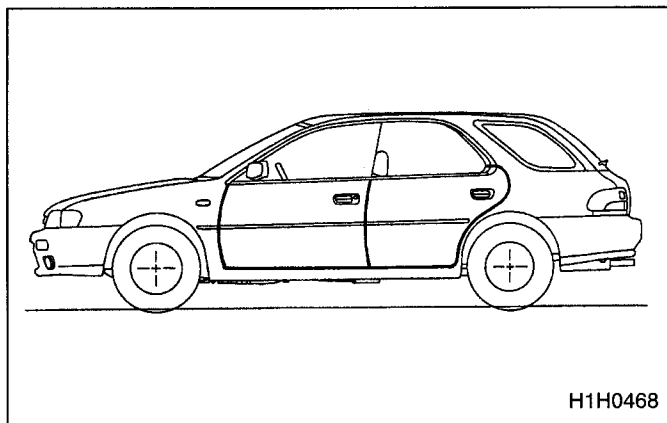
- The clearance between the hood and front fender is uniform.
- The hood's front end is parallel with the front fender.
- The slope of hood is the same as the parts of body surrounding it.
- The hood and weatherstrip stick fast to each other.

**B: DOOR OPERATION, DOOR LOCK AND REGULATOR**

**CHECK POINTS**

1. Door "Open-close" operation
2. Operation of door release and lock
3. Loose or damaged parts
4. Regulator handle operation
5. Position of door window glass
6. Operation of power window switches
7. Power door locking operation

**1. CHECK THE OPENING AND CLOSING OF DOORS AND REAR GATE.**



- 1) First open the door completely and then close it fully by operating the inside handle from the driver's seat.
- 2) Repeat the preced step two or three times to see how the door opens and closes. Pay attention to the operating effort, any abnormal noise and positive operation.
- 3) Operate the outer handle from the outside and check how the door opens and closes. Also, check that there is an uniform clearance between the door and car body without any grade difference.

**NOTE:**

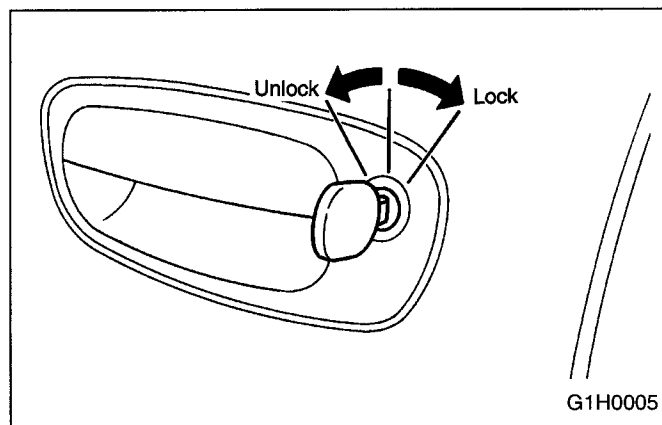
- To examine the closed state and sinking of the door, observe from the front right-hand door.
- If the striker drags during opening when the outer handle is pulled, adjust by relocating the striker.

**2. CHECK THE OPERATION OF DOOR LOCKS.**

- 1) Close the door completely, lock it with the key plate and pull the outside door handle to ensure the door does not open.

**NOTE:**

- Do not pull the outside door handle with greater force than necessary.
- While inspecting the door and lock, check the lock in the rear part of the door and the door striker attached to the pillar.

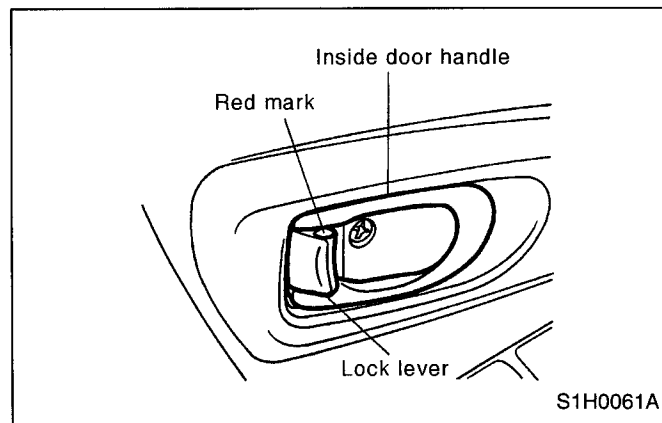


- 2) Again operate the key plate to ensure the door unlocks.

**NOTE:**

Replace the lock cylinder if it malfunctions. When the door lock seems to be operating slowly, lubricate the moving parts with grease or oil.

- 3) Sit in the driver seat, close the door completely, and move the lock lever to lock the door. Then, pull the inside door handle to ensure the door will not open.



**3. CHECK THE LOOSENESS OF DOORS.**

- 1) Open and close the door two or three times with a somewhat strong force.
- 2) Check the bolts or screws securing the door hinge, lock and striker for looseness. Retighten loose ones to the specified tightening torque.

**4. CHECK THE OPERATION OF REGULATOR HANDLE AND POSITION OF DOOR WINDOW GLASS.**

- 1) Operate the regulator handle to see if the window rises and lowers smoothly.
- 2) Make sure that the front of the glass stopper is simultaneously in contact with the glass when the glass is completely raised.
- 3) Also ensure the side windows and locks operate normally.

**5. CHECK THE OPERATION OF POWER WINDOW.**

- 1) Depress the power window switches to fully open the windows.
- 2) Depress the power window switches to fully close the windows.
- 3) Repeat the above steps beginning with the first one two or three times to see how the windows open and close.

**6. CHECK THE OPERATION OF POWER DOOR LOCK.**

- 1) Close the door completely.
- 2) Operate the power door locking switches on the front both side doors to lock and check that all the doors are locked.
- 3) Operate the power door locking switches on the front both side doors to unlock and check that all the doors are unlocked.
- 4) Repeat the above steps two or three times.

**C: TRUNK LID, REAR GATE AND FUEL LID OPERATION****CHECK POINTS**

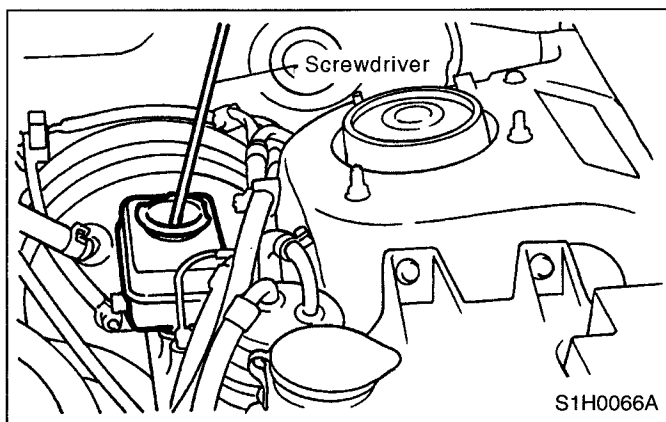
1. *Trunk lid, rear gate and fuel lid "open-close" operation*
2. *Operation of trunk lid and rear gate (release and lock)*
3. *Fitting of trunk lid, rear gate and fuel lid*
4. *Operation of trunk lid opener cancel lever*

**D: BRAKE FLUID LEVEL AND BRAKE PIPING INSTALLATION****CHECK POINTS**

1. *Fluid level in brake reserve tank*
2. *Wiring of fluid leveller and its operation*
3. *Brake booster, master cylinder and pressure control valve for proper installation; brake pipe, brake hose and connectors for proper fitting*
4. *Leakage in any of the above*

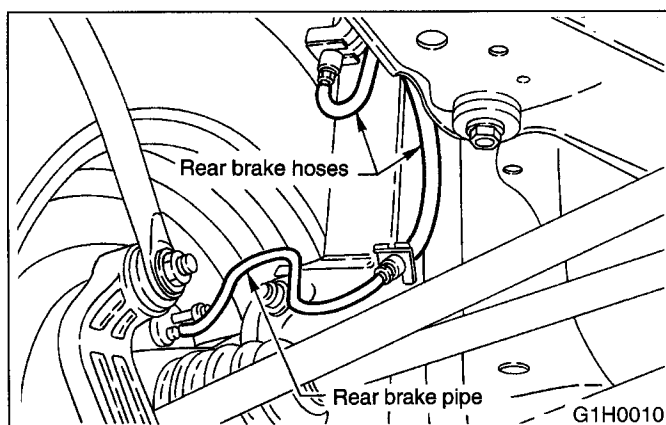
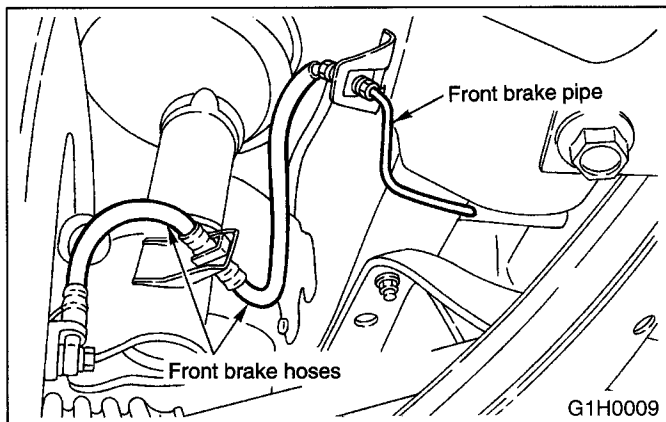
**1. CHECK FLUID LEVELLER OPERATION WHILE PUSHING IT DOWN WITH A SCREWDRIVER.****CAUTION:**

- The fluid level must be kept at "MAX" level.
- Do not mix different brands of brake fluid.
- When adding brake fluid, be careful not to allow any dirt, water, or oil around the fluid tank to enter it.
- Use special care not to spill any brake fluid on the vehicle's painted surfaces, because it will quickly erode them. In case of an accident, wipe it off as quickly and as cleanly as possible.
- Never use engine oil, gear oil, or any mineral oil.
- Use extreme care not to allow any water to get into the fluid; water in the brake fluid will lower the fluid's boiling point and cause vapor-lock.
- If too much brake fluid is missing, check the brake line for possible leakage.
- After adding brake fluid, any excess must be stored in a tightly sealed container.
- When checking the operation of leveller, use clean screwdriver or the like and be careful not to allow dirt or dust to get into the tank.



**Recommended brake fluid**  
**FMVSS No. 116, fresh DOT3 or DOT4**  
**brake fluid**

1) Check that the brake pipes, hoses and connectors are in good condition.



- (1) Brake fluid is not oozing or leaking from the brake fluid lines.
- (2) The connectors and clamps are not loose.
- (3) There is no possibility of the pipes and hoses contacting the body or other me-

chanical parts due to vibration during running.

**E: BATTERY FLUID LEVEL AND BATTERY INSTALLATION**

**CHECK POINTS**

1. External parts
2. Electrolyte level
3. Specific gravity

**WARNING:**

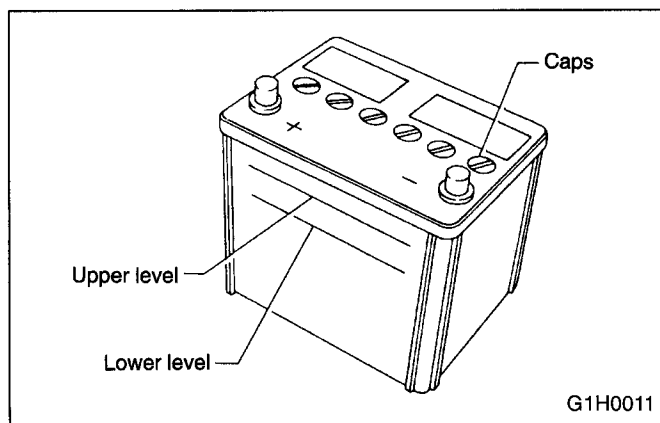
- Electrolyte has toxicity; be careful about handling the fluid.
- Avoid contact with skin, eyes or clothing. Especially in case of contact with eyes, flush with water for 15 minutes and get prompt medical attention.
- Batteries produce explosive gases. Keep sparks, flame, cigarettes away.
- Ventilate when charging or using in enclosed space.

**1. CHECK THE EXTERNAL PARTS**

Check for the existence of dirt or cracks on the battery case, top cover, vent plugs, and terminal posts. If necessary, clean with water and wipe with a dry cloth. Apply a thin coat of grease on the terminal posts to prevent corrosion.

**2. CHECK THE ELECTROLYTE LEVEL**

Check the electrolyte level in each cell. If the level is below MIN LEVEL, bring the level to MAX LEVEL by pouring distilled water into the battery cell. Do not fill beyond MAX LEVEL.

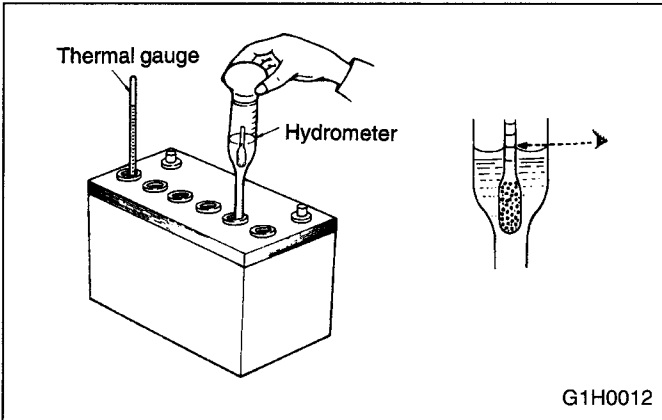




### 3. CHECK THE SPECIFIC GRAVITY

The specific gravity of electrolyte can be measured with a hydrometer. Holding the glass tube vertically, slowly draw the liquid into the tube. Take the reading on the float scale at the highest point of the liquid.

When reading, the eye should be level with the surface of the liquid.



#### **Serviceable specific gravity** **1.220 — 1.280 at 20°C (68°F)**

If the specific gravity reading is below 1.220 at 20°C (68°F), the battery must be recharged and, if necessary, the specific gravity of the electrolyte must be adjusted. The specific gravity changes according to temperature. The standard temperature is considered to be 20°C (68°F).

When measuring the specific gravity, calculate as follows:

#### **Serviceable specific gravity** **$S = St + 0.0007(t - 20)$**

S = Specific gravity corrected for 20°C (68°F)

St = Measured specific gravity at t°C

t = Electrolyte temperature on centigrade scale (°C)

0.0007 = Temperature coefficient

#### [EXAMPLE]

A hydrometer reading of 1.273 at 30°C (86°F) is corrected to 1.280 at 20°C (68°F), indicating that the battery is fully charged. On the other hand, a reading of 1.251 at -10°C (14°F) is corrected to 1.230 at 20°C (68°F), indicating that the battery is partially charged.

### F: COOLANT LEVEL AND COOLING FAN INSTALLATION

#### **CHECK POINTS**

1. **Coolant level**
2. **Cooling fan motor and wiring**
3. **Water leakage and hose damage**

#### **WARNING:**

The radiator is a high pressure type. Never attempt to open the radiator cap when the coolant's temperature is high; otherwise boiling water will spurt out. Be sure to wait until the engine cools down before opening the radiator cap.

#### **CAUTION:**

- The level must be kept at "FULL" level.
- Use only genuine SUBARU Coolant (P/N 000016218).
- Avoid using any coolant or only water other than this designated type to prevent corrosion.
- When retightening the hose clamps, be careful not to over-tighten them, as doing so could damage the hose.

#### **NOTE:**

- Always inspect and add at reserve tank when engine is cold.
- If reserve tank is empty, check coolant level in radiator. Add coolant up to filler neck of radiator too, if necessary.

### G: ENGINE OIL LEVEL

#### **CHECK POINTS**

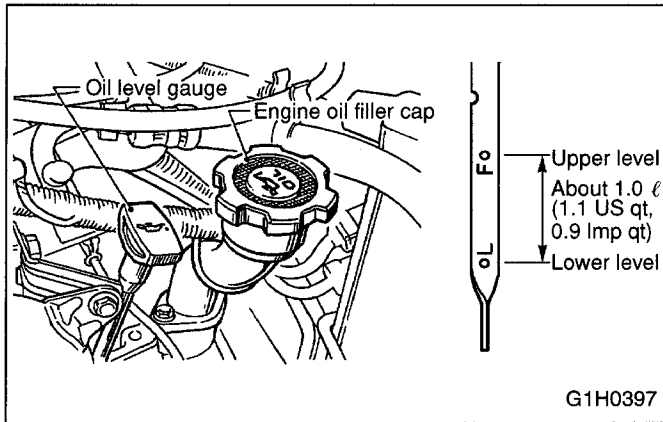
1. **Engine oil level**
2. **Engine oil leakage or contamination**

#### **1. CHECK THE ENGINE OIL LEVEL**

The level should be within the specified range marked on the gauge.

#### **NOTE:**

- Check engine oil level before starting the engine, when engine oil is cold, to obtain correct level reading. After stopping a hot engine, wait about 5 minutes until oil returns to oil pan before checking oil level. Oil level reading will be slightly higher than when engine is cold due to oil expansion. It is advisable to check oil level each time oil is replenished.
- Insert the oil level gauge into guide hole.



**Recommended oil**

**API classification: SJ or SH with the words "Energy Conserving or Energy Conserving II", CCMC specification G4 or G5, ACEA specification A1 or A2 or A3, or New API certification mark is displayed on the container**

SAE Viscosity No. and Applicable Temperature							
(°C)	-30	-20	-15	0	15	30	40
(°F)	-22	-4	5	32	59	86	104
10 W-30, 10W-40							
5W-30 PREFERRED							

B1H0118

**CAUTION:**

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

**H: TRANSMISSION AND DIFFERENTIAL GEAR OIL LEVEL**

**CHECK POINTS**

1. Level of transmission gear oil for manual transmission
2. Level of rear differential gear oil for AWD model
3. Level of front differential gear oil for automatic transmission

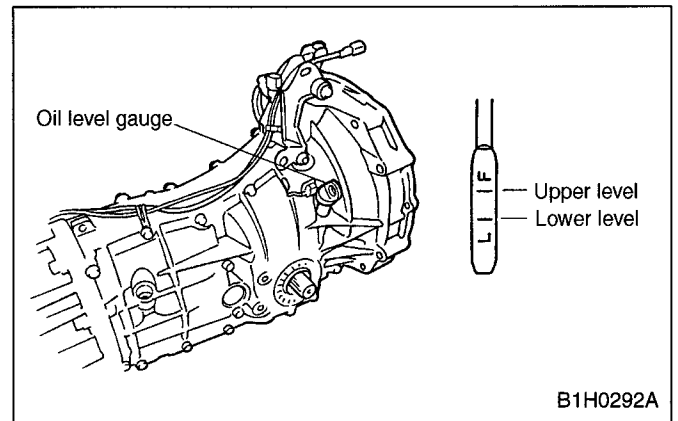
**1. CHECK THE LEVEL OF TRANSMISSION GEAR OIL FOR MANUAL TRANSMISSION**

**CAUTION:**

When inserting the level gauge into transmission, align the protrusion on the side of the top part of the level gauge with the notch in the gauge hole.

**NOTE:**

The level should be within the specified range marked on the gauge.



**Transmission gear oil Recommended oil**

ITEM									
• Transmission gear oil									
API Classification									
GL - 5									
SAE Viscosity No. and Applicable Temperature									
(°C)	-30	-26	-15	-5	0	15	25	30	
(°F)	-22	-15	5	23	32	59	77	86	
90									
85W									
80W									
75W - 90									

B1H0024

**2. CHECK THE LEVEL OF REAR DIFFERENTIAL GEAR OIL**

**CAUTION:**

Each manufacturer uses different base oils and additives. Thus, do not mix brands.

- 1) The oil level must be kept above the bottom of the filler bolt or plug. If below that level, add oil up to the bottom line.
- 2) Install filler bolt or plug onto rear differential gear case firmly.

**CAUTION:**

- Always use a new aluminium gasket. (2200 cc AT model)
- Apply fluid packing to plug. (Except 2200 cc AT model)

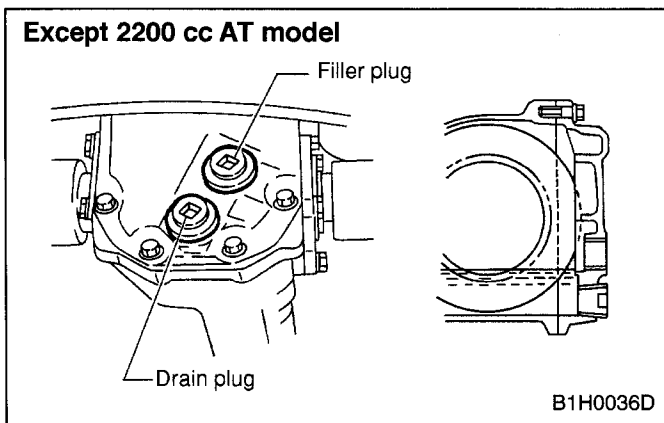
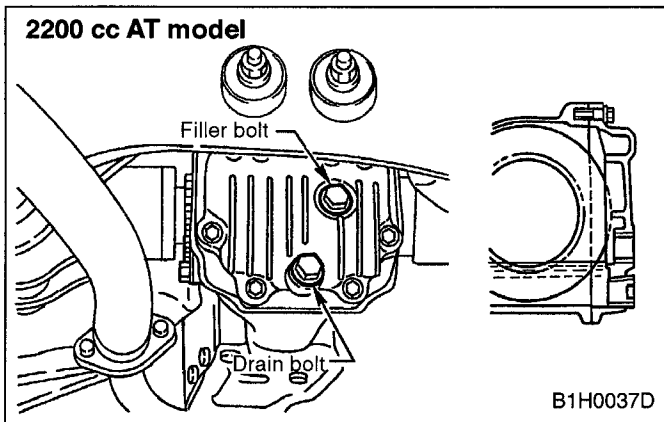
**Fluid packing:**

**THREE BOND 1105 or equivalent**

**Tightening torque:**

**2200 cc AT model:  $34 \pm 4$  N.m**  
**( $3.5 \pm 0.4$  kg-m,  $25 \pm 2.9$  ft-lb)**

**Except 2200 cc AT model:  $44 \pm 4$  N.m**  
**( $4.5 \pm 0.4$  kg-m,  $33 \pm 2.9$  ft-lb)**



**Rear differential gear oil  
Recommended oil**

ITEM								
• Rear differential gear oil								
API Classification								
GL - 5								
SAE Viscosity No. and Applicable Temperature								
(°C)	-30	-26	-15	-5	0	15	25	30
(°F)	-22	-15	5	23	32	59	77	86
	90							
	85W							
	80W							
	75W - 90							
								B1H0038

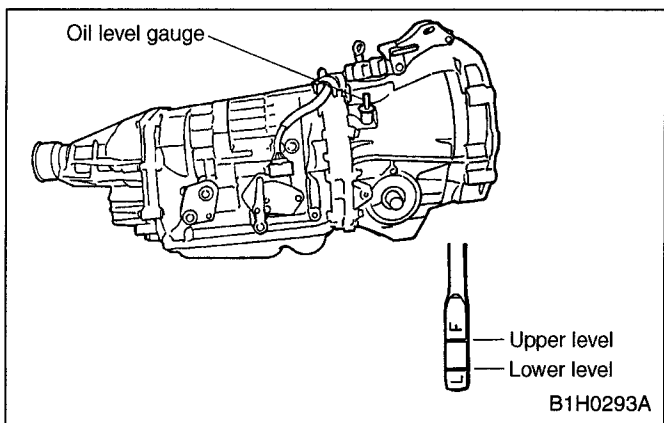
**3. CHECK THE LEVEL OF FRONT DIFFERENTIAL GEAR OIL FOR AUTOMATIC TRANSMISSION**

**CAUTION:**

When inserting the level gauge into differential gear, align the protrusion on the side of the top part of the level gauge with the notch in the gauge hole.

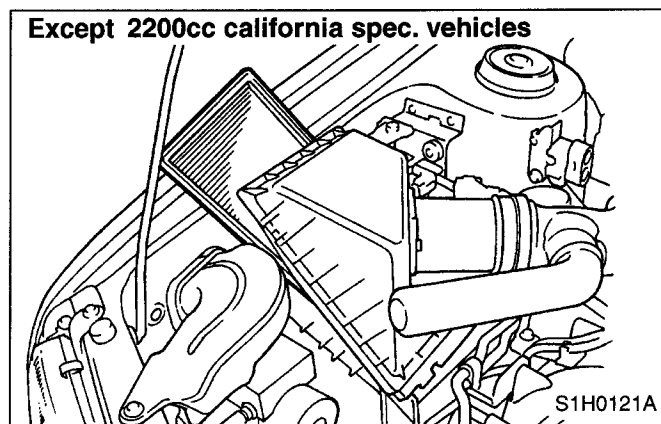
**NOTE:**

The level should be within the specified range marked on the gauge.



**Front differential gear oil  
Recommended oil**

ITEM							
• Front differential gear oil							
API Classification							
GL - 5							
SAE Viscosity No. and Applicable Temperature							
(°C)	-30	-26	-15	-5	0	15	25 30
(°F)	-22	-15	5	23	32	59	77 86
				90			
			85W				
		80W					
		80W - 90					
B1H0039							



**NOTE:**

- The air cleaner element is a viscous type, which should not be washed or cleaned.
- If the air cleaner element is broken or damaged, replace it with a new one.

**I: DRIVE BELT TENSION**

**CHECK POINTS**

1. Belt tension
2. Damage to belt

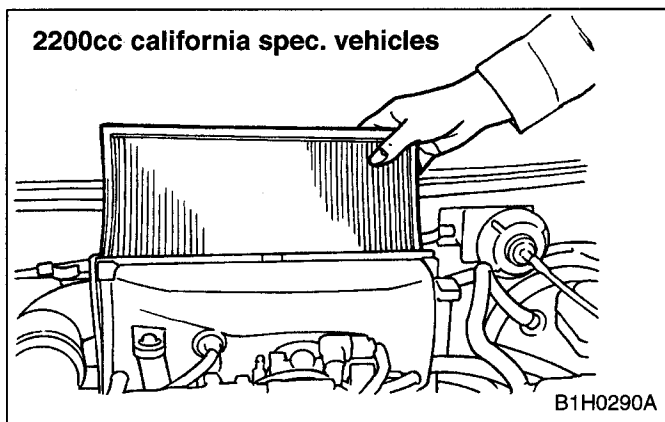
<Ref. to 1-5 [G2A0]. ☆6>

**J: AIR CLEANER**

**CHECK POINTS**

1. Contamination of air cleaner element
2. Related parts

Check the air cleaner element for contamination or presence of foreign matter.



**K: JACK INSTALLATION**

**CHECK POINT**

1. Installed condition of jack

**L: WASHER AND WIPERS**

**CHECK POINTS**

1. Installation of washer tank
2. Checking of washer fluid level
3. Direction and quantity of washer fluid sprayed
4. Operation of wiper and washer

In areas where water freezes in winter, use SUBARU windshield washer fluid (003406401) or equivalent.

The relationship between fluid to water ratio and freezing point is as follows:

Fluid to water ratio (%)	Freezing point °C (°F)
30	-12 (10)
50	-20 (-4)
100	-45 (-49)

**CAUTION:**

- Do not operate the wipers before clean the window glass.
- In freezing weather, do not use the windshield washer until the windshield is sufficiently warmed by the defroster. Otherwise the washer fluid can freeze on the windshield, blocking your view.

● Be sure the wiper blades are not frozen to the windshield or rear window before operating the wipers.

If the wiper operated with the wiper blades are frozen to the windshield or rear window, the wiper blades will be worn or damaged prematurely. Be sure to use defroster or rear window defogger.

● Do not operate the washer continuously for more than ten seconds, or when washer fluid tank is empty. This may cause overheating of the washer motor.

Check the washer fluid level.

● Do not operate the wipers when the windshield or rear window is dry.

This may cause overheating of the washer motor, wear of the wiper blades and scratch of the glass. Before operating the wiper on the dry windshield or rear window, always use the windshield washer.

● Do not clean the wiper blades with gasoline or a solvent, such as paint thinner or benzene. This will cause deterioration of the wiper blades.

NOTE:

● Before operating the wipers, be sure to eject washer fluid onto the window. If the window is dry, the wipers' operating speed and angle of operation will be different from when it is wet.

● If the position at which washer fluid is ejected is wrong: Using an eyelet or similar tool, adjust the direction of the nozzle, be careful not to damage the nozzle hole.

● Grease, wax, insects or other material on the windshield or the wiper blades results in jerky wiper operation and unclear frontal view. If you can not get clear view after operating the windshield washer or wiper operation is jerky, clean the outer surface of the windshield and wiper blades with a neutral detergent.

Wiper blades, windshield and rear window should be cleaned with sponge, soft cloth or mild-abrasive cleaner.

After cleaning, rinse the windshield and wiper blades with clean water. The windshield is clear if beads do not form when you rinse the windshield with water.

## M: REAR WINDOW WASHER AND WIPER

### CHECK POINTS

1. Quantity of washer fluid
2. Direction and quantity of washer fluid sprayed
3. Operation of rear window washer and wiper

## N: WHEEL NUTS FOR LOOSENESS AND TIRE INFLATION PRESSURE

### CHECK POINTS

1. Wheel nut tightening torque
2. Tire inflation pressure and tire specification
3. Damage to tire and rim

### 1. CHECK THE WHEEL NUT TIGHTENING TORQUE

NOTE:

● When checking the wheel nuts, be sure to use a torque wrench, and tighten the nuts to the specified torque.

● After inspecting and adjusting the tire pressure, be sure to put the valve cap back.

#### Tightening torque:

**$88 \pm 10 \text{ N.m}$  ( $9 \pm 1 \text{ kg-m}$ ,  $65 \pm 7 \text{ ft-lb}$ )**

### 2. CHECK THE TIRE INFLATION PRESSURE AND TIRE SPECIFICATION

#### CAUTION:

**Check that all tires are adjusted to the specified tire inflation pressure.**

Tire size	Tire inflation pressure kPa (kg/cm <sup>2</sup> , psi)	
	Front	Rear
P195/60R15 87H	220 (2.2, 32)	200 (2.0, 29)
P205/55R16 87V	220 (2.2, 32)	200 (2.0, 29)
P205/60R15 90S* P205/60R15 90H*	220 (2.2, 32)	200 (2.0, 29)

\*: OUTBACK model only

**O: SEAT ADJUSTER AND SEAT BELTS**

**CHECK POINTS**

1. Front and rear seats, and their facing materials
2. Front seat operation
3. Rear seat folding operation
4. Seat belts and their fit
5. Installing procedure for child anchor

**1. MANUAL THREE-POINT TYPE**

The seat belt warning light on the instrument panel comes on for approximately six seconds with the ignition switch "ON".

And the warning chime sounds if the driver's seat belt is not fastened.

Make sure that the warning system works normally.

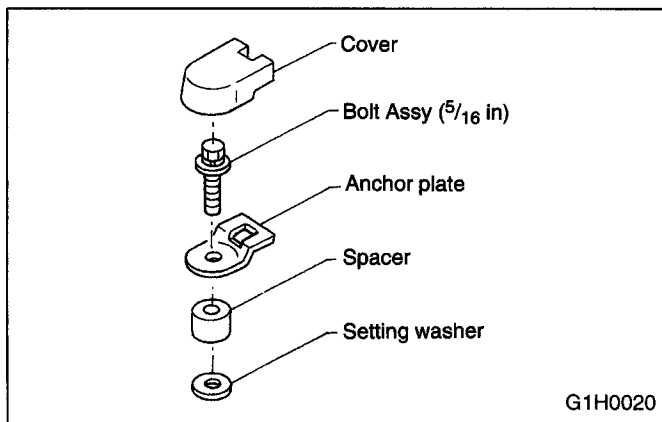
**2. INSTALLING PROCEDURE FOR CHILD ANCHOR**

**CAUTION:**

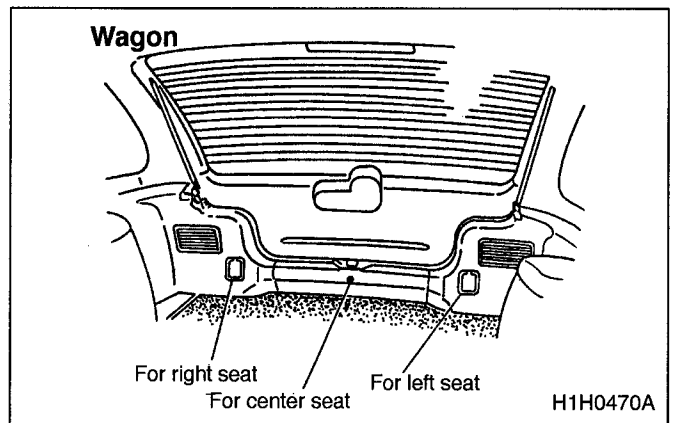
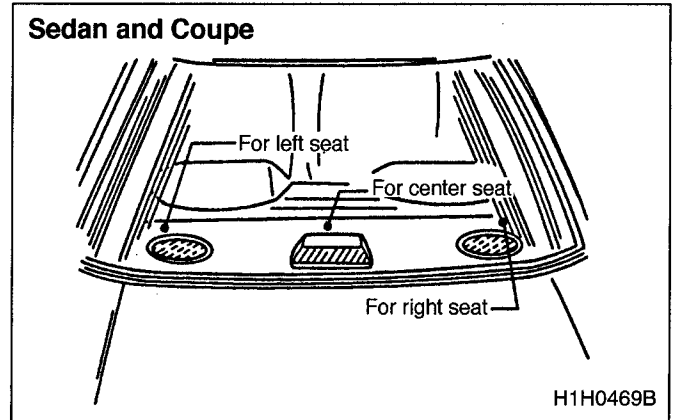
- Be sure to install the plate anchor set in the correct direction.
- Before tightening the plate anchor set, position the plate in the pawl of the cover. Do not allow the cover base to be caught between the plate anchor and spacer.
- Always use a genuine top strap anchor.

When top strap anchor is used for rear seat:

1) For Canada models, the anchor set is inside the glove box. Take it out and check that its components are assembled as shown in figure.



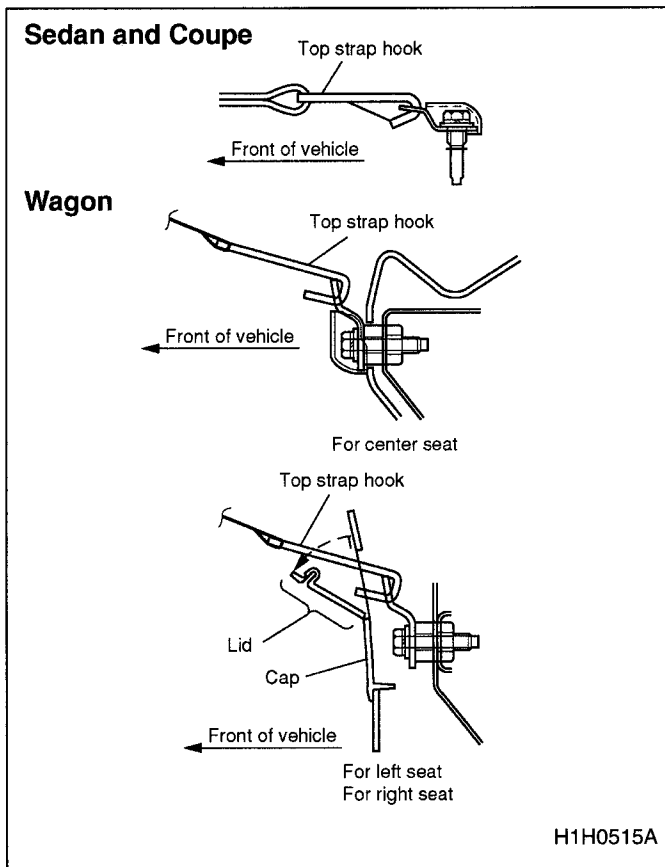
2) The anchor installation points are covered with caps. Remove the cap at the desired anchor installation points.



3) Install the anchor at the installation point. Tighten the bolt so that the anchor is completely secured.

4) Attach the cover to the anchor plate.

5) Attach the hook of the top strap to the anchor.



## P: FUSES

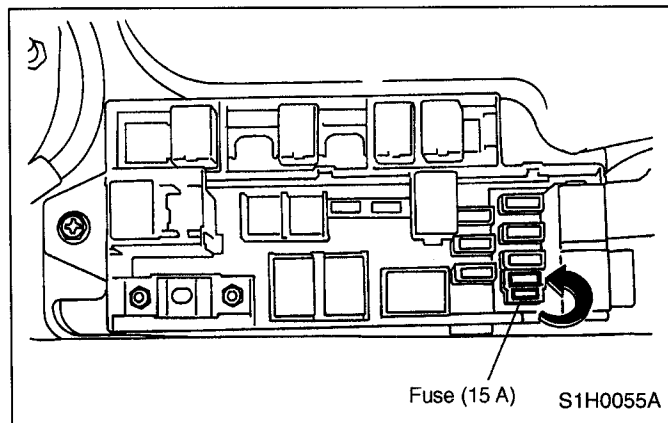
### CHECK POINTS

1. Fuse installation
2. Spare fuse

Fuse as shown in figure is disconnected to avoid discharging the battery.

Insert fuse (15A) in the main fuse box inside the engine compartment.

Use fuse indicated by arrow in figure.



## Q: LIGHTS AND SWITCHES

### CHECK POINTS

1. Visual inspection of lights (installation, damage, dirty lenses, water inside, etc.)
2. Operation of all lights and switches
3. Horn operation
4. Operation of heater and ventilator
5. Removing the clip for room light switch

## R: PREPARATION FOR UNDERSIDE INSPECTION

### CHECK POINT

1. Jacking up and lifting point

<Ref. to 1-3 [G700].☆1>

## S: TEST MODE CONNECTOR

### CHECK POINTS

1. Check engine light flashing
2. Test mode connector disconnection

### 1. CHECK THE MIL (CHECK ENGINE LIGHT) FLASHING

NOTE:

- When ignition switch is turned to ON (engine OFF) or to "START" with the test mode connector connected, the MIL (check engine light) blinks at a cycle of 3 Hz.

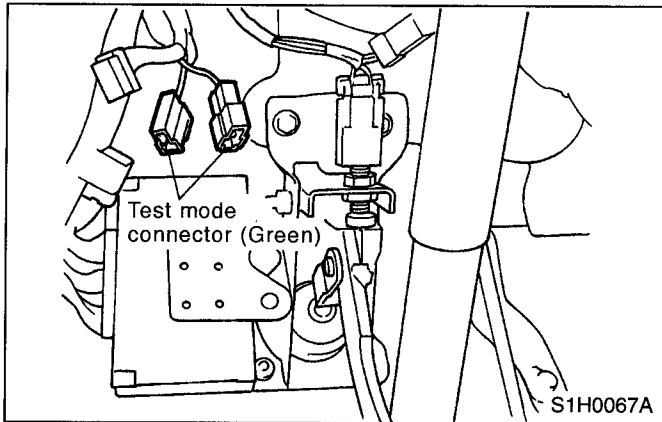
- If engine fails to turn over when the ignition switch is set to START, check the spark plugs.

<Ref. to 6-1 [W3B0].☆1>

### 2. CHECK TEST MODE CONNECTOR DISCONNECTION

NOTE:

Disconnect test mode connector. If the MIL (check engine light) illuminates with engine ON, this indicates that a trouble has occurred. Check diagnostics for CHECK ENGINE malfunction indicator lamp (MIL). <Ref. to 2-7 [T7A0].☆6>

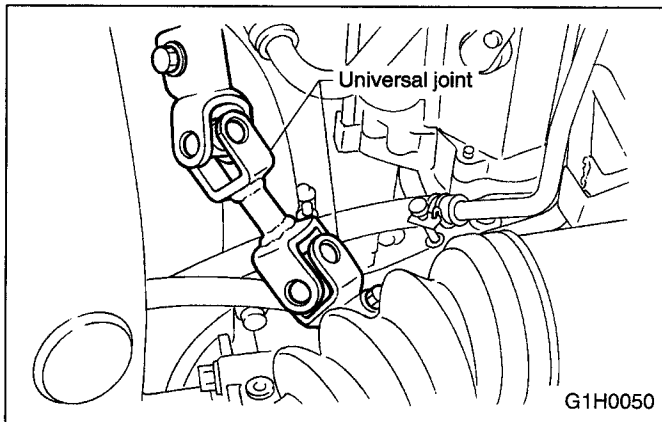


**T: INSTALLATION OF STEERING COMPONENTS**

**CHECK POINTS**

1. Installation of universal joints
2. Steering gear box for looseness, play, or backlash, and boots for damage
3. Tie-rod and tie-rod end for proper installation, or damage

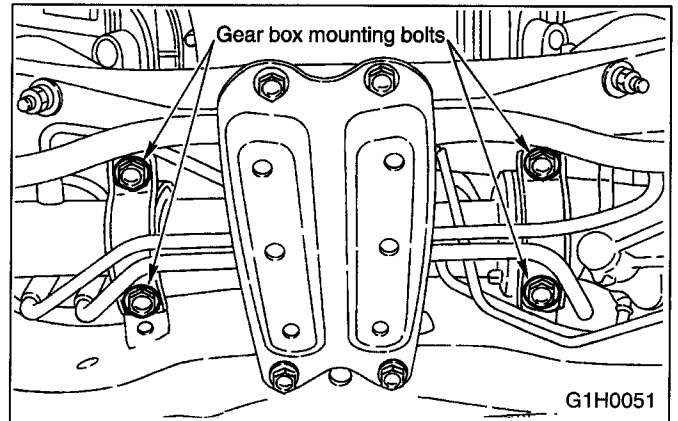
**1. CHECK THE UNIVERSAL JOINT FOR LOOSENESS**



**NOTE:**  
When checking, turn ignition switch to "ACC" position.

**Tightening torque:**  
 $24 \pm 3 \text{ N.m}$  ( $2.4 \pm 0.3 \text{ kg-m}$ ,  $17 \pm 2.2 \text{ ft-lb}$ )

**2. CHECK THE GEAR BOX MOUNTING BOLT FOR LOOSENESS**



**NOTE:**  
Carefully check the root portion of the boots, and the condition of the clips.

**Tightening torque:**  
 $59 \pm 12 \text{ N.m}$  ( $6 \pm 1.2 \text{ kg-m}$ ,  $43 \pm 9 \text{ ft-lb}$ )

**3. CHECK THE TIE-ROD END LOCK NUT FOR LOOSENESS**

**Tightening torque:**  
 $83 \pm 5 \text{ N.m}$  ( $8.5 \pm 0.5 \text{ kg-m}$ ,  $61 \pm 3.6 \text{ ft-lb}$ )

**U: EXHAUST PIPE AND MUFFLER**

**CHECK POINTS**

1. Installation of exhaust system
2. Exhaust gas leakage from parts or joints

Check the exhaust system's installation for looseness, damage and possible interference with other parts. <Ref. to 2-9 [C100].☆7>

**WARNING:**  
When the engine is running, and for a short time after it is stopped, the exhaust system remains very hot; use extreme care and don't get burnt during this evolution.



**V: FUEL SYSTEM FOR LEAKAGE****CHECK POINTS**

1. Installation of fuel hose and pipe. And condition of clamps
2. Fuel system for leakage

**1. CHECK THE INSTALLATION OF FUEL HOSE AND PIPE. AND CONDITION OF CLAMPS****WARNING:**

When checking the fuel system, use extreme care to prevent accidental fires.

- 1) Check the fuel hose's layout, and also search for interference with other parts, twists, or damage, check the condition of the clamps.
- 2) Check the fuel and air breather pipes visually or by feeling with your fingers from the underside. Retighten the clamps if necessary.

**NOTE:**

When retightening the clamps, do not tighten them excessively.

**2. CHECK THE FUEL SYSTEM FOR LEAKAGE**

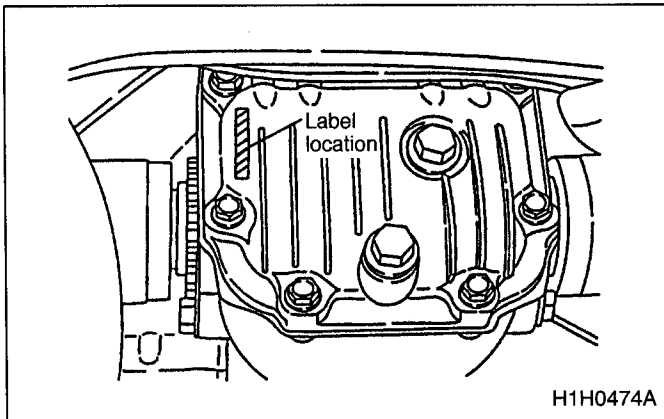
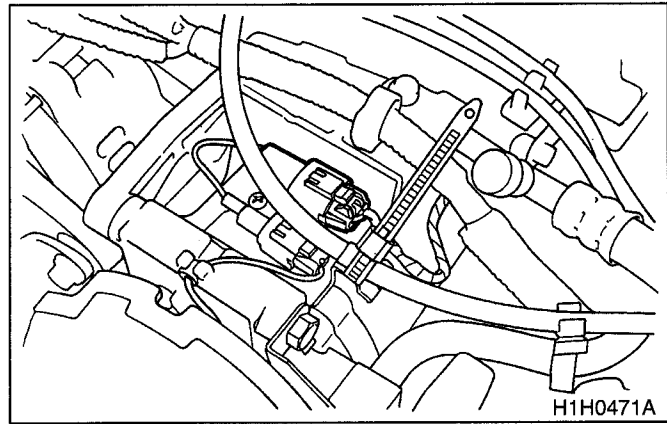
Without starting the engine, turn the ignition switch to the ON position, and operate the fuel pump to pressurize the fuel system. Then check the fuel system for leakage.

**W: PROTECTOR****CHECK POINT****1. Protector removal**

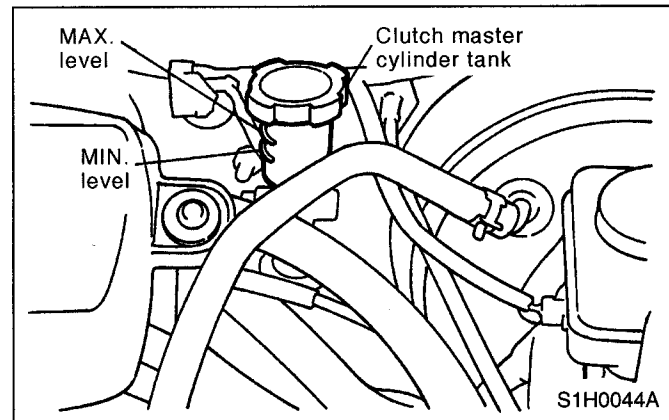
The following parts are covered to prevent splashing of wax. Remove protector.

**NOTE:**

Label of rear differential is covered by tape. Remove it.

**X: AIR CONDITIONING SYSTEM****CHECK POINT****A/C compressor connector connection****Y: CLUTCH FLUID LEVEL****CHECK POINT****1. Clutch fluid level**

Check the fluid level using the scale on the outside of the clutch master cylinder tank. If the level is below "MIN", add clutch fluid to bring it up to "MAX".

**Recommended clutch fluid:**

**FMVSS No. 116, fresh DOT 3 or DOT 4 brake fluid**

**CAUTION:**

- Avoid mixing different brands of brake fluid to prevent degradation of the fluid.
- Be careful not to allow dirt or dust to get into the reservoir tank.
- Use fresh DOT 3 or DOT 4 brake fluid when refilling fluid.

## 4. Post-road Test Inspection

### A: AUTOMATIC TRANSMISSION FLUID (ATF) LEVEL

#### CHECK POINT

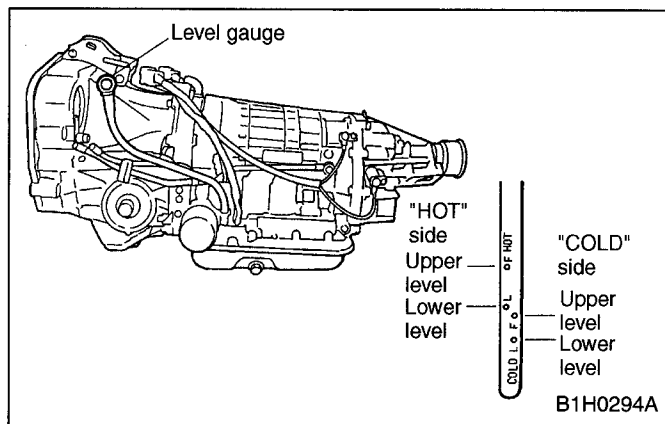
##### 1. Level of ATF

#### CAUTION:

Do not fill above the high mark level.

#### NOTE:

If the fluid level is at the lower mark or below on the "HOT" side, add the recommended ATF to bring the level to the high mark. ATF is added through the level gauge hole. When the fluid level has to be checked without time to warm up the AT, check to see that the fluid level is within the marks on the "COLD" side. If it is below the marks, add fluid.



The ATF should be maintained at the proper level as follows:

- 1) Drive the car several miles to bring the transmission to the normal operating temperature. 60 to 80°C (140 to 176°F) is normal.
- 2) Park the car on a level surface.
- 3) While idling the engine, move selector lever to all ranges. Then return to the P range.
- 4) Remove the level gauge and wipe it clean.
- 5) Reinsert the level gauge completely.
- 6) Remove it again and note its reading.

### B: POWER STEERING FLUID LEVEL

#### CHECK POINT

##### 1. Level of power steering fluid

The power steering fluid should be maintained at a proper level.

#### CAUTION:

The available power steering fluid is ATF DEXRON IIE or III.

Be sure to use the recommended fluid.

When power steering fluid is added, be careful not to allow any dust into the tank.

Check level as follows:

- 1) Drive the car several miles or kilometers to bring power steering system up to the normal operating temperature of about 60°C (140°F).
- 2) Park the car on a level surface and stop the engine.
- 3) Remove the level gauge and wipe it clean.
- 4) Reinstall the level gauge firmly.
- 5) Remove it again and read the level on the "HOT" side.

If the fluid level is at lower level or below it, add recommended power steering fluid up to the high level. When the fluid level is to be checked without warming up the power steering system [at approximately 21°C (70°F)], read the fluid level at the "COLD" position of the level gauge.

### C: WHEEL ALIGNMENT

#### CHECK POINTS

1. Toe of front and rear wheels
2. Camber of front wheels

Before check the toe and camber, make sure that the spare tire, floor mats and service tool are in place. No other weight should be present.

**D: UNDERSIDE****CHECK POINTS**

- 1. Leakage of engine oil, transmission gear oil, differential gear oil, etc.**
- 2. Leakage of coolant**
- 3. Leakage of brake fluid**
- 4. Loose suspension mountings or steering mounting**

Raise the vehicle body and perform these checks from the underside.

- 1) Visually check for any signs of leakage of engine oil, transmission gear oil, differential gear oil, etc.
- 2) Visually check for any sign of coolant leakage.
- 3) Visually check for any sign of brake fluid leakage.
- 4) Check the suspension mounting and steering mounting for any loose or unconnected parts.

**E: WATER LEAKAGE****CHECK POINT****1. Water leakage by pouring water**

- 1) Before performing the water leakage test, remove anything that may obstruct the operation or which must be kept dry.
- 2) Close all of the windows completely, and then close all of the doors tightly. Close the hood and trunk lid before starting the test.
- 3) Connect a hose to a tap, and spray water on the vehicle. The rate of water discharge must be approx. 20 to 25 liters (5.3 to 6.6 US gal, 4.4 to 5.5 Imp gal) per minute. When spraying water on areas adjacent to the floor and wheel house, increase the pressure.

When directing water on areas other than the floor portion and wheel house, decrease the pressure. But the force of water must be made strong occasionally by pressing the end of the hose.

**NOTE:**

Be sure to keep the hose at least 10 cm (3.9 in) from the vehicle.

- 4) Check the following areas:
  - (1) Front window and body framework mating portion
  - (2) Door mating portions
  - (3) Glass mating portions
  - (4) Rear quarter window mating portions
  - (5) Rear window and body framework mating portion
  - (6) Trunk lid mating portion
  - (7) Around roof drips

**NOTE:**

If any dampness in the compartments is discovered after the water has been applied, carefully check all areas that may have possibly contributed to the leak.

**F: EXTERNAL APPEARANCE AND EQUIPMENT****CHECK POINTS**

- 1. Paint**
- 2. Scratches or damage to glass**
- 3. Rust formation**
- 4. Contamination of interior parts**
- 5. Installation of equipment**

- 1) Check the paint after removing the paint protective agent and washing the vehicle.

**NOTE:**

Before removing the protective agent, be sure to wash the vehicle, because the painted surface may be scratched if the surface is rubbed with sand or other hard particles which may be attached to the protective agent.

- 2) Check the whole vehicle body for stains, flaking, damage caused by transportation, rust, dirt, cracks, or blistering.

**NOTE:**

- It is better to determine an inspection pattern in order to avoid missing an area, since the total area is not small.
- It is desirable not to make corrections to the body paint unless absolutely needed. However, if any corrections are required to remove scratches or rust, the area to be corrected must be limited as much as possible. Re-painting and spray painting must be avoided whenever possible.

- 3) Carefully check each window glass for scratches. Slight damage may be removed by polishing with cerium oxide. (Half-fill a cup with cerium oxide, and add warm water to it. Then agitate the content until it turns to wax. Apply this wax to a soft cloth, and polish the glass.)
- 4) Check each portion of the vehicle body and underside components for the formation of rust. If rust is discovered, remove it with #80 — #180 emery paper, and treat the surface with rust preventive. After this treatment is completed, flush the portion thoroughly, and prepare the surface for repair painting.
- 5) Check each portion of the body and all of the chrome parts for deformation or distortion. Also check each lamp lens for cracks.
- 6) Check the following interior parts for contamination.
  - (1) Instrument panel and meter glass
  - (2) Glove box
  - (3) Sun visor
  - (4) Room mirror
  - (5) Assist rail
  - (6) Roof trim
  - (7) Door trim
  - (8) Inner trim
  - (9) Front and rear seats
  - (10) Luggage shelf
  - (11) Floor mat
  - (12) Others

## NOTE:

- If the meter glass is contaminated, wipe it gently with a clean soft cloth that has been dampened with water.
- Do not rub the meter glass hard; otherwise, the transparent resin plate on it may become clouded due to the formation of scratches.

7) Check the interior and exterior equipment to make sure that they are installed securely. Also make sure that the equipment conforms to the vehicle's specifications.

Make sure that the spare tire, jack, spare key, tools, owner's manual, warranty & service booklet, etc. are all present.

# 1. Schedule of Inspection and Maintenance Services

## A: FEDERAL SPEC. VEHICLES

Continue periodic maintenance beyond 192,000 km (120,000 miles) or 120 months by returning to the first column of the maintenance schedule and adding 192,000 km (120,000 miles) or 120 months to the column headings.

MAINTENANCE ITEM	MAINTENANCE INTERVAL (Number of months or km (miles), whichever occurs first)																		REMARKS
	Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
	× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	
	× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
1 Drive belt(s) [Except camshaft]						I				I					I			R	
2 Camshaft drive belt						I				I					I			R	
3 Engine oil	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	See NOTE 1)
4 Engine oil filter	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	See NOTE 1)
5 Replace engine coolant and inspect cooling system, hoses and connections						P				P					P			P	
6 Replace fuel filter and inspect fuel system, hoses and connections						(P)				P					(P)			P	See NOTE 2), 6) & 7)
7 Air cleaner element						R				R					R			R	See NOTE 8)
8 Spark plugs						R				R					R			R	
9 Transmission/Differential (Front & Rear) lubricants (Gear oil)						I				I					I			I	See NOTE 3)
10 Automatic transmission fluid						I				I					I			I	See NOTE 4)
11 Brake fluid						R				R					R			R	See NOTE 5)
12 Disc brake pads and discs, Front and rear axle boots and axle shaft joint portions				I		I		I		I		I		I		I		I	See NOTE 6)
13 Brake linings and drums						I				I					I			I	See NOTE 6)
14 Inspect brake line and check operation of parking and service brake system				P		P		P		P		P		P		P		P	See NOTE 6)
15 Clutch and hill-holder system				I		I		I		I		I		I		I		I	
16 Steering and suspension				I		I		I		I		I		I		I		I	See NOTE 6)
17 Front and rear wheel bearing lubricant										(I)								(I)	
18 Supplemental restraint system	Inspect every 10 years																		
19 Valve clearance																		I	

R: Replace  
 I: Inspect, correct or replace if necessary.  
 P: Perform  
 (I) or (P): Recommended service for safe vehicle operation

**NOTE:**

- 1) When the vehicle is used under severe driving conditions such as those mentioned below\*, the engine oil and filter should be changed every 6,000 km (3,750 miles) or 3.5 months.**
- 2) When the vehicle is used in extremely cold or hot weather areas, contamination of the filter may occur and filter replacement should be performed more often.**
- 3) When the vehicle is frequently operated under severe driving conditions, replacement should be performed every 24,000 km (15,000 miles).**
- 4) When the vehicle is frequently operated under severe driving conditions, such as mountain driving replacement should be performed every 24,000 km (15,000 miles).**
- 5) When the vehicle is used in high humidity areas or in mountainous areas, change the brake fluid every 24,000 km (15,000 miles) or 15 months, whichever occurs first.**
- 6) When the vehicle is used under severe driving conditions such as those mentioned below\*, inspection should be performed every 12,000 km (7,500 miles) or 7.5 months, whichever occurs first.**
- 7) This inspection is not required to maintain emission warranty eligibility and it does not affect the manufacturer's obligations under EPA's in-use compliance program.**
- 8) When the vehicle is used in extremely dusty conditions, the air cleaner element should be replaced more often.**

- \* Examples of severe driving conditions:
  - Repeated short distance driving. (Items 3, 12 and 13 only)
  - Driving on rough and/or muddy roads. (Items 12, 13 and 16 only)
  - Driving in dusty conditions.
  - Driving in extremely cold weather. (Items 3 and 16 only)
  - Driving in areas where roads salts or other corrosive materials are used. (Items 6, 12, 13, 14 and 16 only)
  - Living in coastal areas. (Items 6, 12, 13, 14 and 16 only)
  - Towing a trailer. (Items 3, 4, 9, 10, 12 and 13 only)

**B: CALIFORNIA SPEC. VEHICLES**

Continue periodic maintenance beyond 192,000 km (120,000 miles) or 120 months by returning to the first column of the maintenance schedule and adding 192,000 km (120,000 miles) or 120 months to the column headings.

MAINTENANCE ITEM	MAINTENANCE INTERVAL (Number of months or km (miles), whichever occurs first)																		REMARKS
	Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
	× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	
	× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
1	Drive belt(s) [Except camshaft]					I				I				I		R			
2	Camshaft drive belt					I				I				I		R			
3	Engine oil	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
4	Engine oil filter	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
5	Replace engine coolant and inspect cooling system, hoses and connections					P				P				P					P
6	Replace fuel filter and inspect fuel system, hoses and connections					(P)				(P)				(P)					P
7	Air cleaner element					R				R				R					R
8	Spark plugs					R				R				R					R
9	Transmission/Differential (Front & Rear) lubricants (Gear oil)					I				I				I					I
10	Automatic transmission fluid					I				I				I					I
11	Brake fluid					R				R				R					R
12	Disc brake pads and discs, Front and rear axle boots and axle shaft joint portions				I		I		I		I		I		I		I		I
13	Brake linings and drums					I				I				I					I
14	Inspect brake line and check operation of parking and service brake system			P		P		P		P		P		P		P		P	P
15	Clutch and hill-holder system			I		I		I		I		I		I		I		I	I
16	Steering and suspension			I		I		I		I		I		I		I		I	I
17	Front and rear wheel bearing lubricant									(I)									(I)
18	Supplemental restraint system	Inspect every 10 years																	
19	Valve clearance																		I

R: Replace  
 I: Inspect, correct or replace if necessary.  
 P: Perform  
 (I) or (P): Recommended service for safe vehicle operation

**NOTE:**

- 1) When the vehicle is used under severe driving conditions such as those mentioned below\*, the engine oil and filter should be changed every 6,000 km (3,750 miles) or 3.5 months.**
- 2) When the vehicle is used in extremely cold or hot weather areas, contamination of the filter may occur and filter replacement should be performed more often.**
- 3) When the vehicle is frequently operated under severe driving conditions, replacement should be performed every 24,000 km (15,000 miles).**
- 4) When the vehicle is frequently operated under severe driving conditions, such as mountain driving replacement should be performed every 24,000 km (15,000 miles).**
- 5) When the vehicle is used in high humidity areas or in mountainous areas, change the brake fluid every 24,000 km (15,000 miles) or 15 months, whichever occurs first.**
- 6) When the vehicle is used under severe driving conditions such as those mentioned below\*, inspection should be performed every 12,000 km (7,500 miles) or 7.5 months, whichever occurs first.**
- 7) This inspection is not required to maintain emission warranty eligibility and it does not affect the manufacturer's obligations under EPA's in-use compliance program.**
- 8) When the vehicle is used in extremely dusty conditions, the air cleaner element should be replaced more often.**

- \* Examples of severe driving conditions:

- Repeated short distance driving. (Items 3, 12 and 13 only)
- Driving on rough and/or muddy roads. (Items 12, 13 and 16 only)
- Driving in dusty conditions.
- Driving in extremely cold weather. (Items 3 and 16 only)
- Driving in areas where roads salts or other corrosive materials are used. (Items 6, 12, 13, 14 and 16 only)
- Living in coastal areas. (Items 6, 12, 13, 14 and 16 only)
- Towing a trailer. (Items 3, 4, 9, 10, 12 and 13 only)



## 2. Drive Belt(s) [Except Camshaft] (Inspect drive belt tension)

MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California					I				I				I		R		
All states except California					I				I				I		R		

### A: INSPECTION

- 1) Replace belts, if cracks, fraying or wear is found.
- 2) Check drive belt tension and adjust it if necessary by changing generator installing position and/or idler pulley installing position.

#### Belt tension

(A)

**replaced: 7 — 9 mm (0.276 — 0.354 in)**

**reused: 9 — 11 mm (0.354 — 0.433 in)**

(B)\*

**replaced: 7.5 — 8.5 mm**

**(0.295 — 0.335 in)**

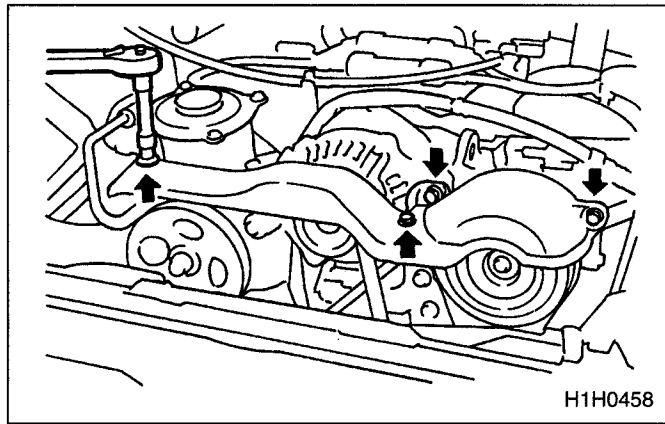
**reused: 9.0 — 10.0 mm (0.354 — 0.394 in)**

\*: There is no belt (B) on models without an air conditioning.

### B: REPLACEMENT

#### 1. V-BELT COVER

- 1) Remove V-belt cover.



#### 2. FRONT SIDE BELT (Driving Power Steering Oil Pump and Generator)

##### CAUTION:

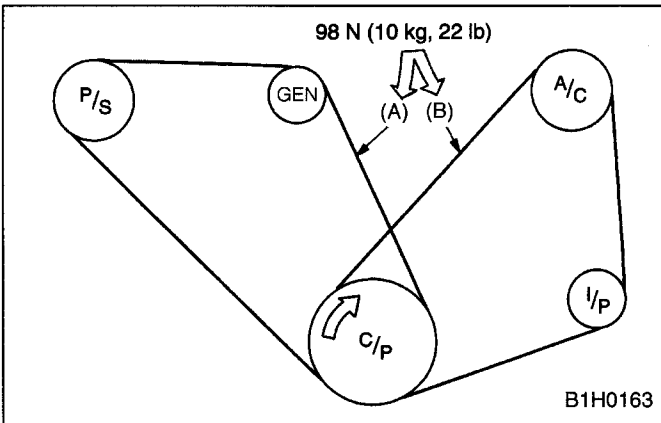
**Wipe off any oil or water on the belt and pulley.**

- 1) Loosen the lock bolt on the slider bolt.
- 2) Loosen the slider bolt and through bolt.
- 3) Remove the front side belt.
- 4) Install a new belt, and tighten the slider bolt so as to obtain the specified belt tension.
- 5) Tighten the lock bolt and through bolt.
- 6) Tighten the slider bolt.

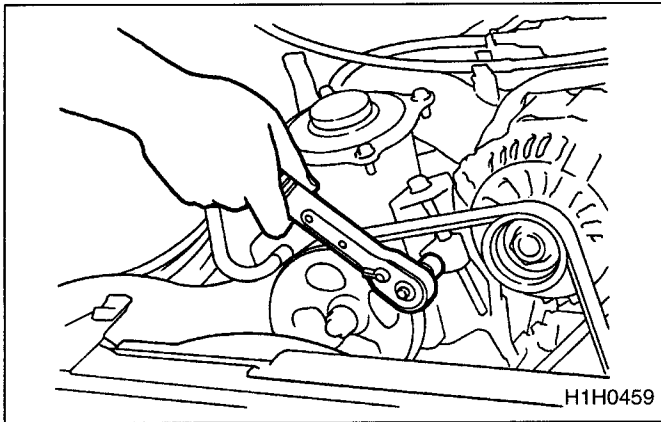
##### Tightening torque:

**Lock bolt, through bolt: 25 ± 2 N.m  
(2.5 ± 0.2 kg-m, 18 ± 1.5 ft-lb)**

**Slider bolt: 8 ± 2 N.m  
(0.8 ± 0.2 kg-m, 5.5 ± 1.5 ft-lb)**



- C/P Crankshaft pulley
- GEN Generator
- P/S Power steering oil pump pulley
- A/C Air conditioning compressor pulley
- I/P Idler pulley



H1H0459

**3. REAR SIDE BELT (Driving Air Conditioning)**

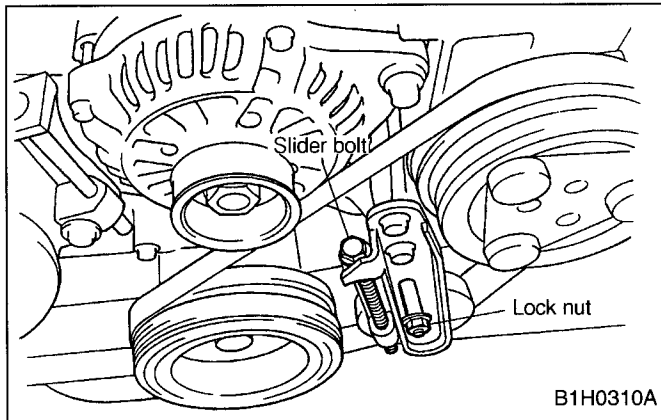
**CAUTION:**

- Wipe off any oil or water on the belt and pulley.
- Before removing the rear side belt, remove the front side belt.

- 1) Loosen the lock nut on the slider bolt.
- 2) Loosen the slider bolt.
- 3) Remove the rear side belt.
- 4) Install a new belt, and tighten the slider bolt so as to obtain the specified belt tension shown on the previous page.
- 5) Tighten the lock nut.
- 6) Tighten the slider bolt.

**Tightening torque (Lock nut):**

**$20 \pm 3 \text{ N.m}$  ( $2 \pm 0.3 \text{ kg-m}$ ,  $14 \pm 2.2 \text{ ft-lb}$ )**



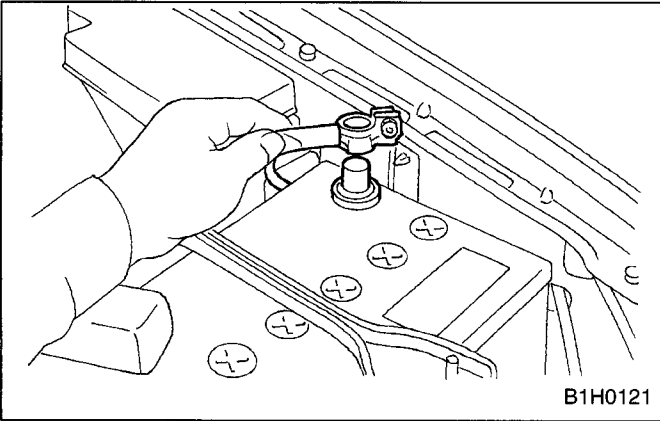
B1H0310A

### 3. Camshaft Drive Belt (Timing Belt)

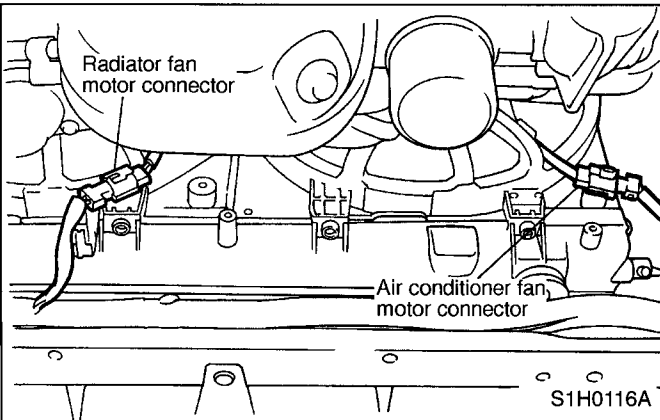
	MAINTENANCE INTERVAL																
	[Number of months or km (miles), whichever occurs first]																
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California					I				I				I		R		
All states except California and Canada					I				I				I		R		

#### A: REPLACEMENT

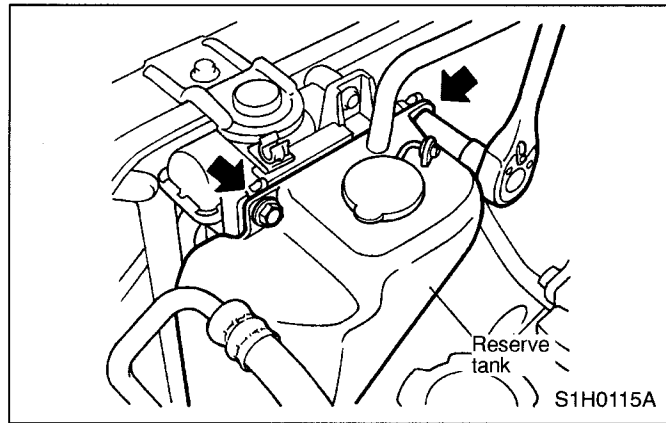
1) Disconnect ground cable (-) from battery.



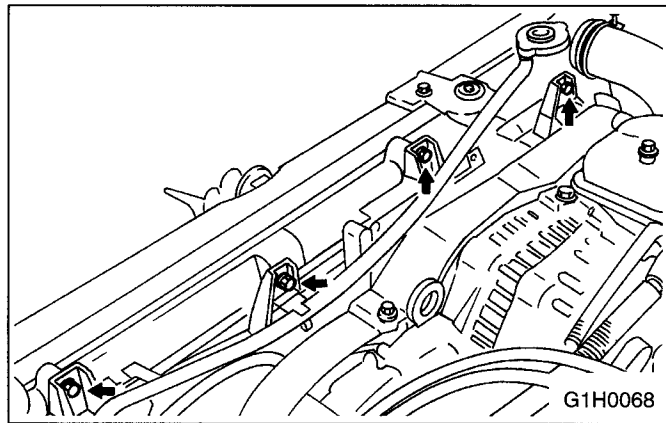
2) Disconnect radiator main fan motor connector and sub fan motor connector.



3) Remove reservoir tank.



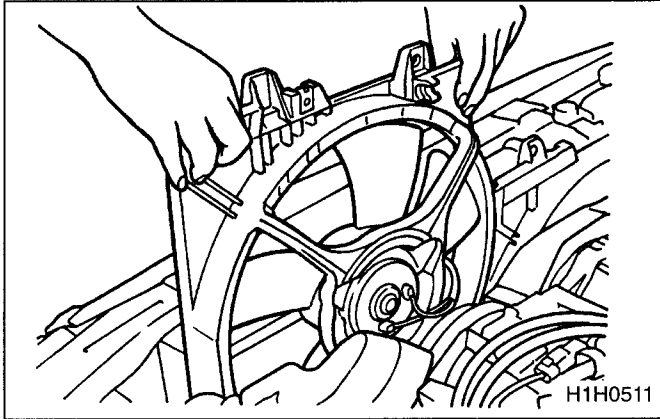
4) Remove four bolts holding shroud to radiator.



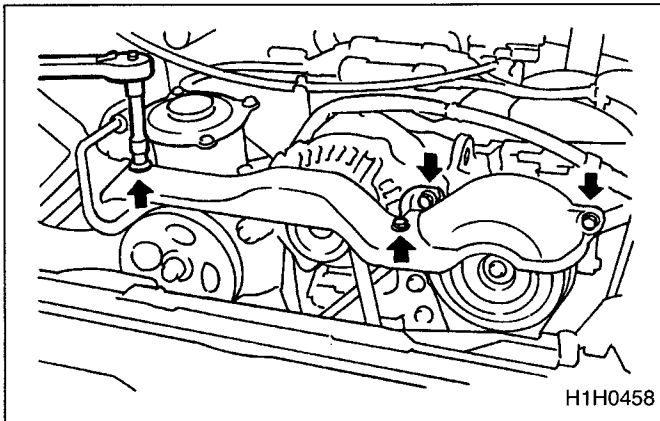
5) Remove radiator main fan and sub fan motor assembly.

**CAUTION:**

**Remove radiator sub fan motor assembly in the same step described in the removal of radiator main fan motor assembly.**



6) Remove V-belt cover.

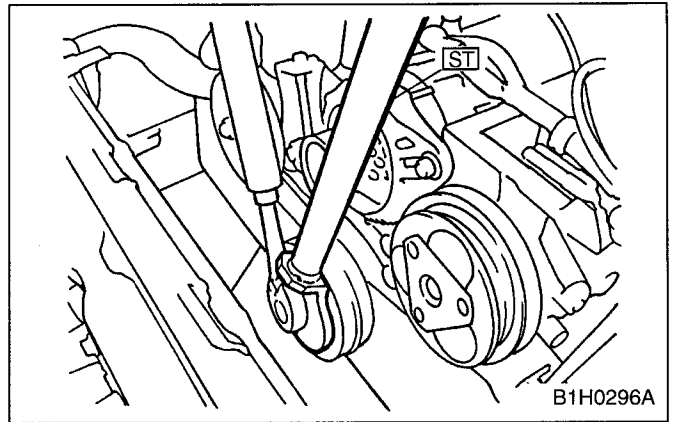


7) Remove V-belts. <Ref. to 1-5 [G2B1].☆7>

8) Remove pulley bolt. To lock crankshaft use ST.

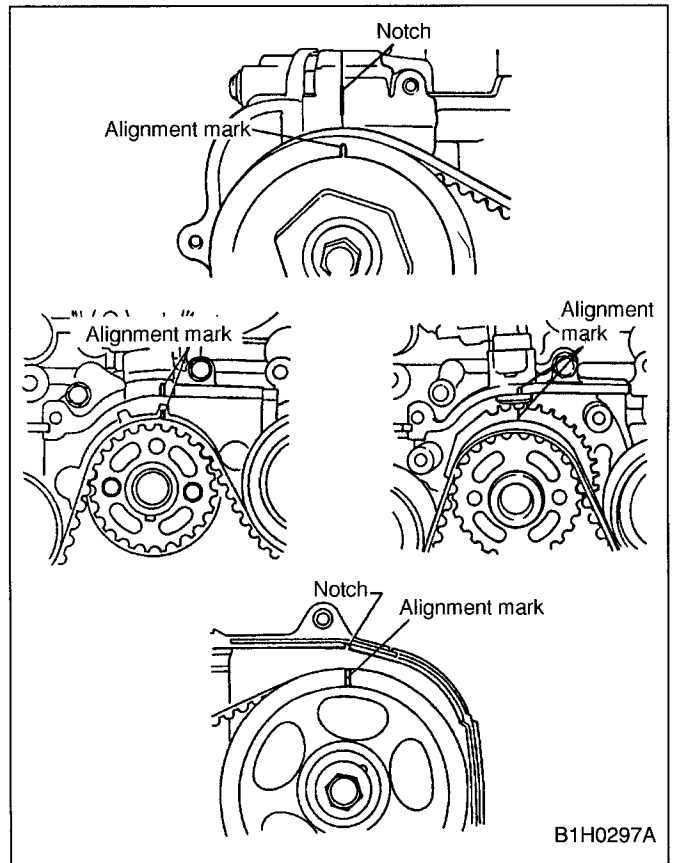
2200 cc engine:  
ST 499977300 CRANKSHAFT PULLEY WRENCH

2500 cc engine:  
ST 499977100 CRANKSHAFT PULLEY WRENCH

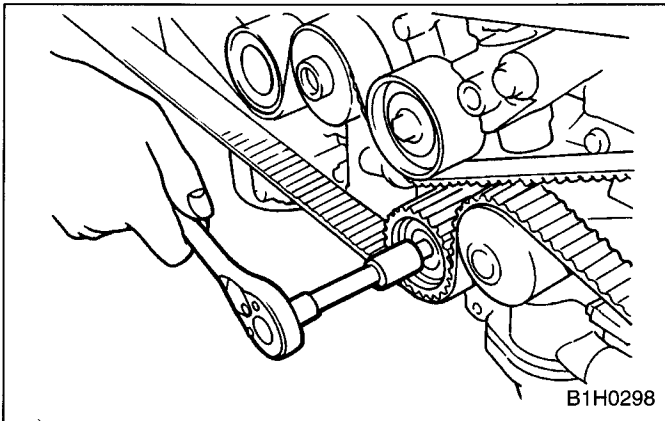


9) Remove crankshaft pulley.  
10) Remove left side belt cover.  
11) Remove front belt cover.  
12) Turn crankshaft and align alignment marks on crankshaft, and left and right camshaft sprockets with notches of belt cover and cylinder block.

ST 499987500 CRANKSHAFT SOCKET

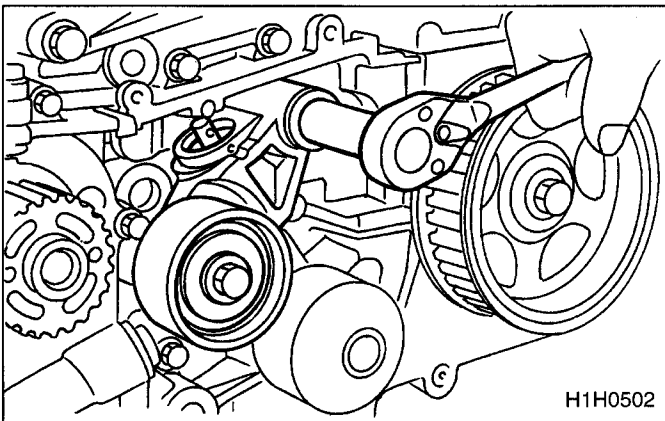


13) Remove belt idler No. 2.



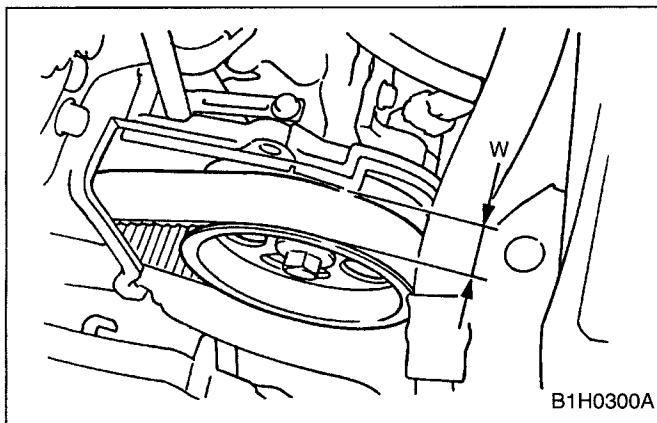
14) Remove timing belt.

15) Remove automatic belt tension adjuster assembly.



### C: INSPECTION

- 1) Remove reservoir tank.
- 2) Remove left timing belt covers.
- 3) While cranking engine at least four rotations, check timing belt back surface for cracks or damage. Replace faulty timing belt as needed.
- 4) Measure timing belt width W. If it is less than 27 mm (1.06 in), check idlers, tensioner, water pump pulley and cam sprocket to determine idler alignment (squareness). Replace worn timing belt.



- 5) Install left timing belt covers.

### B: INSTALLATION

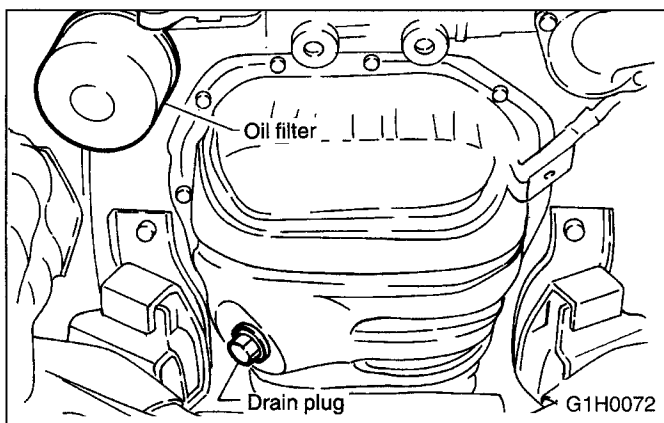
To install, reverse order of removal procedures.  
<Ref. to 2-3 [W1C3].☆7>

## 4. Engine Oil

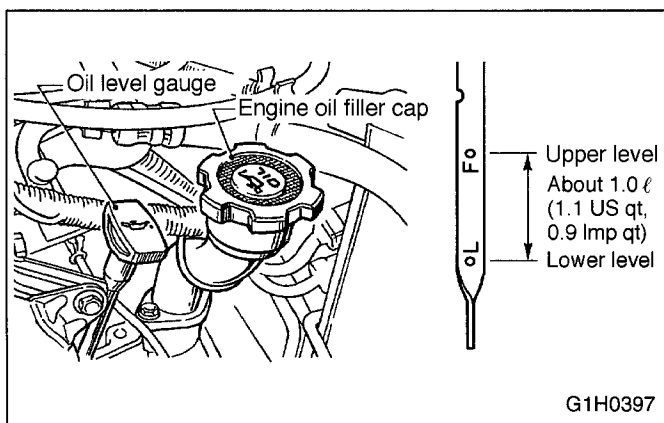
MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
All states except California	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

### A: REPLACEMENT

1) Drain engine oil by loosening engine oil drain plug.



2) Open engine oil filler cap for quick draining of the engine oil.



3) Tighten engine oil drain plug after draining engine oil.

#### Tightening torque:

**44 <sup>+4.8</sup>/<sub>0</sub> N.m (4.5 <sup>+0.5</sup>/<sub>0</sub> kg-m, 33 <sup>+3.6</sup>/<sub>0</sub> ft-lb)**

#### NOTE:

Replace drain plug gasket with a new one.

4) Fill engine oil through filler pipe up to upper point on level gauge. Make sure that vehicle is placed level when checking oil level. Use engine oil of proper quality and viscosity, selected in accordance with the table in figure.

#### Recommended oil

**API classification: SJ or SH with the words "Energy Conserving or Energy Conserving II", or New API certification mark is displayed on the container**

#### Engine oil capacity:

**Upper level**

**4.0 ℓ (4.2 US qt, 3.5 Imp qt)**

**Lower level**

**3.0 ℓ (3.2 US qt, 2.6 Imp qt)**

SAE Viscosity No. and Applicable Temperature							
(°C)	-30	-20	-15	0	15	30	40
(°F)	-22	-4	5	32	59	86	104
<p>10 W-30, 10W-40</p> <p>5W-30 PREFERRED</p>							
B1H0118							

The proper viscosity helps car get good cold and hot starting by reducing viscous friction and thus increasing cranking speed.

## 4. Engine Oil

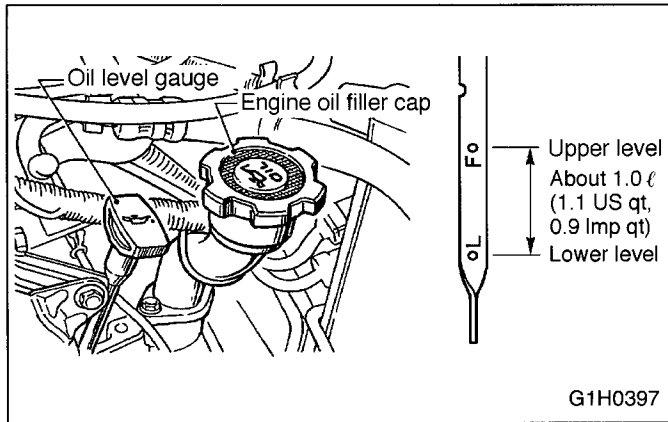
**CAUTION:**

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.

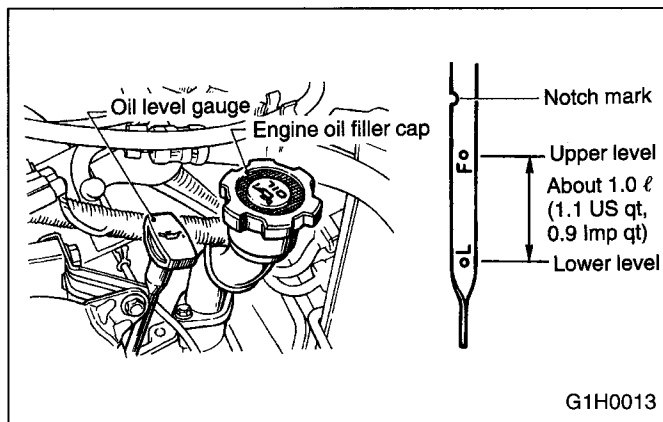
**NOTE:**

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

- 5) Close engine oil filler cap.
  - 6) Start engine and warm it up for a time.
  - 7) After engine stops, recheck the oil level.
- If necessary, add engine oil up to upper level on level gauge.

**B: INSPECTION**

- 1) Park vehicle on a level surface.
- 2) Remove oil level gauge and wipe it clean.
- 3) Reinsert the level gauge all the way. Be sure that the level gauge is correctly inserted and in the proper orientation.
- 4) Remove it again and note the reading. If the engine oil level is below the "L" line, add oil to bring the level up to the "F" line.
- 5) After turning off the engine, wait a few minutes for the oil to drain back into the oil pan before checking the level.
- 6) Just after driving or while the engine is warm, engine oil level may show in the range between the "F" line and the notch mark. This is caused by thermal expansion of the engine oil.
- 7) To prevent overfilling the engine oil, do not add oil above the "F" line when the engine is cold.



## 6. Replace Engine Coolant and Inspect Cooling and Heating System, Hoses and Connections

MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California					P				P				P				P
All states except California					P				P				P				P

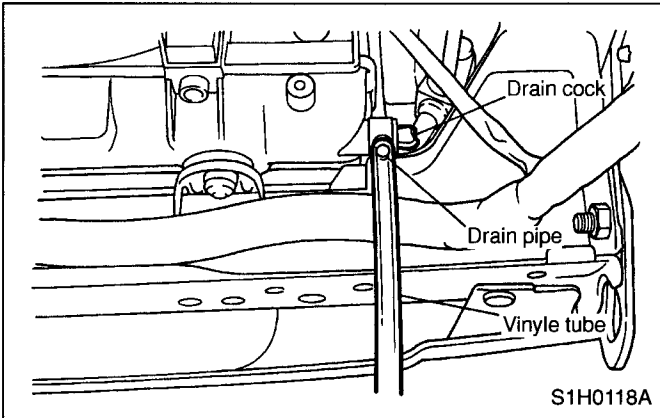
### A: REPLACEMENT

#### 1. REPLACEMENT OF COOLANT

##### WARNING:

The radiator is of the pressurized type. Do not attempt to open the radiator cap immediately after the engine has been stopped.

- 1) Lift up the vehicle.
- 2) Fit vinyl tube to drain pipe.

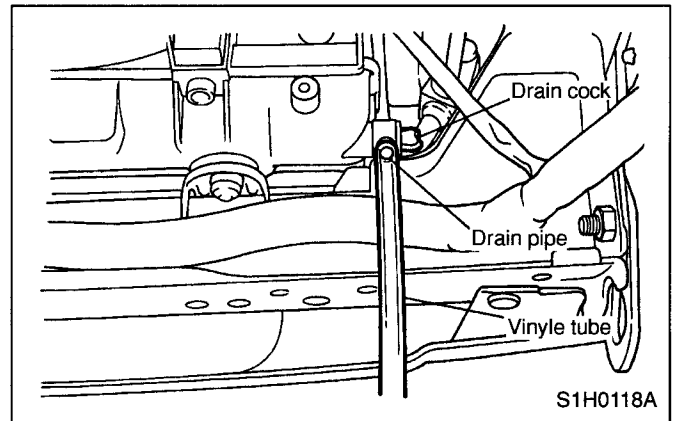


- 3) Place a container under vinyl tube.
- 4) Loosen drain cock to drain engine coolant into container.
- 5) For quick draining, open radiator cap.

##### CAUTION:

Be careful not to spill coolant on the floor.

- 6) Drain coolant from reservoir tank.
- 7) Tighten radiator drain cock securely after draining coolant. (Drain tube may face downward.)



- 8) Fill engine coolant into radiator up to filler neck position.
- 9) Fill engine coolant into reservoir tank up to "FULL" level.

**Coolant capacity (fill up to "FULL" level)**  
**Approx. 6.2 ℓ (6.6 US qt, 5.5 Imp qt)**

##### CAUTION:

The SUBARU Genuine Coolant containing anti-freeze and anti-rust agents is especially made for SUBARU engine, which has an aluminum crankcase. Always use SUBARU Genuine Coolant, since other coolant may cause corrosion.

- 10) Securely install radiator cap and reservoir tank cap.
- 11) Run engine for more than five minutes at 2,000 to 3,000 rpm. (Run engine until radiator becomes hot in order to purge air trapped in cooling system.)
- 12) Stop engine and wait until coolant temperature lowers. Then open radiator cap to check



coolant level and add coolant up to radiator filler neck. Next, add coolant into reservoir tank up to "FULL" level.

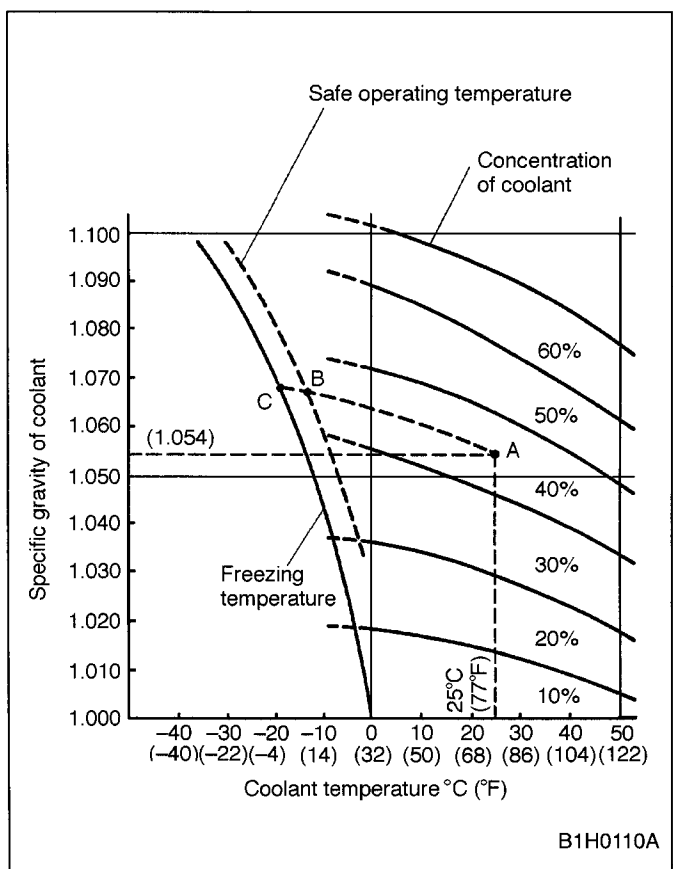
13) Securely install radiator and reservoir tank caps.

**2. RELATIONSHIP OF SUBARU COOLANT CONCENTRATION AND FREEZING TEMPERATURE**

The concentration and safe operating temperature of the SUBARU coolant is shown in the diagram. Measuring the temperature and specific gravity of the coolant will provide this information.

[Example]

If the coolant temperature is 25°C (77°F) and its specific gravity is 1.054, the concentration is 35% (point A), the safe operating temperature is -14°C (7°F) (point B), and the freezing temperature is -20°C (-4°F) (point C).



B1H0110A

**3. PROCEDURE TO ADJUST THE CONCENTRATION OF THE COOLANT**

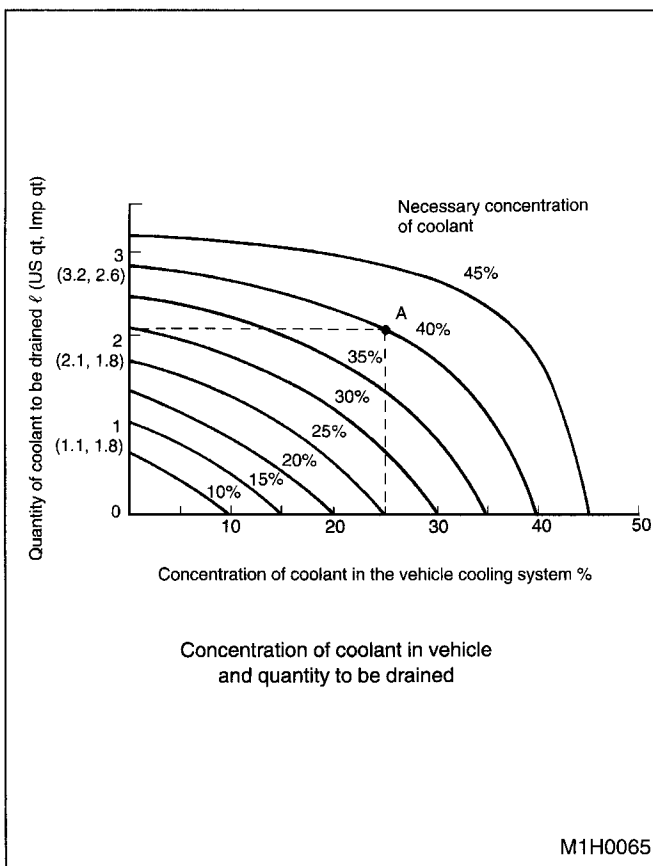
To adjust the concentration of the coolant according to temperature, find the proper fluid concentration in the above diagram and replace the necessary amount of coolant with an undiluted solution of SUBARU genuine coolant (concentration 50).

The amount of coolant that should be replaced can be determined using the diagram.

[Example]

Assume that the coolant concentration must be increased from 30% to 40%. Find point A, where the 30% line of coolant concentration intersects with the 40% curve of the necessary coolant concentration, and read the scale on the vertical axis of the graph at height A. The quantity of coolant to be drained is 3.0 liters (3.2 US qt, 2.6 Imp qt). Drain 3.0 liters (3.2 US qt, 2.6 Imp qt) of coolant from the cooling system and add 3.0 liters (3.2 US qt, 2.6 Imp qt) of the undiluted solution of SUBARU coolant.

If a coolant concentration of 50% is needed, drain all the coolant and refill with the undiluted solution only.



M1H0065

**B: INSPECTION**

1) Check radiator for leakage, filling it with coolant and attach radiator cap tester to the filler neck. Then apply a pressure of 157 kPa (1.6 kg/cm<sup>2</sup>, 23 psi) and check the following points:

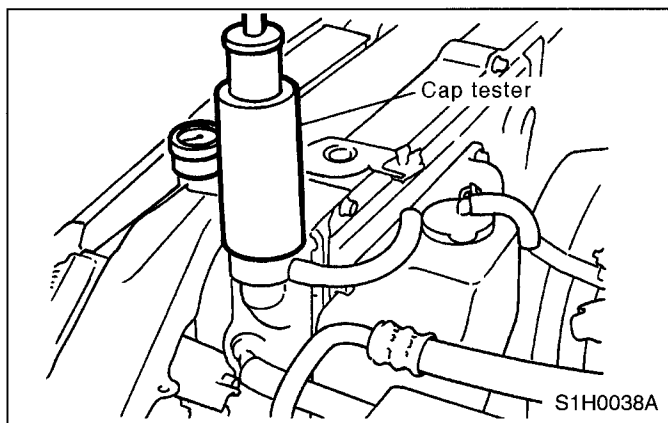
- Each portion of radiator for leakage
- Hose joints and other connections for leakage

**CAUTION:**

**When attaching or detaching tester and when operating tester, use special care not to deform radiator filler neck.**

**NOTE:**

- When performing this check, be sure to keep the engine stationary and fill radiator with coolant.
- Wipe off check points before applying pressure.
- Use care not to spill coolant when detaching tester from radiator.



2) Check the radiator cap valve open pressure using radiator cap tester.

**CAUTION:**

**Rust or dirt on cap may prevent valve from functioning normally: be sure to clean cap before testing.**

- Raise the pressure until the needle of gauge stops and see if the pressure can be retained for five to six seconds. The radiator cap is normal if a pressure above the service limit value has been maintained for this period.

**Radiator cap valve open pressure**

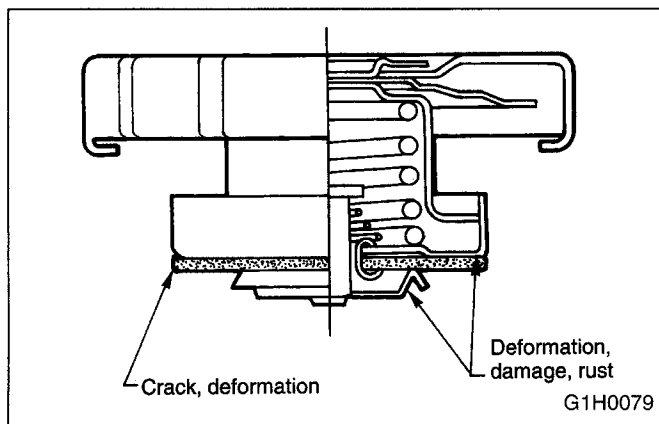
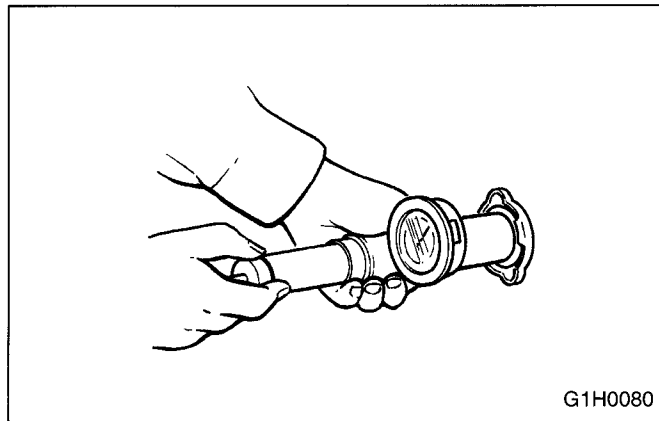
**Standard value:**

**93 — 123 kPa**

**(0.95 — 1.25 kg/cm<sup>2</sup>, 13.5 — 17.8 psi)**

**Service limit:**

**83 kPa (0.85 kg/cm<sup>2</sup>, 12.0 psi)**



3) If the coolant temperature exceeds 76.0 to 80.0°C (169 to 176°F) while radiator is not so hot, check thermostat. If thermostat does not open at 76.0 to 80.0°C (169 to 176°F), replace it with a new one.

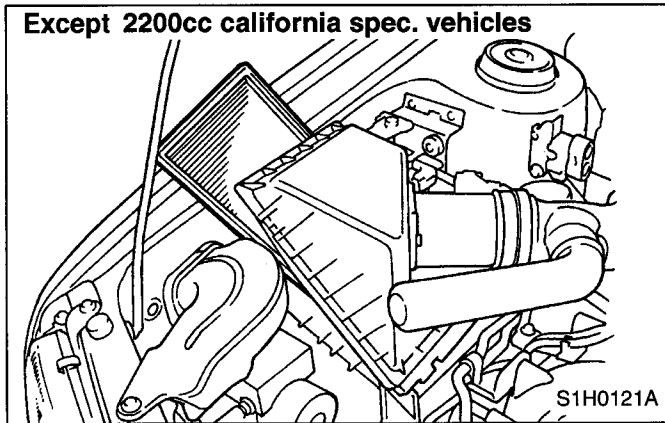
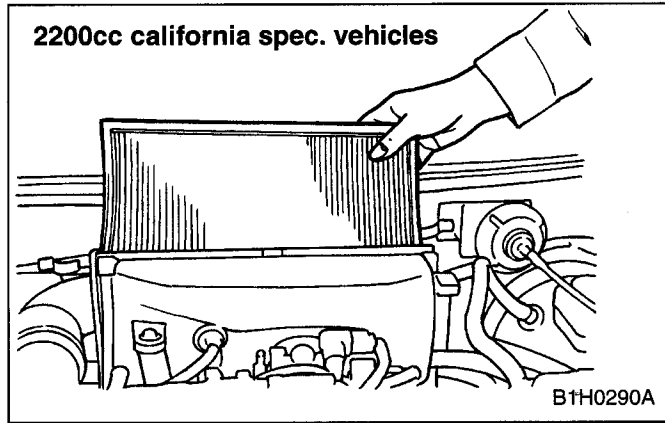
4) If electric fan does not operate when coolant temperature exceeds 90 to 94°C (194 to 201°F), check thermoswitch or fan motor.

**8. Air Cleaner**

MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California					R				R				R				R
All states except California					R				R				R				R

**A: REPLACEMENT**

Do not attempt to clean the air cleaner element. The filter paper of the element is wetted with a special non-inflammable slow-evaporating viscous liquid. It is resistant to cold weather and has a long service life. Dirt adhering to this filter paper forms porous laminations with the viscous liquid, which function as a filtration layer to reduce dust penetration into the filter paper. If this filter paper is cleaned, the filtration layer thus formed will be lost along with the viscous liquid.

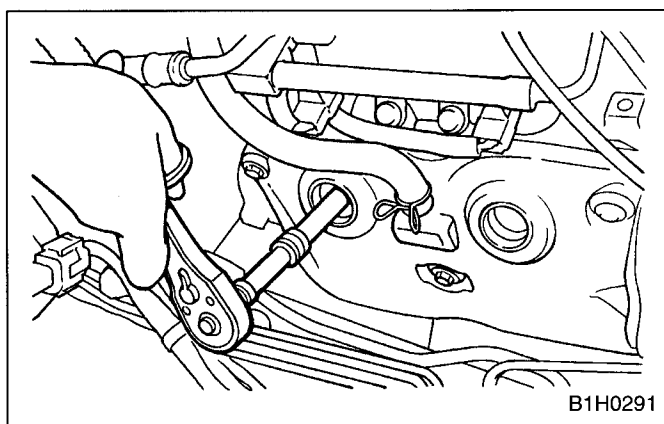


## 9. Spark Plugs

MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California					R				R				R				R
All states except California					R				R				R				R

### A: REPLACEMENT

- 1) Remove intake duct and intake chamber.
- 2) Remove washer tank and put it aside.
- 3) Disconnect spark plug cord.
- 4) Remove spark plug with a plug-wrench.



- 6) Tighten spark plug lightly with hand, and then secure with a plug-wrench to the specified torque.

#### **Tightening torque:**

**21 ± 3 N.m (2.1 ± 0.3 kg-m, 15 ± 2 ft-lb)**

#### **CAUTION:**

**Be sure to place the gasket between the cylinder head and spark plug.**

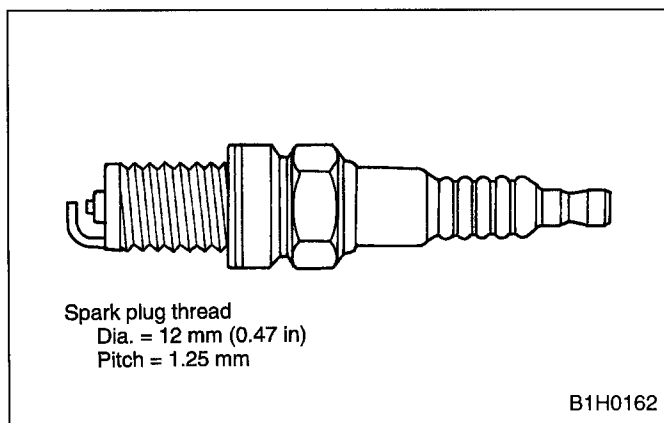
#### **NOTE:**

If torque wrench is not available, tighten spark plug until gasket contacts cylinder head; then tighten further 1/4 to 1/2 turns.

- 5) Set new spark plug.

#### **Recommended spark plug:**

**CHAMPION (Alternate) RC10YC4**  
**NGK BKR5E-11**



# 10. Transmission/Differential (Front and rear) Lubricants (Gear oil)

MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California																	
All states except California																	

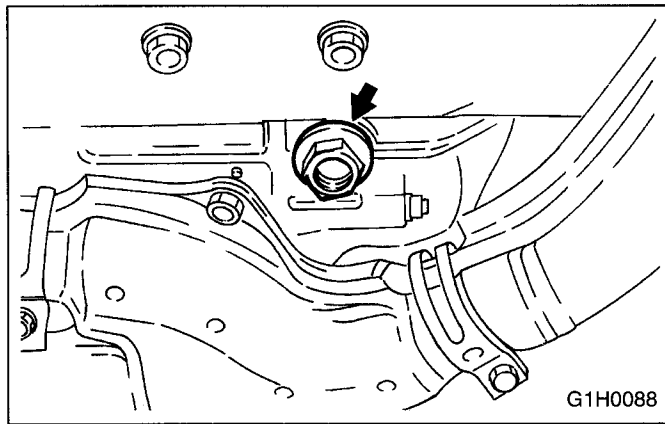
## A: REPLACEMENT

### 1. MANUAL TRANSMISSION

1) Drain gear oil by removing drain plug after allowing the engine to cool for 3 to 4 hours.

**CAUTION:**

**Before starting work, cool off the engine well.**



2) Reinstall drain plug after draining gear oil and tighten it to the specified torque.

**Tightening torque:**

**44 ± 3 N.m (4.5 ± 0.3 kg-m, 32.5 ± 2.2 ft-lb)**

**CAUTION:**

- Be sure to place a gasket between the transmission case and drain plug.
- Replace the gasket with a new one.

3) Fill transmission gear oil through the oil level gauge hole up to the upper point of level gauge.

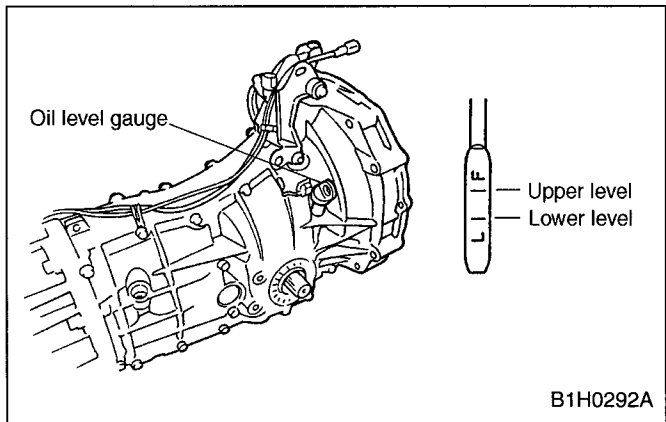
**Gear oil capacity:**

**AWD model: 3.5 l (3.7 US qt, 3.1 Imp qt)**

**Transmission gear oil**

**Recommended oil**

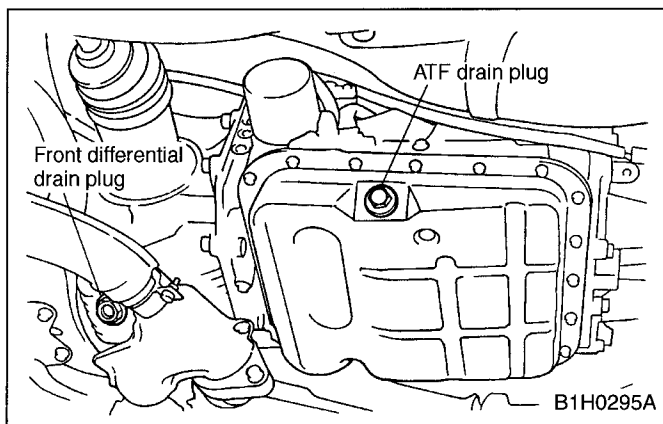
ITEM									
• Transmission gear oil									
API Classification									
GL - 5									
SAE Viscosity No. and Applicable Temperature									
(°C)	-30	-26	-15	-5	0	15	25	30	
(°F)	-22	-15	5	23	32	59	77	86	
						90			
						85W			
						80W			
						75W - 90			
B1H0024									



**2. FRONT DIFFERENTIAL (AUTOMATIC TRANSMISSION)**

1) Drain differential gear oil by removing drain plug after allowing the engine to cool for 3 to 4 hours.

**CAUTION:**  
Before starting work, cool off the engine well.



2) Reinstall drain plug after draining differential gear oil and tighten it to the specified torque.

**Tightening torque:**  
**44 ± 3 N.m (4.5 ± 0.3 kg-m, 33 ± 2.2 ft-lb)**

**CAUTION:**

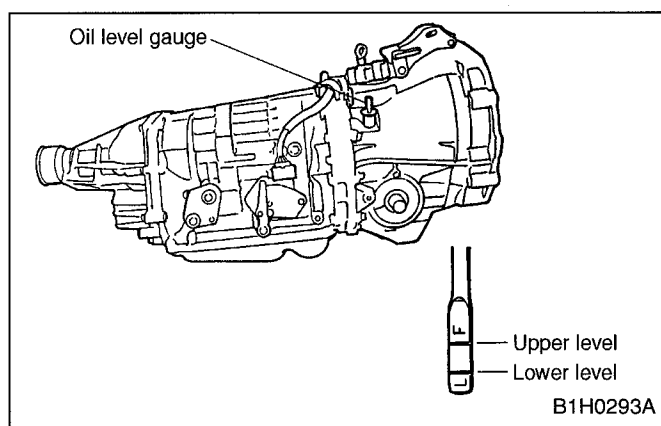
- Be sure to place a gasket between the transmission case and drain plug.
- Replace the gasket with a new one.

3) Fill differential gear oil through the oil level gauge hole up to the upper point of level gauge.

**Differential gear oil capacity:**  
**1.1 — 1.3 ℓ**  
**(1.2 — 1.4 US qt, 1.0 — 1.1 Imp qt)**

**Front differential gear oil Recommended oil**

ITEM							
• Front differential gear oil							
API Classification							
GL - 5							
SAE Viscosity No. and Applicable Temperature							
(°C)	-30	-26	-15	-5	0	15	25 30
(°F)	-22	-15	5	23	32	59	77 86
				90			
				85W			
				80W			
				80W - 90			
							B1H0039



# 11. Automatic Transmission Fluid

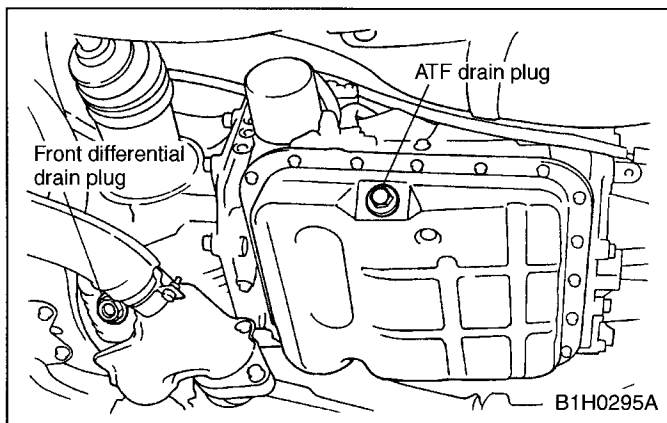
MAINTENANCE INTERVAL																	
[Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California																	
All states except California																	

## A: REPLACEMENT

1) Drain ATF (Automatic Transmission Fluid) by removing drain plug after allowing the engine to cool for 3 to 4 hours.

### CAUTION:

**Before starting work, cool off the engine well.**



2) Reinstall drain plug after draining ATF, and tighten it to the specified torque.

### Tightening torque:

**25 ± 2 N.m (2.5 ± 0.2 kg-m, 18.1 ± 1.4 ft-lb)**

3) Fill ATF up to the middle of the "COLD" side on level gauge by using the gauge hole.

### Recommended fluid:

**Dexron IIE or Dexron III type automatic transmission fluid**

### Fluid capacity:

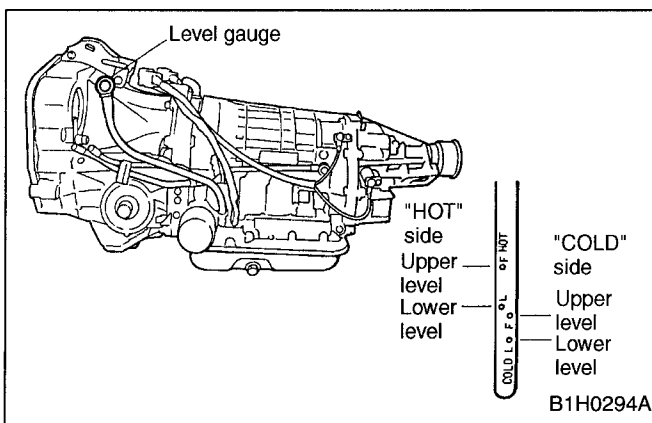
**2200 cc: 8.4 — 8.7 ℓ**

**(8.9 — 9.2 US qt, 7.4 — 7.7 Imp qt)**

**2500 cc: 9.3 — 9.6 ℓ**

**(9.8 — 10.1 US qt, 8.2 — 8.4 Imp qt)**

4) Run the vehicle until the ATF temperature rises to 60 to 80 °C (140 to 176 °F) and check the ATF level of the "HOT" side on level gauge.



## 20. Valve Clearance

MAINTENANCE INTERVAL [Number of months or km (miles), whichever occurs first]																	
Months	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
× 1,000 km	4.8	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
× 1,000 miles	3	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120
California															I		
All states except California															I		

### A: INSPECTION

For the inspection procedures of the valve clearance on SOHC models, refer to "ON-CAR SERVICE". <Ref. to 2-2 [W7A1].☆7>



**1. Engine Tools**

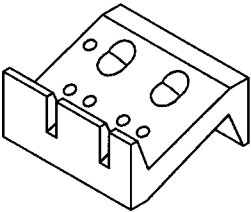
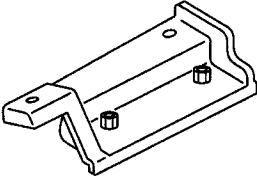
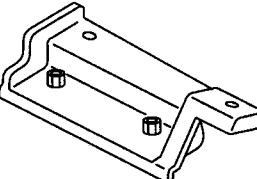
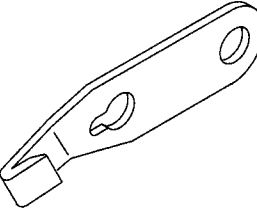
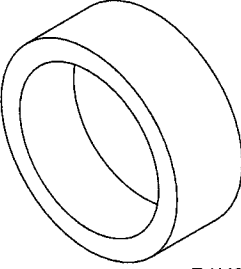
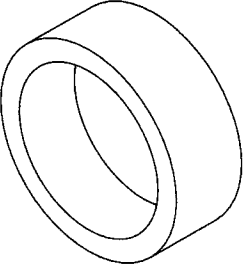
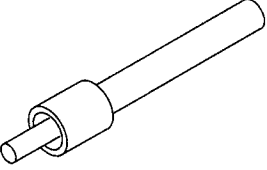
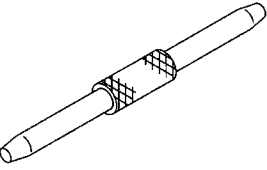
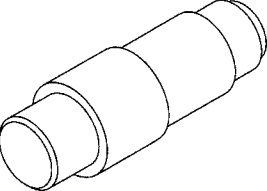
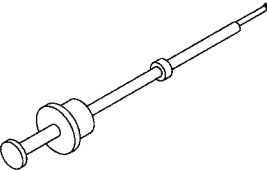
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0304</p>	498267800 (Newly adopted tool)	CYLINDER HEAD TABLE	<ul style="list-style-type: none"> <li>• Used for replacing valve guides.</li> <li>• Used for removing and installing valve springs.</li> </ul>
 <p>G1H0128</p>	498457000	ENGINE STAND ADAPTER RH	Used with ENGINE STAND (499817000).
 <p>G1H0129</p>	498457100	ENGINE STAND ADAPTER LH	Used with ENGINE STAND (499817000).
 <p>B1H0194</p>	498497100	CRANKSHAFT STOPPER	Used for stopping rotation of flywheel when loosening and tightening crankshaft pulley bolt, etc.
 <p>B1H0195</p>	498747100	PISTON GUIDE	<ul style="list-style-type: none"> <li>• Used for installing piston in cylinder.</li> <li>• For 2200 cc engine.</li> </ul>

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B1H0195</p>	498747300	PISTON GUIDE	<ul style="list-style-type: none"> <li>● Used for installing piston in cylinder.</li> <li>● For 2500 cc engine.</li> </ul>
 <p style="text-align: center;">B1H0197</p>	498857100	VALVE OIL SEAL GUIDE	Used for press-fitting of intake and exhaust valve guide oil seals.
 <p style="text-align: center;">B1H0198</p>	499017100	PISTON PIN GUIDE	Used for installing piston pin, piston and connecting rod.
 <p style="text-align: center;">B1H0199</p>	499037100	CONNECTING ROD BUSHING REMOVER & INSTALLER	Used for removing and installing connecting rod bushing.
 <p style="text-align: center;">B1H0200</p>	499097700	PISTON PIN REMOVER ASSY	Used for removing piston pin.

**SPECIAL TOOLS**

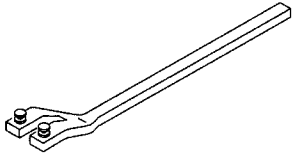
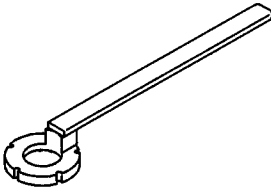
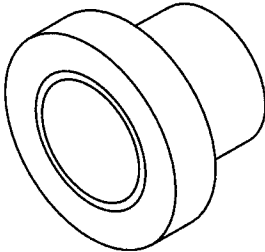
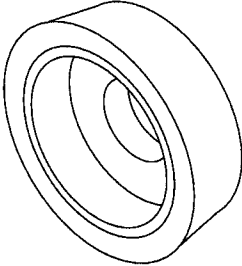
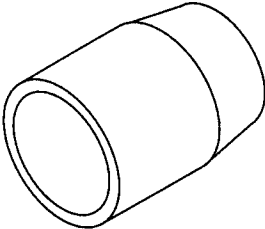
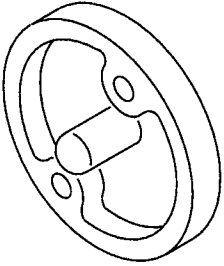
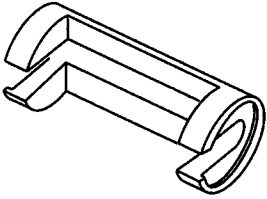
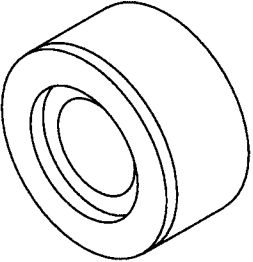
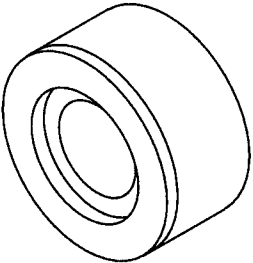
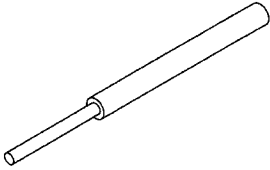
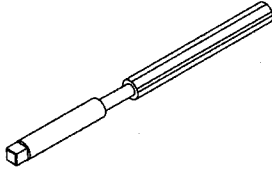
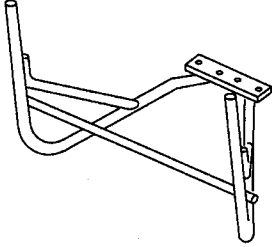
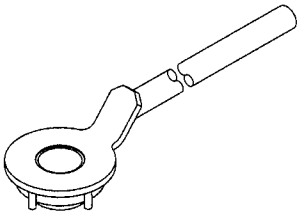
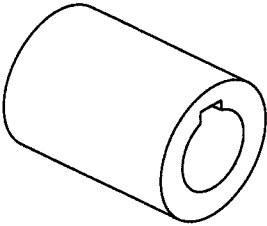
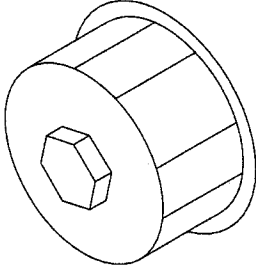
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0201</p>	499207100	CAMSHAFT SPROCKET WRENCH	Used for removing and installing camshaft sprocket (left side).
 <p>B1H0305</p>	499207400 (Newly adopted tool)	CAMSHAFT SPROCKET WRENCH	Used for removing and installing camshaft sprocket (right side).
 <p>B1H0203</p>	499587700 (Newly adopted tool)	CAMSHAFT OIL SEAL INSTALLER	Used for installing cylinder head plug.
 <p>B1H0204</p>	499587200	CRANKSHAFT OIL SEAL INSTALLER	<ul style="list-style-type: none"> <li>● Used for installing crankshaft oil seal.</li> <li>● Used with CRANKSHAFT OIL SEAL GUIDE (499597100).</li> </ul>
 <p>H1H0494</p>	499597000	CAMSHAFT OIL SEAL GUIDE	<ul style="list-style-type: none"> <li>● Used for installing camshaft oil seal.</li> <li>● Used with CAMSHAFT OIL SEAL INSTALLER (499587500).</li> </ul>

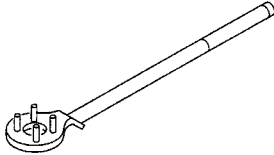
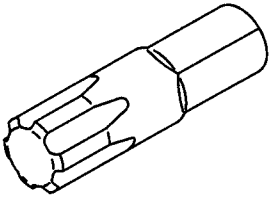
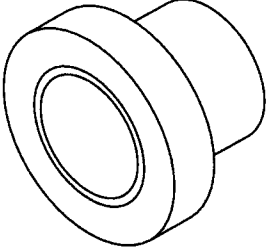
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">H1H0495</p>	499597100	CRANKSHAFT OIL SEAL GUIDE	<ul style="list-style-type: none"> <li>● Used for installing crankshaft oil seal.</li> <li>● Used with CRANKSHAFT OIL SEAL INSTALLER (499587200).</li> </ul>
 <p style="text-align: center;">G1H0142</p>	499718000	VALVE SPRING REMOVER	Used for removing and installing valve spring.
 <p style="text-align: center;">H1H0496</p>	499767700 (Newly adopted tool)	VALVE GUIDE ADJUSTER	Used for installing intake valve guides.
 <p style="text-align: center;">H1H0496</p>	499767800 (Newly adopted tool)	VALVE GUIDE ADJUSTER	Used for installing exhaust valve guides.
 <p style="text-align: center;">B1H0205</p>	499767200	VALVE GUIDE REMOVER	Used for removing valve guides.

## SPECIAL TOOLS

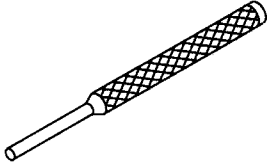
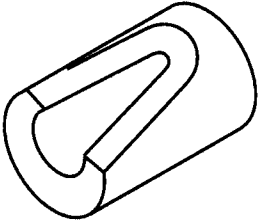
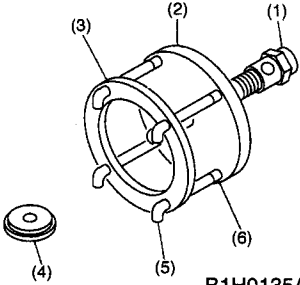
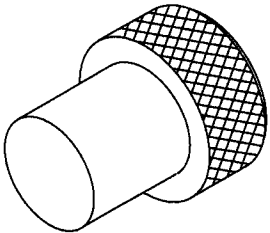
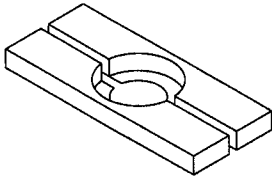
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0206</p>	499767400	VALVE GUIDE REAMER	Used for reaming valve guides.
 <p>G1H0146</p>	499817000	ENGINE STAND	<ul style="list-style-type: none"> <li>• Stand used for engine disassembly and assembly.</li> <li>• Used with ENGINE STAND ADAPTER RH (498457000) &amp; LH (498457100).</li> </ul>
 <p>B1H0274</p>	499977300	CRANK PULLEY WRENCH	<ul style="list-style-type: none"> <li>• Used for stopping rotation of crankshaft pulley when loosening and tightening crankshaft pulley bolts.</li> <li>• For 2200 cc engine.</li> </ul>
 <p>G1H0148</p>	499987500	CRANKSHAFT SOCKET	Used for rotating crankshaft.
 <p>B1H0208</p>	498547000	OIL FILTER WRENCH	Used for removing and installing oil filter.

# SPECIAL TOOLS

[G100] **1-6**  
1. Engine Tools

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B1H0207</p>	<p style="text-align: center;">499977100</p>	<p>CRANK PULLEY WRENCH</p>	<ul style="list-style-type: none"> <li>● Used for stopping rotation of crankshaft pulley when loosening and tightening crankshaft pulley bolts.</li> <li>● For 2500 cc engine.</li> </ul>
 <p style="text-align: center;">B1H0286</p>	<p style="text-align: center;">499497000 (Newly adopted tool)</p>	<p>TORX PLUS</p>	<p>Used for removing and installing camshaft cap.</p>
 <p style="text-align: center;">B1H0203</p>	<p style="text-align: center;">499587500 (Newly adopted tool)</p>	<p>OIL SEAL INSTALLER</p>	<p>Used for installing front camshaft oil seal.</p>

2. Manual Transmission and Differential Tools

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0209</p>	398791700	REMOVER II	Used for removing and installing spring pin (6 mm).
 <p>B1H0210</p>	399411700	ACCENT BALL INSTALLER	Used for installing reverse shifter rail arm.
 <p>B1H0135A</p>	399527700	PULLER SET	Used for removing and installing roller bearing (Differential). (1) BOLT (899521412) (2) PULLER (399527702) (3) HOLDER (399527703) (4) ADAPTER (398497701) (5) BOLT (899520107) (6) NUT (021008000)
 <p>B1H0211</p>	399780104	WEIGHT	Used for measuring preload on roller bearing.
 <p>G1H0156</p>	498077000	5TH DRIVEN GEAR REMOVER	Used for removing roller bearing of drive pinion shaft.

# SPECIAL TOOLS

[G200] 1-6

## 2. Manual Transmission and Differential Tools

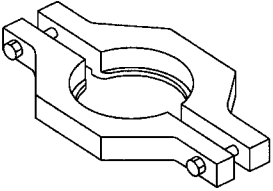
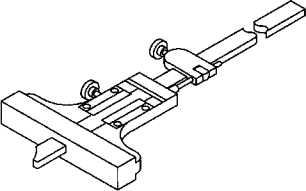
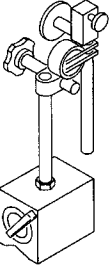
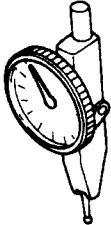
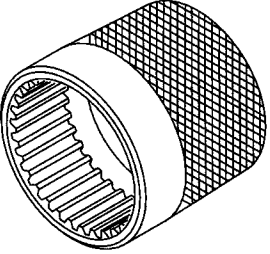
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">G1H0157</p>	498077300	CENTER DIFFERENTIAL BEARING REMOVER	Used for removing the center differential cover ball bearing.
 <p style="text-align: center;">B1H0136</p>	498147000	DEPTH GAUGE	Used for adjusting main shaft axial end play.
 <p style="text-align: center;">B1H0137</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> <li>● Used for measuring backlash between side gear and pinion, and hypoid gear.</li> <li>● Used with DIAL GAUGE (498247100).</li> </ul>
 <p style="text-align: center;">G1H0160</p>	498247100	DIAL GAUGE	<ul style="list-style-type: none"> <li>● Used for measuring backlash between side gear and pinion, and hypoid gear.</li> <li>● Used with MAGNET BASE (498247001).</li> </ul>
 <p style="text-align: center;">B1H0213</p>	498427100	STOPPER	Used for removing and installing drive pinion shaft assembly lock nut.



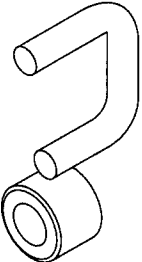
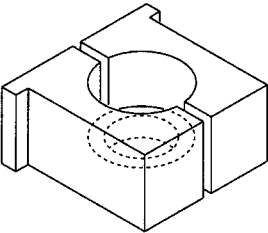
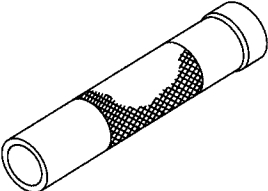
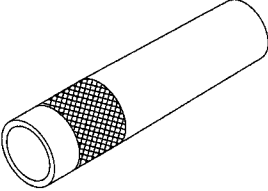
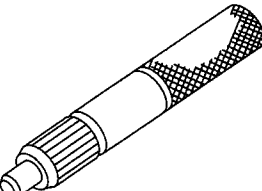
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>G1H0163</p>	498787100	MAIN SHAFT STOPPER	Used for removing and installing transmission main shaft.
 <p>G1H0164</p>	498937000	TRANSMISSION HOLDER	Used for removing and installing transmission main shaft lock nut.
 <p>G1H0165</p>	499277100	BUSH 1-2 INSTALLER	Used for installing 1st driven gear thrust plate and 1st-2nd driven gear bush.
 <p>B1H0214</p>	499277200	INSTALLER	Used for press-fitting the 2nd driven gear, roller bearings, & 5th driven gear onto the driven shaft (AWD).
 <p>G1H0167</p>	499747100	CLUTCH DISC GUIDE	Used when installing clutch disc to flywheel.

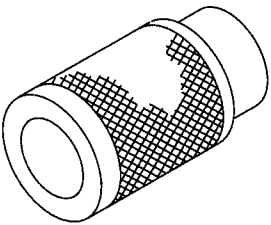
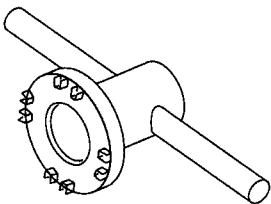
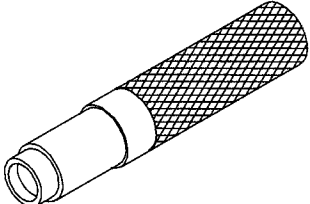
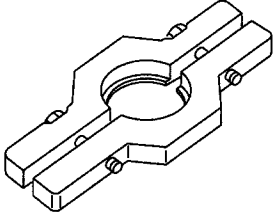
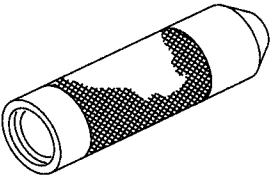
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">G1H0168</p>	499757002	SNAP RING PRESS	Used for installing snap ring (OUT 25), and ball bearing (25 x 26 x 17).
 <p style="text-align: center;">G1H0169</p>	499787000	WRENCH ASSY	Used for removing and installing differential side retainer.
 <p style="text-align: center;">G1H0171</p>	499827000	PRESS	Used for installing speedometer oil seal.
 <p style="text-align: center;">G1H0172</p>	499857000	5TH DRIVEN GEAR REMOVER	Used for removing 5th driven gear.
 <p style="text-align: center;">G1H0173</p>	499877000	RACE 4-5 INSTALLER	<ul style="list-style-type: none"> <li>● Used for installing 4th needle bearing race and ball bearing onto transmission main shaft.</li> <li>● Used with REMOVER (899714110).</li> </ul>

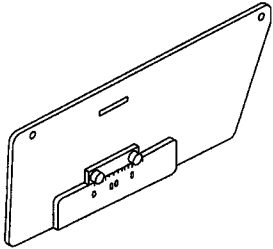
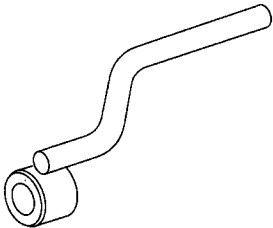
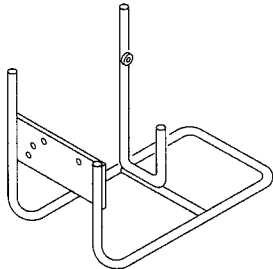
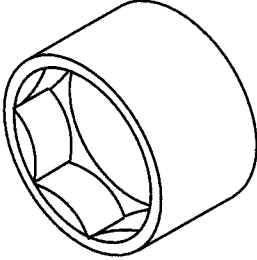
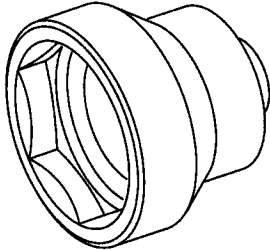
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>G1H0174</p>	499917500	DRIVE PINION GAUGE ASSY	Used for adjusting drive pinion shim.
 <p>G1H0175</p>	499927100	HANDLE	Used for fitting transmission main shaft.
 <p>B1H0215</p>	499937100	TRANSMISSION STAND	Stand used for transmission disassembly and assembly.
 <p>B1H0216</p>	499987003	SOCKET WRENCH (35)	Used for removing and installing driven pinion lock nut and main shaft lock nut.
 <p>G1H0178</p>	499987300	SOCKET WRENCH (50)	Used for removing and installing driven gear assembly lock nut.

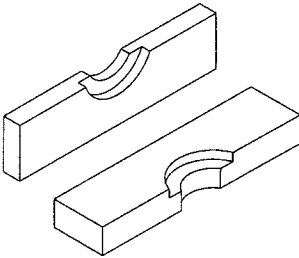
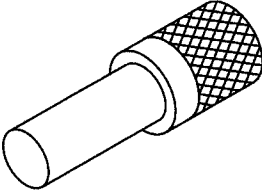
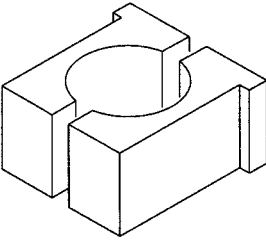
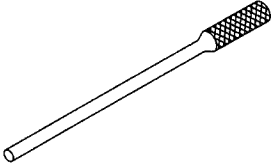
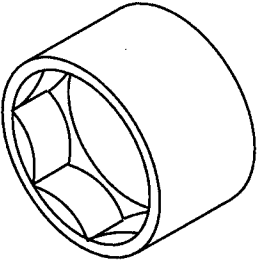
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0217</p>	899714110	REMOVER	Used for fixing transmission main shaft, drive pinion, rear drive shaft.
 <p>B1H0218</p>	899864100	REMOVER	Used for removing parts on transmission main shaft and drive pinion.
 <p>B1H0219</p>	899884100	HOLDER	Used for tightening lock nut on sleeve.
 <p>B1H0220</p>	899904100	REMOVER	Used for removing and installing straight pin.
 <p>B1H0216</p>	899988608	SOCKET WRENCH (27)	Used for removing and installing drive pinion lock nut.

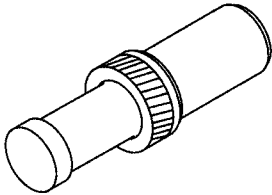
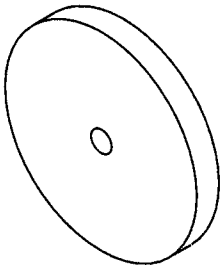
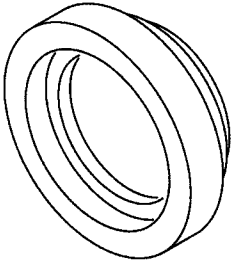
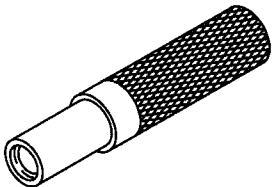
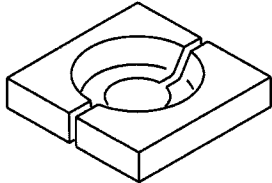
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>G1H0184</p>	499547300	INSTALLER SET	Used for installing adjusting washer of viscous coupling.
 <p>B1H0222</p>	398497701	ADAPTER	<ul style="list-style-type: none"> <li>• Used for installing roller bearing onto differential case.</li> <li>• Used with INSTALLER (499277100).</li> </ul>
 <p>G1H0330</p>	499587000	INSTALLER	Used for installing driven gears to driven shaft.
 <p>G1H0328</p>	899824100	PRESS	Used for installing speedometer shaft oil seal.
 <p>G1H0379</p>	498517000	REPLACER	Used for removing drive pinion thrust plate and roller bearing race.

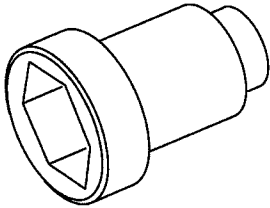
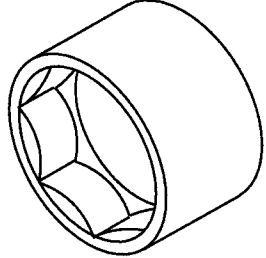
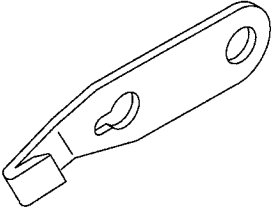
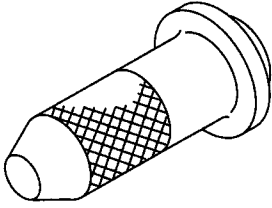
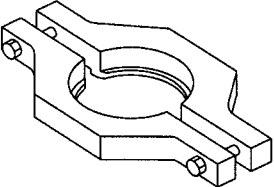
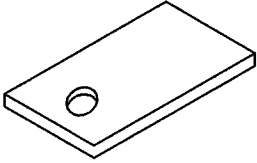
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">B1H0074</p>	499987100	SOCKET WRENCH (35)	Used for removing and installing drive pinion lock nut.
 <p style="text-align: center;">B1H0216</p>	899984103	SOCKET WRENCH (35)	Used for removing and installing drive pinion lock nut.
 <p style="text-align: center;">B1H0194</p>	498497100	CRANKSHAFT STOPPER	Used for stopping rotation of flywheel when loosening tightening bolt, etc.
 <p style="text-align: center;">G1H0188</p>	498057300	INSTALLER	Used for installing extension oil seal.
 <p style="text-align: center;">G1H0157</p>	498077400 (Newly adopted tool)	SYNCHRONIZER CONE REMOVER	<ul style="list-style-type: none"> <li>● Used for removing synchronizer cone of main shaft.</li> <li>● For 2500 cc engine.</li> </ul>

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="306 495 399 520">B1H0285</p>	498255400	PLATE	Used for measuring backlash of hypoid gear.

## 3. Automatic Transmission and Differential Tools

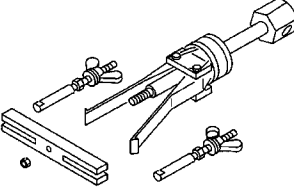
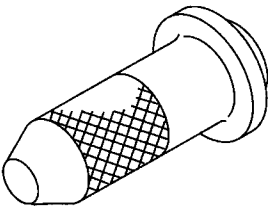
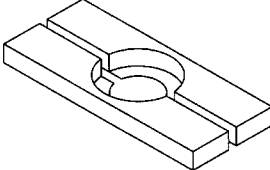
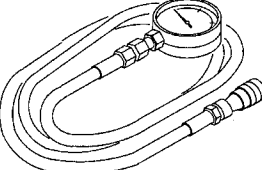
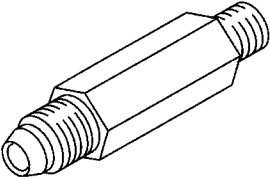
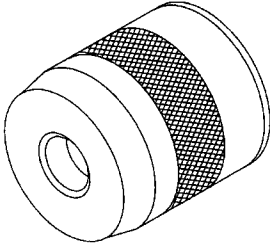
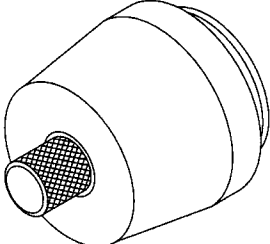
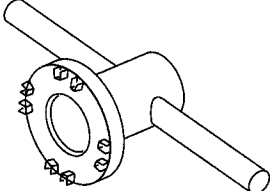
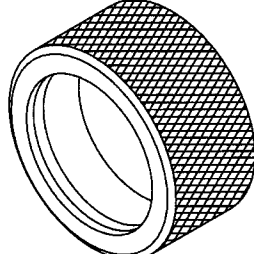
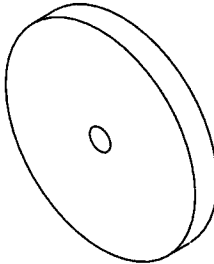
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0138</p>	398527700	PULLER ASSY	Used for removing One-way clutch needle bearing.
 <p>G1H0188</p>	498057300	INSTALLER	Used for installing extension oil seal.
 <p>G1H0156</p>	498077000	REMOVER	Used for removing differential taper roller bearing.
 <p>B1H0139</p>	498575400	OIL PRESSURE GAUGE ASSY	Used for measuring oil pressure.
 <p>G1H0194</p>	498897200	ADAPTER	Used on oil pump housing when measuring reverse clutch pressure and line pressure.



ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0227</p>	499247400	INSTALLER	<ul style="list-style-type: none"> <li>Used for installing transfer outer snap ring.</li> <li>Used with GUIDE (499257300).</li> </ul>
 <p>B1H0228</p>	499257300	GUIDE	<ul style="list-style-type: none"> <li>Used for installing transfer outer snap ring.</li> <li>Used with INSTALLER (499247400).</li> </ul>
 <p>G1H0169</p>	499787000	WRENCH ASSY	Used for removing and installing differential side retainer.
 <p>G1H0200</p>	398437700	DRIFT	Used for installing converter case oil seal.
 <p>B1H0222</p>	398497701	INSTALLER	Used for installing converter case oil seal.

# SPECIAL TOOLS

[G300] 1-6

## 3. Automatic Transmission and Differential Tools

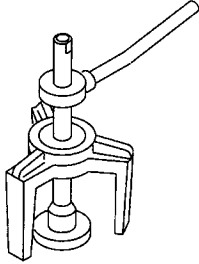
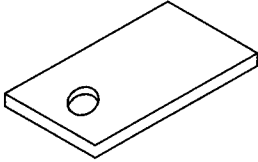
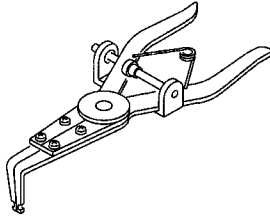
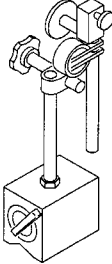
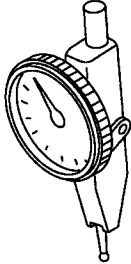
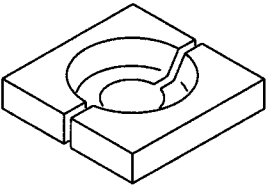
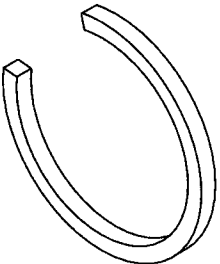
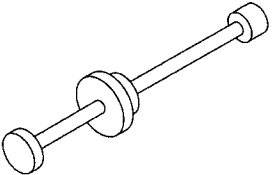
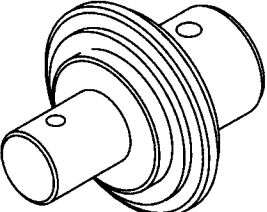
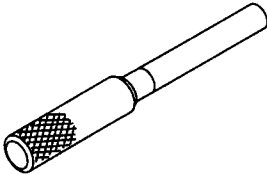
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0140</p>	398673600	COMPRESSOR	Used for removing and installing clutch spring.
 <p>B1H0285</p>	498255400	PLATE	Used for measuring backlash of hypoid gear.
 <p>B1H0142</p>	399893600	PLIER	Used for removing and installing clutch spring.
 <p>B1H0137</p>	498247001	MAGNET BASE	<ul style="list-style-type: none"> <li>● Used for measuring gear backlash.</li> <li>● Used with DIAL GAUGE (498247100).</li> </ul>
 <p>G1H0160</p>	498247100	DIAL GAUGE	<ul style="list-style-type: none"> <li>● Used for measuring gear backlash.</li> <li>● Used with MAGNET BASE (498247001).</li> </ul>

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>G1H0379</p>	498517000	REPLACER	Used for removing front roller bearing.
 <p>B1H0231</p>	398623600	SEAT	Used for removing snapping of transfer clutch piston.
 <p>B1H0232</p>	499095500	REMOVER ASSY	Used for removing axle shaft.
 <p>G1H0209</p>	499247300	INSTALLER	<ul style="list-style-type: none"> <li>• Used for removing axle shaft.</li> <li>• Used with REMOVER (499095500).</li> </ul>
 <p>G1H0210</p>	499267300	STOPPER PIN	Used for installing inhibitor switch.

# SPECIAL TOOLS

[G300] 1-6

## 3. Automatic Transmission and Differential Tools

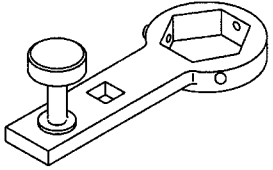
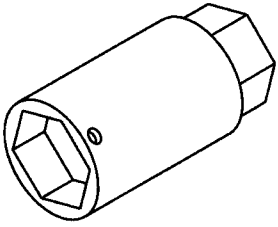
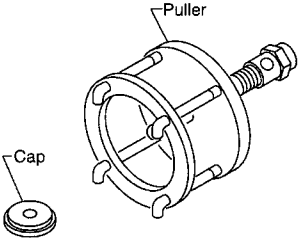
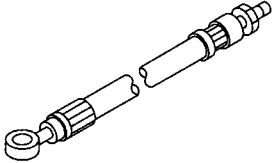
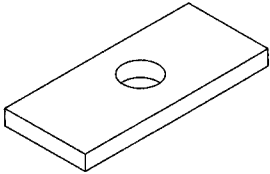
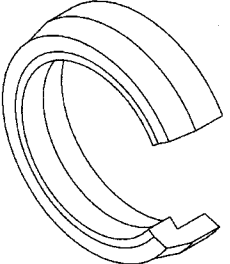
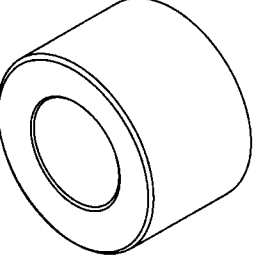
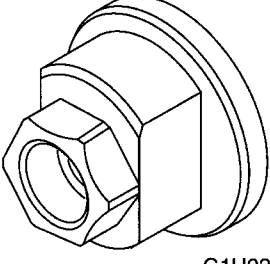
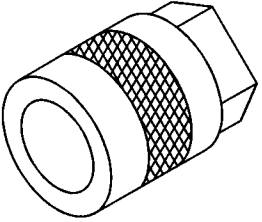
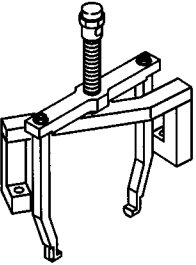
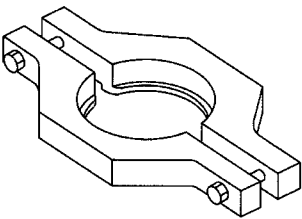
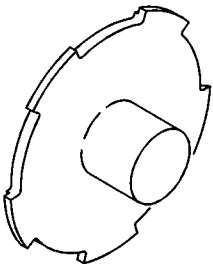
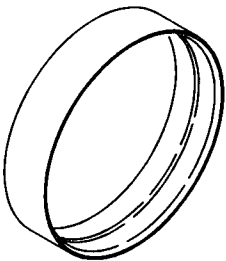
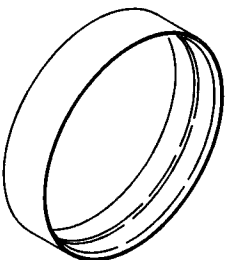
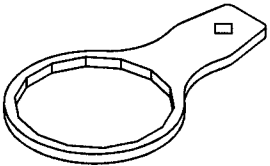
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 G1H0211	499787100	WRENCH ASSY	Used for removing and installing drive pinion lock nut.
 B1H0169	499787500	ADAPTER ASSY	Used for removing and installing drive pinion lock nut.
 B1H0135B	899524100	PULLER SET	Used for removing reduction gear.
 G1H0214	498897700	ADAPTER SET	Used with PRESSURE GAUGE.
 B1H0233	398643600	GAUGE	Used for measuring total end play, extension end play and drive pinion hight.

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0234</p>	498627100	SEAT	Used for holding low clutch piston retainer (return spring) when installing snap ring.
 <p>B1H0068</p>	499577000	GAUGE	Used for measuring the transmission case mating surface to the reduction gear end surface.
 <p>G1H0207</p>	498937110 (Newly adopted tool)	HOLDER	Used for removing and installing drive pinion lock nut.
 <p>B1H0284</p>	499737000 (Newly adopted tool)	PULLER	Used for removing driven gear assembly.
 <p>B1H0281</p>	499737100 (Newly adopted tool)	PULLER SET	Used for removing reduction drive gear assembly.

# SPECIAL TOOLS

[G300] 1-6

## 3. Automatic Transmission and Differential Tools

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">G1H0157</p>	<p style="text-align: center;">498077600 (Newly adopted tool)</p>	<p style="text-align: center;">REMOVER</p>	<p>Used for removing ball bearing.</p>
 <p style="text-align: center;">B1H0282</p>	<p style="text-align: center;">498677100 (Newly adopted tool)</p>	<p style="text-align: center;">COMPRESSOR</p>	<p>Used for installing 2-4 brake snap ring.</p>
 <p style="text-align: center;">B1H0283</p>	<p style="text-align: center;">498437000 (Newly adopted tool)</p>	<p style="text-align: center;">HIGH CLUTCH PISTON GUIDE</p>	<p>Used for installing high clutch piston.</p>
 <p style="text-align: center;">B1H0283</p>	<p style="text-align: center;">498437100 (Newly adopted tool)</p>	<p style="text-align: center;">LOW CLUTCH PISTON GUIDE</p>	<p>Used for installing low clutch piston.</p>
 <p style="text-align: center;">B1H0289</p>	<p style="text-align: center;">498545400</p>	<p style="text-align: center;">FILTER WRENCH</p>	<p>Used for removing and installing ATF filter.</p>

**7. Steering System Tools**

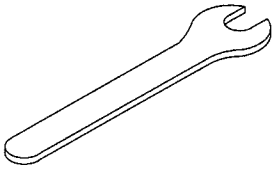
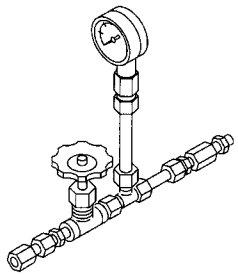
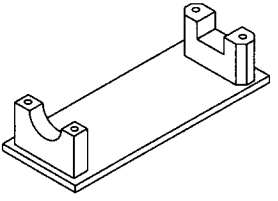
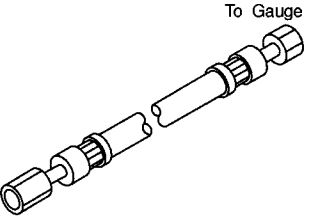
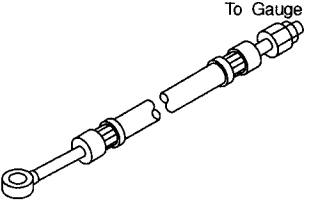
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0258</p>	925700000	WRENCH	<ul style="list-style-type: none"> <li>Used for removing and installing tie-rod.</li> <li>Apply this tool to rack.</li> </ul>
 <p>B1H0147</p>	925711000	PRESSURE GAUGE	Used for measuring oil pump pressure.
 <p>G1H0263</p>	926200000	STAND	Used when inspecting characteristic of gearbox assembly and disassembling it. Use this tool and secure gearbox assembly using gearbox clamp.
 <p>To Gauge</p> <p>B1H0172A</p>	34099AC010	ADAPTER HOSE A	Used with PRESSURE GAUGE (925711000).
 <p>To Gauge</p> <p>B1H0185A</p>	34099AC020	ADAPTER HOSE B	Used with PRESSURE GAUGE (925711000).

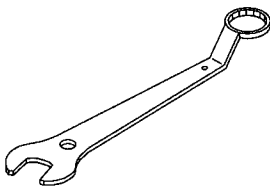
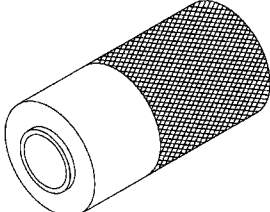
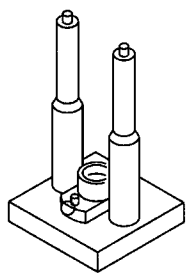
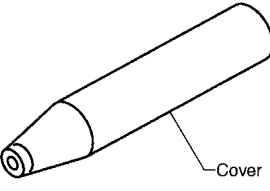
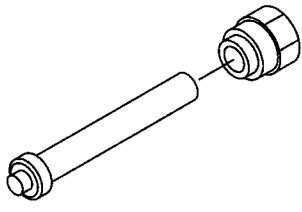
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">G1H0265</p>	926230000	SPANNER	<ul style="list-style-type: none"> <li>● For the lock nut when adjusting backlash of gearbox.</li> <li>● Measurement of rotating resistance of gearbox assembly.</li> </ul>
 <p style="text-align: center;">B1H0261</p>	927640000	INSTALLER B	Used for installing ball bearing into housing.
 <p style="text-align: center;">G1H0267</p>	926370000	INSTALLER A	<ul style="list-style-type: none"> <li>● Used for installing valve assembly into valve housing assembly.</li> <li>● Used with STAND BASE (34099FA100).</li> </ul>
 <p style="text-align: center;">H1H0476A</p>	926390001	COVER & REMOVER ASSY	Used for assembling rack assembly.
 <p style="text-align: center;">G1H0269</p>	926420000	PLUG	When oil leaks from pinion side of gearbox assembly, remove pipe B from valve housing, attach this tool and check oil leaking points.



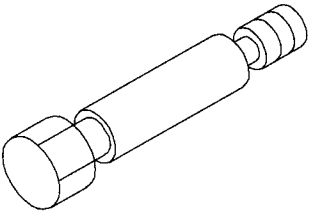
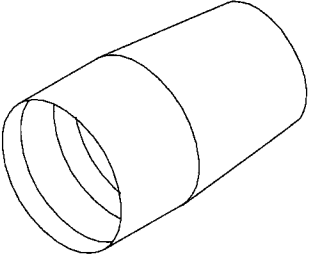
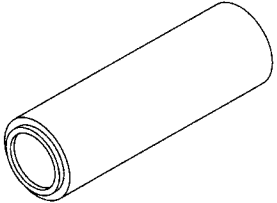
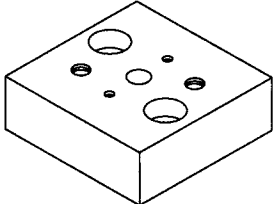
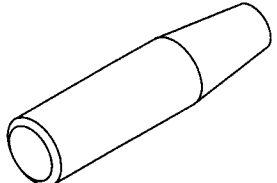
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0069</p>	926400000	GUIDE	<ul style="list-style-type: none"> <li>• Right side of rack when installing rack bush.</li> <li>• Used with GUIDE (927660000).</li> </ul>
 <p>B1H0070</p>	927660000	GUIDE	<ul style="list-style-type: none"> <li>• Right side of rack when installing rack bush.</li> <li>• Used with GUIDE (926400000).</li> </ul>
 <p>B1H0262</p>	927620000	INSTALLER B	<ul style="list-style-type: none"> <li>• Oil seal of valve housing.</li> <li>• Used with INSTALLER A (926360000).</li> </ul>
 <p>G1H0273</p>	34099FA100	STAND BASE	Used for assembling power steering gearbox.
 <p>B1H0263</p>	926360000	INSTALLER A	<ul style="list-style-type: none"> <li>• Used as a guide to install oil seal.</li> <li>• Used with INSTALLER B (927620000).</li> </ul>

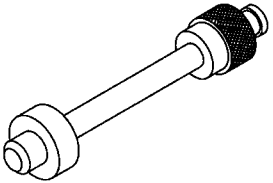
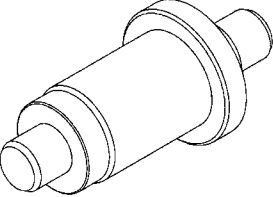
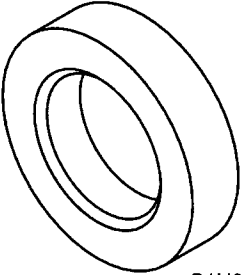
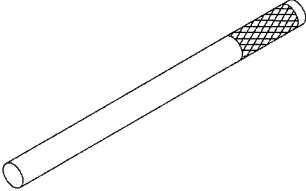
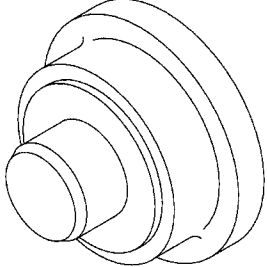
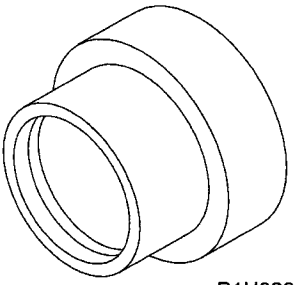
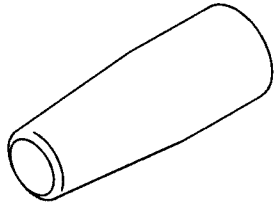
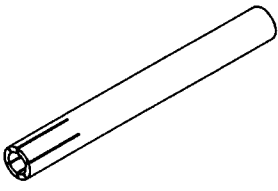
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">G1H0275</p>	34099FA110	INSTALLER	Used for installing oil seal.
 <p style="text-align: center;">S1H0030</p>	34099FA120	INSTALLER AND REMOVER SEAL	Used for installing and removing valve housing oil seal.
 <p style="text-align: center;">S1H0031</p>	34099FA130	INSTALLER SEAL	<ul style="list-style-type: none"> <li>• Used for installing valve housing oil seal.</li> <li>• Used with INSTALLER AND REMOVER SEAL (34099FA120).</li> </ul>
 <p style="text-align: center;">S1H0054</p>	34099FA140	REMOVER OIL SEAL	Used for removing back-up ring and oil seal.
 <p style="text-align: center;">B1H0259</p>	34099AA000	INSTALLER	Used for installing oil seal and shaft of oil pump.

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>B1H0260</p>	34099AA020	INSTALLER	Used for installing shaft of oil pump.
 <p>H1H0513</p>	34099AC030 (Newly adopted tool)	INSTALLER A	<ul style="list-style-type: none"> <li>● Used for installing retaining ring.</li> <li>● Used with INSTALLER B (34099AC040).</li> </ul>
 <p>H1H0514</p>	34099AC040 (Newly adopted tool)	INSTALLER B	<ul style="list-style-type: none"> <li>● Used for installing retaining ring.</li> <li>● Used with INSTALLER A (34099AC030).</li> </ul>

## 10. Supplemental Restraint System Tools

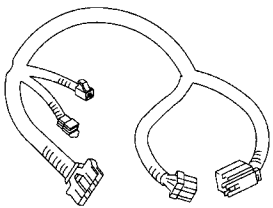
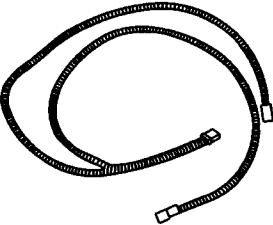
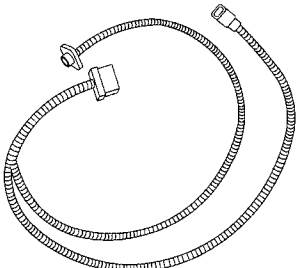
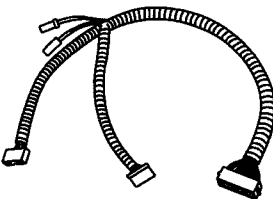
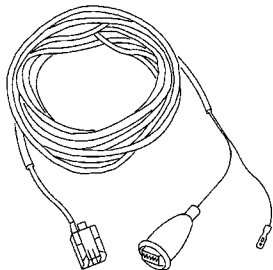
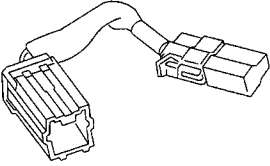

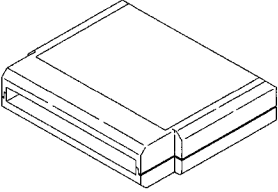

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>G1H0284</p>	98299PA000	HARNESS A	Used for checking the supplemental restraint system.
 <p>S1H0002</p>	98299FC010	HARNESS F	Used for checking the supplemental restraint system.
 <p>S1H0101</p>	98299FA020	HARNESS H	Used for checking the supplemental restraint system.
 <p>S1H0001</p>	98299FC040 (Newly adopted tool)	HARNESS I	Used for checking the supplemental restraint system.
 <p>G1H0287</p>	98299PA030	DEPLOYMENT TOOL	Used for deploying the air bag module.

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="293 493 386 516">G1H0389</p>	98299PA040	AIR BAG RESISTOR	Used for checking the supplemental restraint system.
 <p data-bbox="293 821 386 844">S1H0028</p>	98299FC030	ADAPTER A (DEPLOYMENT)	<ul style="list-style-type: none"> <li>● Used for deploying the air bag module.</li> <li>● Used with DEPLOYMENT TOOL (98299PA030).</li> </ul>

## 11. Select Monitor and Cartridge

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: right;">S1H0070</p>	<p>24082AA090 (Newly adopted tool)</p>	<p>CARTRIDGE</p>	<p>Troubleshooting for electrical systems.</p>
 <p style="text-align: right;">S1H0027</p>	<p>22771AA020</p>	<p>SELECT MONITOR KIT</p>	<p>Troubleshooting for electrical systems.</p> <ul style="list-style-type: none"> <li>● English: 22771AA020 (With printer) 22771AA030 (Without printer)</li> <li>● German: 22771AA040 (With printer) 22771AA070 (Without printer)</li> <li>● French: 22771AA050 (With printer) 22771AA080 (Without printer)</li> <li>● Spanish: 22771AA060 (With printer) 22771AA090 (Without printer)</li> </ul>