1. Foreword

A: FOREWORD

These manuals are used when performing maintenance, repair or diagnosis of Subaru Forester.
Applicable model: 2015 MY SJ*****
The manuals contain the latest information at the time of publication. Changes in the specifications, methods, etc. may be made without notice.

HOW TO USE THIS MANUALS

HU

1. General Description

A: GENERAL DESCRIPTION

Be sure to perform periodic maintenance in order to maintain vehicle performance and find problems before they occur.

1. How to Use This Manuals

A: HOW TO USE THIS MANUALS

1. STRUCTURE

Each section consists of SCT that are broken down into SC that are divided into sections for each component. The specification, maintenance and other information for the components are included, and the diagnostic information has also been added where necessary.

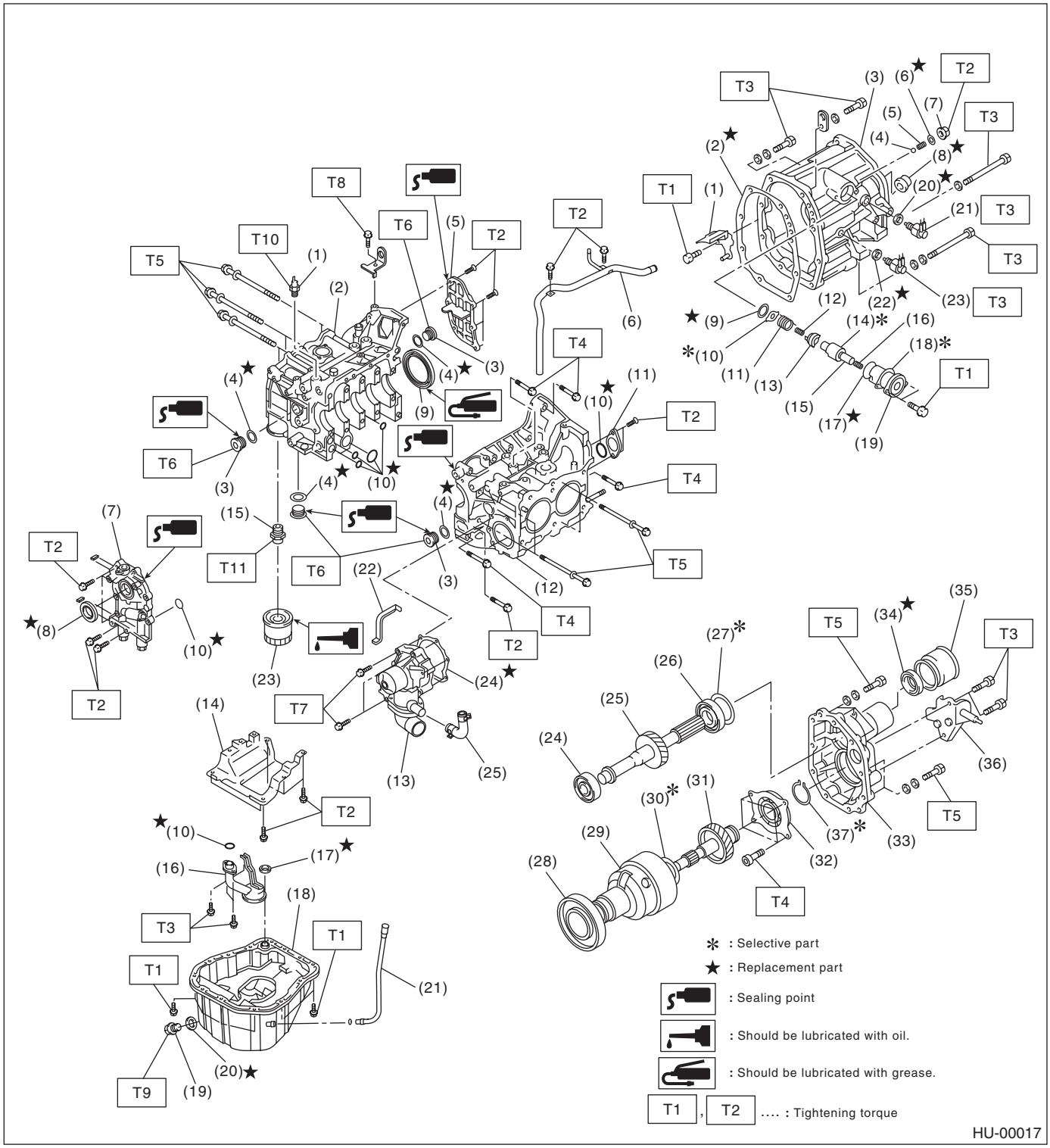
2. CONTENTS

The first page has an index with tabs.

3. COMPONENT

Illustrations are provided for each component. The information necessary for repair work (tightening torque, grease up points, etc.) is described on these illustrations. Information is described using symbol.
To order parts, refer to parts catalogue.

Example:



4. DEFINITIONS OF “NOTE”, “CAUTION”, AND “WARNING”

- NOTE:

Describes additional information to make works easier.

- CAUTION:

Describes prohibited matters to prevent vehicle or parts damage, or matters that requires special attention during work.

- WARNING:

Describes matters that may cause serious damage to the operator or other person, or that may cause damage or accident.

5. SPECIFICATIONS

If necessary, specifications are also included.

6. INSPECTION

Inspections to be carried out before and after maintenance are included.

7. MAINTENANCE

• Maintenance instructions for serviceable parts describe work area and detailed step with illustration. It also describes the use of special tool, tightening torque, caution for each procedure.
• If many serviceable parts are included in one service procedure, appropriate reference is provided for each part.

Example:

15.Main Shaft ← (A)

A: REMOVAL ← (B)

1) Remove the manual transmission assembly from vehicle. <Ref. to MT-33, REMOVAL, Manual Transmission Assembly.> ← (C)

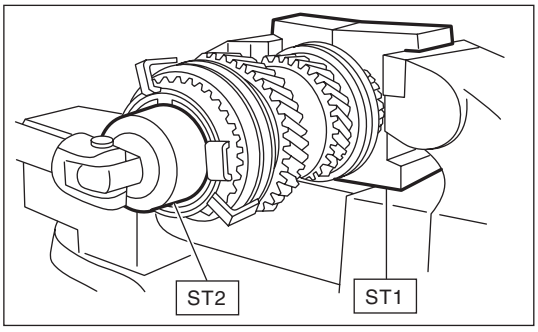
---

11) Tighten the lock nuts to the specified torque using ST1 and ST2.

NOTE: ← (D)
Secure the lock nuts in two places after tightening.

ST1 498937000 TRANSMISSION HOLDER
ST2 499987003 (E) SOCKET WRENCH (35) (F)

Tightening torque:
118 N·m (12.0 kgf-m, 86.8 ft-lb) ← (G)



← (H)

HU-00020

(A) Component
(B) Process
(C) Reference
(D) Cautions
(E) Tool number of special tool
(F) Name of special tool
(G) Tightening torque
(H) Illustration

8. DIAGNOSIS

Step-by-step process is employed for easier diagnosis.

9. SI UNITS

Measurements in these manuals are according to the SI units. Metric and yard/pound measurements are also included.

Example:

Tightening torque:
44 N·m (4.5 kgf-m, 33 ft-lb)

List of SI unit

Item	SI units	Conventional unit	Remarks
Force	N (Newton)	kgf	1 kgf = 9.807 N
Mass (Weight)	kg, g	kg, g	
Capacity	L, mL or cm^3	L or cc	1 cc = 1 cm^3 = 1 mL
Torque	N·m	kgf-m, kgf-cm	1 kgf-m = 9.807 N·m
Rotating speed	rpm	rpm	
Pressure	kPa (Kilopascal)	kgf/cm^2	1 kgf/cm^2 = 98.07 kPa
		mmHg	1 mmHg = 0.1333 kPa
Power	W	PS	1 PS = 0.7355 kW
Calorie	W·h	cal	1 kcal = 1.163 W·h
Fuel consumption rate	g/kW·h	g/PS·h	1 g/PS·h = 1.3596 g/kW·h

The figure used in these manuals are described in the SI units and conventional units are described in ( ).

10.EXPLANATION OF TERMINOLOGY

List

2ndr	Secondary
AAI	Air Assist Injection
AAR	Angular Adjusted Roller
A/B	Airbag
ABS	Anti-lock Brake System
A/C	Air Conditioner
AC	Angular Contact
ACC	Accessory
A/F	Air Fuel Ratio
ALT	Generator
API	American Petroleum Institute
APS	Accessory Power Supply Socket
ASSY	Assembly
AT	Automatic Transmission
ATF	Automatic Transmission Fluid
AUX	Auxiliary Storage Unit (External storage)
AVCS	Active Valve Control System
AWD	All Wheel Drive
BATT	Battery
BCM	Brake Control Module
BJ	Bell Joint
CAN	Controller Area Network
CD	Compact Disc
CD-R/RW	CD Recordable/Rewritable
COMPL	Complete
CPC	Canister Purge Control Solenoid Valve
CPU	Central Processing Unit
CM	Control Module
CVT	Continuously Variable Transmission
CVTF	Continuously Variable Transmission Fluid
DCCD	Driver's Control Center Differential
DOHC	Double Overhead Camshaft
DOJ	Double Offset Joint
DTC	Diagnosis Trouble Code
DU	Drive Unit
DVD	Digital Versatile Disc or Digital Video Disc
EBD	Electronic Brake Distribution
EBJ	High-Efficiency Compact Ball Fixed Joint
ECM	Engine Control Module
EDJ	High-Efficiency Compact Double Offset Joint
E/G	Engine
EGI	Electronic Gasoline Injection
EGR	Exhaust Gas Recirculation
ELR	Emergency Locking Retractor
ETC	Electronic Throttle Control
EX	Exhaust
F/B	Fuse & Joint Box
FL	Fusible Link
Ft	Front
FWD	Front Wheel Drive
GPS	Global Positioning System
HI	High
HID	High-Intensity Discharge
H/L	Headlight
H/U	Hydraulic Unit
HVAC	Heater, Ventilator and Air Conditioner
I/F	Interface
IG	Ignition
ILSAC	International Lubricants Standardization and Approval Committee
IN	Intake
INT	Intermittent
I/O	Input/Output
IR	Infrared Ray
ISC	Idle Speed Control
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LH	LH (Left Hand)
LHD	Left Hand Drive
LSD	Limited Slip Differential
M/B	Main Fuse & Relay Box
MD	Mini Disc
MID	Multi-Information Display
MFI	Multi-Point Fuel Injection
MP-T	Multi-Plate Transfer
MT	Manual Transmission
NA	Natural Aspiration
NC	Normal Close (Relay)
NO	Normal Open (Relay)
OBD	On-Board Diagnosis
OP	Option Parts
PC	Personal Computer
PCD	Pitch Circle Diameter
PCV	Positive Crankcase Ventilation
PID	Parameter Identification
Pr	Primary
PRG	Power Rear Gate
P/S	Power Steering
PTJ	Pillow Tripod Joint
P/W	Power Window
RAM	Random Access Memory
RH	RH (Right Hand)
RHD	Right Hand Drive
ROM	Read Only Memory
rpm	Revolution Per Minute
Rr	Rear

SDI	Subaru Diagnostic Interface
SI	Subaru Intelligent
SOHC	Single Overhead Camshaft
SRS	Supplemental Restraint System
SSM	Subaru Select Monitor
ST	Special Tool
STD	Standard
SW	Switch
T/B	Turbocharger
TCS	Traction Control System
TCM	Transmission Control Module
TGV	Tumble Generator Valve
T/M	Transmission
TPMS	Tire Pressure Monitoring System
UJ	Universal Joint
UV	Ultraviolet
VDC	Vehicle Dynamics Control
V.I.N.	Vehicle Identification Number
ViS-C	Viscous Coupling
VSV	Vacuum Switching Valve
VTD	Variable Torque Distribution
W/H	Wiring Harness

SPECIFICATIONS

SPC

2. Schedule

A: MAINTENANCE SCHEDULE 1

1. U.S. MODELS

		Maintenance interval [Number of months or km (miles), whichever occurs first]													
	Months	3	6	12	18	24	30	36	42	48	54	60	66	To be continued to the next table.	Remarks
	× 1,000 km	4.8	9.6	19.2	28.8	38.4	48	57.6	67.2	76.8	86.4	96	105.6		
	× 1,000 miles	3	6	12	18	24	30	36	42	48	54	60	66		
1	Engine oil		R	R	R	R	R	R	R	R	R	R	R		
2	Engine oil filter		R	R	R	R	R	R	R	R	R	R	R		
3	Spark plug											R			
4	V-belt						I					I			
5	Fuel line						I					I			Note (1)
6	Fuel filter														Note (1)
7	Air cleaner element						R					R			Note (2)
8	Cooling system						I					I			
9	Engine coolant	Replace after the first 11 years or 220,000 km (137,500 miles), and every six years or 120,000 km (75,000 miles) thereafter													
10	Clutch system			I		I		I		I		I			
11	Transmission gear oil						I					I			
12	CVTF						I					I			
13	Front & rear differential gear oil						I					I			
14	Brake line			I		I		I		I					
15	Brake fluid						R					R			
16	Disc brake pad and disc			I		I		I		I		I			
17	Parking brake			I		I		I		I					
18	Suspension			I		I		I		I		I			
19	Wheel bearing											I			
20	Axle boots and joints			I		I		I		I		I			
21	Tire rotation		P	P	P	P	P	P	P	P	P	P	P		Note (3)
22	Steering system (Power steering)			I		I		I		I		I			
23	A/C filter	Replace every 12 months or 19,200 km (12,000 miles)													Note (4)

PERIODIC MAINTENANCE SERVICES

		Maintenance interval [Number of months or km (miles), whichever occurs first]												
	Months	Continued from previous table	72	78	84	90	96	102	108	114	120	126	132	Remarks
	× 1,000 km		115.2	124.8	134.4	144	153.6	163.2	172.8	182.4	192	201.6	211.2	
	× 1,000 miles		72	78	84	90	96	102	108	114	120	126	132	
1	Engine oil		R	R	R	R	R	R	R	R	R	R	R	
2	Engine oil filter		R	R	R	R	R	R	R	R	R	R	R	
3	Spark plug										R			
4	V-belt					I					I			
5	Fuel line					I					I			Note (1)
6	Fuel filter		R											Note (1)
7	Air cleaner element					R					R			Note (2)
8	Cooling system					I					I			
9	Engine coolant	Replace after the first 11 years or 220,000 km (137,500 miles), and every six years or 120,000 km (75,000 miles) thereafter												
10	Clutch system		I		I		I		I		I		I	
11	Transmission gear oil					I					I			
12	CVTF					I					I			
13	Front & rear differential gear oil					I					I			
14	Brake line		I		I		I		I		I		I	
15	Brake fluid					R					R			
16	Disc brake pad and disc		I		I		I		I		I		I	
17	Parking brake		I		I		I		I		I		I	
18	Suspension		I		I		I		I		I			
19	Wheel bearing										I			
20	Axle boots and joints		I		I		I		I		I		I	
21	Tire rotation		P	P	P	P	P	P	P	P	P	P	P	Note (3)
22	Steering system (Power steering)		I		I		I		I		I			
23	A/C filter	Replace every 12 months or 19,200 km (12,000 miles)												Note (4)

Symbol
R: Replace
I: Inspection
P: Perform

NOTE:
1. This inspection is not necessary to observe exhaust gas regulations or is the responsibility of the manufacturer under the current basic EPA regulations that must observed by law.
2. Replace the air cleaner element more frequently than the periodic replacement if the vehicle is being used in an excessively dusty environment.
3. Replace the tires if the tread-wear indicator has cause a bar-shaped cut across the tread. The indicator will appear when the remaining amount of tread is less than 1.6 mm (0.063 in).
4. Replace the A/C filter more frequently than the periodic replacement if the vehicle is being used in an excessively dusty environment.

B: MAINTENANCE SCHEDULE 2

Item	Maintenance interval	Repeat short distance driving	Repeat driving on bumpy muddy road	Driving in extremely cold weather	Area where salt or other corrosive substance used, or coastal area	High humidity or mountain area	Repeat towing trailer
Engine oil	Every 3 months	R		R			R
	4,800 km						
	3,000 miles						
Engine oil filter	Every 3 months	R		R			R
	4,800 km						
	3,000 miles						
Fuel line	Every 6 months				I		
	Every 9,600 km						
	Every 6,000 miles						
Transmission gear oil	Every 15 months						R
	Every 24,000 km						
	Every 15,000 miles						
CVTF	Every 40,000 km						R
	Every 24,855 miles						
Front & rear differential gear oil	Every 15 months						R
	Every 24,000 km						
	Every 15,000 miles						
Brake line	Every 6 months	I	I		I		I
	Every 9,600 km						
	Every 6,000 miles						
Brake fluid Clutch fluid	Every 15 months					R	
	Every 24,000 km						
	Every 15,000 miles						
Disc brake pad and disc	Every 6 months	I	I		I		I
	Every 9,600 km						
	Every 6,000 miles						
Parking brake	Every 6 months	I	I		I		I
	Every 9,600 km						
	Every 6,000 miles						
Suspension	Every 6 months		I	I	I		I
	Every 9,600 km						
	Every 6,000 miles						
Axle boots and joints	Every 6 months	I	I	I	I		I
	Every 9,600 km						
	Every 6,000 miles						
Steering system (Power steering)	Every 6 months	I	I	I	I		I
	Every 9,600 km						
	Every 6,000 miles						

R: Replace
I: Inspection

3. Engine Oil

A: INSPECTION

Refer to “LU” section for engine oil inspection. <Ref. to LU(H4DO)-12, INSPECTION, Engine Oil.>

B: REPLACEMENT

Refer to “LU” section for engine oil replacement. <Ref. to LU(H4DO)-13, REPLACEMENT, Engine Oil.>

1. Forester

A: DIMENSION

Model			2.5 L non-turbo	2.0 L turbo
Overall length		mm (in)	4,595 (180.9)	
Overall width		mm (in)	1,795 (70.7)	
Overall height		mm (in)	Models without roof rail: 1,685 (66.3) Models with roof rail: 1,735 (68.2)	
Compartment	Length	mm (in)	2,095 (82.5)	
	Width	mm (in)	1,540 (60.6)	
	Height	mm (in)	Model without sunroof: 1,280 (50.4) Model with sunroof: 1,245 (49.0)	
Wheelbase		mm (in)	2,640 (103.9)	
Tread	Front wheel	mm (in)	1,545 (60.9)	
	Rear wheel	mm (in)	1,550 (61.1)	
Minimum road clearance		mm (in)	220 (8.7)	

B: ENGINE

Model		2.5 L non-turbo	2.0 L turbo
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine	
Valve arrangement		Overhead camshaft type	
Bore × stroke	mm (in)	94.0 × 90.0 (3.70 × 3.54)	86.0 × 86.0 (3.39 × 3.39)
Displacement	cm^3 (cu in)	2,498 (152.43)	1,998 (121.92)
Compression ratio		10.0	10.6
Ignition order		1 — 3 — 2 — 4	
Idle speed at parking or neutral position	rpm	MT: 650±100 CVT: 675±100	700±100
Maximum output	hp (PS)/rpm	170 (172)/5,800	250 (253)/5,600
Maximum torque	lb-ft (kgf-m)/rpm	174 (24.0)/4,100	258 (35.7)/2,000 — 4,800

C: ELECTRICAL

Model		2.5 L non-turbo	2.0 L turbo
Ignition timing/Idle speed BTDC/rpm		MT: 16°±10°/650 CVT: 16°±10°/675	10°±10°/700
Spark plug	NGK	SILZKAR7B11	ILKAR8H6
Generator		12 V — 130 A	
Battery	Type and capacity (5HR)	12 V — 48 AH (55D23L)	
	CCA	390 A	

D: TRANSMISSION

1. MT

Model			2.5 L non-turbo
Transmission			6MT
Clutch type			DSPD
Gear ratio		1st	3.454
		2nd	1.888
		3rd	1.296
		4th	0.972
		5th	0.780
		6th	0.695
		Rev.	3.636
Reduction gear (front)		Type of gear	Hypoid
		Gear ratio	4.444
Reduction gear (rear)	Transfer reduction	Type of gear	Helical
		Gear ratio	1.000
	Final reduction	Type of gear	Hypoid
		Gear ratio	4.444

6MT: 6-forward speeds and 1-reverse with synchromesh
DSPD: Dry Single Plate Diaphragm

2. CVT

Model			2.5 L non-turbo	2.0 L turbo
Transmission type			CVT	
Clutch type			TCC	
Gear ratio		Forward	3.581 — 0.570	3.505 — 0.544
		Reverse	3.667	2.345
Reduction gear (front)	Final reduction	Type of gear	Hypoid	
		Gear ratio	3.700	4.111
Transfer reduction ratio			1.000	
Reduction gear (rear)		Type of gear	Hypoid	
		Gear ratio	3.700	4.111

TCC: Torque Converter Clutch
CVT: Forward continuously variable speed change, 1-reverse

E: STEERING

Type	Rack & pinion type
	Electric power steering
Turns, lock to lock	3.1
Minimum turning radius m (ft)	5.3 (17.4)

F: SUSPENSION

Front	Macpherson strut type independent suspension
Rear	Double-wishbone type independent suspension

G: BRAKE

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

H: TIRE

Rim size	17 × 7J	18 × 7J
Tire size	P225/60R17 98H	P225/55R18 97H
Type	Tubeless, steel belted radial	

I: CAPACITY

Model			2.5 L non-turbo		2.0 L turbo
Transmission			MT	CVT	CVT
Fuel tank		L (US gal, Imp gal)	60 (15.9, 13.2)		
Engine oil	Total capacity (at overhaul)	L (US qt, Imp qt)	5.7 (6.0, 5.0)		6.0 (6.3, 5.3)
	Filling amount of engine oil L (US qt, Imp qt)	When replacing engine oil and oil filter	4.8 (5.1, 4.2)		5.1 (5.4, 4.5)
		When replacing engine oil only	4.6 (4.9, 4.0)		4.9 (5.2, 4.3)
Transmission oil		L (US qt, Imp qt)	3.3 (3.5, 2.9)	—	—
CVTF		L (US qt, Imp qt)	—	11.93 — 12.43 (12.6 — 13.1, 10.5 — 10.9)	12.11 — 12.61 (12.8 — 13.3, 10.7 — 11.1)
Front differential gear oil		L (US qt, Imp qt)	—	1.3 — 1.4 (1.4 — 1.5, 1.1 — 1.2)	1.3 — 1.5 (1.4 — 1.6, 1.1 — 1.3)
Rear differential gear oil		L (US qt, Imp qt)	0.8 (0.8, 0.7)		
Engine coolant		L (US qt, Imp qt)	7.4 (7.8, 6.5)	7.6 (8.0, 6.7)	8.9 (9.4, 7.8)

J: WEIGHT

Non-turbo model

Option code*1			U5		C0		U5		C4	U5	
			XA		YA		SA	VA	HF	WF	LF
Engine type			2.5 L DOHC non-turbo								
Model			2.5 i		2.5 i Plus				2.5 i Premium		
			AWD								
Transmission			6MT	CVT	6MT	CVT			6MT		
Curb weight (C.W.)	Total	kg (lb)	1,495 (3,296)	1,527 (3,366)	1,498 (3,302)	1,530 (3,373)	1,519 (3,349)	1,519 (3,349)	1,490 (3,285)	1,490 (3,285)	1,490 (3,285)
	Front	kg (lb)	851 (1,875)	866 (1,909)	852 (1,879)	868 (1,913)	863 (1,903)	863 (1,903)	848 (1,869)	848 (1,869)	848 (1,869)
	Rear	kg (lb)	644 (1,421)	661 (1,457)	646 (1,423)	662 (1,460)	656 (1,446)	656 (1,446)	642 (1,416)	642 (1,416)	642 (1,416)
Gross vehicle weight (G.V.W.)		kg (lb)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)
	Rear	kg (lb)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)
Option	Aluminum wheel (17-inch)		—	—	—	—	○	○	○	○	○
	Aluminum wheel (18-inch)		—	—	—	—	—	—	—	—	—
	HID headlight		—	—	—	—	—	—	—	—	—
	Dark-colored glass		—	—	○	○	—	—	○	○	○
	Sunroof		—	—	—	—	—	—	—	—	—
	Auto light		—	—	—	—	—	—	○	—	—
	Cold weather package		—	—	—	—	—	○	—	—	○
	Leather seats and leather door trim center decoration		—	—	—	—	—	—	—	—	—
	Power seat		—	—	—	—	—	—	○	○	○
	Navigation system		—	—	—	—	—	—	—	—	—
	harman/kardon audio + high grade audio		—	—	—	—	—	—	—	—	—
	harman/kardon audio + navigation		—	—	—	—	—	—	—	—	—
	Without audio		—	—	—	—	—	—	—	—	—
	Keyless access with push button start		—	—	—	—	—	—	—	—	—
	Power rear gate		—	—	—	—	—	—	—	—	—
	Side & curtain air-bags		○	○	○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

SPECIFICATIONS

Option code*1			U5			C0		C4	C5		U5		
			IF	TF	TP	HF	JF	HF	HF	JF	IF	TF	TP
Engine type			2.5 L DOHC non-turbo										
Model			2.5 i Premium										
			AWD										
Transmission			6MT			CVT							
Curb weight (C.W.)	Total	kg (lb)	1,505 (3,319)	1,505 (3,319)	1,506 (3,321)	1,523 (3,358)	1,538 (3,391)	1,523 (3,358)	1,523 (3,358)	1,538 (3,391)	1,538 (3,391)	1,538 (3,391)	1,539 (3,393)
	Front	kg (lb)	856 (1,887)	856 (1,887)	857 (1,890)	864 (1,910)	872 (1,929)	864 (1,910)	864 (1,910)	872 (1,929)	872 (1,929)	872 (1,929)	873 (1,931)
	Rear	kg (lb)	649 (1,431)	649 (1,431)	649 (1,431)	659 (1,447)	666 (1,461)	659 (1,447)	659 (1,447)	666 (1,461)	666 (1,461)	666 (1,461)	666 (1,462)
Gross vehicle weight (G.V.W.)		kg (lb)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)
	Rear	kg (lb)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)
Option	Aluminum wheel (17-inch)		○	○	○	○	○	○	○	○	○	○	○
	Aluminum wheel (18-inch)		—	—	—	—	—	—	—	—	—	—	—
	HID headlight		—	—	—	—	—	—	—	—	—	—	—
	Dark-colored glass		○	○	○	○	○	○	○	○	○	○	○
	Sunroof		○	○	○	—	○	—	—	○	○	○	○
	Auto light		—	—	—	○	○	○	○	○	—	—	—
	Cold weather package		—	○	○	—	○	—	—	○	—	○	○
	Leather seats and leather door trim center decoration		—	—	—	—	—	—	—	—	—	—	—
	Power seat		○	○	○	○	○	○	○	○	○	○	○
	Navigation system		—	—	○	—	—	—	—	—	—	—	○
	harman/kardon audio + high grade audio		—	—	—	—	—	—	—	—	—	—	—
	harman/kardon audio + navigation		—	—	—	—	—	—	—	—	—	—	—
	Without audio		—	—	—	—	—	—	—	—	—	—	—
	Keyless access with push button start		—	—	—	—	—	—	—	—	—	—	—
	Power rear gate		—	—	—	—	—	—	—	—	—	—	—
	Side & curtain air-bags		○	○	○	○	○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

Option code*1			U5				C0	C0	C4	
			WF	LF	TF	TP	JB	JB	KS	JS
Engine type			2.5 L DOHC non-turbo							
Model			2.5 i Premium		2.5 i Premium EyeSight		2.5 i Limited			
			AWD							
Transmission			CVT				6MT	CVT		
Curb weight (C.W.)	Total	kg (lb)	1,523 (3,358)	1,523 (3,358)	1,540 (3,396)	1,541 (3,398)	1,514 (3,338)	1,548 (3,413)	1,553 (3,424)	1,551 (3,420)
	Front	kg (lb)	864 (1,910)	864 (1,910)	874 (1,927)	875 (1,929)	861 (1,899)	878 (1,942)	876 (1,932)	876 (1,932)
	Rear	kg (lb)	659 (1,447)	659 (1,447)	666 (1,469)	666 (1,469)	653 (1,439)	670 (1,471)	677 (1,493)	675 (1,488)
Gross vehicle weight (G.V.W.)		kg (lb)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)
	Rear	kg (lb)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)
Option	Aluminum wheel (17-inch)		○	○	○	○	○	○	○	○
	Aluminum wheel (18-inch)		—	—	—	—	—	—	—	—
	HID headlight		—	—	—	—	—	—	○	—
	Dark-colored glass		○	○	○	○	○	○	○	○
	Sunroof		—	—	○	○	○	○	○	○
	Auto light		—	—	—	—	○	○	○	○
	Cold weather package		—	○	○	○	○	○	○	○
	Leather seats and leather door trim center decoration		—	—	—	—	—	—	○	○
	Power seat		○	○	○	○	○	○	○	○
	Navigation system		—	—	—	○	—	—	—	—
	harman/kardon audio + high grade audio		—	—	—	—	—	—	—	—
	harman/kardon audio + navigation		—	—	—	—	—	—	—	—
	Without audio		—	—	—	—	—	—	—	—
	Keyless access with push button start		—	—	—	—	—	—	○	○
	Power rear gate		—	—	—	—	○	○	○	○
	Side & curtain air-bags		○	○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

SPECIFICATIONS

Option code*1			U5				C0		U5			
			JM	JZ	JK	JV	JB	J1	JM	JZ	JK	JV
Engine type			2.5 L DOHC non-turbo									
Model			2.5 i Limited				2.5 i Limited EyeSight					
			AWD									
Transmission			CVT									
Curb weight (C.W.)	Total	kg (lb)	1,546 (3,408)	1,551 (3,419)	1,552 (3,422)	1,556 (3,430)	1,550 (3,418)	1,550 (3,418)	1,548 (3,413)	1,553 (3,424)	1,554 (3,427)	1,558 (3,435)
	Front	kg (lb)	877 (1,939)	879 (1,946)	880 (1,947)	882 (1,952)	880 (1,940)	880 (1,940)	879 (1,938)	881 (1,943)	882 (1,945)	884 (1,949)
	Rear	kg (lb)	669 (1,469)	672 (1,474)	672 (1,475)	674 (1,478)	670 (1,477)	670 (1,477)	669 (1,475)	672 (1,482)	672 (1,482)	674 (1,486)
Gross vehicle weight (G.V.W.)		kg (lb)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)
	Rear	kg (lb)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)
Option	Aluminum wheel (17-inch)		○	○	○	○	○	○	○	○	○	○
	Aluminum wheel (18-inch)		—	—	—	—	—	—	—	—	—	—
	HID headlight		—	—	—	—	—	—	—	—	—	—
	Dark-colored glass		○	○	○	○	○	○	○	○	○	○
	Sunroof		○	○	○	○	○	○	○	○	○	○
	Auto light		○	○	○	○	○	○	○	○	○	○
	Cold weather package		○	○	○	○	○	○	○	○	○	○
	Leather seats and leather door trim center decoration		○	○	○	○	—	—	○	○	○	○
	Power seat		○	○	○	○	○	○	○	○	○	○
	Navigation system		—	—	○	—	—	—	—	—	○	—
	harman/kardon audio + high grade audio		—	—	—	—	—	—	—	—	—	—
	harman/kardon audio + navigation		—	—	—	○	—	—	—	—	—	○
	Without audio		—	—	—	—	—	—	—	—	—	—
	Keyless access with push button start		—	—	—	—	—	○	—	—	—	—
	Power rear gate		—	○	○	○	○	○	—	○	○	○
	Side & curtain air-bags		○	○	○	○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

Option code*1			C0		C4	U5		C0/U5		U5	
			GU	GV	GS	4V	GW	GR	GR	4V	GW
Engine type			2.5 L DOHC non-turbo								
Model			2.5 i Touring					2.5 i Touring EyeSight			
			AWD								
Transmission			CVT								
Curb weight (C.W.)	Total	kg (lb)	1,562 (3,444)	1,563 (3,446)	1,558 (3,435)	1,562 (3,444)	1,562 (3,444)	1,565 (3,451)	1,565 (3,451)	1,564 (3,449)	1,565 (3,451)
	Front	kg (lb)	886 (1,954)	886 (1,954)	884 (1,949)	886 (1,954)	886 (1,954)	888 (1,958)	888 (1,958)	886 (1,954)	888 (1,958)
	Rear	kg (lb)	676 (1,491)	677 (1,493)	674 (1,479)	676 (1,491)	676 (1,491)	677 (1,493)	677 (1,493)	678 (1,495)	677 (1,493)
Gross vehicle weight (G.V.W.)		kg (lb)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)	2,032 (4,480)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)	1,048 (2,310)
	Rear	kg (lb)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)	1,093 (2,410)
Option	Aluminum wheel (17-inch)		—	—	—	—	—	—	—	—	—
	Aluminum wheel (18-inch)		○	○	○	○	○	○	○	○	○
	HID headlight		○	○	○	—	○	○	○	—	○
	Dark-colored glass		○	○	○	○	○	○	○	○	○
	Sunroof		○	○	○	○	○	○	○	○	○
	Auto light		○	○	○	○	○	○	○	○	○
	Cold weather package		○	○	○	○	○	○	○	○	○
	Leather seats and leather door trim center decoration		○	○	○	○	○	○	○	○	○
	Power seat		○	○	○	○	○	○	○	○	○
	Navigation system		—	—	—	—	—	—	—	—	—
	harman/kardon audio + high grade audio		○	—	—	—	○	—	—	—	○
	harman/kardon audio + navigation		—	○	—	○	—	○	○	○	—
	Without audio		—	—	—	—	—	—	—	—	—
	Keyless access with push button start		—	—	○	—	○	○	○	—	○
	Power rear gate		○	○	○	○	○	○	○	○	○
	Side & curtain air-bags		○	○	○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

Turbo model

Option code*1			C0		U4		C0		C4
			MB	MF	4P	4F	GU	GV	GS
Engine type			2.0 L DOHC turbo						
Model			2.0 XT Premium				2.0 XT Touring		
			AWD						
Transmission			CVT						
Curb weight (C.W.)	Total	kg (lb)	1,649 (3,636)	1,644 (3,624)	1,643 (3,622)	1,644 (3,624)	1,656 (3,651)	1,657 (3,653)	1,652 (3,642)
	Front	kg (lb)	956 (2,108)	957 (2,110)	956 (2,108)	957 (2,110)	964 (2,126)	964 (2,126)	961 (2,119)
	Rear	kg (lb)	693 (1,528)	687 (1,515)	687 (1,515)	687 (1,515)	692 (1,526)	693 (1,528)	691 (1,524)
Gross vehicle weight (G.V.W.)		kg (lb)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)
	Rear	kg (lb)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)
Option	Aluminum wheel (17-inch)		—	—	—	—	—	—	—
	Aluminum wheel (18-inch)		○	○	○	○	○	○	○
	HID headlight		—	—	—	—	○	○	○
	Dark-colored glass		○	○	○	○	○	○	○
	Sunroof		○	○	○	○	○	○	○
	Auto light		○	○	○	○	○	○	○
	Cold weather package		○	—	○	—	○	○	○
	Leather seats and leather door trim center decoration		—	—	—	—	○	○	○
	Power seat		○	○	○	○	○	○	○
	Navigation system		—	—	○	—	—	—	—
	harman/kardon audio + high grade audio		—	—	—	—	○	—	—
	harman/kardon audio + navigation		—	—	—	—	—	○	—
	Without audio		—	—	—	—	—	—	—
	Keyless access with push button start		—	—	—	—	—	—	○
	Power rear gate		○	—	—	—	○	○	○
	Side & curtain air-bags		○	○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

Option code*1			U4		C0	U4		
			4V	GW	GR	GR	4V	GW
Engine type			2.0 L DOHC turbo					
Model			2.0 XT Touring		2.0 XT Touring EyeSight			
			AWD					
Transmission			CVT					
Curb weight (C.W.)	Total	kg (lb)	1,656 (3,651)	1,656 (3,651)	1,668 (3,677)	1,668 (3,677)	1,667 (3,676)	1,667 (3,676)
	Front	kg (lb)	964 (2,126)	964 (2,126)	971 (2,141)	971 (2,141)	970 (2,139)	971 (2,141)
	Rear	kg (lb)	692 (1,526)	692 (1,526)	697 (1,537)	697 (1,537)	697 (1,537)	696 (1,535)
Gross vehicle weight (G.V.W.)		kg (lb)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)	2,110 (4,652)
Gross axle weight ratio (G.A.W.)	Front	kg (lb)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)
	Rear	kg (lb)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)	1,095 (2,414)
Option	Aluminum wheel (17-inch)		—	—	—	—	—	—
	Aluminum wheel (18-inch)		○	○	○	○	○	○
	HID headlight		—	○	○	○	—	○
	Dark-colored glass		○	○	○	○	○	○
	Sunroof		○	○	○	○	○	○
	Auto light		○	○	○	○	○	○
	Cold weather package		○	○	○	○	○	○
	Leather seats and leather door trim center decoration		○	○	○	○	○	○
	Power seat		○	○	○	○	○	○
	Navigation system		—	—	—	—	—	—
	harman/kardon audio + high grade audio		—	○	—	—	—	○
	harman/kardon audio + navigation		○	—	○	○	○	—
	Without audio		—	—	—	—	—	—
	Keyless access with push button start		—	○	—	○	—	○
	Power rear gate		○	○	○	○	○	○
	Side & curtain air-bags		○	○	○	○	○	○

*1: For option codes, refer to the ID section.<Ref. to ID-6, MODEL NUMBER LABEL, IDENTIFICATION, Identification.>

PRECAUTION

PC

4. Engine Oil Filter

A: REPLACEMENT

Refer to “LU” section for engine oil filter replacement. <Ref. to LU(H4DO)-63, Engine Oil Filter.>

1. Precaution

A: CAUTION

Please clearly understand and adhere to the following. They must be strictly followed to avoid minor or serious injury to the person doing the work or people in the area.

1. VEHICLE DYNAMICS CONTROL (VDC)

Handle the VDC as a total system. Do not disassemble or attempt to repair parts which are not instructed in this manual. Follow the directions in this manual when performing maintenance on the VDCCM&H/U. When parts other than those specified are disassembled, it could prevent the VDC system from operating when needed or cause it to operate incorrectly and result in injury.

2. BRAKE FLUID

If brake fluid gets in your eyes or on your skin, do the following:
- Wash eyes and seek immediate medical attention.
- Wash your skin with soap and then rinse thoroughly with water.

3. RADIATOR FAN

The radiator fan may rotate without warning, even when the engine is not ON. Do not place your hand, cloth, tools or other items near the fan at any time.

4. ROAD TEST

Always conduct road tests in accordance with traffic rules and regulations to avoid bodily injury and interrupting traffic.

5. AIRBAG

To prevent bodily injury from unexpected deployment of airbags and unnecessary maintenance, follow the instructions in this manual when performing maintenance on the airbag components and nearby, around front of the vehicle (radiator panel, front wheel apron, front side frame, front bumper, front hood panel, front fender panel), around side of the vehicle (front door panel, rear door panel, center pillar, rear fender panel, side sill, rear wheel apron), around rear of the vehicle (the rear seat cushion, rear floor pan, rear sub frame assembly) and the airbag wiring harnesses and nearby.
To prevent unexpected deployment, turn the ignition switch to OFF and disconnect the ground cable from battery, then wait at least 60 seconds to discharge electricity before starting work. Removing or installing the components or the connectors with the ignition switch ON will electrically impair them.

6. AIRBAG AND SEAT BELT PRETENSIONER DISPOSAL

To prevent bodily injury from unexpected airbag deployment, do not dispose the airbag modules or seat belt pretensioner in the same way as other waste. Follow the special instructions for disposal in this manual. Follow all government regulations concerning disposal of refuse.

7. AIRBAG MODULE

Adhere to the following when handing and storing the airbag module to prevent bodily injury from unexpected deployment:

- Do not hold the harnesses or connectors to carry the module.
- Do not face the bag in the direction that it opens towards yourself or other people.
- Do not face the bag in the direction that it opens towards the floor or walls.

8. AIRBAG SPECIAL TOOL

To prevent unexpected deployment, only use special tools.

9. WINDOW

Always wear safety glasses when working around any glass to prevent glass fragments from damaging your eyes.

10.WINDOW ADHESIVE

Always use the recommended or equivalent adhesive when attaching glass to prevent it from coming off and being removed, resulting in accidents and injury.

11.OIL

When handling oil, adhere to the following to prevent unexpected accident.

- Prepare a container and cloth to prevent scattering of oil when performing work where oil can be spilled. If the fuel spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Follow all government and local regulations concerning disposal of refuse when disposing.

12.FUEL

When handling and storing fuel, adhere to the following to prevent from unexpected accident.

- Be careful with fire.
- Prepare a container and cloth to prevent scattering of fuels when performing work where fuels can be spilled. If the fuel spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Follow all government and local regulations concerning disposal of refuse when disposing.

13.ENGINE COOLANT

When handling engine coolant, adhere to the following to prevent from unexpected accident.

- Never remove the radiator cap since engine coolant may blow out when it is hot.
- Prepare a container and cloth to prevent scattering of engine coolant when performing work where engine coolant can be spilled. If the oil spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Follow all government and local regulations concerning disposal of refuse when disposing.

14.AIR CONDITIONER REFRIGERANT

In order to prevent from global warming, avoid releasing air conditioner refrigerant into the atmosphere. Using a refrigerant recovery system, discharge and recycle it.

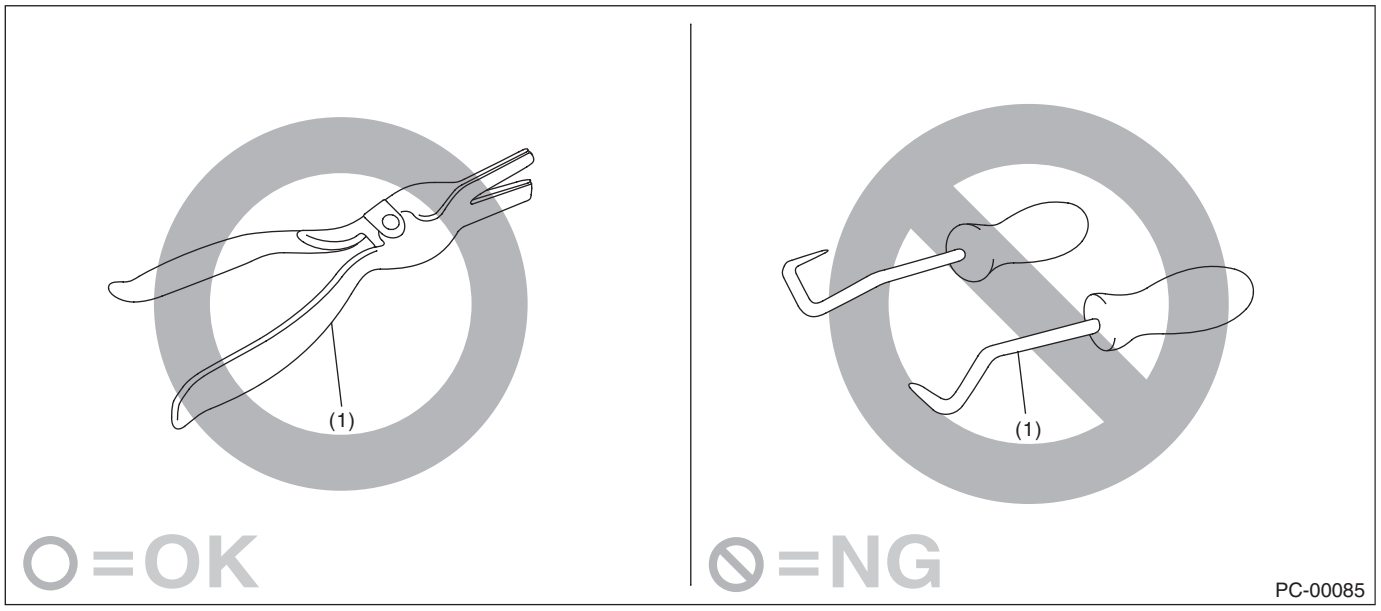
15.REMOVAL AND INSTALLATION OPERATION OF HOSES, ETC.

1. Before the removal and installation operation of hoses, etc.

• If you keep using the damaged or deformed hose , it results bleeds or leakage of the fat adheres or disconnection of the hose. Be careful not to spill fat adheres on exhaust pipes, etc. during maintenance to prevent emitting smoke or causing fires.
• Perform the operation with the hose removed. If the operation is performed without removing the hose, it may damage inner surface of the hose.

2. Removal and installation operation of hoses, etc. during the inspection

• Follow the instructions below when removing hose.
• Do not use a pointed hose remover (hose plucker) when using a general hose remover. It may damage the pipe surface or the hose.

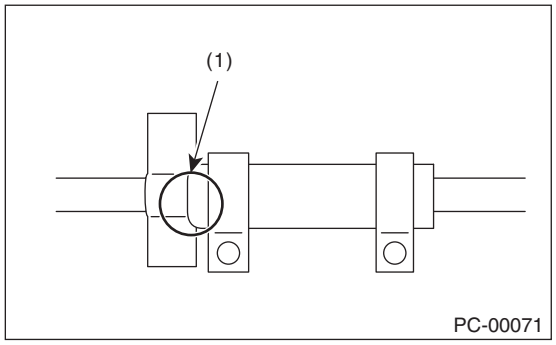


(1) Hose remover

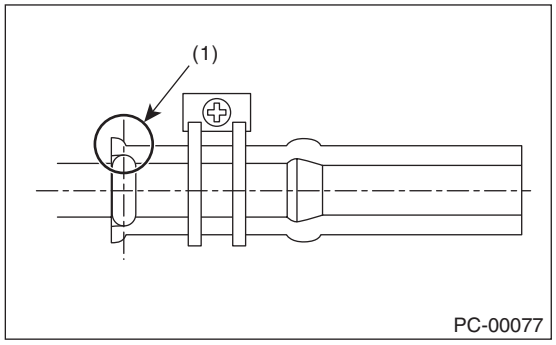
• When draining hose using pliers, be sure to cover the hose with cloth and rotate the hose slightly to extract straight.

• If you keep using the hose, perform the inspection below and replace the hose with a new part if faulty.

- Replace the hose with a new part if it rides over the stay or the top of spool.



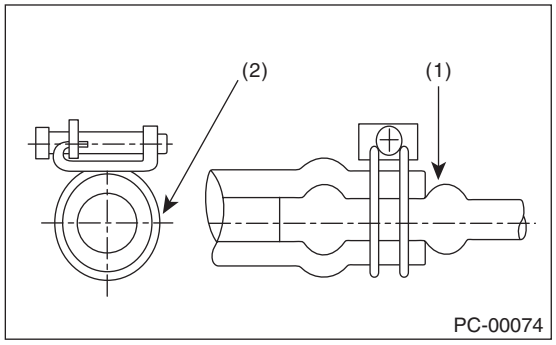
(1) Hose rides over the stay

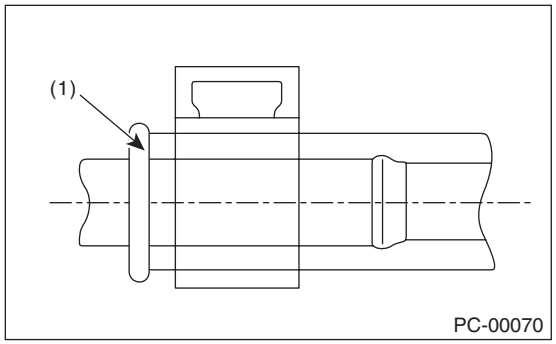


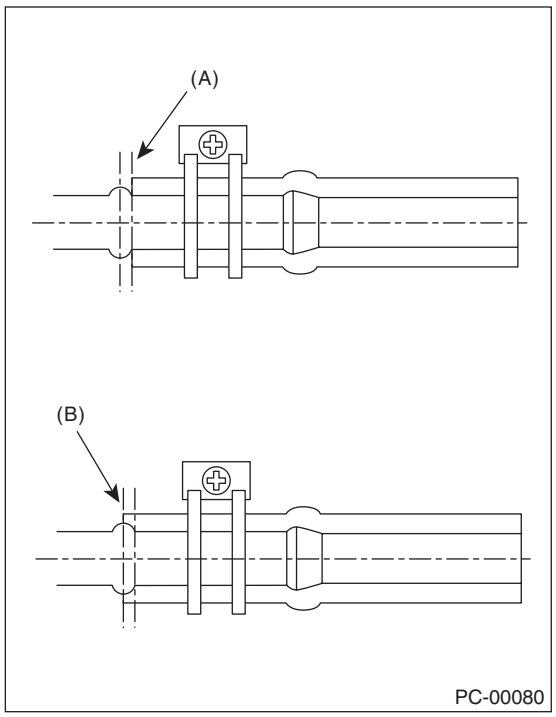
(1) Hose rides over the top of spool

- Check if the surface and the inner surface of the hose are damaged, cracked, bend, hardened, softened, swelled, peeled or deformed due to the adherence or the entry of the foreign matter by bending the hose. Replace with the new part if faulty.

- **Follow the instructions below during installation.**
  - Check carefully for assembling position.
  - Never use lubricants.
  - Insert the hose to the specified position (stopper or spool) securely. (The stopper of the spool is between the top of the spool and the bottom section.)







(1) Push against the spool. (Insert the hose and prevent it from becoming wrinkled.)

(2) Tighten the hose outwards and apply force thoroughly.

(A) OK position (bottom of spool)

(B) OK position (top of spool)

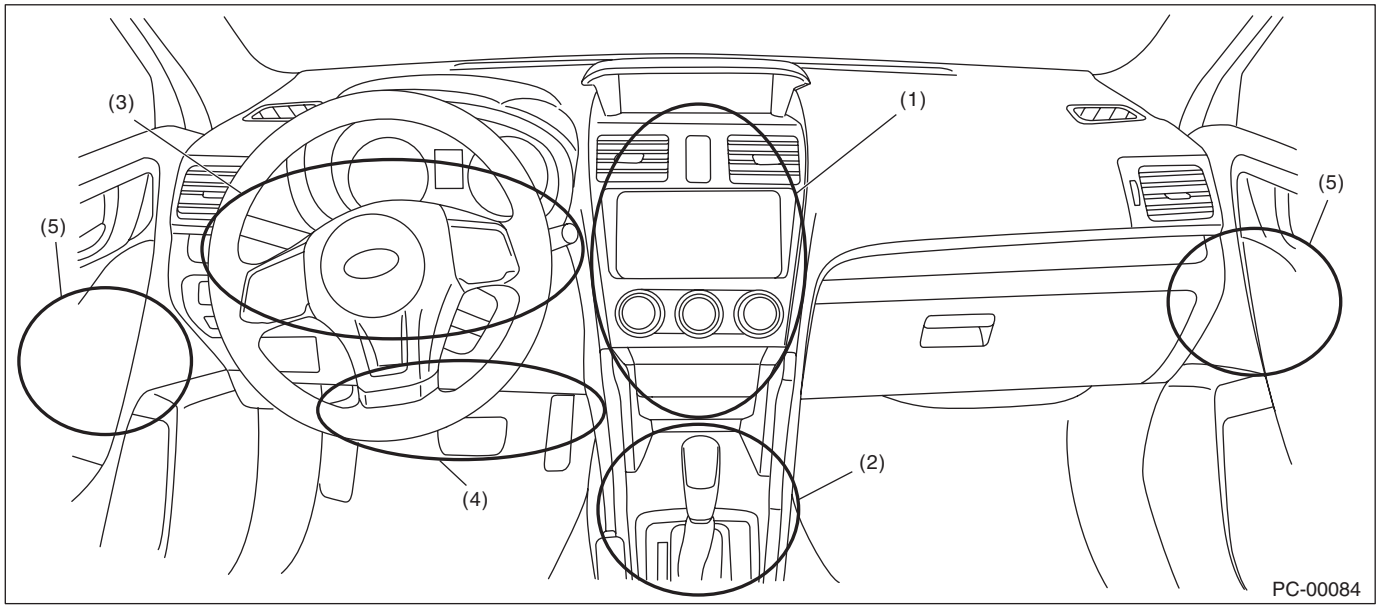
- Check if the position, direction and hose layout of the hose clamp are correct. (Check if the position, direction, length and the gap around are correct, or if it is different from the condition before the work)
- After the installation, check that the hose is installed securely and there is no leakage. (Check if it is fixed securely with the clamp)

- **For hose clips and hose clamps, perform the inspection below and replace them with a new part if faulty.**
  - Check for deformation, rust, damage or foreign matters.
  - For hose clip, check if it works and has clamping force.
  - For hose clamp, check if it can tighten screw, not ovalized or the screw is not damaged.
- **For hose pipes, perform the inspection below and replace with a new part if faulty.**
  Check if the pipe is not damaged, rusted, peeled (peeled plates included), covered with foreign matter, bent, compressed or cracked.
- **For the parts below, replaces with a new part when the hose is removed or the installation position is changed.**
  CVTF oil cooler hose, engine oil cooler hose, fuel hose (delivery/return) (except for those with quick connector)

16.HANDLING PRECAUTIONS FOR SILICON-CONTAINING SPRAY

When a silicone contained in the lubricant, rust inhibitor or glazing agent adheres to the electrical contact of the relay or switch, nonconducting silica dioxide (SiO_2) film will be formed, which may lead to poor continuity. Therefore, the following precautions must be observed when using the silicon-containing spray.

- Never spray directly to the electrical equipment.
- When using the spray close to the electrical equipment, always put the cover on it. Be sure to put the cover on the electrical equipment especially when using the spray to the locations shown in the figure below and their surrounding areas.



(1)	Audio, heater control switch	(3)	Combination switch, steering switch	(5)	Power window switch
(2)	Shift/select lever switch, parking switch	(4)	Stop light switch, brake light switch, clutch switch, clutch start switch		

- If the residual silicon remains in the vicinity of the electrical equipment after the spray has been used, the vaporized silicon stands around the electrical equipment and it may adhere to electrical contact. After using the spray, be sure to wipe the silicon off with a cloth.
- Even when using the spray to the place away from the electrical equipment, the droplet of the spray may be splashed to the periphery. Use as small amount of spray as possible, and take care not to splash the silicon to the periphery.

NOTE:
The “silicon” used in this section refers to “silicone”, that is, silicon polymer.

NOTE

NT

1. Note

A: BASIC REPAIR HINT

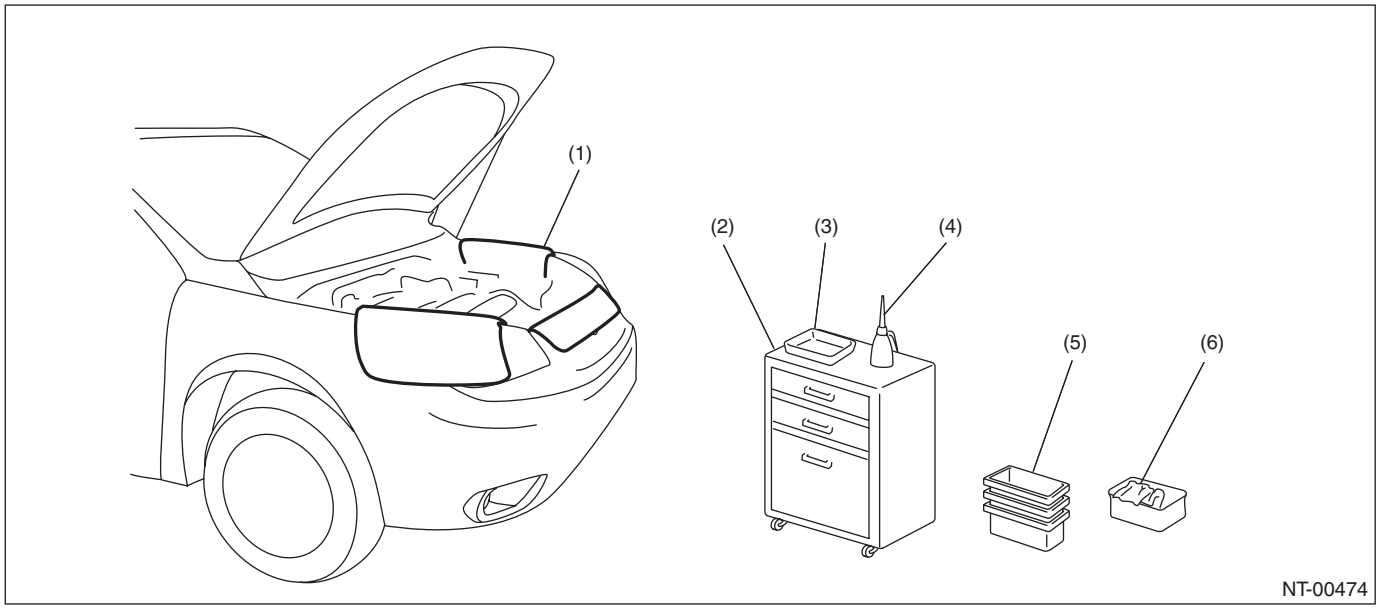
This section describes basic points that the service operator must understand before performing the service operation.

1. APPEARANCE

- Always wear clean work clothing.
- Wear a cap and protective shoes.

2. PROTECTION OF VEHICLE UNDER MAINTENANCE AND PREPARATION OF TOOLS/ EQUIPMENT

- Before work, cover the vehicle body. (Ex. grille cover, fender cover, seat cover and floor mat cover)
- Before performing the service operation, prepare tools, equipment, container box, grease and cloth etc.



(1)	Fender cover	(3)	Tray	(5)	Container box
(2)	Tools/equipment case	(4)	Oil	(6)	Cloth

3. SAFETY

- Before work, set the wheel stoppers to secure the vehicle.
- When performing work by multiple workers, call to each other to make sure that service operation is performed safely.
- Ventilate the room when starting the engine.
- When performing the service operation of high-temperature parts like muffler, or rotating parts like fan and other movable parts, be careful not to get burned or injured.
- For the jack-up and lift up, set the tool to the proper location to support the vehicle correctly. And use the safety device properly when lifting up.

4. SERVICE OPERATION

- By identifying the vehicle problems thoroughly before service operation, diagnostics work will be performed effectively.
- Before removing parts, confirm the installation condition or the damage of the parts.
- To reinstall parts properly, leave a note of the condition before work as necessary.
- For a part which needs positioning, take appropriate action such as putting alignment marks.
- For a removed part, clean it as necessary and check for damage and defect before installation. If a part is damaged or does not work properly, replace it with a new part.
- Removing or installing the components or the connectors with the ignition switch ON will electrically impair them.

5. REMOVED PART

• A removed part must be organized to avoid mixing up with similar parts. When same parts are used in multiple locations, such as pistons in engine, manage the parts by using labels with cylinder No. so that the parts are not installed to the wrong location.
• Always replace nonreusable parts such as gasket and O-ring with new parts.
• After work, have a customer confirm the replaced part.

6. WHEN REMOVING BATTERY

When removing battery, power supply is cut off and the information stored in the computer memory is volatilized. Therefore, setting information of some device is initialized to the factory default. The device and functions initialized by removing battery are as follows.

No.	Item	Job contents when connecting battery
1	Clock (MFD) (settings that the customer set)	Set the clock to the current time.
2	MFD (high grade type)	Set to the date checked before disconnecting the battery.
3	Audio (settings that the customer set)	Set to the contents checked before disconnecting the battery.
4	Navigation system (settings that the customer set)	• Time setting is not necessary because the time information is received via GPS. • Set the sound and other settings (items that were set in the selection) to the contents checked before disconnecting the battery.
5	Temperature setting of fully automatic air conditioner (settings that the customer set)	Set to the contents checked before disconnecting the battery.
6	Power window system	Initialize automatic full open/close of driver's window (power window system). For the initialization procedure, refer to "GW" section. <Ref. to GW-9, OPERATION, Power Window System.>
7	Steering lock system (model with keyless access)	If the engine does not start, initialize the steering lock system. For the initialization procedure, refer to "KPS" section. <Ref. to KPS(diag)-124, ENGINE DOES NOT START, INSPECTION, Diagnostics with Phenomenon.>
8	EyeSight (model with EyeSight)	Set to the contents checked before disconnecting the battery.
9	Electronic throttle system	Turn the ignition switch to ON, wait for 10 seconds or more, and start the engine.
10	Engine control system	Let the engine run at idle until it fully warms up (the radiator fan turns 2 times or more) under no electrical load condition.
11	Power rear gate	When the battery is connected again with the power rear gate opened, perform the initialization. (When the battery is connected again with the power rear gate closed, the initialization is automatically performed.) Refer to "PRG" for initialization. <Ref. to PRG-8, INITIALIZATION, PROCEDURE, Power Rear Gate System.>
12	Past trouble history (memory code)	—

NOTE

7. OTHER ADJUSTMENT OPERATIONS BEFORE DELIVERING THE VEHICLE TO CUSTOMER

Due to service and parts replacement convenience, perform the following operations before delivering the vehicle to the customer.

No.	Item	Check operation	Adjustment operation	Additional adjustment operations when replacing parts
1	Positions of devices • Steering • Room mirror • Door mirror • Seat • Air conditioner vent grille	Is the device set to the same position when the vehicle was received from the customer?	Adjust the device to the similar position when the vehicle was received from the customer.	When removing/installing each device • Meter, instrument panel, steering column, etc. • Room mirror, roof trim, sunroof assembly, etc. • Door mirror, door panel, etc. • Seat, floor carpet, parking brake lever, etc. • Vent grille, instrument panel, console box, etc.
2	Positions of switches • SI-Drive • Wiper, light (AUTO or OFF) • Headlight beam leveler • Illumination control • Room light • Seat heater, etc.	Is the switch set to the same position when the vehicle was received from the customer?	Set the switch to the same position when the vehicle was received from the customer.	When removing/installing each switch
3	Position of antenna	Is the antenna set to the same position when the vehicle was received from the customer?	Adjust the position of antenna.	When removing/installing the antenna and washing the vehicle

B: NOTE

This information will improve the efficiency of maintenance and assure the sound work.

1. CLEANING

- Perform the operation in a clean location and use extra caution in dust proofing.
- Clean the items (except for assembly components) with steam, etc. before disassembly. During steam cleaning, wrap the air breather, oil level gauge, connectors, etc. with vinyl tape to prevent steam from entering inside the parts.
- Use an appropriate cleaning solvent.
- Do not clean rubber parts such as O-ring, gasket and oil seal with cleaning solution.

2. FASTENERS NOTICE

Fasteners must be tightened to the specified torque.
Do not apply paint, lubricant, rust retardant or other substance to the surface around bolts, nuts, etc. Doing so will cause such a malfunction as looseness of bolts and nuts, power change, etc. even if tightening the bolts and nuts to the specified torque.

3. STATIC ELECTRICITY DAMAGE

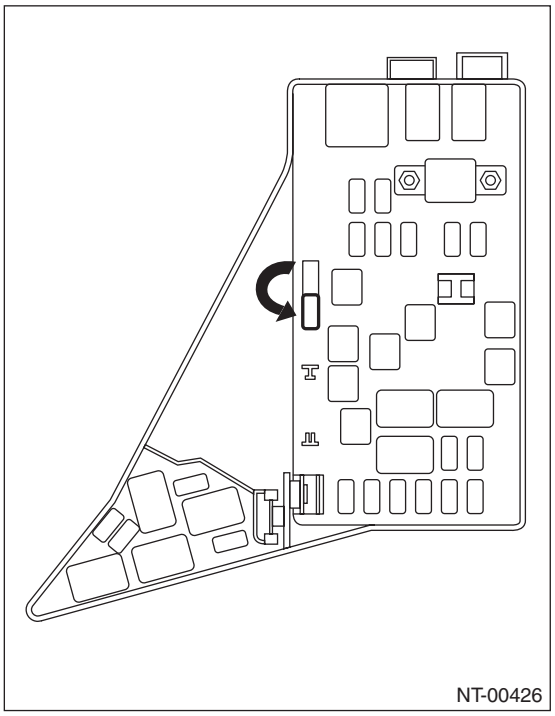
Do not touch the control modules, connectors, logic boards and other such parts when there is a risk of static electricity. Always use a static electricity prevention cord or touch grounded metal for the elimination of static electricity before conducting work.

4. BATTERY

When removing the battery terminal, always be sure to turn the ignition switch to OFF and disconnect the battery ground terminal first.

5. BACKUP/POWER SUPPLY FUSE

Backup fuse (20A) remains removed to prevent the battery consumption when vehicles are delivered. Install the backup fuse by following the illustration.



6. IMMOBILIZER RELATED PART

Do not replace parts which have immobilizer ID with the parts from other vehicle.

- Model without keyless access function

All ignition keys, combination meter (except for C0 and C5), body integrated unit, ECM, security CM (for C0 and C5)

- Model with keyless access function

All access keys, keyless access CM, steering lock CM, ECM, ID code box (for C0, C5)

7. SERVICE PARTS

Use genuine parts for maximum performance and maintenance when conducting repairs. Subaru/FHI will not be responsible for poor performance resulting from the use of parts except for genuine parts.

8. PROTECTING VEHICLE UNDER MAINTENANCE

Make sure to attach the fender cover, seat covers, etc. before work.

9. ENSURING SECURITY DURING WORK

When working in a group of two or more, perform the work with calling each other to ensure mutual safety.

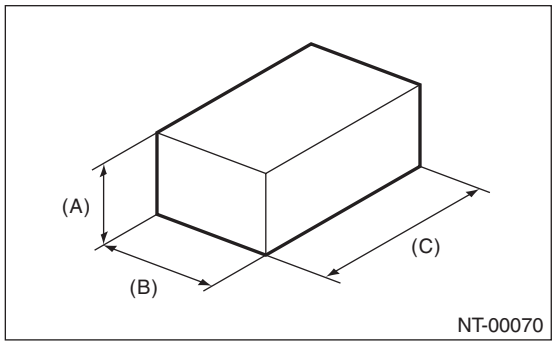
NOTE

10.LIFT AND JACK

When using a lift or shop jack to raise a vehicle or using rigid rack to support a vehicle, always follow instructions concerning jack-up points and weight limits to prevent the vehicle from falling, which could result in injury. Be especially careful that the vehicle is balanced before raising it. Be sure to set the wheel stoppers when jacking-up only the front or rear side of the vehicle.

CAUTION:
Select the lift attachment so that the side sill does not contact the lift arm.

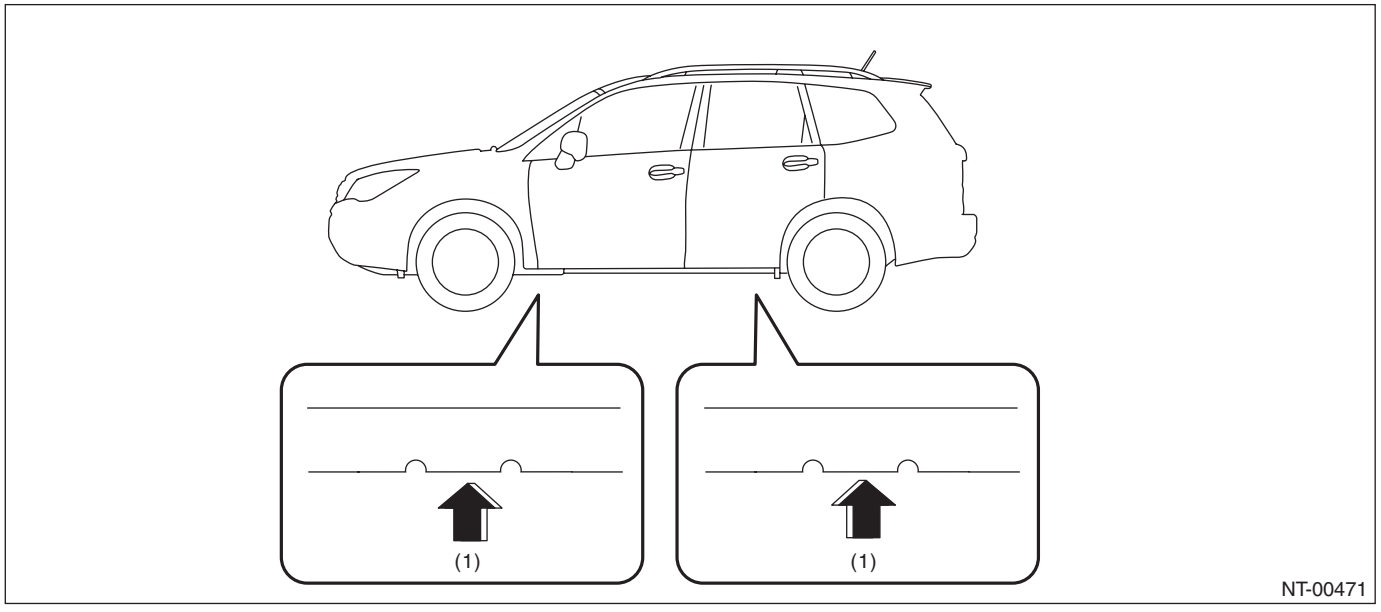
NOTE:
- When using a lift, follow its operation manual.
- When the side sill cover contacts the lift arm, use a lift attachment.
- Do not work or leave unattended while the vehicle is supported with jack, support it with rigid racks.
- Be sure to use the rigid racks with rubber attached to cradle to support the vehicle.
- When using a lift, use an attachment or something similar.
- When using a plate lift, use a rubber attachment. Place the attachment to the specified position of the vehicle, by adjusting front/rear and left/right sides accordingly.



(A) 80 mm (3.1 in) or more
(B) 80 — 100 mm (3.15 — 3.94 in)
(C) 120 — 200 mm (4.72 — 7.87 in)

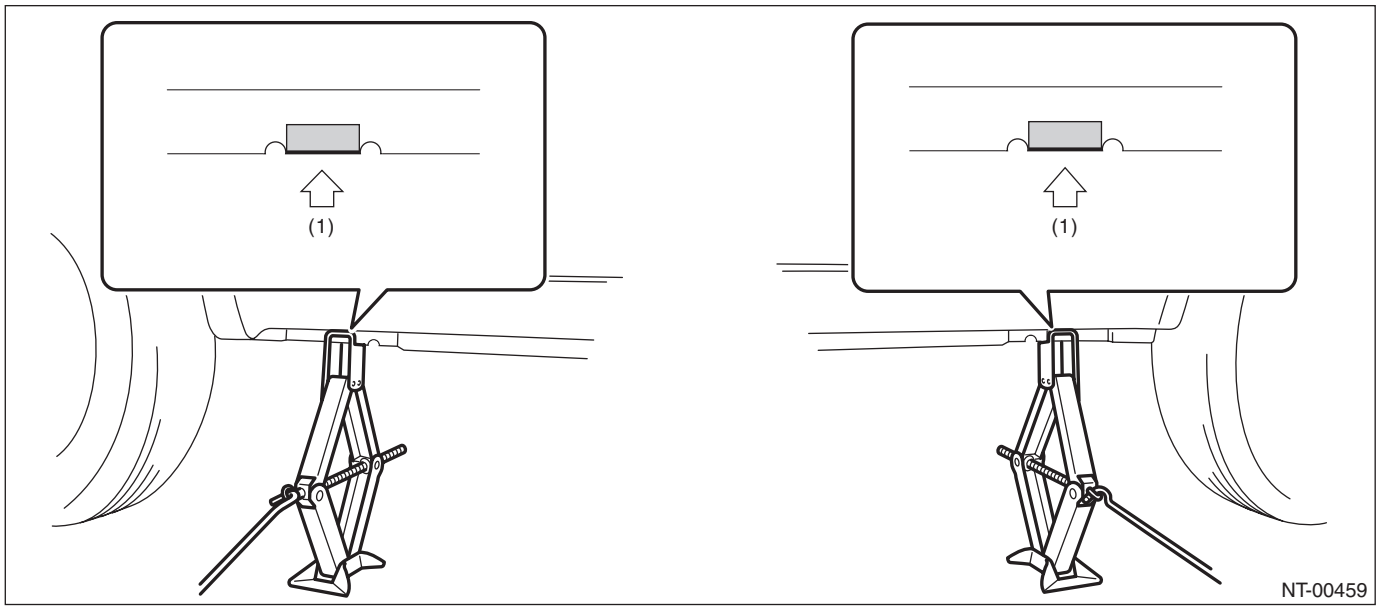
- Align the cushion rubber center part of plate lift with the center part of rubber attachment.
- Do not use the plate lift whose attachment does not reach the supporting locations.

- **Support locations**



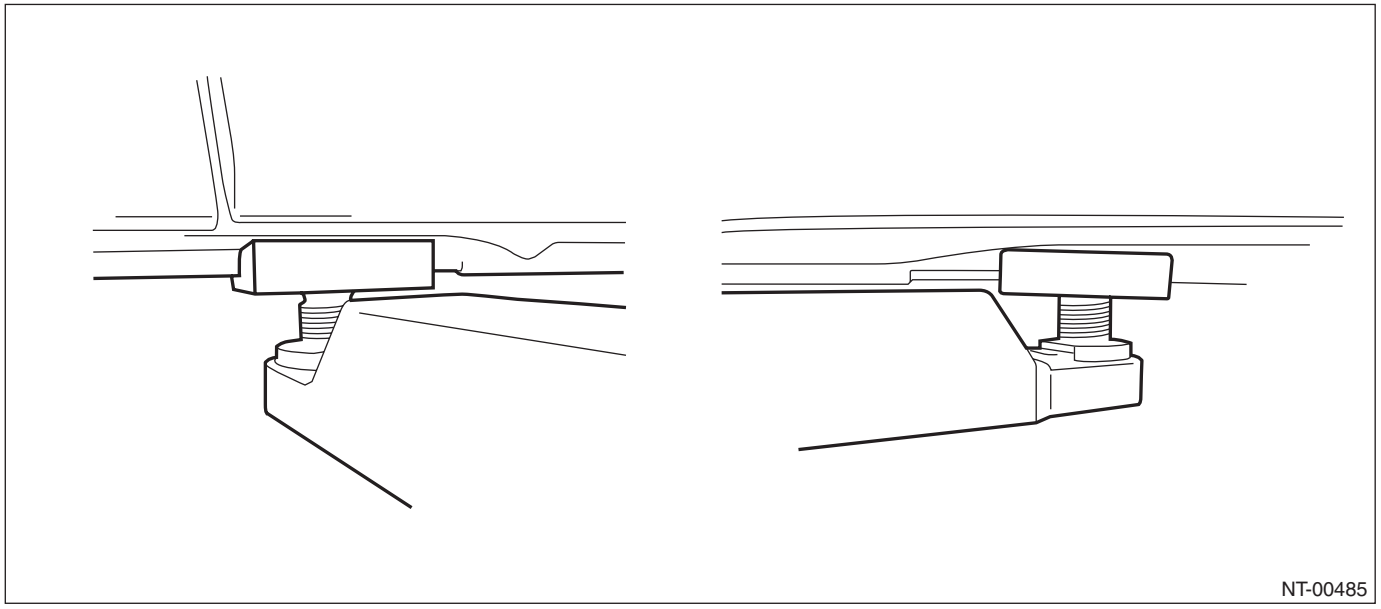
(1) Jack-up point

- **Pantograph jack**



(1) Jack-up point

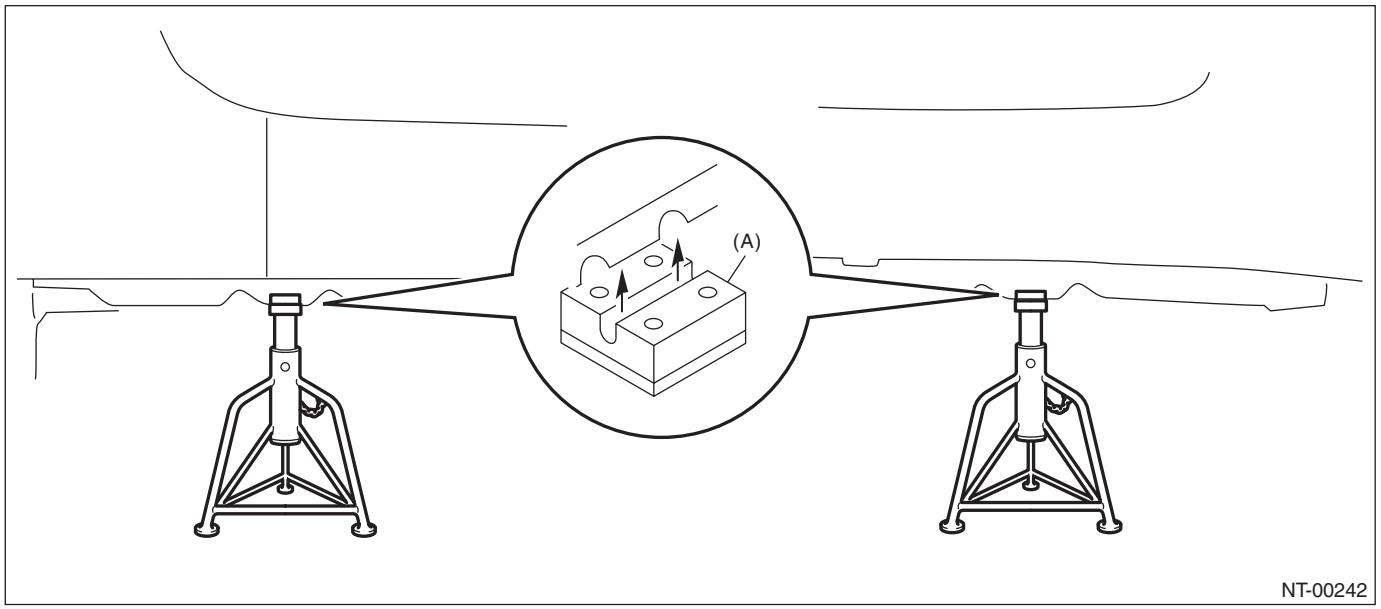
- **Lift**



CAUTION:
Depending on the type of the two-post lift, the door may contact the arm. In such a case, use the attachment of the regular option for the two-post lift.

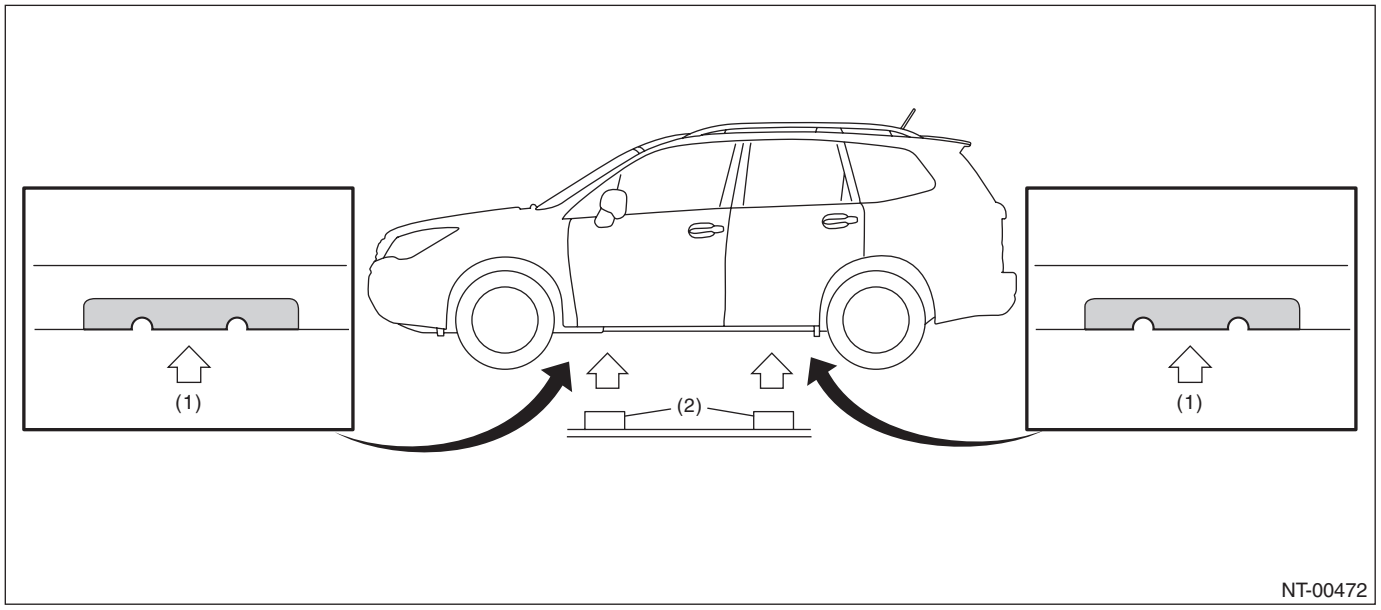
NOTE

- **Rigid rack**



(A) Attachment

- **Plate lift**

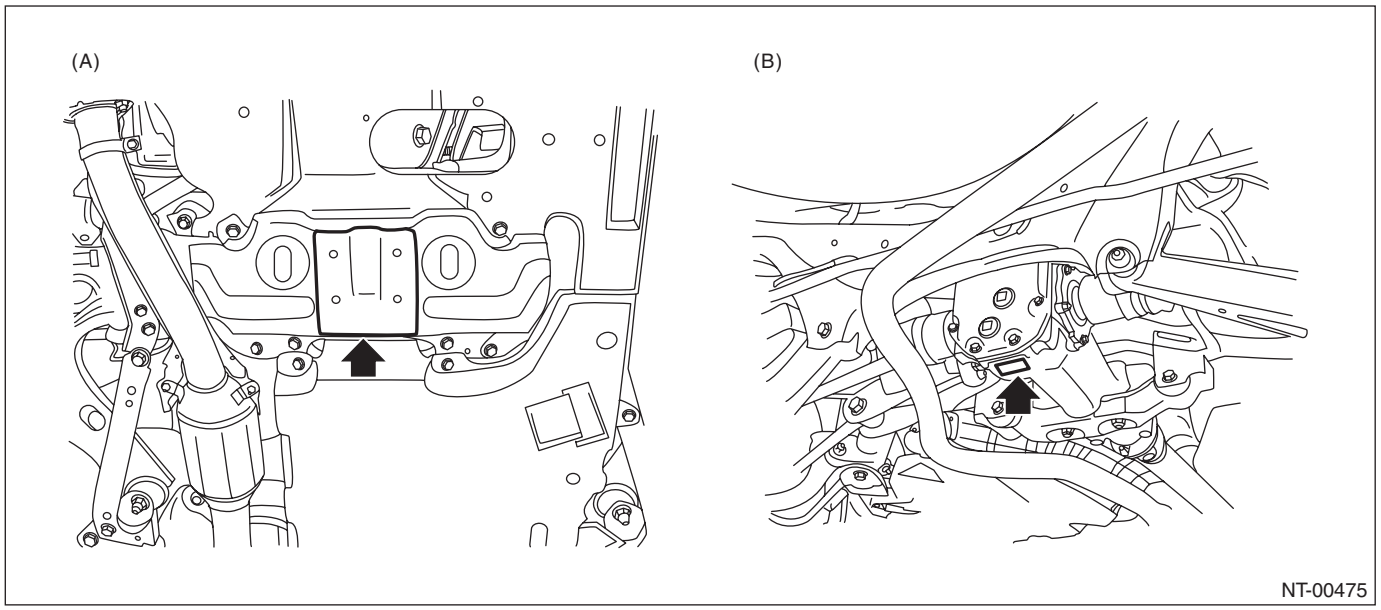


(1) Jack-up point (2) Attachment

- **Jack-up point (when using a garage jack)**

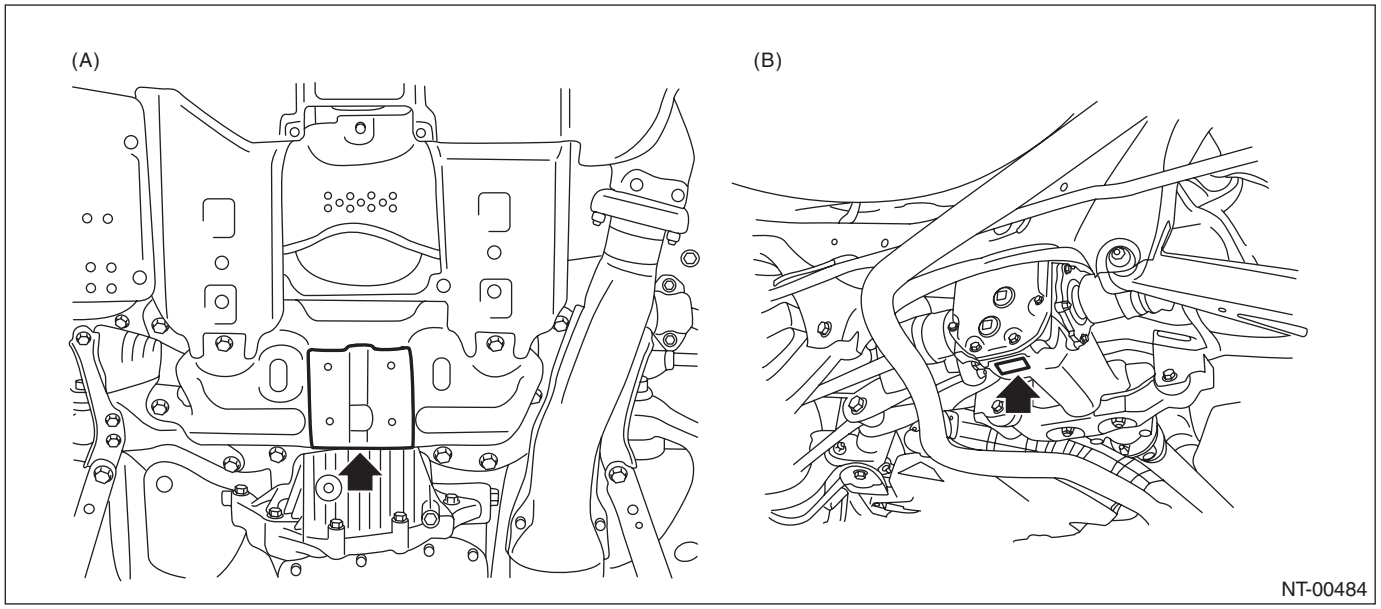
CAUTION:
If jacking up the front side of the vehicle, make sure that the jack is attached at the center of the jack-up plate not at the sides.

Non-turbo model



(A) Front (B) Rear

Turbo model

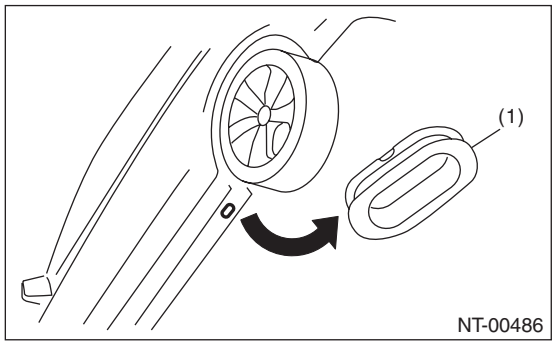


(A) Front (B) Rear

NOTE

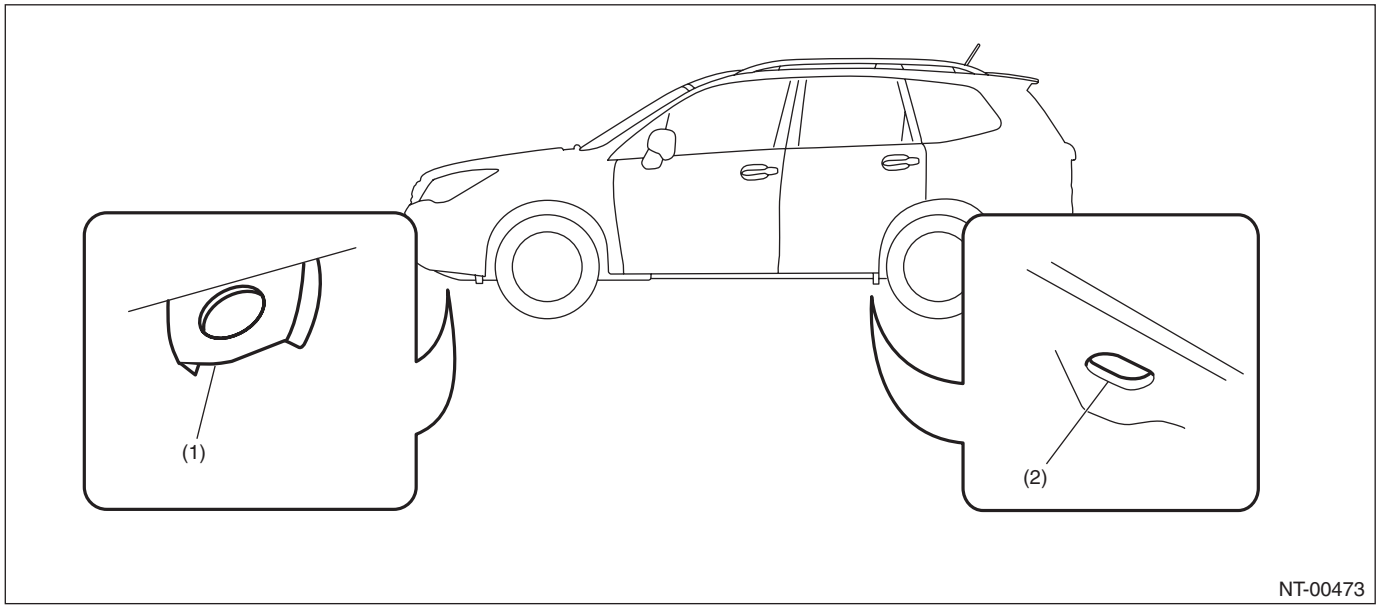
11.TIE-DOWNS

Tie-downs are used when transporting vehicles and when using the chassis dynamo. Remove the grommet of the tie-down hole and install the tie-down only to the specified locations on the vehicle.



(1) Grommet

- **Tie-down location**



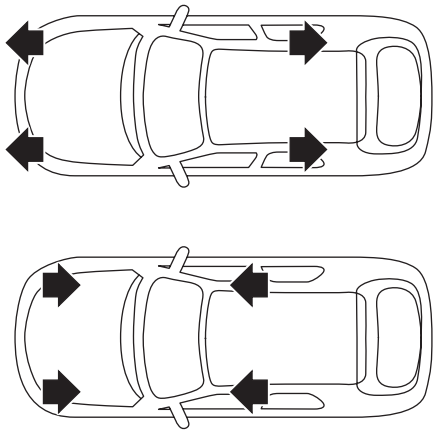
(1) Hook for tie-down
(2) Tie-down hole

• Chain direction at tie-down condition

CAUTION:

• Pull the front and rear of the vehicle in the opposite direction, and pull the left and right of the vehicle in the same direction.

• Patterns except for the followings (recommended) are not allowed.

	Recommended
Tie-down direction	 NT-00214

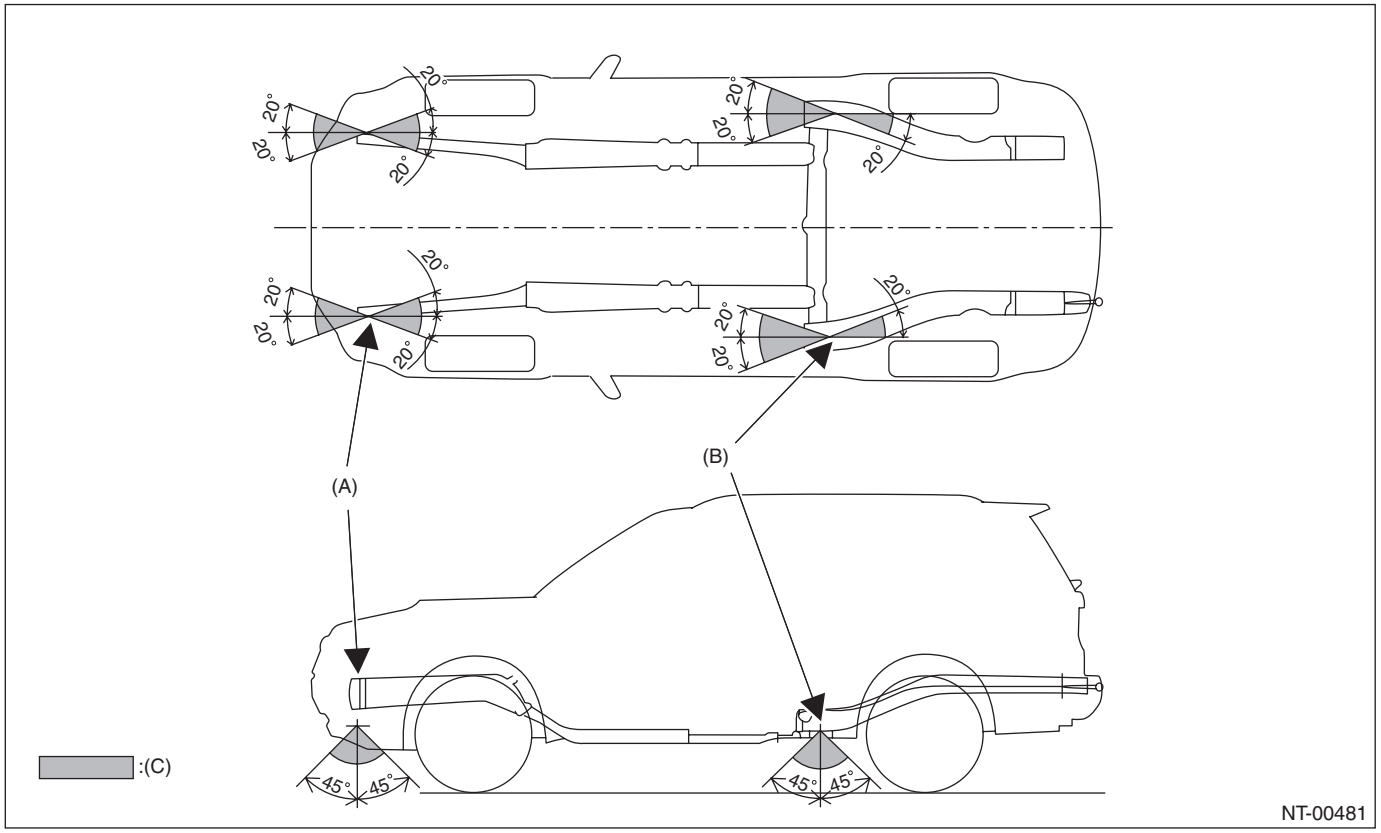
NOTE

- **Tie-down range**

For ground transportation

CAUTION:

When the vehicle is tied down from vehicle inside, hook the hooks of tie-down chain on the rear tie-down holes from vehicle inside. When the vehicle is tied down from vehicle outside, hook the hooks of tie-down chain on the rear tie-down hooks from vehicle outside.



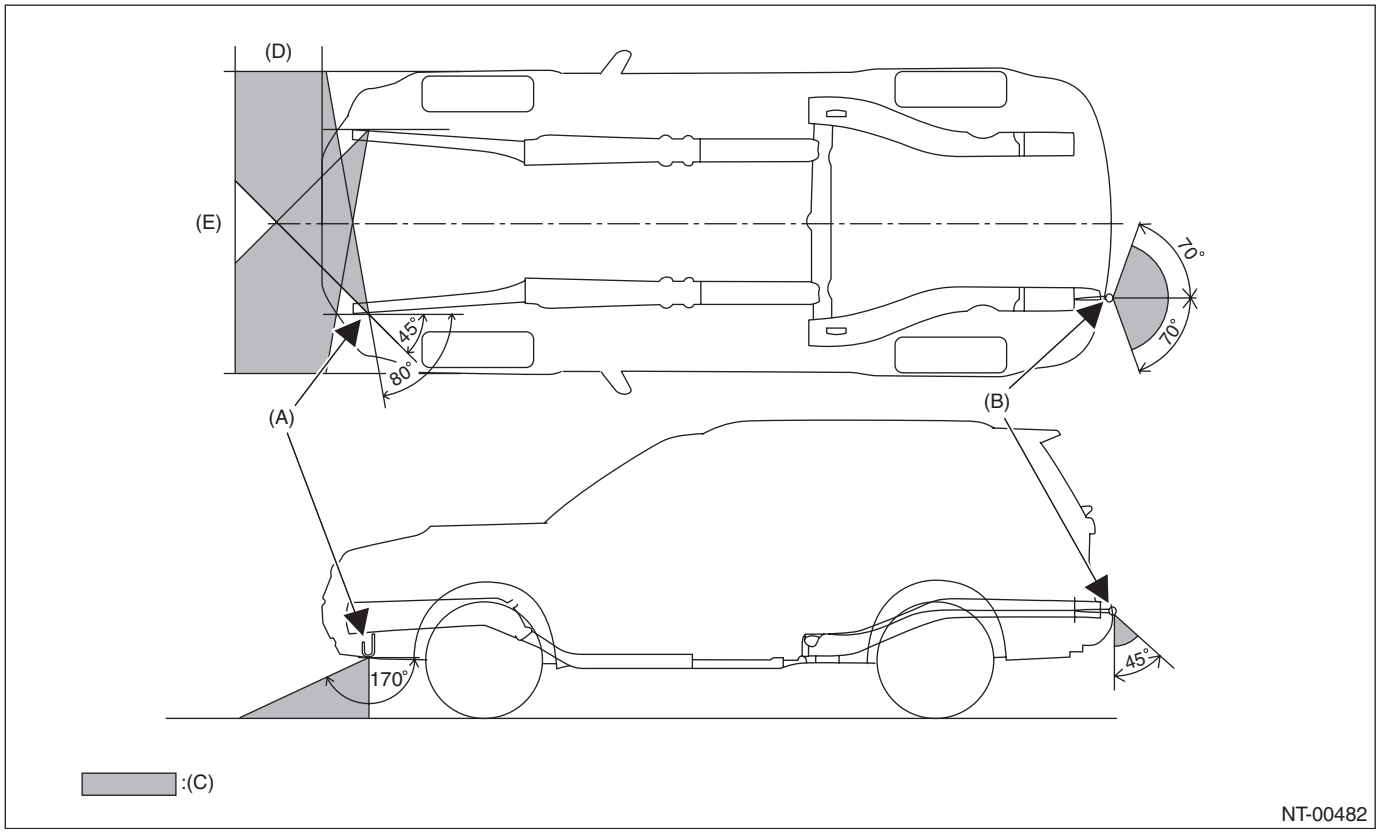
(A) Front tie-down hook

(B) Rear tie-down hole

(C) Chain pulling range at tie-down condition

For sea transportation

CAUTION:
The eyebolts are exclusively used for towing and sea transportation tie-down, and do not use them for ground and freight transportation.

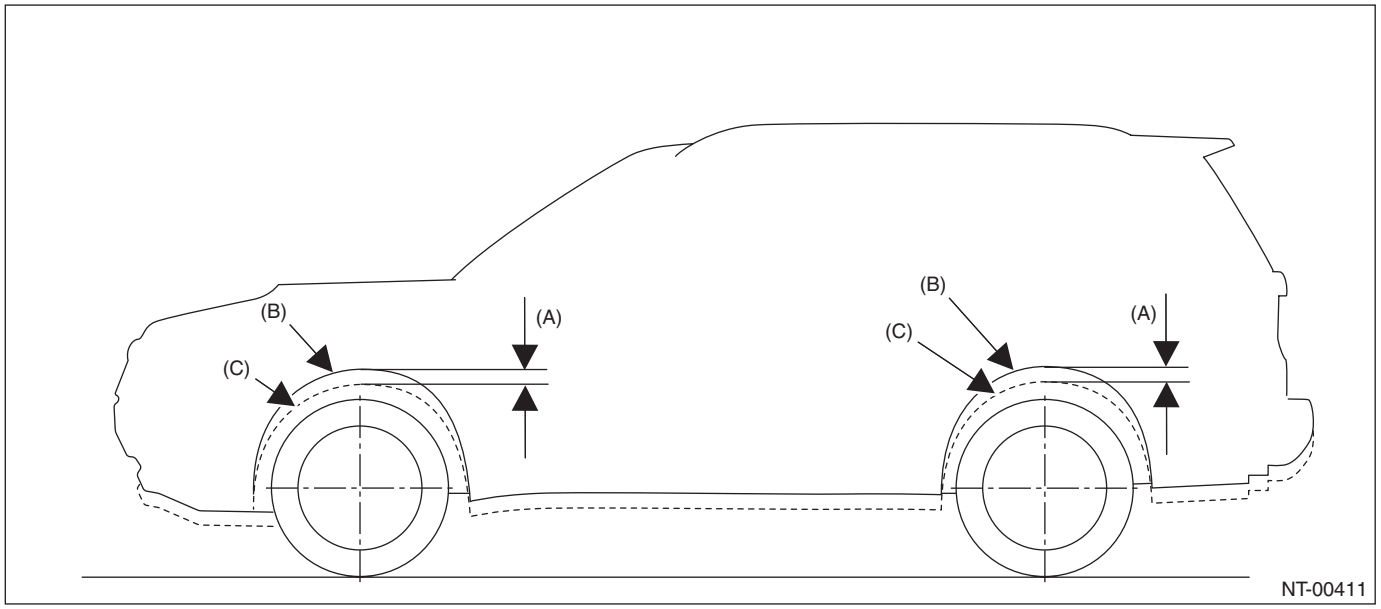


(A)	Front tie-down hook	(C)	Chain pulling range at tie-down condition	(E)	1,795 mm (70.9 in)
(B)	Eyebolt	(D)	400 mm (15.7 in)		

NOTE

- **Vehicle sinking volume at tie-down condition**

CAUTION:
The vehicle sinking volume at tie-down condition should be less than 50 mm (1.97 in) and make sure to fix the vehicle securely.
Check to see if the tensions of chains or belts at tie-down condition are appropriate in the following procedures.
1) Before tie-down, measure the distance between the highest tire point and highest arch point at the center of wheel.
2) After tie-down, measure the distance between the highest tire point and highest arch point at the center of wheel.
3) If the distance (A) between the measured value of 1) and 2) above, is less than 50 mm (1.97 in), it is judged as OK. If the distance is 50 mm (1.97 in) or more, it is judged as NG because the tension is too high.



(B) Arch position before tie-down (C) Arch position after tie-down

- **Notes for the use of tie-down hook**

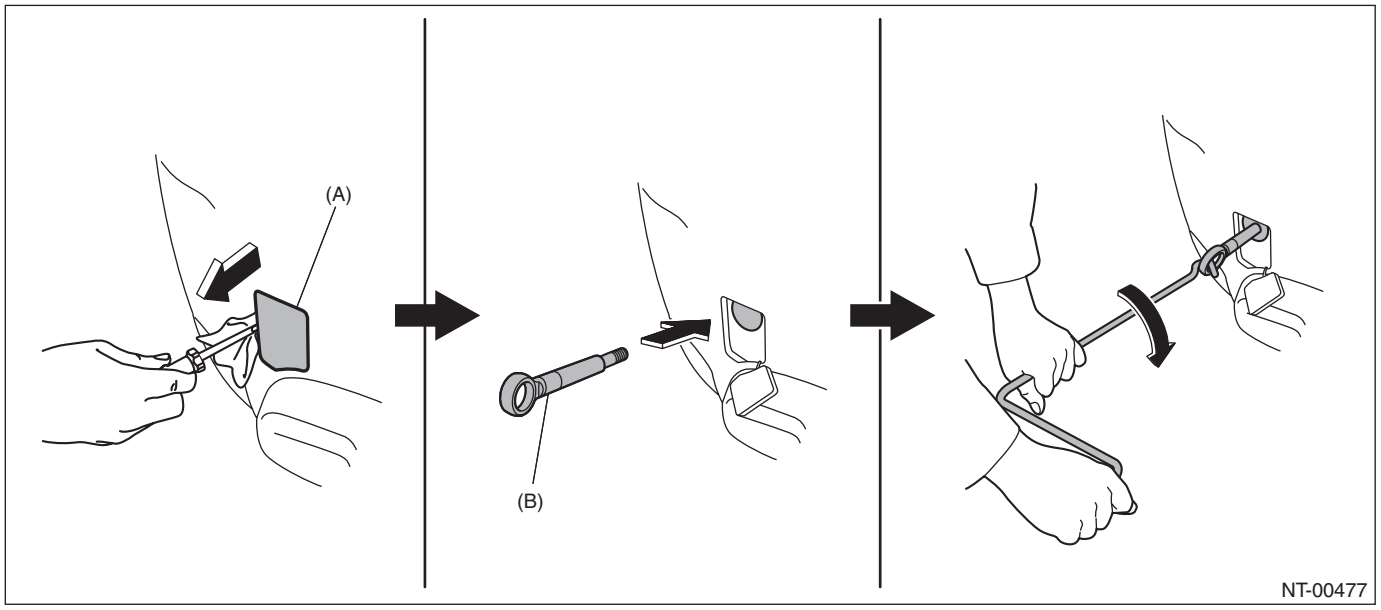
When the vehicle is tied down from vehicle inside, hook the hooks of tie-down chain from vehicle inside, and when the vehicle is tied down from vehicle outside, hook the hooks of tie-down chain from vehicle outside.
For front tie-down hook, use S hook and J hook, and for rear tie-down hole, use S hook, J hook and T hook.
T hook can be used only for rear tie-down hole.

12.TOWING

Avoid towing vehicles except when the vehicle cannot be driven. For models with AWD, CVT or VTD, use a loader instead of towing. When towing other vehicles, pay attention to the following to prevent hook or vehicle damage resulting from excessive weight.

- Do not tow other vehicles with a front tie-down hook.
- Make sure the vehicle towing is heavier than the vehicle being towed.
- When towing the vehicle equipped with Subaru EyeSight, be sure to hold down the pre-collision brake OFF switch to turn OFF the pre-collision brake function. (Check that the pre-collision brake OFF indicator light in the meter lights up.)
- Front

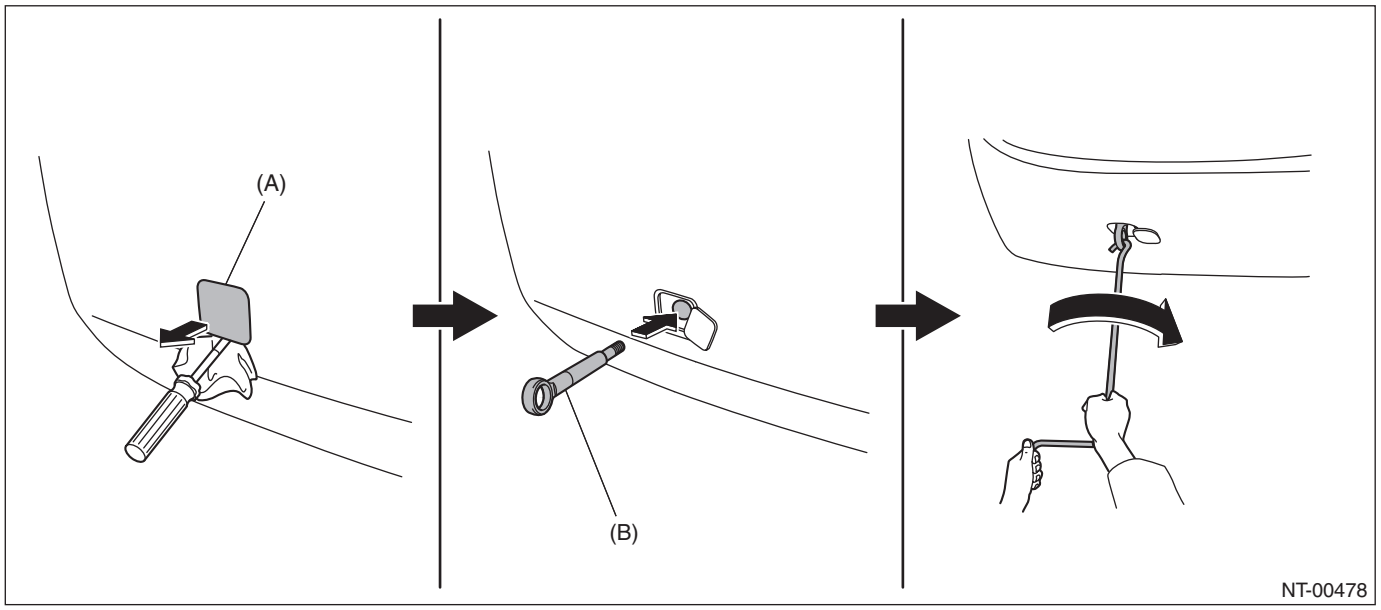
Remove the hook cover, and install the towing hook (eyebolt).



(A) Hook cover (B) Towing hook (eyebolt)

- Rear

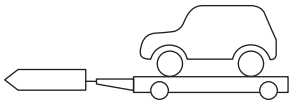
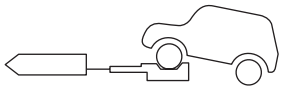
Remove the hook cover, and install the towing hook (eyebolt).



(A) Hook cover (B) Towing hook (eyebolt)

NOTE

- Precautions

Towing	Precautions	AWD	
		MT	CVT
Lifting up four wheels (on a trailer)  NT-00023	Towing the vehicle after lifting up all four wheels is a basic rule for AWD model.	❍	❍
Rope  NT-00024	• Check if both front and rear wheels are rotated normally. • CVT model driving conditions: Driving speed of 30 km/h (19 MPH) or less Allow driving distance 50 km (31 miles) or less	❍	▲
Raising the front wheels  NT-00025	Prohibited for full-time AWD model.	×	×
Lifting up the front wheels  NT-00026	• Prohibited, due to damage on bumper, front grille, etc. • Do not raise the vehicle with bumper.	×	×

Marked ○: OK, Marked ×: Prohibited, Marked ▲: Conditionally OK

CAUTION:
- **Place the shift lever in "N" position during towing.**
- **Do not lift up the rear wheels to avoid unsteady rotation.**
- **Turn the ignition key to "ACC", then check the steering wheel moves freely. (Models without the keyless access with push button start system)**
- **Turn the ignition switch to "ACC" or "ON" position, and check that the steering wheel moves freely. (Models equipped with the keyless access with push button start system)**
- **Release the parking brake to avoid tire dragging.**
- **Since the power steering does not work, be careful for the heavy steering effort. (When engine is stopped)**
- **Since the servo brake does not work, be careful that the brake is not applied effectively. (When engine is stopped)**
- **In case of the malfunction of internal transmission or drive system, lift up four wheels (on a trailer) for towing.**
- **Do not use towing hook (eyebolt) except when towing.**
- **Make sure to detach the towing hook (eyebolt) after towing. If the hook remains attached, airbag may not operate properly when receiving a shock from front side. And it may also affect the crash performance of the vehicle.**
- **While being towed with all four wheels on the ground, turn the engine switch to ON but do not start the engine.**

13.CARRIER CAR

Before lowering the vehicle from the carrier car, perform the following operations.

CAUTION:
Always perform the following operations before lowering the vehicle from the carrier car. Otherwise, the power unit will rotate reversely, which may cause the damage to the engine, vacuum pump, and transmission.

1) Start the engine.
2) Set the transmission shift position into driving direction of the vehicle. (When the vehicle drives forward, do not set the transmission into R range. When the vehicle drives rearward, do not set the transmission into 1 — 6 speed, or D range.)

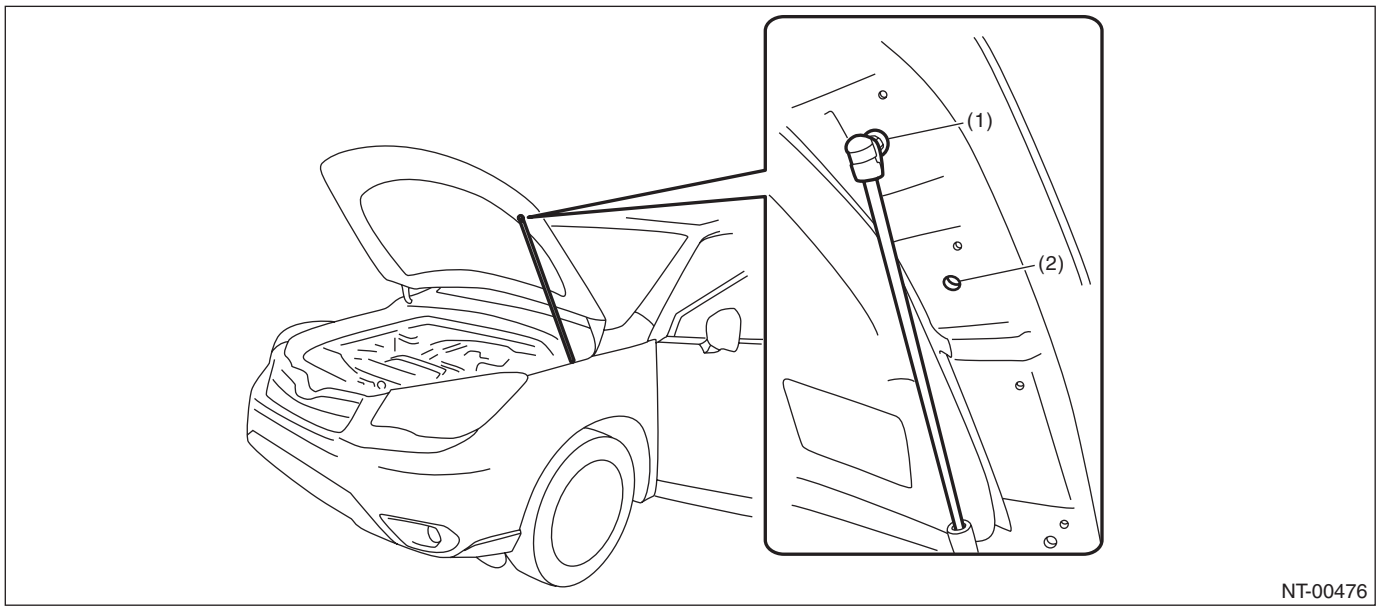
CAUTION:
Be sure to perform 2) mentioned above even if the engine cannot be started in some reasons.

NOTE

14.FRONT HOOD DAMPER STAY

1) Always perform works such as inspections and maintenance with both damper stays attached.

CAUTION:
At the inspection and general maintenance, do not detach the damper stays.



(1) Normal attached position (2) Installation position at full open

2) When wider hood opening is necessary, set the damper stay below as shown in the figure.

Tightening torque:
<Ref. to EB-3, FRONT HOOD, COMPONENT, General Description.>

CAUTION:
• The hood cannot be closed with the hood damper on the full open side. When it is necessary to close, tie the hood striker and the radiator panel with a string etc. to fix them.
• After work, set the damper stays back to the normal position and tighten the bolts to the specified torque.

15.GENERAL SCAN TOOL

Using general scan tools will greatly improve the efficiency of repairing engine electronic controls. Subaru Select Monitor can be used to diagnose the engine, VDC, air conditioner and other electrically controlled parts.

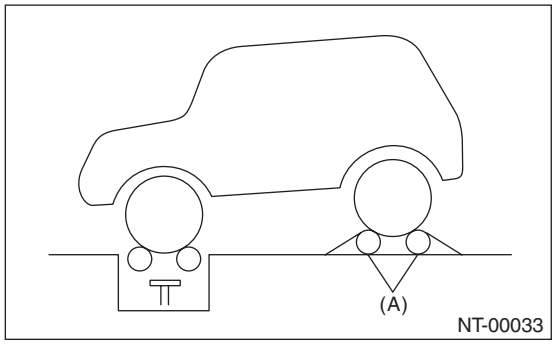
16.AWD CIRCUIT MEASURES

1) Full-time AWD MT model
Since viscous coupling (limited slip differential) is used in the center differential, cut-off of AWD circuit cannot be carried out.
2) Full-time AWD CVT model
Since electronically controlled MP-T hydraulic multi-plate clutch is adapted for center differential, switch to FWD by using Subaru Select Monitor.

17.SPEEDOMETER TEST

1) Rear wheel free roller system
(1) Set the free roller on the floor of rear wheel side securely according to the wheel base and rear tread of the vehicle.
(2) Let the vehicle ride on the tester and free roller gently.

CAUTION:
Fix the vehicle using a pulling metal (chain or wire) to the front and rear towing hooks or tie-down hook to prevent the lateral runout of front wheels and springing out of vehicle.



(A) Free roller

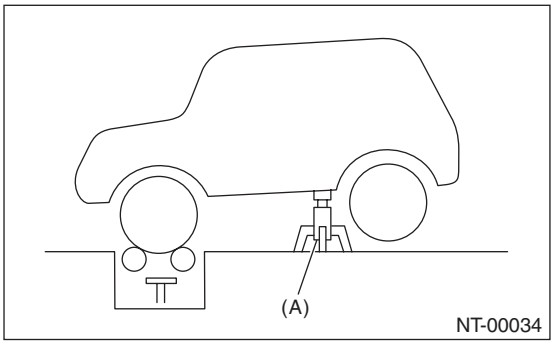
(3) Set the speedometer tester.
(4) Conduct the speedometer test work.

CAUTION:
Do not operate the clutch quickly and do not accelerate or decelerate suddenly during work.

2) Rear wheel jack-up system
(1) Set the vehicle on speedometer tester.

CAUTION:
Fix the vehicle using a pulling metal (chain or wire) to the front and rear towing hooks or tie-down hook to prevent the lateral runout of front wheels and springing out of vehicle.

(2) Jack up the rear wheels and set the rigid racks to the specified locations of side sill.



(A) Rigid rack

(3) Conduct the speedometer test work.

CAUTION:
Do not operate the clutch quickly and do not accelerate or decelerate suddenly during work.

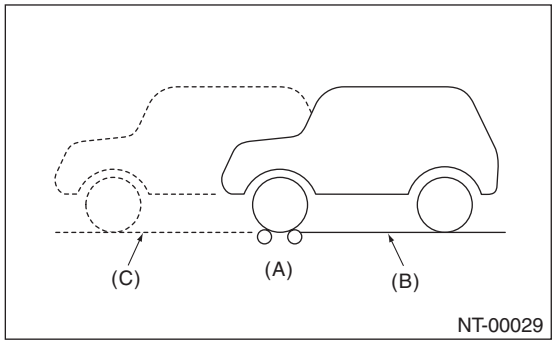
18.BRAKE TEST

1) Full-time AWD MT model

(1) Perform this test after driving the vehicle 2 to 3 km (1.24 to 1.86 miles) on road in order to stabilize the viscous torque of viscous coupling.

(2) Keep the front or rear wheels on the ground for this test.

NOTE:
Effect of the viscous torque on braking force will be added approx. 25 kg compared with FWD model.



(A) Brake tester
(B) Position for measuring front wheel
(C) Position for measuring rear wheel

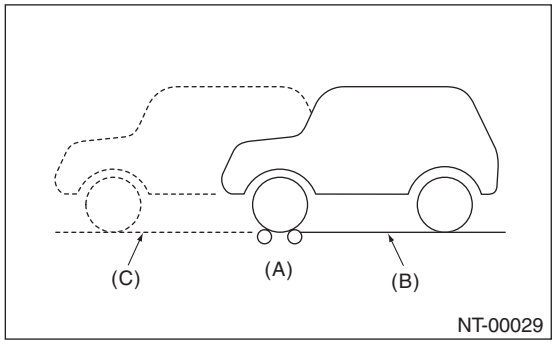
(3) When the brake dragging force is large.

• Check the dragging of brake pad or brake shoe.

• Since it may be affected by the viscosity of viscous coupling, jack up either of the front or rear two wheels to check the each wheel rotation condition with the viscous coupling affection removed.

2) Full-time AWD CVT model

(1) Keep the front or rear wheels on the ground during measurement.



(A) Brake tester
(B) Position for measuring front wheel
(C) Position for measuring rear wheel

(2) When the brake dragging force is large.

• Check the dragging of brake pad or brake shoe.

Specifications:

	Braking force
Rear wheel total	10% or more of load on front or rear wheels
Difference between right and left wheels	8% or less of load on front or rear wheels
Grand total	50% or more of vehicle weight at the time of test

• When measurement is difficult to carry out because both of front wheels are locked, brake force measurement in this condition conforms to standard grand total.

19.ON THE CAR WHEEL BALANCING

CAUTION:

• Carry out the procedures after measuring the balance of each single tire.

• Set the vehicle so that the front and rear wheels are the same height.

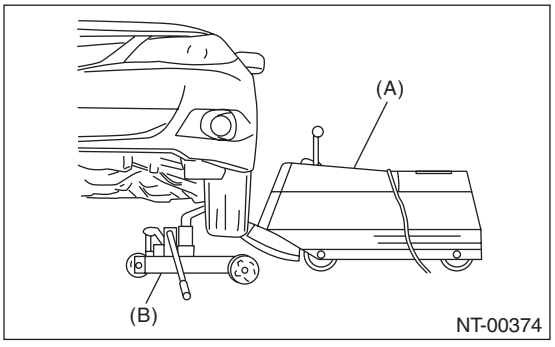
• Release the parking brake during measurement.

• Rotate each wheel by hands, and make sure it rotates without dragging.

• Do not operate the clutch quickly and do not accelerate or decelerate suddenly during work.

• When an error is indicated during engine drive, do not use the motor drive together.

1) Set the rigid rack to the specified locations of side sill, jack up the front or rear two wheels of non-measuring side and set the pickup stands to two wheels of measuring side.



(A) Balancer body
(B) Pickup stand (left and right)

2) For drive wheel, drive the tires with engine for measurement.

3) For non-drive wheel, drive the tires from the on the car wheel balancer for measurement.

IDENTIFICATION

ID

5. Spark Plug

A: REPLACEMENT

Refer to “IG” section for spark plug replacement. <Ref. to IG(H4DO)-4, Spark Plug.> <Ref. to IG(H4DOTC)-4, Spark Plug.>

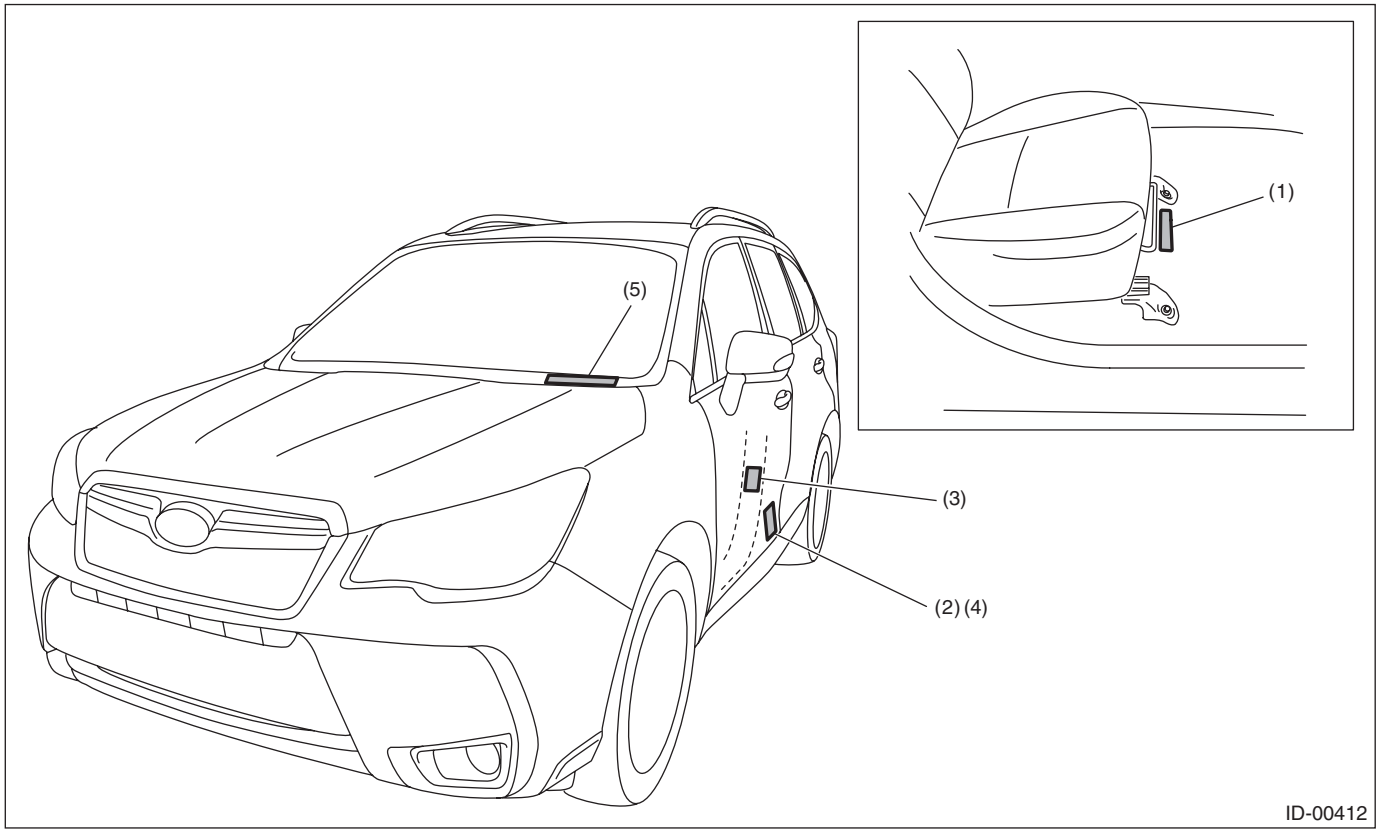
1. Identification

A: IDENTIFICATION

1. IDENTIFICATION NUMBER AND LABEL LOCATIONS

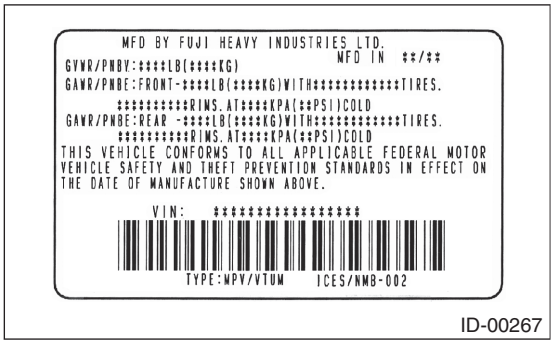
The V.I.N. (Vehicle Identification Numbers) is used to classify the vehicle.

- **Positioning of the plate label for identification**



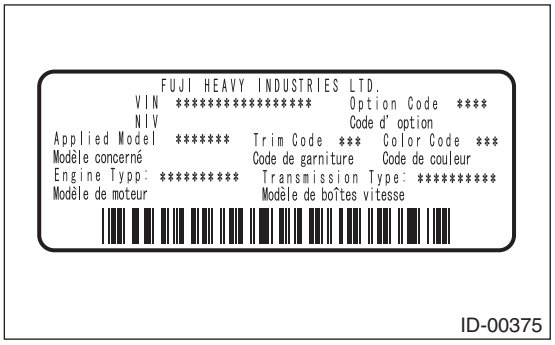
(1)	Vehicle identification number (V.I.N.) (below right front floor carpet)	(3)	Tire inflation pressure label	(5)	Vehicle identification number (V.I.N.) plate
(2)	MVSS/CMVSS label (attached to left side of vehicle)	(4)	Model number label (attached to right side of vehicle)		

- **MVSS/CMVSS label**



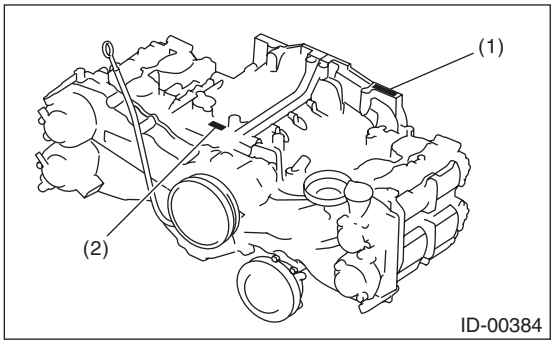
ID-00267

- **Model number label**



ID-00375

- **Engine**



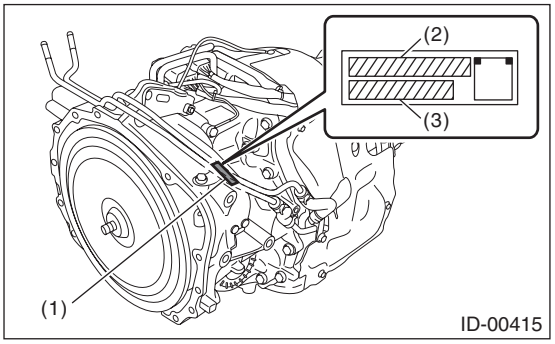
ID-00384

(1) Engine serial number (punch mark)
(2) Engine type (casting) crankcase upper side

- **Automatic transmission**

CVT

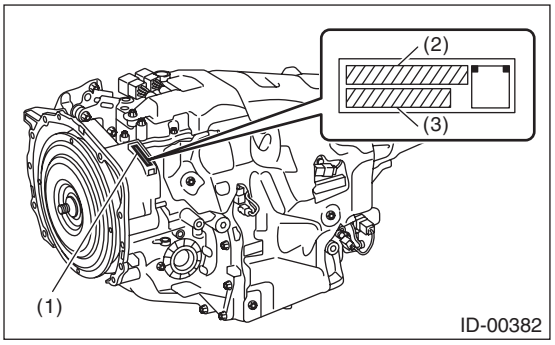
- TR690



ID-00415

(1) Label
(2) CVT type label
(3) Transmission serial No. label

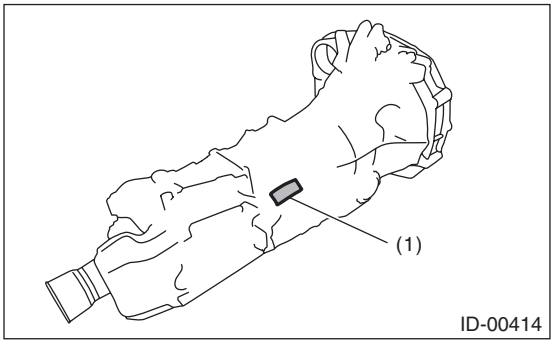
- TR580



ID-00382

(1) Label
(2) CVT type label
(3) Transmission serial No. label

- **Manual transmission**

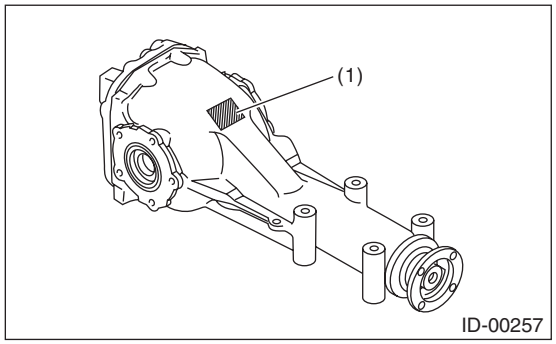


ID-00414

(1) MT type and transmission serial number label

- **Rear differential**

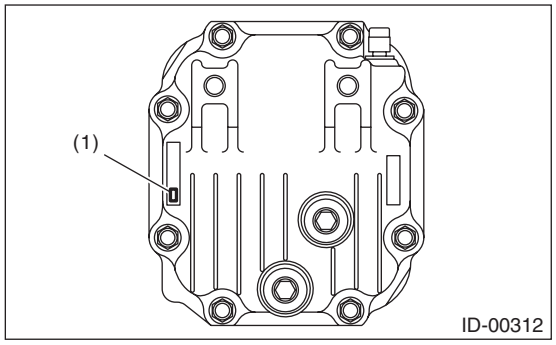
T-type



(1) Identification (white paint)

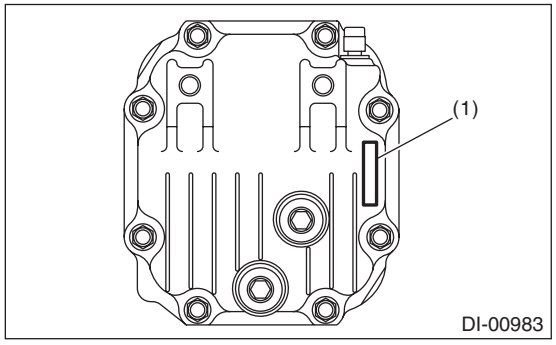
VA1-type

Type a



(1) Type (label)

Type b



(1) Type (label)

2. MEANING OF V.I.N.

The meaning of the V.I.N. is as follows:
]JF2SJAACXFG400001[
The starting and ending brackets ( ] [ ) are stop marks.

Digits	Code	Meaning	Details
1 — 3	JF2	Manufacturer body area	JF2: FHI manufactured passenger car
4	S	Car line	S: Forester
5	J	Body type	J: Wagon
6	A	Displacement class	A: 2.5 L non-turbo U5 C: 2.5 L non-turbo C0 D: 2.5 L non-turbo C4 E: 2.5 L non-turbo C5 G: 2.0 L turbo U4 H: 2.0 L turbo C0 J: 2.0 L turbo C4
7	A	Grade	A: 2.5 i B: 2.5 i Plus C: Premium D: Premium + M/R E: Premium + M/R + NAVI F: Premium + M/R + EyeSight G: Premium + M/R + NAVI + EyeSight H: Limited + M/R J: Limited + M/R + NAVI K: Limited + M/R + NAVI (H/K) L: Limited + M/R + navigation M: Limited + M/R + EyeSight N: Limited + M/R + EyeSight + S/P P: Limited + M/R + NAVI + EyeSight R: Limited + M/R + NAVI (H/K) + EyeSight S: Touring + M/R + H/K T: Touring + M/R + NAVI (H/K) U: Touring + M/R + H/K + S/P V: Touring + M/R + S/P W: Touring + M/R + NAVI (H/K) + S/P + EyeSight X: Touring + M/R + NAVI (H/K) + EyeSight Y: Touring + M/R + H/K + S/P + EyeSight
8	C	Restraint or GVWR class	C: Manual belt, dual airbags, side airbags for seat back + curtain airbags for roof + driver's knee airbags, Class C (GVWR 4001 — 5000 lb)
9	X	Check numbers	X or 0 — 9
10	F	Model year	F: 2015MY
11	G	Transmission type	G: Full-time AWD 6 speed MT single range H: Full-time AWD CVT
12 — 17	400001	Serial number	400001 — 599999

3. MODEL NUMBER LABEL

The model number label indicates: the applied model, the option code, the trim code, the engine type, the transmission type, and the exterior color code. This information is helpful when placing orders for parts.

SJ9BY2A

Digits	Code	Meaning	Details
1	S	Series	S: Forester
2	J	Body type	J: Wagon
3	9	Total engine displacement Drive system	9: 2.5 L AWD (non-turbo) G: 2.0 L AWD (turbo)
4	B	Model year	B: 2015MY
5	Y	Destination	Y: U.S.A., Canada
6	2	Grade	2: 2.5 i 3: 2.5 i Plus 4: 2.5 i Premium 5: 2.5 i Premium EyeSight 7: 2.5 i Limited 8: 2.5 i Limited EyeSight 9: 2.5 i Touring F: 2.5 i Touring EyeSight K: 2.0 XT Premium M: 2.0 XT Touring R: 2.0 XT Touring EyeSight
7	A	Transmission, fuel feed system	8: DOHC turbo CVT A: DOHC non-turbo 6MT C: DOHC non-turbo CVT

The engine and transmission type are as follows.

Engine

FA20FAZHYA

Digits	Code	Meaning	Details
1 and 2	FA	Engine type symbol	FA: 4 cylinder gasoline FB: 4 cylinder gasoline
3 and 4	20	Displacement	20: 2.0 L 25: 2.5 L
5	F	Valve train/fuel supply system/steering	B: DOHC non-turbo MFI (LH) F: DOHC DIT (LH)
6	A	Exhaust regulations	A: For states not using California emission standards C: For states using California emission standards
7	Z	Intake/exhaust system	Y: Intake AVCS, TGV, EGR Z: Intake AVCS, exhaust AVCS, TGV, EGR
8	H	Mounted transmission	B: 6MT H: CVT
9 and 10	YA	Detailed specifications	Used when ordering parts. For details, refer to the parts catalog.

Transmission

1. **MT**
TY751VHZDA

Digits	Code	Meaning	Details
1	T	Transmission	T: Transmission
2	Y	Transmission system	Y: Full-time AWD MT center differential
3 and 4	75	Distance between gear center	75: Between main shaft and drive pinion
5	1	Classification	1: 6MT
6	V	Transmission specifications	V: Full-time AWD single range 6MT with viscous coupling center differential
7	H	Mounted engine	H: 2.5 L DOHC non-turbo
8 — 10	ZDA	Detailed specifications	Used when ordering parts. For details, refer to the parts catalog.

2. CVT
TR580GHZAB

Digits	Code	Meaning	Details
1	T	Transmission	T: Transmission
2	R	Transmission system	R: Full-time AWD CVT
3 and 4	58	Distance between pulley centers	58: Between pulley centers 69: Between pulley centers
5	0	Classification	0: CVT
6	G	Transmission specifications	G: CVT with CVTF warmer, without air cooler
7	H	Mounted engine	B: 2.0 L DOHC turbo H: 2.5 L DOHC non-turbo
8 — 10	ZAB	Detailed specifications	Used when ordering parts. For details, refer to the parts catalog.

Rear differential

B4

Code	Reduction gear ratio	LSD
B4	4.444	None
X1	4.111	None
XD	3.700	None

Option code

4B

- 1-digit number

OP code	G	H	I	J	K	L	M	T	W	X	Y	4
Aluminum wheel (17-inch)	—	○	○	○	○	○	—	○	○	—	—	—
Aluminum wheel (18-inch)	○	—	—	—	—	—	○	—	—	—	—	○
HID headlight	○	—	—	—	○	—	—	—	—	—	—	—
Dark-colored glass	○	○	○	○	○	○	○	○	○	—	○	○
Sunroof	○	—	○	○	○	—	○	○	—	—	—	○
Auto light & auto wiper	○	○	—	○	○	—	○	—	—	—	—	○
Cold weather package	○	—	—	○	○	○	—	○	—	—	—	○

- 2-digit number

OP code	A	B	F	K	M	P	R	S	U	V	Z
Leather seats and leather door trim center decoration	—	—	—	○	○	—	○	○	○	○	○
Power seat	—	○	○	○	○	○	○	○	○	○	○
Navigation system	—	—	—	○	—	○	—	—	—	—	—
harman/kardon audio + high grade audio	—	—	—	—	—	—	—	—	○	—	—
harman/kardon audio + navigation	—	—	—	—	—	—	○	—	—	○	—
Without audio	—	—	—	—	—	—	—	—	—	—	—
Keyless access with push button start	—	—	—	—	—	—	○	○	—	—	—
Power rear gate	—	○	—	○	—	—	○	○	○	○	○
Side & curtain airbags	○	○	○	○	○	○	○	○	○	○	○

RECOMMENDED MATERIALS

RM

6. V-belt

A: INSPECTION

Refer to “ME” section for V-belt inspection. <Ref. to ME(H4DO)-89, V-belt.> <Ref. to ME(H4DOTC)-77, V-belt.>

B: REPLACEMENT

Refer to “ME” section for V-belt replacement. <Ref. to ME(H4DO)-89, V-belt.> <Ref. to ME(H4DOTC)-77, V-belt.>

7. Fuel Line

A: INSPECTION

The fuel line is located mostly internally, so check pipes, areas near pipes, and engine compartment piping for rust, hose damage, loose band, etc. If faulty parts are found, repair or replace them. <Ref. to FU(H4DO)-166, INSPECTION, Fuel Delivery and Evaporation Lines.> <Ref. to FU(H4DOTC)-208, Fuel Delivery and Evaporation Lines.>

1. Recommended Materials

A: RECOMMENDED MATERIALS

1. GENERAL

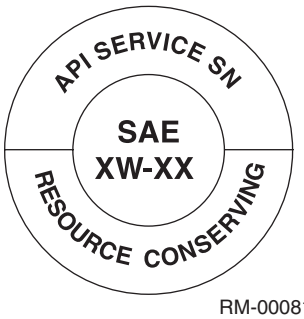
To insure the best performance, always use the specified oil, gasoline, adhesive, sealant, etc. or a substitute of equivalent quality.

2. FUEL

• Use unleaded gasoline to reduce air pollution, because using leaded gasoline will damage the catalytic converter.
• Do not use the low quality gasoline, or improper fuel such as diesel fuel, fuel alcohol, or gasoline additive because they will adversely affect on engine components and fuel system components.
• Always use gasoline that is equivalent to that prescribed in the owner's manual or that of high octane value. There is the possibility of damaging or improper operation of the engine and fuel injection system if the specifications are not observed. Use the prescribed gasoline type to maintain proper vehicle performance.

3. LUBRICANTS

Use the lubricants shown in the table below, or equivalent. See the table below to choose the correct SAE viscosity.

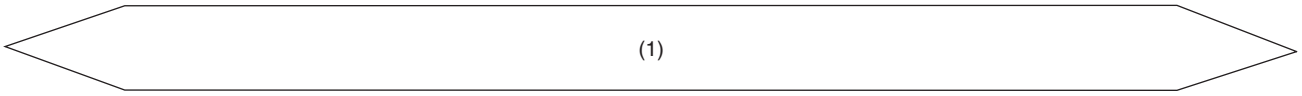
Lubricant	Recommended materials	
	API standard	ILSAC standard
Engine oil Choose oil suitable for the standard from the right.	SN or SM grade "Resource conserving" or "Energy conserving"  RM-00081 Those with the above API service labels	GF-5 or GF-4  RM-00002 Those with the above ILSAC certification mark (Starburst mark)
Rear differential gear oil	GL-5	—

SAE viscosity No. and applicable temperature

Engine oil

Non-turbo model

(˚C)	–30	–20	–10	0	10	20	30	40
(˚F)	–22	–4	14	32	50	68	86	104

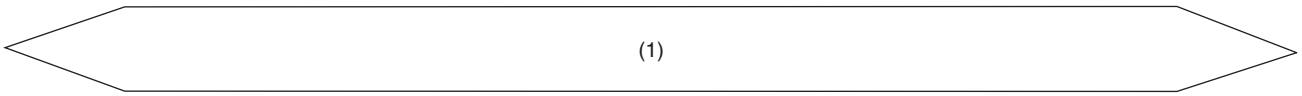


RM-00075

(1) 0W-20 (synthetic oil) Specified

Turbo model

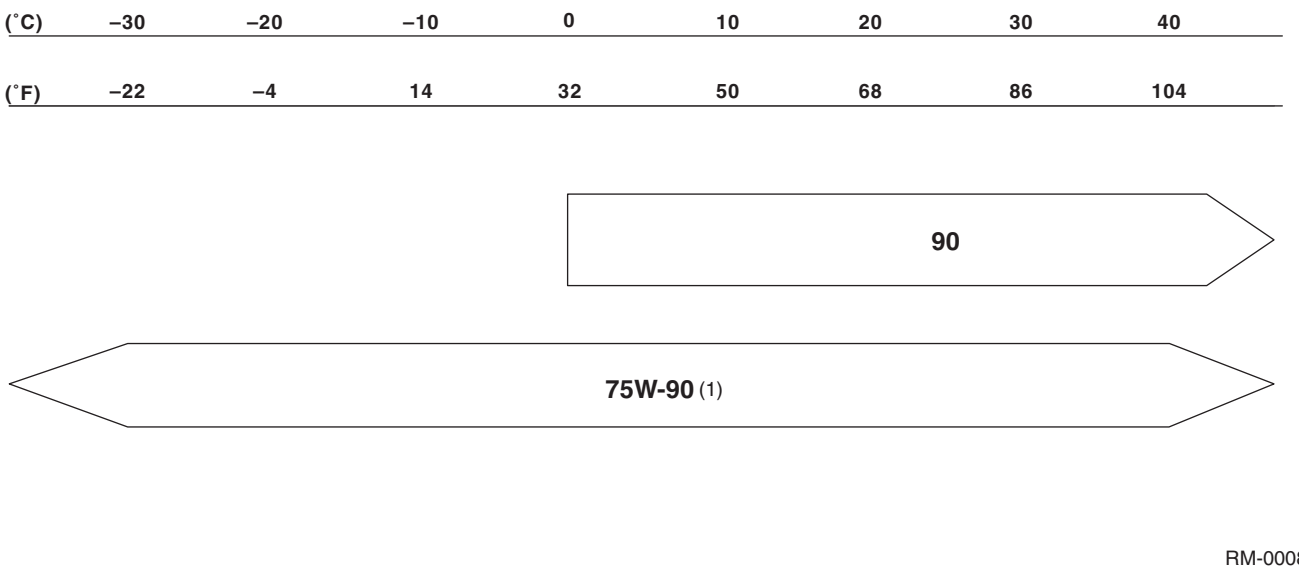
(˚C)	–30	–20	–10	0	10	20	30	40
(˚F)	–22	–4	14	32	50	68	86	104



RM-00075

(1) 5W-30 (synthetic oil) Specified

Rear differential gear oil*1



(1) Recommended materials

*1

CAUTION:
Do not mix two different kinds or makes of gear oil.

4. FLUID

Use the fluids specified in the table below. Do not mix two different kinds or makes of fluid.

CAUTION:
• Be sure to use the recommended CVTF. Using material except recommended one would cause trouble.
• If an alternative transmission gear oil is used, you may not have expected functionality and performance.

Fluid			Recommended materials	Item number	Alternative
Automatic transmission fluid	CVT	Non-turbo	SUBARU CVT OIL FOR LINEARTRONIC	K0425Y0710	—
		Turbo	SUBARU HIGH TORQUE CVT OIL FOR LINEARTRONIC	K0421Y0700	—
Transmission gear oil			SUBARU GEAR OIL EXTRA MT	—	GL-5 (75W-90)
Front differential gear oil			SUBARU GEAR OIL EXTRA MT	—	GL-5 (75W-90)
Brake fluid and clutch fluid			FMVSS No. 116 DOT3, or DOT4	—	—

5. ENGINE COOLANT

Use genuine engine coolant to protect the engine.

Engine coolant	Recommended materials	Item number	Alternative
Coolant	SUBARU SUPER COOLANT (Concentrated type)	—	—
	SUBARU SUPER COOLANT (Diluted type)	K0670Y0001	
Water for dilution	Distilled water	—	Soft water or tap water
Cooling system protective agent	Cooling system conditioner	SOA345001	—

6. REFRIGERANT

Standard air conditioners on Subaru vehicles use HFC134a refrigerant. Do not mix it with other refrigerants. Also, do not use any air compressor oil except for DH-PR.

Air conditioner	Recommended materials	Item number	Alternative
Refrigerant	HFC134a	—	—
Compressor oil	DH-PR	—	—

7. GREASE

Use grease and supplementary lubricants shown in the table below.

Grease	Application point	Recommended materials	Item number	Alternative
Supplementary lubricants	Oxygen sensor	Spray type lubricant	004301003	—
Grease	• MT main shaft (spline parts) • MT main shaft (oil seal lip) • Transfer driven gear (front roller bearing, rear roller bearing) • Clutch release lever • Clutch release bearing (inner circumference) • Clutch operating cylinder	NICHIMOLY N-130	—	—
	Clutch master cylinder push rod	SILICONE GREASE G-40M	—	—
	• Gear shift lever • Clutch pedal • Brake pedal	NIGTIGHT LYW No. 2	—	—
	Select lever	Multemp D	—	—
	• Door latch • Door striker	SILICONE GREASE G-30M	004404002	—
	Steering gearbox	Multemp AC-P	—	—
	Disc brake (lock pin, guide pin)	NIGLUBE RX-2	—	—
	Between brake pad and shim	Molykote AS-880N	—	—
	Brake pad clip	Molykote M7439 (Brake Grease 60G)	—	—
	Parking brake	Molykote 44MA	—	—
	Front axle PTJ	NKG302	—	—
	• Front axle EBJ • Rear axle BJ • Rear axle EBJ • Rear axle DOJ • Rear axle EDJ	NKG814	—	—

8. ADHESIVE

Use the adhesives shown in the table below, or equivalent.

Adhesive	Application point	Recommended materials	Item number	Alternative
Adhesive	Windshield glass, rear quarter glass, rear gate glass and body	Dow Automotive's Adhesive: ESSEX U-400HV or equivalent Glass primer: U-401 and U-402 Painted surface primer: U-413	—	—

9. SEAL MATERIAL

Use the seal material shown in the table below, or equivalent.

Seal material	Application point	Recommended materials	Item number	Alternative
Seal material	• MT transmission case • MT transfer case • Transmission cover • CVT transmission case • CVT extension case • CVT intermediate case (TR690 model) • CVT converter case cover (TR690 model) • CVT oil pump chain cover • CVT drive pinion retainer	THREE BOND 1215B	—	DOW CORNING No. 7038 THREE BOND 1215
	Transmission oil pan (CVT model)	THREE BOND 1217B	K0877YA020	—
	• Rear differential • Oil pressure switch • PCV valve	THREE BOND 1324	004403042	—
	Rear differential	THREE BOND 1105	004403010	DOW CORNING No. 7038
	Steering adjusting screw	THREE BOND 1111B	—	—
	• Engine oil pan • Separator cover • Cylinder block • Rocker cover • Chain cover • Oil pan upper • Cylinder head • Camshaft carrier • Camshaft bearing cap	THREE BOND 1217G	K0877Y0100	—
	• Front door (sealing cover) • Rear door (sealing cover)	3M Butyl Tape 8626	—	—
	Rear differential (side retainer bolt)	THREE BOND 1110F	—	THREE BOND 1110B

PRE-DELIVERY INSPECTION

PI

8. Fuel Filter

A: REPLACEMENT

For fuel filter replacement procedure, refer to “FU” section. <Ref. to FU(H4DO)-146, Fuel Filter.> <Ref. to FU(H4DOTC)-197, Fuel Filter.>

B: INSPECTION

Replace if the filter is clogged, or time for replacement has come.

1. Pre-delivery Inspection

A: GENERAL DESCRIPTION

The purposes of the pre-delivery inspection (PDI) are as follows.
- Remove the vehicle protective parts for transportation.
- Check that the vehicle or parts before delivery are not damaged during transportation or storage.
- Check that the vehicle after repair is normal.
- Make sure to provide a complete vehicle to customer.

For above reasons, all SOAs (dealerships) must carry out the PDIs before delivery of vehicle.
Refer to this manual unless otherwise specified.

B: PRE-DELIVERY INSPECTION (PDI) PROCEDURE

Perform the procedures indicated in the table below.
Static checks just after vehicle receipt

Procedure	Check point
1. Appearance	1. If the vehicle is covered with protective coating, visually check the vehicle body for damage and dents. If the protective coating has been removed, visually check the painted body surfaces in detail for damage or rust. 2. Visually check the glass and light lenses for any damage, cracks or excessive gaps between body sheet metal. 3. Visually check the plated parts for any damage. 4. Check the instrument panel, console and trim for stains or dirt.
2. Tire	1. Check the tires for damage, defective, and dents on wheels. 2. Check the tire air pressure.
3. Fuse installation	If the vehicle is about to be delivered to customer, attach a back-up fuse.
4. Door lock/unlock and open/close operations	1. Using the key, check the door can be locked or unlocked normally. 2. Open and close all doors to check that there are no problems. 3. Operate the power door lock switch to check that all doors and the rear gate lock and unlock normally.
5. Child safety lock	Check the child safety lock system operates normally.
6. Rear gate lock/unlock and open/close operations	1. Open and close the rear gate to check that there are no problems. 2. Check if the rear gate can be opened normally through the emergency hole. 3. Operate the power door lock switch to check that all doors and the rear gate lock and unlock normally.
7. Power rear gate	Check if the power rear gate operates normally.
8. Fuel lid opener lock release lever	Operate the fuel lid opener to check that the fuel filler lid can be unlocked normally.
9. Towing hook (eyebolt)	At factory shipment, the towing hook (eyebolt) is installed to the rear bumper. Remove the towing hook (eyebolt), store it in the holder.
10. Accessory	Check that the following accessories are equipped. • Owner's manual • Warranty booklet • Maintenance note • Spare key • Key No. plate • Jack • Tool set • Spare tire • Towing hook
11. Front hood lock release	Operate the front hood lock release lever to check that the front hood opens normally.
12. Battery	Check the battery for any abnormal conditions such as rust or traces of battery fluid leaks.
13. Brake fluid	Check the brake fluid amount.
14. Engine oil	Check the engine oil amount.
15. Transmission gear oil	Check that the transmission gear oil level is normal.

Procedure	Check point
16. CVT front differential oil	Check for leakage of CVT front differential oil.
17. Rear differential gear oil	Check for leakage of gear oil from the rear differential.
18. Engine coolant	Check the engine coolant level.
19. Clutch fluid	Check the clutch fluid amount.
20. Window washer fluid	Check the window washer fluid amount.
21. Front hood latch	Check that the front hood is closed normally and locked securely.
22. Keyless entry system	Check that the keyless entry system operates normally.
23. Keyless access system	Check that the keyless access function operates normally.
24. Alarm system	Check that the alarm system operates normally.
25. Seat	1. Check the seat surfaces for stains or dirt. 2. Check the seat installation conditions and functionality.
26. Seat belt	Check the seat belt installation conditions and functionality.
27. Grommet installation	Install the grommet provided in the glove box to the tie-down hole.
28. TPMS (U.S. model)	If the display of TPMS warning light does not operate normally, perform the diagnosis by referring to TPMS (Diagnosis).

Checks with the engine running

Procedure	Check point
29. Delivery (test) mode	Turn the ignition switch to ON and check that the malfunction indicator light starts blinking.
30. Immobilizer system	1. Check that the engine starts with all keys that are equipped on vehicle. 2. Check that the security indicator light operates normally.
31. Push button start	Using the push button start function of the access key equipped with the vehicle, check that the engine starts and stops.
32. Starting condition	Start the engine and check that the engine starts smoothly.
33. Exhaust system	Check that the exhaust noise is normal and no leaks are found.
34. Indicator and warning lights	Check that all indicator lights and warning lights are operating correctly.
35. Heater & ventilation	Check that the heater & ventilation system operates normally.
36. Air conditioner	Check that the air conditioner operates normally.
37. Multi-function display (MFD)	Check that the Multi-Function Display (MFD) function operates normally.
38. Audio	Check the radio and AUX operate normally.
39. Navigation	Check the navigation and AUX operate normally.
40. Accessory power supply socket	Check that the accessory power supply socket operates normally.
41. Lighting system	Check that the lighting system operates normally.
42. Illumination control	Check that the illumination control operates normally.
43. Window washer	Check that the window washer system operates normally.
44. Wiper	Check that the wiper system operates normally.
45. Wiper deicer	Check that the wiper deicer operates normally.
46. Power window	Check that the power window operates normally.
47. Sunroof	Check that the sunroof operates normally.
48. Rear defogger	Check that the rear defogger operates normally.
49. Door mirror	Check that the remote control mirror and heated mirror operate normally.
50. Parking brake	Check the parking brake for normal operations.
51. Diagnostic trouble code (DTC) check	Check that the diagnostic trouble code (DTC) is not detected.

Dynamic test with the vehicle running

Procedure	Check point
52. Brake test	Check the foot brake for normal operations.
53. Shift control	Check that the shift patterns are correct.
54. Cruise control	Check that the cruise control system operates normally.
55. Subaru EyeSight	Check that the Subaru EyeSight operates normally.

Checks after dynamic test

Procedure	Check point
56. Power steering system	Check the steering warning light operation.
57. Fluid leakage	Check for fluid/oil leaks.
58. Water leak test	Spray the vehicle with water and check for water leaks.
59. Appearance 2	1. Remove the protective coating (if equipped). 2. Check the body paints for damage and stain. 3. Check the plated parts for damage and rust.

1. APPEARANCE

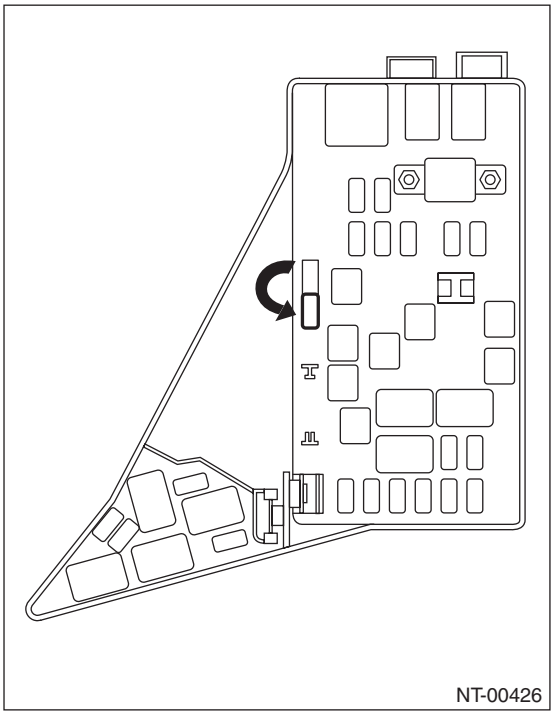
• If the vehicle is covered with protective coating, visually check the vehicle body for damage and dents.
• When there is no protective coating, check the body paints for damage or stains in detail and repair as necessary.
• Check the window glass, door glass, and lights for any cracks or damage, and replace as necessary.
• Visually check the plated parts, such as the grilles and door knobs, for damage or loss of gloss and replace the parts as necessary.
• Check the instrument panel, console and trim for stains or dirt.

2. TIRE

• Check the tires for damage, defective, and dents on wheels.
• Check the tire size, spare tire and tire air pressure described on the tire air pressure label (driver's side).

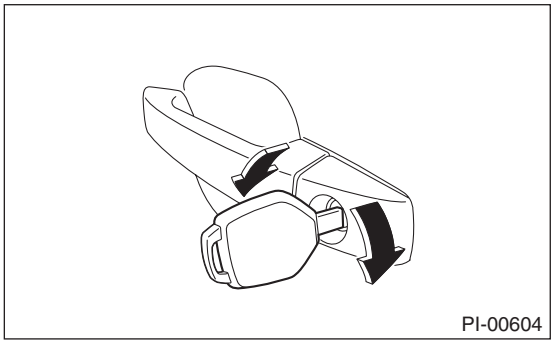
3. FUSE INSTALLATION

Fuses for the back-up circuit on initially delivered vehicles are removed to prevent battery discharge. Attach the 20 A fuse as shown in the figure.

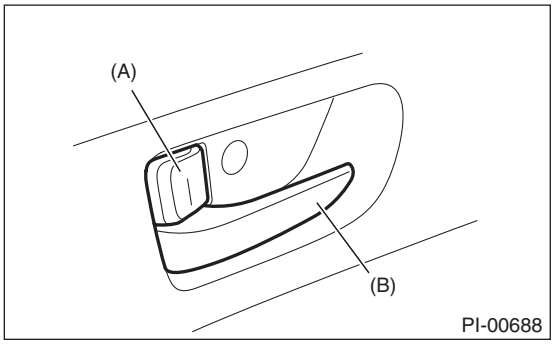


4. LOCK/UNLOCK AND OPEN/CLOSE OPERATION CHECKS OF DOORS

1) Using the key, lock and unlock the door several times to check for normal operation. Open and close the door several times for smooth movement.

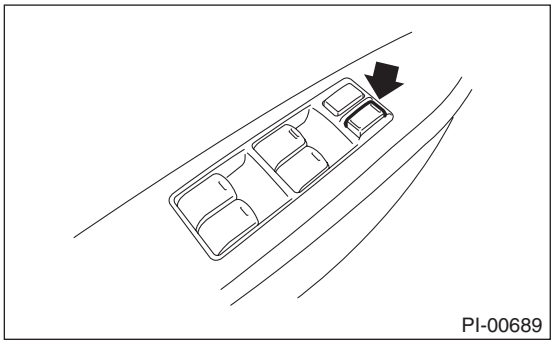


2) Completely close the driver's door, and then check the smooth movement with operating door lock knob from lock to unlock several times. Set the door lock knob (A) to lock position. Then pull the inner remote (B) to ensure that doors will not open.
For other doors, place the door lock knob (A) to lock position and then pull the inner remote (B) to ensure that doors will not open.

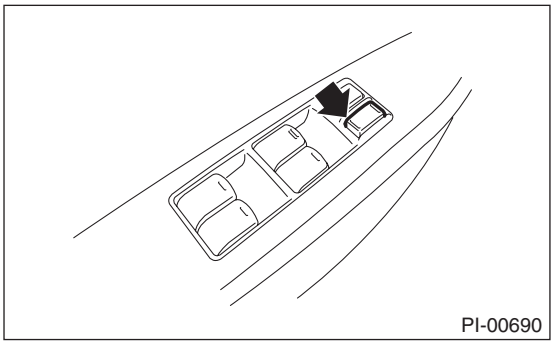


(A) Door lock knob
(B) Inner remote

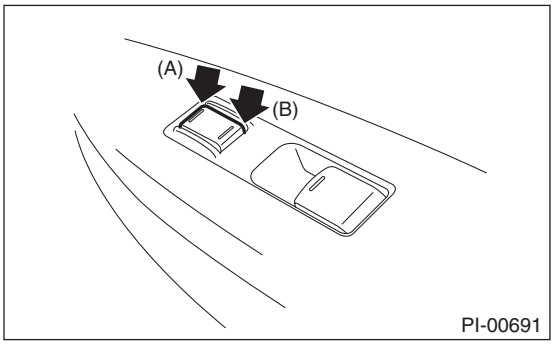
3) Close all the doors, and then press the lock on power door lock switch at driver's side. Check that all doors (including the rear gate) lock.



4) Press the driver's side power door lock switch to unlock side. Check that all doors including rear gate are unlocked.



5) Check that the passenger's power door lock switch locks and unlocks normally in the same manner.

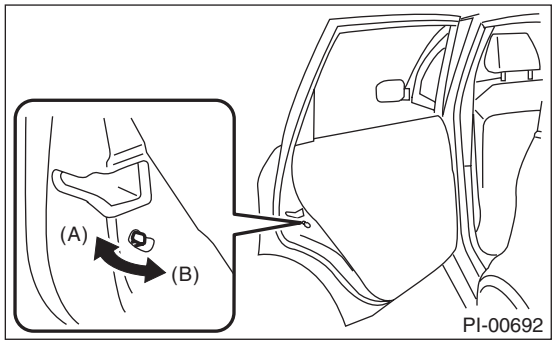


(A) Lock
(B) Unlock

6) Insert the key to ignition switch, and open the driver's side door. Press lock on power door lock. Check that the door is not locked.

5. CHILD SAFETY LOCK

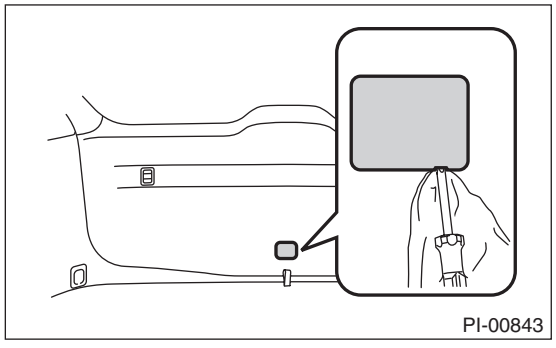
1) Set the child safety lock lever on both rear doors to the lock position.
2) Close the rear doors completely.
3) Check that the lock levers of the rear doors are in the unlock position. Then, pull inner remote of rear doors to ensure that doors will not open.
4) Pull the outer handles to ensure that doors will open.



(A) Unlock
(B) Lock

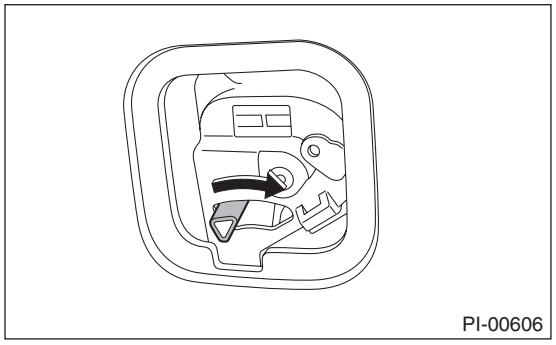
6. REAR GATE LOCK/UNLOCK AND OPEN/CLOSE OPERATIONS

1) Open and close the rear gate several times for smooth movement.
2) Operate the rear gate emergency release lever to check that the rear gate can be locked and unlocked properly.
(1) Remove the cover inside the rear gate.

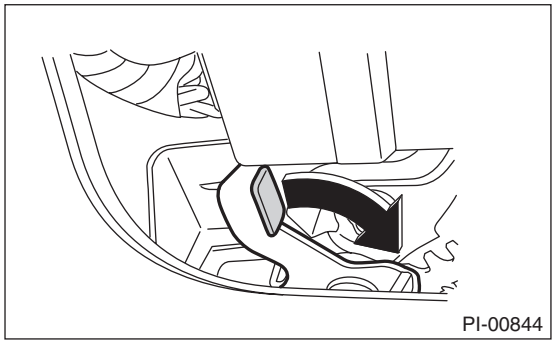


(2) Operate the lever using a tool such as a screwdriver to check that the rear gate is unlocked normally.

- Except for model with power rear gate



- Model with power rear gate



7. POWER REAR GATE

1) Check that the power rear gate normally opens/closes and temporarily stops by pressing the power rear gate switch, power rear gate inner switch, power rear gate driver's switch and rear gate/trunk button of keyless transmitter and access key. Also, check that it can be opened/closed manually.
2) Operate the memory height switch to check that it normally stops at the memory position. At the same time, check that the opening angle of the stop position stored in the memory is fully closed to 30 cm or more.

NOTE:
The memory position of the vehicle before delivery is set to the opening angle from fully closed to 30 cm.

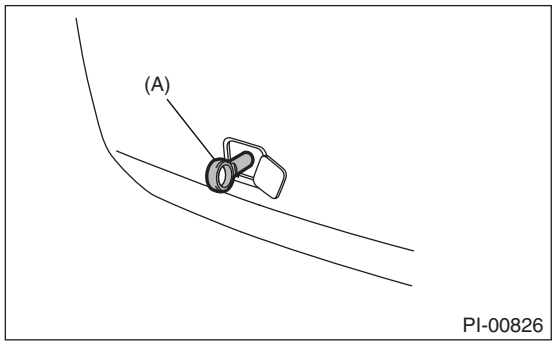
3) Push the power rear gate inner switch with the power rear gate fully opened. Immediately after the power rear gate starts closing, press in either right or left touch sensor by 2 mm or more and check that the auto-reverse operation activates.

8. FUEL LID OPENER LOCK RELEASE LEVER

Operate the fuel lid lock release lever to check that the fuel lid is unlocked normally. Check that the filler cap is securely closed.

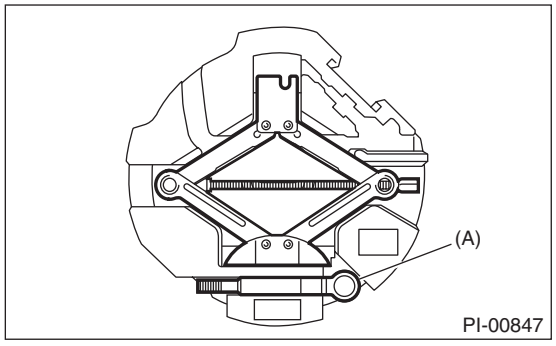
9. TOWING HOOK (EYEBOLT)

NOTE:
At factory shipment, the towing hook (eyebolt) is installed to the rear bumper for securing the vehicle during transportation. Follow the procedure below to store the towing hook (eyebolt) to the holder in the spare tire.
1) Remove the towing hook (eyebolt) from the rear bumper.



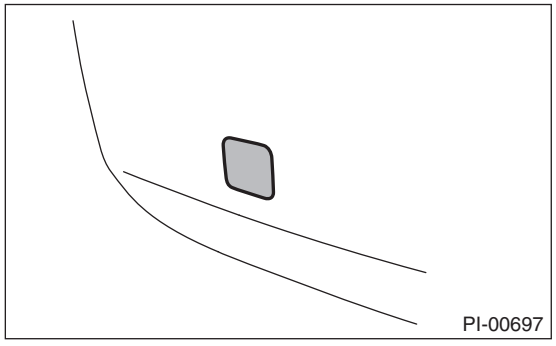
(A) Towing hook (eyebolt)

2) Store the towing hook (eyebolt) to the holder in the spare tire.



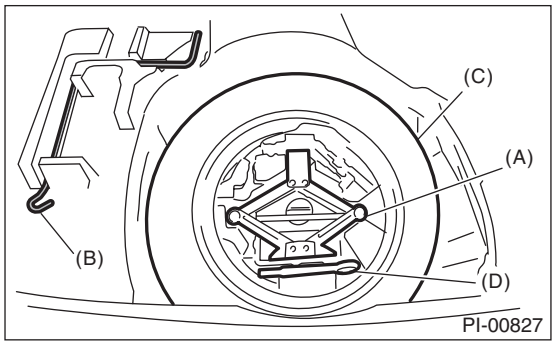
(A) Towing hook (eyebolt)

3) Install the supplied rear hook cover to rear bumper.



10.ACCESSORY

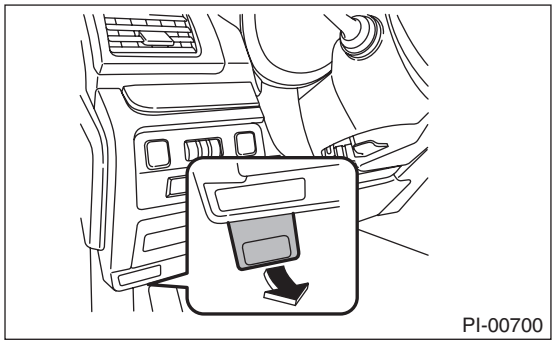
Check that the following accessories are provided.
- Owner's manual
- Warranty booklet
- Maintenance note
- Spare key
- Key No. plate
- Jack
- Tool set
- Spare tire
- Towing hook (eyebolt)



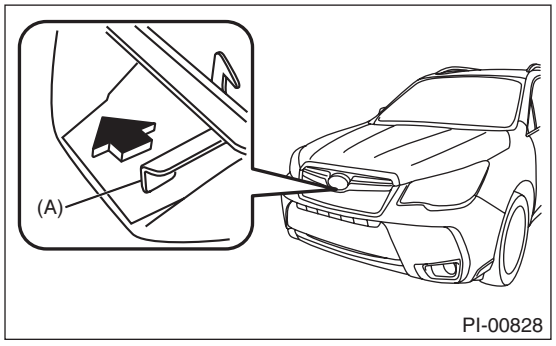
(A) Jack
(B) Jack handle
(C) Spare tire
(D) Towing hook (eyebolt)

11.FRONT HOOD LOCK RELEASE

Operate the front hood release lever to check that the front hood is unlocked normally.

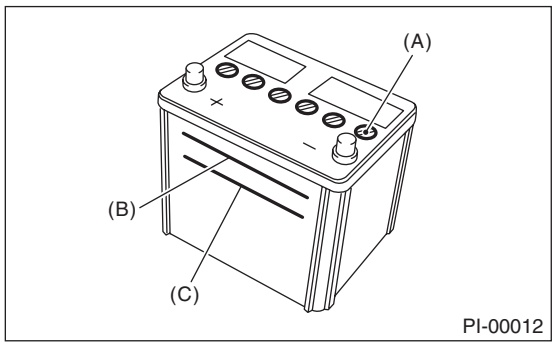


Operate the lever (A) and check that the front hood is opened normally.



12.BATTERY

Check the battery terminals to make sure that there are no rust or corrosions due to fluid leaks. Check that the battery caps are securely tightened.

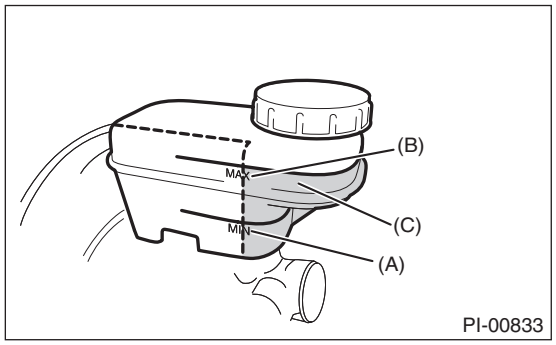


(A) Cap
(B) Upper level
(C) Lower level

13.BRAKE FLUID

CAUTION:
• If the brake fluid is spilt over exhaust pipe, wipe it off with cloth to avoid emitting smoke or causing a fire.
• Always check the level using the specified direction because there is a partition in the reservoir tank.

Check that the brake fluid level is normal from a straight view or within 90° to the right and left forward. If the amount is insufficient, carry out a brake line test to identify brake fluid leaks and check the brake operation. After that, refill the brake fluid tank with the specified type of fluid.

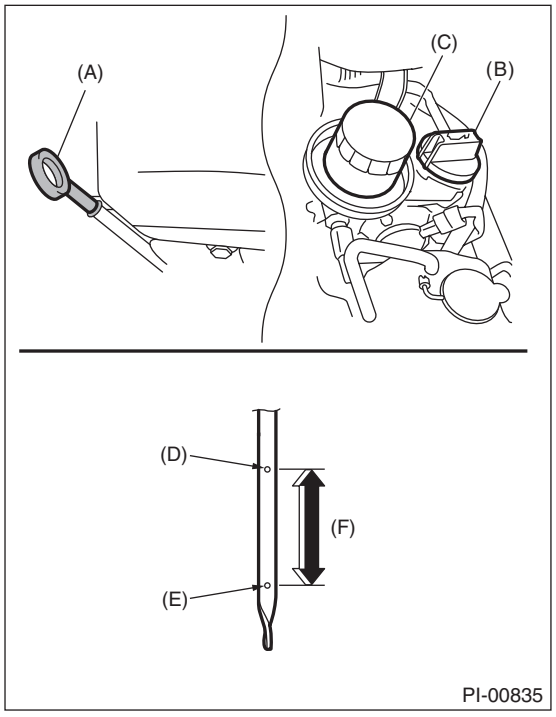


(A) MIN. level
(B) MAX. level
(C) Brake fluid

14.ENGINE OIL

1) Park the vehicle on a level surface.
2) Remove the oil level gauge and wipe away the oil.
3) Reinsert the oil level gauge all the way. Be sure that the oil level gauge is correctly inserted and properly orientated.
4) Pull out the oil level gauge again, and check both sides of the oil level gauge. Use a lower side to determine the engine oil level. If the engine oil level is below “L” line, add oil to bring the level up to “F” line.
5) Start the engine, and spread the oil in engine room.
6) After turning off the engine, wait a few minutes for the oil to return to the oil pan before checking the oil level.

NOTE:
To prevent overfilling of engine oil, do not add oil above “F” line when the engine is cold.



(A) Engine oil level gauge
(B) Engine oil filler cap
(C) Engine oil filter
(D) “F” line
(E) “L” line
(F) Approx. 1 L (1.1 US qt, 0.9 Imp qt)

15.TRANSMISSION GEAR OIL

Check the transmission gear oil amount. If the amount of gear oil is insufficient, check for leaks. Then, add the necessary amount of the specified gear oil. Refer to “6MT” section for transmission gear oil inspection. <Ref. to 6MT-24, INSPECTION, Transmission Gear Oil.>

CAUTION:
If gear oil is spilt over the exhaust pipe, wipe it off with a cloth to avoid emitting smoke or causing a fire.

16.CVT FRONT DIFFERENTIAL GEAR OIL

Check for leakage of CVT front differential gear oil.

CAUTION:
If gear oil is spilt over the exhaust pipe, wipe it off with a cloth to avoid emitting smoke or causing a fire.

17.REAR DIFFERENTIAL GEAR OIL

Check for leakage of gear oil from the rear differential.

CAUTION:
If the rear differential gear oil is spilt over exhaust pipe, wipe it off with cloth to avoid emitting smoke or causing a fire.

18.ENGINE COOLANT

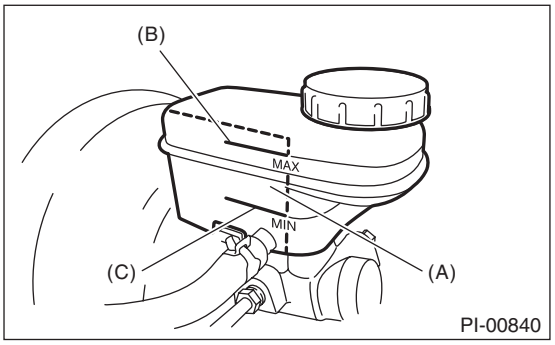
Check the coolant amount on the reservoir. If the amount of engine coolant is insufficient, check that no leaks are found. Then, add the necessary amount of coolant with the specified concentration.

CAUTION:
If the coolant is spilt over exhaust pipe, wipe it off with cloth to avoid emitting smoke or causing a fire.

19.CLUTCH FLUID

Check the clutch fluid amount. If the amount of fluid is insufficient, check that no leaks are found. Then, add the necessary amount of specified fluid.

CAUTION:
If any clutch fluid is spilt on the exhaust pipe, wipe it off with a cloth to avoid emitting smoke or causing a fire.

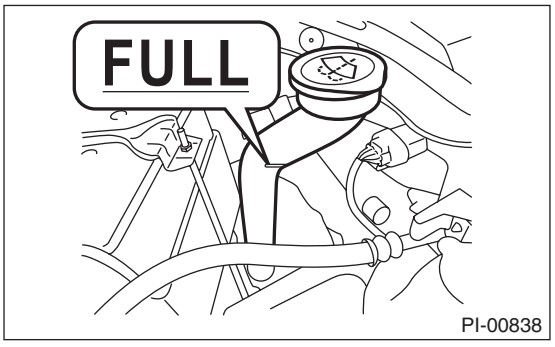


(A) Clutch fluid chamber
(B) MAX. level
(C) MIN. level

20.WINDOW WASHER FLUID

Check the window washer fluid amount. If the amount of washer fluid is insufficient, check that no leaks are found. Then, add the necessary amount of washer fluid.

NOTE:
If there is the vibration, water comes into the layer of air in the washer tank and the water level may drop. This is not a malfunction.



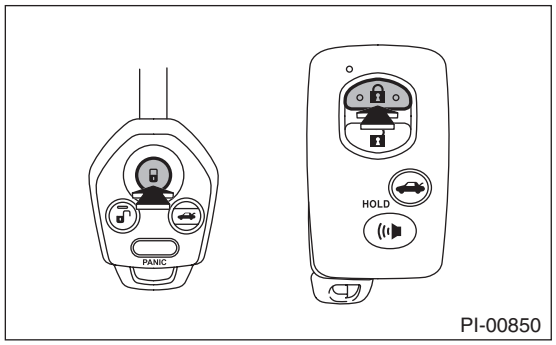
21.FRONT HOOD LATCH

Close the front hood. Check that the front hood is completely latched.

22.KEYLESS ENTRY SYSTEM

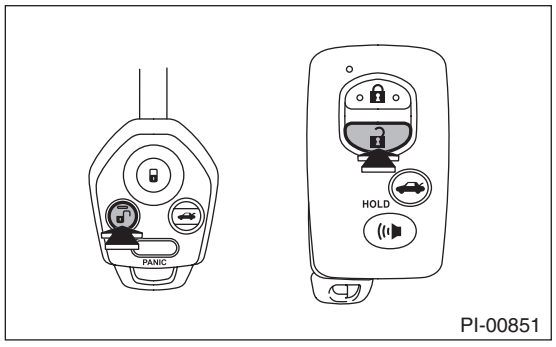
Check the keyless entry system operations as follows:

- Fully open all the door windows.
- Remove the key from the ignition switch and close all the doors including rear gate.
- Press the “LOCK/ARM” button momentarily on the keyless transmitter. Check that all the doors become locked, the buzzer sounds once, and the hazard lights flash once.



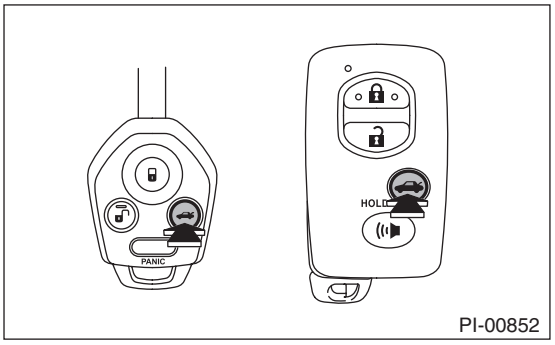
PI-00850

- Press the “UNLOCK/DISARM” button momentarily on the keyless transmitter. Check that the driver’s door is unlocked, the buzzer sounds twice, and the hazard lights flash twice.



PI-00851

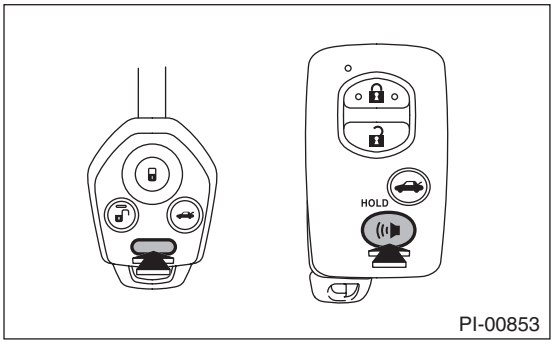
- Within 5 seconds, press the “UNLOCK/DISARM” button momentarily on the keyless transmitter. Check that all doors (including rear gate) are unlocked, the buzzer sounds twice, and the hazard lights flash twice.
- Lock all the doors including rear gate. Check that the buzzer sounds twice, and the hazard lights flash twice, when the rear gate/trunk button on the keyless transmitter is pressed to unlock the rear gate. Press the release button and check that the rear gate opens.



PI-00852

NOTE:
For the power rear gate, the rear gate automatically opens when the rear gate/trunk button is pressed continuously.

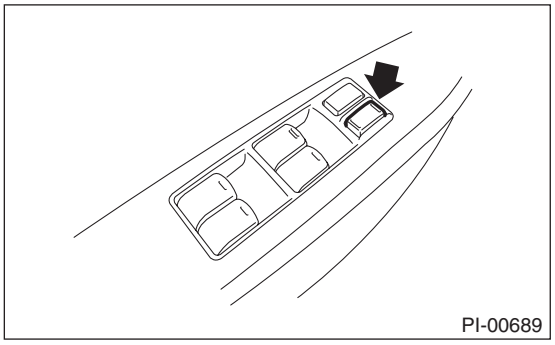
- Press the “PANIC” button of the keyless transmitter. Check that the panic mode (the horn keeps sounding) is initiated. Also, check that this condition continues for 30 seconds or until when any of the buttons on the keyless transmitter are pressed.



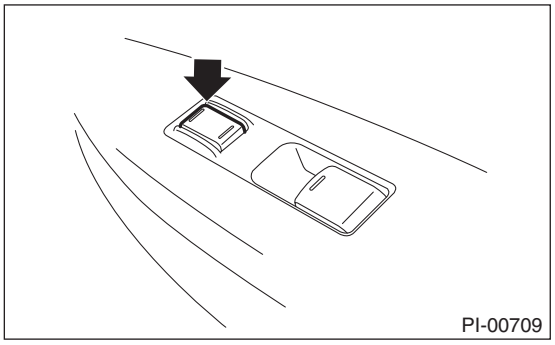
PI-00853

- Press the “LOCK/ARM” button momentarily on the keyless transmitter with one of the doors (including the rear gate) opened. Check that the buzzer sounds 5 times, and the hazard light flashes 5 times to notify the door not being fully closed. Next, close all the doors including rear gate. Check if all doors are locked and buzzer sounds once and the hazard light flashes once.
- With one of the doors open (including the rear gate), press the “LOCK” side of the power door lock switch. Next, close all the doors including rear gate. Check if all doors are locked and buzzer sounds once and the hazard light flashes once.

• Driver's side



• Passenger's side



Alarm sound operational check

• The system uses the buzzer and sounds the alarm when the door is locked or unlocked. The alarm sound can be turned OFF. To turn the alarm sound from ON to OFF, close all doors, (with the key not inserted in the key cylinder), hold down the "UNLOCK" side of the power door lock switch and insert the key in the key cylinder. Within 10 seconds, insert and take out the key for 5 times or more, and within 10 seconds after that, open and close the driver's door. With the door closed, the hazard light will flash 3 times, indicating that the alarm sound has been turned OFF. To turn the alarm sound from OFF to ON, perform this procedure again. The hazard light will flash 3 times, indicating that the alarm has been turned ON.

23.KEYLESS ACCESS FUNCTION

CAUTION:

• When performing the check, check one access key at a time, separating individual keys.

• Do not leave any separated access keys in the vehicle.

NOTE:

The following inspections show the initial settings. When the settings are different from the initial settings, use Subaru Select Monitor to check the details of each setting for inspections. <Ref. to BC(diag)-11, OPERATION, Read Current Data.>

• While carrying the access key, check that the room light illuminates when you move close to the front door handles of the vehicle whose doors are all locked.

• While carrying the access key, check that touching the driver's side touch sensor unlocks the driver's door, touching the front passenger's side touch sensor unlocks all doors and the rear gate, pressing the rear gate opener button unlocks the rear gate, and the hazard lights blink.

NOTE:

For the power rear gate, the rear gate automatically opens when pressing the power rear gate switch.

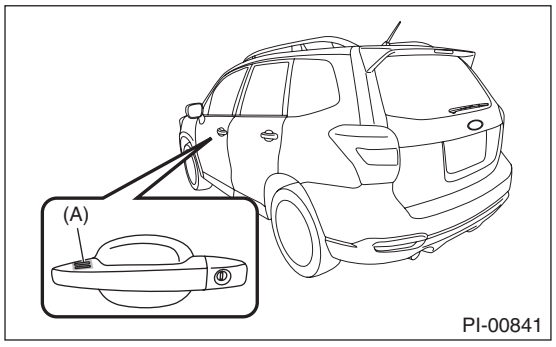
• While carrying the access key, check that all doors and the rear gate are locked, and the hazard lights flash when you touch the touch sensor (lock) of the front door or press the rear lock button of the rear gate.

NOTE:

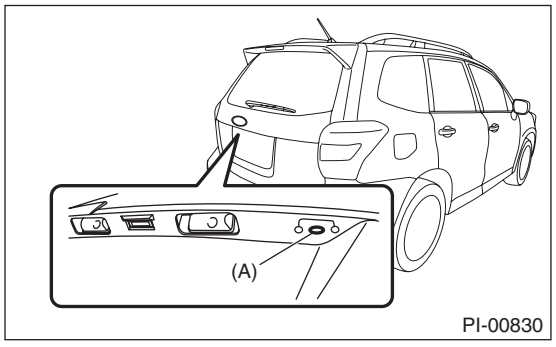
• The hazard lights flash twice and the buzzer sounds twice when unlocking.

• The hazard lights flash once and the buzzer sounds once when locking.

• The hazard lights flash four times when the power rear gate automatically opens. (Locked state)



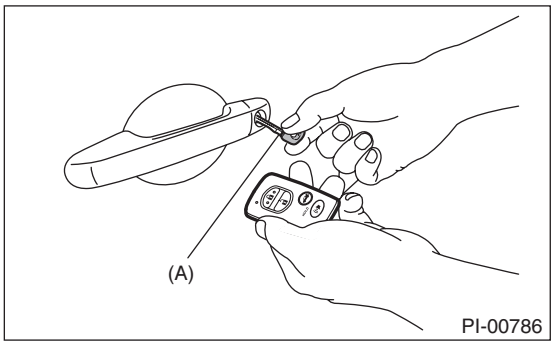
(A) Touch sensor (lock)



(A) Rear lock button

• Manually operate the access key button to check the lock/unlock of doors and rear gate, and the flashing of hazard lights.

• Check the mechanical key attached to the access key can be used for locking/unlocking.



(A) Mechanical key

• With the access key in the vehicle, check that warning buzzer sounds and locking does not occur when you touch the touch sensor (lock) of the door or press the rear lock button.

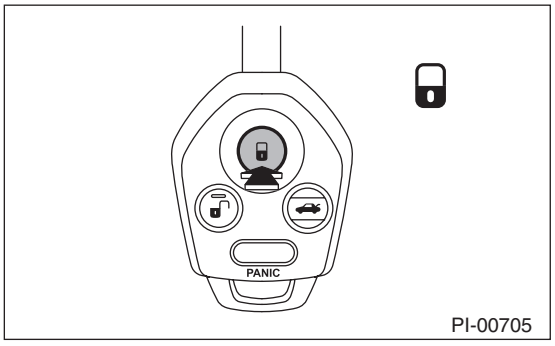
CAUTION:
Remove the mechanical key from the access key and hold the mechanical key.

24.ALARM SYSTEM

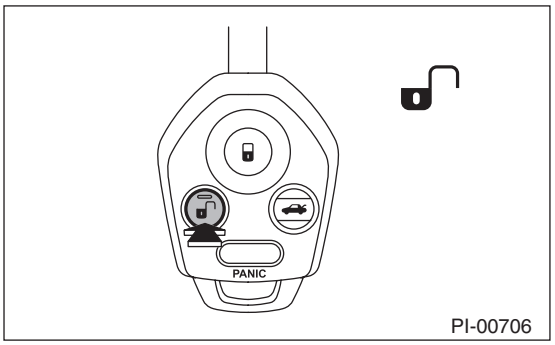
• Model without keyless access function

NOTE:
The following inspections show the initial settings. When the settings are different from the initial settings, use Subaru Select Monitor to check the details of each setting for inspections. <Ref. to BC(diag)-17, OPERATION, Registration Body Integrated Unit.>

1) Fully open all the door windows.
2) Remove the key from the ignition switch and close all the doors including rear gate.
3) Press the “LOCK” button momentarily on the keyless transmitter. All doors are locked, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.

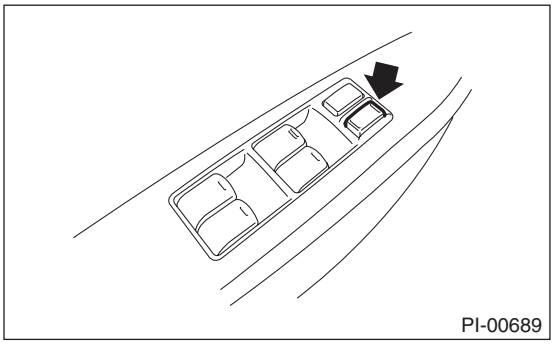


4) Press the “UNLOCK” button momentarily on the keyless transmitter. When the door of the driver’s seat is unlocked, the security indicator light blinks, and the alarm system enters the release mode.

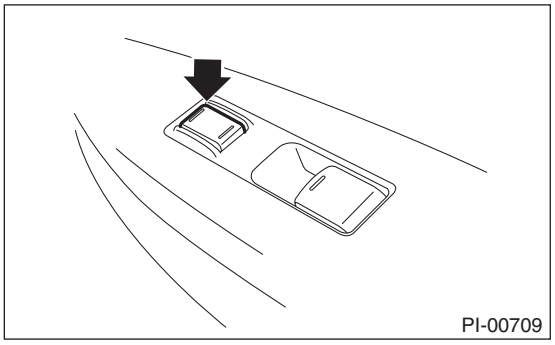


5) Press the “LOCK” button once on the keyless transmitter with one of the doors (including the rear gate) open. Check that the buzzer sounds 5 times to give the door not fully closed warning. The doors are locked when all doors (including the rear gate) are closed, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.
6) Press the “UNLOCK” button momentarily on the keyless transmitter. When the door of the driver’s seat is unlocked, the security indicator blinks, and the alarm system enters the release mode.
7) With one of the doors open (including the rear gate), press the “LOCK” side of the power door lock switch. The doors are locked when all doors (including the rear gate) are closed, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.

• Driver’s side



• Passenger's side


PI-00709

8) Unlock a door using the inner lock knob or the key and open the door while the security system is in the set mode. Check if the alarm condition occurs (horn sounds continuously, hazard light blinks, security indicator light illuminates). Check if this condition lasts until any button of the keyless transmitter is pressed or until the ignition switch is turned to IGN ON after inserting the key into the ignition switch.

NOTE:
The alarm sounds for three minutes with the door open.

9) On models equipped with an impact sensor, hit the windshield glass with your hand with the alarm system in the monitoring condition, to check that the alarm condition occurs.

10) When none of above is applicable, perform troubleshooting for the security system.

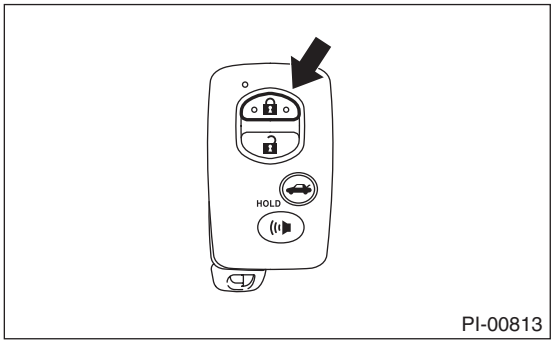
• Model with keyless access function

NOTE:
The following inspections show the initial settings. When the settings are different from the initial settings, use Subaru Select Monitor to check the details of each setting for inspections. <Ref. to BC(diag)-17, OPERATION, Registration Body Integrated Unit.>

1) Fully open all the door windows.

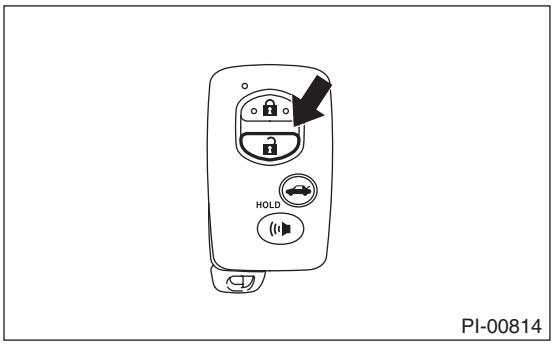
2) Close all the doors and rear gate.

3) Press the "LOCK" button momentarily on the access key. All doors are locked, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.



PI-00813

4) Press the "UNLOCK" button momentarily on the access key. When the door of the driver's seat is unlocked, the security indicator light blinks, and the alarm system enters the release mode.



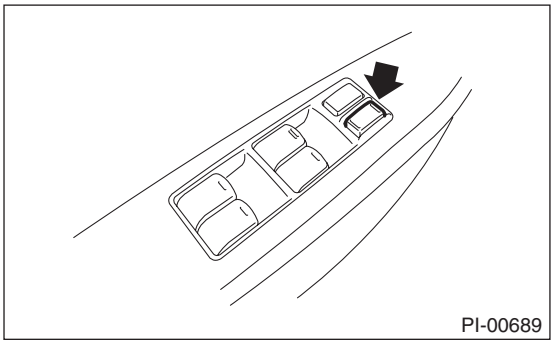
PI-00814

5) Press the "LOCK" button once on the access key with one of the doors (including the rear gate) open. Check that the buzzer sounds 5 times to give the door not fully closed warning. The doors are locked when all doors (including the rear gate) are closed, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.

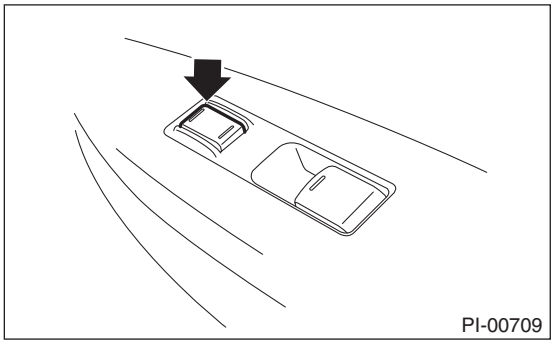
6) Press the "UNLOCK" button momentarily on the access key. When the door of the driver's seat is unlocked, the security indicator blinks, and the alarm system enters the release mode.

7) With one of the doors open (including the rear gate), press the "LOCK" side of the power door lock switch. The doors are locked when all doors (including the rear gate) are closed, and the security indicator light blinks faster for 30 seconds and blinks slowly twice repeatedly, then the alarm system is in set condition.

• Driver's side

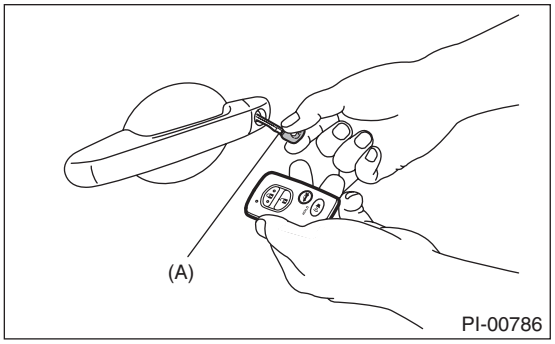

PI-00689

- Passenger's side



8) Unlock a door using the mechanical key and open the door while the security system is in the set mode. Check if the alarm condition occurs (horn sounds continuously, hazard light blinks, security indicator light illuminates). Check if this condition lasts until any button on the access key is pressed or until the ignition switch is turned to ACC.

NOTE:
The alarm sounds for three minutes with the door open.



(A) Mechanical key

9) On models equipped with an impact sensor, hit the windshield glass with your hand with the alarm system in the monitoring condition, to check that the alarm condition occurs.
10) When none of above is applicable, perform troubleshooting for the security system.

25.SEAT

1) Check the seat surfaces for stains or dirt.
2) Check that each seat provides full functionality in sliding, reclining, lifter, tilting and lumber. Check all available functions of the rear seat such as armrest and backrest tilt knob.
3) Check the passenger's seat occupant detection system.
   (1) Empty the passenger's seat and turn the ignition switch to ON.
   (2) Check that the passenger airbag ON/OFF indicator lights both turn on simultaneously for approximately six seconds, and after turning off for two seconds, only the OFF light illuminates.
4) With a person weighing approximately 70 kg (155 lb) or more sitting in the passenger's seat, check whether the ON light of the passenger's airbag ON/OFF indicator illuminates or not.
5) Have the passenger get out of the passenger's seat, and check whether the OFF light of the passenger side airbag ON/OFF indicator illuminates.

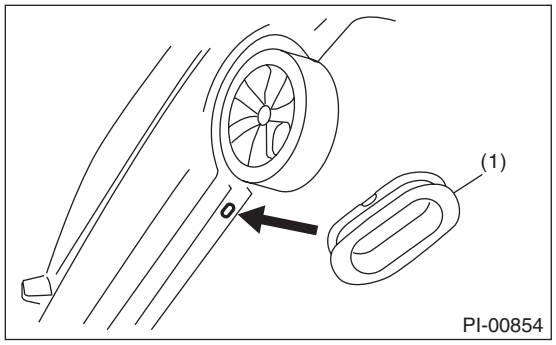
26.SEAT BELT

1) Pull out the seat belt and then release it. Check that the belt retracts smoothly.
2) Check seat warning system
   (1) Turn the ignition switch to ON without driver's and passenger's seat belts on.
   (2) Check the seat belt warning lights of the driver's and the passenger's blink for approximately six seconds and the buzzer sounds intermittently.
   (3) Then check that the seat belt warning lights illuminate and blink in a cycle of approximately 15 seconds. (If no one is seated on the passenger's seat, the seat belt warning light of the passenger's will not operate.)

27.GROMMET INSTALLATION

Install the grommet provided in the glove box to the tie-down hole.

CAUTION:
Make sure that the tie-down hole is firmly plugged with the grommet. Otherwise, dust, smell, etc. may come into the passenger compartment indirectly from the rear quarter, via the side sill from the tie-down hole.

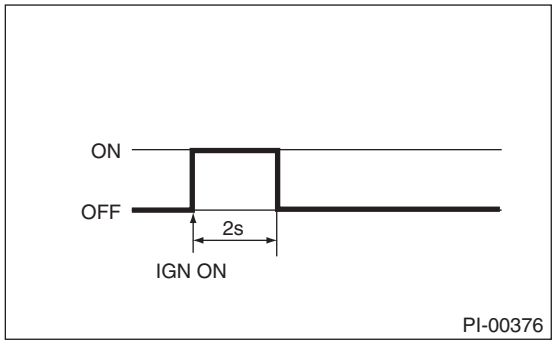


(1) Grommet

28.TPMS (U.S. MODEL)

1) Turn the ignition switch to ON, and check that the TPMS warning light is in a normal operation condition.

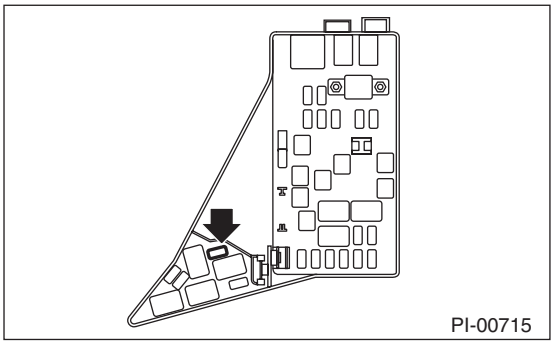
- Normal operation (IG ON (Light check))



2) If the TPMS warning light display does not operate normally, check and repair the system. <Ref. to TPM(diag)-2, Basic Diagnostic Procedure.>

29.DELIVERY (TEST) MODE

1) Turn the ignition switch to ON and check that the malfunction indicator light starts blinking.
2) If the light blinks, return the ignition key to LOCK.
3) Remove the D check fuse and attach it to the spare fuse holder provided on the fuse box cover.



4) Then, turn the ignition key to ON again.
5) Make sure that the malfunction indicator light is off. If the malfunction indicator light blinks, carry out an engine diagnosis.

30.IMMOBILIZER SYSTEM

1) Check that the engine starts with all keys that are equipped on vehicle. Also, when starting the engine, check that the security indicator light goes off.
2) 60 seconds after turning ignition switch from ON to ACC or OFF, or immediately after removing the key, check that the security indicator light is blinking. (Model without keyless access function)
3) Immediately after turning ignition switch from ON to OFF, or when opening/closing a door while the ignition switch is in ON or ACC with the engine stopped, check that the security indicator light is blinking. (Model with keyless access function)

NOTE:
If malfunctions occur, refer to “IMMOBILIZER (DIAGNOSTICS)”. <Ref. to IM(diag)-2, Basic Diagnostic Procedure.>

31.PUSH BUTTON START FUNCTION

1) Get into the vehicle while carrying the access key, with the vehicle in P range and the brake pedal OFF, and check that every time the push button ignition switch is pressed, that it cycles through ACC → IGN ON → IGN OFF, and the indicator light for the push button ignition switch is illuminated in orange.
2) Get into the vehicle while carrying the access key, with the vehicle in P range and the brake pedal ON, check that the indicator light for the push button ignition switch is illuminated in green.

NOTE:
While the select lever button is being pressed, the indicator light of the push button ignition switch does not illuminate in green even if the shift position is in the P range.
3) Get into the vehicle while carrying the access key, with the vehicle in P range and the brake pedal ON, check that the engine starts when you press the push button ignition switch.
4) With the vehicle stopped, the engine running and in P range, check that the engine stops when you press the push button ignition switch.
5) With the vehicle stopped, the engine running and in N range, check that the engine stops when you press the push button ignition switch, and cycles through ACC → IGN ON each time you press the push button ignition switch.

32.STARTING CONDITION

Start the engine and check that the engine starts smoothly. If the battery voltage is low, recharge or replace the battery. If any noises are observed, immediately stop the engine and check and repair the abnormal components.

33.EXHAUST

Listen to the exhaust noise to see if no noises are observed. Check that no leaks are found.

34.INDICATOR AND WARNING LIGHTS

Check that all indicator lights and warning lights are operating correctly.

35.HEATER & VENTILATION

Operate the heater & ventilation system to check for normal airflow outlet control, air inlet control, airflow capacity and heating performance.

36.AIR CONDITIONER

Operate the air conditioner. Check that the A/C compressor operates normally and enough cooling is provided.

NOTE:
To prevent the insufficient lubrication of the air conditioner, operate the air conditioner for five minutes at idling.

37.MULTI-FUNCTION DISPLAY (MFD)

1) Check that the Multi-Function Display (MFD) function operates normally.
2) Check that the rearview camera operates normally.

38.AUDIO

1) Check if the AM/FM radio broadcasting can be heard.
2) Check that all the radio functions work properly and the noise level is normal.
3) Check the CD and AUX for normal operation.
4) Check that the AUX is installed into the console without looseness.

39.NAVIGATION SYSTEM

1) Check all display functions for normal operation. (Refer to the operation manual.)
2) Check that the navigation system operates normally.
3) Check the radio, CD player and AUX for normal operation.
4) Check that the AUX is installed into the console without looseness.

40.ACCESSORY POWER SUPPLY SOCKET

1) Check the operation of the front accessory power supply socket.
2) Check operation of the accessory power supply socket in console box.
3) Check operation of the accessory power supply socket in the luggage room.

41.LIGHTING SYSTEM

1) Check the headlight operations. When pulling out the key, check if the headlight illuminates by turning the headlight switch from OFF to ON.
2) Check the stop light operation.
3) Check other lights for normal operations.

42.ILLUMINATION CONTROL

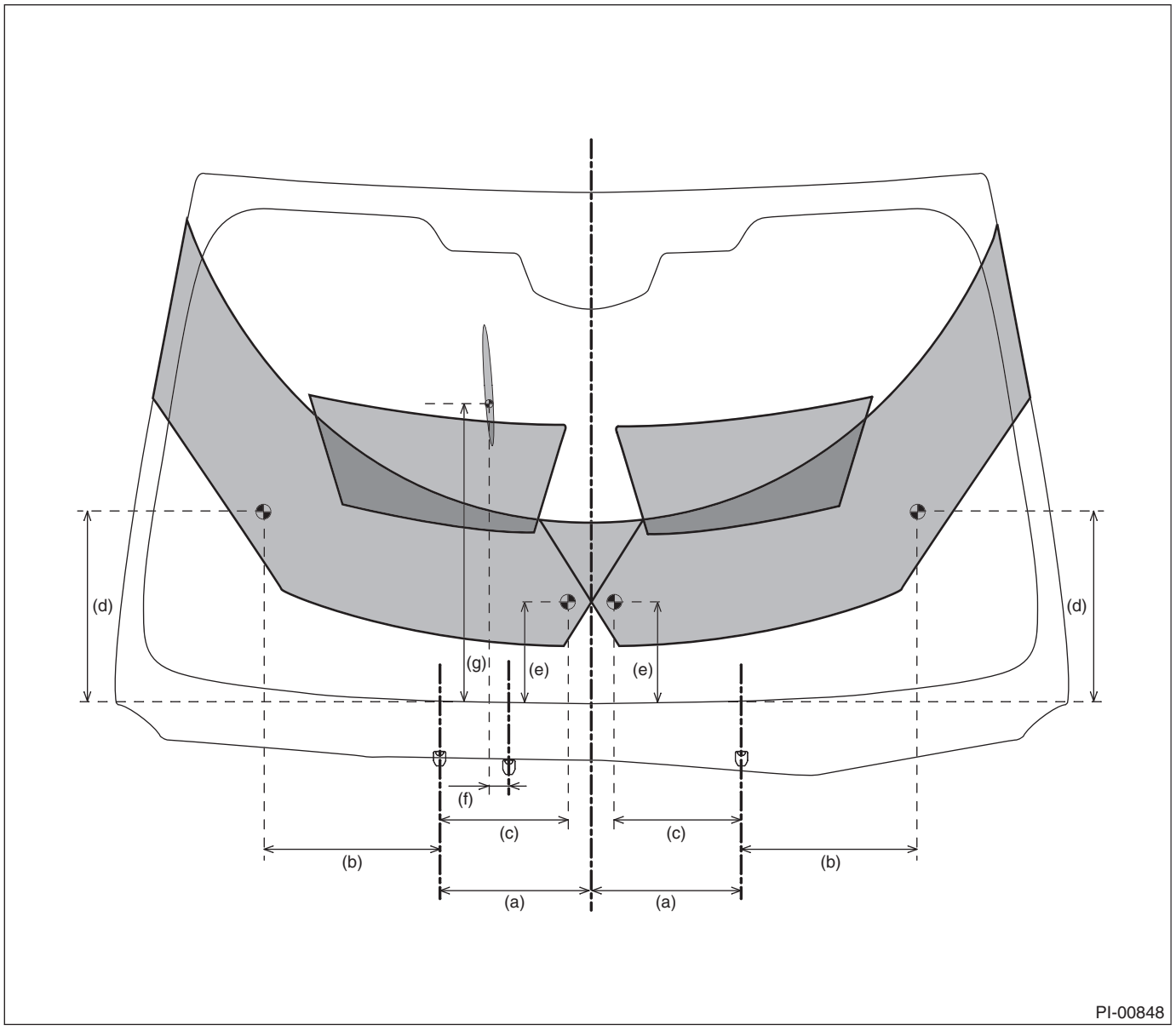
Check that the illumination control operates normally.

43.WINDOW WASHER

Check that the window washer system injects washer fluid to the specified area of the windshield shown in the figure.

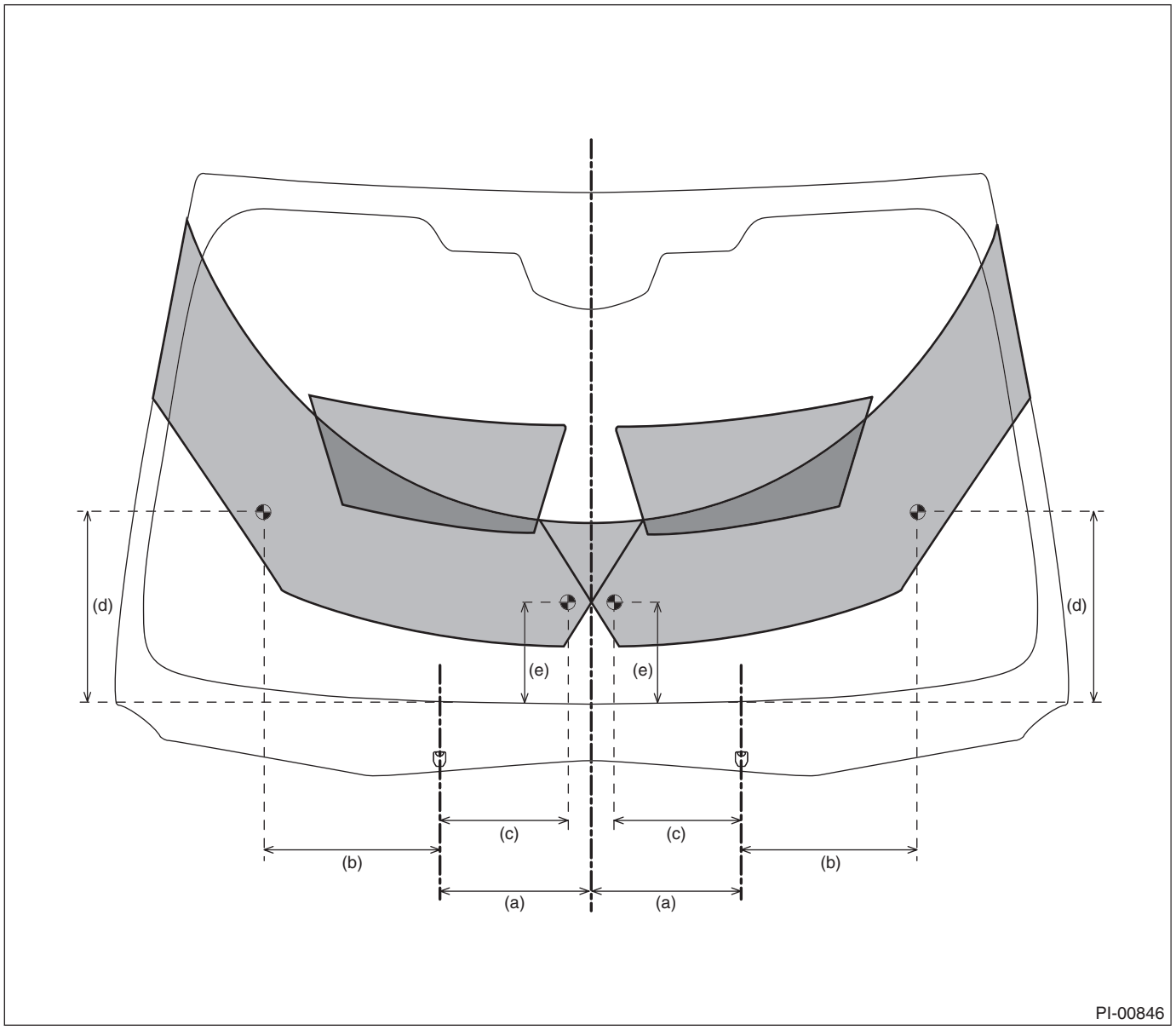
Front injection position:

- Models with EyeSight



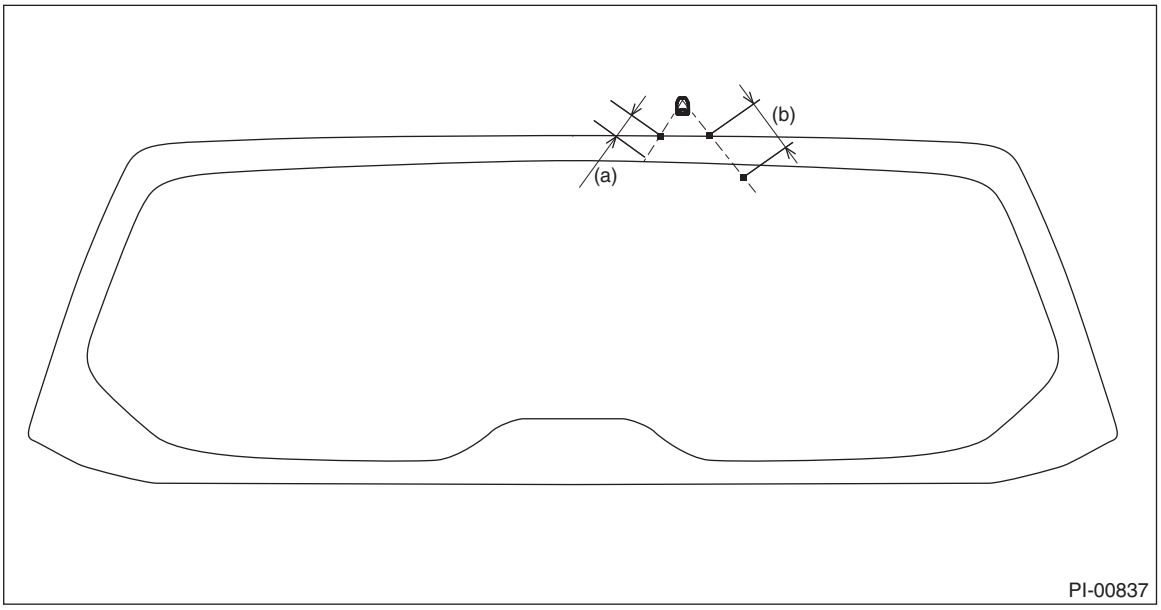
(a) 230 mm (9.06 in)
(b) 271 mm (10.67 in)
(c) 195 mm (7.68 in)
(d) 302 mm (11.89 in)
(e) 160 mm (6.30 in)
(f) 31 mm (1.22 in)
(g) 471 mm (18.54 in)

- Models without EyeSight



(a) 230 mm (9.06 in)
(b) 271 mm (10.67 in)
(c) 195 mm (7.68 in)
(d) 302 mm (11.89 in)
(e) 160 mm (6.30 in)

Rear spray position:



(a) 30 mm (1.18 in) (b) 64 mm (2.52 in)

44.WIPER

Check the front and rear wipers for normal operations.

45.WIPER DEICER

Check that the wiper deicer operates normally.

NOTE:
When an ambient temperature is 5°C or more, wiper deicer operation is cancelled. Press the switch for 3 seconds or more to perform the compulsory operation.

46.POWER WINDOW

Operate the power window switches one by one to check that each of the power windows goes up and down without noises.

47.SUNROOF

Check that the sunroof operates normally.

48.REAR DEFOGGER

Press the rear defogger switch and check that the light inside the switch is activated for approx. 15 minutes and the rear defogger automatically turns to OFF.

49.DOOR MIRROR

- Check that the remote control mirror operates normally.
- Check that the heated mirror operates normally.

50.PARKING BRAKE

Check the parking brake for normal operations. When pulling the parking brake lever with a force of 200 N (20 kgf, 45 lb), check that the lever stroke of parking brake lever is 7 to 8 notches.
If it is not within the specified value, adjust the parking brake. <Ref. to PB-22, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

51.DIAGNOSTIC TROUBLE CODE (DTC) CHECK

Read the diagnostic trouble code and check that the diagnostic trouble code is not detected.
If any diagnostic trouble code is detected, clear all.
1) Read Diagnostic Trouble Code

NOTE:
For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
2) Clear Memory Mode

NOTE:
For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

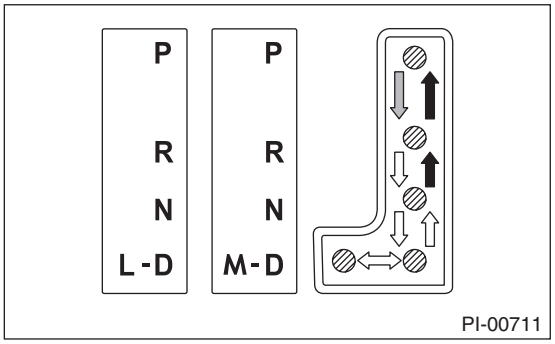
52.BRAKE TEST

Check the foot brake for normal operations.

53.SHIFT CONTROL

• CVT

1) Turn the ignition switch to ON.
2) While brake pedal is not depressed, check if the select lever does not move from “P” range.
3) While brake pedal is depressed, check if the select lever moves from “P” range.
4) Set the selector lever to each gear position and check the shifting while driving the vehicle. Operate the paddle shift at manual mode and check the shifting while driving the vehicle.



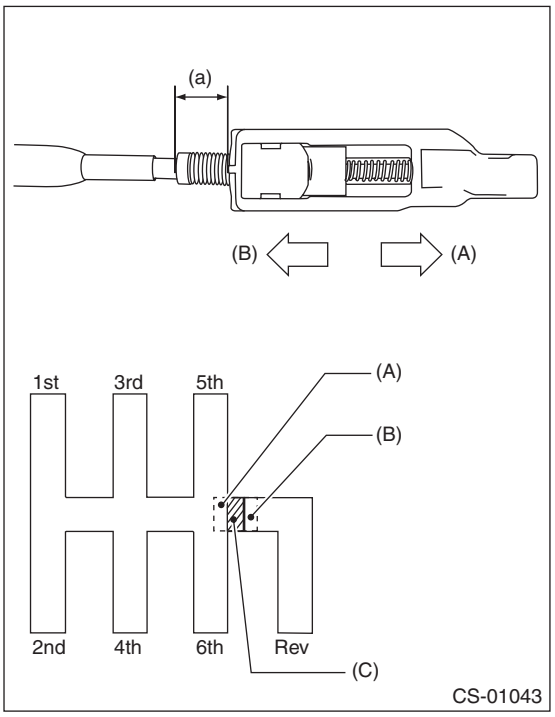
Selector position	Gear position							
	1st	2nd	3rd	4th	5th	6th	7th*1	8th*1
D	Continuously variable speed change							
Manual mode	OK	OK	OK	OK	OK	OK	OK	OK

*1: Turbo model (at S# mode)

5) Set the select lever to other than “P” range. (except for models with keyless access function)
6) When the ignition switch is turned to OFF, check if the ignition key switch cannot be removed. (except for models with keyless access function)

• 6MT

1) Check for smooth operation to each position. Especially, shift to 5th ←→ 6th and to Rev, and check for stuck.
2) Check the slider returns to the original position by shifting to the Rev and then back in neutral while pulling up the slider.
3) If the shifting operation is not smooth, readjust the exposed length (a) of MT gear select cable by referring to the following figure.



(a) Exposed length of MT gear select cable
(A) Extend direction of exposed length of MT gear select cable
(B) Shorten direction of exposed length of MT gear select cable
(C) Specification of exposed length (a)

• If the shift cannot be inserted to push the reverse lock bracket 5th and 6th.
→ Extend the exposed length (a) of MT gear select cable.
• When operate the select lever to 4th → 5th, it cannot be operated at select lever crank line.
→ Shorten the exposed length (a) of MT gear select cable.

54.CRUISE CONTROL

Operate the cruise control system. Check that the system is activated and deactivated correctly.

55.SUBARU EyeSight

• Operate the EyeSight system. Check that the system is activated and deactivated correctly.
• Check the stereo camera cover opening for foreign matter.
• Check the glass in front of stereo camera for dirt and stickers.
• Check the lens and filter of the stereo camera for dirt such as fingerprints.
• Check the filter at lens portion of stereo camera for damage.
• According to the “ES(diag)” section, check the windshield glass and dashboard in front of stereo camera to make sure that no aftermarket part is adhered or attached in the prohibited area.<Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.>
• When delivering the vehicle, explain to the customer to make sure not to touch the filter at lens portion of the stereo camera.

56.POWER STEERING SYSTEM (ELECTRIC POWER STEERING MODEL)

Check that the electric power steering warning light illuminates when the ignition switch is turned to ON, and that the electric power steering warning light goes off after the engine is started.

57.FLUID LEAKAGE

Check entire areas of the vehicle for any trace of engine coolant/engine oil/transmission fluid leaks.

58.WATER LEAK TEST

Spray the vehicle with water using a hose and check that no water enters the passenger compartment.
• Before performing the water leakage test, remove anything that may obstruct the operation or which must be kept dry.
• Close all the windows and doors securely. Close the front hood, trunk lid and rear gate before starting the test.
• Connect a hose to a tap, and spray water on the vehicle. The rate of water spray must be approx. 20 to 25 L (5.3 — 6.6 US gal, 4.4 — 5.5 Imp gal) per minute.
When spraying water on areas adjacent to the floor and wheel house, increase the pressure. When spraying water on areas other than the floor 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) away from vehicle.
Check the following areas.
• Front window and body framework mating portion
• Door mating portions
• Glass mating portions
• Rear quarter window mating portions
• Rear window and body framework mating portion
• Around roof drips
If any dampness in the compartments is discovered after the water has been applied, carefully check all the areas that may have possibly contributed to the leak.

59.APPEARANCE 2

1) If protective coating (wrap guard) is applied, remove it.

NOTE:
• When removing the wrap guard, using steam will make it easier to remove.
• Vehicle left for a extended periods or at low temperatures, spray the vehicle with water heated 50 — 60°C (122 — 140°F) to raise the surface temperature before peeling off the wrap guard. Do not use the water heated to over 60°C (140°F).
• If the adhesive remains exist on the coated surface, soak a flannel rag, etc. with a small amount of coating wax or solvent such as oil benzene and IPA, put the soaked cloth on the remains lightly, and then wipe them off with a flannel rag etc.
• Keep solvent from touching the resin or rubber parts. Do not use coating wax or solvents while the component surface temperature is hot due to hot weather etc.
• If the coated surface is swollen out due to seams or moisture, expose the vehicle to the sunlight for a few hours or heat the seam and swollen portions using a dryer etc.
• Dispose of the peeled wrap guard as burnable industrial garbage.

2) Check the whole vehicle body for flaking paint, damage by transportation, corrosion, dirt, cracks or blisters.

NOTE:
• It is better to determine an inspection pattern in order to avoid missing an area, since the total inspection area is wide.
• Do not repair the body paint unless absolutely necessary. Also, if the vehicle is in need of repair to remove scratches or corroded paint, the repair area must be limited to the minimum. Re-painting and spray painting must be avoided as much as possible.

3) Check each window glass for scratches carefully. Slight damage may be removed by polishing with cerium oxide. (Fill a cup half 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 with it.)

4) Check each portion of the vehicle body and underside components for the formation of rust. If rust is discovered, remove it with sandpaper of #80 to #180 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 body and all of the exterior parts for deformation or distortion. Also, check each light lens for cracks.

6) Peel the protective tape, vinyl wrapping and identification seal attached to the following places.
• Seat
• Door trim
• Floor carpet
• Side sill
• Fuel lid opener lock release lever
• Rear wiper
• Roof rail
• Door mirror
• Front fog light
• Tonneau cover (model with power rear gate (only OP))

PERIODIC MAINTENANCE SERVICES

PM

9. Air Cleaner Element

A: REPLACEMENT

Refer to “IN” section for air cleaner element replacement. <Ref. to IN(H4DO)-4, Air Cleaner Element.> <Ref. to IN(H4DOTC)-7, Air Cleaner Element.>

10.Cooling System

A: INSPECTION

1. RADIATOR

Check that there are no engine coolant leaks from the hose connections. Refer to “CO” section for radiator inspection. <Ref. to CO(H4DO)-62, INSPECTION, Radiator.> <Ref. to CO(H4DOTC)-51, INSPECTION, Radiator.>

2. RADIATOR CAP

Refer to “CO” section for radiator cap inspection. <Ref. to CO(H4DO)-63, INSPECTION, Radiator Cap.> <Ref. to CO(H4DOTC)-52, INSPECTION, Radiator Cap.>

3. COOLING FAN

Check the radiator fan operates using Subaru Select Monitor, when the coolant temperature exceeds the specified value. If it does not operate, check the radiator fan system. <Ref. to CO(H4DO)-9, INSPECTION, Radiator Fan System.> <Ref. to CO(H4DOTC)-8, INSPECTION, Radiator Fan System.>

4. COOLING SYSTEM

Start the engine, and then inspect that it does not overheat or it is not cooled excessively. If it overheats or it is cooled excessively, check the cooling system.

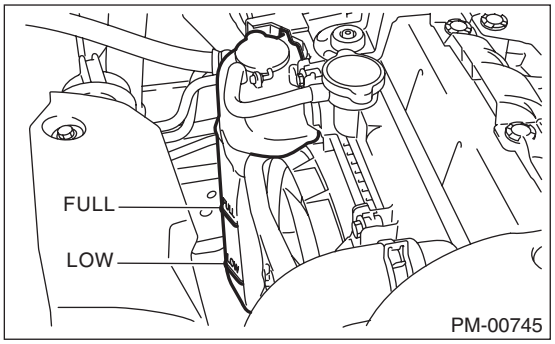
11.Engine Coolant

A: INSPECTION

CAUTION:
- **Do not use water instead of coolant.**
- **Refer to "RM" section for the recommended engine coolant. <Ref. to RM-4, ENGINE COOLANT, RECOMMENDED MATERIALS, Recommended Materials.>**

1) Park the vehicle on a level surface.
2) Make sure the engine coolant level in the reservoir tank is between "FULL" and "LOW" when the engine is cold.

NOTE:
If the engine coolant level drops, make sure that there are no engine coolant leakage, and add engine coolant to the "FULL" line.



3) Remove the radiator cap and make sure that the radiator is filled with engine coolant up to the filler neck position.

B: REPLACEMENT

Refer to "CO" section for engine coolant replacement. <Ref. to CO(H4DO)-14, REPLACEMENT, Engine Coolant.> <Ref. to CO(H4DOTC)-13, REPLACEMENT, Engine Coolant.>

12.Clutch System

A: INSPECTION AND ADJUSTMENT

Refer to “CL” section for inspection and adjustment of clutch system. <Ref. to CL-27, INSPECTION, Clutch Pedal.> <Ref. to CL-28, ADJUSTMENT, Clutch Pedal.>

13.Transmission Gear Oil

A: INSPECTION

Refer to “6MT” section for transmission gear oil inspection. <Ref. to 6MT-24, INSPECTION, Transmission Gear Oil.>

B: REPLACEMENT

Refer to “6MT” section for transmission gear oil replacement. <Ref. to 6MT-24, REPLACEMENT, Transmission Gear Oil.>

14.CVTF

A: INSPECTION

Refer to “CVT” section for CVTF inspection. <Ref. to CVT(TR580)-35, INSPECTION, CVTF.> <Ref. to CVT(TR690)-36, INSPECTION, CVTF.>

B: REPLACEMENT

Refer to “CVT” section for CVTF replacement. <Ref. to CVT(TR580)-37, REPLACEMENT, CVTF.> <Ref. to CVT(TR690)-38, REPLACEMENT, CVTF.>

15. Front & Rear Differential Gear Oil

A: INSPECTION

1. FRONT DIFFERENTIAL (MT MODEL)

Front differential gear oil of MT model lubricates the transmission and differential together. Refer to “6MT” section for inspection procedures. <Ref. to 6MT-24, INSPECTION, Transmission Gear Oil.>

2. FRONT DIFFERENTIAL (CVT MODEL)

Refer to “CVT” section for inspection of CVT model front differential gear oil. <Ref. to CVT(TR580)-40, INSPECTION, Differential Gear Oil.> <Ref. to CVT(TR690)-41, INSPECTION, Differential Gear Oil.>

3. REAR DIFFERENTIAL

Refer to “DI” section for rear differential gear oil inspection. <Ref. to DI-19, INSPECTION, Differential Gear Oil.>

B: REPLACEMENT

1. FRONT DIFFERENTIAL (MT MODEL)

Front differential gear oil of MT model lubricates the transmission and differential together. Refer to “6MT” section for replacement procedure. <Ref. to 6MT-24, REPLACEMENT, Transmission Gear Oil.>

2. FRONT DIFFERENTIAL (CVT MODEL)

Refer to “CVT” section for front differential gear oil replacement. <Ref. to CVT(TR580)-42, REPLACEMENT, Differential Gear Oil.> <Ref. to CVT(TR690)-43, REPLACEMENT, Differential Gear Oil.>

3. REAR DIFFERENTIAL

Refer to “DI” section for rear differential gear oil replacement. <Ref. to DI-19, REPLACEMENT, Differential Gear Oil.>

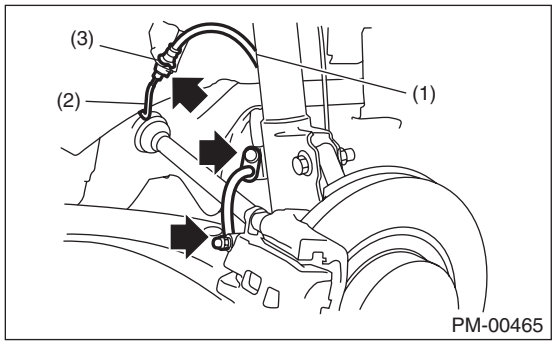
16.Brake Line

A: INSPECTION

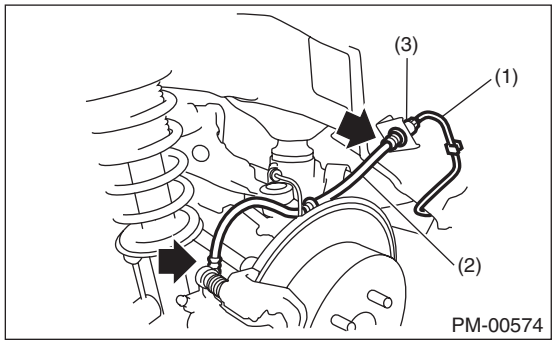
1. BRAKE LINE

1) Check for scratches, swelling, corrosion, traces of fluid leakage on the brake hoses or pipe joints.
2) Make sure that brake pipes/hoses do not interfere with adjacent parts and there is no loose connector/clamp during driving.
3) Check any trace of fluid leakage, scratches, etc. on master cylinder, wheel cylinder and hydraulic unit.

NOTE:
• When the brake fluid level in the reservoir tank is lower than specified limit, the brake warning light on the combination meter will illuminate.
• Visually check the brake hose for damage. (Use a mirror where it is difficult to see)



(1) Front brake hose
(2) Front brake pipe
(3) Clamp



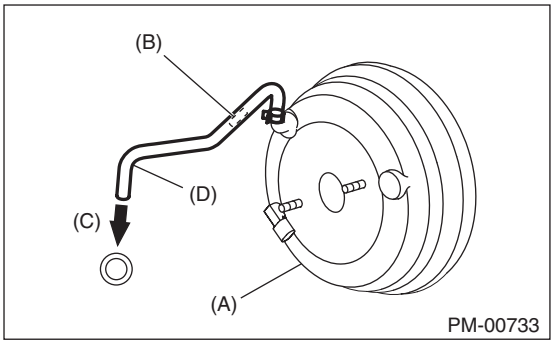
(1) Brake pipe
(2) Rear brake hose
(3) Clamp

2. SERVICE BRAKE

Refer to “BR” section for foot brake inspection. <Ref. to BR-67, INSPECTION, Brake Pedal.>

3. BRAKE SERVO SYSTEM

1) With the engine off, depress the brake pedal several times applying the same pedal force. Check that the travel distance should not change.
2) With the brake pedal depressed, start the engine. Check that the pedal moves slightly toward the floor.
3) With the brake pedal depressed, stop the engine and keep the pedal depressed for 30 seconds. Check that the pedal height does not change.
4) A check valve is built into the brake booster nipple. Disconnect the vacuum hose to inspect function of check valve.
Check that check valve ventilates from booster side to engine side. Also, check that there is no ventilation from engine side to booster side.



(A) Brake booster
(B) Check valve
(C) Engine side
(D) Brake booster side

5) Check the vacuum hose for cracks or other damage.

CAUTION:
When installing the vacuum hose on the engine and brake booster, do not use soapy water or lubricating oil on their connections.
6) Check that the vacuum hose is securely tightened.

17.Brake Fluid

A: INSPECTION

Refer to “BR” section for brake fluid inspection.
<Ref. to BR-57, INSPECTION, Brake Fluid.>

B: REPLACEMENT

Refer to “BR” section for brake fluid replacement.
<Ref. to BR-57, REPLACEMENT, Brake Fluid.>

18.Disc Brake Pad and Disc

A: INSPECTION

Refer to “BR” section for disc brake pad and disc inspection. <Ref. to BR-18, INSPECTION, Front Brake Pad.> <Ref. to BR-32, INSPECTION, Rear Brake Pad.> <Ref. to BR-20, INSPECTION, Front Disc Rotor.> <Ref. to BR-35, INSPECTION, Rear Disc Rotor.>

19.Parking Brake

A: INSPECTION

Refer to “PB” section for parking brake inspection. <Ref. to PB-21, INSPECTION, Parking Brake Assembly (Rear Disc Brake).>

B: ADJUSTMENT

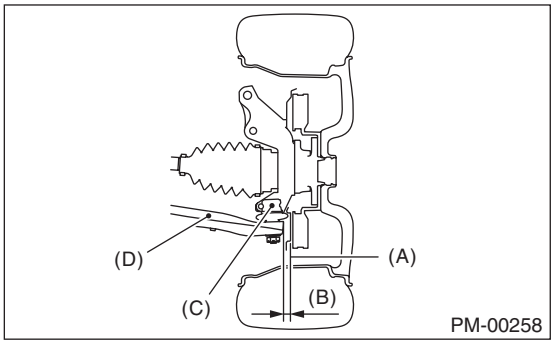
Refer to “PB” section for parking brake adjustment. <Ref. to PB-22, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

20.Suspension

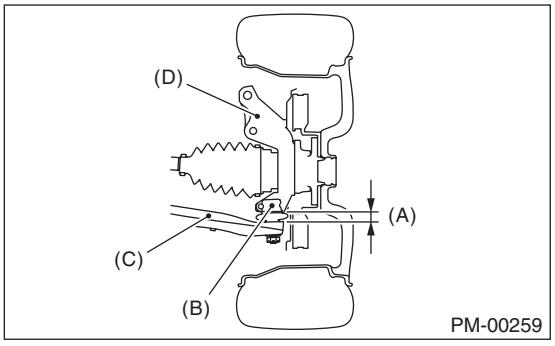
A: INSPECTION

1. FRONT SUSPENSION BALL JOINT

1) Lift up the vehicle until front wheels are off ground.
2) Grasp the bottom of tire and move it in and out in axial direction. If movement (B) is observed between the brake disc cover (A) and end of front arm (D), ball joint (C) may be excessively worn.



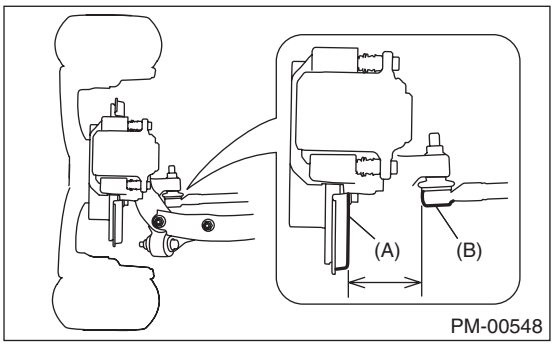
3) Next, grasp the end of front arm (C) and move it up and down. If movement (A) between the housing (D) and front arm (C) boss is observed, ball joint (B) may be excessively worn.



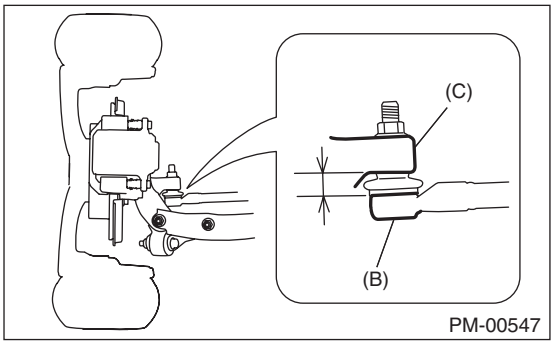
4) If the relative movement is observed in the preceding two steps, remove and inspect the ball joint. If the free play exceeds standard value, replace the ball joint. <Ref. to FS-31, Front Ball Joint.>
5) Damage of dust boots
Visually inspect the ball joint dust boots. Replace if ball joint is damaged.

2. REAR SUSPENSION BALL JOINT

1) Lift up the vehicle until rear wheels are off ground.
2) Grasp the bottom of tire and move it in and out in axial direction.
3) If movement is observed between the brake disc cover (A) and end of front lateral link (B), ball joint may be excessively worn.

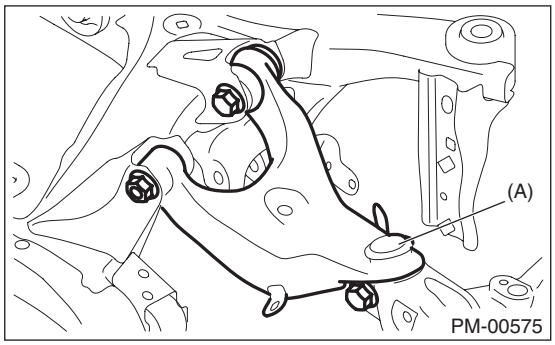


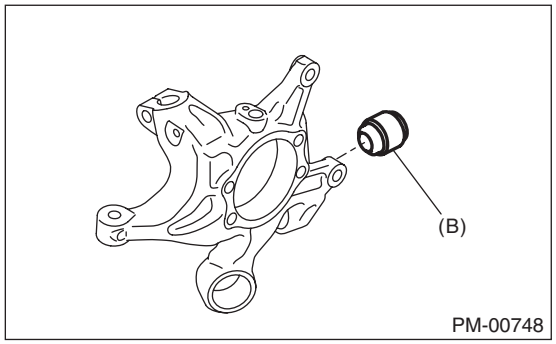
4) Grasp the end of front lateral link (B) and move it up and down. If movement is observed between the housing (C) and front lateral link (B) boss, ball joint may be excessively worn.



5) If the movement related to the previous two steps is observed, replace the front lateral link. <Ref. to RS-23, Front Lateral Link.>
6) Damage of dust boots
Visually inspect the ball joint dust boots. Replace if front lateral link is damaged.

7) Check the upper arm ball joint and the pillow ball bushing of housing in the same manner.



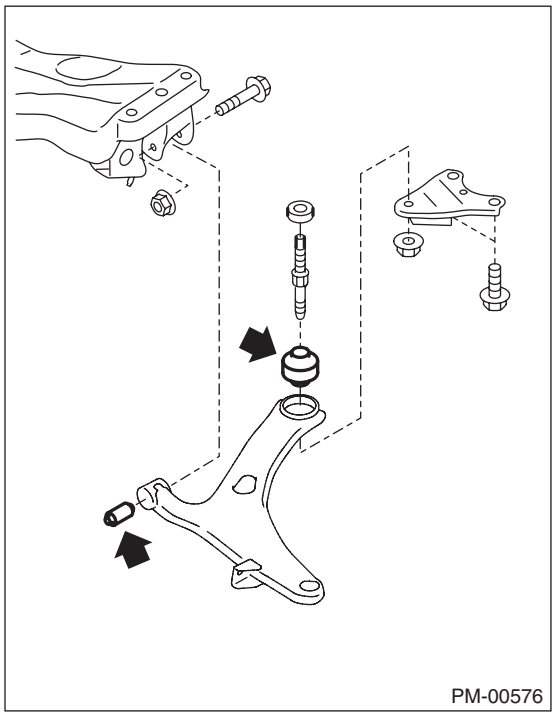


(A) Upper arm ball joint
(B) Pillow ball bushing

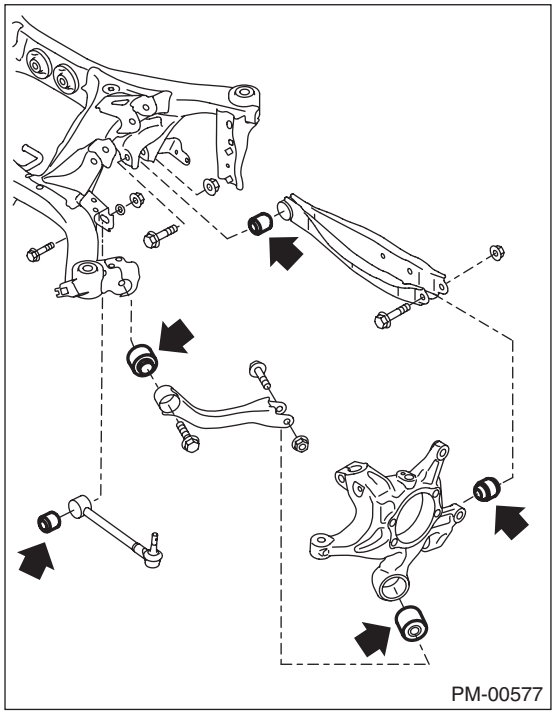
3. FRONT, REAR SUSPENSION BUSHING

Apply pressure with tire lever etc, and inspect the bushing for excessive wear or damage. If defective, replace the bushing.

- Front suspension bushing



- Rear suspension bushing



4. WHEEL ARCH HEIGHT

Refer to “FS” section for wheel arch height inspection. <Ref. to FS-8, WHEEL ARCH HEIGHT, INSPECTION, Wheel Alignment.>

5. WHEEL ALIGNMENT

Measure and adjust the front and rear wheel alignment at a time. Refer to “FS” section for measurement and adjustment of wheel alignment. <Ref. to FS-7, INSPECTION, Wheel Alignment.>

6. OIL LEAKAGE OF STRUT AND SHOCK ABSORBER

Visually inspect the front strut and rear shock absorber for oil leakage. Replace the front strut and rear shock absorber if oil leaks excessively.

7. TIGHTNESS OF BOLTS AND NUTS

Check the bolts and nuts for looseness. Retighten the bolts and nuts to specified torque. If the self-locking nuts and bolts are removed, replace them with new parts. <Ref. to FS-2, General Description.> <Ref. to RS-2, General Description.>

8. DAMAGE TO SUSPENSION PARTS

Check the following parts and the fastening portion of the vehicle body for deformation or excessive rusting which impairs the suspension. Thoroughly remove the deposits of the lower spring seat of strut where dust or mud are likely piled up. If necessary, replace the damaged parts with new parts. If minor rust formation, pitting, etc. are noted, remove the rust and take rust prevention measure.

- Front suspension
  - Front arm
  - Crossmember
  - Strut
- Rear suspension
  - Sub frame
  - Front lateral link
  - Rear lateral link
  - Upper arm
  - Trailing link
  - Shock absorber
- In the area where salt is sprayed to melt snow on a road in winter, check suspension parts for damage caused by rust every 12 months after lapse of 60 months. Take rust prevention measures as required.

21.Wheel Bearing

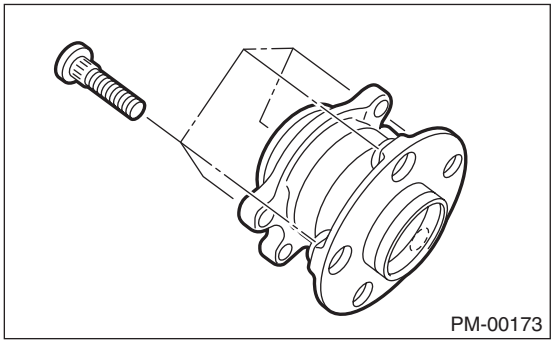
A: INSPECTION

1. FRONT WHEEL BEARING

NOTE:
Inspect the condition of front wheel bearing grease.
1) Jack-up the front side of vehicle.
2) While holding the front wheel by hand, swing it in and out to check bearing free play.
3) Loosen the wheel nuts, and remove the front wheel.
4) If the bearing free play exists in step 2) above, attach a dial gauge to the hub and measure axial play in axial direction.

Service limit:
Straight-ahead position within 0.05 mm (0.0020 in)

5) Remove the bolts and self-locking nuts, and extract the front arm from front crossmember.
6) Remove the transmission-side joint of the front drive shaft from the transmission. <Ref. to DS-19, Front Axle.>
7) While supporting the front drive shaft horizontally with one hand, turn the hub with the other hand to check for noise or binding.
If the hub is noisy or binds, replace the front axle.

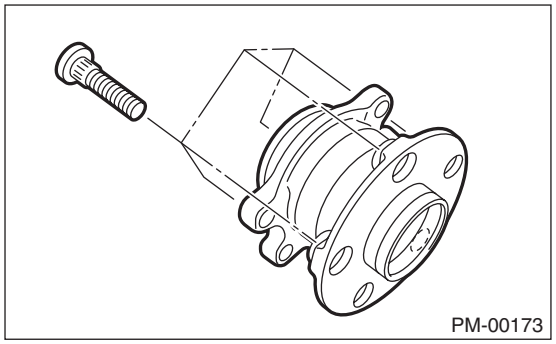


2. REAR WHEEL BEARING

1) Jack-up the rear side of vehicle.
2) While holding the rear wheel by hand, swing it in and out to check bearing free play.
3) Loosen the wheel nuts, and remove the rear wheel.
4) If the bearing free play exists in step 2) above, attach a dial gauge to the hub and measure axial play in axial direction.

Service limit:
Straight-ahead position within 0.05 mm (0.0020 in)

5) Remove the DOJ of rear drive shaft from rear differential. <Ref. to DS-65, Rear Drive Shaft.>
6) While supporting rear drive shaft horizontally with one hand, turn the hub with the other hand to check for noise or binding.
If the hub is noisy or binds, replace the rear axle.



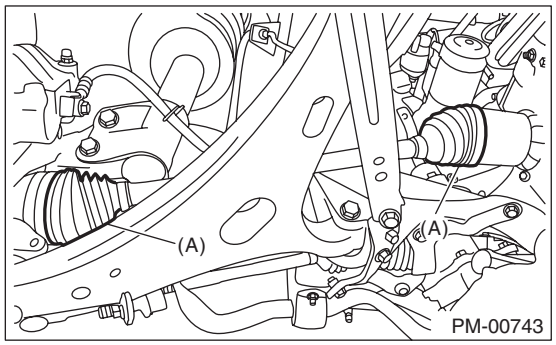
22.Axle Boots & Joints

A: INSPECTION

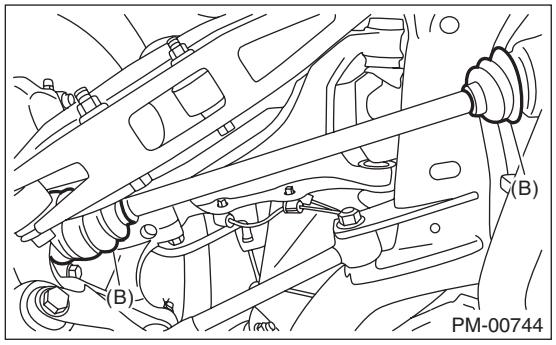
1. FRONT AND REAR AXLE BOOTS

Inspect the front axle boots (A) and rear axle boots (B) for deformation, damage or failure. If faulty, replace with new part. <Ref. to DS-57, Front Drive Shaft.> <Ref. to DS-65, Rear Drive Shaft.>

- Front



- Rear



2. PROPELLER SHAFT

Inspect the propeller shaft for damage or failure. If faulty, replace with new part. <Ref. to DS-11, Propeller Shaft.>

23.Tire Inspection and Rotation

A: INSPECTION

Refer to “WT” section for tire inspection and rotation. <Ref. to WT-6, TIRE ROTATION, INSPECTION, Tire and Wheel.>

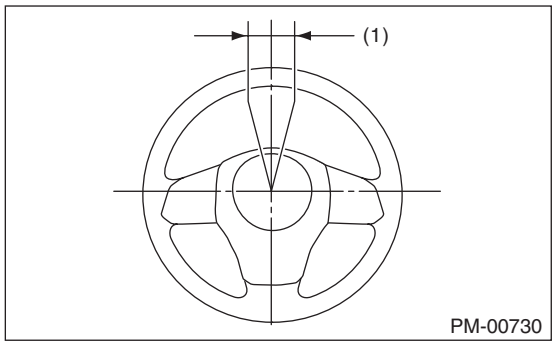
24.Steering System (Power Steering)

A: INSPECTION

1. STEERING WHEEL

1) Set the steering wheel in a straight-ahead position, and check the wheel spokes to make sure they are correctly set in their specified positions.
2) Lightly turn the steering wheel to the left and right to determine the point where front wheels start to move.
Measure the distance of the movement of steering wheel (periphery).

Steering wheel free play:
0 — 17 mm (0 — 0.67 in)



(1) Steering wheel free play

Move the steering wheel vertically toward the shaft to check if there is play in the direction.

Play limit:
0.5 mm (0.020 in)

3) Drive the vehicle and check the following items.
(1) Steering force:
The effort required for steering should be smooth and even at all points, and should not vary.
(2) Pulled to one side:
Steering wheel should not be pulled to one side while driving on a level surface.
(3) Wheel runout:
Steering wheel should not show any sign of runout.
(4) Return status:
Steering wheel should return to its original position after it has been turned and then released.

2. STEERING SHAFT JOINT

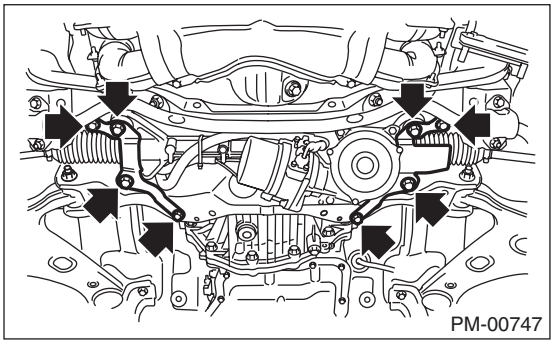
When the steering wheel free play is excessive, disconnect the universal joint of steering shaft and check it for any play and yawing torque (at the point of the crossing direction). Also inspect for any damage to sealing or worn serrations. If the joint is loose, retighten the mounting bolts to the specified torque. <Ref. to PS-13, Universal Joint.>

Tightening torque:
24 N·m (2.4 kgf-m, 17.4 ft-lb)

3. GEARBOX

1) Set the steering wheel in the straight position, then rotate it 90° in both the left and right directions. While steering wheel is being rotated, check the looseness of the gearbox.

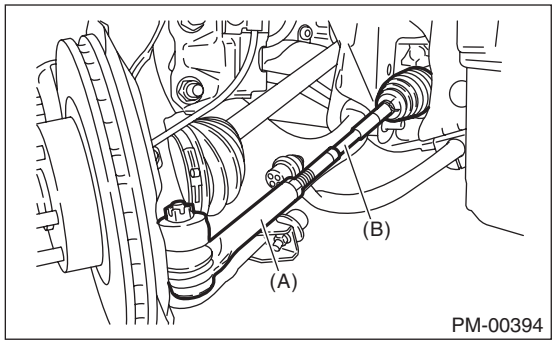
Tightening torque:
60 N·m (6.1 kgf-m, 44.3 ft-lb)



2) Check the boot for damage, cracks or deterioration.
3) With the vehicle stopped on a level surface, quickly turn the steering wheel to the left and right. While steering wheel is being rotated, check the gear backlash. If any noise is noticed, adjust the gear backlash. <Ref. to PS-39, GEARBOX BACKLASH ADJUSTMENT, ADJUSTMENT, Electric Power Steering Gearbox.>

4. TIE-ROD

1) Check the tie-rod and tie-rod ends for bends, scratches or other damage.



(A) Tie-rod end
(B) Tie-rod

2) Confirm that the connections of knuckle ball joints for play, and then check for damage on dust boots and free play of ball studs. If castle nut is loose, retighten it to the specified torque, then tighten further up to a maximum of 60° until the cotter pin hole is aligned.

Tightening torque:
27 N·m (2.75 kgf-m, 19.9 ft-lb)

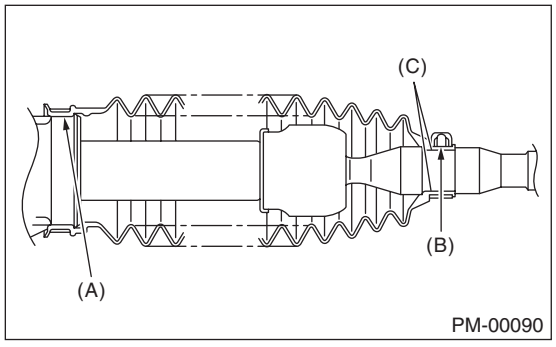
3) Check the lock nut on the tie-rod end for tightness. If it is loose, retighten it to the specified torque.

Tightening torque:
85 N·m (8.7 kgf-m, 62.7 ft-lb)

5. GEARBOX BOOTS

Inspect both sides of the gearbox boot as follows, and correct the defects if necessary.
1) The (A) and (B) positions of the gearbox boot are fitted in (A) and (C) grooves of gearbox and the rod.
2) Clips are fitted onto the boot grooves to the positions (A) and (B) of the boot.
3) Check that there is no cracks or holes in the boot.

NOTE:
Rotate (B) position of gearbox boot against the torsion produced by the adjustment of toe-in etc.



25.A/C Filter

A: REPLACEMENT

Refer to “AC” section for A/C filter replacement.
<Ref. to AC-105, REPLACEMENT, A/C Filter.>

ENGINE 1 SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.
This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.
Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUEL INJECTION (FUEL SYSTEMS)

FU(H4DO)