FOREWORD

This manual has been prepared to provide information for the construction, operation and other technical details of SUBARU vehicles.
Read this manual thoroughly and make the most of it to give better service to your customers and improve your knowledge of vehicle maintenance.

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

FUJI HEAVY INDUSTRIES LTD. U2460BE

1.GENERAL DESCRIPTION

1-1 General Description

A: OBJECT OF DEVELOPMENT

The new Legacy is aiming at “provision of evolution and luxury of Legacy-like performance as well as integration with the global environment,” and is developed with the following main features to better meet the market needs as the fifth-generation model.

1. DRIVING PERFORMANCE

The newly developed chassis provides improved drivability and ride comfort, while the 3.6 L engine offers enhanced engine performance, realizing comfortable driving.

2. SAFETY CONSIDERATION

VDC has been adopted to all models to improve active safety, while collision safety has been strengthened for passive safety.

3. ENVIRONMENTAL CONSIDERATION

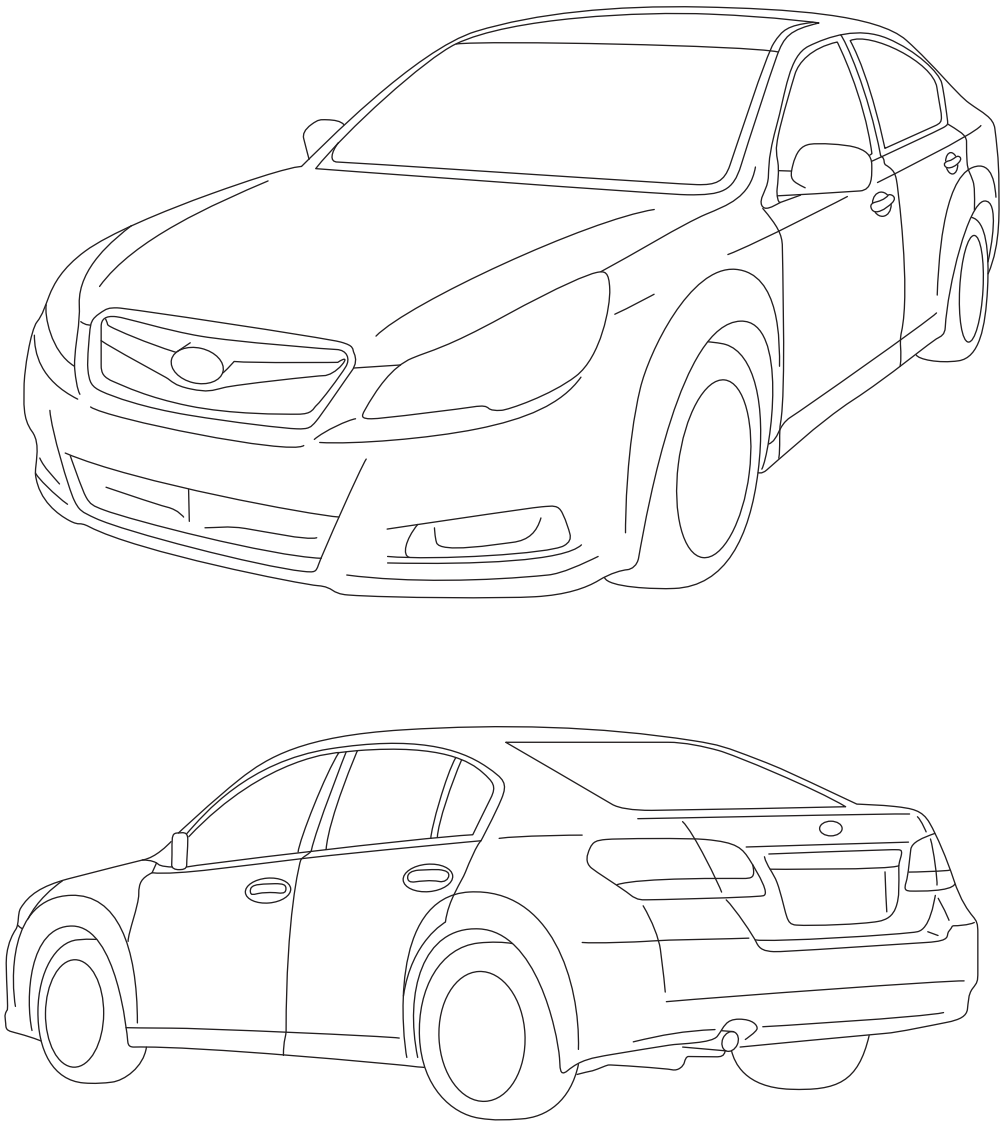
For 2.5 L non-turbo, the longitudinally-positioned Lineartronic™ has improved fuel economy, while regular gasoline is accepted for 3.6 L, achieving the fuel economy and economic efficiency of equivalent to or higher than the previous models. For 2.5 L turbo, the bottom-placed turbo has improved the driving response and the exhaust gas performance.

4. IMPROVED OCCUPANT COMFORT

As an innovated packaging, the enlarged vehicle frame has not only provided increased interior space as well as comfortable seats and seating positions, but improved the interior quietness significantly.

B: EXTERIOR

1. SEDAN



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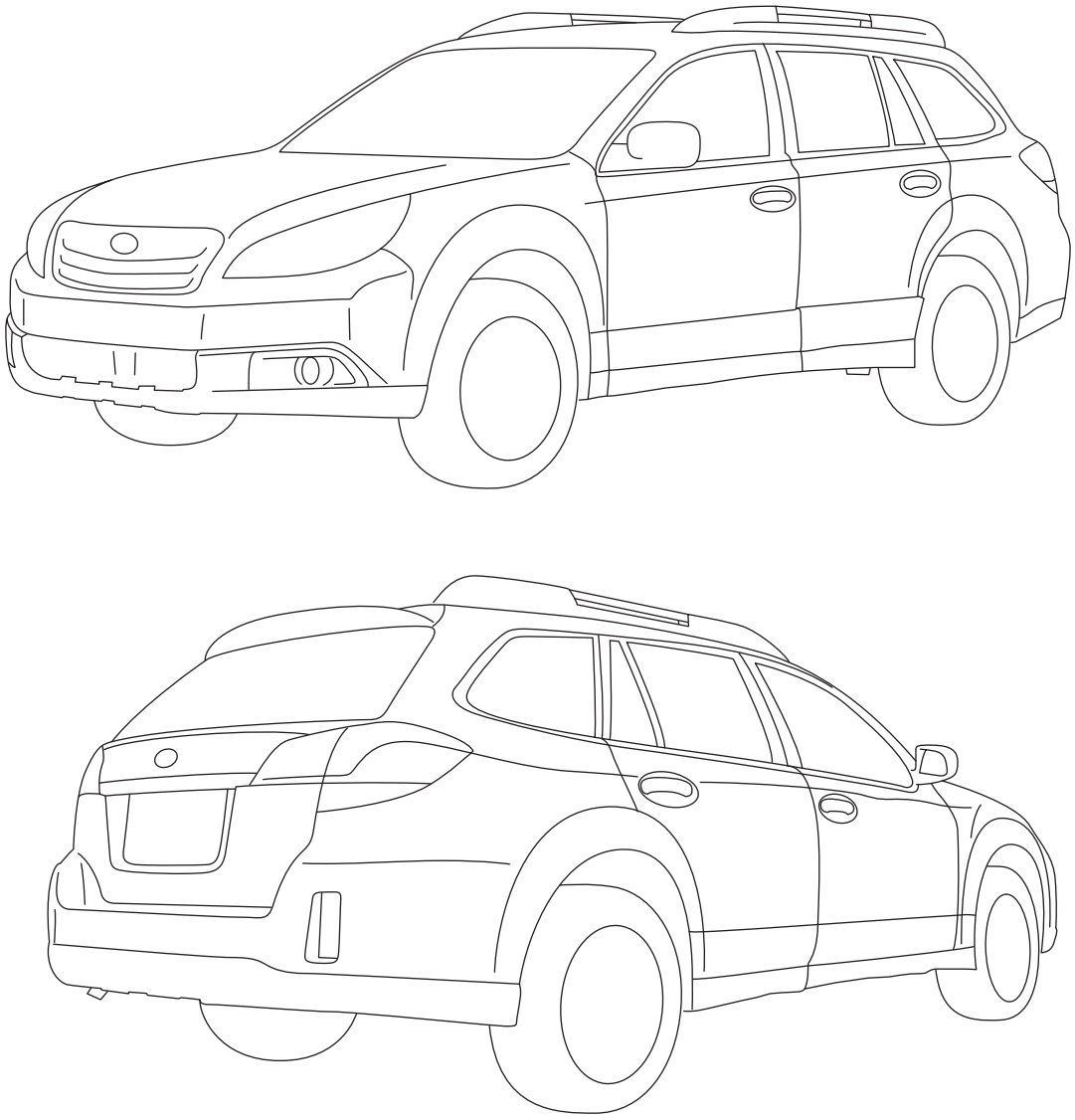
2. OUTBACK



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C: MODEL LINEUP

Body type	Engine	Transmission
Sedan	2.5 L SOHC non-turbo	6MT/Lineartronic™ CVT
	2.5 L DOHC turbo	6MT
	3.6 L DOHC non-turbo	5AT
OUTBACK	2.5 L SOHC non-turbo	6MT/Lineartronic™ CVT
	3.6 L DOHC non-turbo	5AT

D: SPECIFICATION

Body type			Sedan		
Displacement			2.5 L SOHC non-turbo	2.5 L DOHC turbo	3.6 L DOHC non-turbo
Grade			2.5 i	2.5 GT	3.6 R
Length		mm (in)	4735 (186.4)		
Width		mm (in)	1820 (71.7)		
Height		mm (in)	1505 (59.3)		
Wheelbase		mm (in)	2750 (108.3)		
Tread	mm (in)	Front	1565 (61.6)	1550 (61)	1565 (61.6)
		Rear	1570 (61.8)	1555 (61.2)	1570 (61.8)
Capacity		Passenger	5		
Engine			EJ 25		EZ 36
Maximum output (net)		kW (HP) /rpm	127 (170) / 5600	198 (265) / 5600	191 (256) / 6000
Maximum torque (net)		N-m (kg-m, ft-lb) / rpm	230 (23.5, 170) / 4000	350 (35.7, 258) / 2000 — 5200	334 (34.1, 247) / 4400

Body type			OUTBACK	
Displacement			2.5 L SOHC	3.6 L DOHC
Grade			OUTBACK 2.5 i	OUTBACK 3.6 R
Length		mm (in)	4780 (188.2)	
Width		mm (in)	1820 (71.7)	
Height		mm (in)	1670 (65.7) (when crossbar is stored)	
Wheelbase		mm (in)	2740 (107.9)	
Tread	mm (in)	Front	1550 (61)	
		Rear	1550 (61)	
Capacity		Passenger	5	5
Engine			EJ 25	EZ 36
Maximum output (net)		kW (HP) /rpm	127 (170) / 5600	191 (256) / 6000
Maximum torque (net)		N-m (kg-m, ft-lb) / rpm	230 (23.5, 170) / 4000	334 (34.1, 247) / 4400

E: DESCRIPTION OF MODEL CLASSIFICATION CODE

1. V.I.N.

]4S3BMAA6XA1210001[

The starting and ending brackets ( ] [ ) are stop marks.

Digit	Code	Meaning	Details
1 — 3	4S3	Manufacturer of body area	4S3: For US C0 except OUTBACK model 4S4: For US C0 OUTBACK model
4	B	Car line	B: LEGACY/OUTBACK
5	M	Body type	M: Sedan R: Wagon
6	A	Displacement + destination	A: 2.5 L non-turbo U4 B: 2.5 L non-turbo U5 C: 2.5 L non-turbo U6 D: 3.6 L non-turbo U5 E: 3.6 L non-turbo U6 F: 2.5 L turbo U4 G: 2.5 L non-turbo C0 H: 2.5 L non-turbo C5 J: 3.6 L non-turbo C0 K: 2.5 L turbo C0 L: 2.5 L non-turbo C6 M: 3.6 L non-turbo C6
7	A	Grade	A: Base B: Premium C: Premium + CWP D: Premium + 6 CD HK E: Premium + M/R F: Premium + 6 CD HK + CWP G: Premium + M/R + CWP H: Premium + M/R + CWP + 6 CD HK J: Limited + 6 CD HK K: Limited + 6 CD HK + M/R L: Limited + M/R + Navigation M: Limited + M/R
8	6	Restraint system or GVWR class	6: Manual belts, dual airbags, side airbag on the seat backrest + Curtain airbag on the ceiling (Except for OUTBACK model) C: Manual belts, dual airbags, side airbag on the seat backrest + Curtain airbag on the ceiling; Class C (GVWR 4001 to 5000 lb) (OUTBACK model)
9	X	Check digit	X or 0 — 9
10	A	Model year	A: 2010 MY
11	1	Transmission type	1: Full-time AWD 6MT 2: Full-time AWD 5AT 3: Full-time AWD Lineartronic™
12 — 17	210001	Serial number	Sedan: 210001 — Wagon: 310001 —

2. MODEL NUMBER PLATE

BM9AY4M

Digit	Code	Meaning	Details
1	B	Series name	B: LEGACY
2	M	Body type	M: Sedan R: Wagon
3	9	Engine/Drive classification	9: 2.5 L AWD F: 3.6 L AWD
4	A	Model year revision classification	A: Start with A, followed by B, C and so forth
5	Y	Destination	Y: United States of America, Canada
6	4	Grade	4: 2.5 i 5: 2.5 i Premium 6: 2.5 i Limited C: 2.5 GT Premium D: 2.5 GT Limited F: 3.6 R G: 3.6 R Premium H: 3.6 R Limited K: OUTBACK 2.5 i L: OUTBACK 2.5 i Premium M: OUTBACK 2.5 i Limited S: OUTBACK 3.6 R T: OUTBACK 3.6 R Premium U: OUTBACK 3.6 R Limited
7	M	Transmission, fuel feed system	9: Lineartronic™ MFI SOHC non-turbo U: D-5AT MFI DOHC non-turbo M: 6MT MFI SOHC X: 6MT MFI DOHC turbo

3. ENGINE TYPE CLASSIFICATION CODE

EJ253ADAFB

Digit	Code	Meaning	Details
1	E	Engine code	E: Engine
2	J	Engine type code	J: Horizontally opposed 4 cylinders 16 valves Z: Horizontally opposed 6 cylinders 24 valves
3 — 4	25	Displacement	25: 2.5L 36: 3.6L
5	3	Fuel feed system	3: SOHC EGI (MFI) non-turbo 5: DOHC EGI (MFI) turbo D: DOHC EGI (MFI) non-turbo 6 cylinders
6	A	Emission control	A: North America (FED) A: North America (FED, CAL) C: North America (CAL)
7	D	Mounted transmission	C: D-5AT (without ATF warmer) D: 6MT U: Lineartronic™
8	A	Model year revision, major change	A: Start with A, followed by B, C and so forth
9	F	Detailed specifications	F: SOHC variable adjustment valve L: DOHC direct type (with water-cooled oil cooler)
10	B	Detailed specifications	Specification difference over vehicle body

4. Transmission classification code

1) MT

TY756WCAAA

Digit	Code	Meaning	Details
1	T	Transmission code	T: Transmission
2	Y	Standard transmission system	Y: Full-time AWD MT
3 — 4	75	Distance between gear centers	75: From main shaft to drive pinion
5	6	Type series	6: 6MT
6	W	Transmission specification	W: Full-time AWD 6MT with viscous coupling center differential
7	C	Mounted engine	C: 2.5 L SOHC non-turbo L: 2.5 L DOHC turbo
8	A	Model year revision, major change	A: Start with A, followed by B, C and so forth
9 — 10	AA	Detailed specification	Used when ordering parts. For details, refer to the parts catalog.

2) AT
TG5D8CJAAA

Digit	Code	Meaning	Details
1	T	Transmission code	T: Transmission
2	G	Standard transmission system	G: VTD type full-time AWD 5AT
3 — 4	5D	Transmission type series	5D: New E-5AT
5	8	Car line series	8: Small
6	C	Transmission specification	C: Full-time AWD direct 5AT with VTD type center differential
7	J	Mounted engine	J: 3.6 L DOHC non-turbo
8	A	Model year revision, major change	A: Start with A, followed by B, C and so forth
9 — 10	AA	Detailed specification	Used when ordering parts. For details, refer to the parts catalog.

3) Lineartronic™
TR690JHAAA

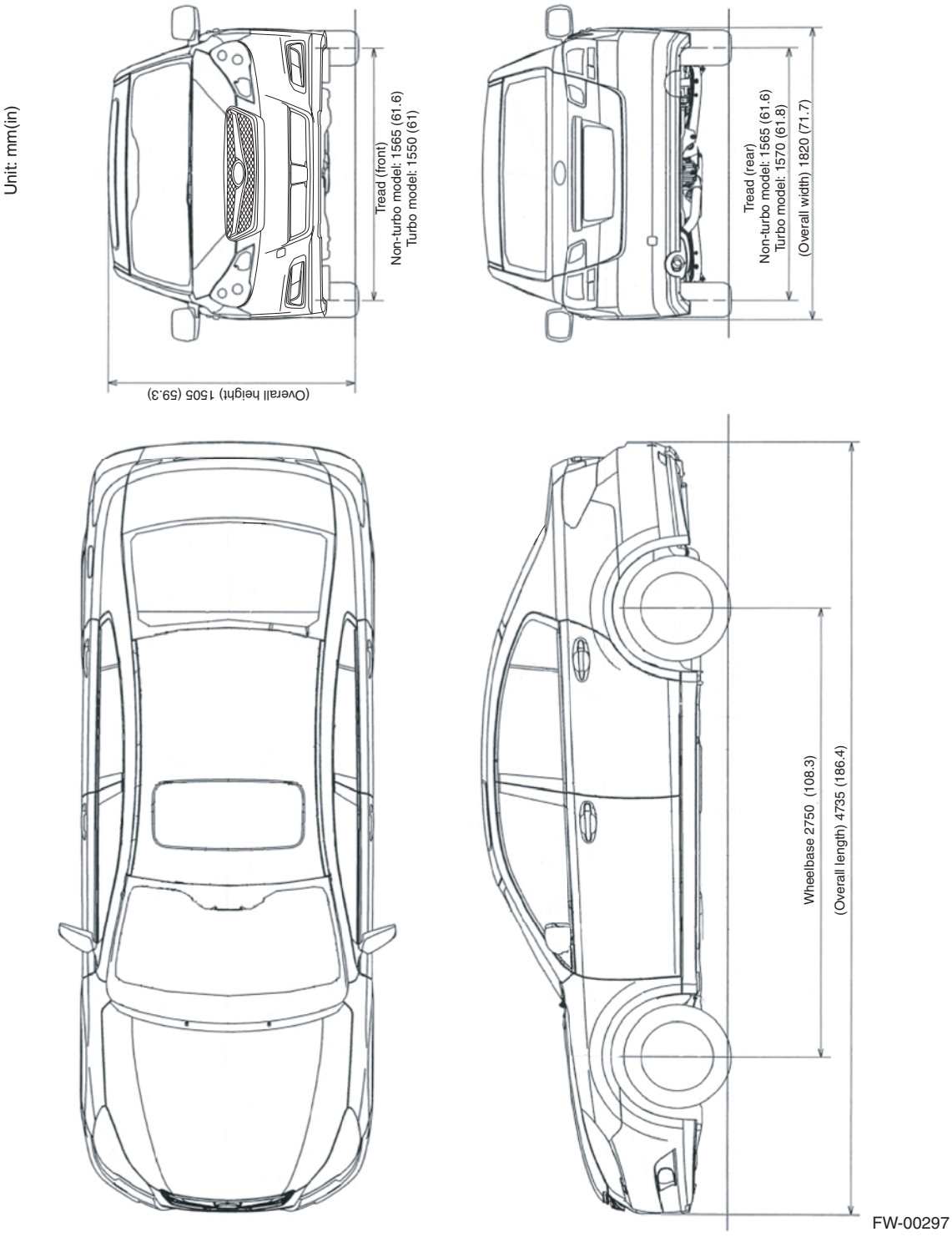
Digit	Code	Meaning	Details
1	T	Transmission code	T: Transmission
2	R	Standard transmission system	R: Full-time AWD
3 — 4	69	Distance between pulley centers	69: Lineartronic™ (169 mm between pulley centers)
5	0	Type series	0: Lineartronic™
6	J	Transmission specification	J: Active torque split type full-time AWD
7	H	Mounted engine	H: 2.5 L SOHC non-turbo
8	A	Model year revision, major change	A: Start with A, followed by B, C and so forth
9	A	Specification difference (final reduction gear ratio)	A: 3.700 B: 3.900
10	A	Detailed specification	Used when ordering parts. For details, refer to the parts catalog.

5. Rear differential classification code

Identification	Reduction gear ratio	LSD
B1	4.111	None
B2	3.900	None
T2	4.111	None
TP	4.444	None
XC	3.083	None
XD	3.700	None

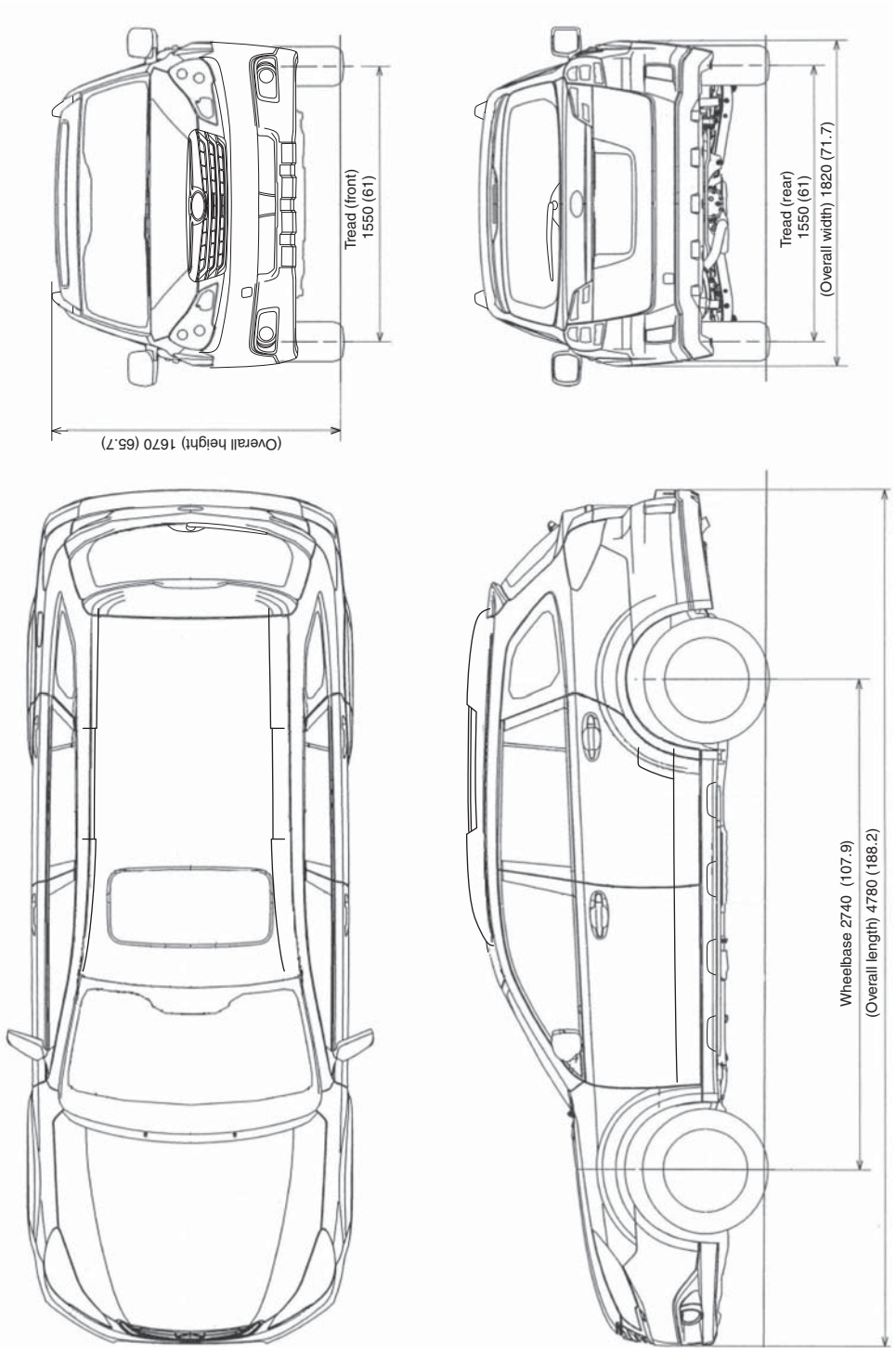
F: EXTERIOR FOUR ORTHOGONAL VIEWS

1. SEDAN



2. OUTBACK

Unit: mm(in)



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1-2 Outline of the Vehicle

A: VEHICLE BODY SIZE

- The interior has been enlarged, which provides more amenity space.
- The entirely reviewed packaging provides the relaxing space where you can feel luxury.

Unit (if not described): mm (in)

New/Existing	New models		Existing models		
Body type	Sedan	OUTBACK	Sedan	Wagon	OUTBACK
Total length	4735 (186.4)	4780 (188.2)	4700 (185)	4785 (188.4)	4800 (189)
Total width	1820 (71.7)		1730 (68.1)		1770 (69.7)
Total height	1505 (59.3)	1670 (65.7)*2	1425 (56.1)	1475 (58.1)	1605 (63.2)
Wheelbase	2750*1(108.3)	2740 (107.9)	2670 (105.1)		
Minimum turning radius	5.6 m (18.4 ft)		5.4 m (17.7 ft)		
Minimum road clearance	150 (5.9)	220 (8.7)	150 (5.7)		213 (8.4)

*1: The difference with OUTBACK results from the posture.

*2: Equipped with crossbar

B: IMPROVED FUEL ECONOMY

- For the non-turbo models for the existing 4AT, Lineartronic™ is newly developed and adopted.
- In addition, various items including the air conditioner with a variable compressor (all models) have been adopted to improve the fuel economy regardless of the larger vehicle size.

C: IMPROVED AMENITY

- The newly developed seats with increased slide distance and enlarged seat surface as well as the electric lumber have been adopted, improving the amenity.
- Through adoption of the electronic parking brake, the center console vicinity space has been used efficiently, improving the utility.
- An auto light system is equipped, which saves you from the manual switching operation at twilight or at the way-in and out of the tunnel. It also helps prevent leaving the lights on.

D: EQUIPMENT SPECIFICATIONS

Convenience has been increased through the addition of the hill-hold function to the electronic parking brake, advanced navigation and audio system.

E: IMPROVED SAFETY PERFORMANCE

- VDC is provided on all models as standard equipment, while the brake assist has been also adopted to all models.
- Through the cradle structure, the collision safety has been further enhanced.

F: ASSURING AND TRUSTING DRIVE

The cradle structure + the new mounting system have achieved improved drivability, vibration and noise, and ride comfort.

G: ADVANCED ENGINE

The newly developed 2.5 L engine has been adopted to the non-turbo/turbo four-cylinder engines. The six-cylinder engine increases its displacement to 3.6 L.

H: TEXTURE QUALITY

Texture quality has been improved for the interior and exterior. Essential quality such as installation and gap accuracy has been improved.

2.ENGINE

2-1 Engine Description

A: GENERAL DESCRIPTION

- The engine has three types: 2.5 L SOHC non-turbo, 2.5 L DOHC turbo, and 3.6 L DOHC non-turbo.
- For the 3.6 L DOHC non-turbo, the gasoline specification has been changed from the octane value 93AKI of the 3.0 L DOHC non-turbo to 87AKI.

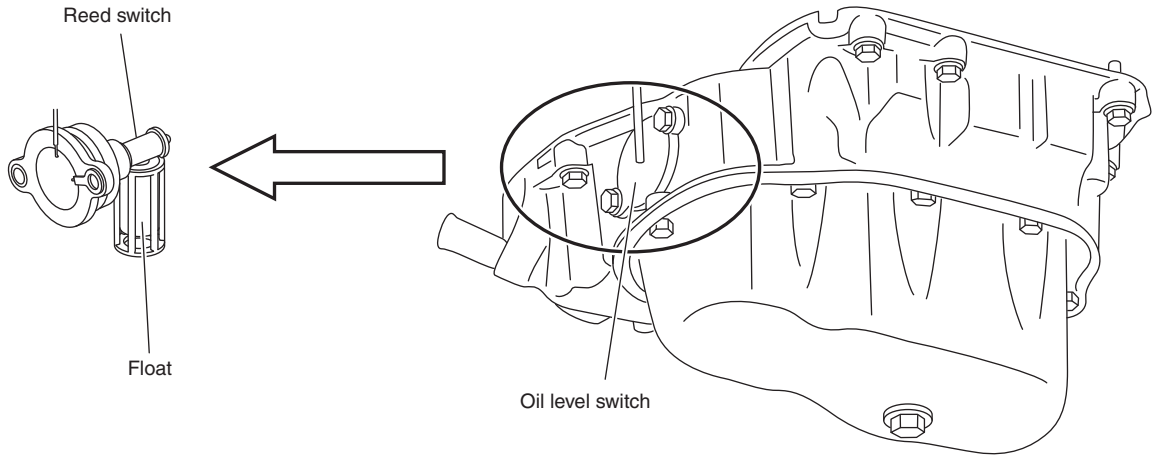
Model		New model	Existing model
		2.5 L SOHC non-turbo	2.5 L SOHC non-turbo
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine	
Valve arrangement		Overhead camshaft	
Bore × stroke	mm (in)	99.5×79.0 (3.917×3.110)	99.5×79.0 (3.917×3.110)
Displacement	cm^3 (cu in)	2,457 (149.93)	2,457 (149.93)
Compression ratio		10.0	10.0
Ignition order		1 — 3 — 2 — 4	
Idle speed at Park or Neutral position	rpm	MT: 650 Lineartronic™: 675 (U5) : 650 (U6)	MT: 650 AT: 700
Maximum output	kW (HP) /rpm	127 (170) /5,600	127 (170) /6,000
Maximum torque	N•m (kgf-m, ft-lb) /rpm	230 (23.5, 170) /4,000	230 (23.5, 170) /4,400

Model		New model	Existing model
		2.5 L DOHC turbo	2.5 L DOHC turbo
Engine type		Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine	
Valve arrangement		Overhead camshaft	
Bore × stroke	mm (in)	99.5×79.0 (3.917×3.110)	99.5×79.0 (3.917×3.110)
Displacement	cm^3 (cu in)	2,457 (149.93)	2,457 (149.93)
Compression ratio		8.4	8.4
Ignition order		1 — 3 — 2 — 4	
Idle speed at Park or Neutral position	rpm	700	750
Maximum output	kW (HP) /rpm	198 (265) /5,600	182 (243) /6,000
Maximum torque	N•m (kgf-m, ft-lb) /rpm	350 (35.7, 258) / 2,000 — 5,200	327 (33.3, 241) /3,600

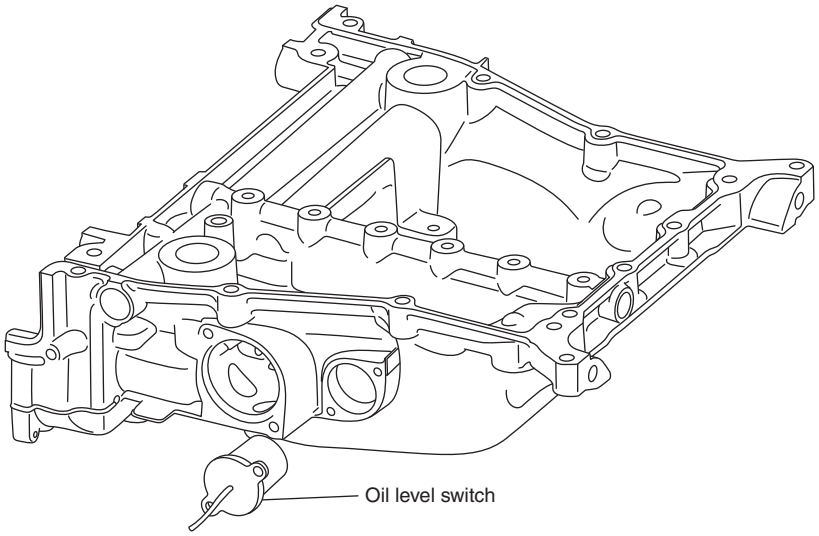
Model		New model	Existing model
		3.6 L DOHC non-turbo	3.0 L DOHC non-turbo
Engine type		Horizontally opposed, liquid cooled, 6-cylinder, 4-stroke gasoline engine	
Valve arrangement		Overhead camshaft	
Bore × stroke	mm (in)	92.0×91.0 (3.622×3.583)	89.2×80.0 (3.512×3.150)
Displacement	cm^3 (cu in)	3,630 (221.44)	3,000 (183. 06)
Compression ratio		10.5	10.7
Ignition order		1 — 6 — 3 — 2 — 5 — 4	
Idle speed at Park or Neutral position	rpm	700	650
Maximum output	kW (HP) /rpm	191 (256) /6,000	183 (245) /6,600
Maximum torque	N•m (kgf-m, ft-lb) /rpm	334 (34.1, 247) /4,400	291 (29.7, 215) /4,200

B: OIL LEVEL SWITCH

The oil level switch has been adopted for all models.
The adoption has been made in order to prevent critical engine malfunctions by warning the customer of the engine oil decrease with the warning light illumination.
1. The oil level switch is installed on the block lower (H4 model) or on the oil pan upper (H6 model). The part is composed of float and reed switch, and when the oil level decreases, the oil level switch turns to OFF.



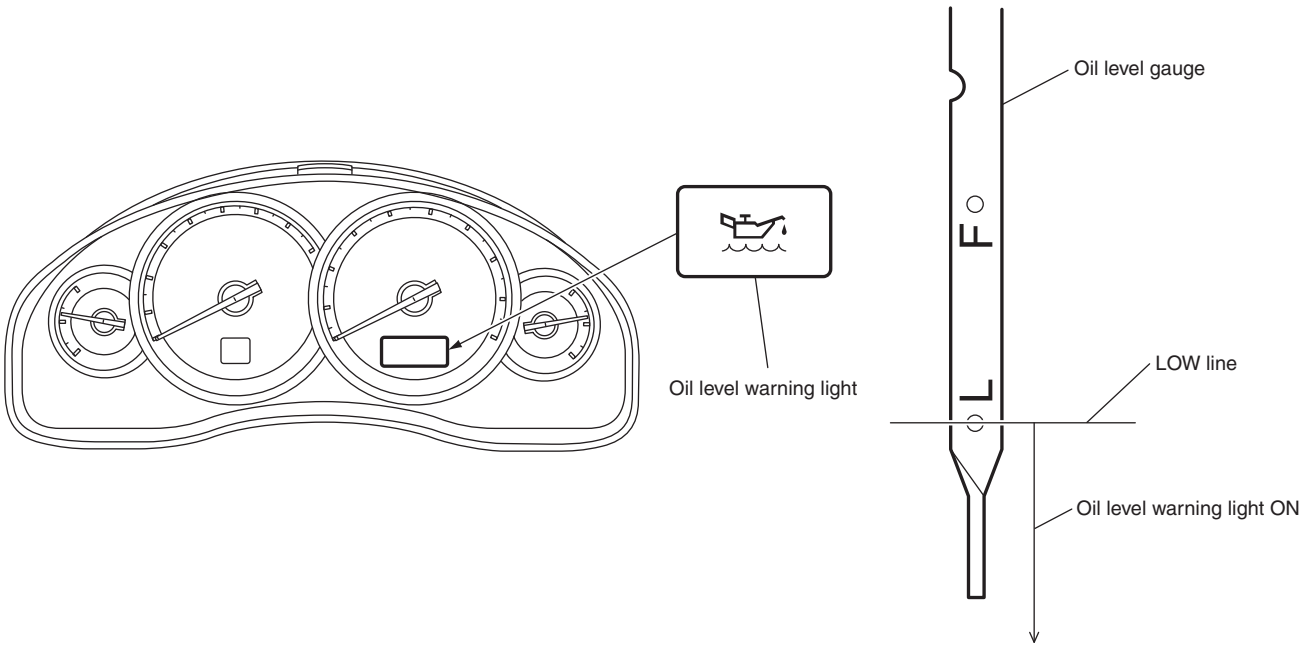
H4 model



H6 model

LU-02606

2. When the oil level gauge reads LOW or lower, the oil level switch turns to OFF, and the oil level warning light illuminates.
   - When the oil level is approximately 2.9 L to 2.7 L or lower (H4 model)
   - When the oil level is approximately 5.3 L to 5.1 L or lower (H6 model)

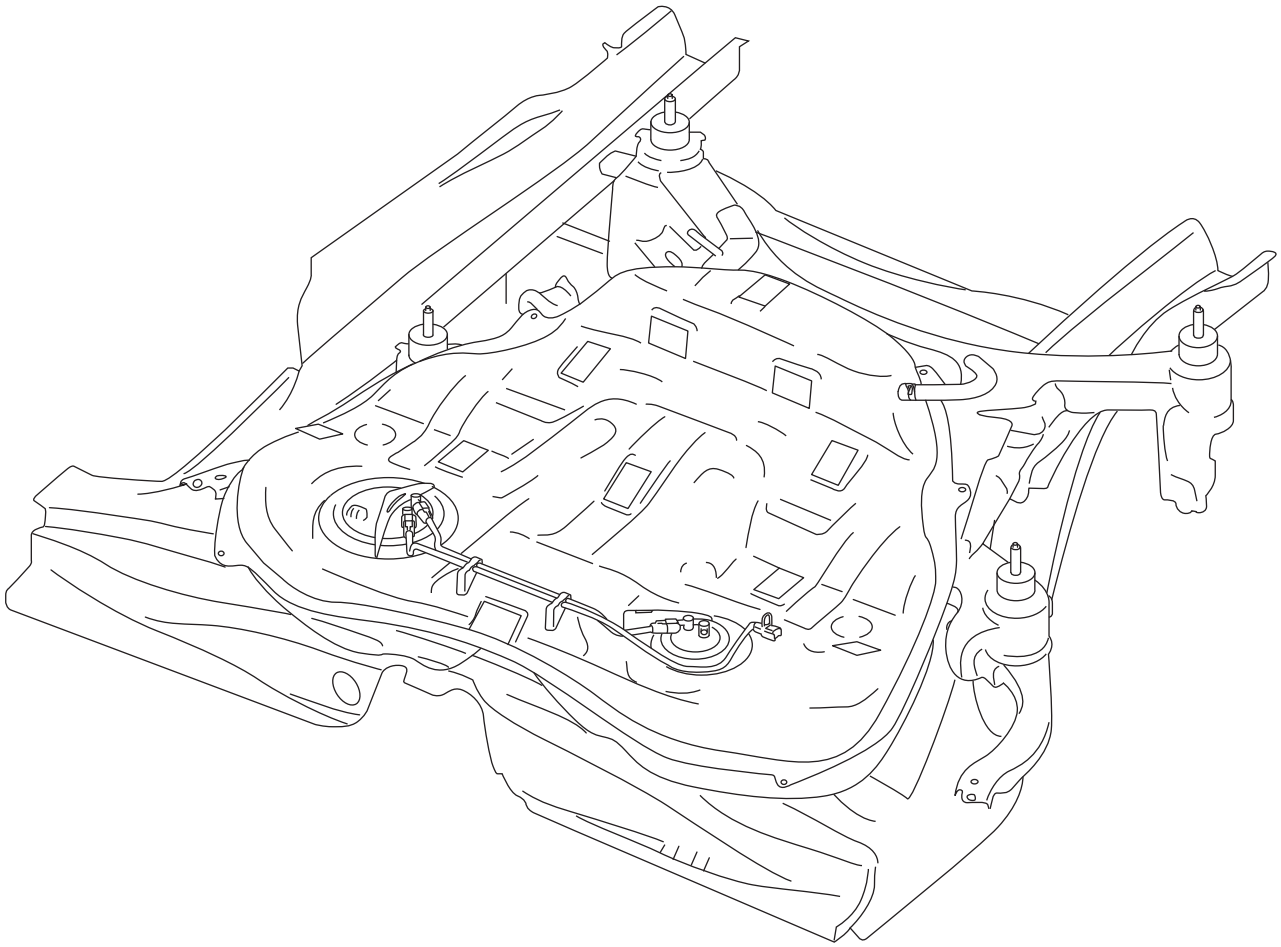


LU-02607

3. Perform judgment of on or off of the oil level warning light during idling after warming up the engine, which is when the oil surface is stable. It takes 10 seconds to make a judgment.
4. When the oil level is 1.8 L or less with the ignition switch ON and before starting the engine, the oil level warning light illuminates immediately. (For the H6 model, 3.8 L or less)
5. Incorrect judgment may occur due to slope road.

C: FUEL TANK

For the extended cruising distance, the fuel tank has been enlarged (tank capacity: 70L).
Tin galvanized steel that lead, an environmental load substances, is abolished has been adopted.



FU-04917

2-2 2.5 L DOHC Turbo, 2.5 L SOHC Common

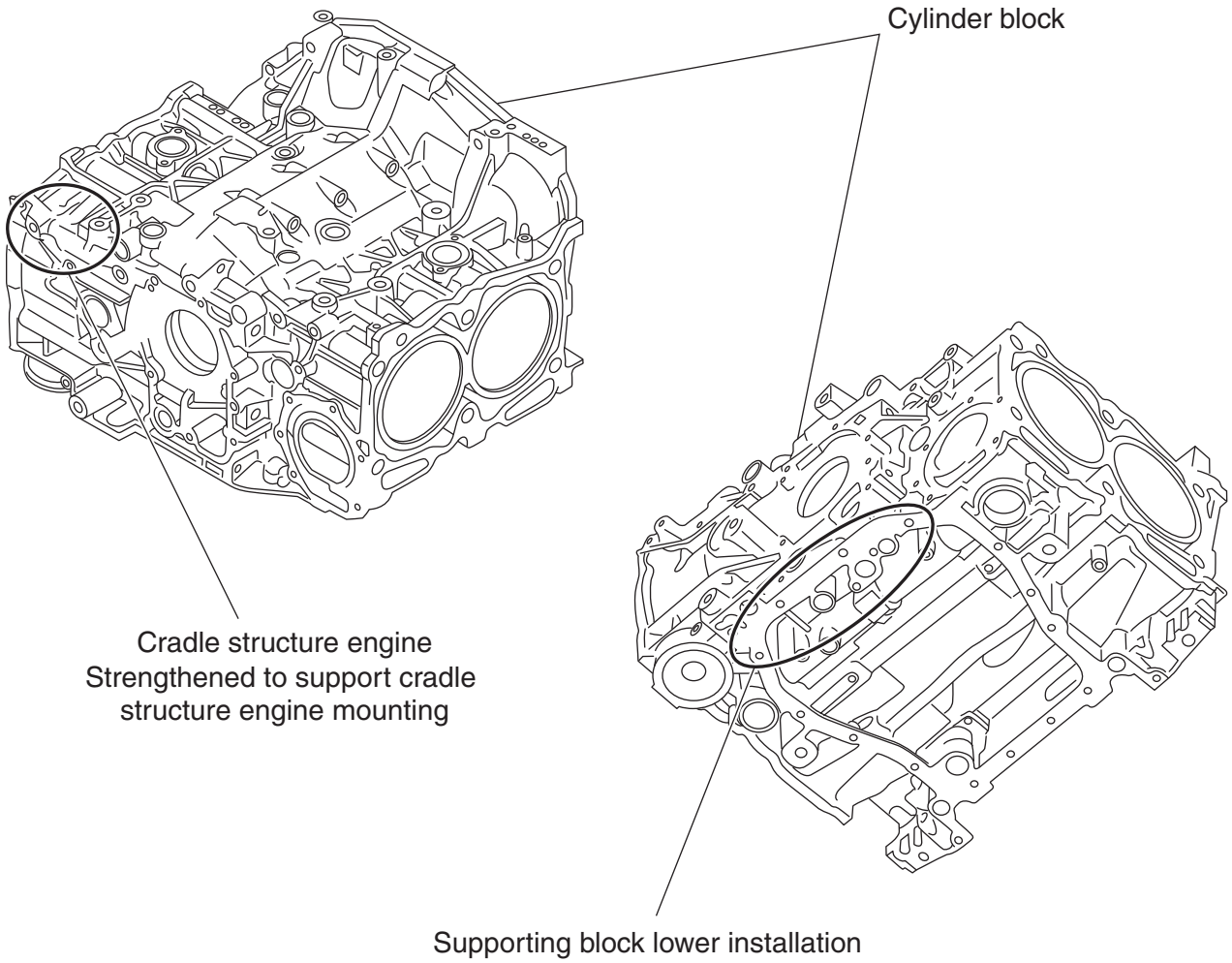
A: GENERAL DESCRIPTION

The following items have been modified for both 2.5 L DOHC turbo and 2.5 L SOHC.

No.	Modified items	Modified reason
1	Cylinder block	To support the cradle structure engine mounting
2	Block lower	To support the cradle structure engine mounting
3	Engine mount bracket	To support the cradle structure engine mounting
4	Baffle plate	To support block lower
5	Oil pan	To support block lower
6	Oil strainer	To support block lower
7	Belt layout	To support serpentine
8	Stopper rod	To support the cradle structure engine mounting

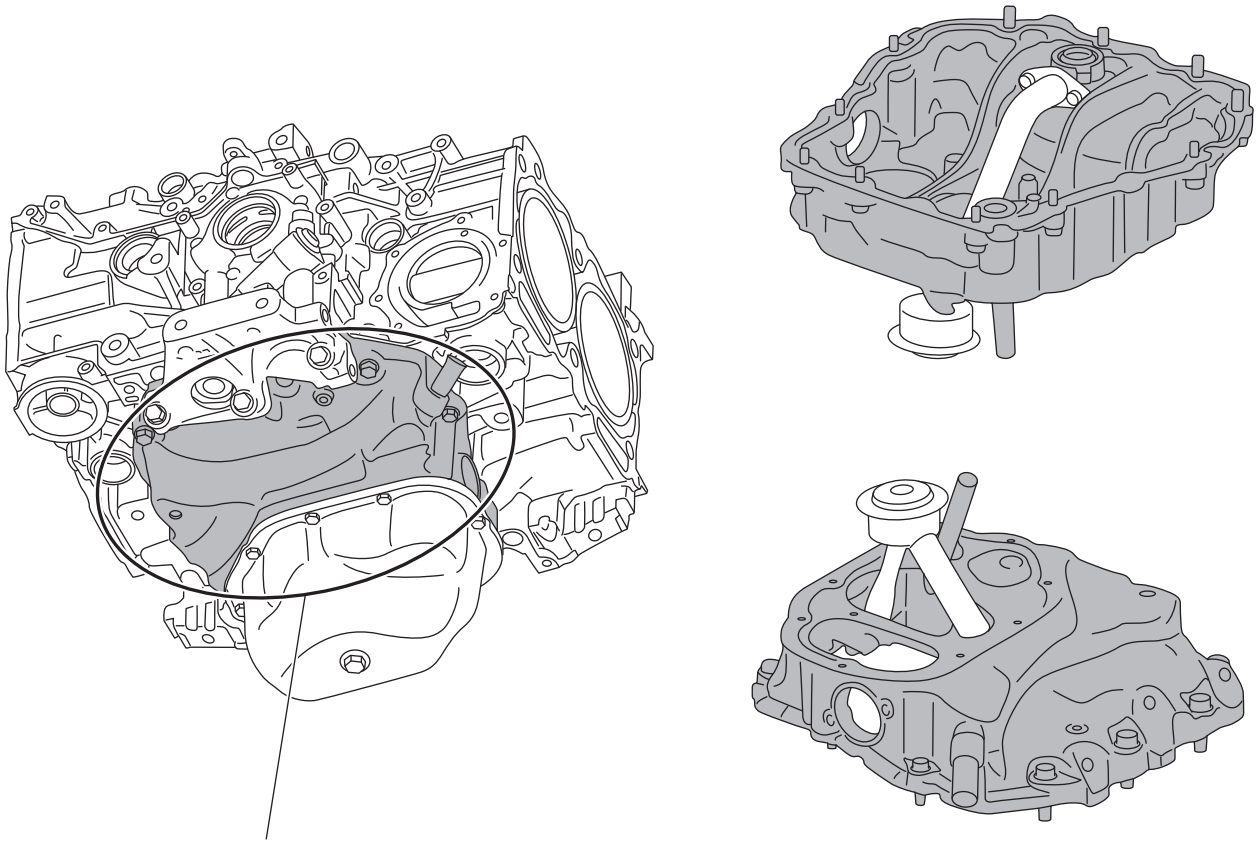
1. CYLINDER BLOCK

To support the cradle structure engine mounting, the cylinder block has been strengthened, and the block lower installation surface has been modified.



2. BLOCK LOWER

To support the cradle structure engine mounting, the block lower has been additionally established.



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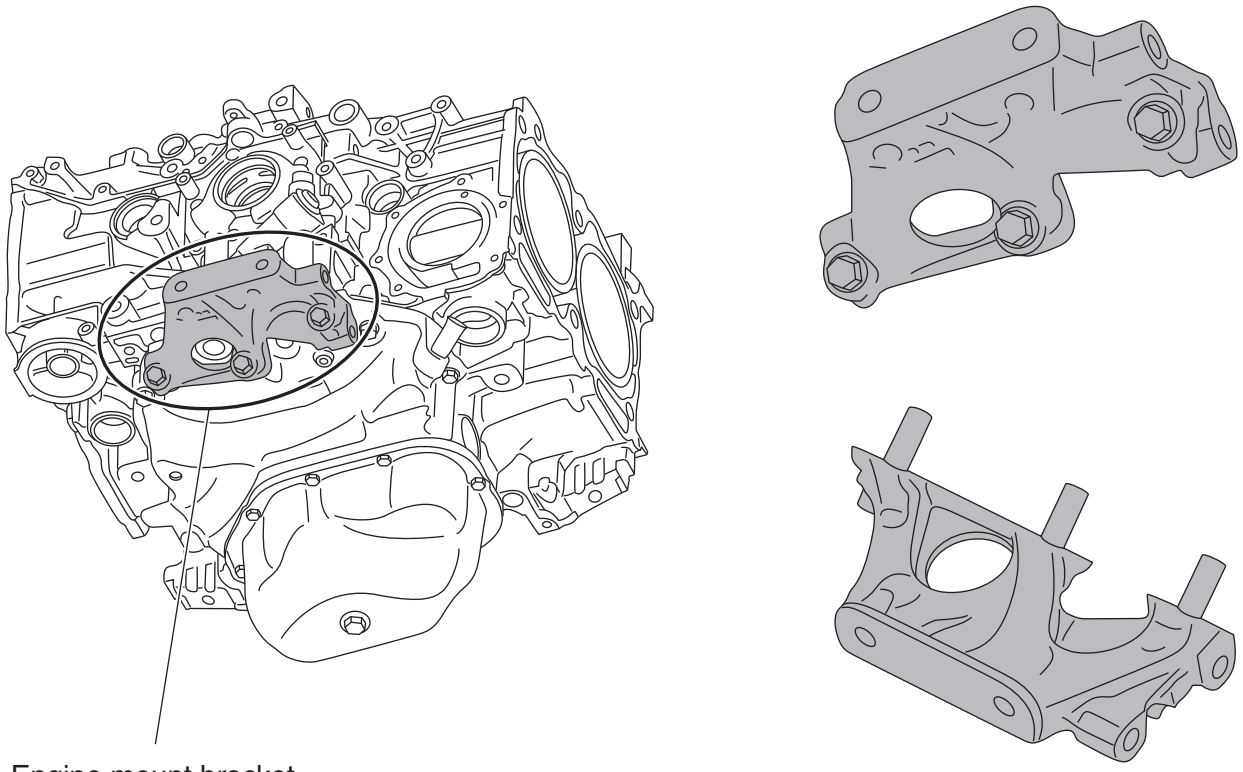
3. ENGINE MOUNT BRACKET

To support the cradle structure engine mounting, the mount bracket has been additionally established.



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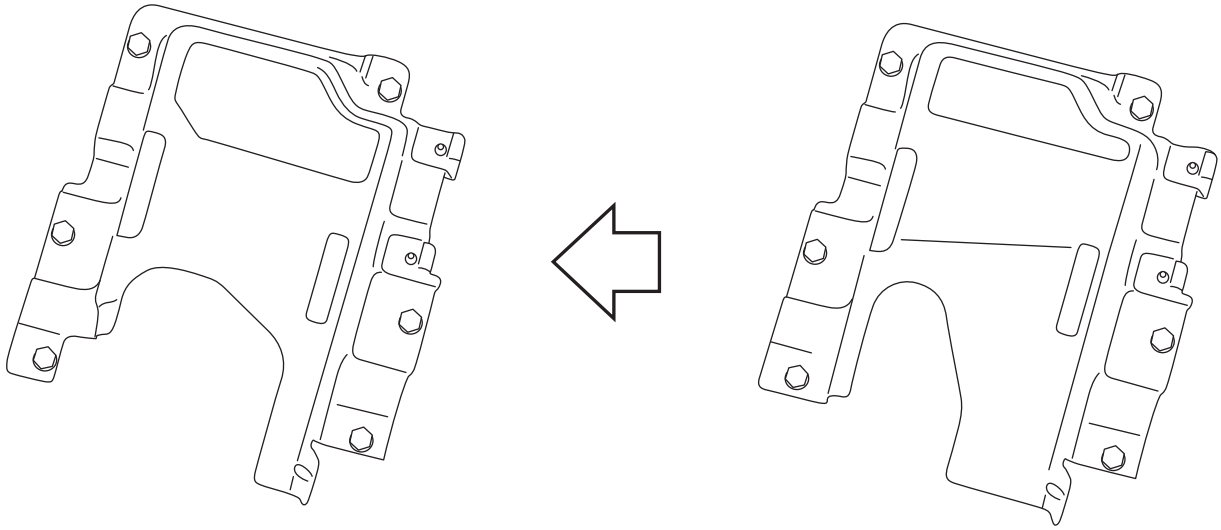
4. BAFFLE PLATE

To additionally establish the block lower, the baffle plate has been modified.



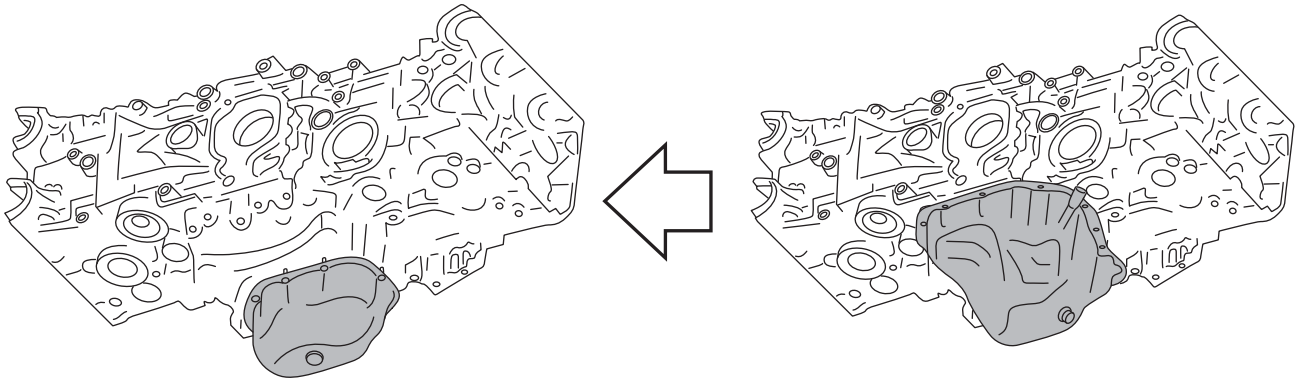
New model

Existing model

ME-04157

5. OIL PAN

To additionally establish the block lower, the oil pan has been modified.



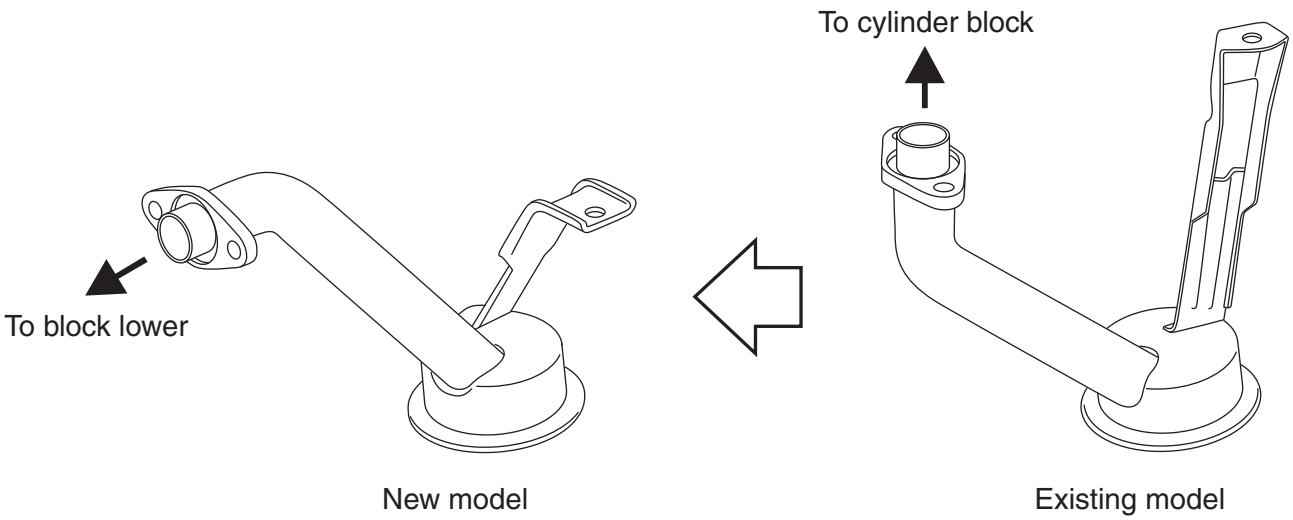
New model

Existing model

ME-04158

6. OIL STRAINER

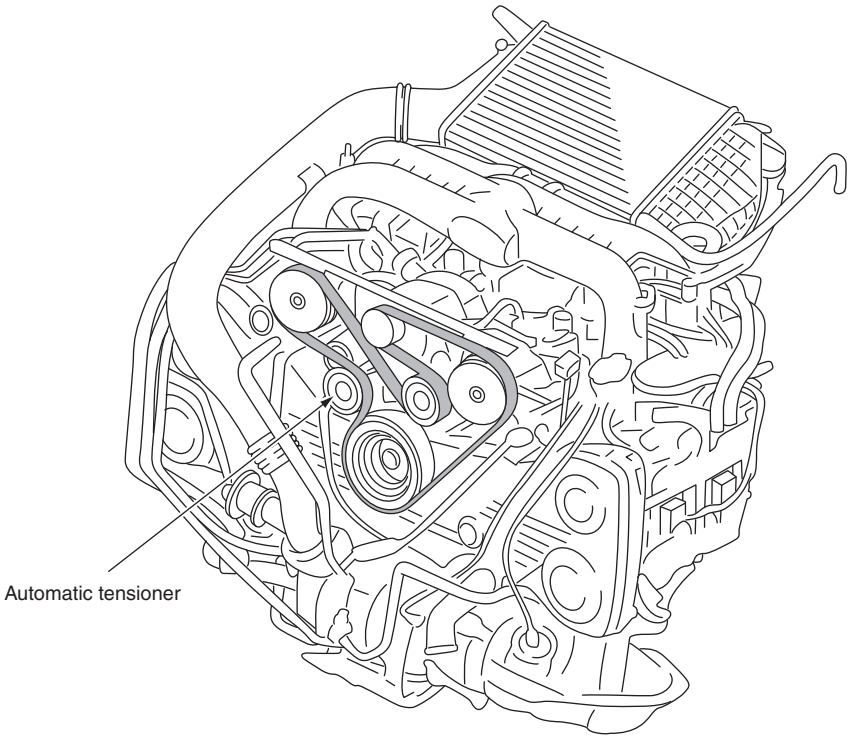
To additionally establish the block lower, the oil strainer has been modified.



ME-04159

7. BELT LAYOUT

To support the variable capacity air conditioning, the belt layout has been modified, and the automatic tensioner has been adopted.



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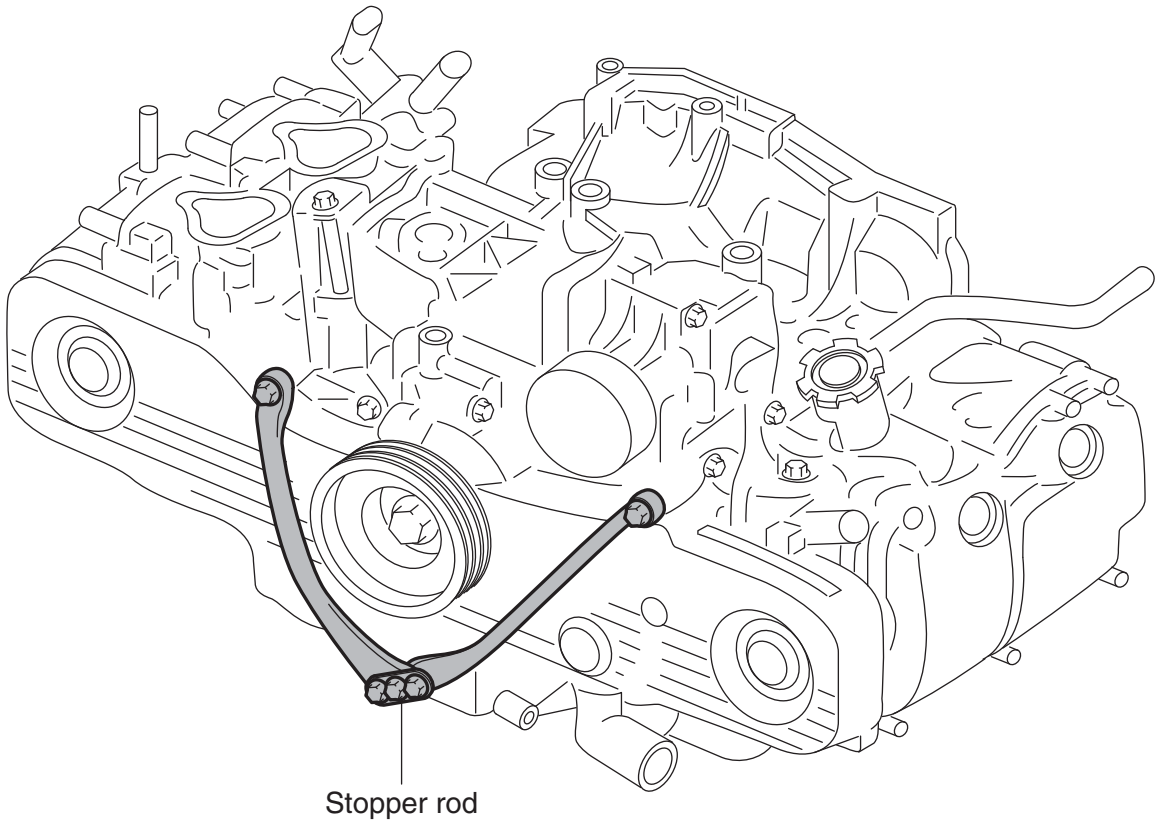
8. STOPPER ROD

To increase rigidity for the vibration and noise restraint, the stopper rod has been newly established.



FU-04561

2-3 2.5 L SOHC Non-turbo

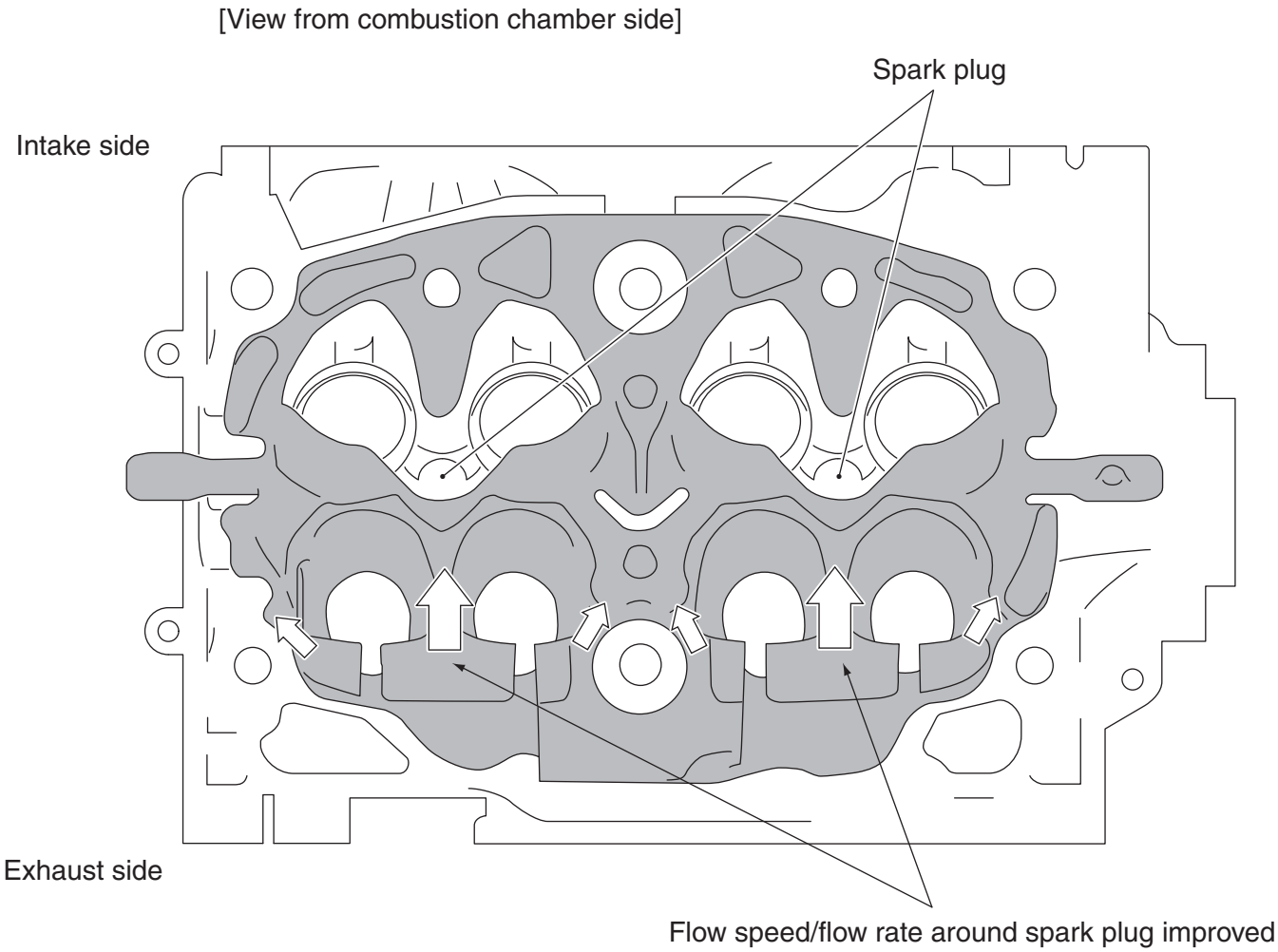
A: GENERAL DESCRIPTION

For 2.5 L SOHC, the following items have been modified to improve fuel economy, output, merchantability and productivity, and to support the cradle structure engine mounting.

No.	Modified items	Modified reason
1	Cylinder head cooling circuit	Fuel economy improvement
2	Piston	Fuel economy improvement
3	Rocker cover	Productivity improvement
4	Intake manifold	Weight reduction, output improvement
5	Spark plug	Actual fuel economy improvement
6	Generator	Actual fuel economy improvement
7	Intake boot	Output improvement
8	Multifunction duct	Productivity improvement, weight reduction
9	Throttle chamber	Productivity improvement
10	Fuel pipe	Productivity improvement
11	Ignition coil	Productivity improvement
12	Knock sensor	Productivity improvement
13	Exhaust	Weight reduction

1. CYLINDER HEAD COOLING CIRCUIT

To improve the fuel economy, the cooling circuit shape has been modified and the cooling performance has been improved.

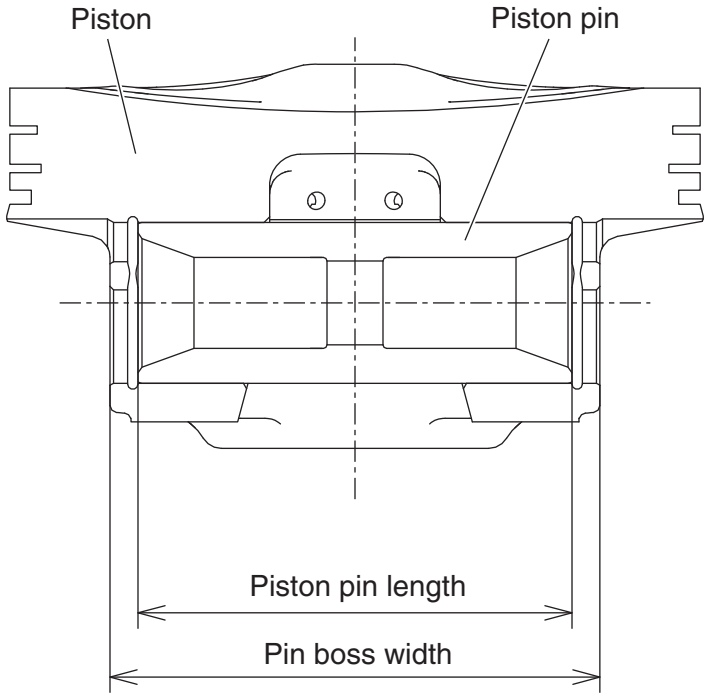


ME-04161

2. PISTON

To improve the fuel economy and response, the piston shape has been modified and weight reduction has been achieved.

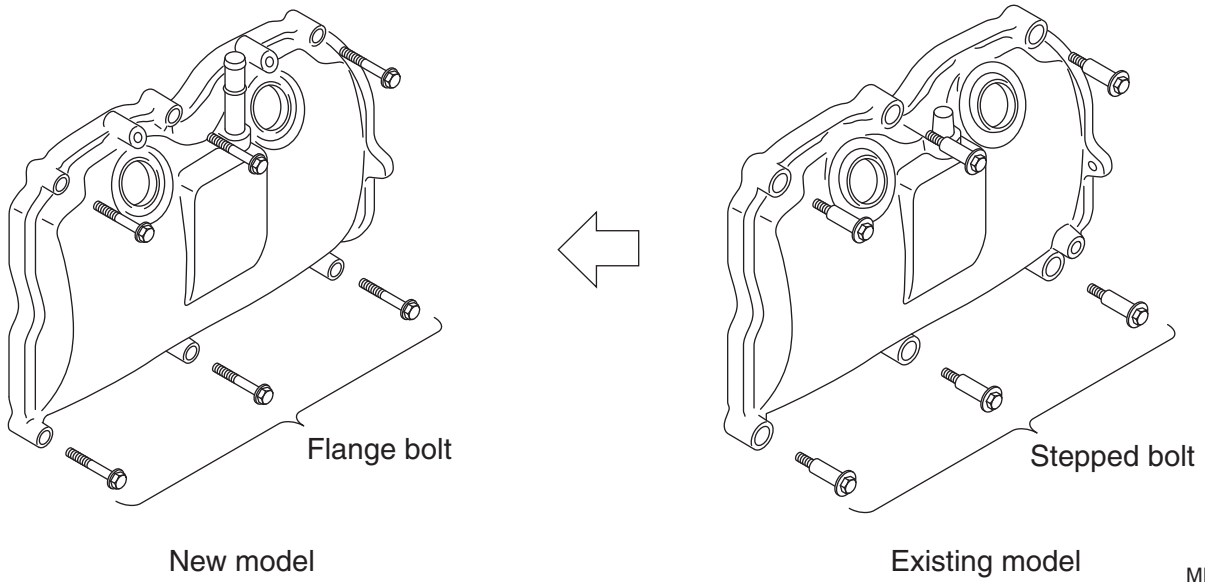
Contents	Contents
Piston pin	Length decreased by 2 mm
	Modified from straight shape to conical shape
Pin boss	Width decreased by 2 mm
Piston & piston pin	Weight reduced by 26 g



ME-04162

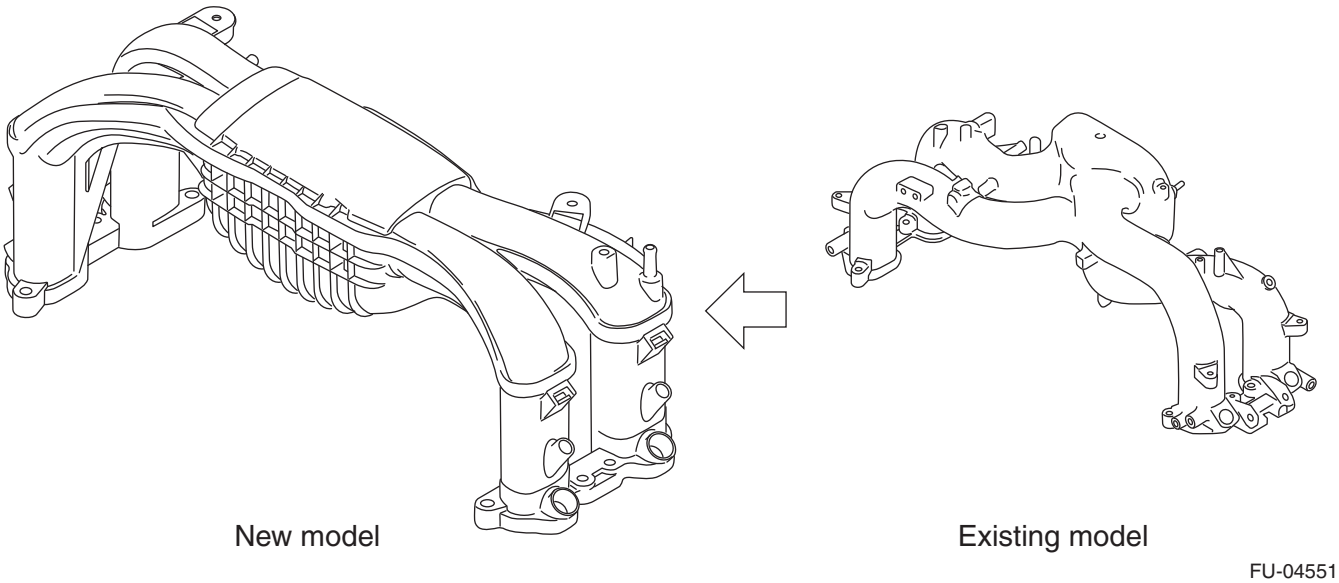
3. ROCKER COVER

To improve productivity, the locker cover structure has been modified from the floating installation type to the rigid installation type.
Along with this change, the bolts have been changed from the stepped bolts to the flange bolts.



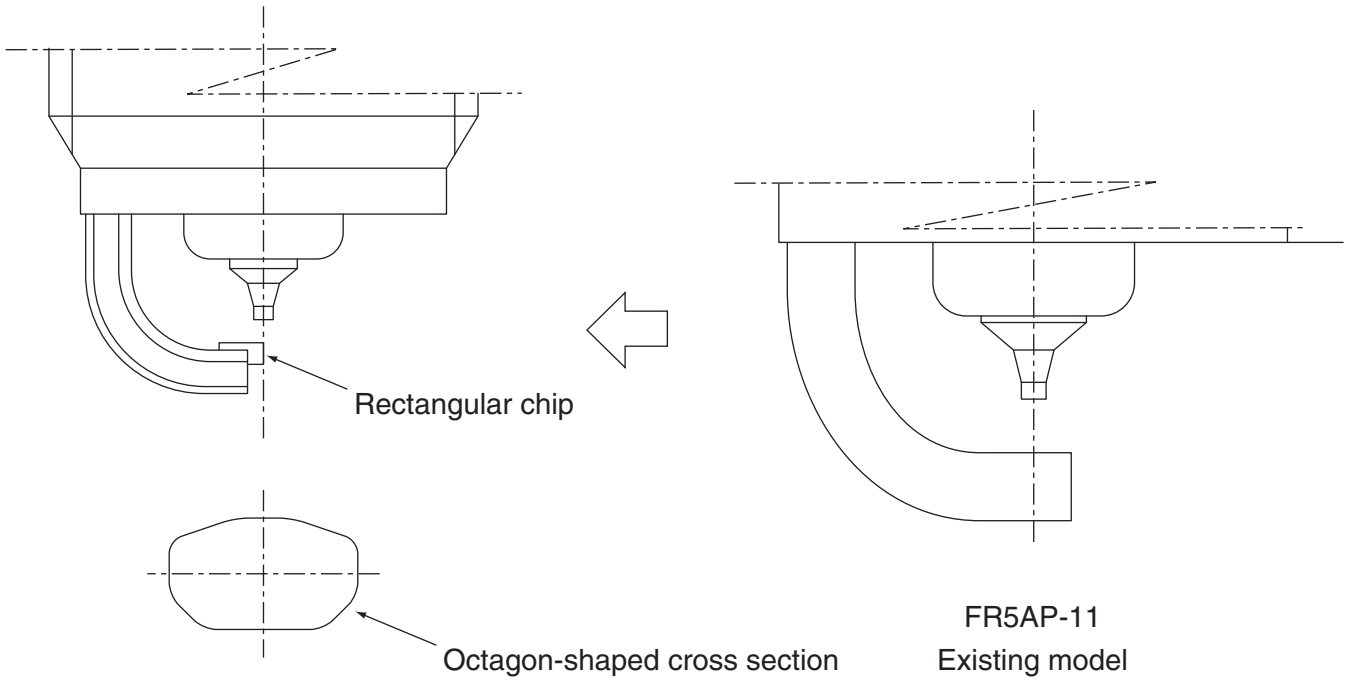
4. INTAKE MANIFOLD

To achieve weight reduction and to improve output, resin is used and the shape has been modified.



5. SPARK PLUG

To improve fuel economy, the specifications of the spark plug have been modified.



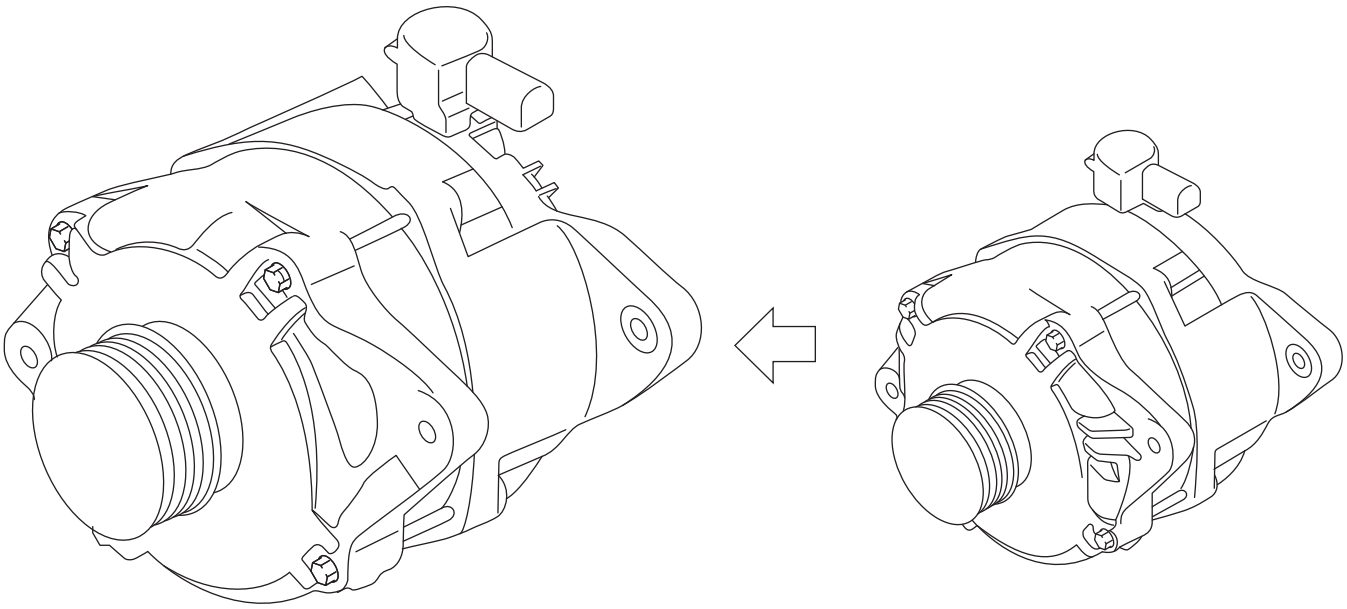
SIFR6A11
[Outside electrode] Platinum rectangular chip
New model

FR5AP-11
Existing model

FU-05085

6. GENERATOR

To improve fuel economy, the efficiency has been improved, and advancement to next generation has been achieved.



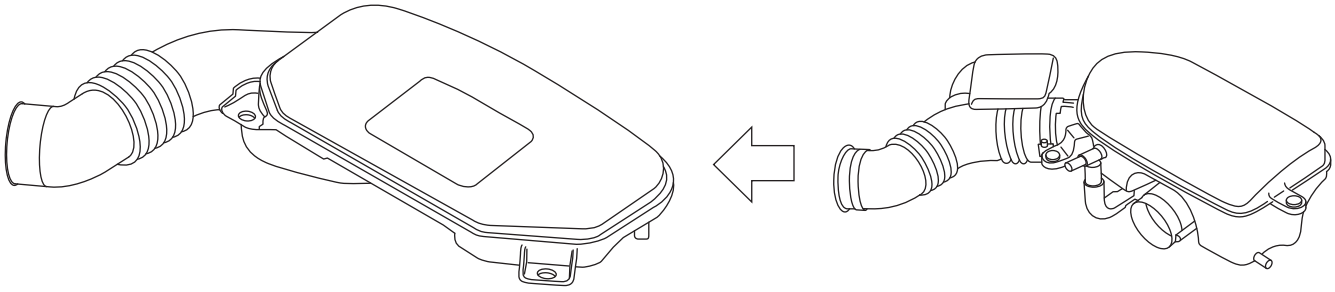
130A
New model

110A
Existing model

FU-04559

7. INTAKE BOOT

To improve output, shapes of the intake parts have been modified.



New model

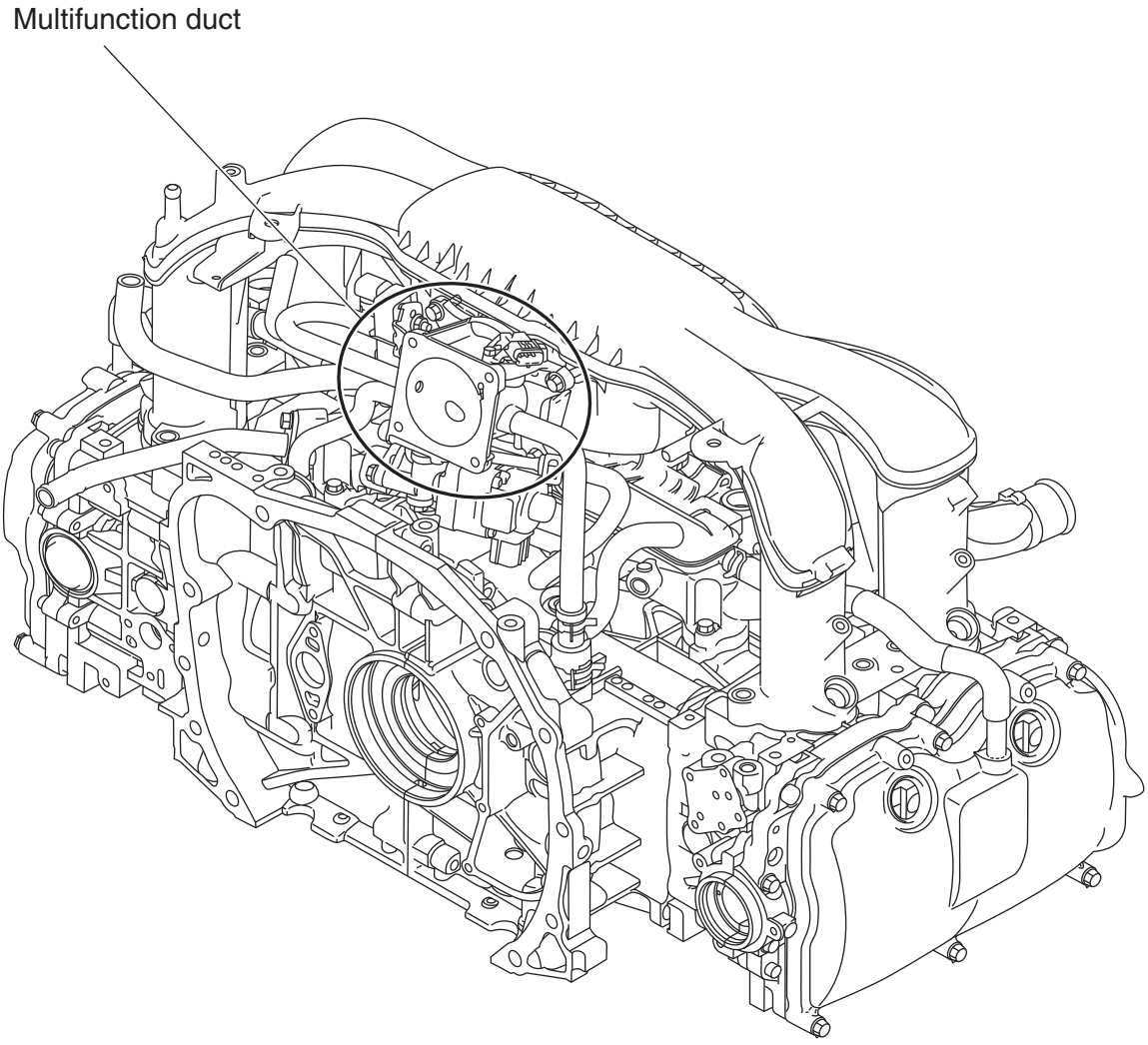
Existing model

FU-04562

8. MULTIFUNCTION DUCT

By establishing the multifunction duct, productivity has been improved through the simplified intake manifold structure and the concentration of sensors and pipes.
Concentrated sensors and pipes

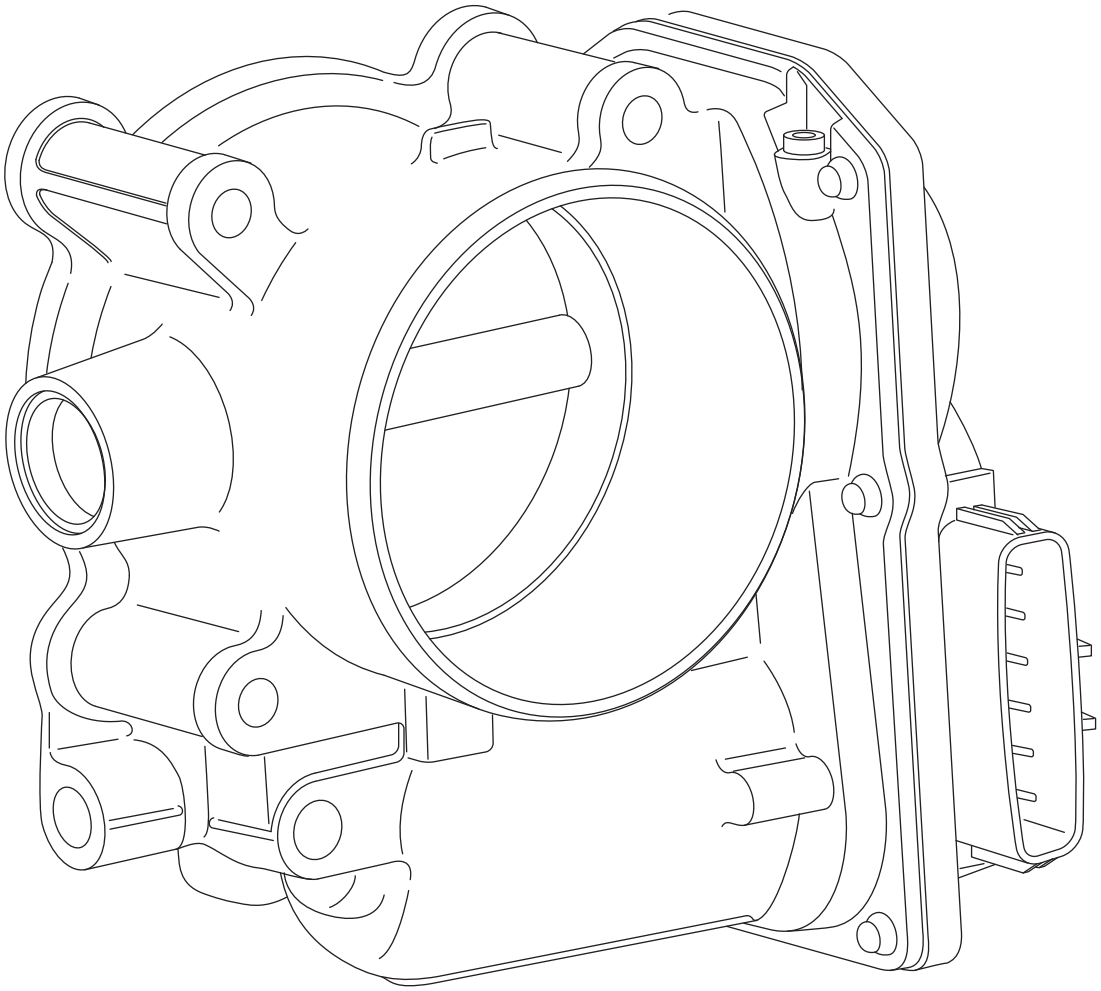
- EGR valve
- Evaporation purge valve
- Intake pipe inner pressure sensor
- Throttle hot water path
- Blow-by introduction



FU-04550

9. THROTTLE CHAMBER

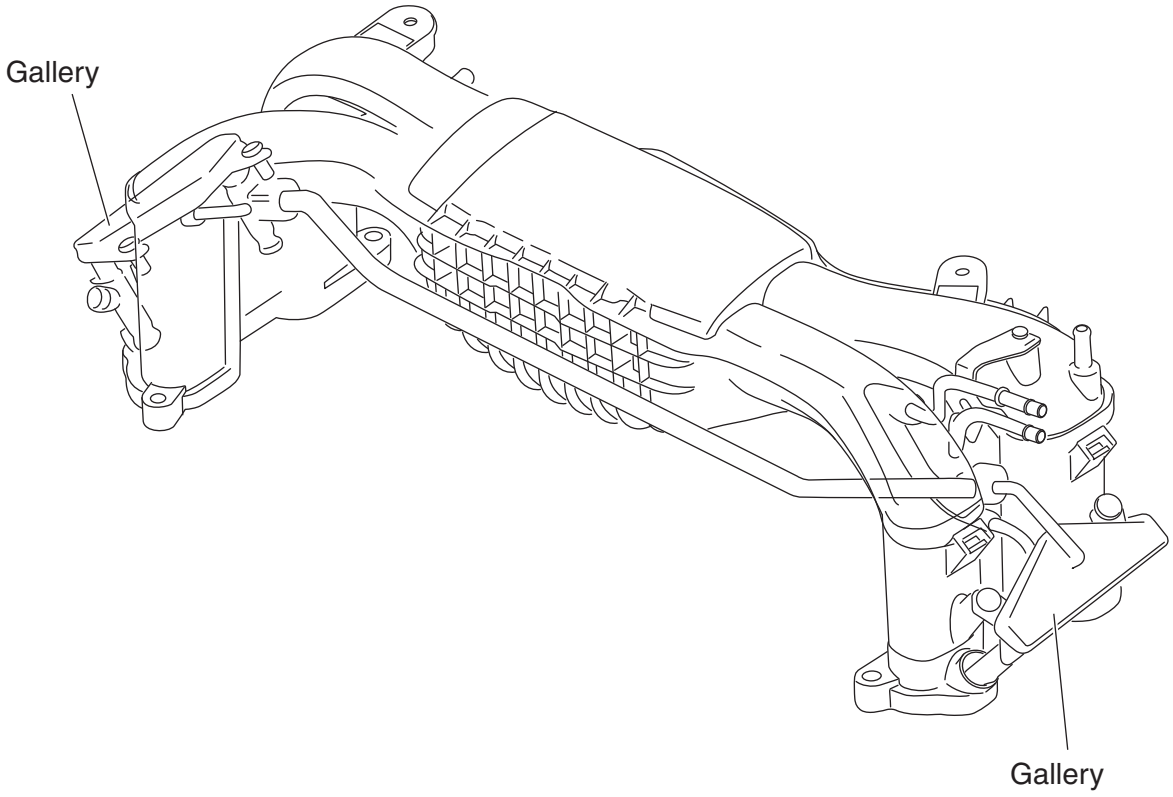
The inner structure has been simplified to improve productivity, the hot water path is abolished due to adoption of the multifunction duct, and the throttle chamber shape has been modified.



FU-04553

10.FUEL PIPE

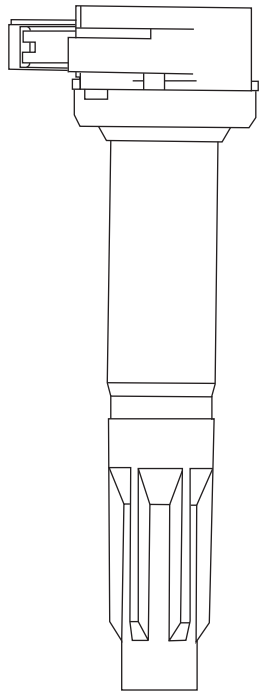
To improve productivity, the gallery shape of the fuel pipe has been modified.
While the gallery shape has been modified to enlarge capacity, the fuel damper is abolished.



FU-04554

11.IGNITION COIL

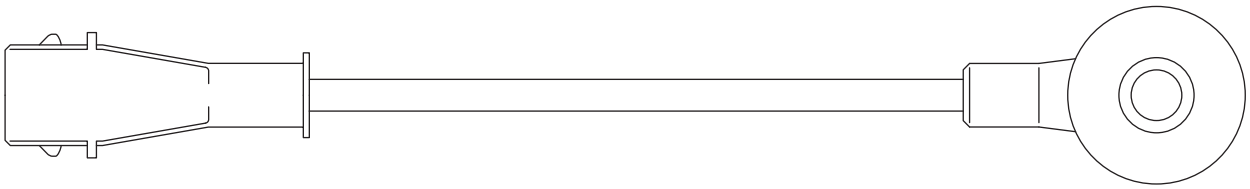
To improve productivity, the ignition coil has been changed from the simultaneous ignition type to the independent ignition type.



FU-04556

12.KNOCK SENSOR

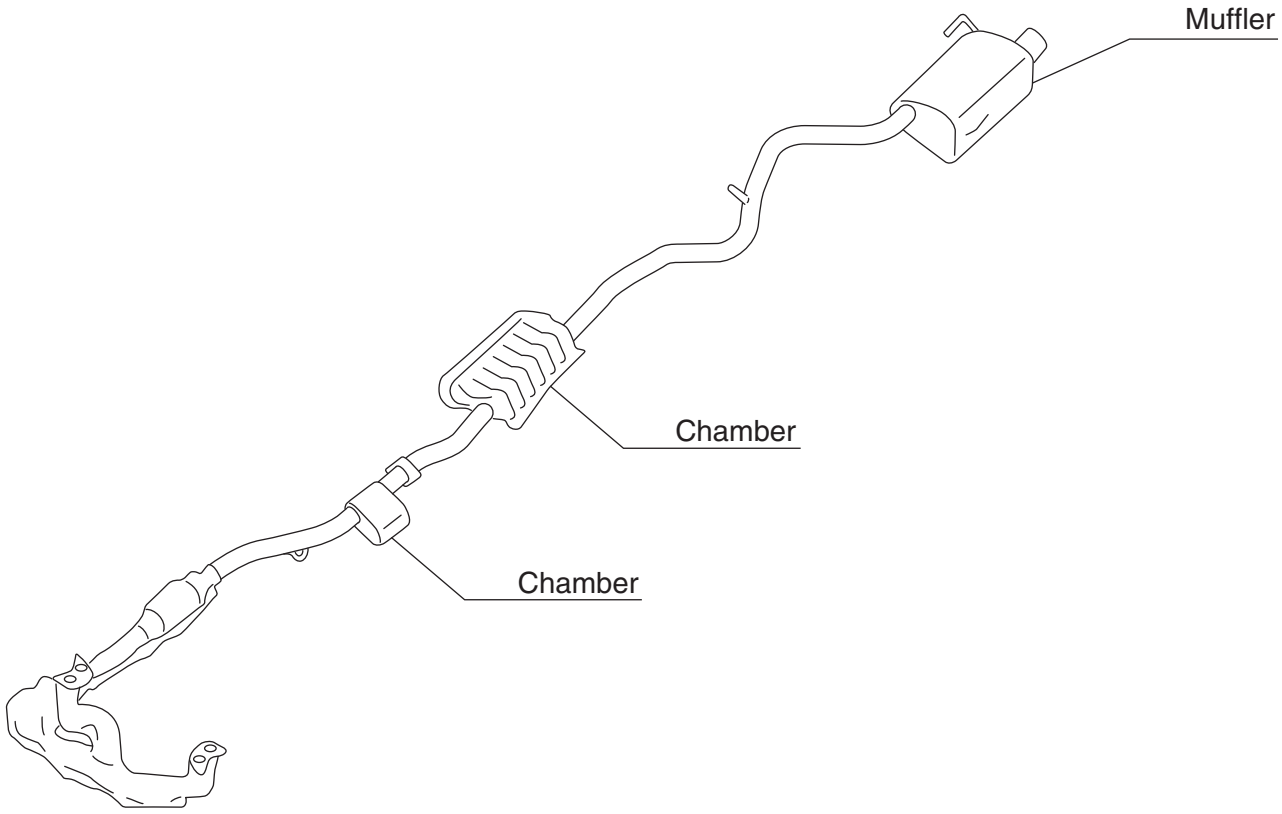
To improve productivity, the terminal plating, weight and connecter have been modified.



FU-04557

13.EXHAUST

While the noise and vibration performance and the output performance are balanced, weight reduction has been achieved by changing from the dual muffler to the single muffler.



FU-04563

2-4 2.5 L DOHC Turbo

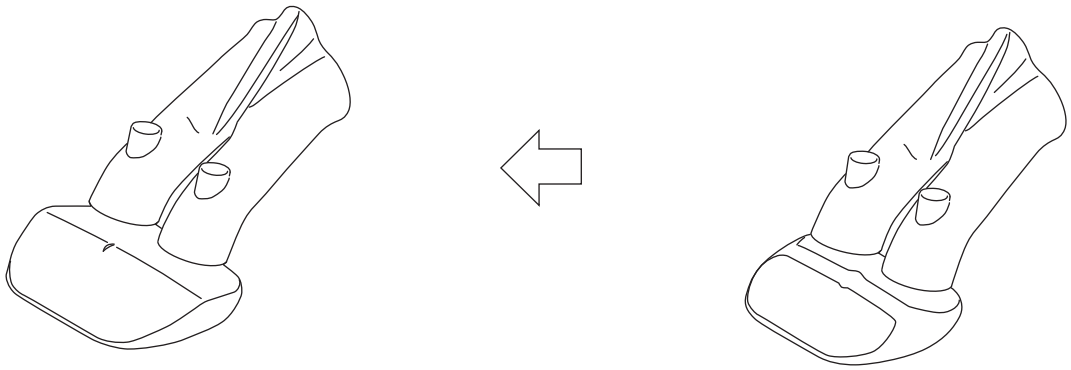
A: GENERAL DESCRIPTION

For 2.5 L DOHC turbo, the following items have been modified to achieve the performance improvement, exhaust gas reduction, fuel economy improvement, productivity improvement, and to support the cradle structure engine mounting.

No.	Modified items	Modified reason
1	Cylinder Head	Fuel economy improvement, performance improvement
2	Scavenger pump	To support the engine-bottom-placed turbocharger
3	Rear cam cap	To support the scavenger pump
4	Camshaft	To support the scavenger pump
5	Oil control valve assembly	Productivity improvement
6	Piston	Performance improvement, fuel economy improvement
7	Cam timing & profile	Performance improvement, fuel economy improvement
8	Valve spring	Fuel economy improvement
9	Exhaust AVCS	Performance improvement, fuel economy improvement
10	Timing belt cover	To support exhaust AVCS
11	Rocker cover	Productivity improvement
12	Oil pump	Friction reduction
13	Oil filler duct	Productivity improvement
14	Thermostat	Fuel economy improvement
15	Water pump, Thermo cover	To support the cradle structure engine mounting, to support the engine-bottom-placed turbocharger
16	Oil cooler	To support the cradle structure engine mounting
17	Engine-bottom placed turbocharger	Performance improvement
18	Turbocharger	Performance improvement
19	Intake air system	Performance improvement
20	Intercooler	Performance improvement
21	Spark pulg	Fuel economy improvement
22	Electronic throttle control	Productivity improvement
23	Knock sensor	Productivity improvement
24	Collector cover	To support the new engine

1. CYLINDER HEAD

To improve the fuel economy and performance through combustion enhancement, the combustion chamber has been modified.



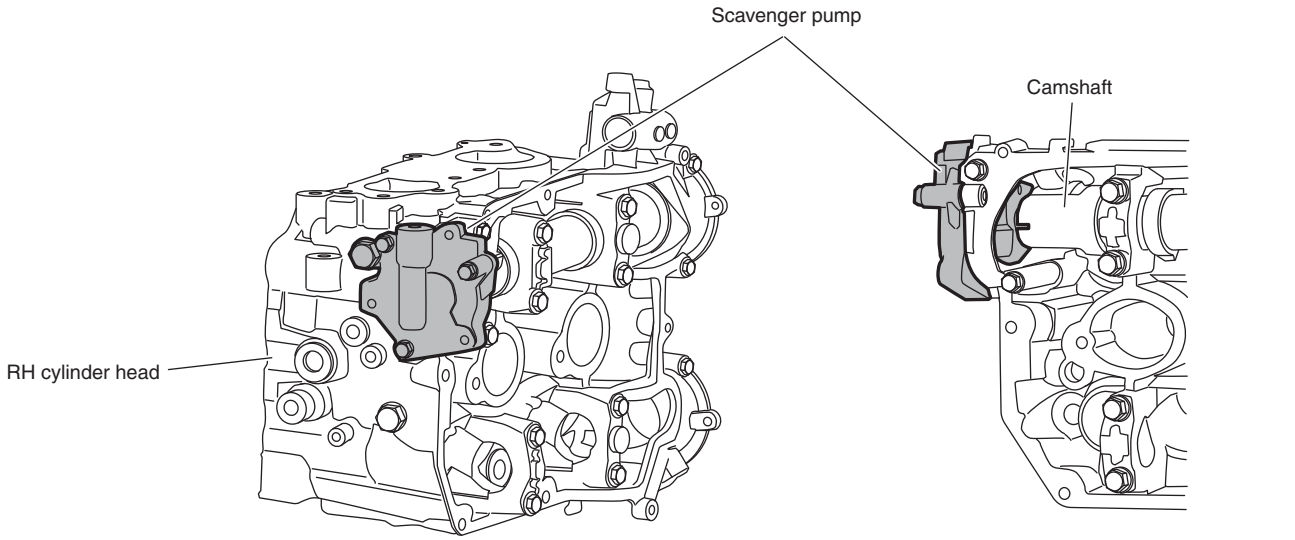
New model

Existing model

ME-04414

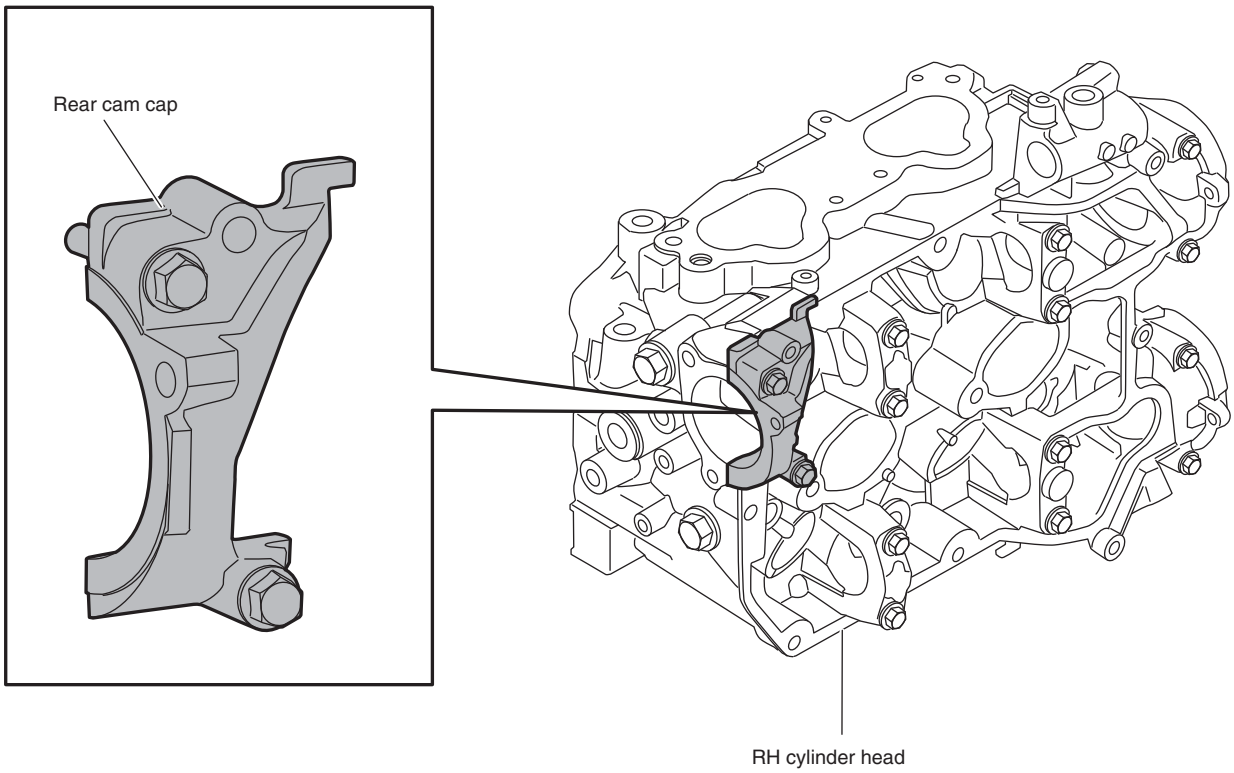
2. SCAVENGER PUMP

In order to position the turbocharger on the bottom of the exhaust port, the special lubrication circuit and scavenger pump have been added.
The scavenger pump is driven by the camshaft.



3. REAR CAM CAP

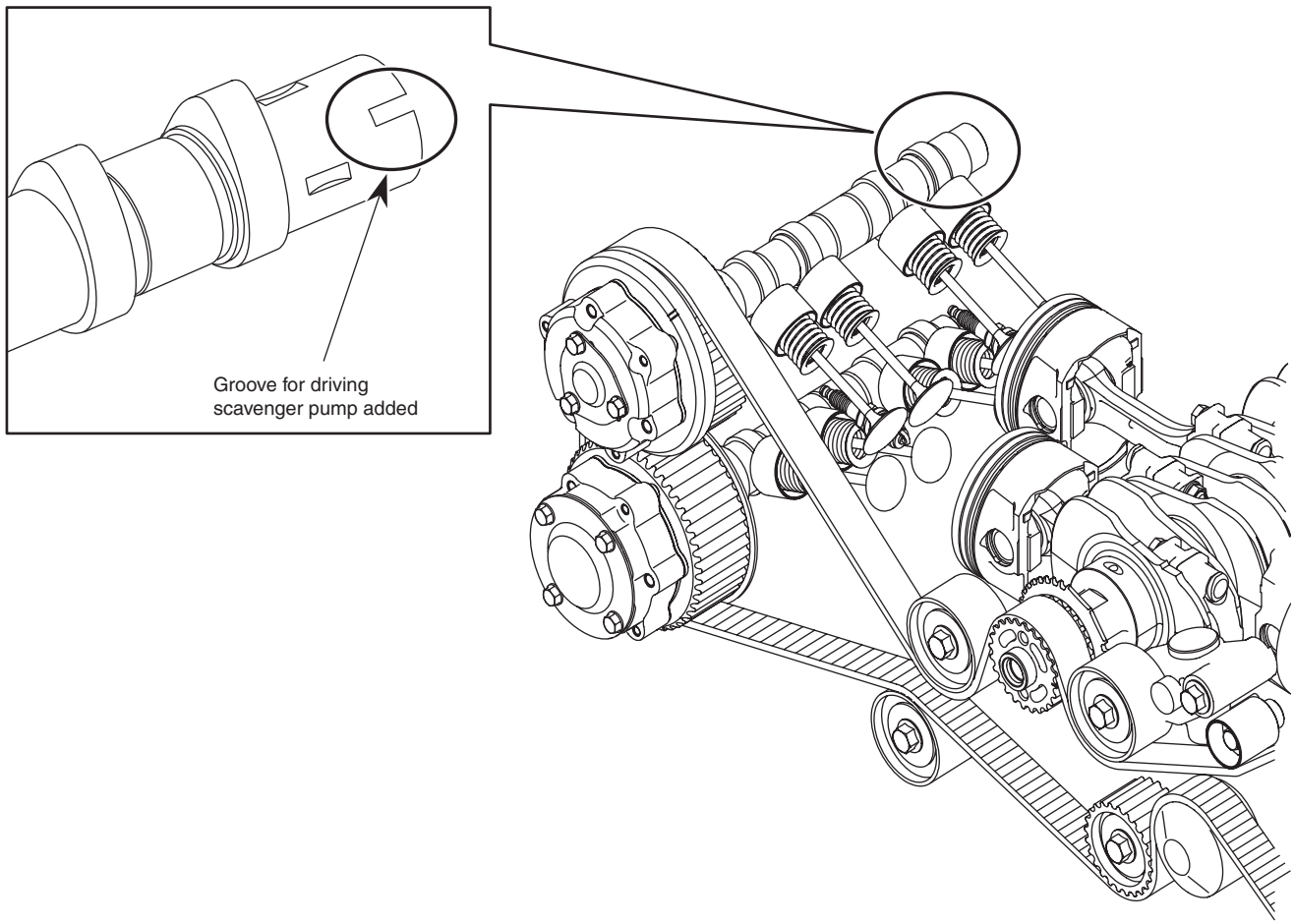
To install the scavenger pump, the rear cam cap has been added to the RH cylinder head.



ME-04176

4. CAMSHAFT

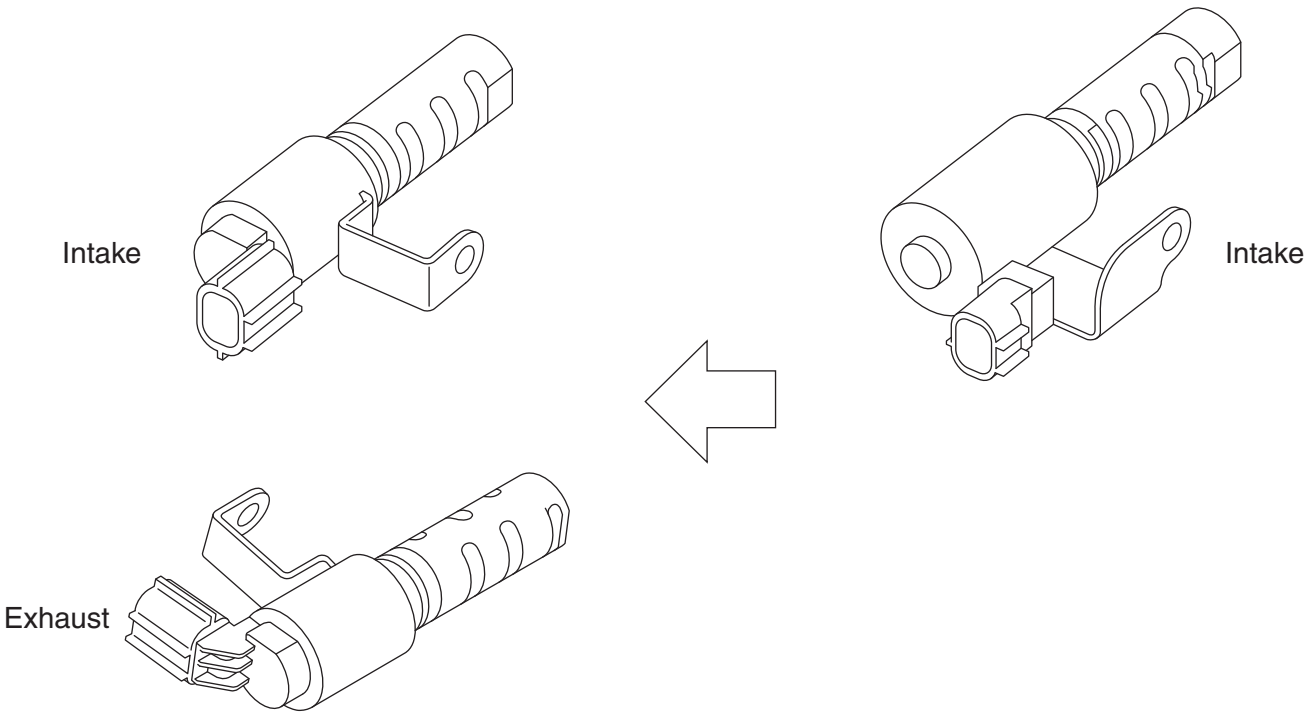
To drive the scavenger pump, the groove has been added to the camshaft.



ME-04177

5. OIL CONTROL VALVE ASSEMBLY

To improve productivity, the oil control valve assembly has been modified.
To support exhaust AVCS, the exhaust oil control valve has been added.



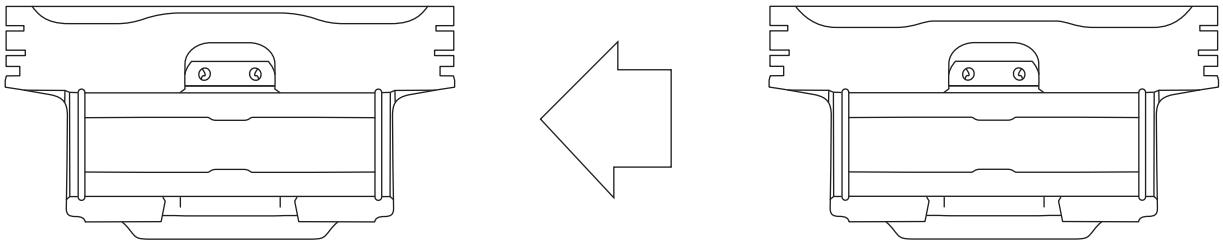
New model

Existing model

ME-04415

6. PISTON

To improve performance and fuel economy through combustion enhancement, the crown shape of the piston has been modified.



New model

Existing model

ME-04416

7. CAM TIMING & PROFILE

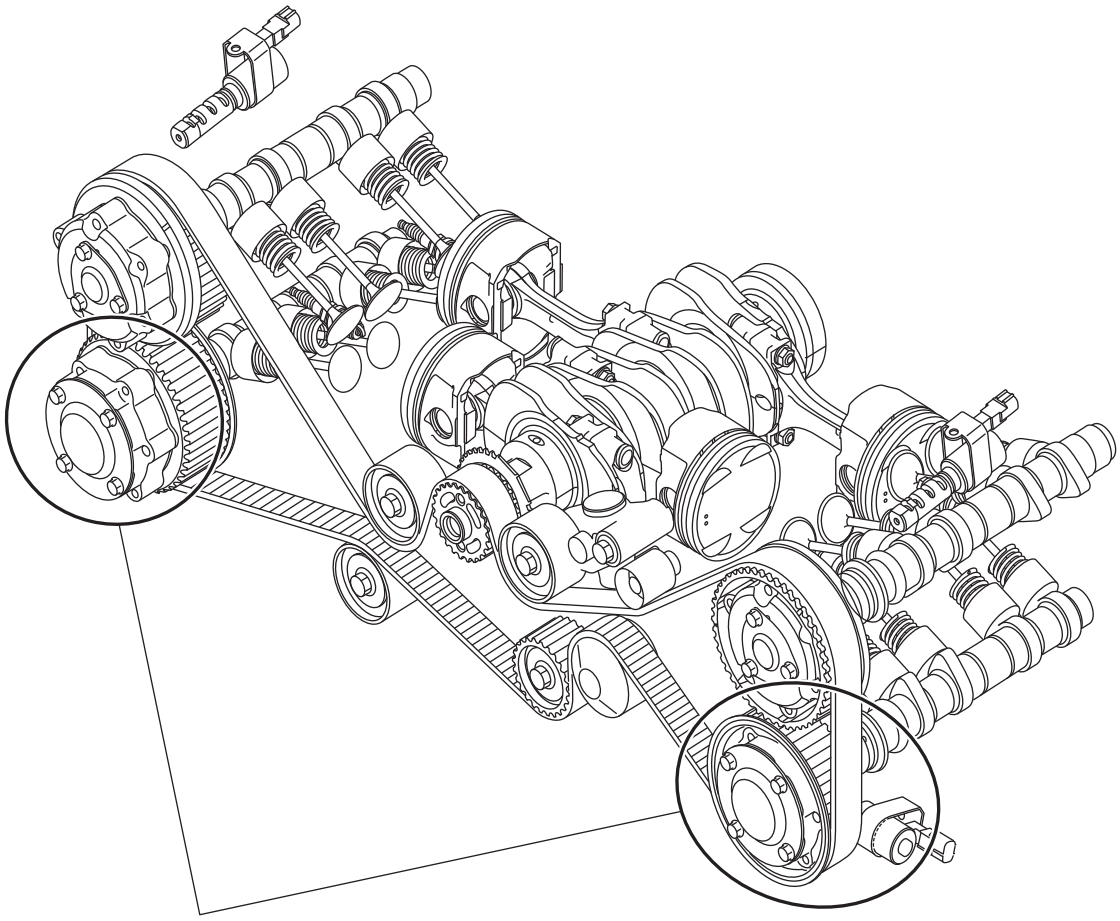
Combustion has been improved through small opening angle for exhaust air, and to enhance the low speed range torque, the cam timing & profile has been modified.

8. VALVE SPRING

The lift weighting point of the valve spring has been set low to contribute to the fuel economy improvement.

9. EXHAUST AVCS

To improve performance and fuel economy, the exhaust AVCS has been added.

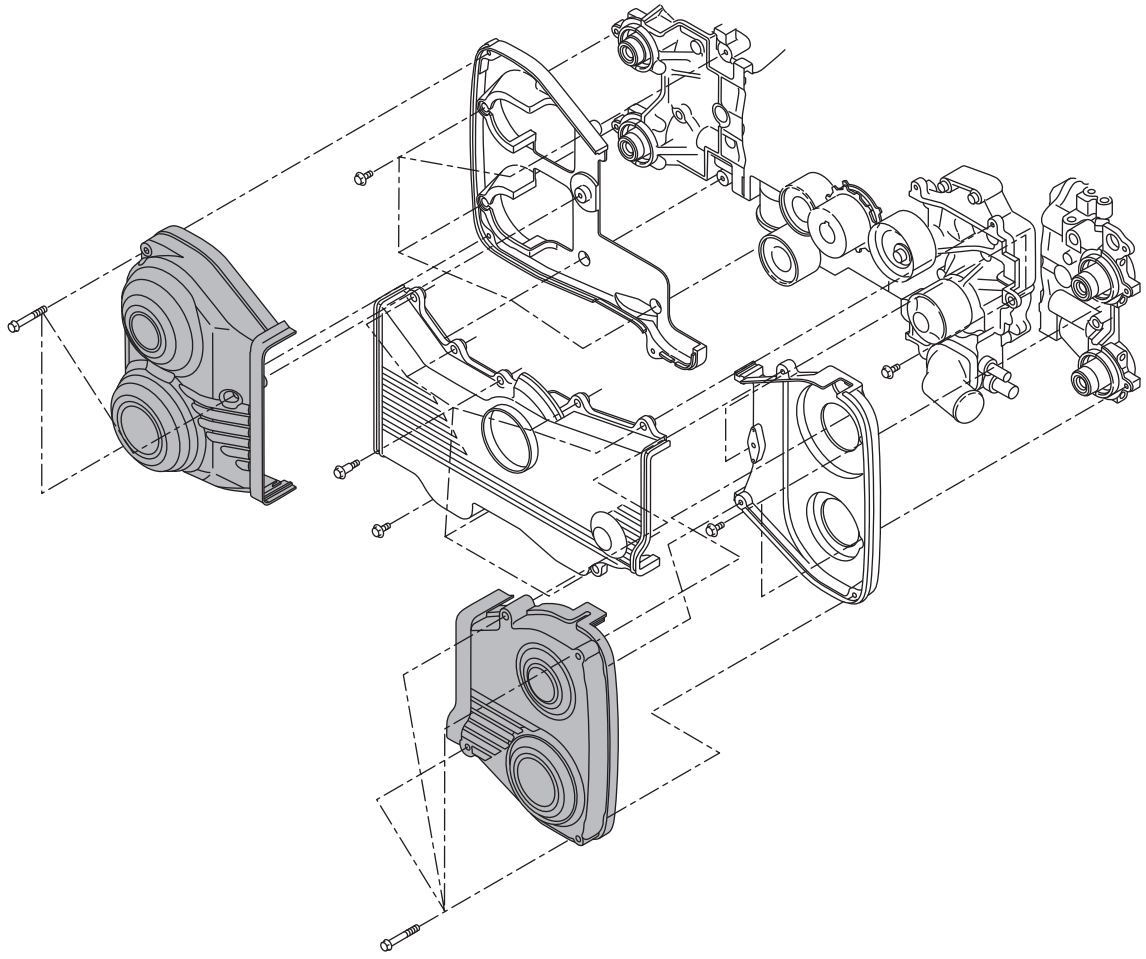


Exhaust AVCS

ME-04417

10.TIMING BELT COVER

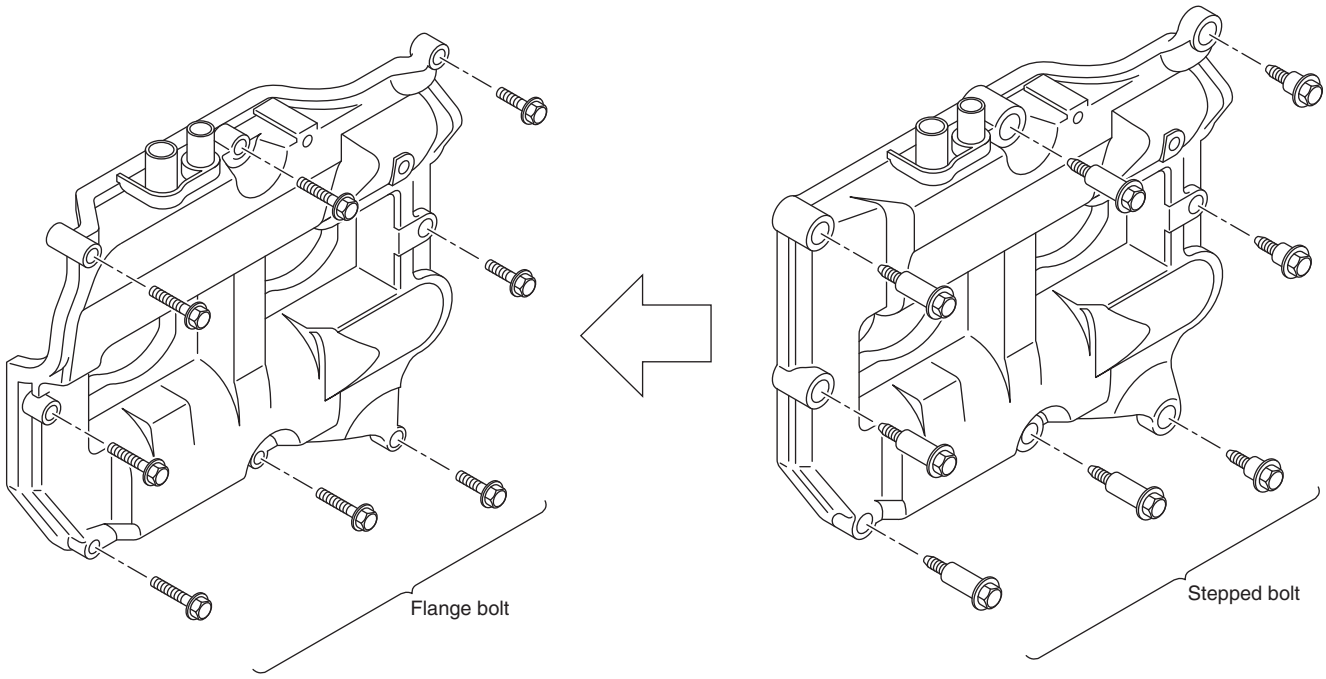
To support exhaust AVCS, the shapes of timing belt cover LH and RH have been modified.



ME-04418

11.ROCKER COVER

To install the scavenger pump, the RH rocker cover has been modified.
To improve productivity, the locker cover structure has been modified from the floating installation type to the rigid installation type.
Along with this change, the bolts have been changed from the stepped bolts to the flange bolts.



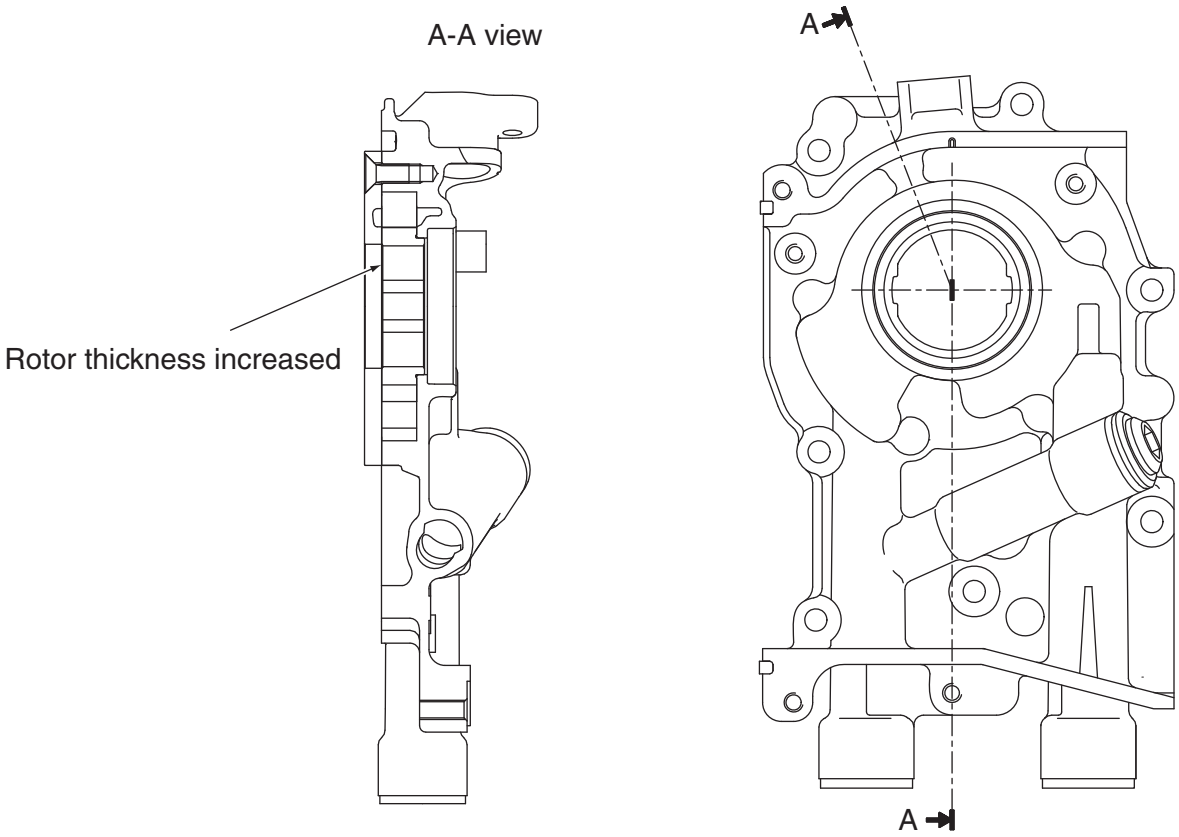
New model

Existing model

ME-04181

12.Oil pump

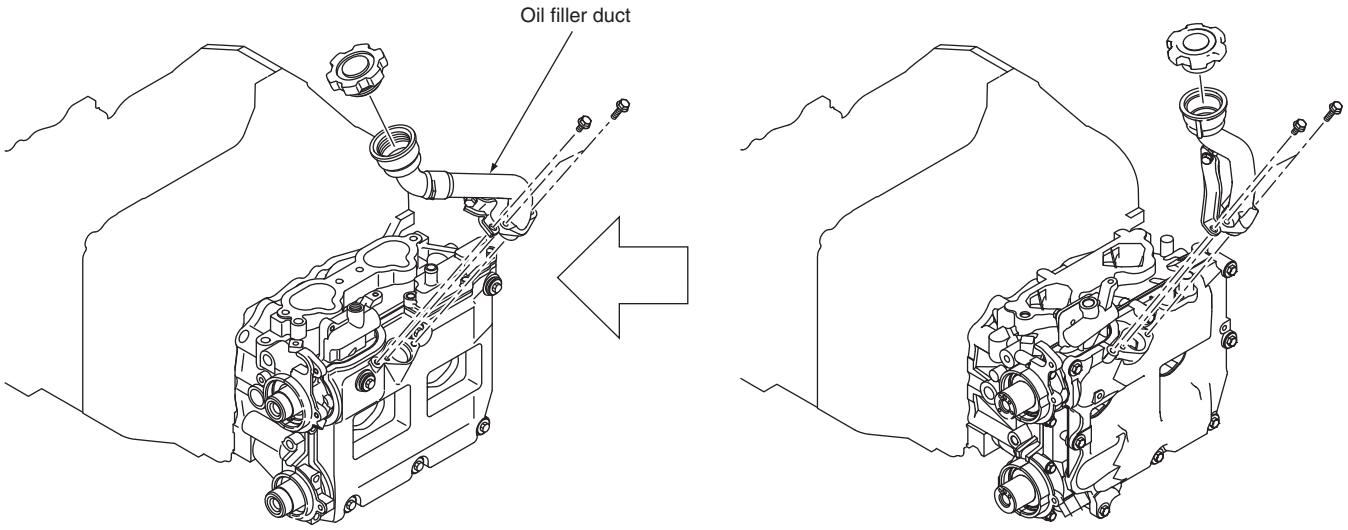
To add exhaust AVCS, the oil pump rotor has been thickened, and the oil flow rate has been increased.



ME-04419

13.OIL FILLER DUCT

To improve productivity, modification has been made.



New model

Existing model

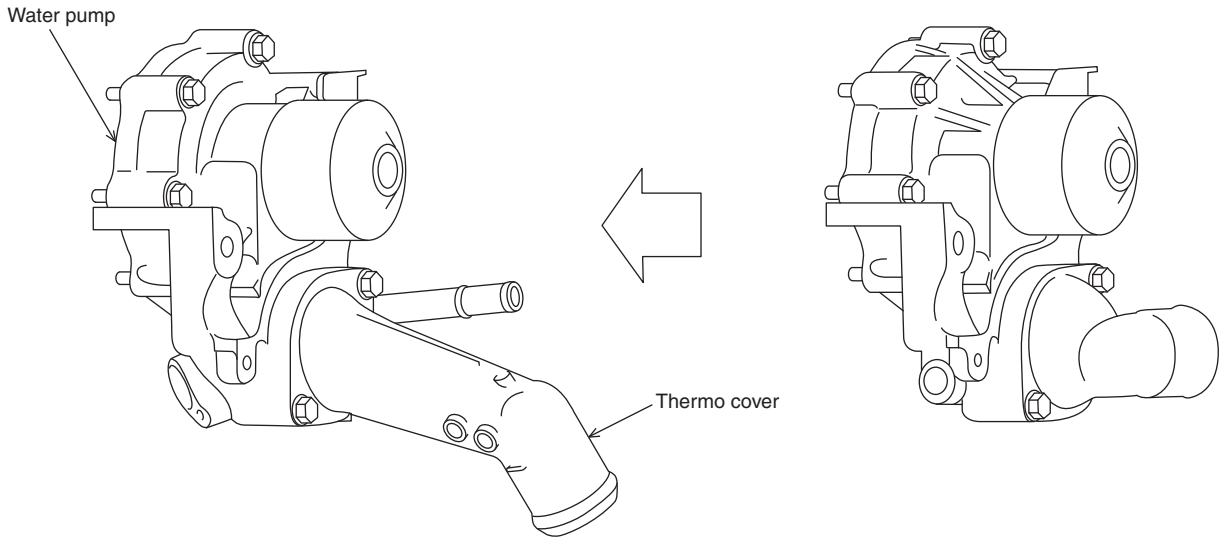
ME-04183

14.THERMOSTAT

The valve opening temperature has been increased to improve the fuel economy.

15.WATER PUMP, THERMO COVER

- To support the cradle structure engine mounting, the water pump case and nipple shape have been modified.
- To support the turbocharger installed on the bottom of the engine, the thermo cover shape has been modified.



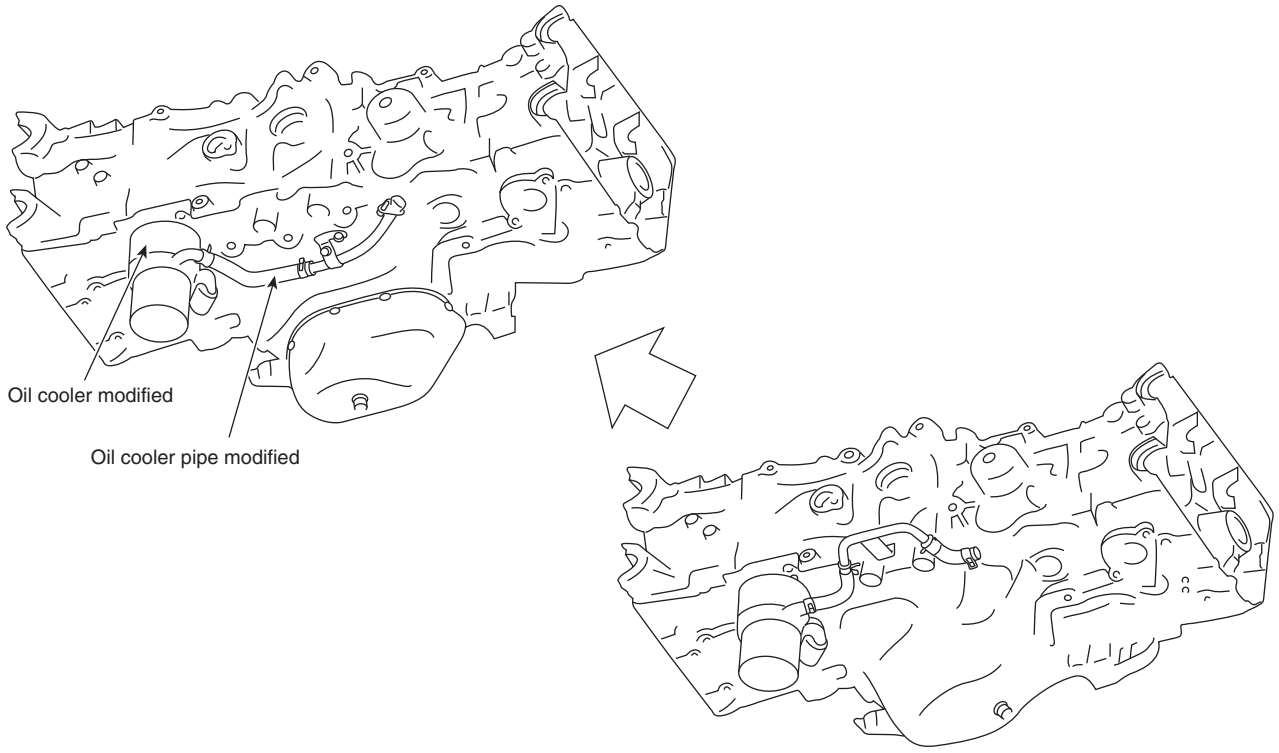
New model

Existing model

ME-04184

16.OIL COOLER

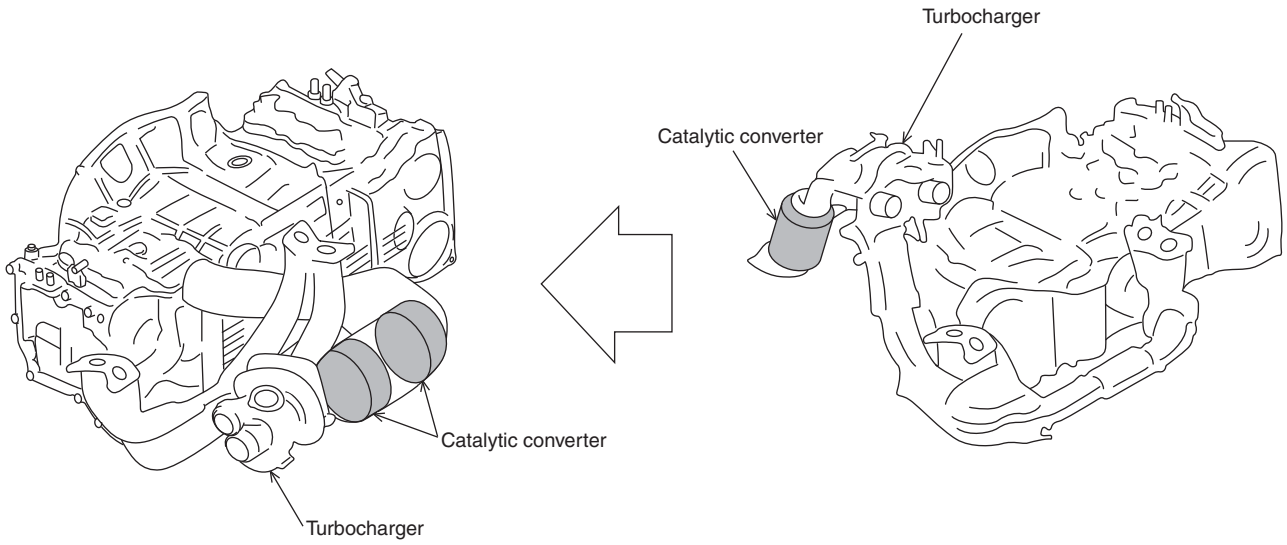
To support the cradle structure engine mounting, the oil cooler has been modified.



ME-04185

17.ENGINE-BOTTOM-PLACED TURBOCHARGER

To improve the catalytic converter heatup performance, the turbocharger is installed on the bottom of the engine for the exhaust parts compactification.



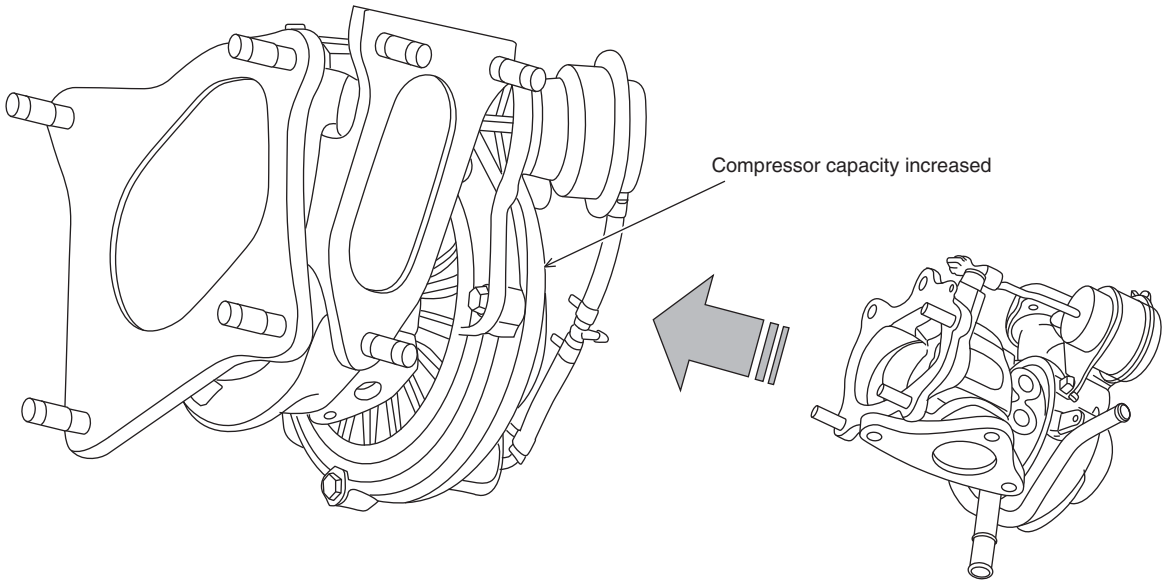
New model

Existing model

FU-04918

18.TURBOCHARGER

To improve the output performance, the compressor capacity of the turbocharger has been increased.



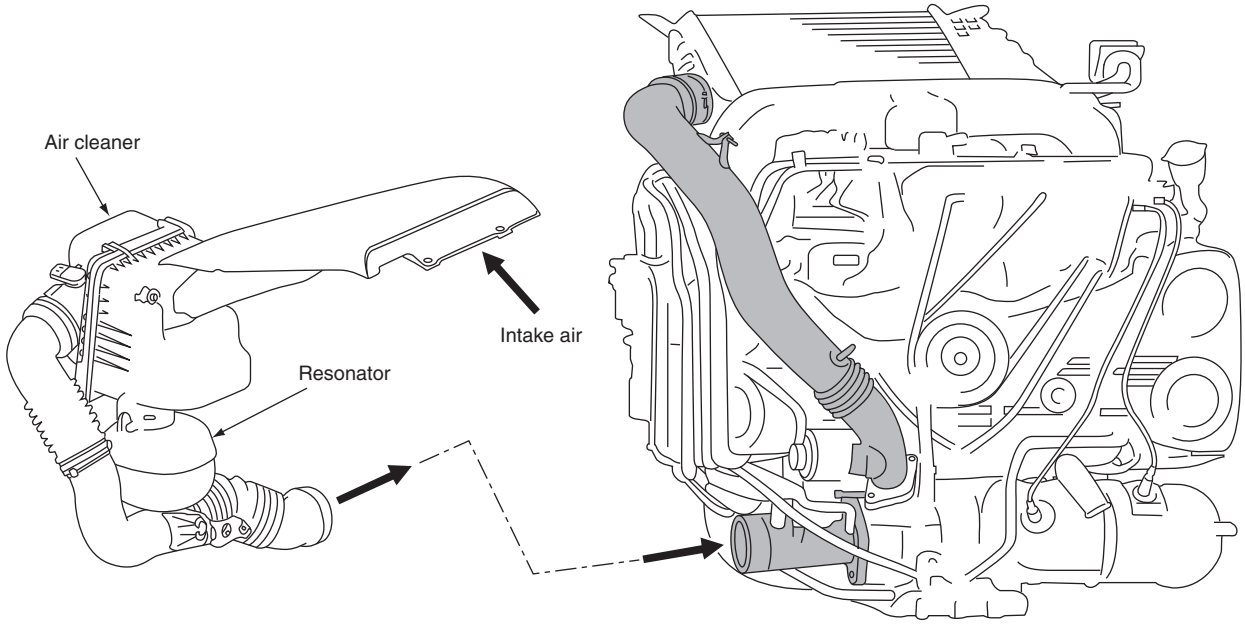
New model

Existing model

FU-05084

19.INTAKE AIR SYSTEM

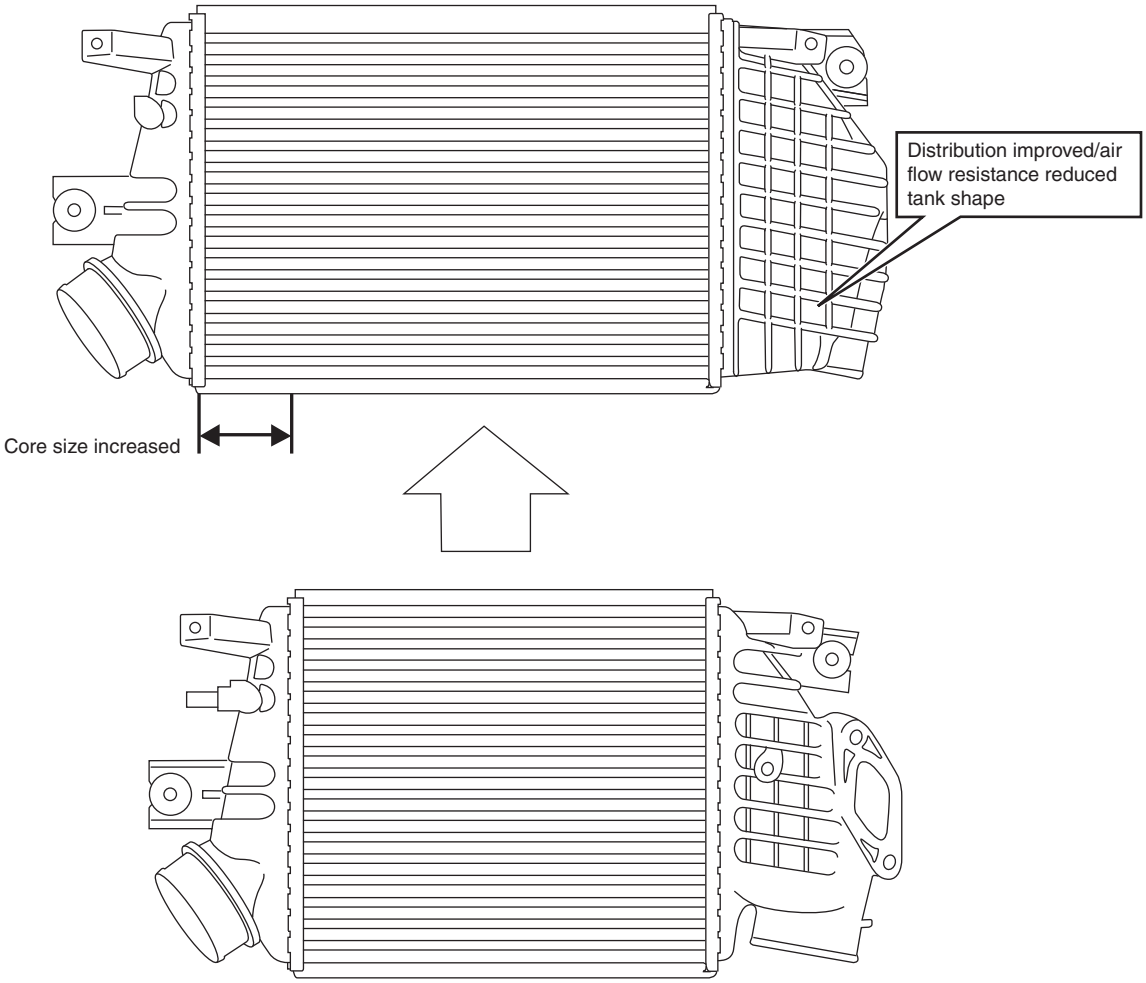
Due to adoption of the turbocharger installed on the bottom of the engine, the intake air system layout has been modified.



FU-04578

20.INTERCOOLER

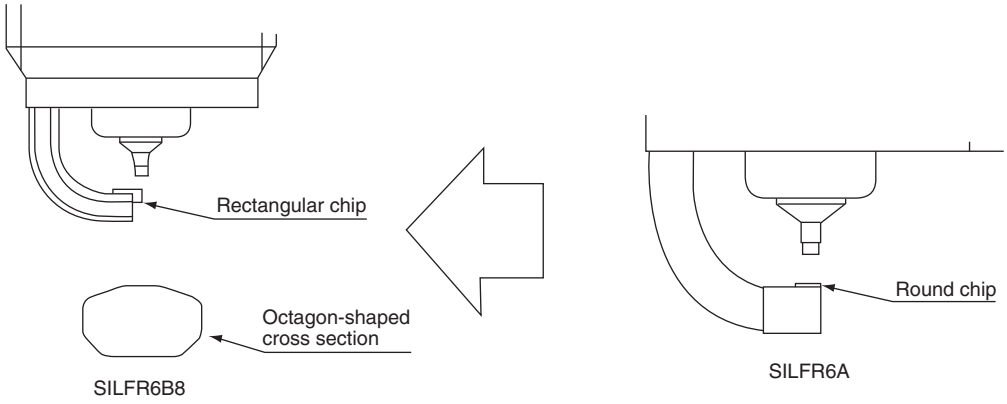
To improve performance, the core size has been increased and the outlet tank shape has been modified.



FU-04579

21.SPARK PLUG

To improve fuel economy, the spark plug with high ignitability has been adopted.



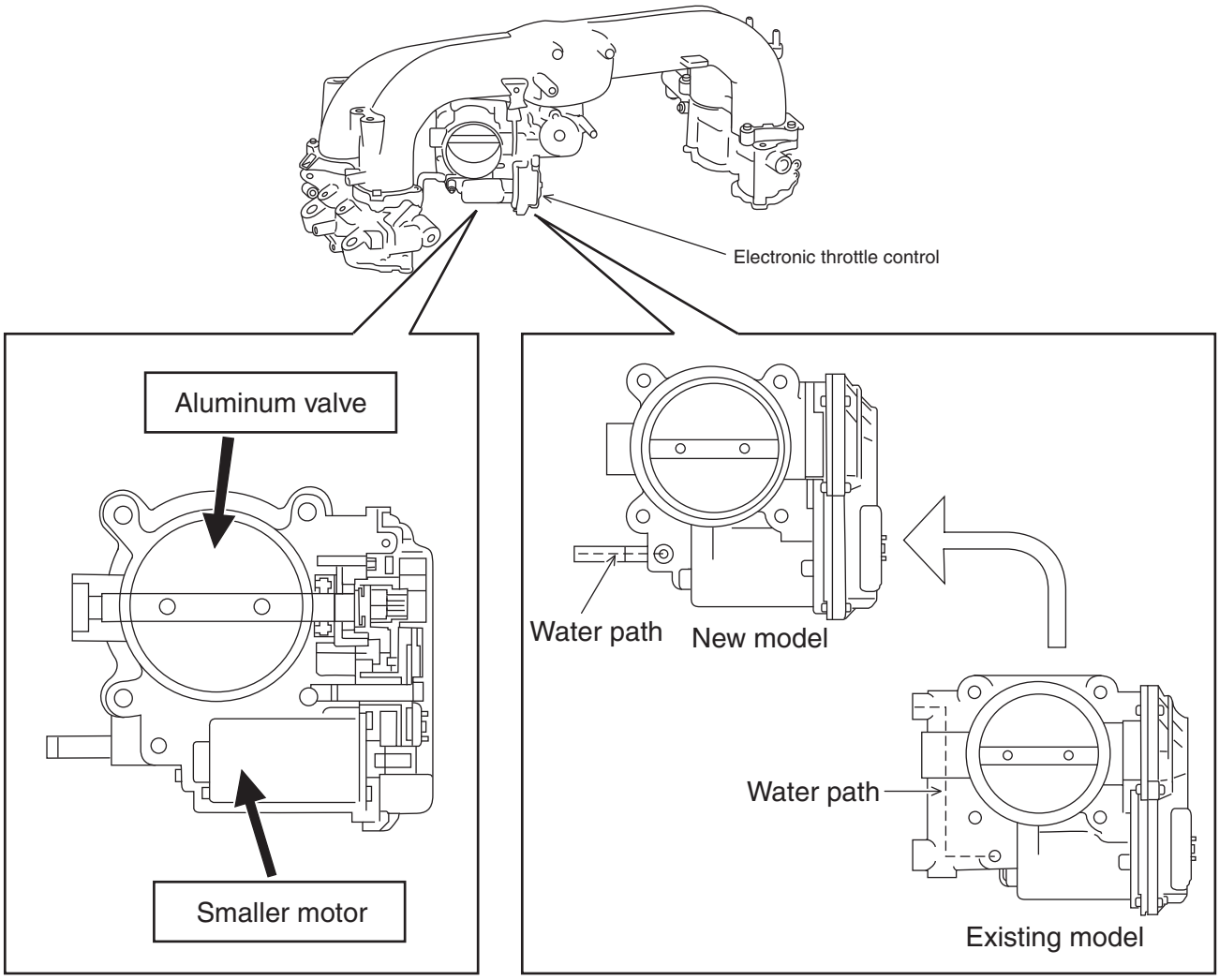
New model

Existing model

FU-04919

22.ELECTRONIC THROTTLE CONTROL

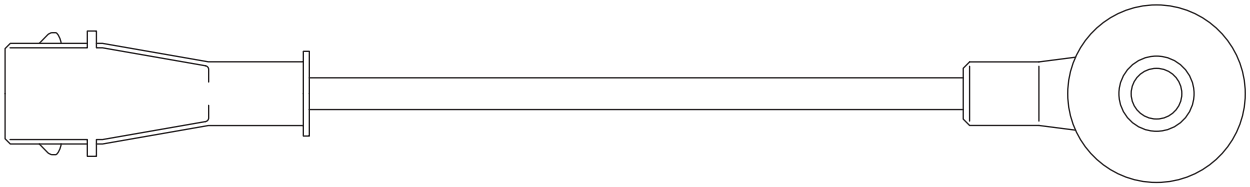
To improve productivity, the hot water path has been changed from two sides to one side as advancement to the next generation.



FU-05086

23.KNOCK SENSOR

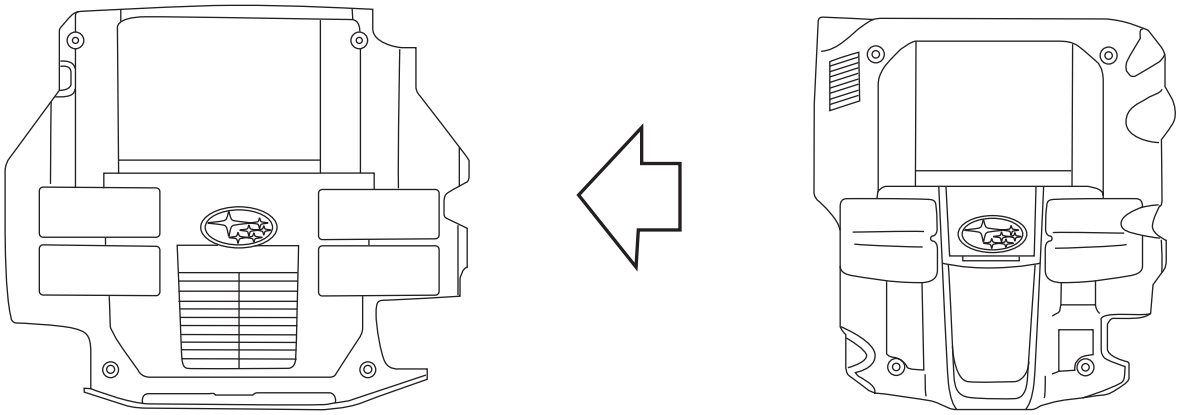
To improve productivity, the terminal plating, weight and connecter have been modified.



FU-04557

24.COLLECTOR COVER

To improve the design, the collector cover design has been changed.



New model

Existing model

FU-05087

2-5 3.6 L DOHC non-turbo

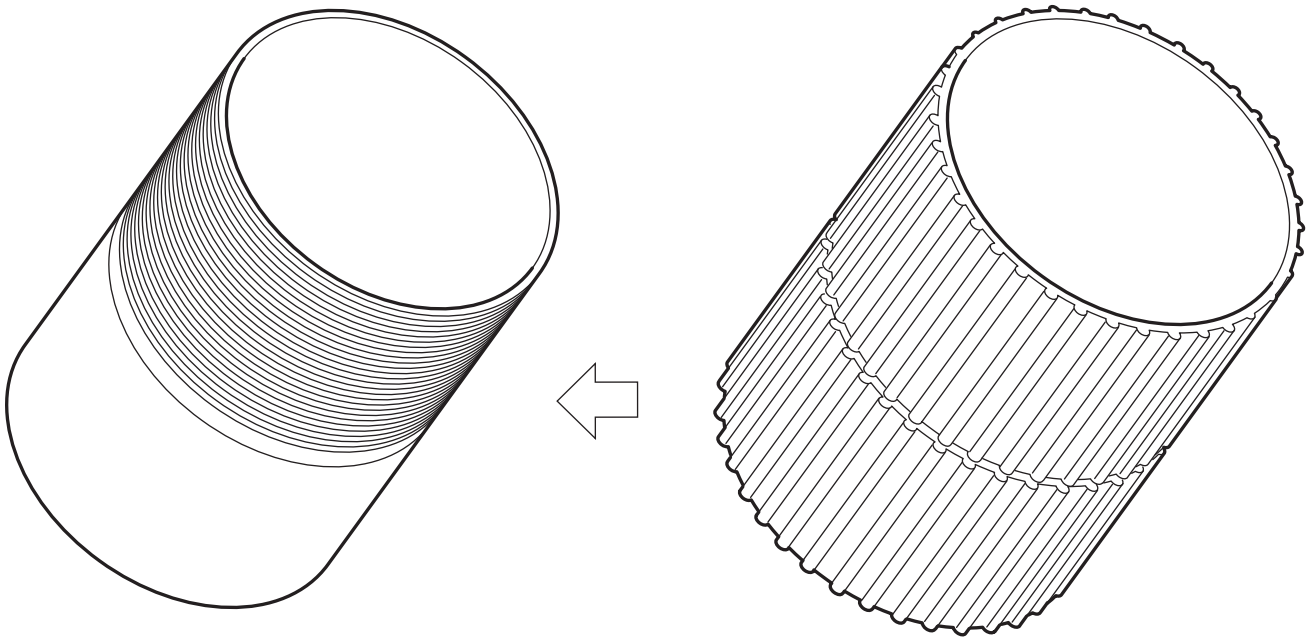
A: GENERAL DESCRIPTION

For 3.6 L DOHC non-turbo, the following items have been modified due to the increased displacement, performance improvement, exhaust gas reduction, fuel economy improvement, merchantability improvement, productivity improvement, and to support the cradle structure engine mounting.

No.	Modified items	Modified reason
1	Cylinder block I	Increased displacement
2	Cylinder block II	Quietness improvement
3	Cylinder head	Performance improvement, fuel economy improvement
4	Cooling circuit	Performance improvement, fuel economy improvement
5	Connecting rod	Increased displacement
6	Crankshaft	Increased displacement
7	Intake/exhaust AVCS	Performance improvement, fuel economy improvement, exhaust gas reduction
8	Chain drive system	Reliability improvement, vibration and noise reduction
9	Chain cover	Light weight intake/exhaust AVCS support, cradle structure engine mounting support
10	Oil pump	Chain drive system modification
11	Spark plug	Fuel economy improvement, exhaust gas reduction
12	Generator	Fuel economy improvement
13	Injector	Increased displacement
14	Starter	Increased displacement
15	Air intake	Performance improvement
16	Exhaust	Exhaust gas reduction, performance improvement

1. CYLINDER BLOCK I

- Due to the displacement increase from 3.0 L to 3.6 L, the bore diameter has been changed (from 89.2 mm to 92 mm).
- The thin liner has been adopted.



Thin liner

New model

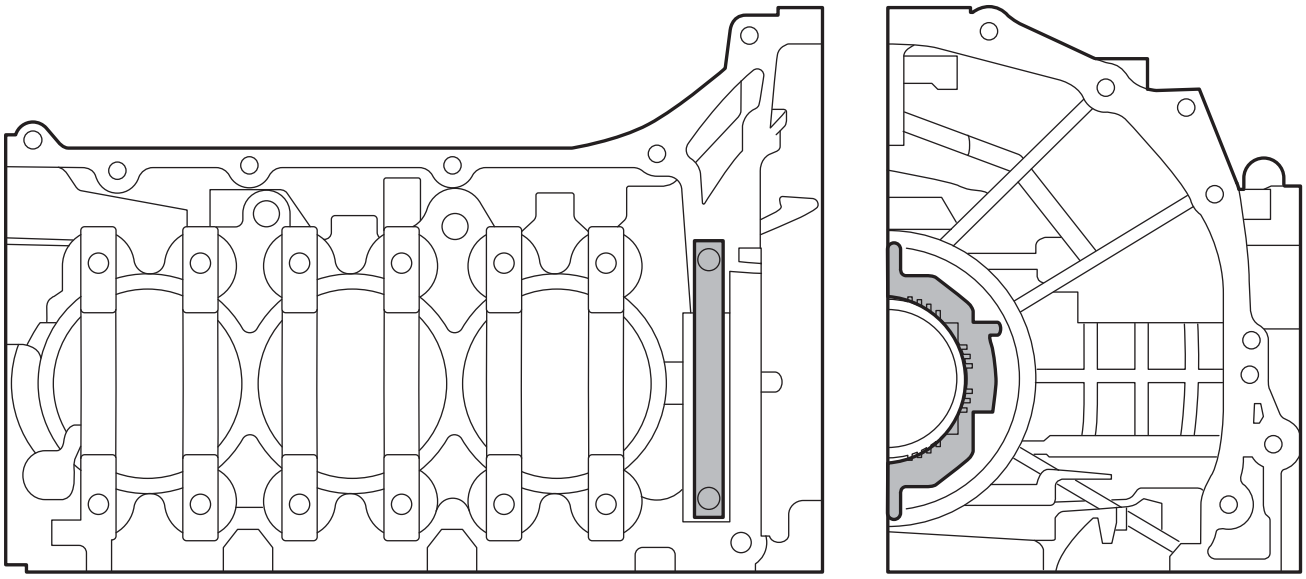
Existing liner

Existing model

ME-04339

2. CYLINDER BLOCK II

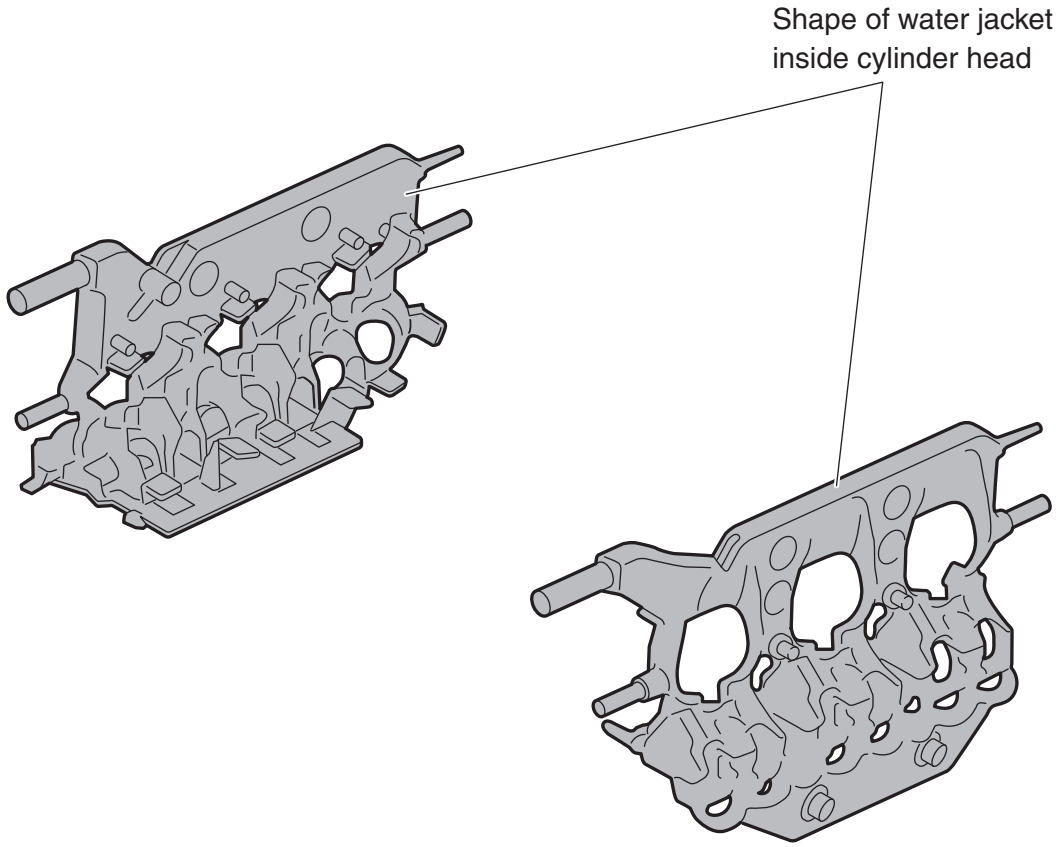
To improve the quietness, the cast-in insertion of the iron sintered piece to the crank journal portion has been adopted.



ME-04340

3. CYLINDER HEAD

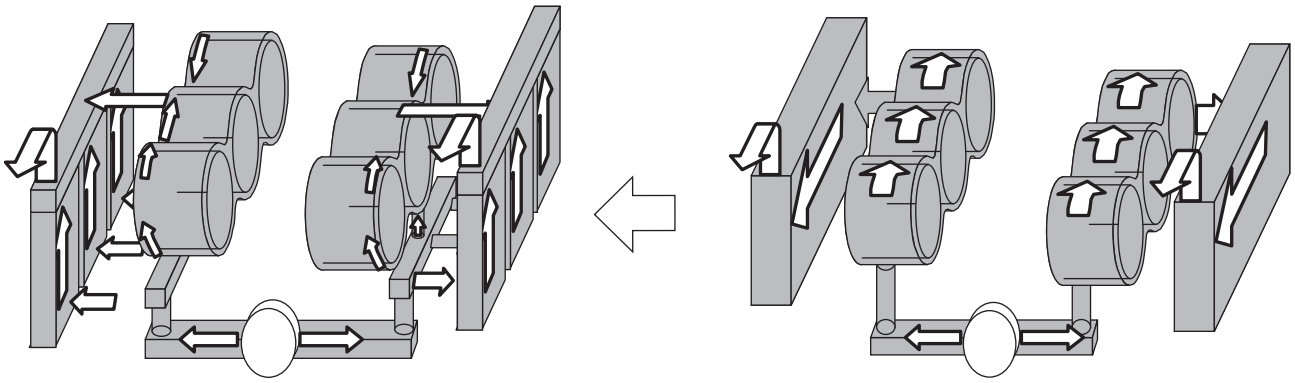
- To improve the performance and combustion, the intake/exhaust valve diameters have been increased, and the intake/exhaust port shapes have been optimized.
- To restrain the temperature variation among the cylinders, the water jacket shape has been optimized.



ME-04341

4. COOLING CIRCUIT (CYLINDER BLOCK, CYLINDER HEAD)

To improve the performance and fuel economy, the cooling circuit path has been changed from the in-line flow to the parallel flow.
In-line flow (the existing models): The water is divided into left and right at the water pump exit, and cools while passing through each bank
Parallel flow (the new models): The water is divided into left and right at the water pump exit, and cools each cylinder block and cylinder head independently via the water separation chamber in the cylinder block



New model

Existing model

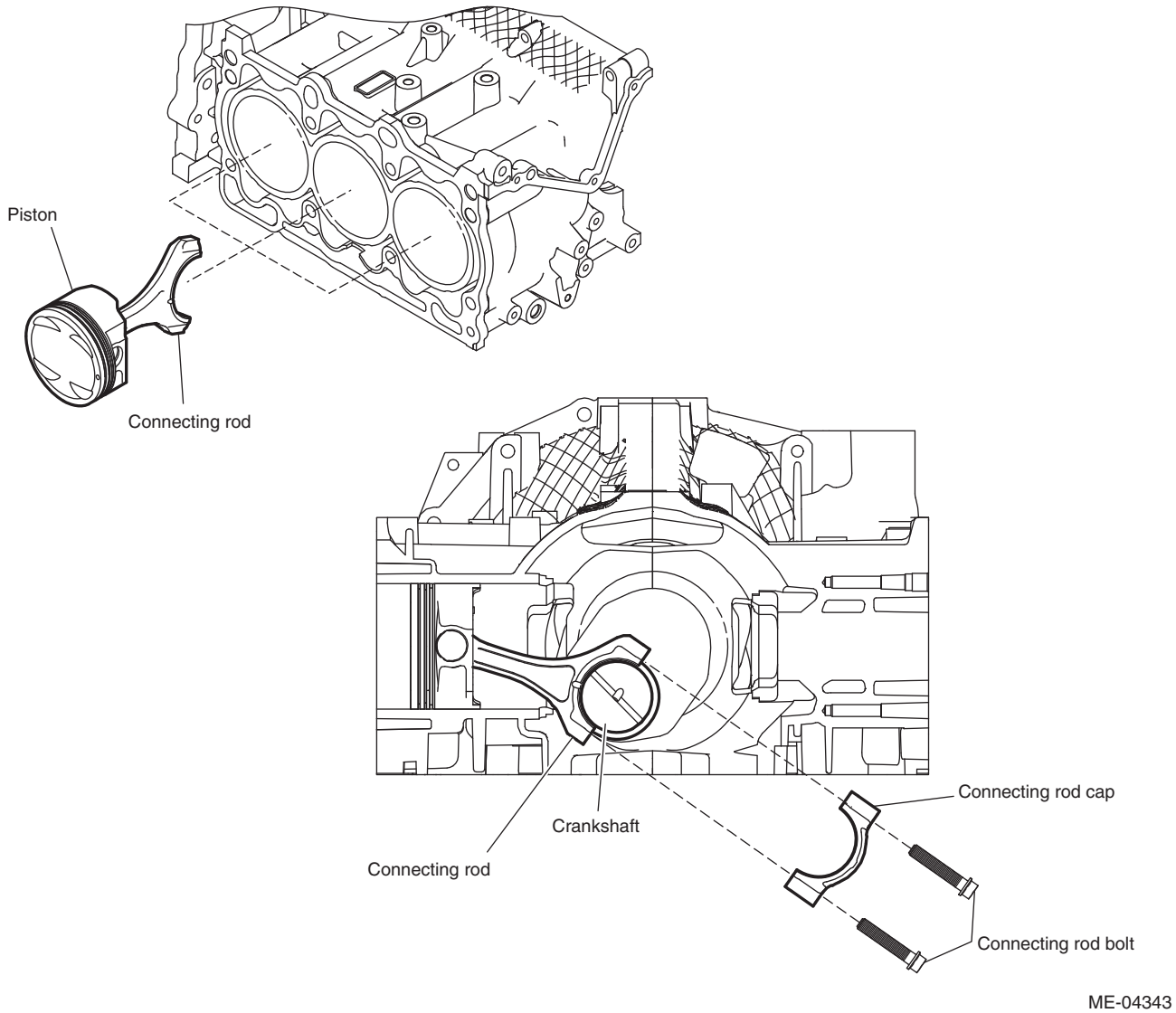
ME-04342

5. CONNECTING ROD

For the increased displacement, the connecting rod with the skewed split at the rod large end has been adopted.

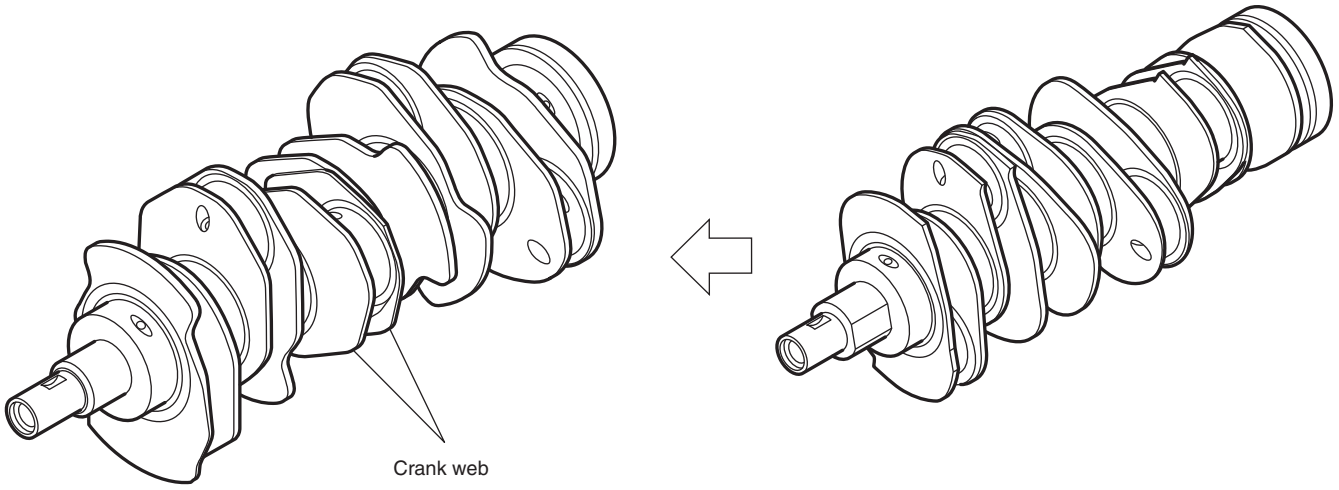
- Installation to the cylinder and crankshaft with the piston and connecting rod installed has become possible, and the service hole is abolished.
- The connecting rod and connecting rod cap are produced as one part, and separated by cracking at the last process. As a result, the installation accuracy is improved, and the knock pin is abolished.

To ensure the work space, the connecting rod bolt with the outer TORX shape has been adopted.



6. CRANKSHAFT

The stroke has been increased for the increased displacement. (80 mm → 91 mm)
To increase the torsional stiffness, the crank web width has been increased.



New model

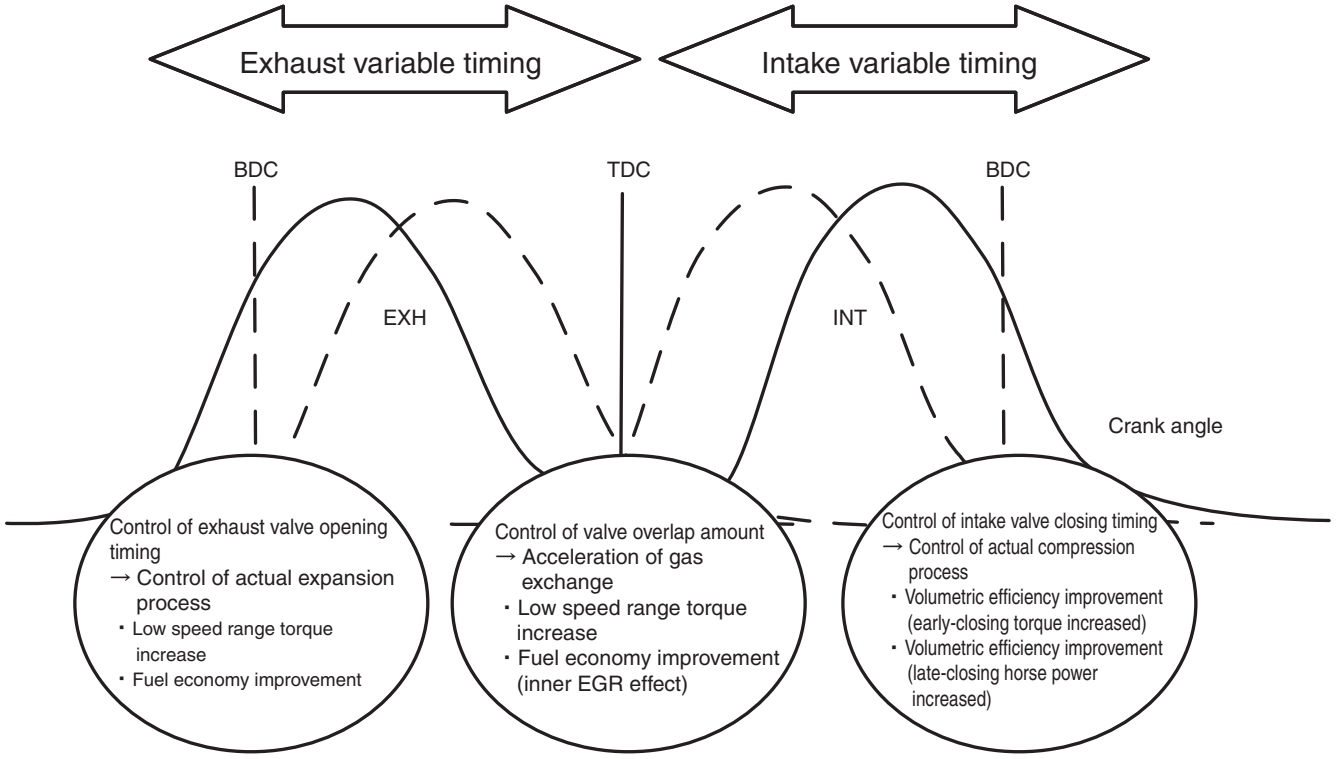
Existing model

ME-04344

7. INTAKE/EXHAUST AVCS

To improve the performance, fuel economy and to reduce the exhaust gas, the intake/exhaust AVCS has been adopted.

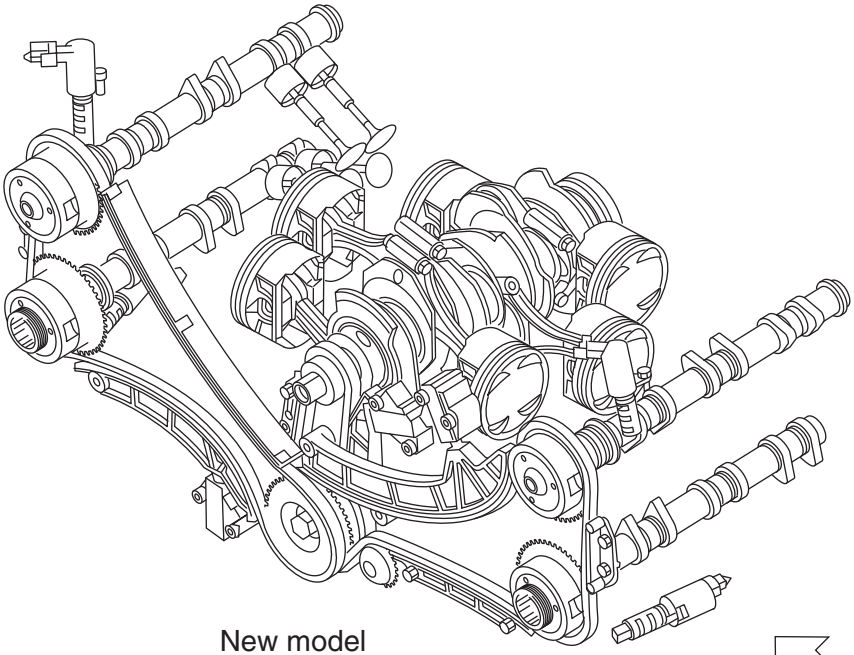
AVCS operation conceptual diagram



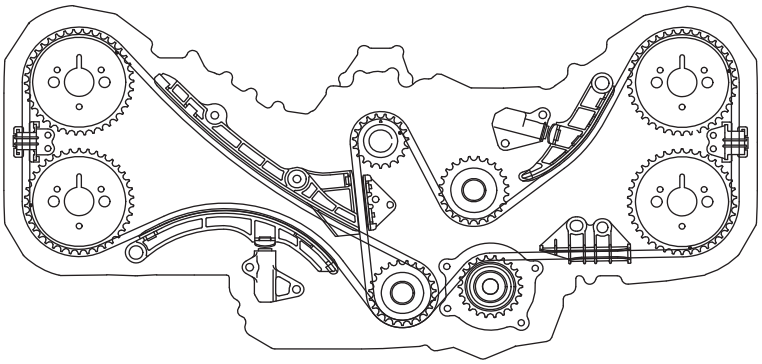
ME-04345

8. CHAIN DRIVE SYSTEM

To improve the reliability for the increased displacement, the chain layout has been modified.
To reduce the engagement noise, the cam chain pitch has been modified.



New model

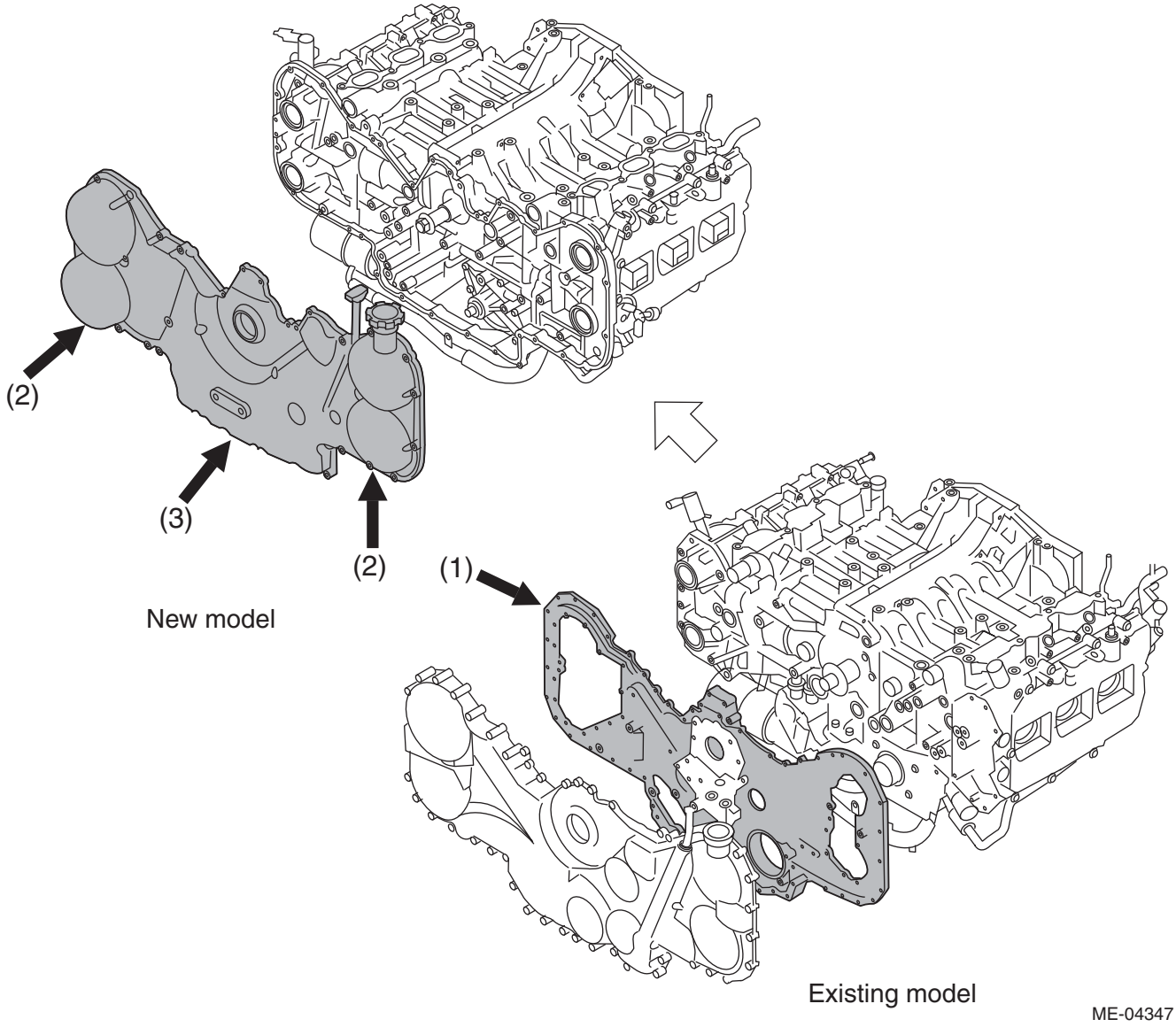


Existing model

ME-04346

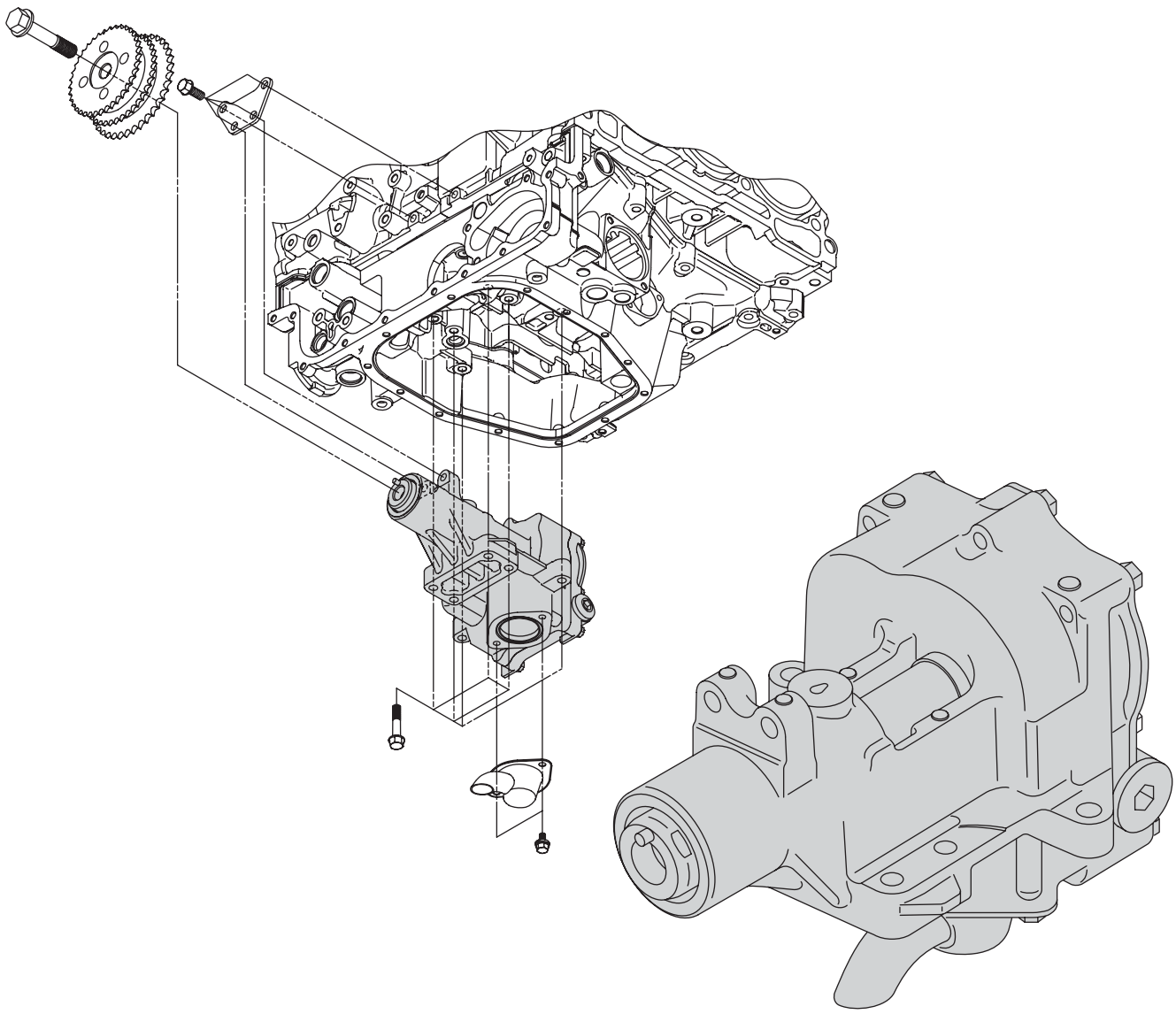
9. CHAIN COVER

(1) The chain cover No. 2 is abolished for the weight reduction.
(2) The protruded shape has been adopted due to the addition of the intake/exhaust AVCS.
(3) To support the cradle structure engine mounting, the mounting boss for the front mounting bracket has been added.



10.Oil pump

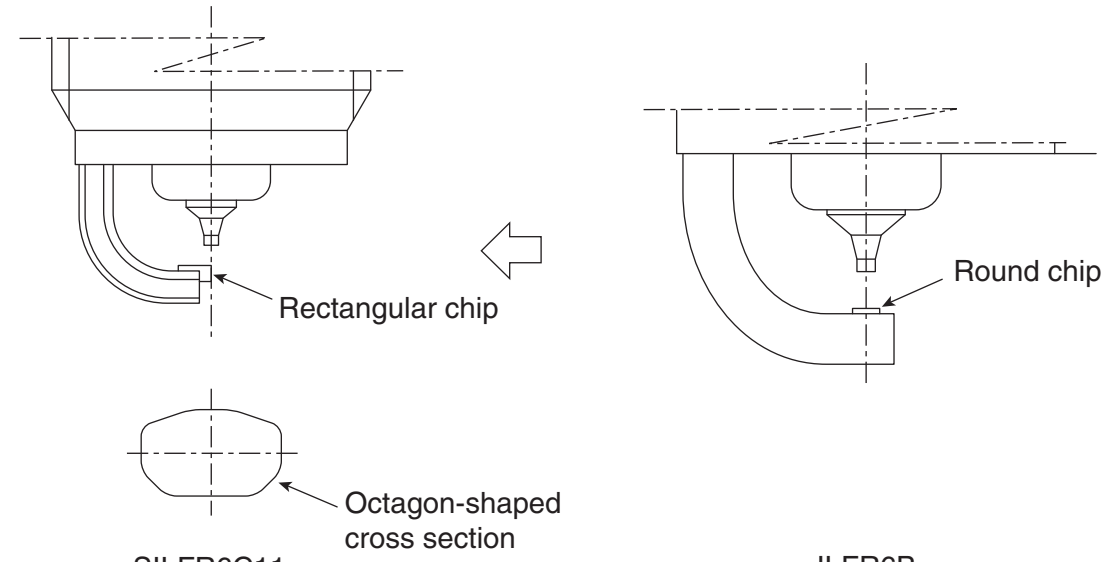
Due to the chain drive system change, the oil pump drive system has been changed to the idler drive system, and the pump layout has been optimized.



ME-04348

11.SPARK PLUG

To improve fuel economy and exhaust gas purification performance, the octagon rectangular chip type spark plug has been adopted.



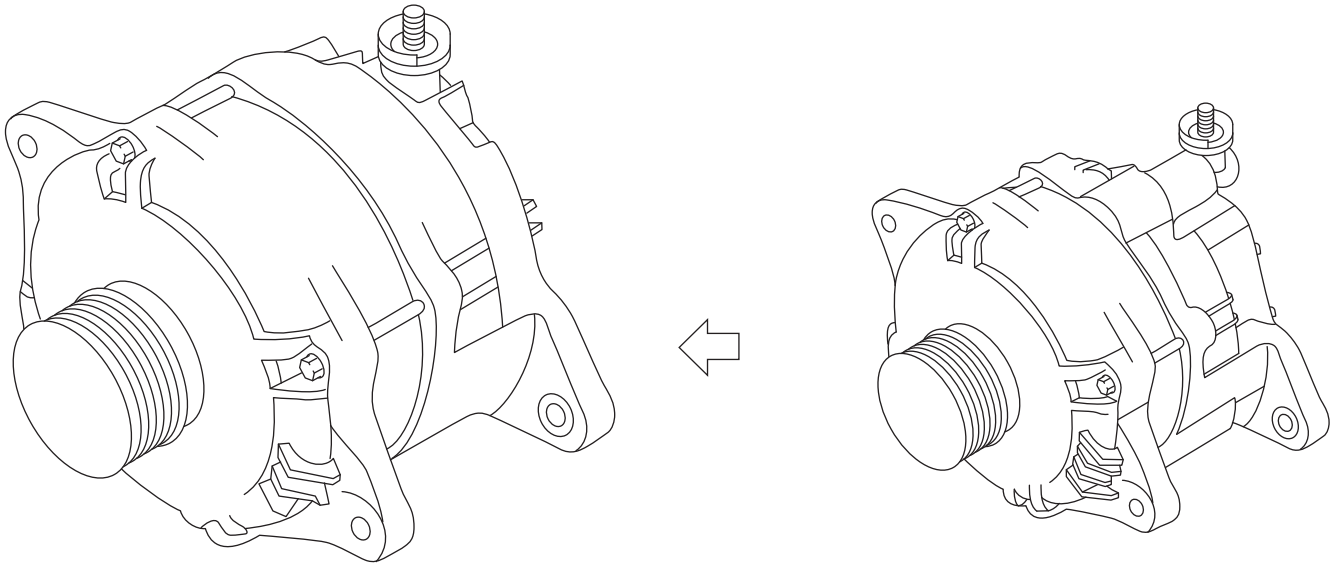
SILFR6C11
(Octagon rectangular chip type)
New model

ILFR6B
(Round chip type)
Existing model

FU-04870

12.GENERATOR

To improve actual fuel economy, power generation capacity has been increased.



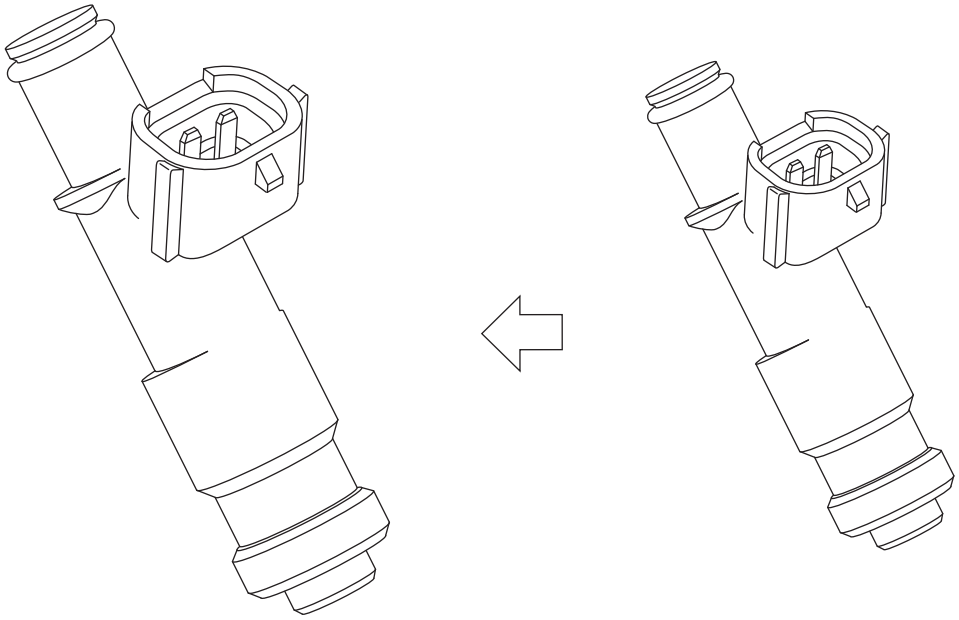
130A
New model

110A
Existing model

FU-04871

13.INJECTOR

The spray amount has been increased for the increased displacement.
The color has been changed to prevent wrong assembly. (From brown to light green)



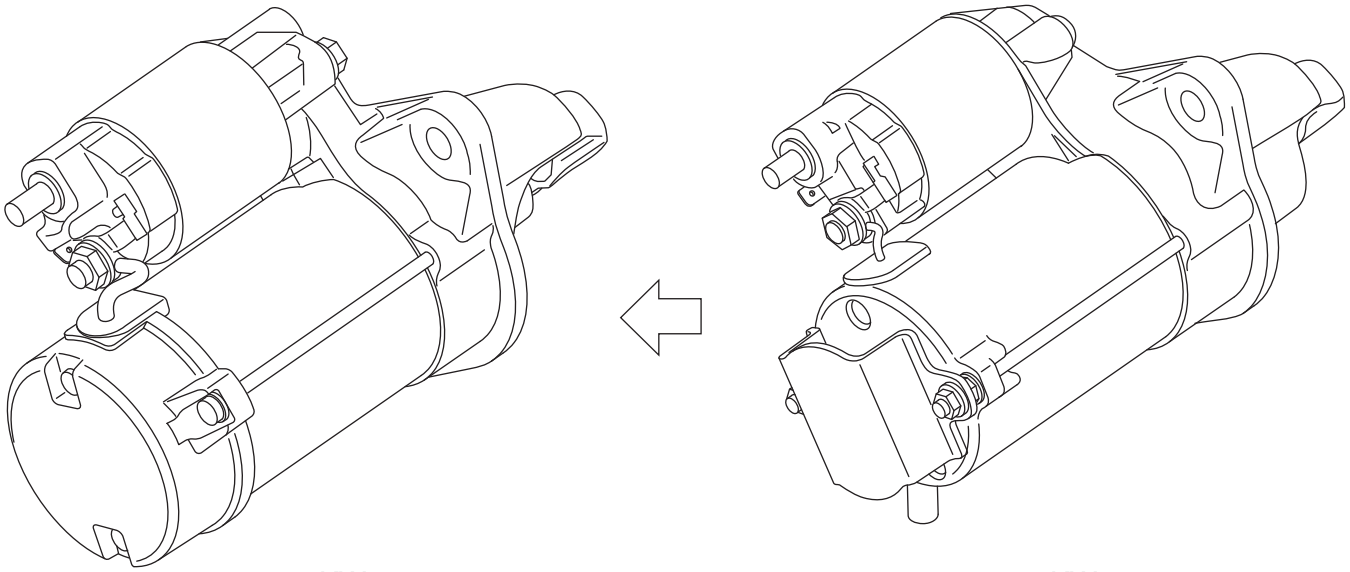
Light green
New model

Brown
Existing model

FU-04872

14.STARTER

The starter output has been increased for the increased displacement.



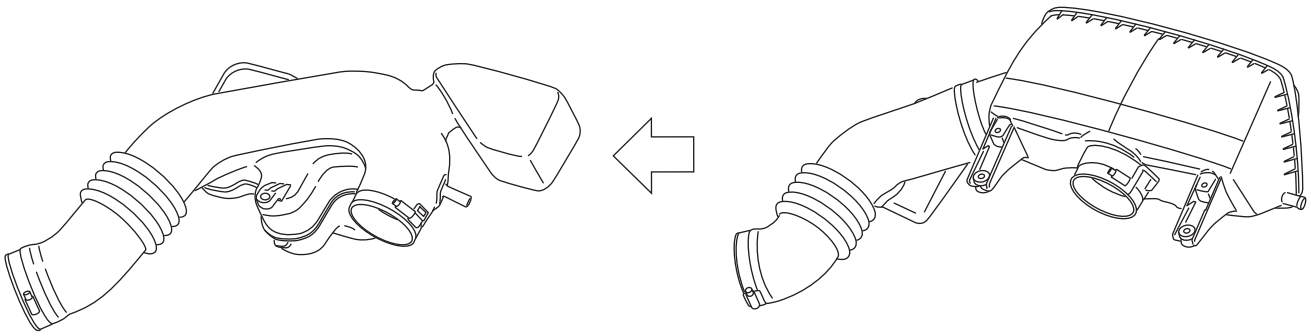
1.47KW
New model

1.4KW
Existing model

FU-04877

15.AIR INTAKE

To improve performance, the intake shape has been modified.



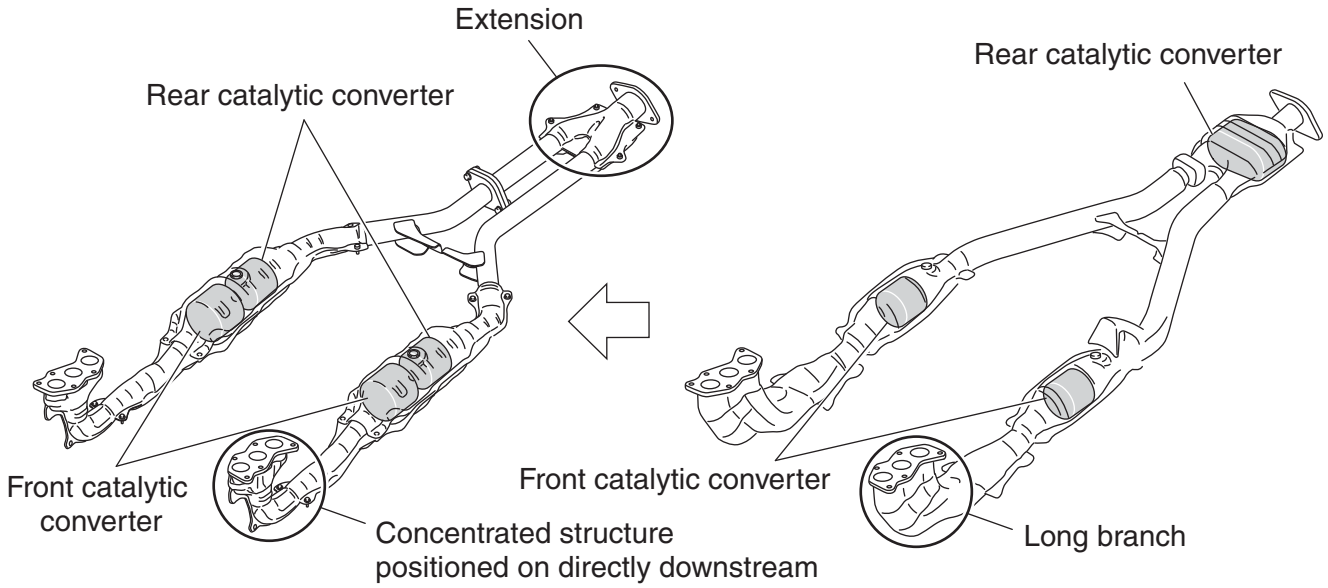
New Model

Existing model

FU-04878

16.EXHAUST

- To improve the exhaust gas purification performance, the concentrated structure positioned on directly downstream of the port has been adopted.
- To improve the exhaust gas purification performance, the rear catalytic converter has been separated into the right and left parts and moved to immediately behind the front catalytic converter.
- To improve performance, the dual pipe portion has been extended.



FU-04879

3.TRANSMISSION

3-1 Lineartronic™

A: GENERAL DESCRIPTION

As a next generation automatic transmission replacing existing automatic transmission, Lineartronic™ has been newly developed.

The vehicle with the Lineartronic™ combines a torque converter with lockup and a continuously variable automatic transmission system with chain and pulleys, which offers a wider ratio coverage than conventional automatic transmission and thus improves the drivability and fuel economy. The use of the lockup type torque converter contributes to the comfort in vehicle start due to addition of a creep phenomenon and the fuel economy improvement due to expansion of the lockup range.

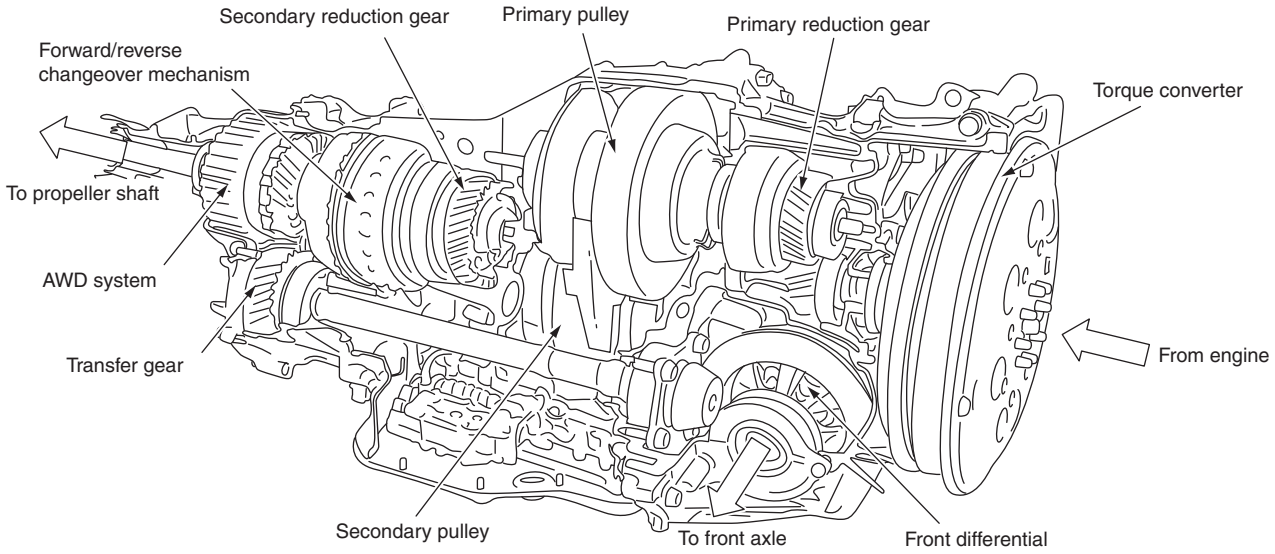
- For the forward/reverse changeover, single pinion planetary gears and a hydraulic multiple-disc clutch are combined. Besides, the Lineartronic™ locates the forward/reverse changeover mechanism downstream the secondary pulley, which is located before the primary pulley in a typical CVT.
- The oil pump secures a sufficient flow rate by using a separate shaft that rotates at a higher rotation speed than the engine shaft by means of a sprocket & chain mechanism.
- For the AWD system, an active torque split AWD is adopted.
- The following environment support technologies are adopted to achieve a top-in-the-class fuel economy.
  (1) Optimization of chain clamping force:
  This reduces any excessive pulley pressure and thus restricts the resultant chain friction and oil pump loss, by precisely controlling the input torque, which leads to improved transmission efficiency.
  (2) Low speed lockup control:
  This significantly expands the full lockup range of the torque converter, for which conventional automatic transmission required a 40 km/h minimum vehicle speed, and prevents any torque converter loss, contributing to fuel economy improvement in a wider vehicle speed range.

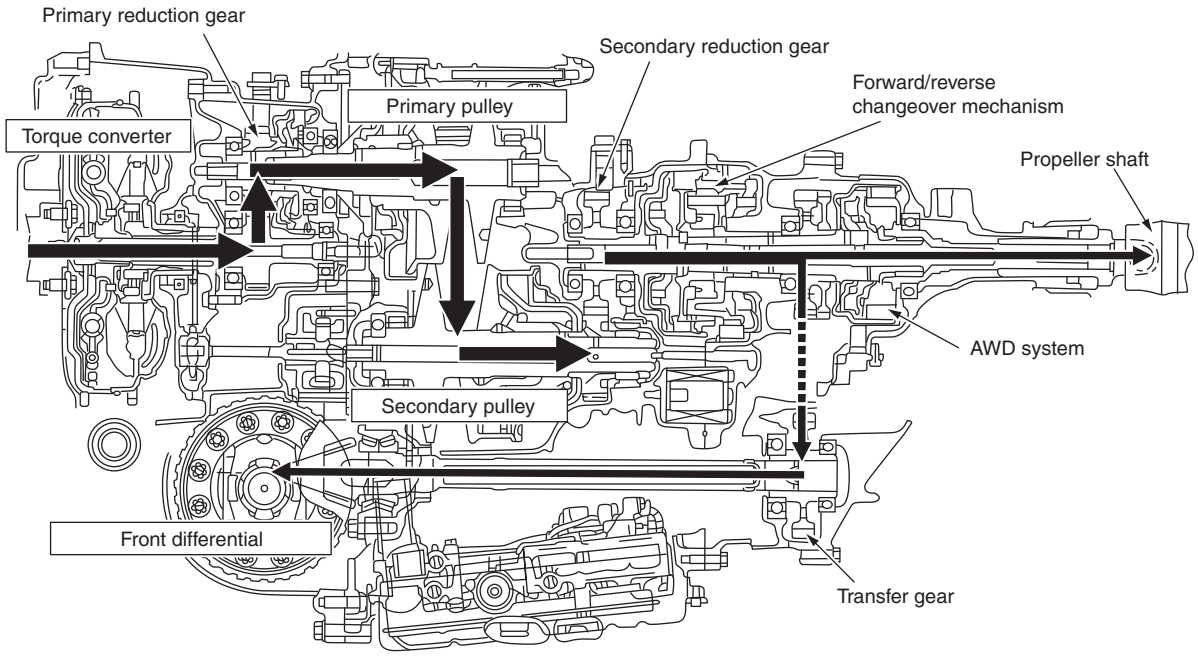
B: SPECIFICATIONS

Vehicle				Sedan	OUTBACK
Engine				2.5 L SOHC Non-turbo	
Driving method				Full-time AWD	
Transmission type				TR690JHAAA	TR690JHABA
Torque converter	Stall torque ratio			2.07	
	Nominal diameter mm (in)			ϕ236 (9.3)	
	Stalling speed rpm			2400 — 3100	
Transmission	Type			Chain type continuously variable automatic transmission	
	Forward/reverse changeover mechanism			Single pinion type planetary gears + hydraulic multiple disc clutch	
	Select position			P: Parking (transmission in neutral, output shaft stationery, engine startable)	
				R: Reverse	
				N: Neutral (transmission in neutral, engine startable)	
				D: Drive (forward, continuously variable automatic speed change)	
				M: Manual (forward, manual 6 speeds)	
	Trans-mission ratio	Forward D range		3.525 — 0.558	
		Forward M range	1st	3.525	
			2nd	2.238	
			3rd	1.641	
			4th	1.194	
			5th	0.850	
			6th	0.611	
		Rev.		2.358	
	Final reduction gear ratio			3.700	3.900
	Oil pump	Type		Internal contact tooth profile gear pump	
		Driving method		Driven by engine	
	AWD system			Electronically-controlled wet type multiple disc hydraulic clutch	
	Transmission oil		Oil in use	SUBARU CVT OIL FOR LINEARTRONIC	
			Oil amount ℓ	Approx. 12.5	
	Front differential oil		Oil in use	Subaru gear oil Extra S 75W-90 (GL-5)	
			Oil amount ℓ	1.4	

C: MAIN STRUCTURE

The driving power, which is transmitted from the engine via the torque converter → primary reduction gear → primary pulley → secondary pulley → secondary reduction gear → forward/reverse changeover mechanism, is distributed to the front and rear axles by the active torque split AWD system.
The front driving power is output to the front axle via the transfer gear → front differential.
The rear driving power is output to the propeller shaft.

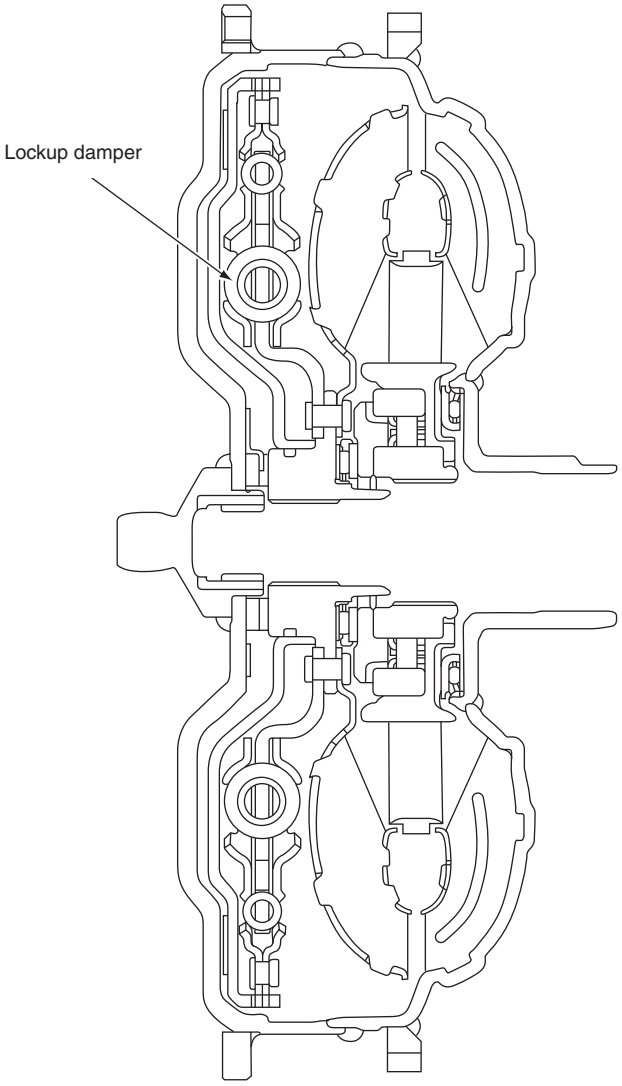




AT-05336

D: TORQUE CONVERTER

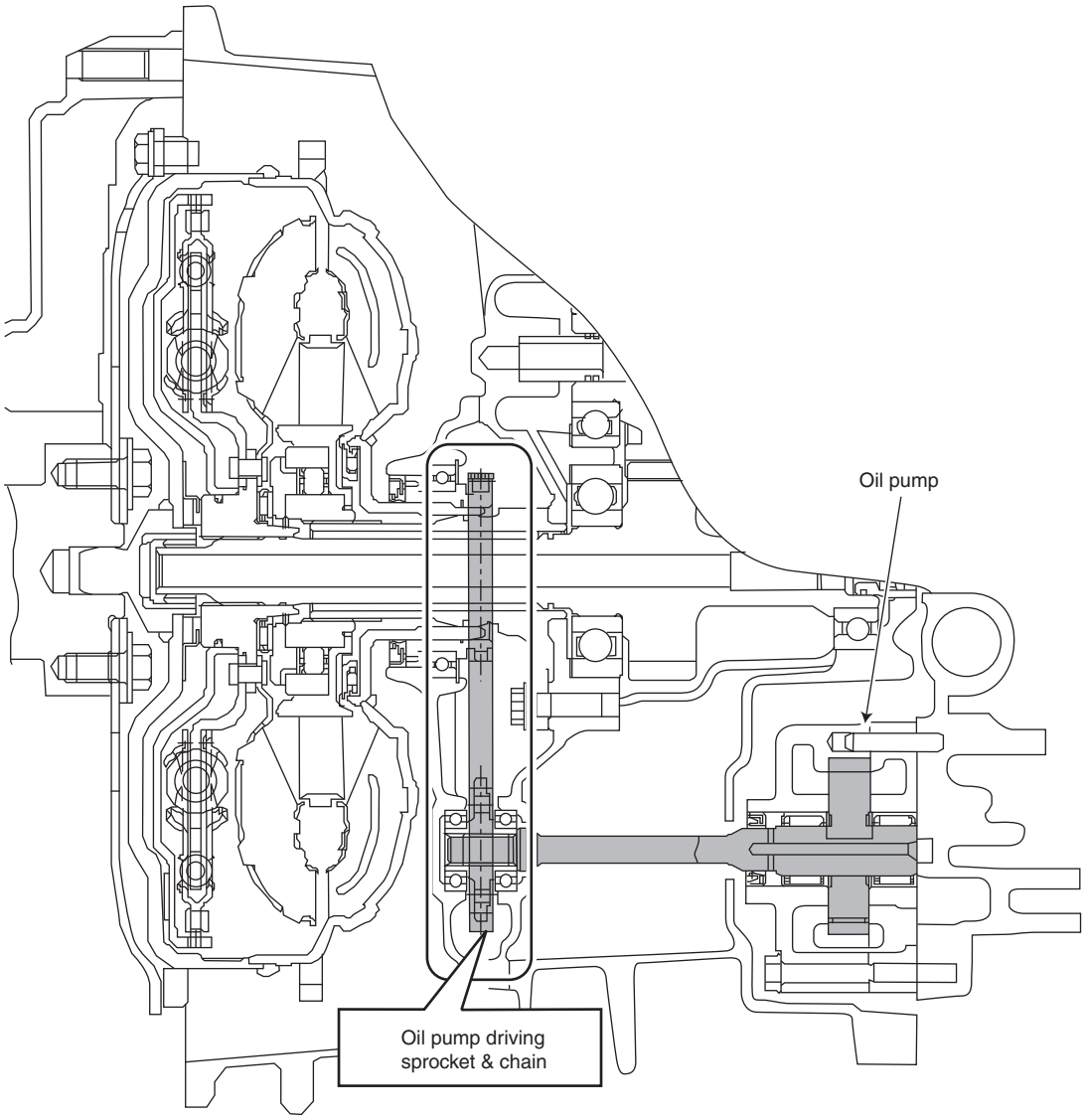
The lockup damper specially designed for Lineartronic™ has improved the damping performance for engine torque fluctuations and expanded the lockup range to a lower vehicle speed than that of conventional automatic transmission.



AT-05337

E: OIL PUMP

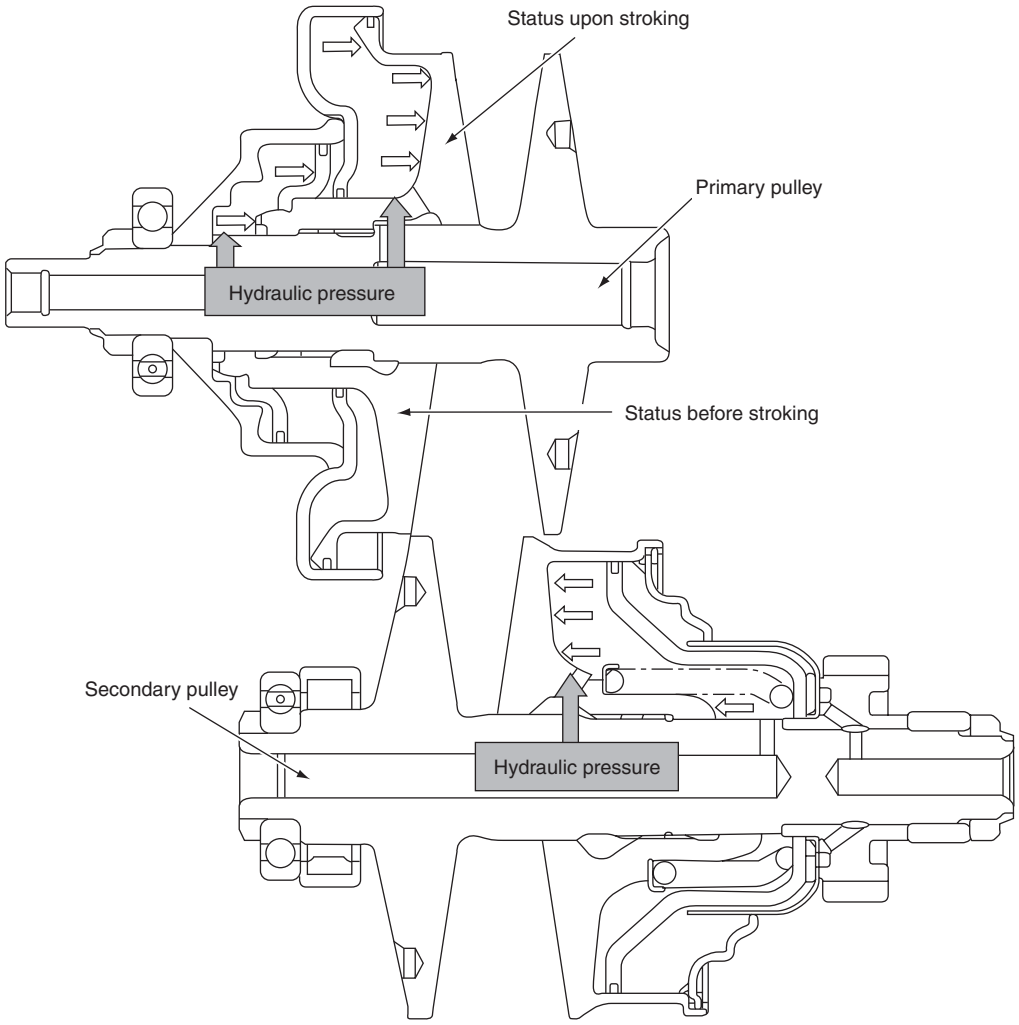
To reduce pumping loss, a compact internal tooth gear pump is adopted. Sufficient flow rate is secured by using a separate shaft that rotates at a higher rotation speed than the engine shaft by means of a sprocket & chain mechanism.



AT-05031

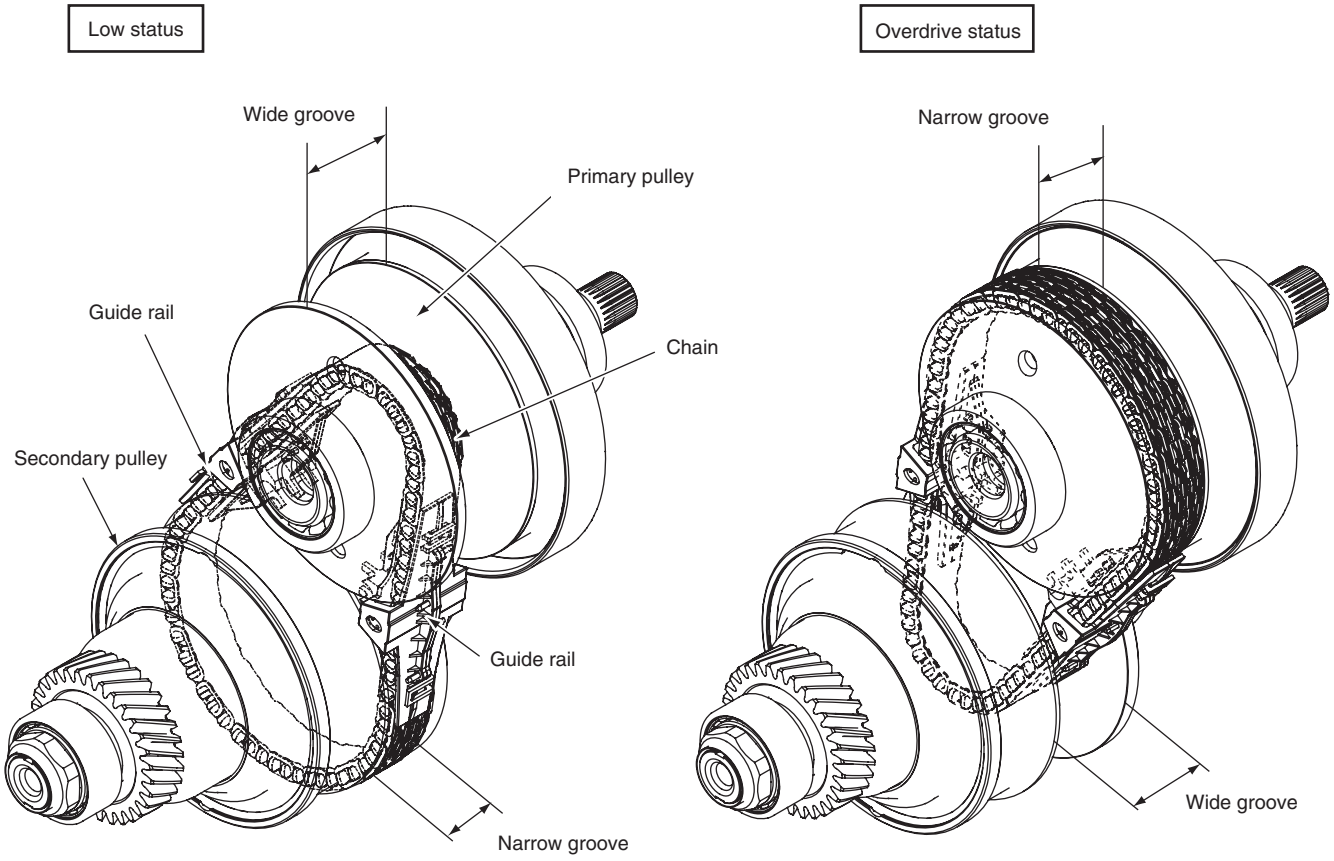
F: PULLEY & CHAIN

- The system consists of a primary pulley, secondary pulley, and chain.
- It presses the chain to the pulleys by the pressure generated from the hydraulic pressure chambers of the pulleys and thus generates friction force between the pulley banks and the chain to transmit the power.



AT-05338

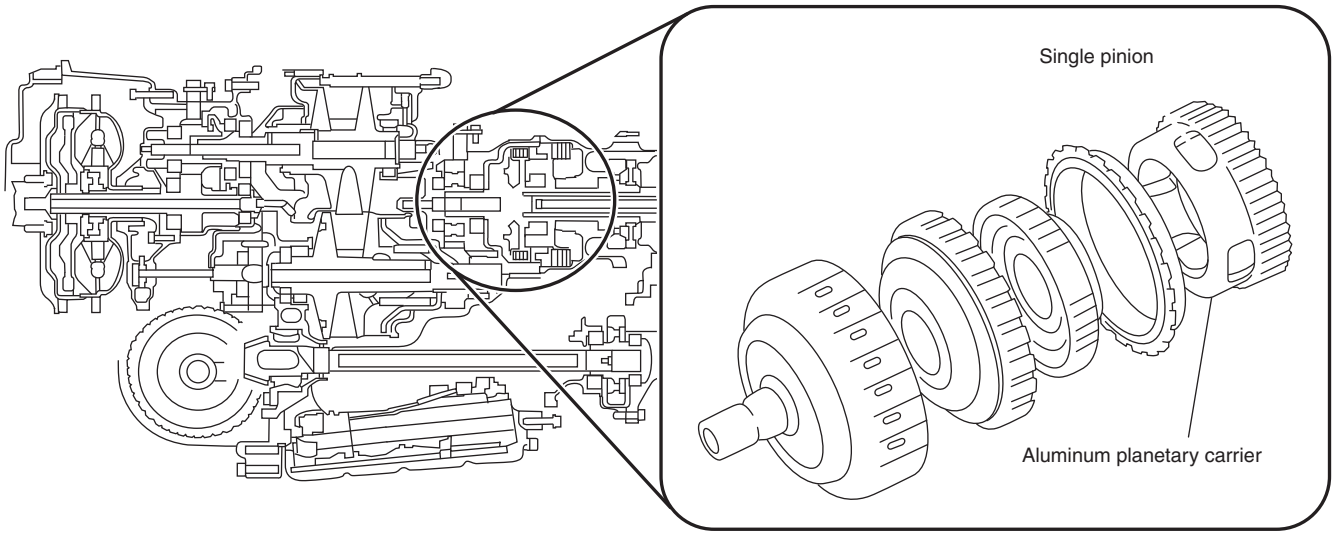
- It achieves continuously variable speed change by controlling the hydraulic pressures of the primary and secondary pulleys and thus changing the pulley widths. In addition, the larger transmission ratio intervals support both the drivability and the fuel economy.
- A guide rail is provided to both the tension side and the releasing side, which reduce the string vibration of the chain and resultant noises.



AT-05339

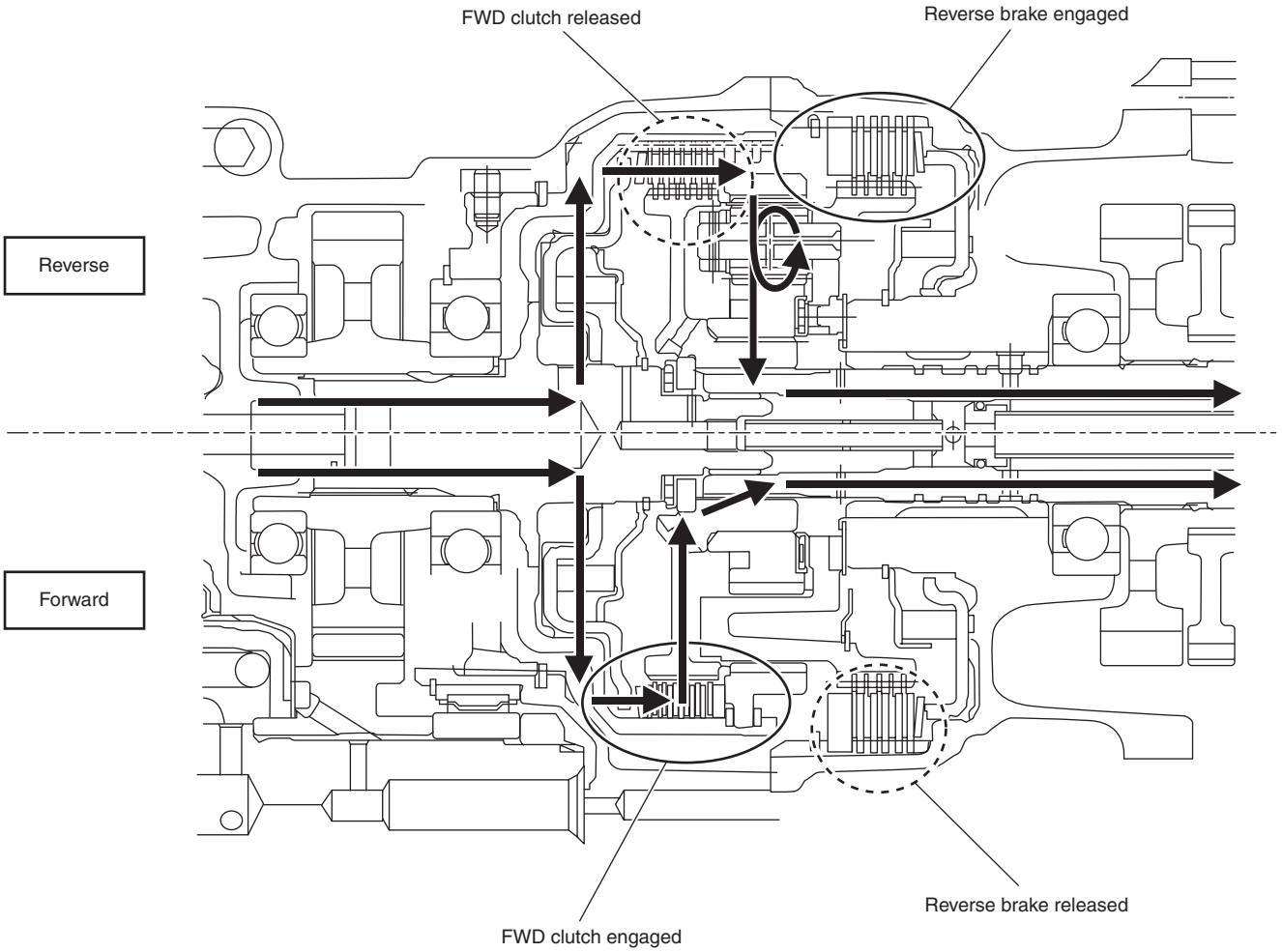
G: FORWARD/REVERSE CHANGEOVER MECHANISM

The mechanism is located between the pulley and the AWD system.
The entire structure is composed of an FWD clutch, a reverse brake, single pinion planetary gears, and an aluminum planetary carrier.



AT-05038

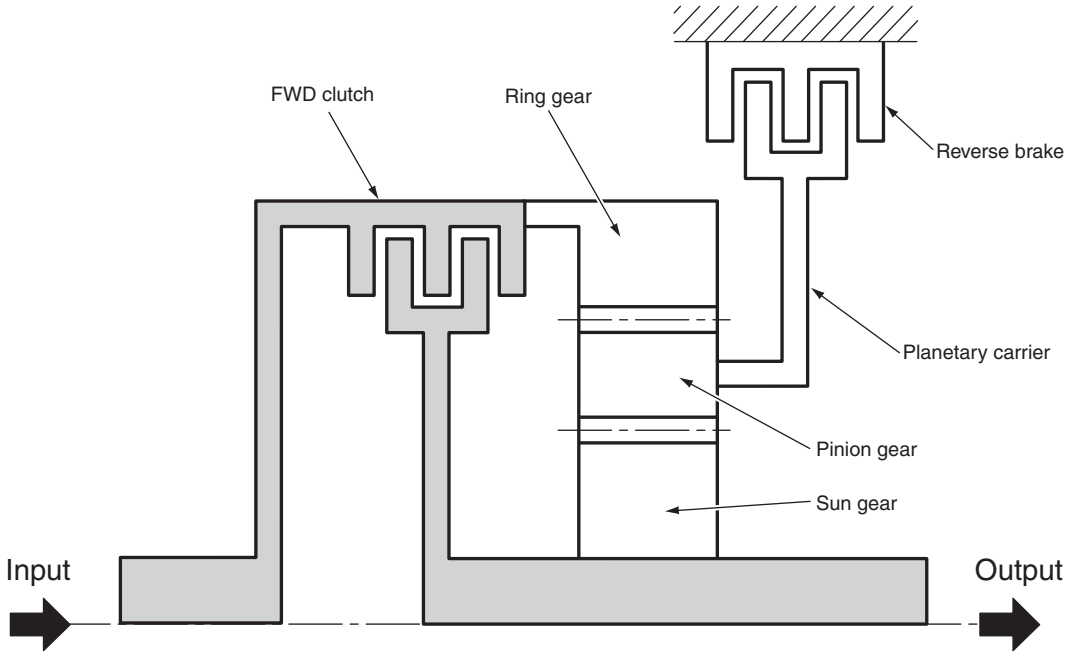
1. FORWARD/REVERSE POWER TRANSMISSION

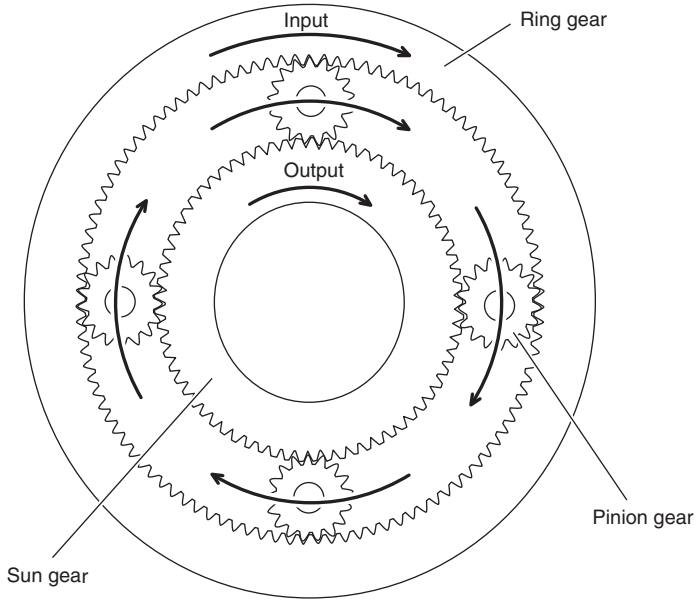


AT-05041

2. ADVANCING

The gears rotate together as the result of the engagement of FWD clutch and the release of reverse brake, making the torque input from the ring gear rotate the sun gear directly as the output.

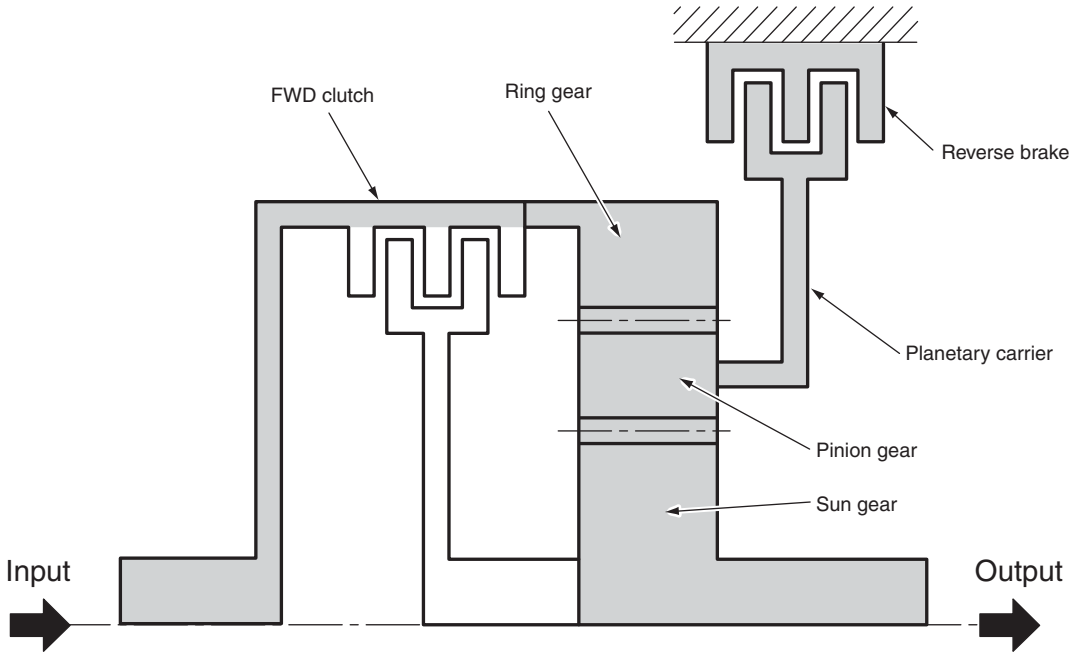


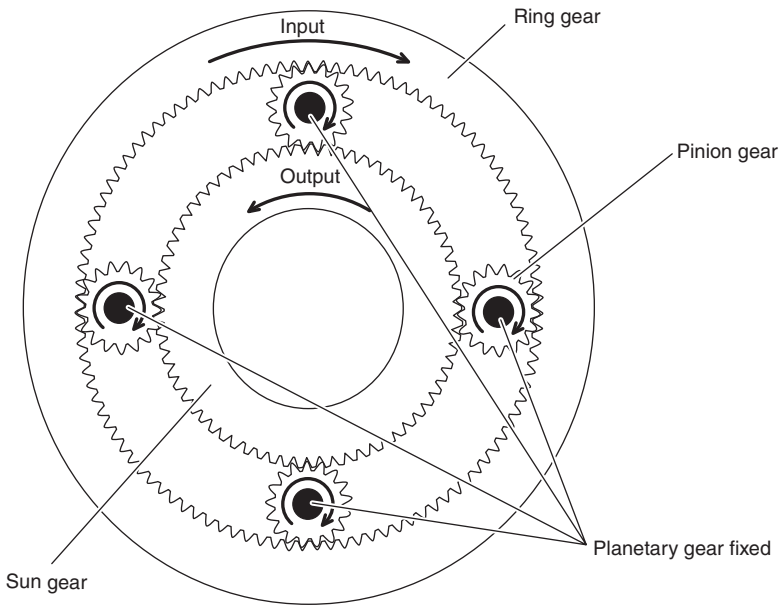


AT-05342

3. REVERSING

The planetary carrier is fixed as the result of the release of FWD clutch and the engagement of reverse brake, making the torque input from the ring gear rotate the sun gear in the reverse direction due to the function of pinion gears.

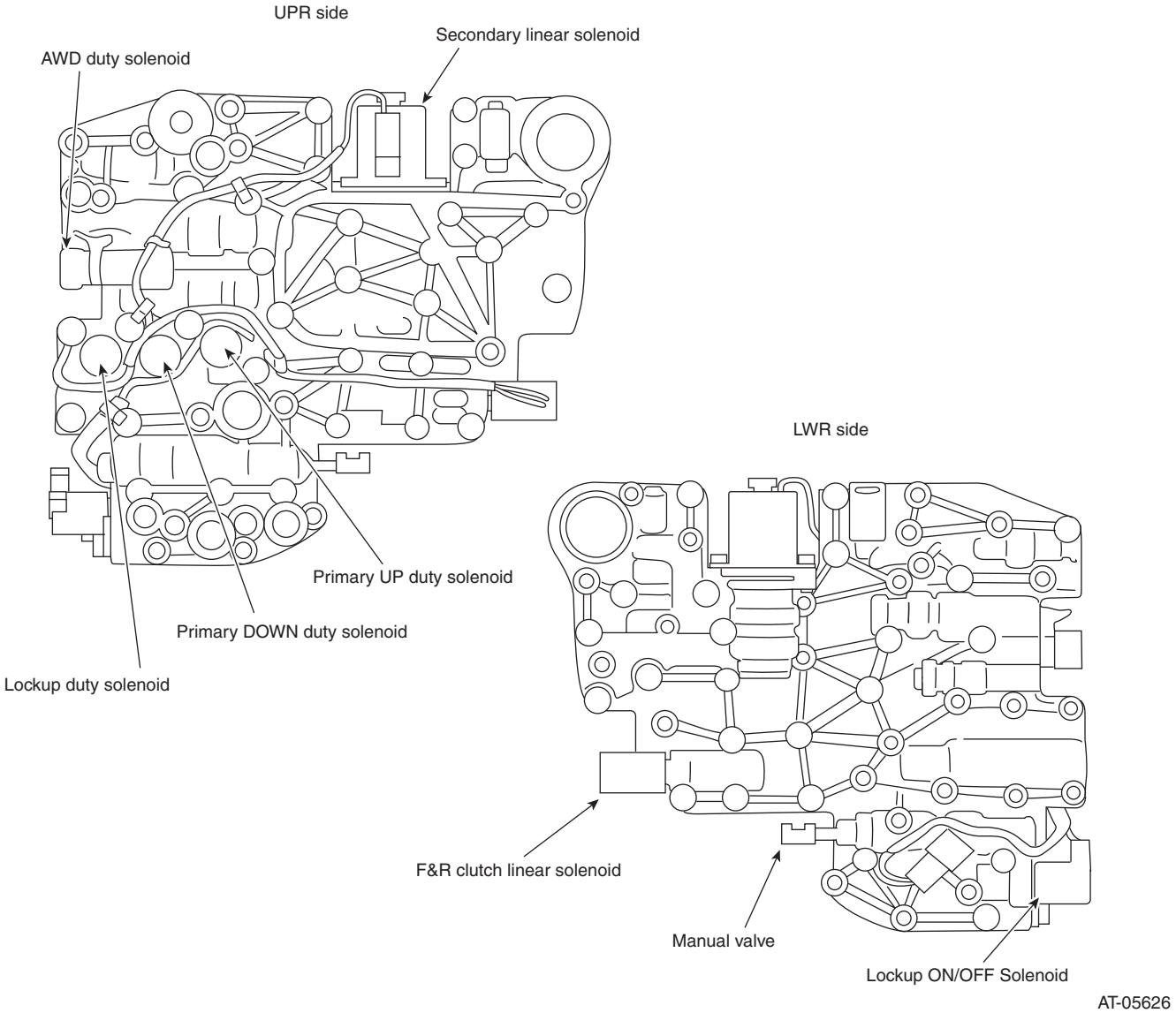




AT-05343

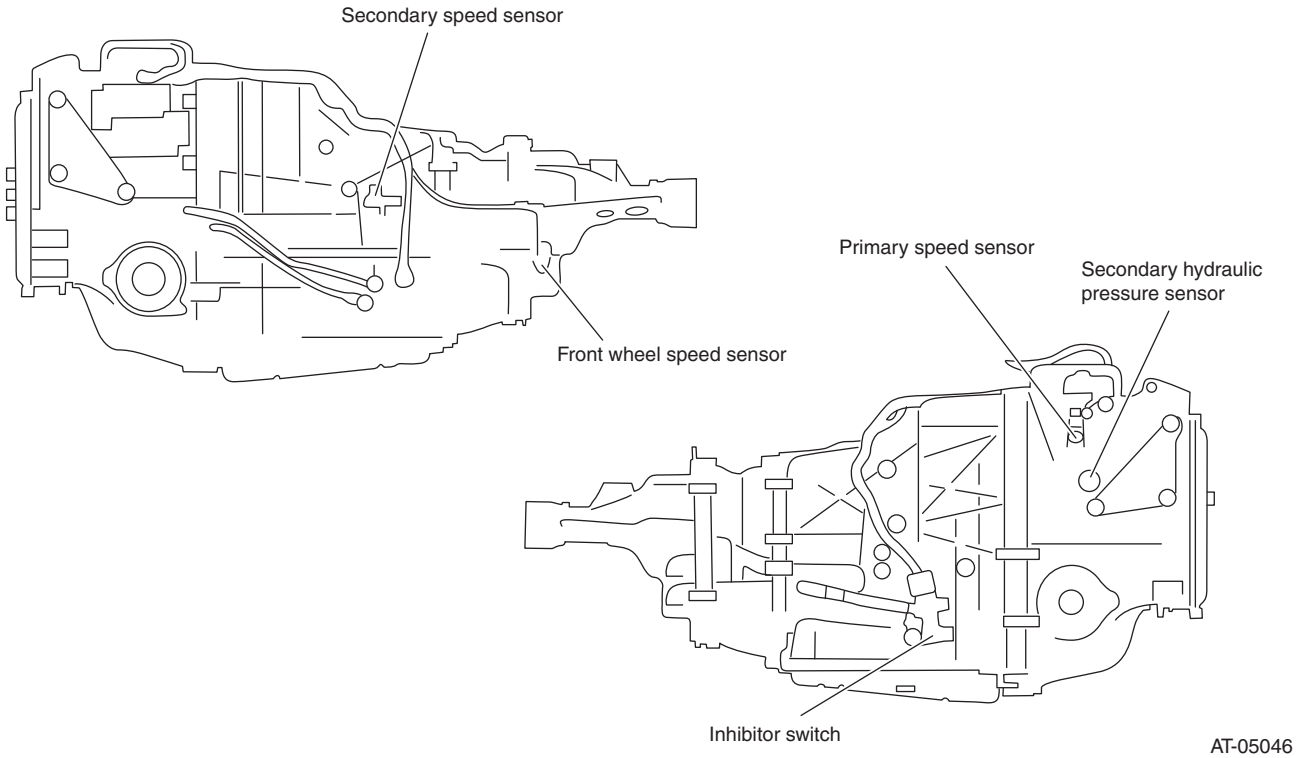
H: CONTROL VALVE

No.		Contents	Remarks
1	Torque converter lockup control	Lockup ON/OFF solenoid	Changes over the supply pressure to the torque converter between the lubrication pressure and the lockup pressure.
2		Lockup duty solenoid	Adjusts the torque converter lockup pressure.
3	Speed change control	Primary UP duty solenoid	Performs an upshift.
4		Primary DOWN duty solenoid	Performs a downshift.
5	F & R clutch pressure control	F & R clutch linear solenoid	Adjusts the F & R clutch pressure.
6		Manual valve	Changes over the forward/reverse travel directions.
7	Transfer pressure control	AWD duty solenoid	Adjusts the transfer clutch pressure.
8	Line pressure control	Secondary linear solenoid	Adjusts the line pressure.

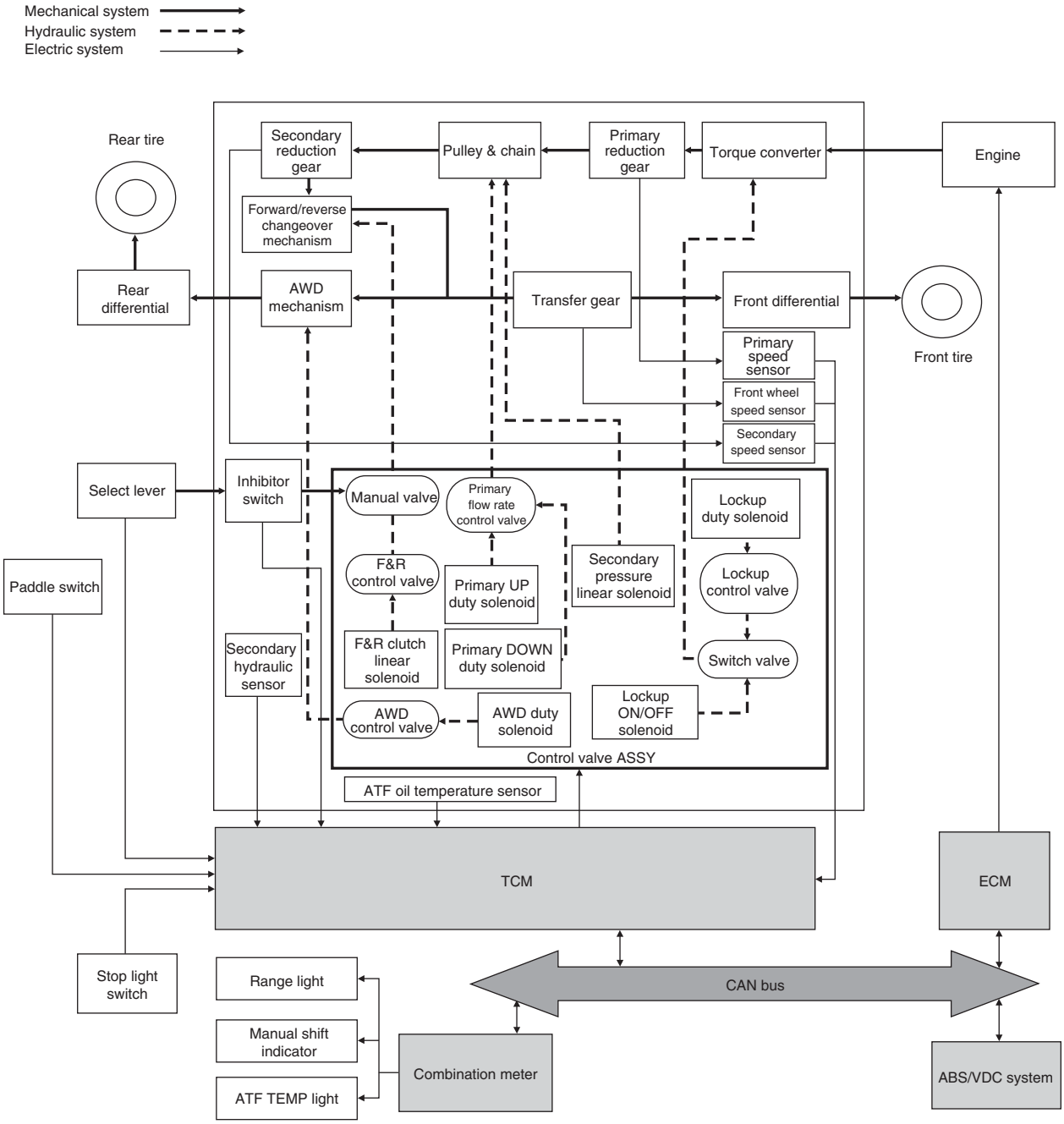


I: SENSORS AND SWITCHES

No.	Contents	Remarks	Position
1	Secondary hydraulic pressure sensor	Detects the pressure of the secondary hydraulic circuit.	Center on right side of converter case
2	Front wheel speed sensor	Detects the front wheel speed.	Bottom of extension case
3	Secondary speed sensor	Detects the secondary pulley rotation speed.	Center of left side of transmission case
4	Primary speed sensor	Detects the primary pulley rotation speed.	Upper right of converter case
5	ATF oil temperature sensor	Detects the ATF temperature.	In the harness for the control valve
6	Inhibitor switch	• Enables engine start when the select lever is set at P or N. • Detects the shift position.	Right side of transmission case



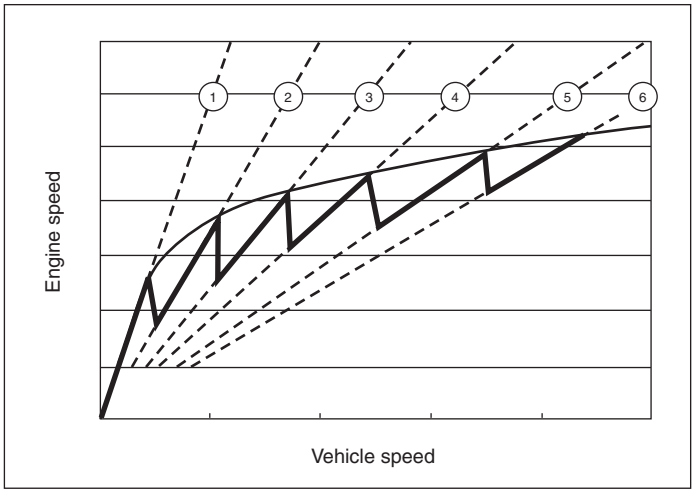
J: ELECTRONIC HYDRAULIC CONTROL SYSTEM DIAGRAM



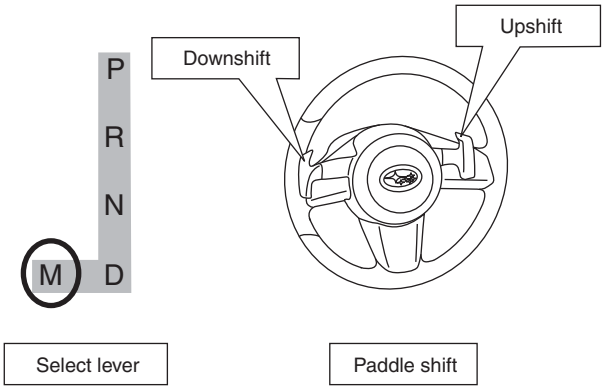
AT-05341

1. MANUAL SHIFT CONTROL

The manual mode of the Lineartronic™ provides 6 speed ranges.
As the result of the thorough the repeated driving tests which simulates various road conditions with an intent of providing driving feel and traction power controllability equivalent to manual transmission, the 6 speed configuration has been adopted as in manual transmission. This creates an easy-to-use manual shifting which, for example, can provide appropriate engine brake effect or acceleration as intended just with one shift down operation. (Example: With a 7-speed or 8-speed system, the driver must perform two or three downshift operations to obtain an intended traction power because the gear ratio steps are smaller)



Speed Change Image



AT-05547

(1) Normal manual shift mode
In the D range, tilting the select lever to the manual side triggers the manual mode. In the manual mode, the inherently continuous speed change range of Lineartronic™ is divided into 6 gear ratios to allow the driver to select a desirable gear by operating the paddle switch on the steering wheel.
(2) Temporary manual shift mode
When the paddle switch integrated in the steering wheel is operated during a travel at D range, the system enters the manual mode temporarily. This mode is cancelled automatically and the normal D range control is restored if no further paddle switch operation takes place and the accelerator pedal is depressed.
(3) Manual 2nd vehicle start mode
During a vehicle stop, the manual 2nd gear vehicle start mode can be selected by tilting the select lever to the manual side and operating the paddle switch +. This mode allows a vehicle start with a traction power equivalent to the 2nd speed range, making it easy to control the traction on a slippery road.

2. UPHILL/DOWN HILL CONTROL

This control helps the driver running on a uphill and downhill by estimating the road gradient during driving, then optimizing the traction and the engine brake force.

K: ON-BOARD DIAGNOSIS SYSTEM

The on-board diagnosis system detects a trouble and generates/displays a code corresponding to the trouble point. The AT OIL TEMP light on the combination meter flashes to indicate the occurrence of a trouble or malfunction.

The AT OIL TEMP light flashes as the result of trouble detection by the control module, the diagnosis trouble code (DTC) corresponding to that trouble is stored in the control module.

Before checking a DTC, you must connect the Subaru Select Monitor III (SSM III) to the data link connector.

To facilitate various functions and diagnosis operations, a SSM III-ready diagnosis system is adopted.

The on-board diagnosis system detects troubles in the electric system or abnormal system conditions as listed below.

Lockup duty solenoid	AWD duty solenoid
Lockup ON/OFF solenoid	ATF oil temperature sensor
Primary speed sensor	Inhibitor switch
Secondary speed sensor	Manual switch
Front wheel speed sensor	Speed change control function
Secondary hydraulic pressure sensor	High-speed CAN communication
Secondary linear solenoid	Self-shut relay
F & R clutch linear solenoid	Brake switch
Primary UP duty solenoid	AT shift lock solenoid
Primary DOWN duty solenoid	—

L: FAIL-SAFE FUNCTION

The Lineartronic™ performs diagnoses to the following devices in order to secure safety and minimum drivability upon a trouble.
If a trouble is detected, it makes the AT OIL TEMP light flash at 2 Hz cycles and allows the user to retrieve DTC by SSM III and identify the trouble point easily.

1. PRIMARY SPEED SENSOR

If a trouble occurs with the primary speed sensor, the Lineartronic™ continues the control according to the engine speed value during a lockup or the secondary speed sensor value when the lockup is OFF.

2. SECONDARY SPEED SENSOR

If a trouble occurs with the secondary speed sensor, the Lineartronic™ continues the control according to the front wheel speed sensor value.

3. FRONT WHEEL SPEED SENSOR

If a trouble occurs with the front speed sensor, the Lineartronic™ continues the control according to the secondary speed sensor value.

4. SECONDARY HYDRAULIC PRESSURE SENSOR

If a trouble occurs with the secondary hydraulic pressure sensor, the Lineartronic™ stops the pressure feedback control and performs an open loop control.

5. SECONDARY LINEAR SOLENOID

If a trouble occurs with the secondary linear solenoid, the Lineartronic™ stops the solenoid driving current supply, providing a mechanical maximum hydraulic pressure for the secondary pressure.

6. F & R CLUTCH LINEAR SOLENOID

If a trouble occurs with the F & R clutch linear solenoid, the Lineartronic™ stops the solenoid driving current supply, providing a maximum hydraulic pressure corresponding to the secondary pressure for the F & R clutch pressure.

7. PRIMARY UP AND DUTY SOLENOIDS

If a trouble occurs with the primary UP or DOWN duty solenoid, the Lineartronic™ stops the driving control for each solenoid sequentially to provide a speed change ratio that allows vehicle travel at minimum.

8. LOCKUP DUTY SOLENOID

If a trouble occurs with the lockup duty solenoid, the Lineartronic™ stops the solenoid driving control and inhibits any lockup.

9. LOCKUP ON/OFF SOLENOID

If a trouble occurs with the lockup ON/OFF solenoid, the Lineartronic™ stops the solenoid driving control and inhibits any lockup.

10.AWD DUTY SOLENOID

If a trouble occurs with the AWD duty solenoid, the Lineartronic™ stops the solenoid driving control and creates a front wheel drive status.

11.ATF OIL TEMPERATURE SENSOR

If a trouble occurs with the ATF oil temperature sensor, the Lineartronic™ continues the control by assuming the specified oil temperature.

12.INHIBITOR SWITCH

If no input or multiple input occur consecutively in the TCM input circuit, the Lineartronic™ continues the control by selecting a range according to the following priority order.
D → R → N → P

13.MANUAL SWITCH

If an ON failure is detected for the manual switch, the Lineartronic™ inhibits the manual mode.

14.HIGH-SPEED CAN COMMUNICATION

The Lineartronic™ exchanges information with various control modules including the engine control system via. the high-speed CAN communication and constantly checks the reliability of communication by monitoring the incoming information mutually. If TCM detects a CAN communication error in the CAN communication line or any system, it continues the control by replacing the data necessary for transmission control with the appropriate backup values.

15.SELF-SHUT RELAY

If the TCM self-shut relay is not activated due to a malfunction even when the ignition switch is ON, the transmission falls in a no-control state because it cannot supply power to each solenoid. Even in this case, TCM makes the AT OIL TEMP light flash via the CAN communication to alert the driver to the malfunction.

M: SSM III SUPPORT CONTROLS

The Lineartronic™ adopts the following new convenience functions in the SSM III "AT related learning and inspection mode" to facilitate the service work.

1. AWD ON/OFF CHANGEOVER FUNCTION

The AWD fuse in the fuse box, which was used to disable the AWD mechanism, has been abolished and the same function is now available from SSM III.

2. SIMPLIFIED LEARNING CONTROL

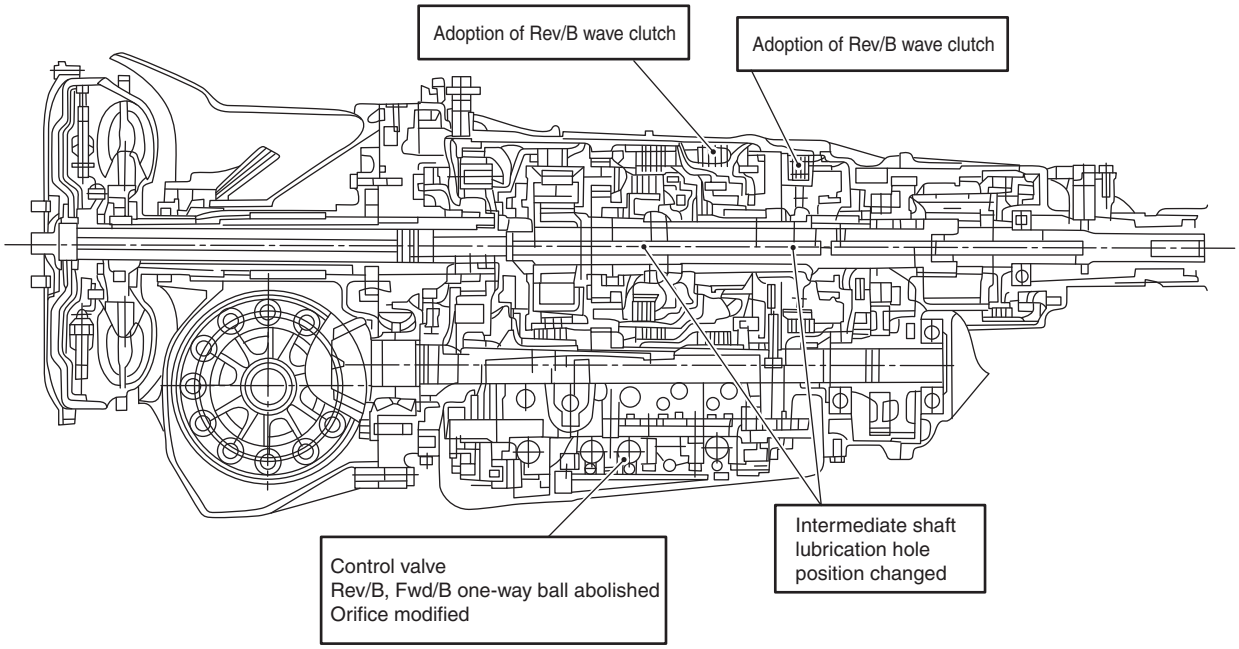
The solenoid learning promotion process carried out before delivery is now executable on-board in the market by using SSM III as is the case with the conventional 4AT and 5AT transmissions. Because of this, an equivalent quality level to that attained at the factory can be secured even after the transmission assembly or TCM is replaced in the market.

3. REAR DIFFERENTIAL INSPECTION MODE

To prepare for a possible gap in the final gear ratio between the front and rear wheels, which may occur inadvertently after replacement of the transmission assembly or rear differential assembly in the market, a new on-vehicle inspection mode for the front and rear wheel final gear ratios is adopted. Once a non-proper final gear ratio is detected, the Lineartronic™ controls the vehicle in the FF mode and makes the AWD light flash to alert the driver until it recognizes that a proper part is installed.

3-2 5AT

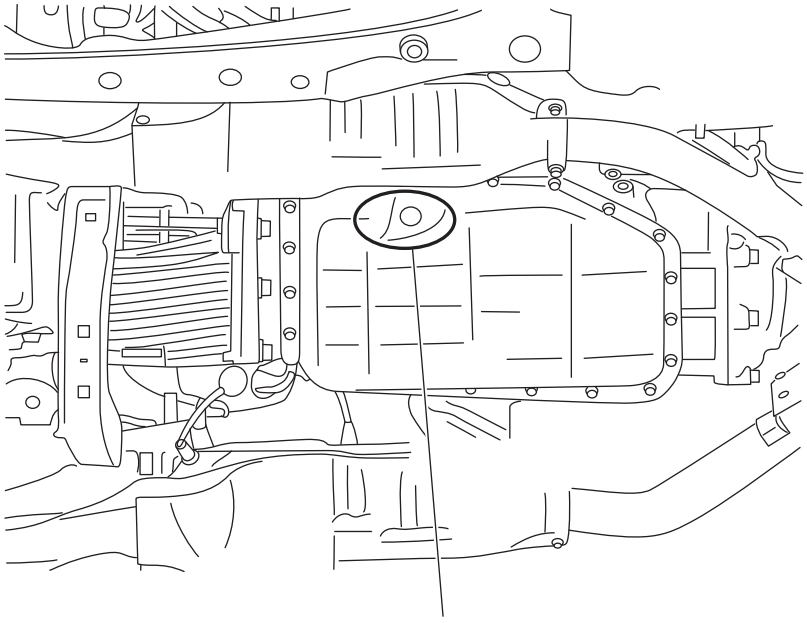
- The reverse brake and forward brake have adopted wave clutches in order to improve the fuel economy.
- The positions of the intermediate shaft lubrication holes have been changed to improve the fuel economy.



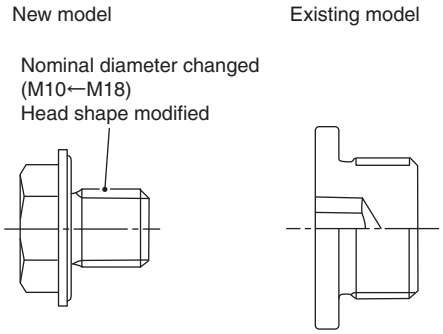
AT-05576

- The pitching stopper has been abolished for the weight reduction.
- The mount has been changed to support the cradle structure.

• In order to improve the workability of ATF draining, the position and size of the drain plug has been changed.



Oil pan drain plug position and size modified

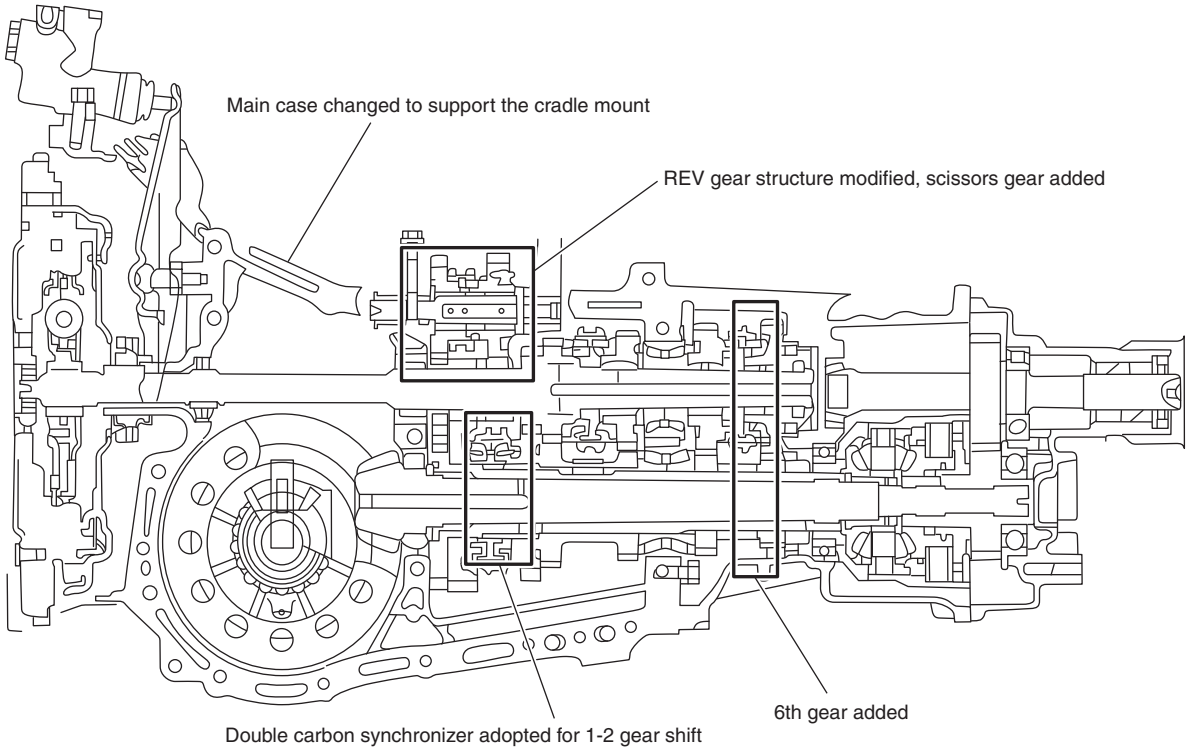


AT-05541

3-3 6MT

A: GENERAL DESCRIPTION

To the existing 5MT model, the 6th gear and the constant-engaging REV gear are installed without changing the overall length, realizing the new 6MT.



MT-02098

B: SPECIFICATIONS

Model	New model (standard vehicle height, 2.5L non-turbo)	New model (OUTBACK vehicle height, 2.5L non-turbo)	New model (standard vehicle height, 2.5L turbo)	Existing model (standard vehicle height, 2.5L turbo)
T/M	6MT			5MT
Shift mechanism	Cable type			Rod type
Type	TY756WCAAA	TY756WCABA	TY756WLAAA	TY758VWAAA
1st	3.454			3.166
2nd	1.947			1.882
3rd	1.296			1.296
4th	0.972			0.972
5th	0.825		0.780	0.738
6th	0.695		0.666	—
REV	3.636			3.333
Final gear ratio	4.111	4.444	4.111	3.900
REV mechanism	Constant-engaging (with scissors gear)			Selective-engaging

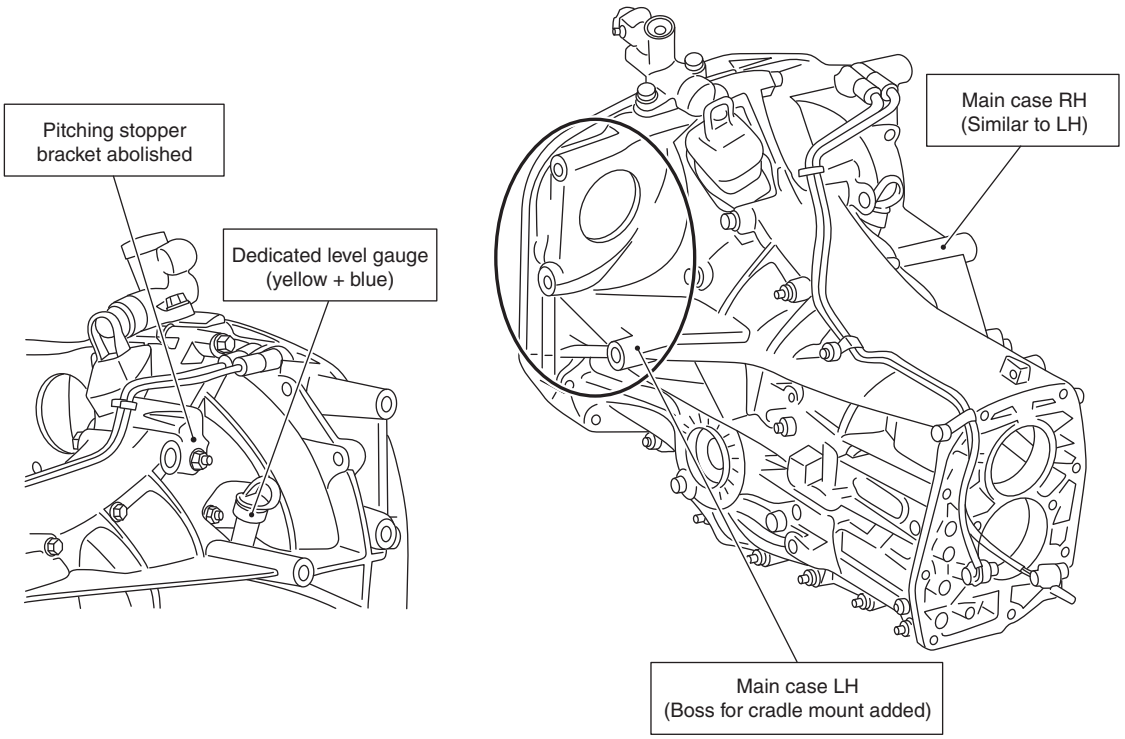
C: CONTENTS OF CHANGE

1. SUPPORTING CRADLE

- The mount bosses are added on both sides of the clutch housing to support the cradle structure.
- The pitching stopper is abolished, and the bracket is simplified.

2. OIL LEVEL GAUGE

The level gauge has been newly designed to meet the height change of the gauge seating surface due to the addition of the case stiffening rib. (Level gauge color: yellow + blue)



MT-02096

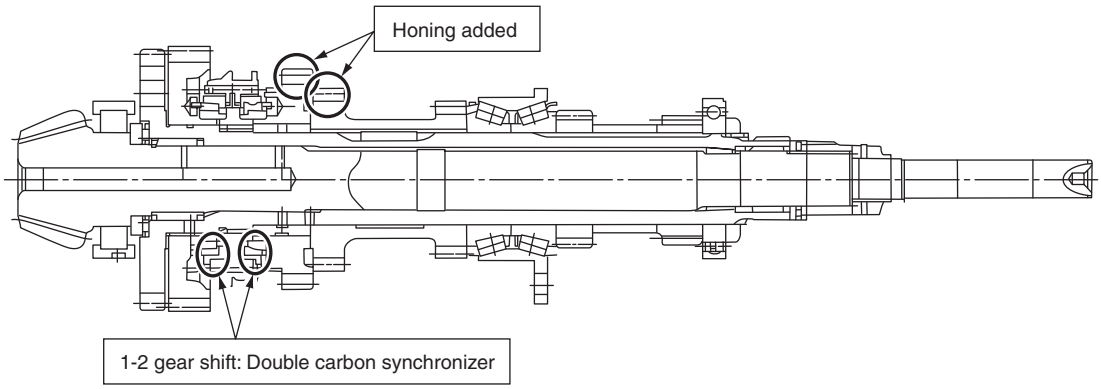
3. CHANGING MAIN SHIFT GEAR

To ensure the engine performance, the main shift gears have been changed.

Model	1st	2nd	3rd	4th	5th	6th	REV
New model (standard vehicle height, 2.5L non-turbo)	3.454	1.947	1.296	0.972	0.825	0.695	3.636
New model (OUTBACK vehicle height, 2.5L non-turbo)							
New model (standard vehicle height, 2.5L turbo)					0.780	0.666	

4. DOUBLE CARBON SYNCHRONIZER

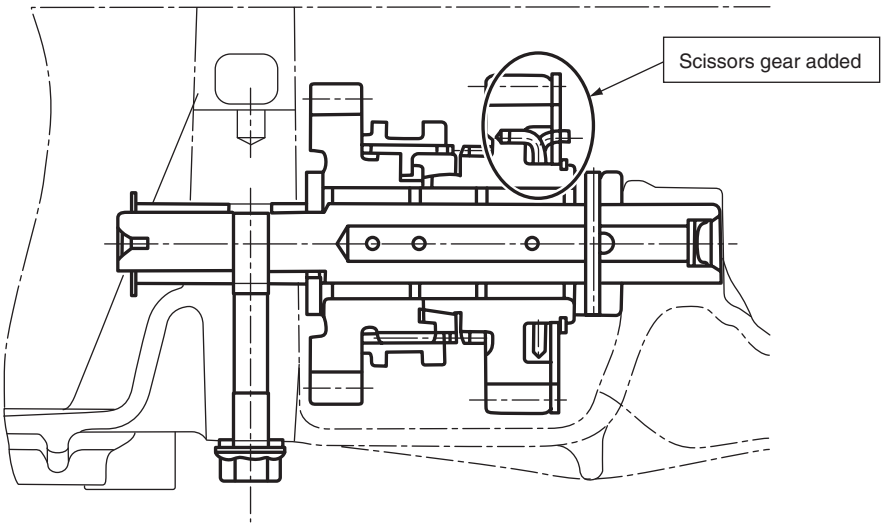
The Subaru's first double carbon synchronizers have been adopted for the 1-2 speed.



MT-02102

5. ESTABLISHING REV SCISSORS GEAR

To ensure the noise and vibratoin performance, the scissors gear has been established to the REV gear.



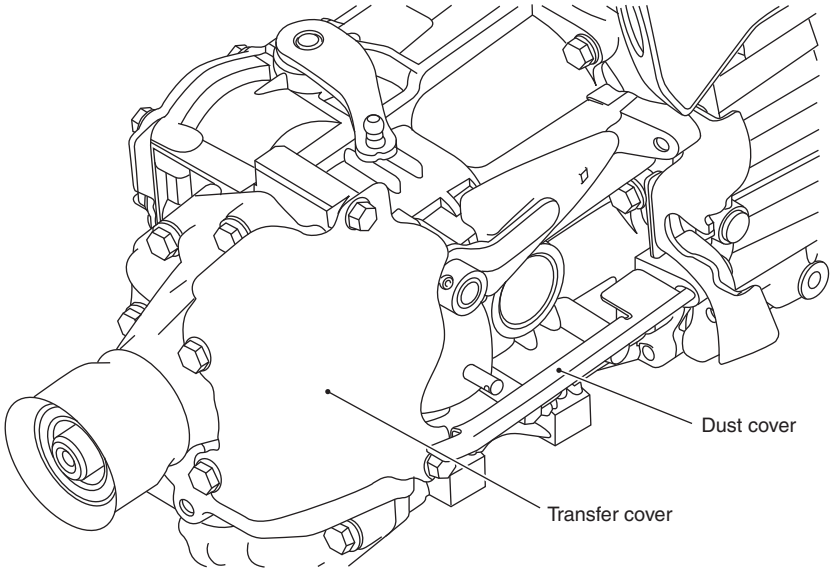
MT-02103

6. ADOPTING CABLE SHIFT TYPE

By adopting the cable-type gear shift, vibration reduction as well as shift feeling with both of smooth operation and click feeling have been realized.

7. TRANSFER COVER & DUST COVER

The extension cover has been adopted for the prevention of snow damage.



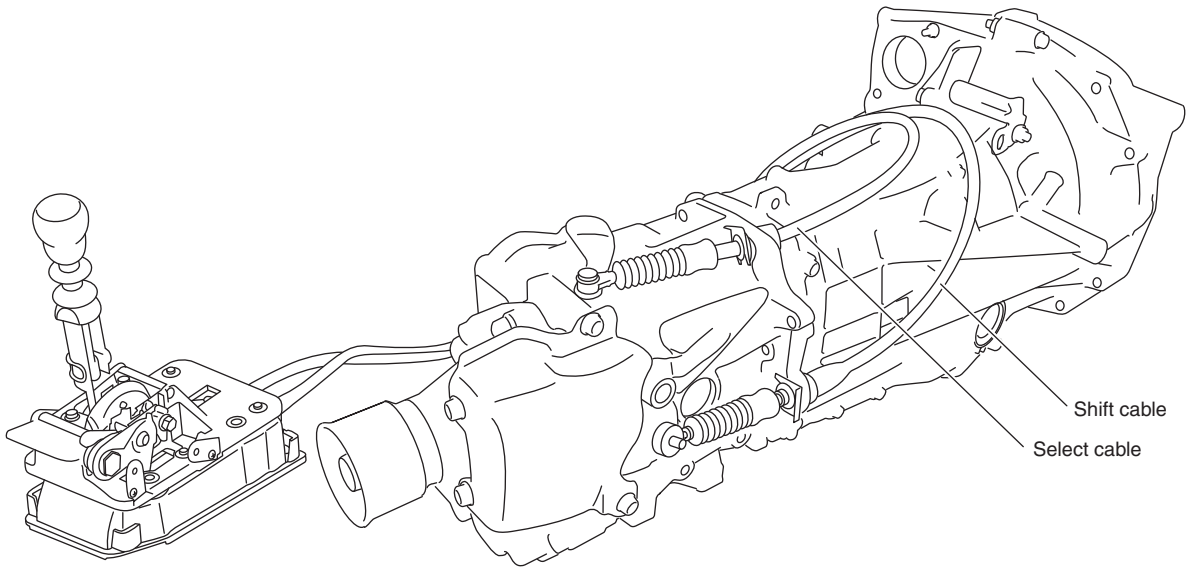
MT-02097

3-4 Control System

A: GEAR SHIFT SYSTEM

The cable type gear shift system is adopted for 6MT.

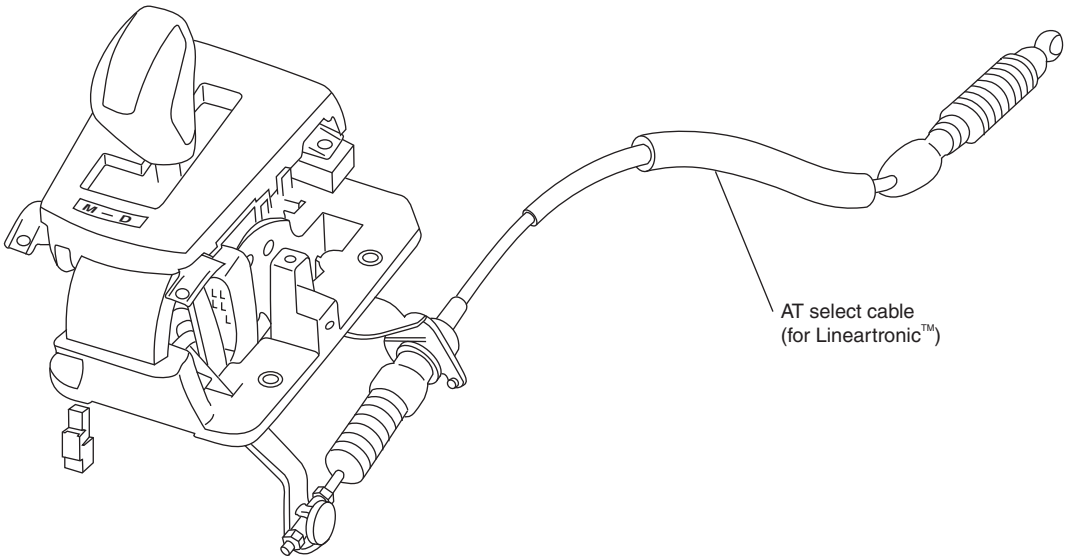
- The gear shift lever supporting the 6-speed manual transmission is newly developed.
- By adopting the cable type gear shift and optimizing the knob position and lever ratio, vibration reduction as well as shift feeling with both of smooth operation and click feeling have been achieved.



MT-02099

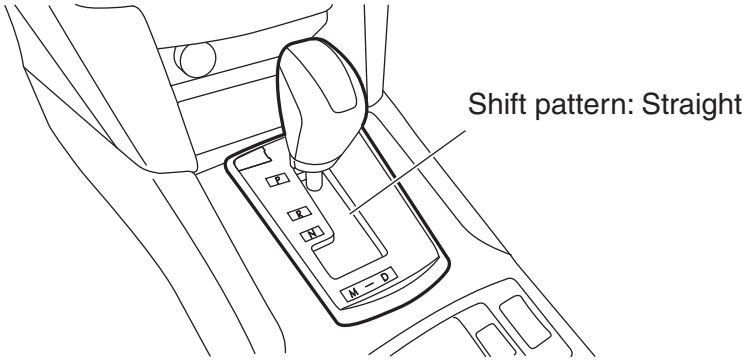
B: AT SELECT SYSTEM

• The AT select supporting the Lineartronic™ in addition to existing 5AT is newly developed.



CS-01195

• The straight type has been adopted for the shift pattern.
• The AT grip and indicator are newly designed, improving the operability and the arm rest utility.

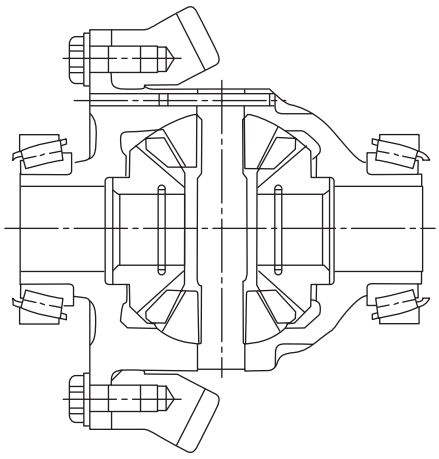
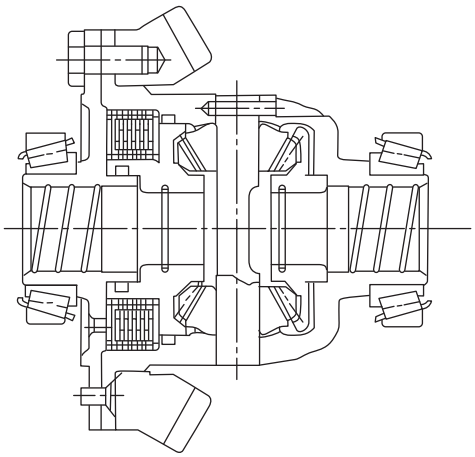


CS-01194

3-5 Rear Differential

A: GENERAL DESCRIPTION

- The new model and new gear ratio have been established for the Lineartronic™ with standard vehicle height.
- For all models, LSD has been abolished.
- The tightening method for the crown bolt is changed from torque tightening to angle tightening. (62 N-m → 20±2 N-m, 33±2°)
- The differential case is changed from the separate type to the integrated type. (5AT model)

Model	New model (5AT)	Existing model (5AT)
Cross-section shape	 MT-02071	 MT-02072
Differential case	Integrated type	Separate type
LSD	None	Viscous

There is no change in the outer shape.

B: SPECIFICATIONS

Engine	Grade	T/M	Size	Gear ratio	Identification
2.5L SOHC non-turbo	Sedan 2.5i	Lineartronic™	R152	3.700	XD
		6MT	R160	4.111	T2
	OUTBACK 2.5i	Lineartronic™	R160	3.900	B2
		6MT	R160	4.444	TP
2.5L DOHC turbo	Sedan 2.5GT	6MT	R160	4.111	B1
3.6L DOHC non-turbo	Sedan 3.6R	5AT	R160	3.083	XC
	OUTBACK 3.6R	5AT	R160	3.083	XC

4.CHASSIS

4-1 Suspension

A: FRONT SUSPENSION

1. OUTLINE OF STRUCTURE

- The Macpherson strut type suspension has been adopted.
- By mounting both front and rear arm bushings on the cradle, high rigidity, quietness and low vibration have been improved.
- For the sheet metal arm, the cross-section shape has been optimized in order to minimize the weight increase due to the tread expansion.

2. GEOMETRY

Along with the tread expansion, the wheel stroke has been extended.

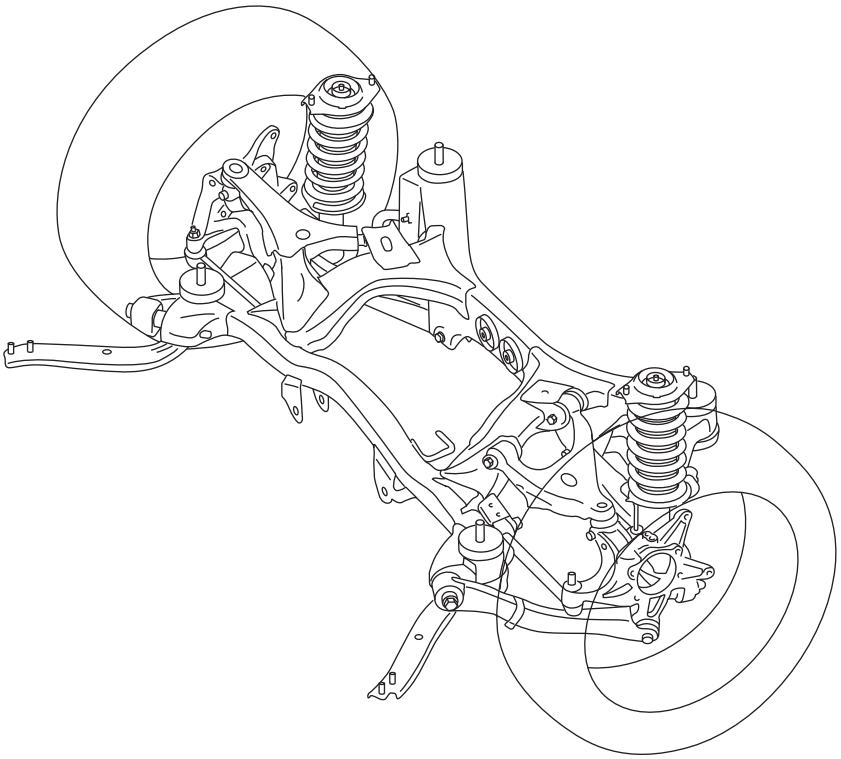
B: REAR SUSPENSION

1. OUTLINE OF STRUCTURE

- As with Impreza and Forester, the double-wishbone type suspension with short hight has been adopted.
- The double vibration-proof structure is used, where all the suspension links and rear differential are installed to the sub frame via the bushings, and the large bushings are used between the sub frame and the vehicle body. In addition, by optimizing the specifications for the new Legacy such as the link bushing and shock absorber mount, input from the road surface and transmission of the powertrain vibration have been significantly reduced, resulting in the improved ride comfort.

2. GEOMETRY

- The tread is increased, improving the turning performance.
- The camber to the ground is less changeable, and the tires always contact the ground vertically, so that the tire performance can be fully achieved.
- Through the minimal toe change and proper toe-in during the lateral force or braking, the stability against the road surface and weather conditions is increased.
- Anti-geometry is strengthened, improving the road-hugging property of the tires and assurance at braking.



RS-00317

C: DAMPER

In order to increase the ride comfort and texture quality, the low-friction type oil seals, guide bushings and hydraulic oil have been adopted.

4-2 Steering

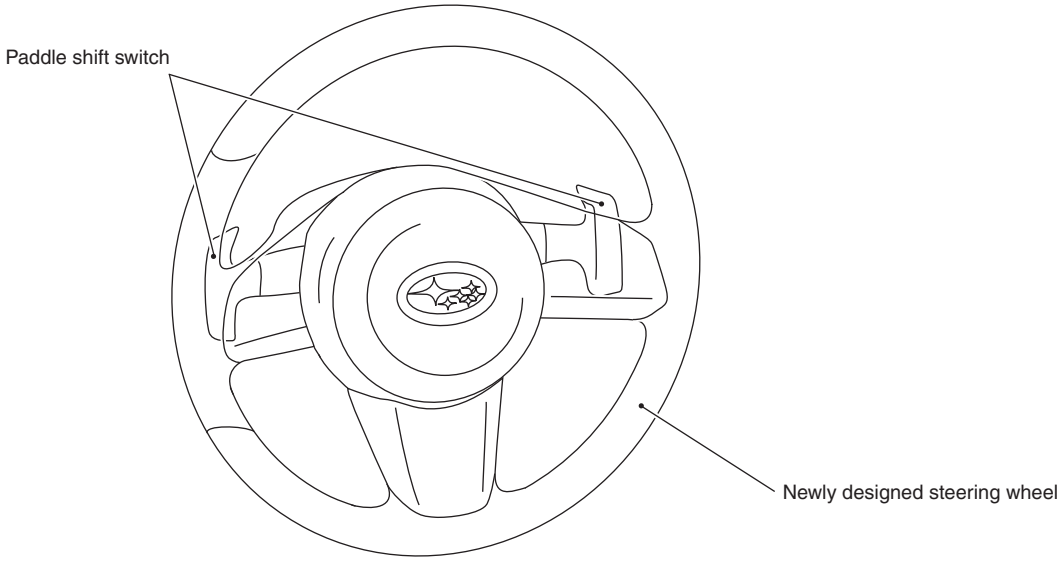
A: STEERING WHEEL AND DRIVER'S SEAT VICINITY

1. NEWLY DESIGNED STEERING WHEEL (ALL MODELS)

The newly designed steering wheel has been adopted.

2. HANDLE-FIXED TYPE PADDLE SHIFT SWITCH (ALL AT, LINEARTRONIC™ MODELS)

The steering wheel fixed type paddle shift switch has been adopted. Through the compact switch design considering the operation space during turning, operability and convenience are improved.

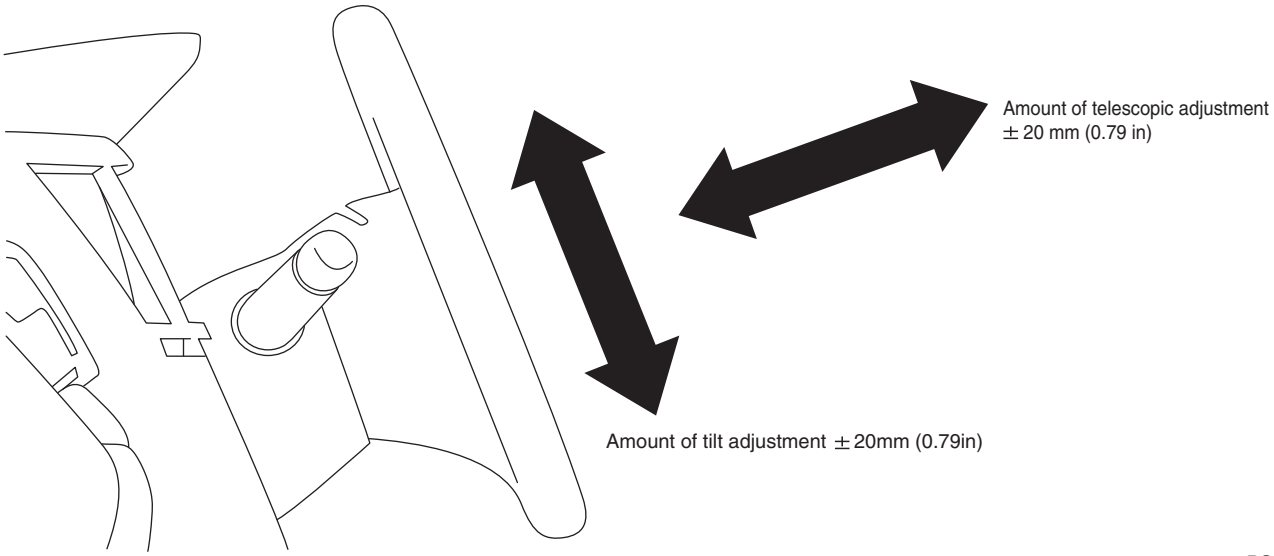


PS-01100

3. TILT/TELESCOPIC STEERING (ALL MODELS)

In order to adopt various driving positions and ensure the optimal driving posture, the tilt/telescopic adjustment structure has been adopted to all models.

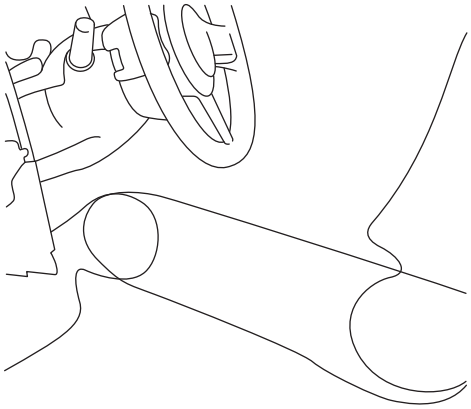
- Telescopic adjustment: ±20 mm (0.79 in)
- Tilt adjustment: ±20 mm (0.79 in)

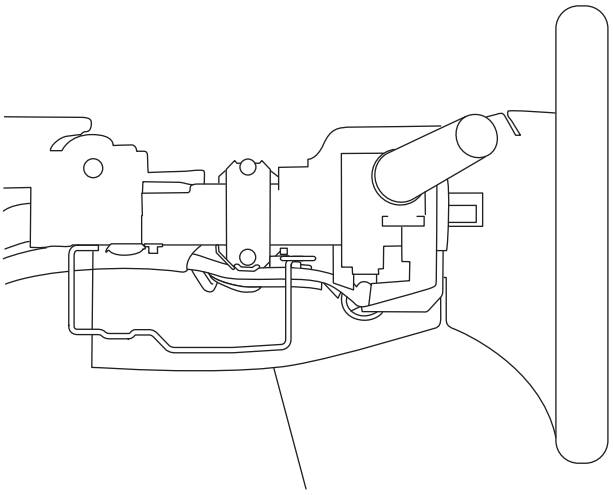


PS-01107

4. INCREASED KNEE VICINITY SPACE (ALL MODELS)

- By reviewing the design of the steering layout and column cover, the knee room is increased, significantly improving the ingress and egress comfort.
- By reviewing the part layout in the column cover, and maximally ensuring the crumple space against the knee area at the collision, the safety around the knee area has been highly improved.





PS-01101

5. CHANGE IN INSTRUMENT PANEL BLIND STRUCTURE AT TELESCOPING (ALL MODELS)

The synthetic leather is used as a blind material to hide the gap between the column cover and instrument panel.

6. LIGHT WEIGHT/HIGH RIGIDITY STEERING (ALL MODELS)

By partially using the aluminum material, the steering column with light weight and high rigidity has been established, ensuring rigid impression and steering feeling of high quality.

B: HYDRAULIC PRESSURE POWER STEERING

1. POWER STEERING PUMP

- For all models, the variable capacity type power steering pump has been adopted to improve the fuel economy.
- The discharge rate efficiency of fluid at high temperature improves the performance of quick steering operation. (turbo, 6-cylinder model)

2. STEERING GEARBOX

- The characteristics of the hydraulic pressure has been modified to enhance the response near the neutral steering wheel position.
- The quick gear has been adopted to all sedan models, to obtain sporty steering feel.
  (16.5 : 1 → 14.5 : 1)

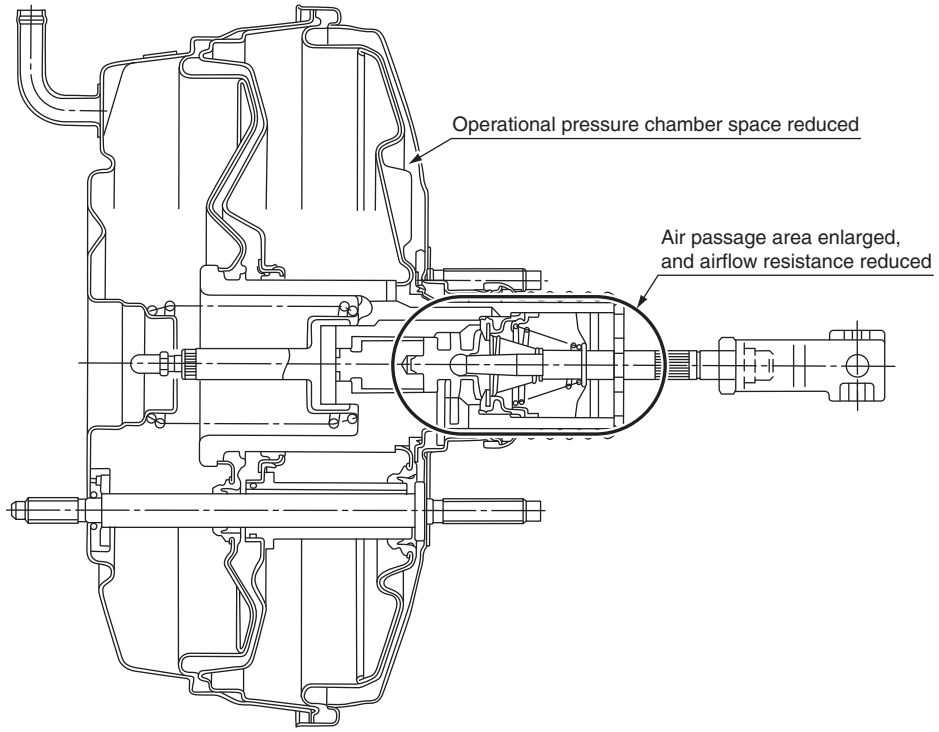
4-3 Brake

A: GENERAL DESCRIPTION

To seek and establish “the assuring and trusting brake system in any situations and driving conditions”, the following items have been incorporated, realizing the class top performance and quality.

B: TIE-ROD TYPE TANDEM BOOSTER

- As with the existing model, the tie rod has been adopted to the booster in order to prevent the booster shell deformation and to ensure rigid impression.
- In addition, through the increase in the airflow path and the decrease in airflow resistance, responsiveness has been significantly improved, achieving the assuring and trusting brake feel in any situations and driving conditions.



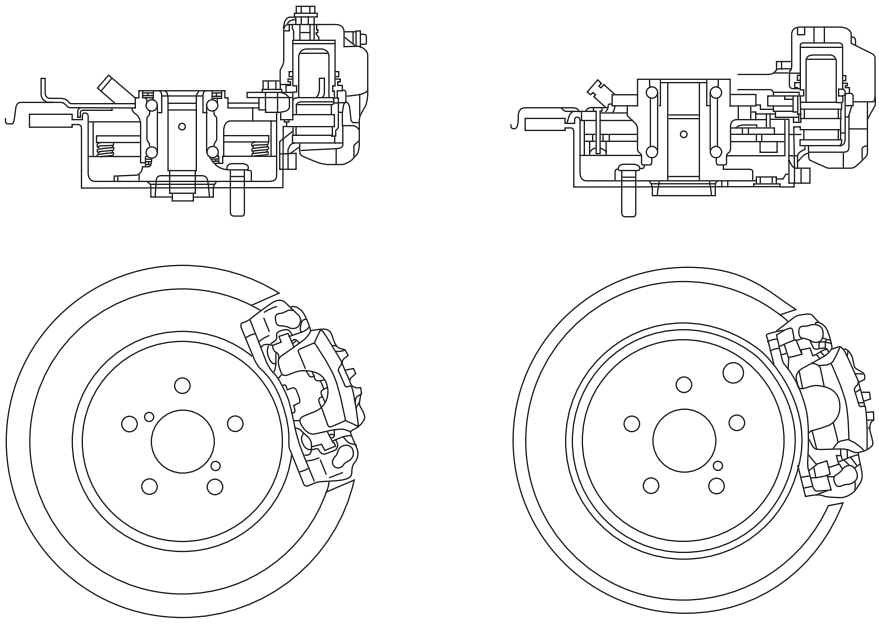
BR-00764

C: FRONT BRAKE

The 16-inch and 17-inch ventilated disc brakes have been adopted from the existing models.
(The pad material is changed for the 17-inch only.)

D: REAR BRAKE

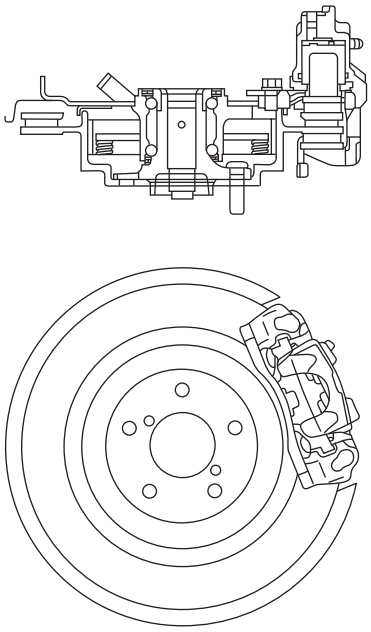
- The aluminum caliper is used for all models with weight reduction as a main purpose, and the 16-inch solid disc brake and 16-inch ventilated disc brake have been newly established for the new model, while the 15-inch solid disc brake and 15-inch ventilated brake are used for the existing model.
- For the 16-inch ventilated disc brake, the cylinder size is increased (ϕ38 → ϕ40) to improve the performance.



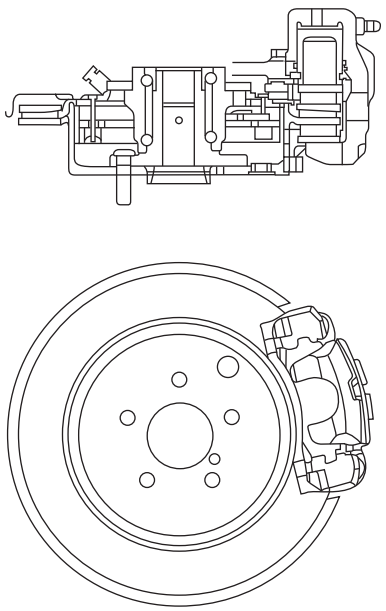
Existing model (15-inch solid aluminum caliper)

New model (16-inch solid aluminum caliper)

BR-00747



Existing model
15-inch ventilated cast-iron caliper
(cylinder size: ϕ 38)



New model
16-inch ventilated aluminum caliper
(cylinder size: ϕ 40)

BR-00748

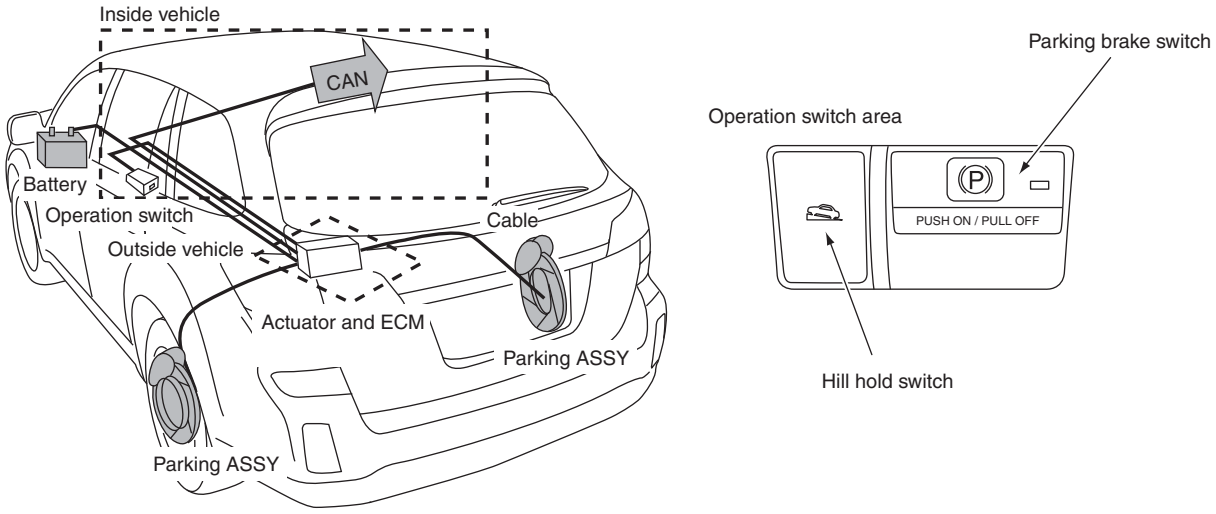
E: ELECTRONIC PARKING BRAKE

1. GENERAL DESCRIPTION

- The electronic parking brake is provided on all models as standard equipment in order to achieve comfortable interior space and reduce the parking brake operation load.
- The hill hold function is added to improve the hill start comfortability.

2. SWITCH OPERATION

1) Parking brake switch
   - Push: Operates the parking brake
   - Pull: Releases the parking brake
2) Hill hold switch
   - ON (switch operated): The hill hold function (automatic operation on the uphill) operates
   - OFF (normally): The hill hold function does not operate
   - Regardless of ON/OFF, the hill hold function can be operated/released manually, and the parking brake is released automatically when the accelerator pedal is operated.



PB-00201

• Power transmission path

ECM signal output

↓

Motor rotation

↓

Gearbox rotation/power transmission

↓

Spline shaft rotation

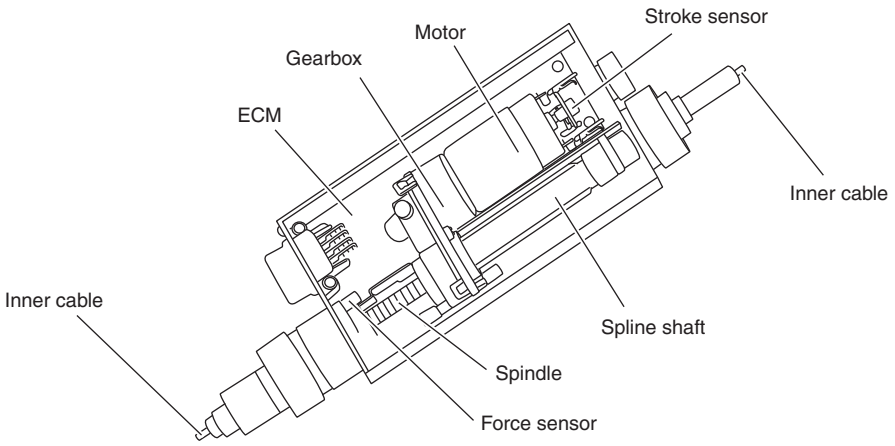
↓

Spindle/spline shaft move

↓

Inner cable is pulled

Actuator inner components



PB-00189

3. ACCELERATOR INTERLOCK FUNCTION

- The startup operation by the driver is detected, and the electronic parking brake is automatically released.
- With the door open, while the driver's seat belt is unfastened, the automatic release is prohibited to prevent improper release. (Manual release is possible.)

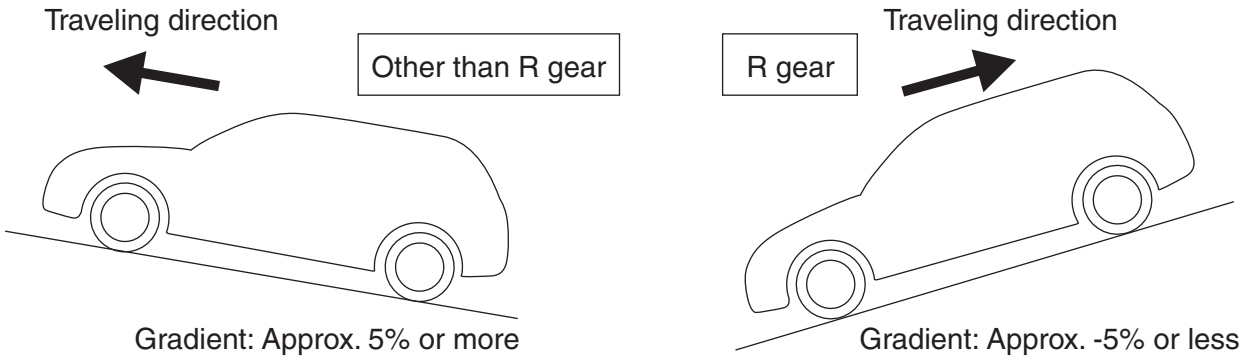
4. HILL HOLD FUNCTION

1) Function description

With this function, when the vehicle is stopped on the uphill, the parking brake automatically operates to prevent backdown of the vehicle when the brake pedal is released. In addition, immediately after the vehicle is stopped, the fluid pressure hold function by VDC also operates temporarily.

2) Control items and operating conditions

Hill hold function figure



PB-00196

(1) Operating condition

1. When the brake pedal is released after the vehicle is stopped completely on the hill by depressing the brake pedal, the brake fluid pressure is temporarily held.
   - The longitudinal G sensor detects the slant.
   - The traveling direction of the vehicle is detected according to the shift position, and the function operates at the forward/backward uphill driving. The function does not operate at the forward downhill start. (See the figure.)
   - The vehicle is held with the brake fluid pressure equivalent to the brake depression amount applied by the driver.
2. When the vehicle is stopped completely on the hill by depressing the brake pedal, the hill hold function operates, and the parking will be applied.
   - The longitudinal G sensor detects the slant.
   - The traveling direction of the vehicle is detected according to the shift position, and the function operates at the forward/backward uphill driving. The function does not operate at the forward downhill start. (See the figure.)

CAUTION:

- **When the driver does not depress the brake pedal enough, the vehicle may move backdown until the parking brake operates.**
- **While the fluid pressure is held, the VDC module valve is closed. Therefore, when the brake pedal is released and then depressed again, hardness and discomfort may be felt against the pedal; this is not malfunction, however.**

(2) Release condition

According to the startup operation by the driver (depressing the accelerator pedal, clutch pedal, etc.), the parking brake and fluid pressure hold will be released, once the driving torque necessary to the hill start has been achieved.

- The engine drive torque necessary to the hill start is calculated from the longitudinal G sensor signals, and once the drive torque signal from ECM reaches the specified value, the fluid pressure hold and parking brake will be released.
- The fluid pressure hold function by VDC holds the fluid pressure temporarily after the brake pedal is released, and then gradually decreases the pressure to end the operation.

CAUTION:

- **Depending on the accelerator operation timing, stuck may be felt; this is not malfunction, however. Depress the accelerator as usual to start the vehicle. (This function assists the hill start for the MT model, but does not prevent the engine stall.)**
- **When the hill hold function is enabled (ON), if the vehicle is attempted to start without the seat belt fastened, the vehicle may not start smoothly or noise may occur from the brake (underbody).**

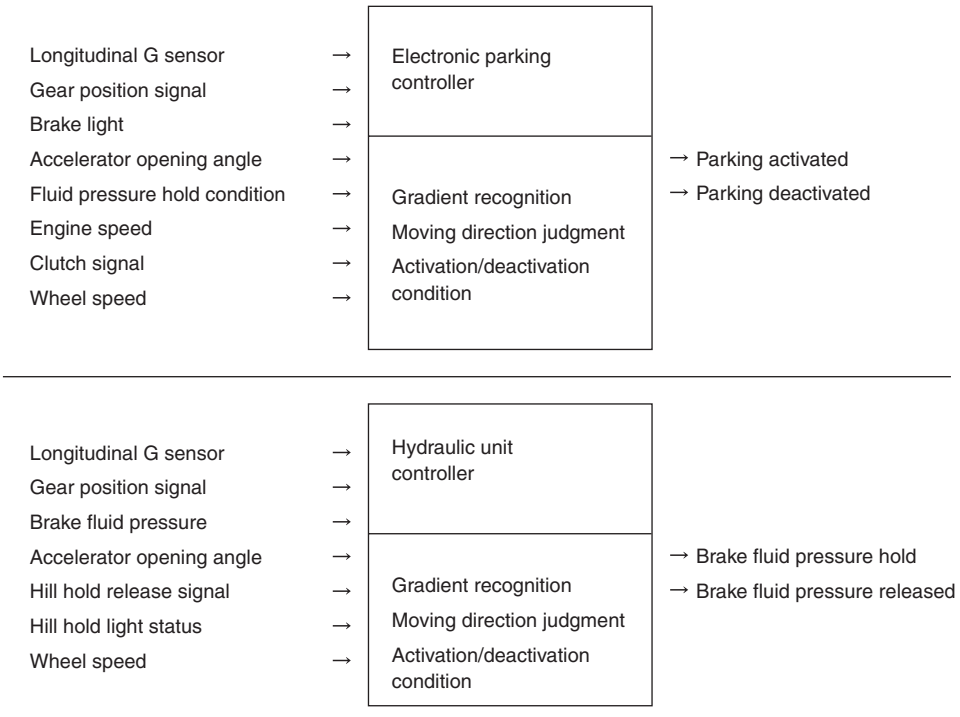
(3) Other

The hill hold function does not operate in the following cases:

- When the vehicle is stopped without the brake pedal depressed
- When the parking brake switch is set to release
- When the vehicle remains stopped after the hill hold is released (the operation does not start again until the vehicle is slightly moved)
- During driving (the vehicle stop condition is detected through the wheel speed sensor signal)
- While the parking brake warning light lit
- While the hill hold light off

(4) Hill hold function theory diagram

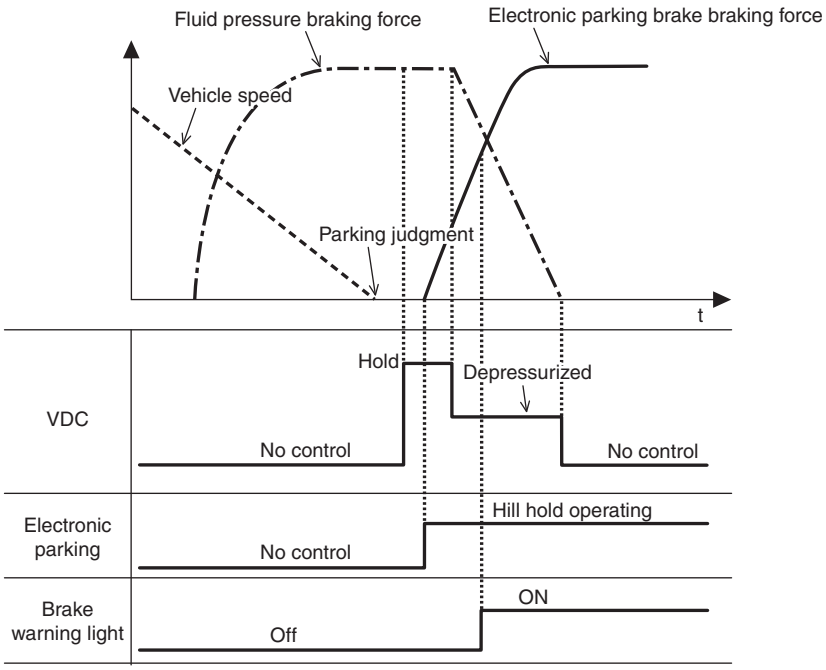
Hill hold function theory diagram



PB-00186

(5) Image figure for the fluid pressure hold by VDC and the hill hold control by the electronic parking

Image figure for the fluid pressure hold by VDC and the hill hold control by the electronic parking



PB-00190

- The fluid pressure hold by VDC operates to assist the braking force until the parking brake is completely applied.
- Because of this, VDC and the electronic parking brake perform hold judgment separately.
- Depending on the gradient or braking to stop the vehicle, the fluid pressure hold by VDC may operate by itself.

F: VDC

1. VDC STANDARD EQUIPMENT FOR ALL MODELS (CO-EXISTENCE OF DRIVING EXCITEMENT AND SAFETY)

The driving conditions (vehicle behavior) is always checked, and ABS (anti-lock control), TCS (engine control, brake LSD control) and VDC (engine control and brake control for anti-skid) are controlled flexibly. Furthermore, the control begins before the vehicle starts sliding in order to ensure the stability, assisting the safety and driving pleasure.

The OFF mode (canceling the torque down control of the engine) that is effective at escaping from quagmire (deep snow/gravel) is available.

2. SYSTEM WEIGHT REDUCTION (LONGITUDINAL G/LATERAL G/YAW RATE SENSORS BUILT INTO VDC ECM)

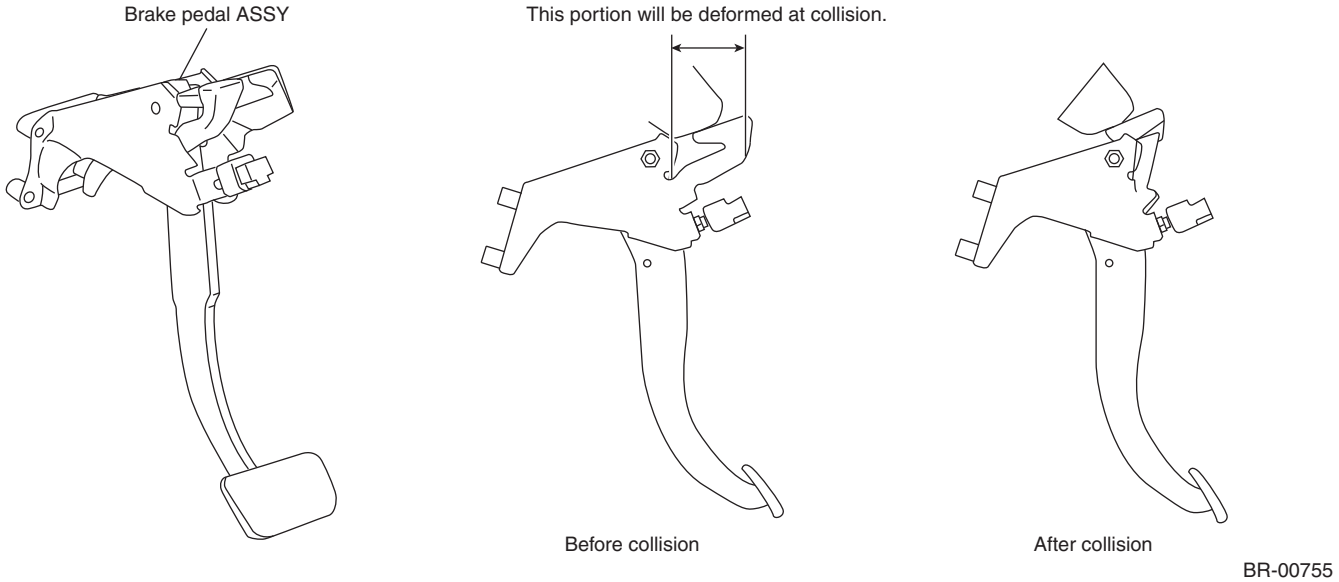
The longitudinal G/lateral G/yaw rate sensors that used to be installed in the center console on the existing models have been built into VDC ECM in order to reduce the VDC system weight as well as to use the center console vicinity space efficiently.

3. HYDRAULIC UNIT PRESSURE TYPE BRAKE ASSIST FUNCTION

In panic operations at emergency braking, the driver may not be able to depress the brake pedal strong enough, resulting in output of small braking force. The brake assist function detects emergency braking by the driver using the pedal depression speed. At the rapid pedal depression speed, the brake pressure is sharply increased up to the ABS operation to assist the deceleration.

G: BRAKE PEDAL

- For the change of the driver position and weight reduction on all models, the brake pedal assembly has been newly designed.
- For collisions, the method that the bracket deforms to absorb the impact of the crash has been adopted.



4-4 Tire & Wheel

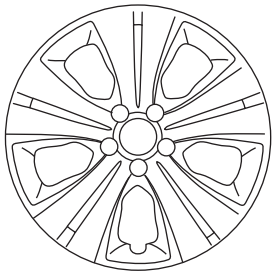
A: WHEEL

1. GENERAL DESCRIPTION

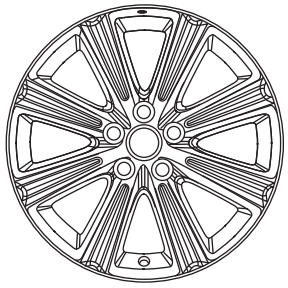
- Five types of wheels and full wheel caps are newly designed.
- The number of characteristic vibrations has been optimized in each type of the wheels to reduce road noise.
- The new wheels keeps their designs, while designed to reduce the weight.

2. SPECIFICATIONS

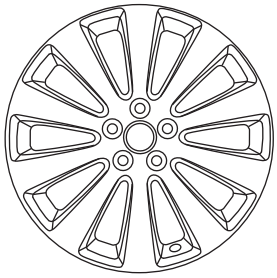
Size			Type	Design	Note
16-inch	6 1/2JJ	Offset 48	Steel wheel + full wheel cap	(A)	Newly designed
	6 1/2J	Offset 48	Aluminum	(B)	Newly designed
17-inch	7 1/2J	Offset 48	Aluminum (sedan)	(C)	Newly designed
	7J	Offset 48	Aluminum (OUTBACK)	(D)	Newly designed
18-inch	7 1/2J	Offset 55	Aluminum	(E)	Newly designed



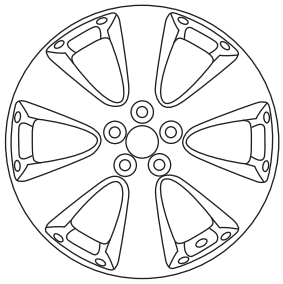
(A) 16-inch full wheel cap



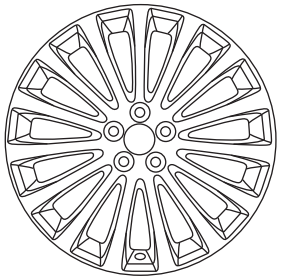
(B) 16-inch aluminum wheel



(C) 17-inch aluminum wheel (sedan)



(D) 17-inch aluminum wheel (OUTBACK)



(E) 18-inch aluminum wheel

WT-00150

B: TIRE

1. GENERAL DESCRIPTION

- The tire size has been enlarged to match with the enlarged vehicle body size.
- Rolling resistance has been reduced, braking distance has been shortened, and the difference of braking distances under dry and wet conditions has become smaller.
- Drivability under dry and wet conditions, quietness and ride comfort are highly balanced.

2. SPECIFICATIONS

Type	Size	
Sedan	16-inch	P205/60 R16 91V
	17-inch	P215/50 R17 90V
	17-inch	P225/50 R17 93V
	18-inch	P225/45 R18 91W
OUTBACK	16-inch	P215/70 R16 99S
	17-inch	P225/60 R17 98T

4-5 Drive Shaft

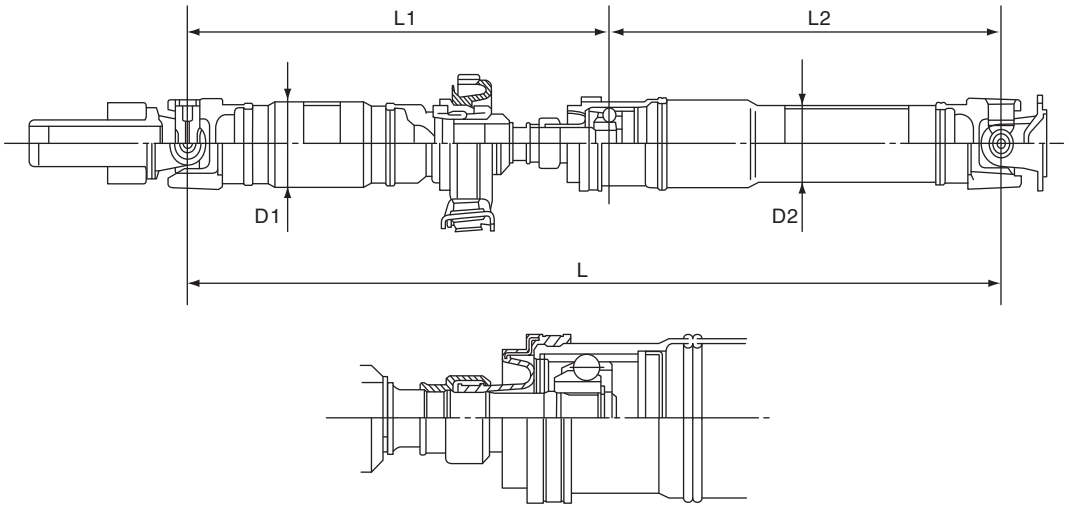
A: GENERAL DESCRIPTION

The dimensions of the drive shaft have been changed along with the enlarged vehicle body size.

B: SPECIFICATIONS

1. PROPELLER SHAFT

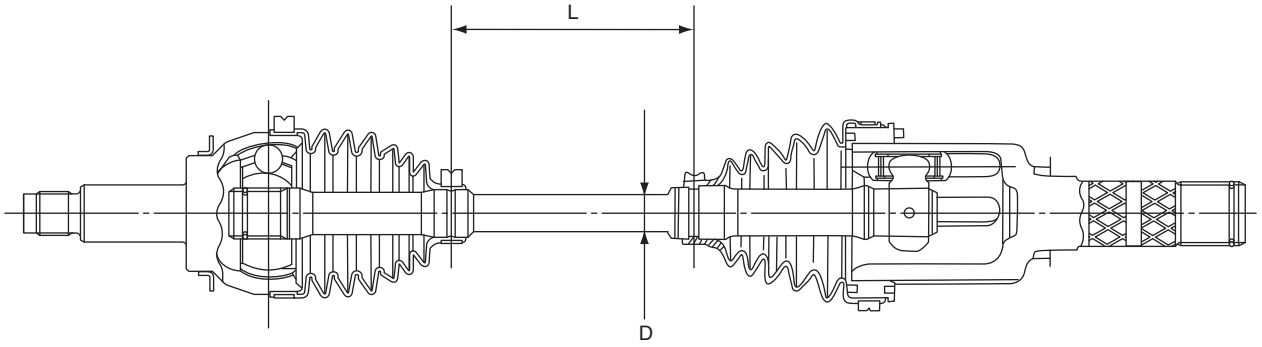
Transmission			Lineartronic™	5AT	6MT
Propeller shaft type			EDJ		
Propeller shaft length: L	mm (in)		1406 (55.4)	1390 (54.7)	1563.5 (61.6)
Length between front propeller shaft joints: L1	mm (in)		578 (22.8)	562 (22.1)	735.5 (29)
Length between rear propeller shaft joints: L2	mm (in)		828 (32.6)	828 (32.6)	828 (32.6)
Tube outer diameter	mm	D1	63.5 (2.5)	63.5 (2.5)	63.5 (2.5)
	(in)	D2	57.5 (2.3)	57.5 (2.3)	57.5 (2.3)



DS-00468

2. FRONT DRIVE SHAFT

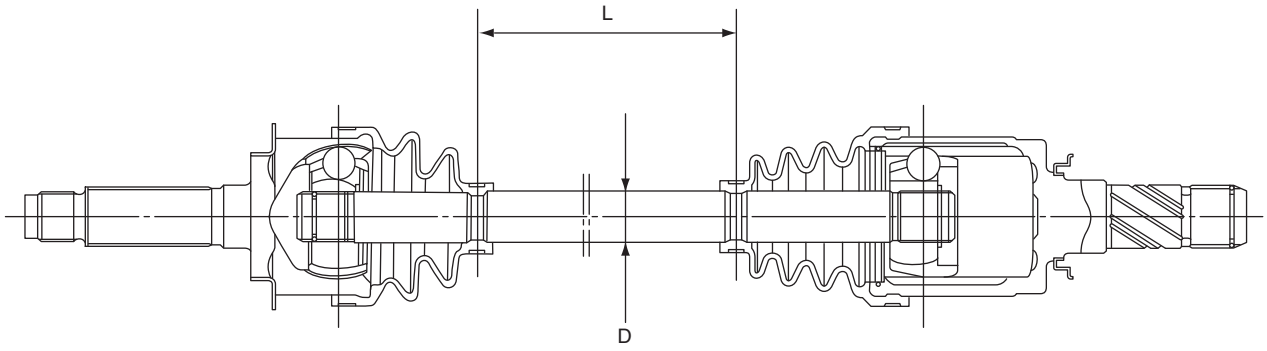
Drive shaft type		AC + AAR
Axle diameter ϕD	mm (in)	ϕ22.67 (0.9)
Axle length L	mm (in)	ϕ352.4 (13.9)



DS-00479

3. REAR DRIVE SHAFT

Transmission		Lineartronic™ (sedan)	5AT	6MT	Lineartronic™ (OUTBACK)
Drive shaft type		BJ + DOJ	EBJ + DOJ		
Axle diameter ϕD	mm (in)	ϕ22 (0.9)	ϕ22 (0.9)	ϕ22 (0.9)	ϕ22 (0.9)
Axle length L	mm (in)	400.6 (15.8)	394.3 (15.5)	394.3 (15.5)	394.3 (15.5)



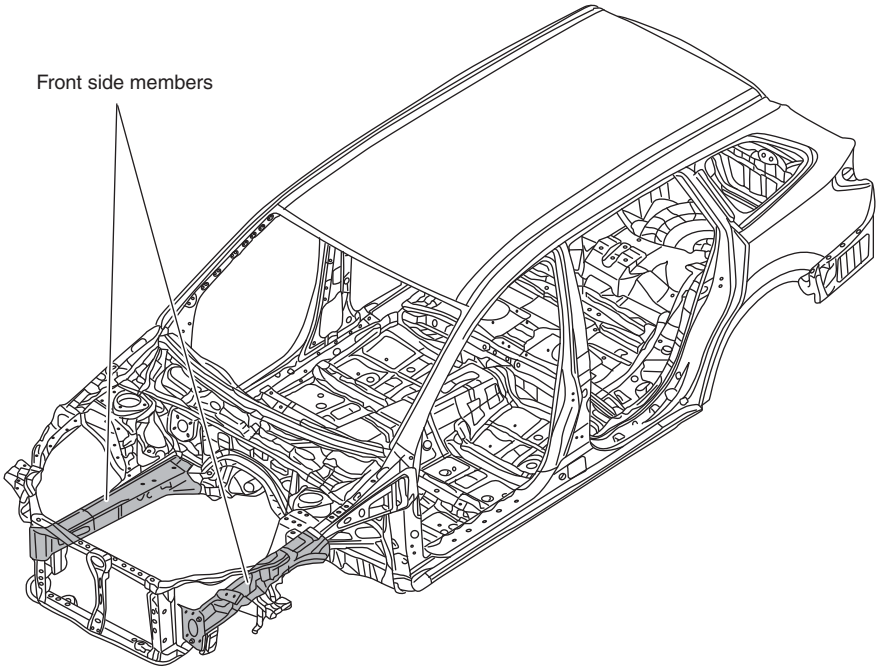
DS-00480

5.BODY

5-1 Safety

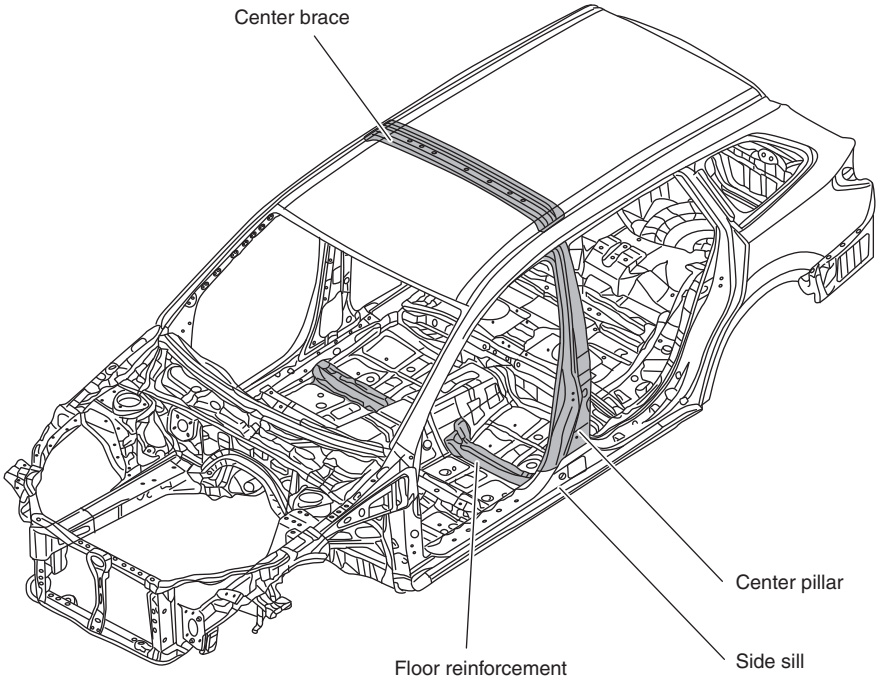
A: BODY STRUCTURE

• The body is structured so that the frontal crash energy is mainly absorbed by the front side members.



BS-04401

• The input load from side impact is mainly absorbed by the center pillar, brace center, and floor reinforcement.



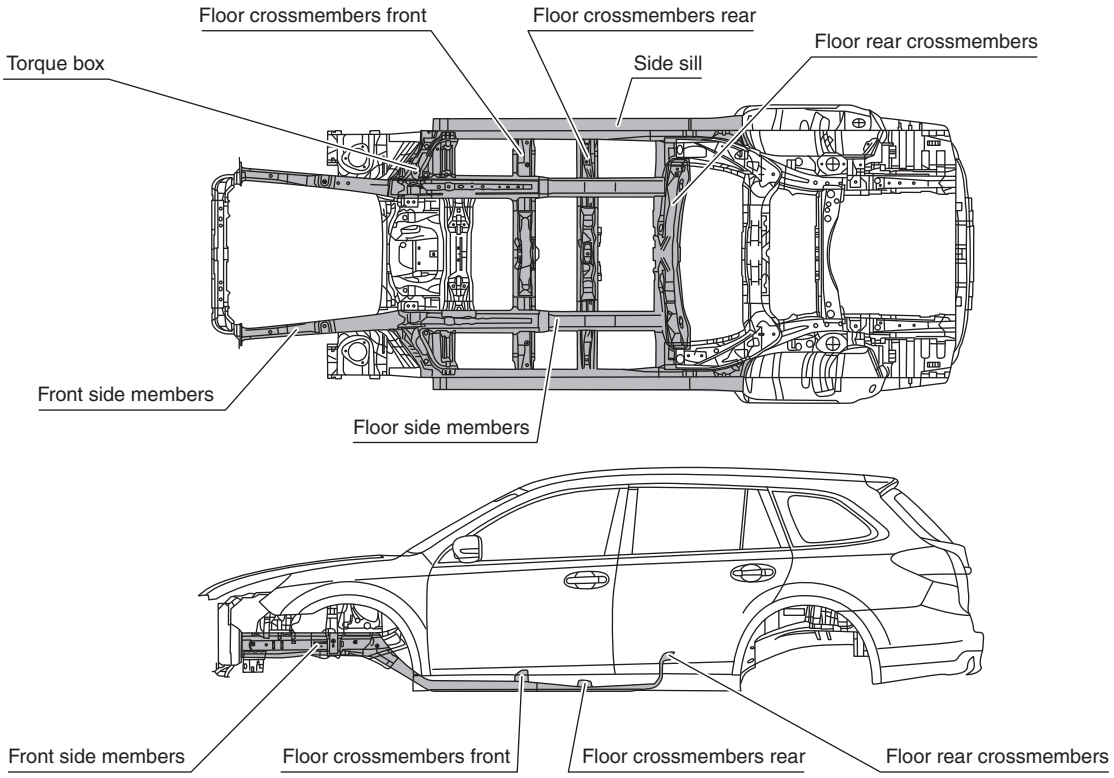
BS-04402

B: ENERGY ABSORPTION STRUCTURE

1. FRONT

The front side members are shaped in straight forms wherever possible to effectively absorb any impact energy.

- The input from the front side members is divided into two streams at the joint with the passenger compartment, one of which is transferred to the floor side members located rear and the other is transferred to the side sills via. the torque box.
- The left and side sills are connected by the floor crossmembers so that they can securely sustain the frontal impact.

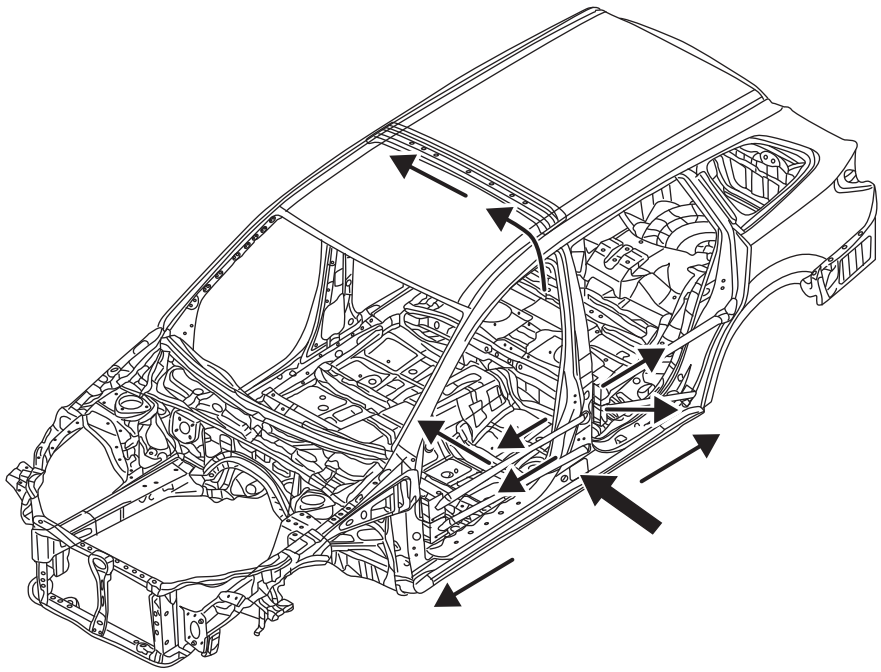


BS-04433

2. SIDE

The center pillars are given as large a cross section as possible to transfer the impact load effectively. Along with the reinforcement of the center pillars, the body side provides an overall impact absorbing structure that disperses any input from a center pillar to three routes.

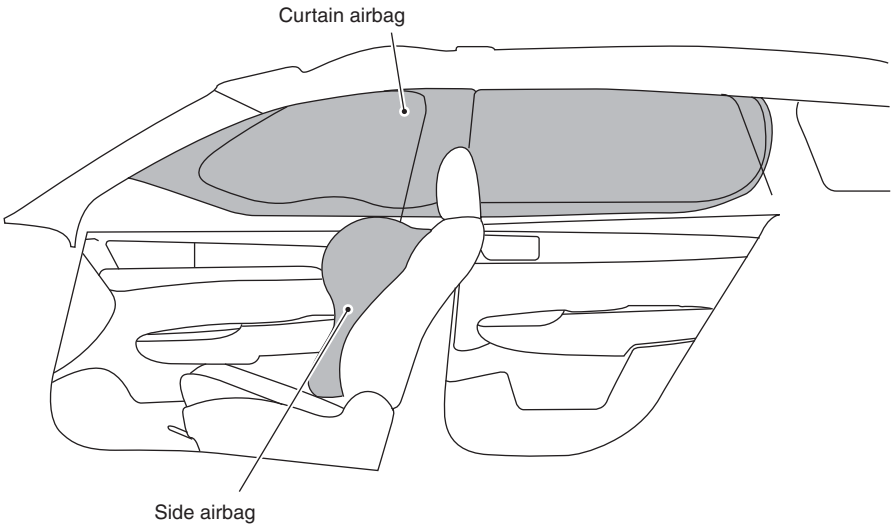
- Impact energy is divided in two components, one of which is transferred to the brace center above the center pillar and the other is transferred through the lower section of the center pillar to the floor reinforcement.
- Impact energy is divided in two components, one of which is transferred to the front pillar via. the side sill and the other is transferred to the rear wheel arch.
- Impact energy is divided in two components, one of which is transferred to the front pillar via. the door beam and the other is transferred to the front of the rear wheel arch.



BS-04404

C: SRS CURTAIN AIRBAG/SIDE AIRBAG

The following figure illustrates how the curtain airbag and side airbag deploy.



AB-02247

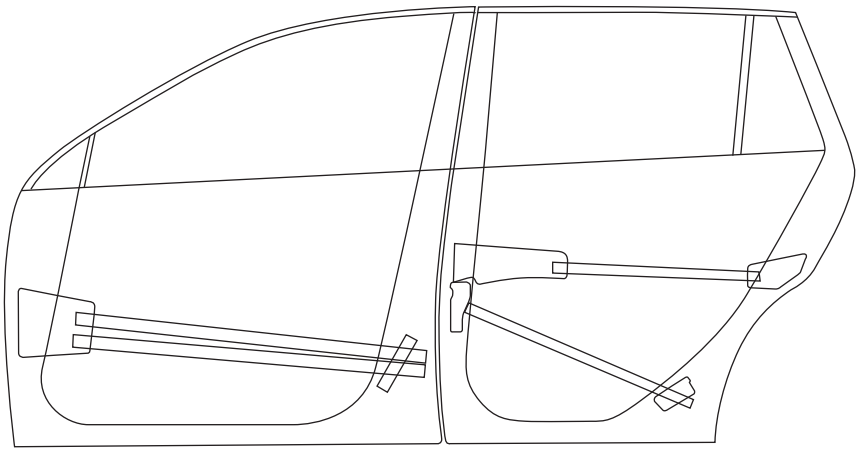
D: DOOR

1. IMPACT ABSORBING PAD INSIDE DOOR TRIM

To reduce any impact due to a secondary collision, an impact absorbing pad is provided inside the door trims beside the occupants.

2. DOOR STRUCTURE

The following figure illustrates the door structure.



BS-04551

5-2 Body Structure

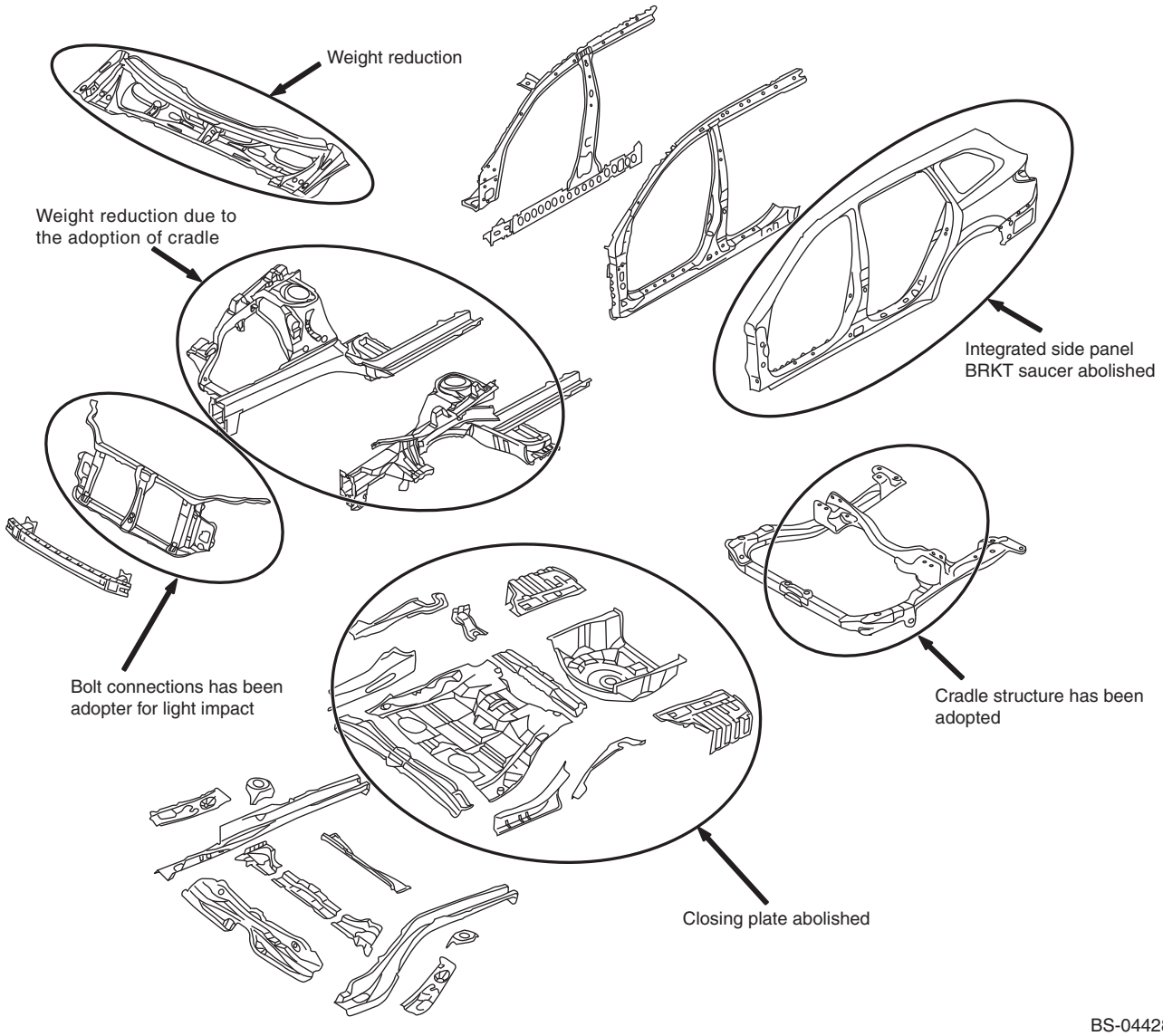
A: GENERAL DESCRIPTION

- While the body size and the passenger compartment are enlarged, the weight is reduced and sufficient stiffness is secured for the body size.
- The weight reduction and aerodynamic performance improvement contribute to better fuel economy.
- The interior comfort is improved by expanding the passenger compartment size.
- The collision performance is improved by the cradle structure.
- The combination of the cradle structure and the new mount system achieves a performance level comparable to the upper class in drivability, NVH, and comfort, offering safe and reliable driving experiences.

B: WEIGHT REDUCTION ALONG WITH STRENGTH/STIFFNESS

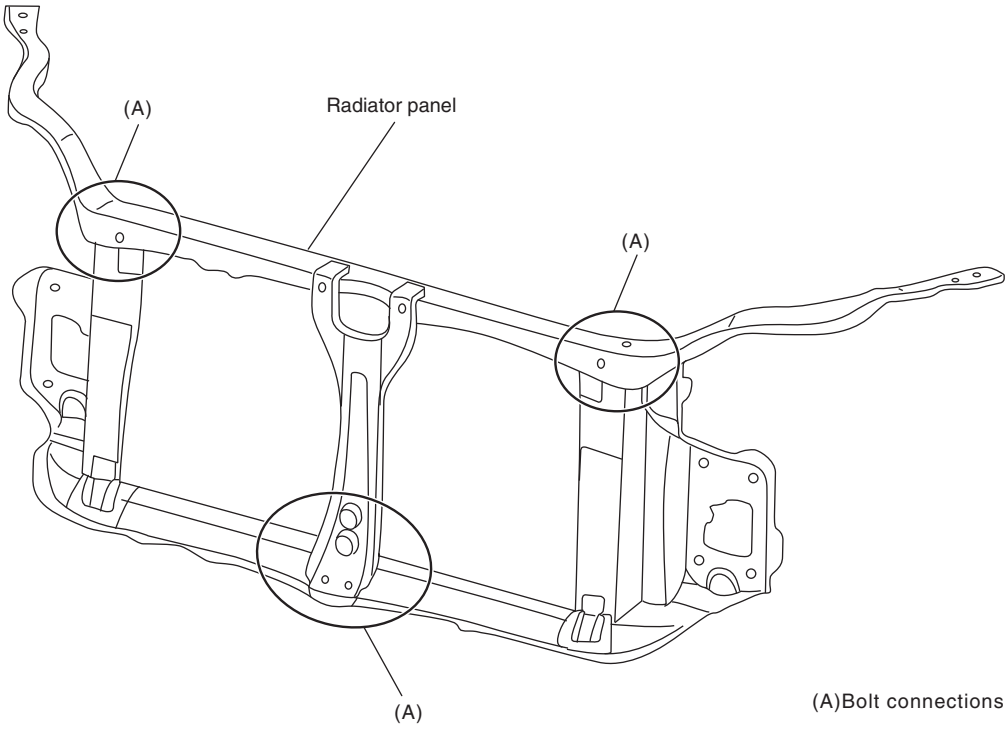
1. BODY SHELL IN GENERAL

The following figure indicates the changes from existing models in the main structure of body shell.



2. REDUCTION OF REPAIR COST

The adoption of bolt connections contribute to reduction of repair costs due to light impact.



(A)Bolt connections adopted

BS-04553

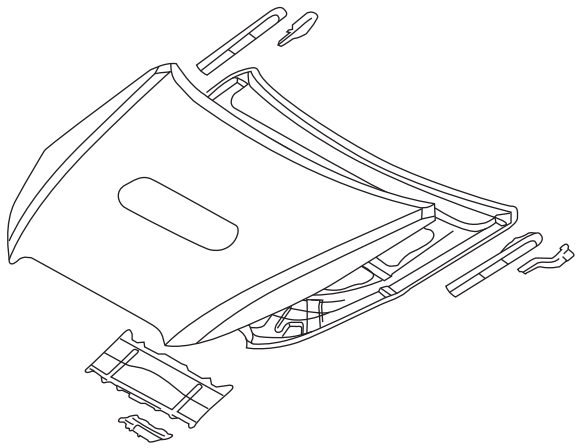
3. LOOSE PARTS

Indicated below are the main structural changes from existing models in the loose parts.

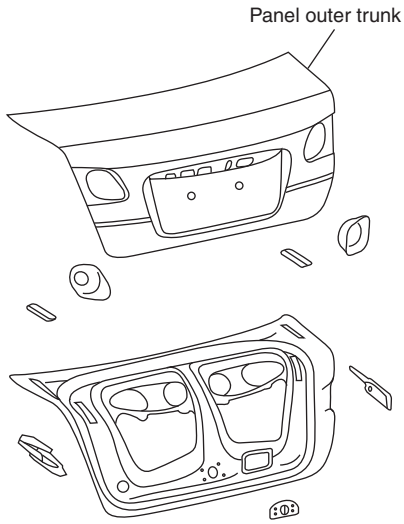
1) Hood
- Use of steel (weight increase minimized)
- Use of gas filled stay
- Reduction of part quantity (weight reduction)
- Improvement of pedestrian protection performance

2) Trunk
- Adoption of link hinges (gas filled stay)
- Electric switch
- Integrated to outer panel (weight reduction)
- Reduction of part quantity (weight reduction)

Hood



Trunk



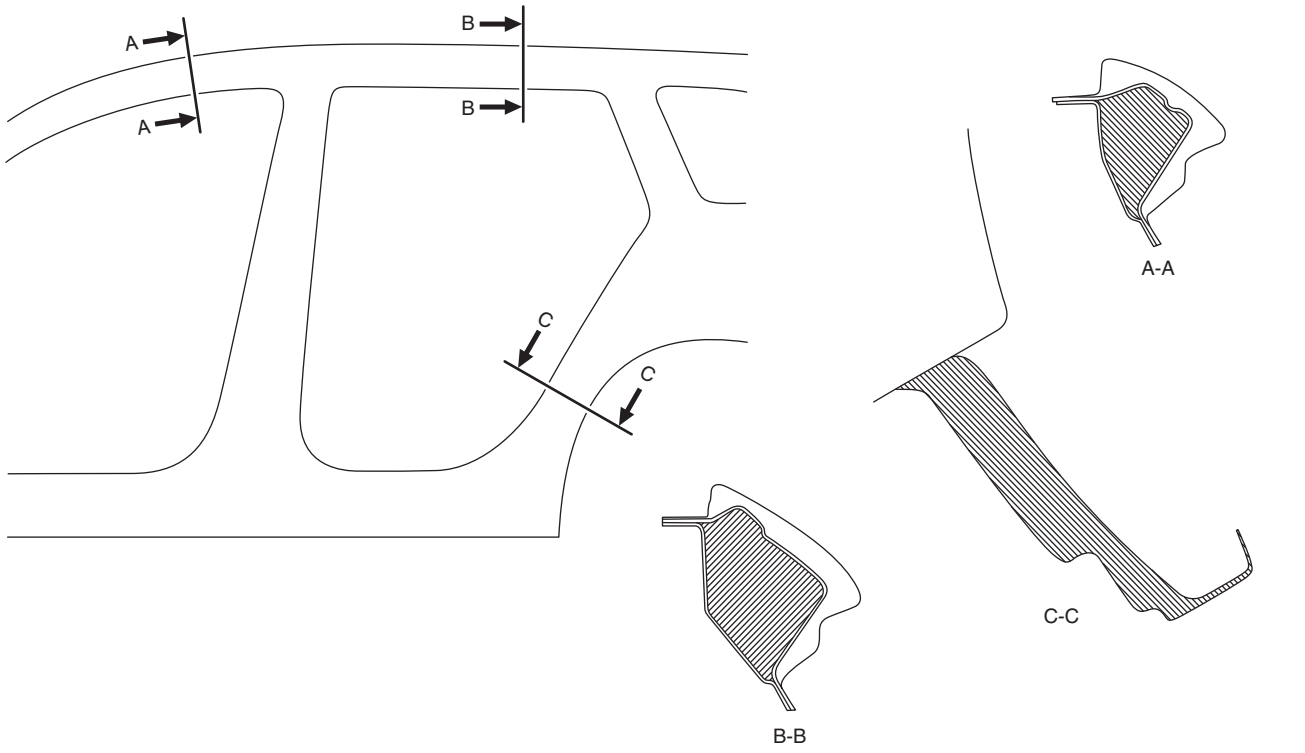
BS-04082

C: IMPROVED AMENITY

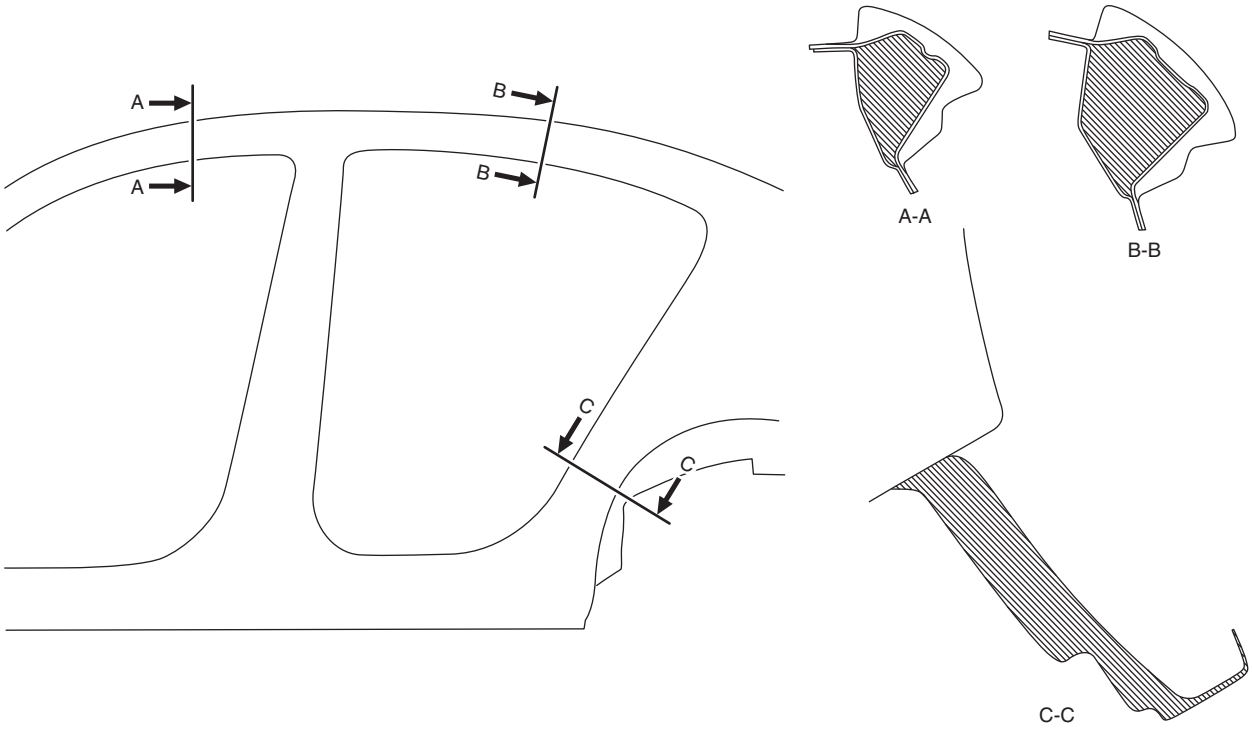
1. ADDITION OF FOAM MATERIAL INSIDE PILLAR

Foam materials are added inside the pillars to reduce noises.

• Wagon



• Sedan

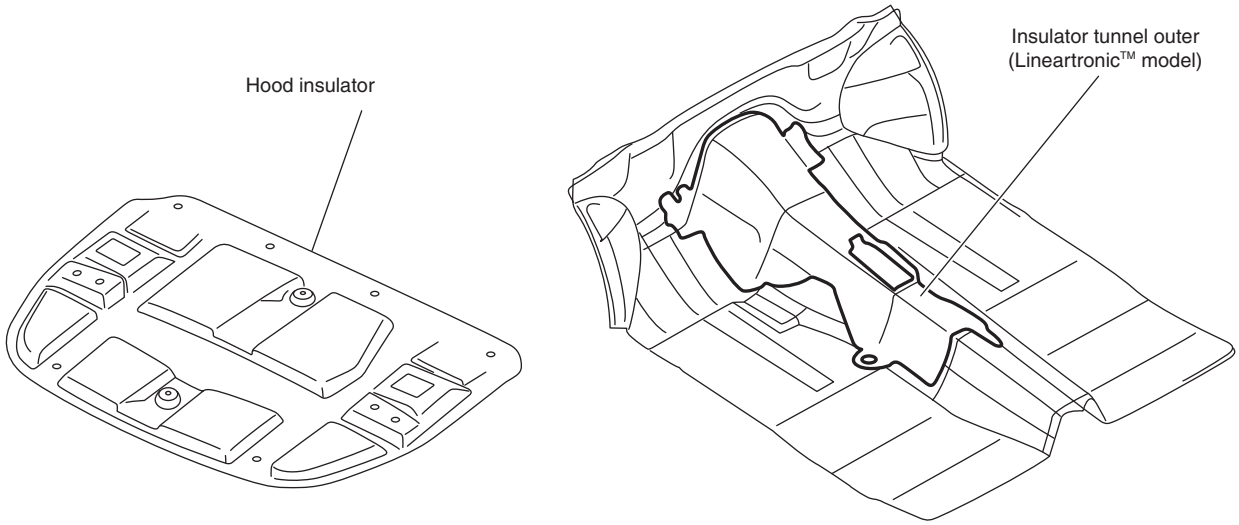


BS-04435

2. INSULATOR

• The hood insulators are increased (in amount and thickness) to improve the high frequency absorption performance.

• The insulator tunnel outer is adopted to improve the comfort. (Lineartronic™ model)

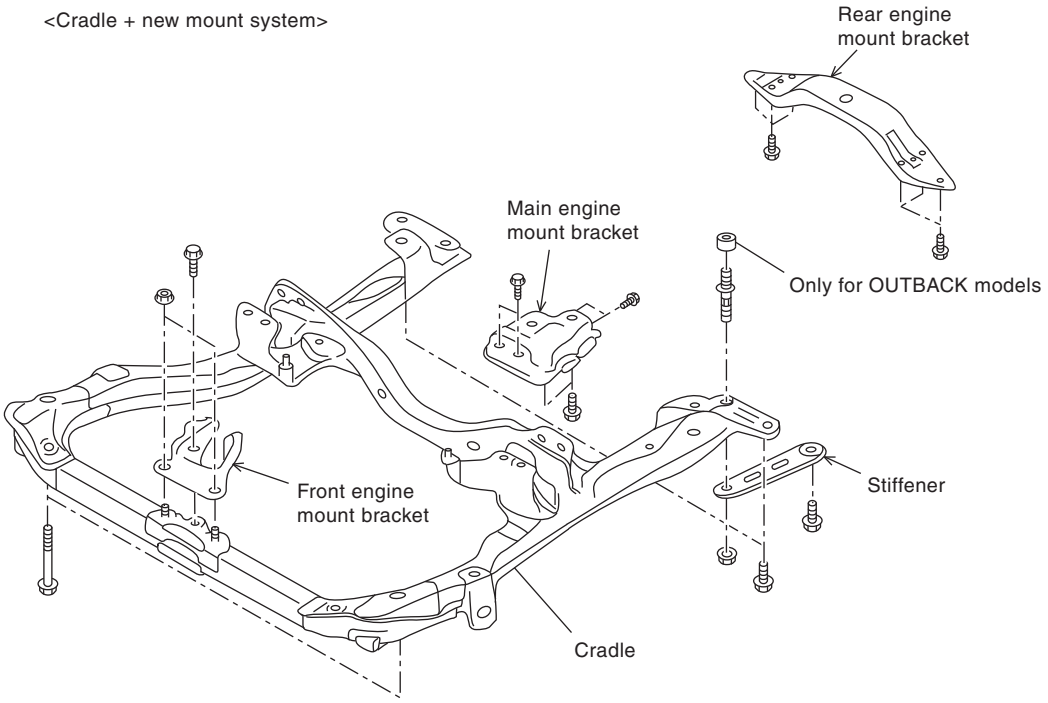


BS-04554

D: CRADLE STRUCTURE

1. AIM OF NEW MODELS

- A new platform (cradle + new mount system) is adopted which achieves a well-balanced performance at an one rank higher level than existing models, in order to improve the comfort (NVH, ride comfort), drivability, and side collision safety as well as address the turbo layout change.



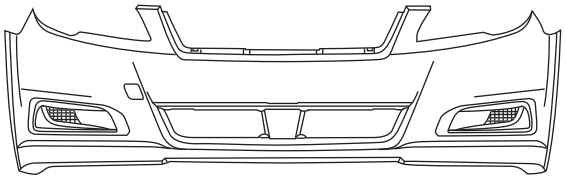
BS-04410

5-3 Body Exterior

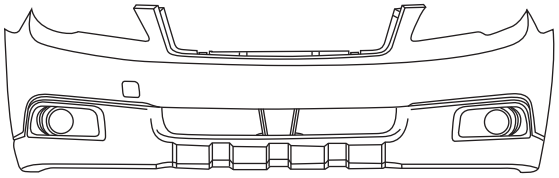
A: FRONT BUMPER

Two types are available, for standard models and OUTBACK.

SEDAN



OUTBACK

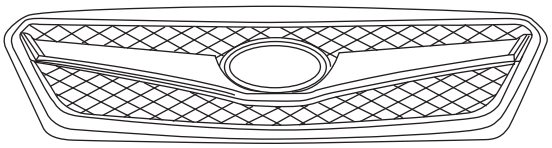


EB-00556

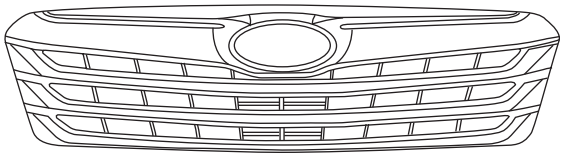
B: FRONT GRILLE

Two types are available, for standard models and OUTBACK.

SEDAN



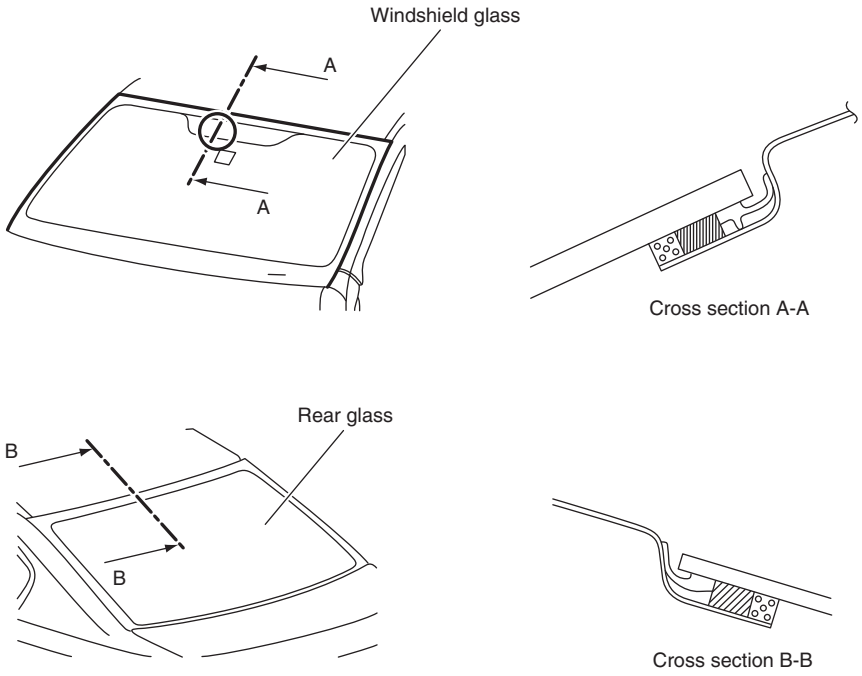
OUTBACK



EB-00557

C: WINDSHIELD GLASS, REAR GLASS

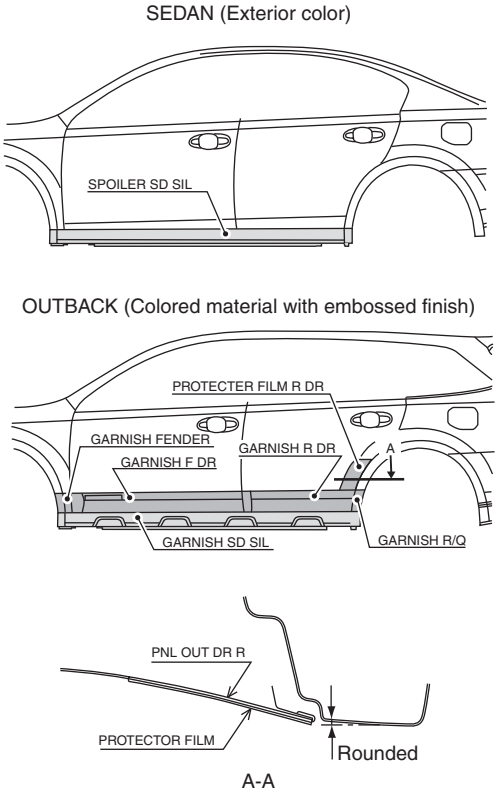
The moldings are located behind the glasses for both the front and rear windows to eliminate exposure of moldings on the glass surfaces and thus provide a neat and smart appearance.



EB-00570

D: SIDE SILL SPOILER, SIDE SILL GARNISH

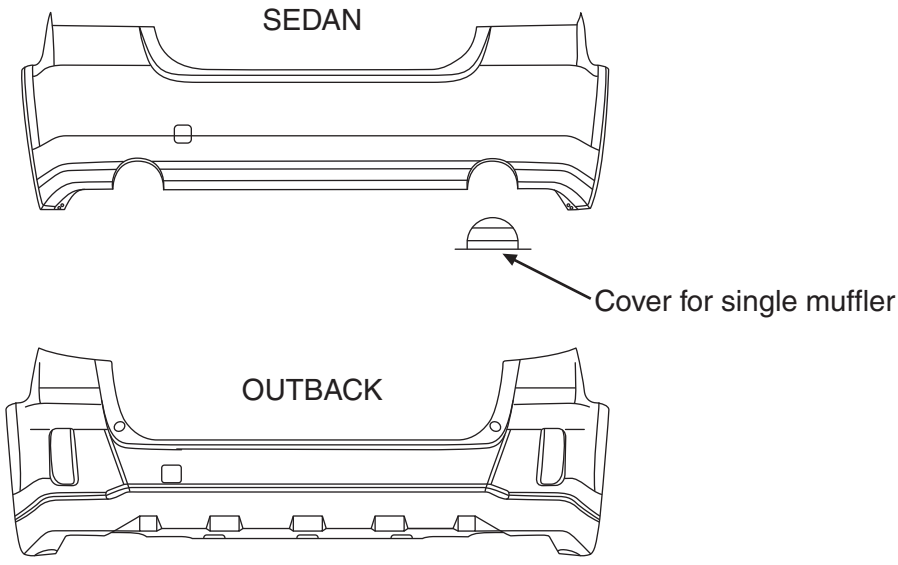
- The side sill spoiler is given a cross section that can improve both the ease of ingress/egress and the chipping resistance.
- For OUTBACK, the quarter panel edge facing to the rear door rear edge is rounded to prevent any scratch due to chipping.



EB-00572

E: REAR BUMPER

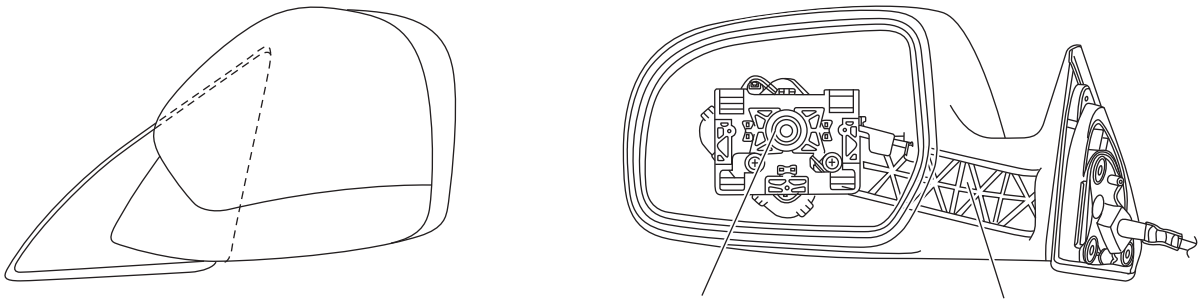
Two types are available, for standard models and OUTBACK.



EB-00560

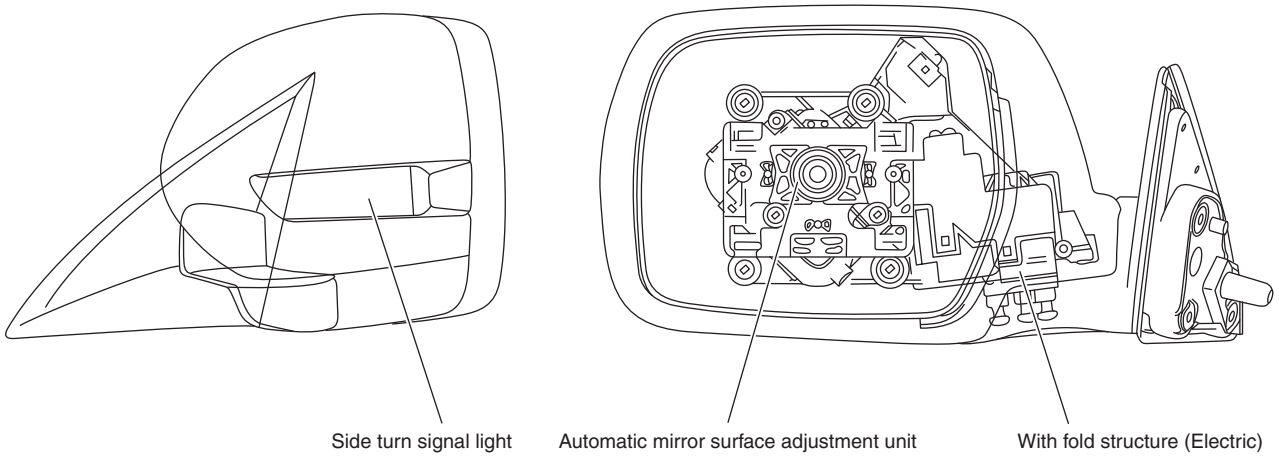
F: DOOR MIRROR

• Except C6 model



GW-00841

• C6 model



GW-00894

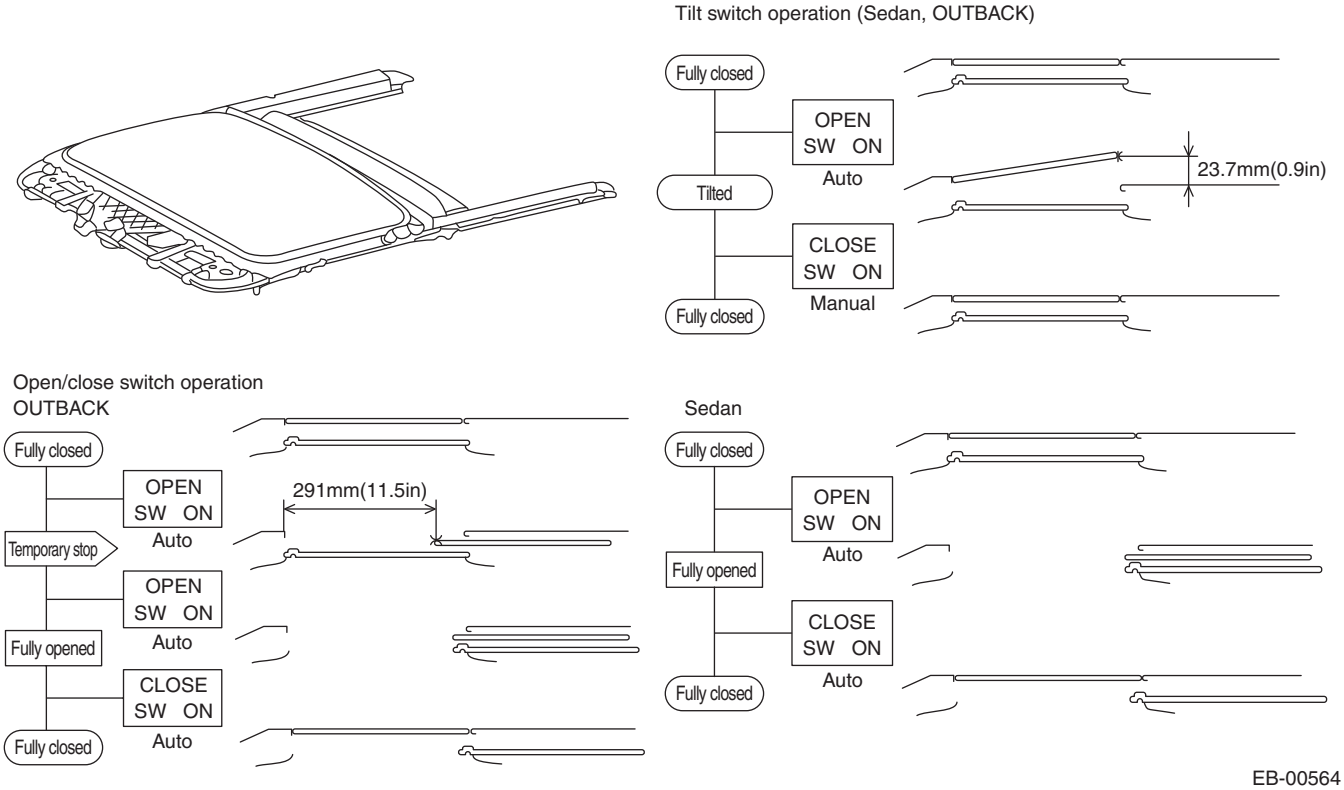
G: SUNROOF

1. GENERAL DESCRIPTION

An inner slide glass sunroof with tilt-up control is provided.

2. OPERATION

- It automatically opens and closes as well as offers an auto-reverse function. (The temporary stop during closing operation has been abolished.)
- To prevent the windows from throbbing, a function for temporary stop during opening operation is available. (OUTBACK only)



EB-00564

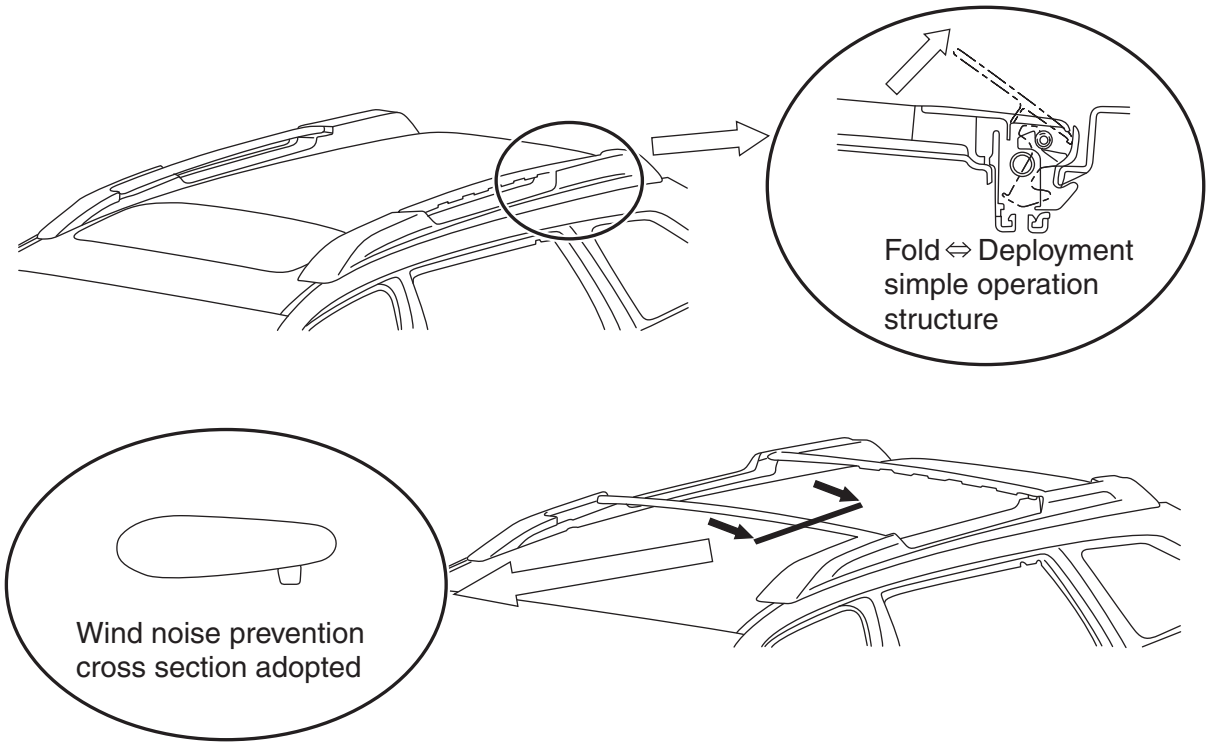
H: ROOF RAIL

1. GENERAL DESCRIPTION

A cross bar which was previously provided as a retrofit option is now built into the roof rail and can be unlocked and used with simple operations. This significantly improves the convenience.

2. STRUCTURE

The cross bar is given projections on the bottom face in addition to the adoption of airfoil profile to reduce wind noises.



EB-00571

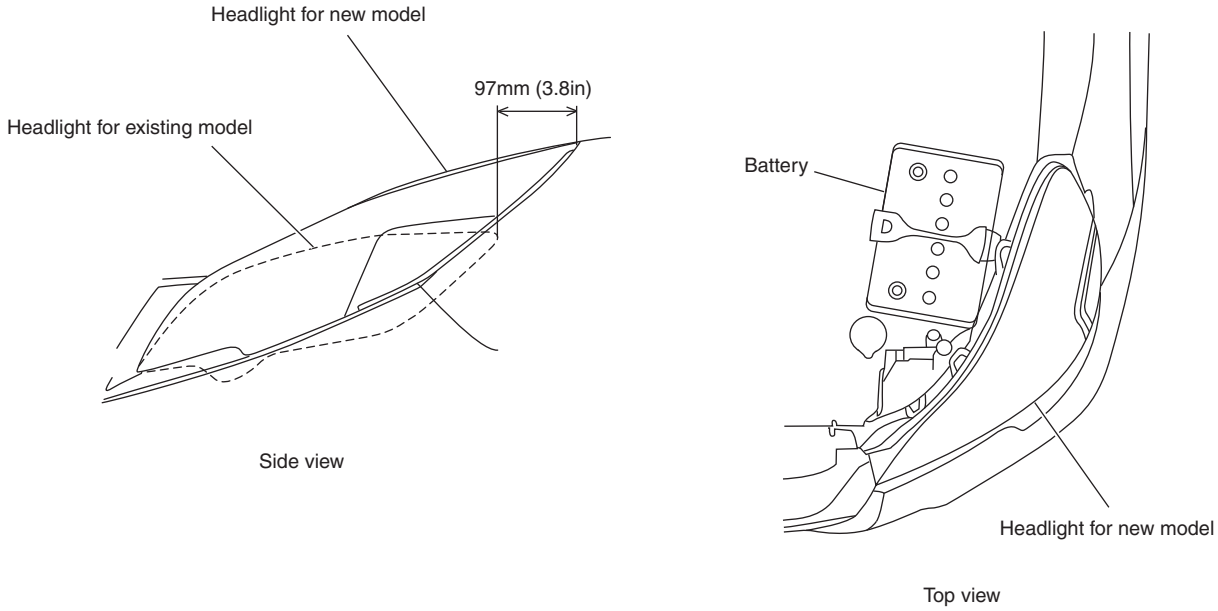
5-4 Lighting System

A: GENERAL DESCRIPTION

- Whereas the light systems of existing models turn off the tail lights, clearance lights, and head lights when the ignition switch is turned OFF, the new system turns off those lights when the key is removed, or the ignition switch is turned to ACC OFF for a vehicle with push button start function.
- Now the lights can be activated without inserting the key. In addition, when the driver opens the driver's door with the lights activated, a warning buzzer sounds. (This feature is not available in the automatic mode. In the automatic mode, the lights can be activated when IGN is ON.)
- Due to these functions, the light remaining ON condition can be prevented while the convenience in light control when leaving the vehicle is improved. Furthermore, the operation steps necessary to activate the lights only have been reduced for more convenience.

B: HEADLIGHT

- By locating the projector low beam lights in the fender, the front mask design is optimized to the extended vehicle width.
- By locating the battery lengthwise, the headlight position is moved further rearward than existing models and the feel of lengthy front nose is reduced.



C: AUTO LIGHT SYSTEM

- An auto light system is implemented, which activates the lights automatically according to the surrounding brightness.
- Because of this, the vehicle lights automatically turn on/off according to the environment such as sunset, sunrise, and tunnel entry, releasing the driver from troublesome light switch operations and preventing him from leaving the lights ON in daytime.
- The sensitivity volume for the auto light system can be adjusted in four stages so that the control is customized to the user sense.

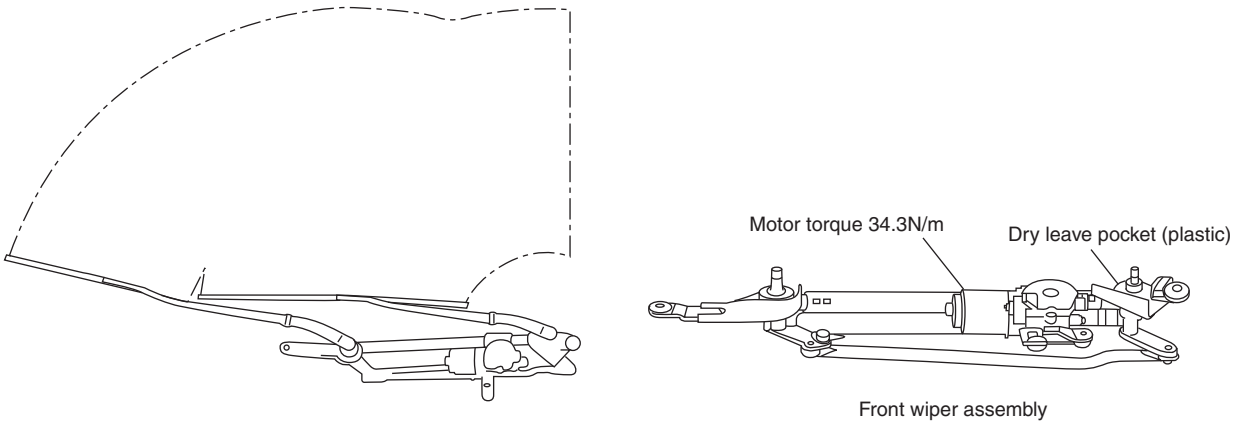
5-5 Wiper and Washer

A: FRONT WIPER

1. BLADE

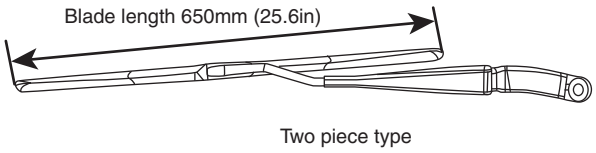
- For all models, wipers with a design blade are adopted and located below the hood. This improves the wiping performance during high speed travel, reduces the wind noise, and offers a neat and smart appearance.
- To improve the quietness, an one-step reduction gear motor is adopted.
- The wiper blade length on the driver's side has been extended from 600 mm (23.6 in) to 650 mm (25.6 in). On the passenger's side, the length has been extended from 450 mm (17.7 in) to 475 mm (18.7 in).

For the purpose of improving the appearance, wiping performance, and quietness, design blades are adopted.

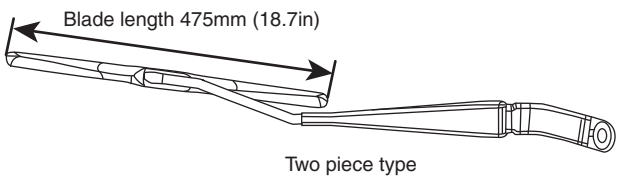


WW-00661

<Front wiper arm (driver's side)>



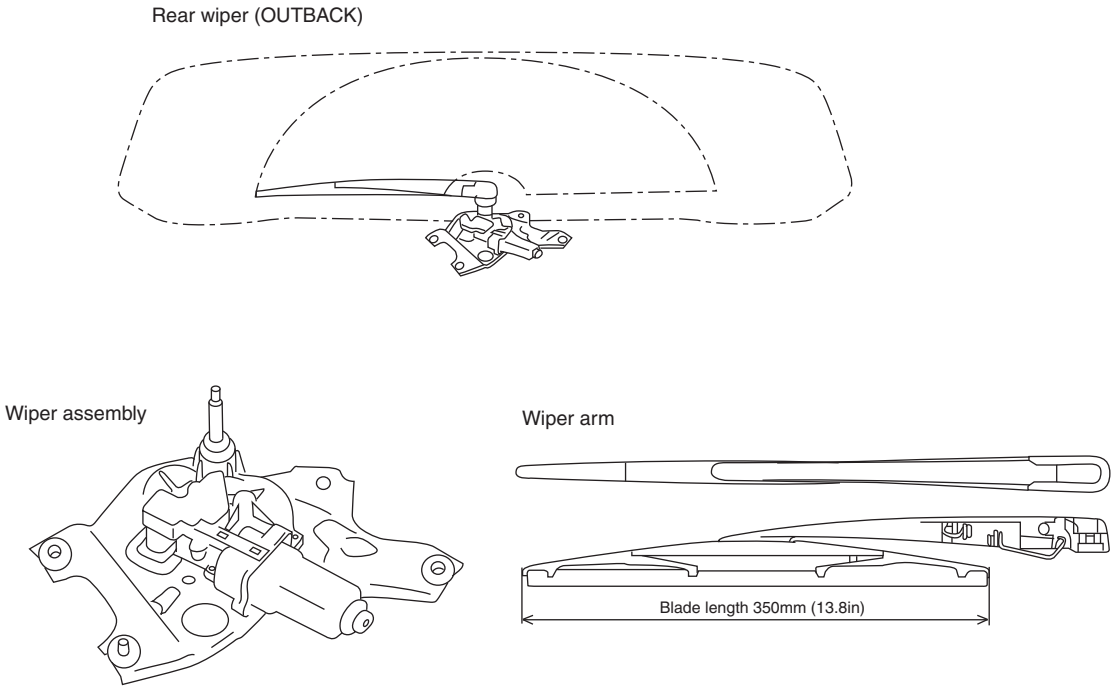
<Front wiper arm (passenger's side)>



WW-00644

B: REAR WIPER (OUTBACK)

- Plastic arms as used in existing models are adopted.
- The blade length is unchanged at 350 mm (13.8 in).



WW-00645

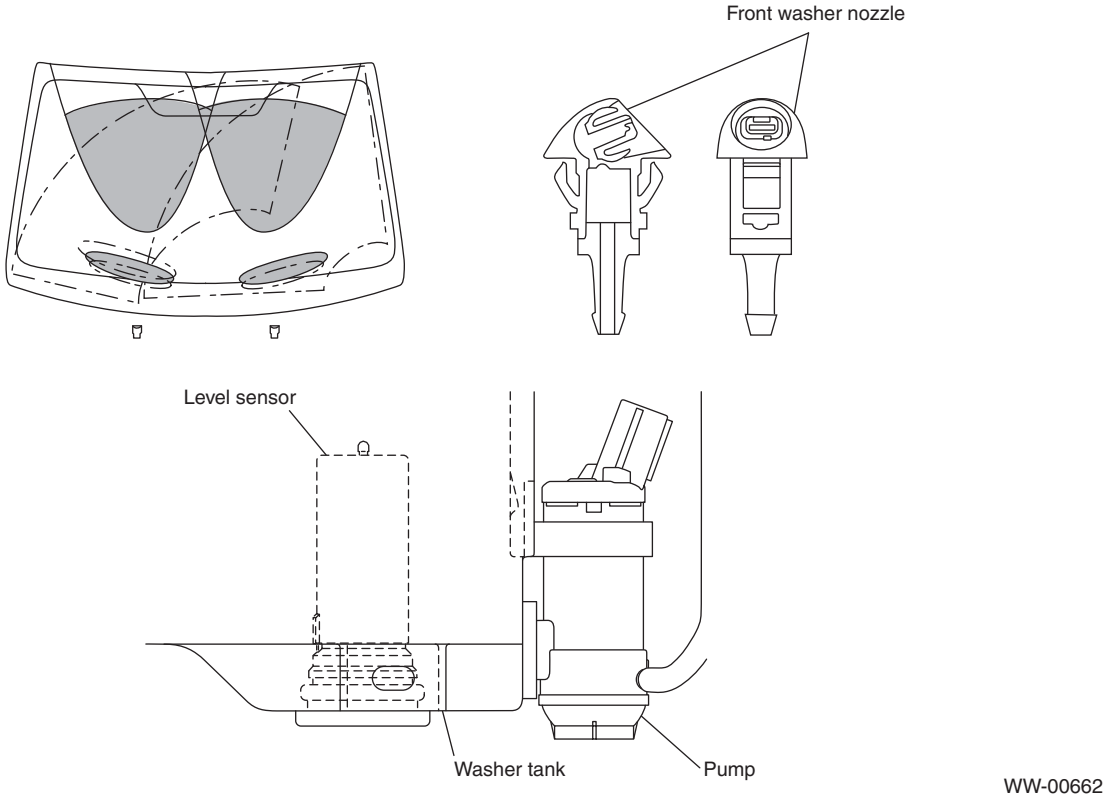
C: FRONT AND REAR WASHER

1. FRONT WASHER NOZZLE

• The nozzles in use are a cowl-mounted, adjustable multi diffusing type.

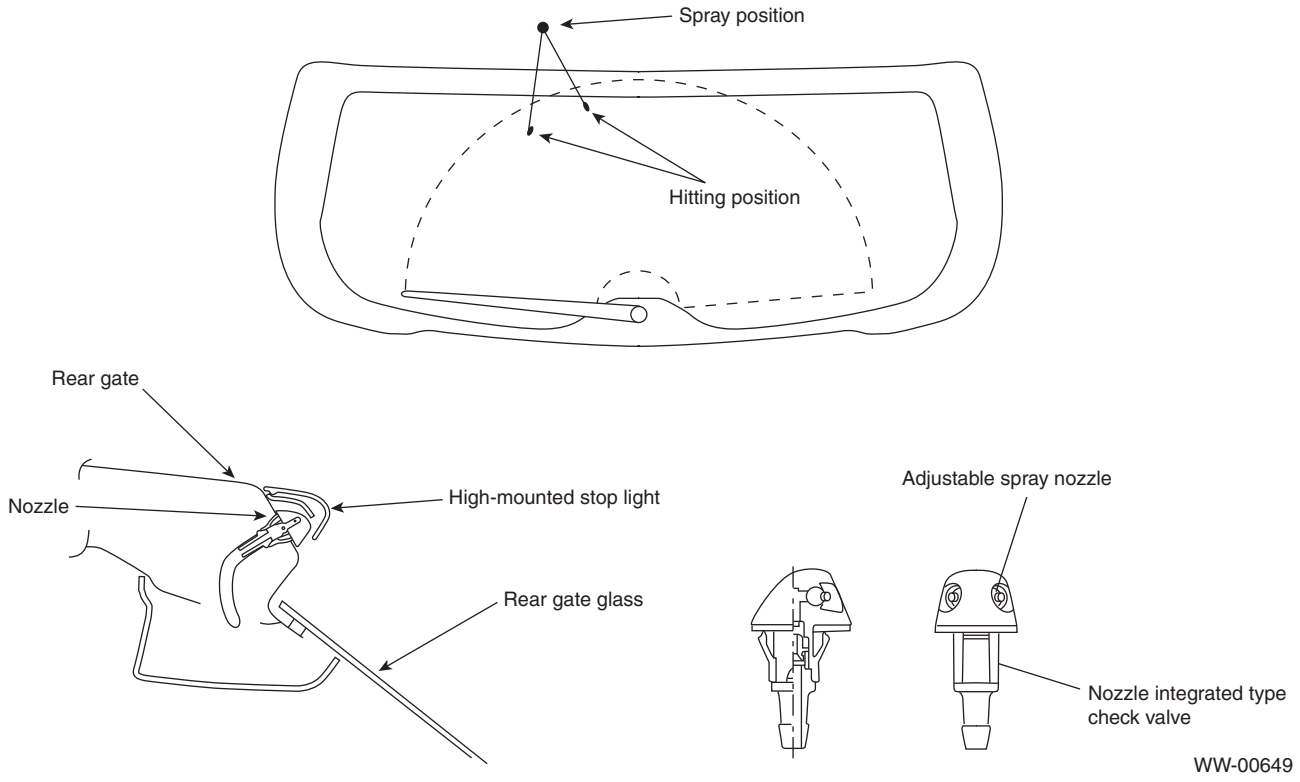
2. WASHER TANK AND PUMP

• The wiping performance has been improved by adoption of a high pressure rear washer pump.
• The tank capacity is 4.5L.
• The washer fluid level sensor is added.



3. REAR WASHER NOZZLE (OUTBACK)

- The nozzles in use are an adjustable two-point type.
- The nozzles integrate a check valve to prevent any washer fluid dripping.
- The rear washer nozzles are concealed by the high-mounted stop light to offer a neat and smart appearance.



5-6 Meter and Multi-information Display

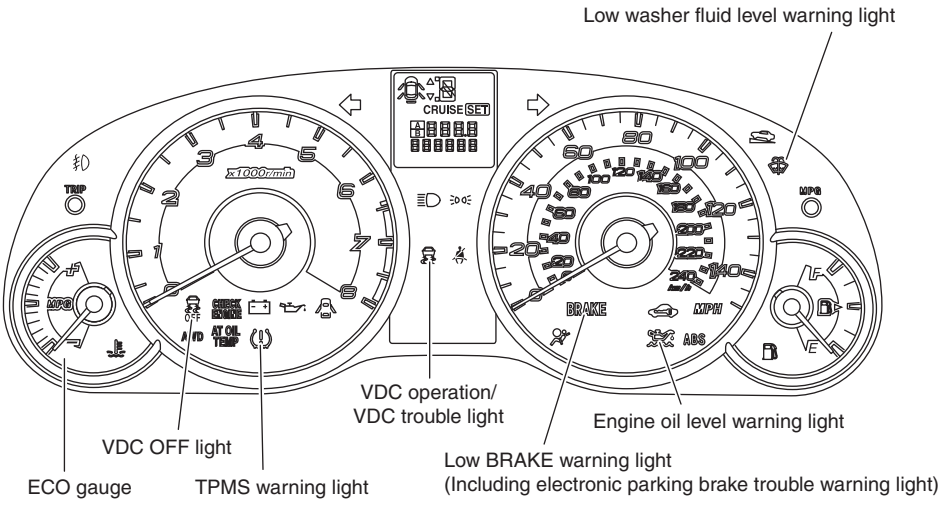
A: COMBINATION METER

- The sweep function is adopted to offer an amusing effect upon IG ON.
- The meters and display are now illuminated constantly even in daytime to improve the visibility. In addition, to improve the feel of quality in daytime, the brightness for daytime is varied from that for nighttime MAX brightness to make the lettering panel more visible.
- The water temperature is displayed as follows using the lamp illumination pattern.

Water temperature	Low	Normal	High	Critically high
Lamp illumination pattern	Lights up in blue	Off	Flashes in red	Lights up in red

- An ECO gauge is adopted to all models as an item for fuel economy improvement.
- An MT shift indicator is adopted to all MT models.
- An aluminum vapor coating ring is adopted to improve the marketability and quality feel.
- A mirror printing feature is added to improve the quality feel.
- The engine oil level warning light is added.
- The low washer fluid level warning light is added.
- After IGN ON, the dealer customization mode or the self diagnosis mode can be selected by turning the position light ON to/from OFF and operating the trip knob in combination. The dealer customization mode allows enabling and disabling the ambient temperature correction, average fuel consumption correction and GPS automatic time correction.
- The initial sweep now can be enabled or disabled by operating the trip knob upon IGN OFF.

- For U.S.



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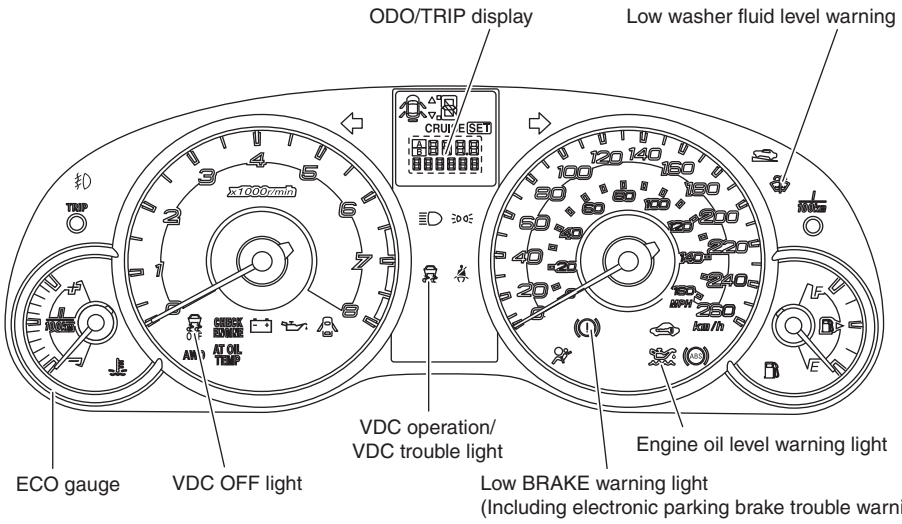
• For Canada



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B: MULTI-INFORMATION DISPLAY

1. AMBIENT TEMPERATURE DISPLAY

The ambient temperature display function is now available in all grades.

2. FUEL CONSUMPTION DISPLAY SWITCHING

- As an item for fuel economy improvement, the switching function between average fuel consumption A/B, instantaneous fuel consumption and possible travel distance is now available to all grades.
- The display changes as follows linking with the operation of the MFD display changeover knob in the meter: Possible travel distance → Average fuel consumption → Instantaneous fuel consumption → Blank → Possible travel distance, and so on.
- For the average fuel consumption A/B, the data corresponding to the trip information in the meter (trip A/B) are displayed.

3. CLOCK DISPLAY

- The clock display function is now available in all grades.
- For a vehicle with maker option navigation system, the time display is automatically corrected to the GPS time in combination with the navigation system. The time correction can be enabled or disabled by the customization function from the meter.

4. SRS PASSENGER'S AIRBAG INDICATOR

In accordance with the North American regulations, an ON/OFF indicator is adopted for the passenger's SRS airbag.

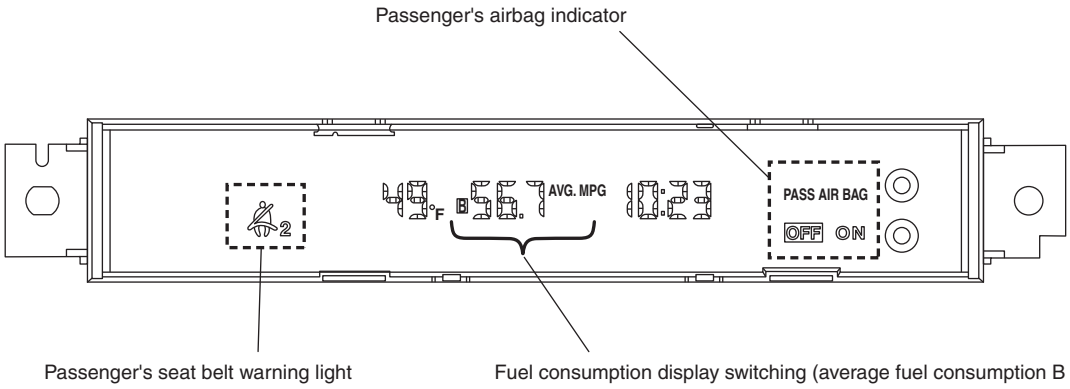
5. PASSENGER'S SEAT BELT WARNING LIGHT

The passenger's seat belt warning light is adopted.

6. INSTALLATION LOCATION

The display is located in the upper section of the center panel so that it can be viewed from any seat position.

• For U.S.



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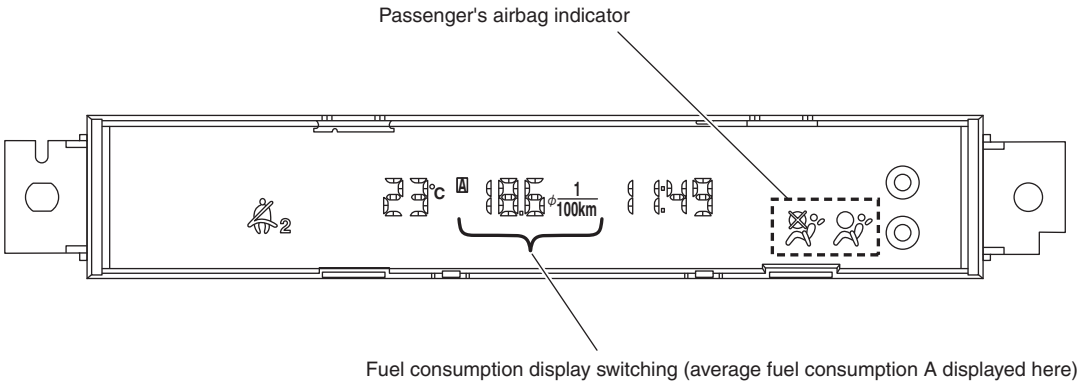
• For Canada



IDI00328

5-7 Seat

A: GENERAL DESCRIPTION

The seats have been newly developed to create an open interior space that can be recognized at a glance and achieve such a seating comfort as releasing occupants from fatigue even in a long distance travel.

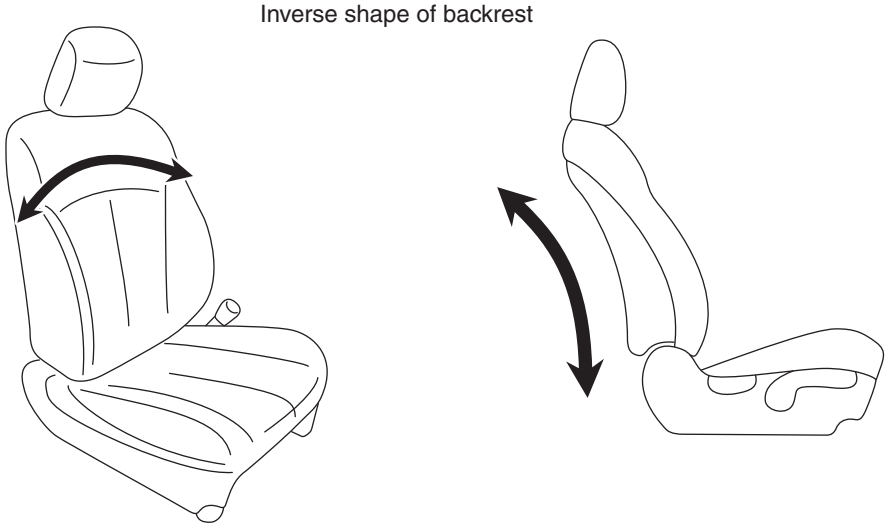
B: FRONT SEAT

1. SHAPE

1) Inverse shape of backrest

- By adopting an inverse shape, the seats offer both an open feel and a feel of support simultaneously.
- The plastic back board formed in an inverse shape, provided to the rear of the backrest, improves the quality feel while extending the knee space for rear occupants.

Inverse shape of backrest

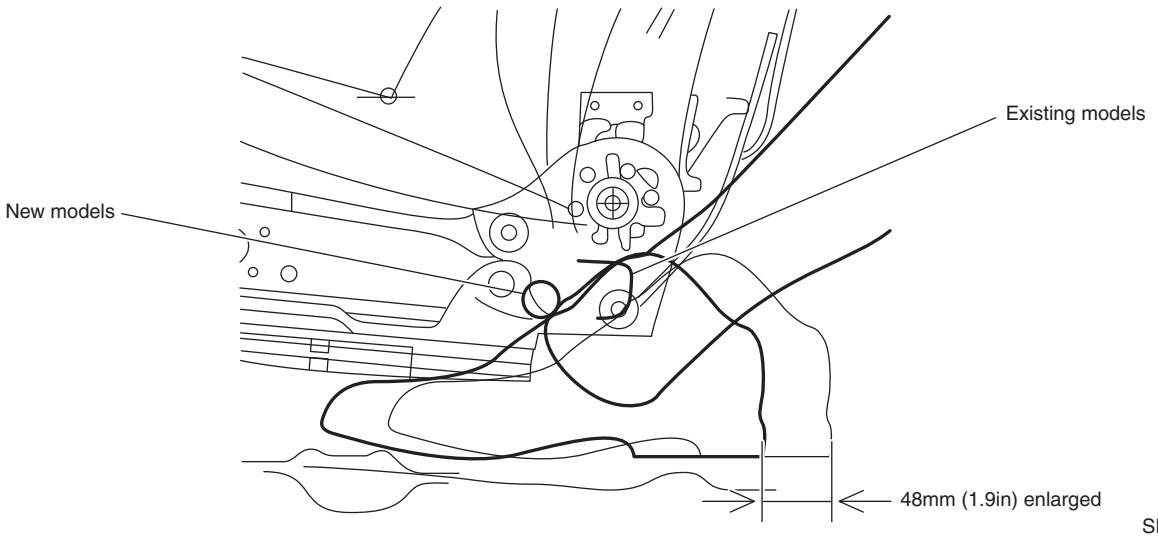


SE-00972

2) Extended footwell for rear occupants

The seat framework has been totally revised to extend the footwell for rear occupants.
(48 mm (1.9 in) wider than existing models)

Extended footwell for rear occupants



SE-01092

2. ADJUSTMENT MECHANISM

1) Variable types of adjustment mechanisms

	Driver's seat		Passenger's seat	
	10 way power	6 way, manual	4 way power	4 way, manual
Slide	Powered	Manual	Powered	Manual
Reclining	Powered	Manual	Powered	Manual
Lifter	Powered	Manual	×	×
Tilt	Powered	×	×	×
Lumbar	Powered	×	×	×

Note
× : not equipped

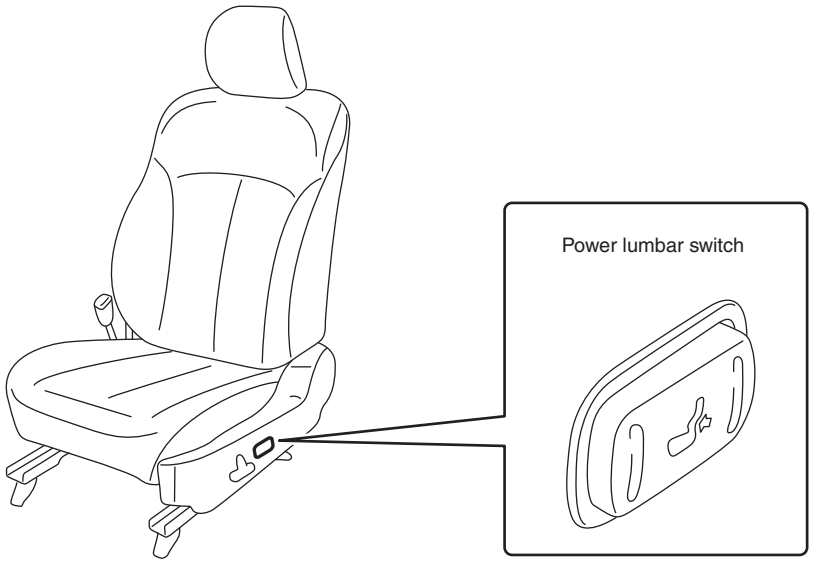
2) Increase of adjustment range

The adjustment range has been increased to support a wider variety of human body types.

Front seat adjustment range		New models	Existing models
Manual seat	Slide range (mm) (in)	250 (9.8)	216 (8.5)
	Slide pitch (mm) (in)	10 (0.4)	12 (0.5)
	Lifter range (mm) (in)	60 (2.4)	40 (1.6)
Power seat	Slide range (mm) (in)	250 (9.8)	210 (8.5)
	Lifter range (mm) (in)	60 (2.4)	40 (1.6)
	Tilt angle (°)	8.1	6.3

3) Adoption of power lumber control

- A power lumber control mechanism is adopted to the 10 way power seat.
- The lumbar adjusting operations are now electrically controlled to improve the usability.

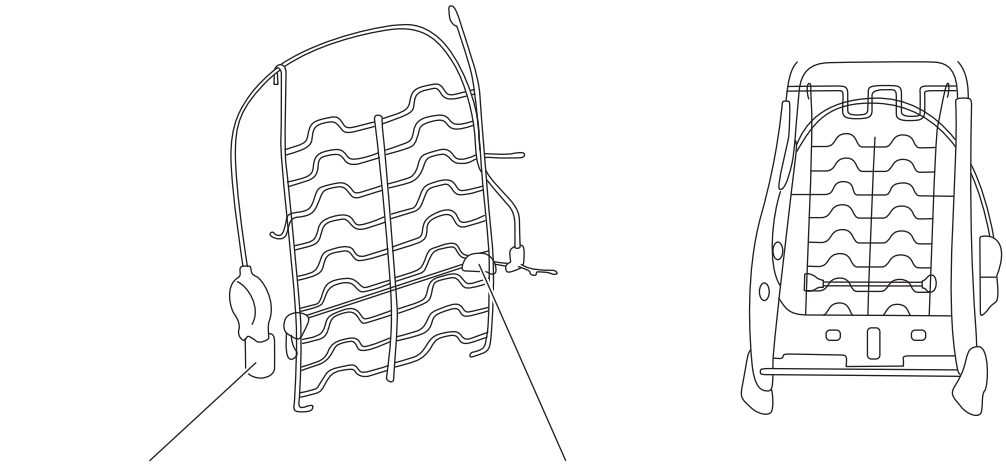


SE-01121

• The adjustment range has been increased to improve the lumbar support performance.

	New models	Existing models
Lumbar mechanism	Powered	Manual
Change in lumbar support protrusion length when adjusted from lowest level ⇒ highest level mm (in)	20 (0.8)	7 (0.3)

Power lumber control mechanism (10 WAY power seat)



SE-01130

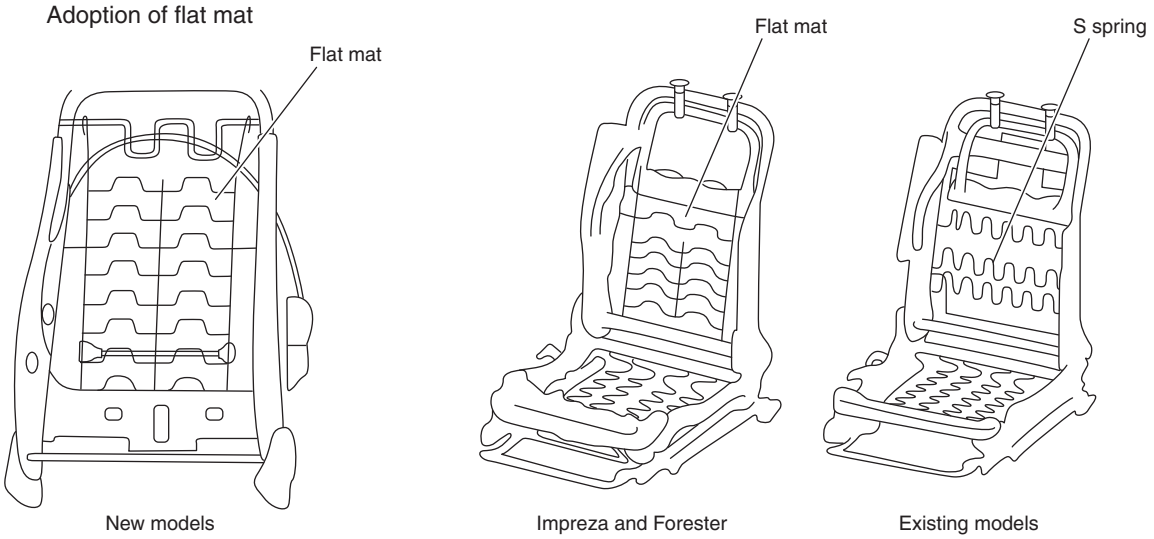
3. IMPROVEMENT OF SEATING COMFORT

1) Adoption of low resilience polyurethane foam

The adoption of low resilience polyurethane foam for cushions has improved the seating comfort with appropriate feel of support while absorbing any small vibrations during a vehicle travel.

2) Adoption of flat mat

- A flat mat is adopted for the backrest spring.
- In comparison with the S spring in existing models, it offers better seating feel by supporting the occupant body by his entire back.
- Even when compared with the new Impreza and Forester that have already adopted the flat mat, the flat mat coverage of the new models is more expanded upward to compensate for the absence of active headrest, which contributes to further improvement of seating comfort.



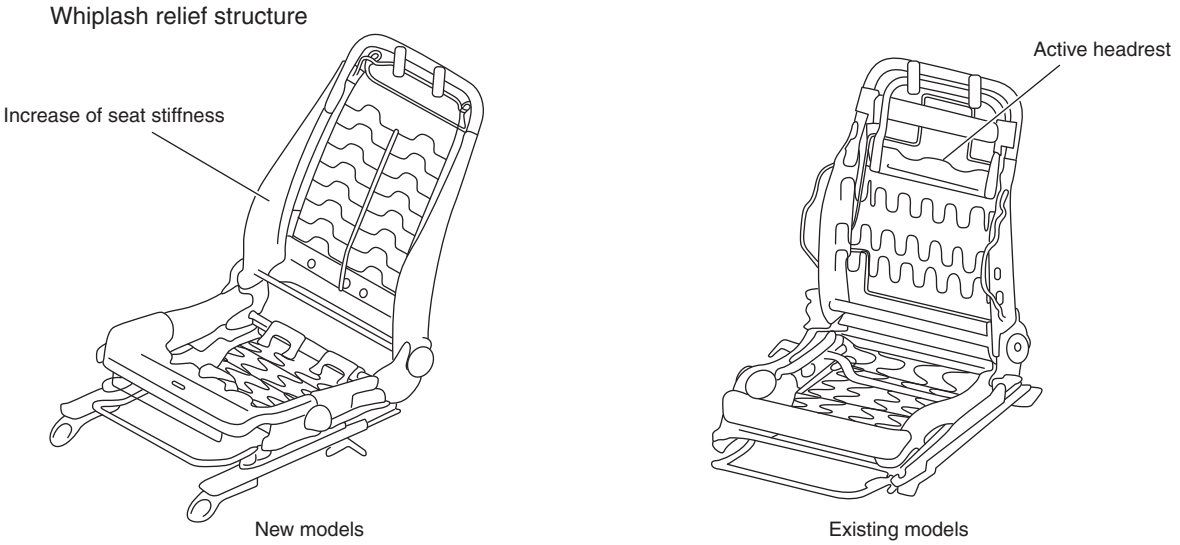
3) Optimum setting of pad hardness

- An optimum pad hardness is selected.
- The softer setting than existing models has improved the seating comfort.

4) Whiplash relief structure

- In existing models, the active headrest relieves the whiplash effect upon a rear-end collision. In the new models, a new seat structure has been developed to relief the whiplash effect by modifying the entire seat structure while discontinuing the use of active headrest.

• The possible damage to the occupant neck has been reduced by significantly increasing the seat stiffness and eloborately controlling the occupant behavior with the energy-absorbing hook and energy-absorbing headrest.



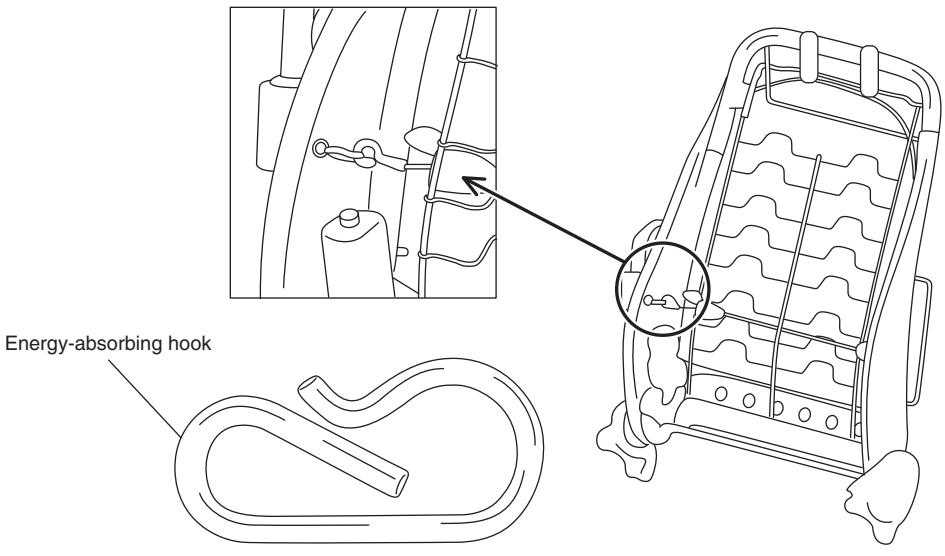
SE-00976

(1) Significant increase of seat stiffness

Upon a rear-end collision, the entire seat structure holds the occupant body and head simultaneously and securely.

(2) Energy-absorbing hook

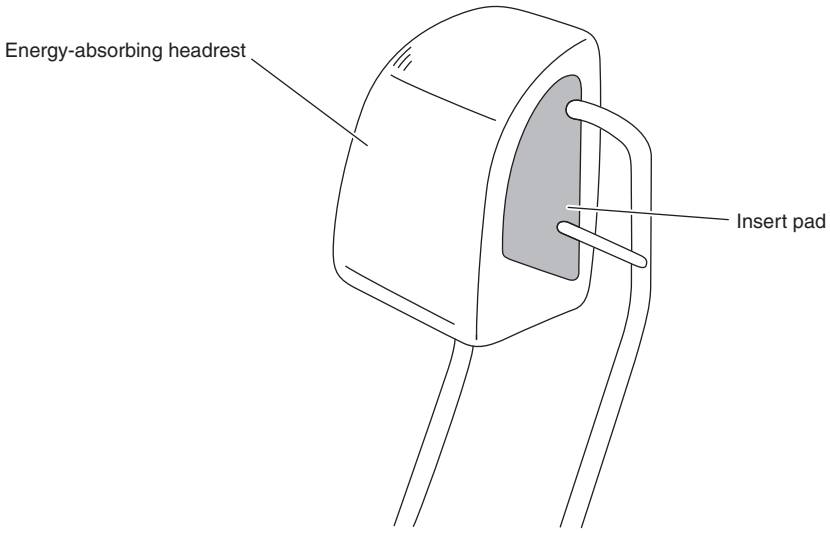
This reduces the load to the occupant body at an early stage of rear-end collision by restricting and absorbing the collision impact.



SE-00977

(3) Energy-absorbing headrest

This reduces the load to the occupant head at an early stage of rear-end collision by restricting and absorbing the collision impact.



SE-00978

C: REAR SEAT

1. SHAPE

1) Inverse shape of backrest

By adopting an inverse shape, the seats offer both an open feel and a feel of support simultaneously.

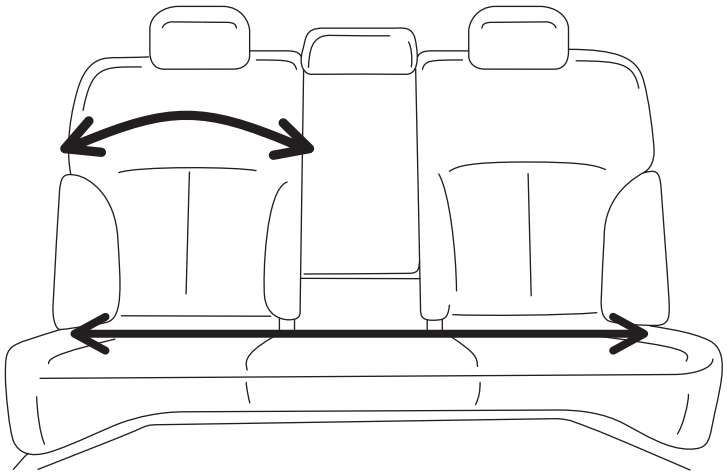
2) Cushion shape with less irregularities

A feel of roominess is created by reducing any surface level gap between center seat and outer seats as far as possible.

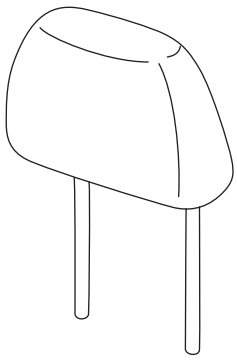
3) Large headrest for outer seats

In accordance with the safety regulations, a large headrest is adopted.

Inverse shape of backrest



Large headrest for outer seats



SE-01093

2. ADJUSTMENT MECHANISM

1) Variable types of adjustment mechanisms

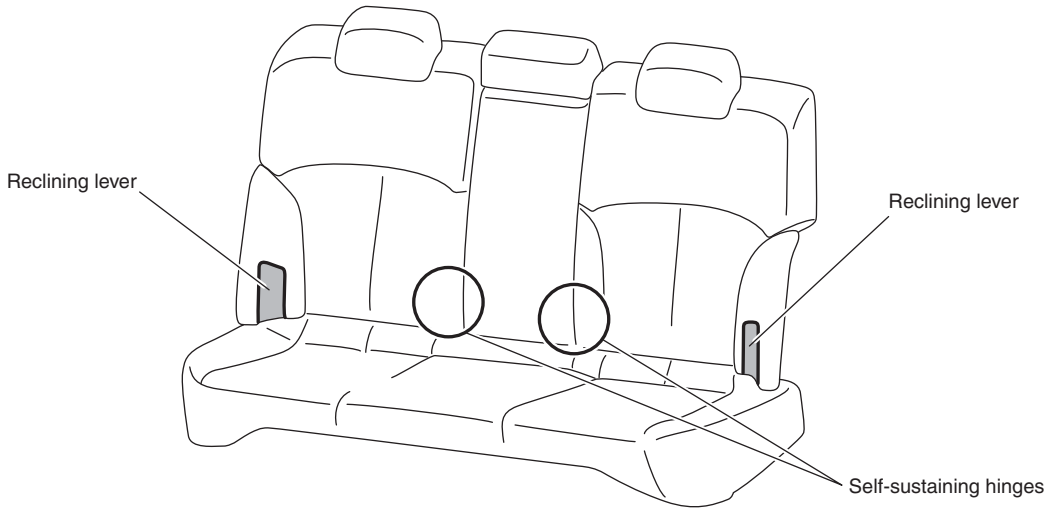
	Sedan	OUTBACK
Cushion	Fixed	Fixed
Backrest	Split-folding	Split-folding
Reclining	×	❍
Center armrest	❍	❍
Cup holder (integrated in armrest)	❍	❍
Outer seat headrest	❍ Large	❍ Large
Center seat headrest	❍	❍

Note
× : not equipped
❍ : equipped

2) Reclining mechanism (OUTBACK only)

Instead of the striker system adopted in existing models, the new models adopt self-sustaining hinges

		New models	Existing models
Reclining angle	**Forward**	6°	None
	Rearward	14°	None
	Total	20°	None



SE-00980

3. SEATING COMFORT

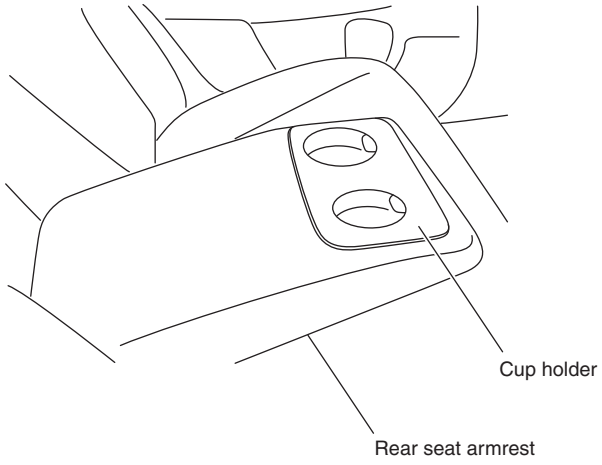
- As in the front seats, an optimum pad hardness is selected.
- The softer setting than existing models has improved the seating comfort.

4. UTILITY

Cup holder-integrating armrest

- All models are provided with cup holders (with bottom sheet) as standard feature.

Cup holder-integrating armrest (all models)



SE-01060

5-8 Immobilizer

- The transponder communication system has been totally revised so that the transponder is not affected easily by any signal-generating device nearby, such as Speedpass *.
- Due to this modification, the transponders for new models have no compatibility with existing models. (Keys for Impreza and Forester cannot be registered to the new Legacy models. The same applies to the reverse cases.)

* Electronic device for automatic payment, used in gas stations.

- To obey the Canada regulation (CMVSS114), security control module is added to the location where one can not access easily.

5-9 Anti-theft Alarm

An anti-theft alarm system has been provided to all models, which issues an alarm (activation of horn and hazard light) if any door is unlocked and opened with any other means than the keyless entry system when all doors closed (wireless keyless transmitter door lock) or the vehicle receives certain impact (only for models with dealer option impact sensor).

- In the following case, the alarm does not operate because the anti-theft alarm system is not armed.
  The anti-theft alarm system is not armed (alarm monitor is not active) if the vehicle is locked with a vehicle key, or locked by operation without keyless system from inside the vehicle while all doors are closed.
- In the following case, the alarm is activated.
  If a door is unlocked with a vehicle key or by user operations from inside the vehicle while the anti-theft alarm system is armed (in alarm monitor state), the anti-theft alarm system is not disarmed. When the user opens a door in the above state, the alarm is activated.

When the alarm is activated, it can be canceled by performing any of the following operations.

- Press any button of the keyless transmitter.
- Insert the key into the ignition switch and turn the ignition switch to ON.

* The anti-theft alarm system can be enabled or disabled by the user. (Refer to the owners manual)

5-10 Integrated Unit

A: GENERAL DESCRIPTION

Compared to existing models, convenience and hospitality features have been added for better utility and quality feel.

B: AUTO LIGHT FUNCTION

- An auto light system is adopted, which activates the lights automatically according to the surrounding brightness.
- For details of auto light, refer to “LIGHTING SYSTEM”.

C: TRUNK RELEASE FUNCTION

- The trunk release system has been changed from the cable type to the electronic control type.
- The quality feel for operation has been improved.
- Any inadvertent trunk release operation during a vehicle travel can be prevented.

D: ELECTRONICALLY CONTROLLED LIGHT OPERATION (TAIL/CLEARANCE, ILLUMINATION, HEADLIGHT)

- The light deactivation timing has been changed from IGN OFF to when the key is pulled out (or ACC OFF for models with smart key).
- The lights can be turned on without inserting a key. The switch on the column cover has been eliminated.
- When the driver opens the driver’s side door with a light activated, the light ON reminder buzzer sounds.
- While maintaining the automatic light deactivation function that is triggered when the driver leaves the vehicle, the new system eliminates the need of inserting a key when turning on the lights. This improves the user convenience further.

E: REAR WIPER OPERATION BY MODULE CONTROL

The rear wiper activation timing for rear washer operation is optimized (delayed) to prevent damage to rear glass and wiper rubbers due to dry wiping.

F: CUSTOMIZATION OF VARIOUS FUNCTIONS

- Various functions can be customized according to the user preference using SSM.

Customizable item	Contents	Default setting
Room light off delay time	OFF/SHORT/NORMAL/LONG	LONG
Rr defogger op. mode/Wiper deicer op. mode	Continuous/normal	Normal
Alarm ON/OFF setting	ON/OFF	ON
Alarm monitor delay	ON/OFF	ON
Lockout prevention	ON/OFF	ON
Door open warning	ON/OFF	ON
Auto Light Sensitivity Adjustment	1: Insensible 2: Standard 3: Sensitive 4: Very sensitive	2: Standard
Answer-back buzzer setup	ON/OFF	ON
Hazard answer-back setup	ON/OFF	ON
Impact Sensor ON/OFF setting	ON/OFF	OFF
Passive arming changeover	ON/OFF	OFF

G: HOSPITALITY IMAGE BY INTERIOR LIGHT

1. IMPROVED FEEL OF HIGH QUALITY AND UNITY FOR INTERIOR LIGHT

1) From the activation/deactivation of interior lights in a slow and unified manner, the users will feel tenderness and high quality image.
2) With the following specification changes, the vehicle lights offer image of unity and high quality.
    - The phased lamp activation/deactivation time has been changed to create a tender light control image.
    - The off delay times for door open/close operations and keyless unlock operations have been unified.
    - The off delay times for IGN/ACC ON/OFF operations have been unified.

2. MODIFICATION OF INITIAL SETTING FOR ROOM LIGHT ACTIVATION TIME

The initial setting for room light activation time has been changed to 30 seconds to allow the user to find the vehicle in a parking lot without any light more easily.

3. OPTIMIZATION OF MAP LIGHT SYNCHRONIZATION WITH DOOR

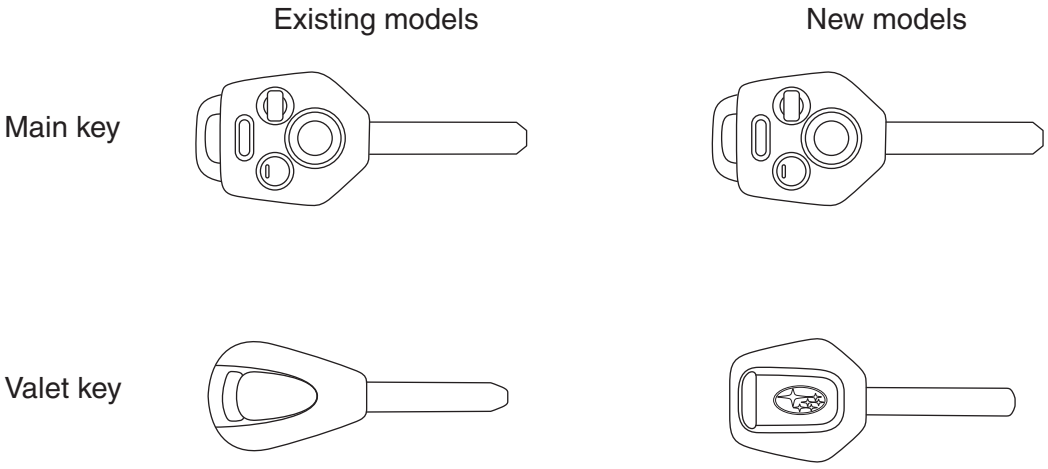
- A door synchronizing switch has been added to the map light.
- The map light specifications have been modified so that it turns on when a door is opened and remains off when the rear gate is opened.
- The elimination of unnecessary light activation upon rear gate opening improves the functionality feel.

H: WIPER DEICER

- The separate wiper deicer switch has been eliminated. The function is now integrated in the rear defogger switch.
- The wiper deicer is synchronized with the rear defogger operation. If you operate the rear defogger when the ambient temperature is 5 °C (41 °F) or less, the deicer operates automatically.

5-11 Key Plate

The appearance has been modified from those for existing models.



5-12 Combination Switch

The appearance and wiper operation patterns have been modified from those for existing models.

Change in wiper operation	Existing models	New models
Wiper and headlight washer operation	Turn ON by switch at lever end	Turn ON by pulling lever toward you
Mist operation	Turn ON by pulling lever toward you	Turn ON by pushing lever up

5-13 Power Window Switch

The auto UP operation specifications are modified.

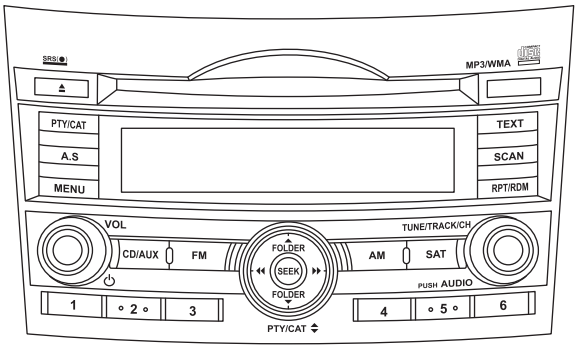
Existing models		New models	
UP operation	DOWN operation	UP operation	DOWN operation
Manual	Auto	Auto (with reverse function) *1	Auto

*1: 2.5i is provided the manual UP operation function only as in the existing models.

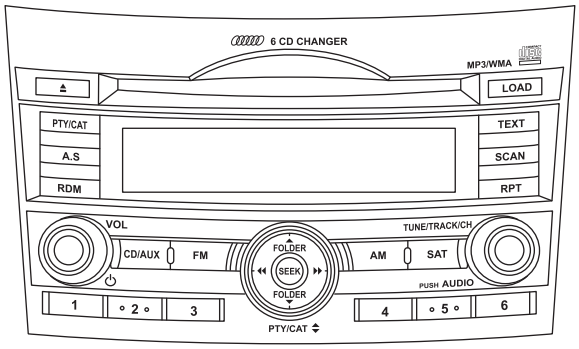
5-14 Audio and Navigation

A: AUDIO

The audio systems installed in the new Legacy models provide a “multi entertainment” solution creating a comfortable interior space to individual users.



1CD model



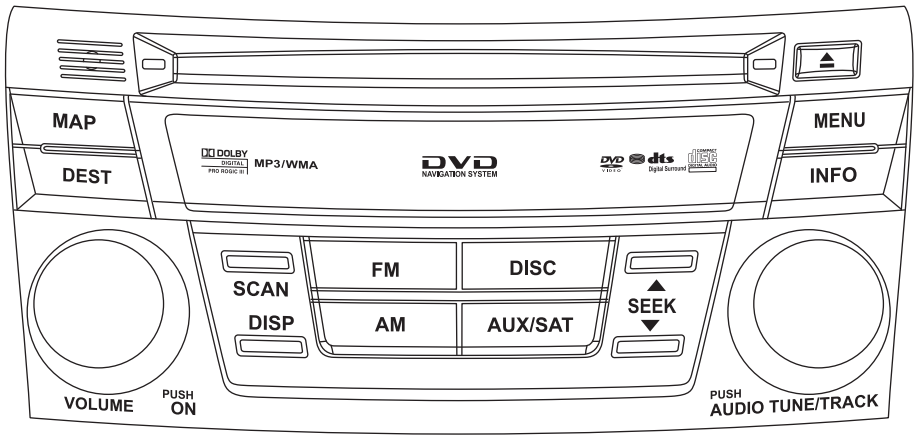
6CD model

ET-00429

- In addition to the support of CD-R/RW and playback of various recording formats (MP3, WMA), they also offer versatile connectivity for various kinds of external devices utilizing the external input terminals. (All models)
- The sound quality and sound field are specially tuned to the Legacy models utilizing the parametric equalizer and time alignment functions. Moreover, the adoption of SRS CS Auto® contributes to creation of extensive and abundant sound fields. (1CD)
- The harman/kardon® premium audio system has been thoroughly tuned focusing on the sound quality, sound field and vibration suppression in corporation with harman/kardon®. (6CD in-dash CD change)
- The audio system also incorporates a sound volume adjustment function that automatically optimizes the audio sound volume to the noise level in the passenger compartment increasing as the vehicle speed increases. (All models)
- A phase diversity digital tuner is adopted for FM reception to achieve more noiseless reception. (All models)
- The adoption of Bluetooth® handsfree functions allows the user to respond to a telephone call received during a vehicle travel without stopping the vehicle. (6CD in-dash CD changer) (Except models for Canada)
- A handsfree microphone is located in the overhead console, which can be used in combination with the steering switches to make a call by voice. (6CD in-dash CD changer) (Except models for Canada)
- The radio functions are further enhanced with support of satellite radio and RBDS. (All models) (An optional satellite tuner antenna and the subscription to XM or SIRIUS are required)
- The audio operations can be achieved in an integrated manner also through the audio control switches installed on the steering wheel. (All models)
- Power amplifier maximum power: 180 W (1CD model)

B: AUDIO AND NAVIGATION INTEGRATED SYSTEM

The audio and navigation integrated systems installed in the new Legacy models provide a “multi entertainment” solution creating a comfortable interior space to individual users.



Navigation operation area

ET-00414

- A high-resolution wide VGA 8 inch monitor is adopted to improve the visibility and legibility so that occupants can view information without stress. (OP for all models)
- In addition to the support of CD-R/RW, DVD videos, DVD±R/RW and playback of various recording formats (MP3, WMA), they also offer versatile connectivity for various kinds of external devices utilizing the external input terminals. (OP for all models)
- The harman/kardon® premium audio system has been thoroughly tuned focusing on the sound quality, sound field and vibration suppression in corporation with harman/kardon®. (Models with harman/kardon® premium audio)
- The audio system also incorporates a sound volume adjustment function that automatically optimizes the audio sound volume to the noise level in the passenger compartment increasing as the vehicle speed increases. (OP for all models)
- A phase diversity digital tuner is adopted for FM reception to achieve more noiseless reception. (OP for all models)
- The adoption of Bluetooth® handsfree functions allows the user to respond to a telephone call received during a vehicle travel without stopping the vehicle. (All models)
- Bluetooth® enables connections with audio appliances as well as handsfree operation of cellular phone. Once connected by Bluetooth, the appliance can be controlled from the navigation screen, audio unit, or steering switches. (OP for all models)
- The system incorporates a voice recognition function utilizing the handsfree microphone, which allows the user to make a telephone call or operate the audio and navigation systems by voice.
- The audio operations can be achieved in an integrated manner also through the audio control switches installed on the steering wheel. (All models)
- All models with navigation system are provided with a rear view camera as standard feature.
- The harman/kardon® premium audio system has no special sound process functions as adopted to the standard audio systems.

C: AUX(EXTERNAL INPUT TERMINAL)

1. FEATURES

For the first time with Subaru, the new Legacy models offer an AUX port with USB interface that supports digital audio devices such as iPod. (only models with navigation) Other models with audio system provide a 3.5mm diameter mini-jack as the existing models do so.

2. GENERAL DESCRIPTION OF USB FUNCTIONS

- The USB communication is based on USB2.0 (Full speed).
- It supports connection of USB mass storage class devices and iPod.
- The port is used to play back audio files stored in a USB storage device or iPod (not support iPod video) and at the same time charge the iPod.
- The user can view music titles and select a music piece to play back by using the navigation touch panel.
- A “SUBARU” logo is displayed in the iPod display.

3. SUPPORTED MEDIA

1) iPod support

iPod model	Operation-verified firmware version	Supported contents
		MUSIC
nano	1.3.1	Yes
5G	1.3	Yes
2G nano	1.1.3	Yes
classic	1.1.2	Yes
3G nano	1.1.2	Yes
touch	1.1.4	Yes

The iPod models with older version firmware may be operable if the firmware is updated to the latest one, although some inconveniences may be encountered in operation.

4G nano and 2G touch are also operable though some inconveniences may be encountered.

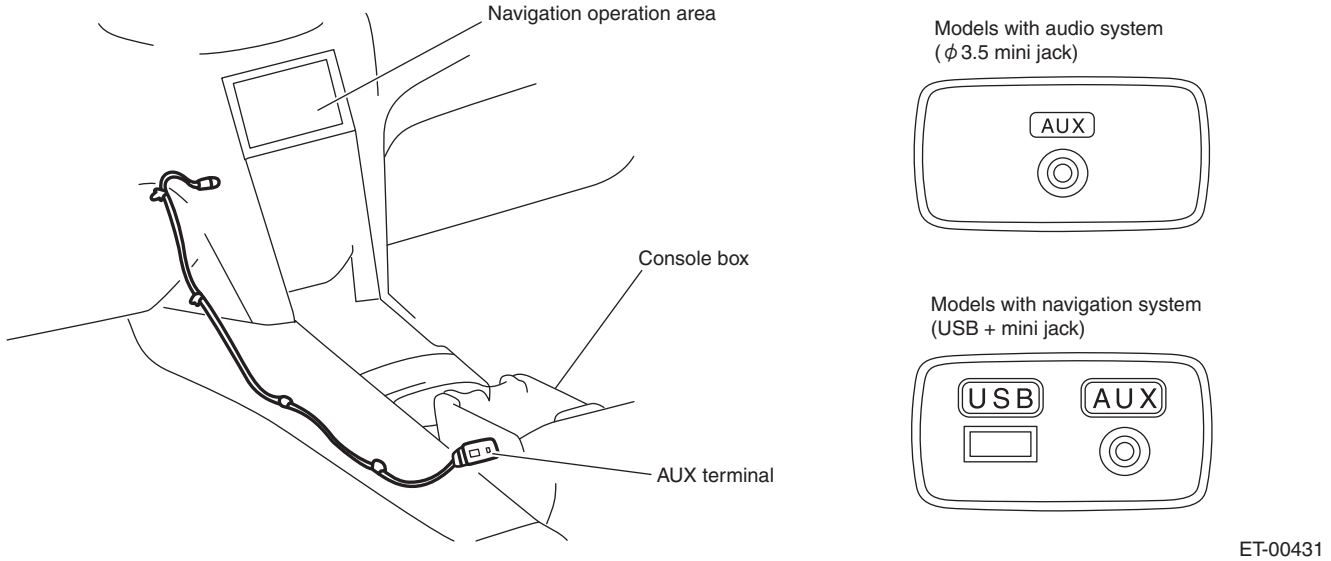
*iPod models not supported: 3G, Shuffle, mini, 4G, Photo, iPhone, iPhone 3G

2) USB memory support

Contents	Specifications
Supported standards	USB2.0, mass storage class
Supply current	500 mA max.
File system	FAT16, FAT32
File/folder	Maximum folder layers: 8 layers (root is layer 0) Maximum number of files: 65535 Maximum number of files in a folder: 1,000 Maximum number of folders: 699 Minimum file size: 24 kB
Memory size	FAT16: 128 MB or more FAT32: 256 MB or more
Supported formats (file extension)	MP3: MPEG1 Audio Layer3 32 - 320 kbps 44.1/48/32 kHz WMA: Windows Media Audio 9.2 compliant ACC: AAC-LC 8 - 320 kbps 8 - 48 kHz
Cases where normal operation cannot be assured	Connection via. USB hub Operation current exceeding 500 mA Device supporting USB1.1 only Device requiring power supply other than USB bus power Digital audio players other than iPod NTFS Memory card inserted in card reader File with digital right management (DRM) Some inferior quality products (not compliant to USB2.0)

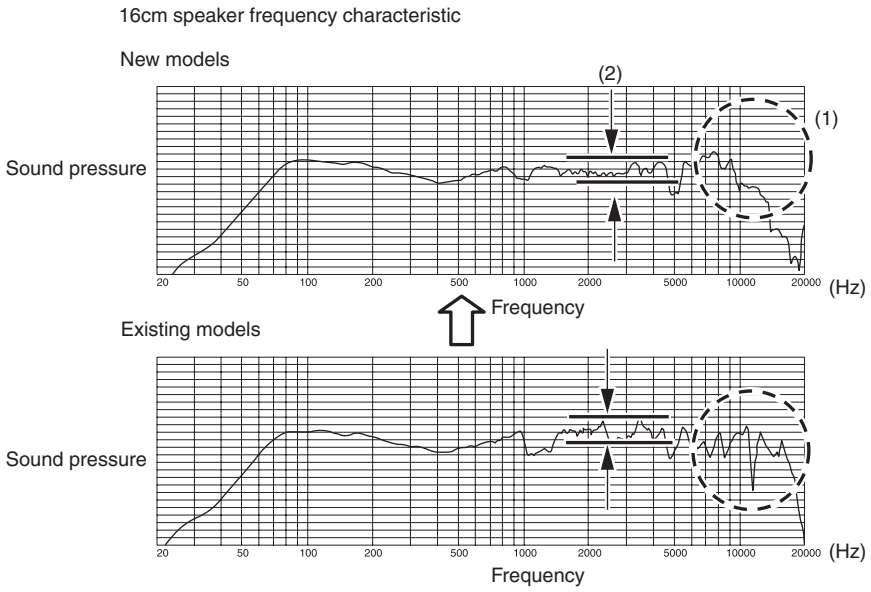
4. INSTALLATION LAYOUT

- The AUX port is located on the front wall inside the console box.
- If equipped with USB, a dedicated cable compliant to USB2.0 is installed between the port and the navigation unit.



D: SPEAKER (STANDARD SPEAKER SYSTEM)

- A speaker mainly covering low to medium frequency ranges is adopted for the door speakers. (16 cm speaker frequency characteristic chart, (1))
- A speaker diaphragm of uneven thickness structure is adopted to restrict inherent resonance. In addition, a frequency characteristic with less peaks and dips is achieved. (16 cm door speaker frequency characteristic chart, (2))



ET-00417

E: GLASS ANTENNA

1) General description of glass antenna

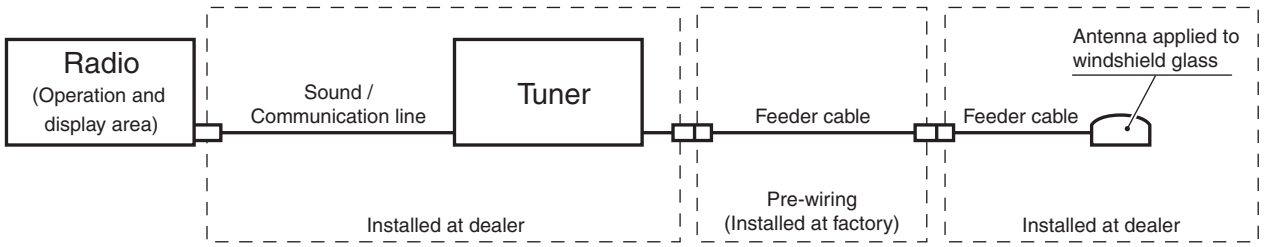
- A glass antenna for AM/FM reception is provided on the rear glass as standard feature.
- An antenna amplifier is fitted to insure stable radio reception even in a fringe area.

2) FM diversity support

- For improvement of reception performance in urban areas, the antenna supports the FM diversity system.
- The radio reception system is a combined diversity type to provide a good reception condition constantly.
- Thanks to the adoption of FM diversity system, the reception performance is significantly improved in comparison with existing models.

3) Satellite radio support (dealer option)

Supports the satellite radio broadcasts in North America. Over 100 channels of programs can be enjoyed with high sound quality equivalent to CD. (To listen to the satellite radio programs, optional satellite tuner and antenna as well as the subscription to XM or SIRIUS are required.)



ET-00418

5-15 Rear View Camera

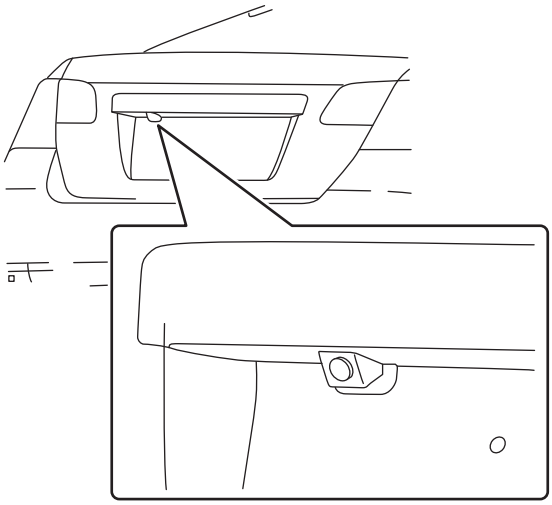
A: FEATURES

- The same type of camera as existing models is adopted and a new bracket has been designed to match with the new models.The view angle is 130.1° × in horizontal direction and 97.5° in vertical direction. For the image pickup device, a 1/4 inch color CCD (250 thousand pixels) is adopted.
- In the night, the back-up light offers sufficient rearward visibility.
- The system superimposes a fixed guide lines (indicating vehicle width and distance) on the navigation screen to help the driver maneuver the vehicle for reverse travel or parking. (Red: 0.5 m (1.6 ft), yellow: 1.0 m (3.3 ft), green: 2.0 m (6.6 ft) /3.0 m (9.8 ft))

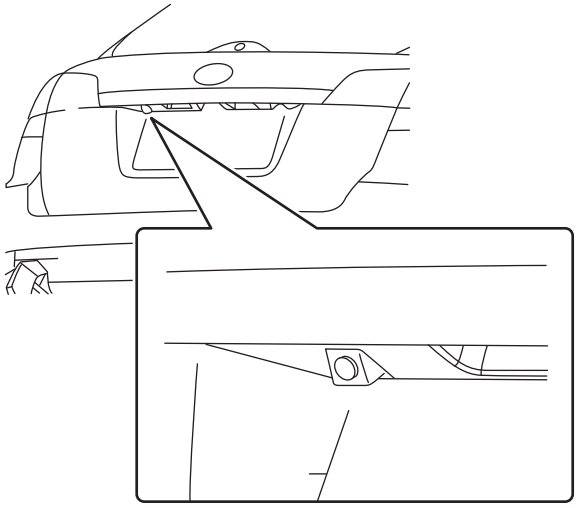
B: MOUNTED VIEW AND NAVIGATION SCREEN DISPLAY

- Rear view camera location

<Sedan>

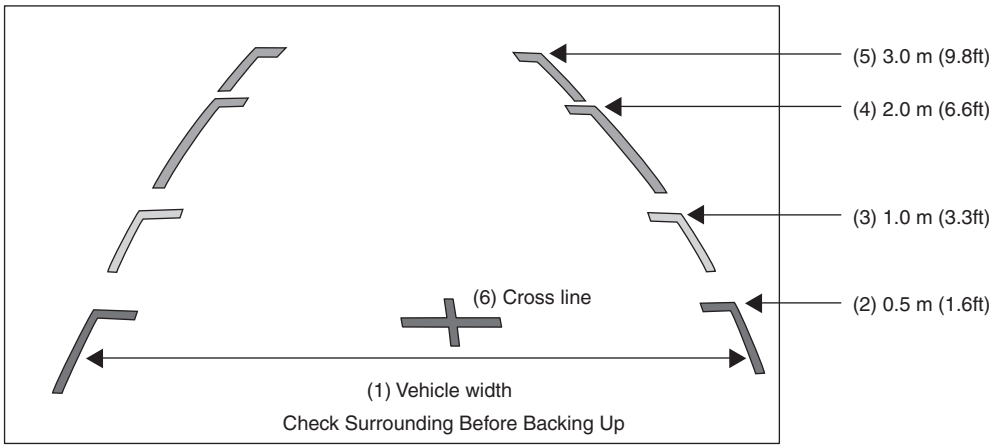


<OUTBACK>



PC-00072

• Guide lines for vehicle rear on display



ET-00430

No.	Description	
(1)	Vehicle width	Indicates the trace (vehicle width) created by the vehicle when it reverses straightly from the current position. The lines indicate positions 150 mm (5.9 in) left and right from the vehicle width.
(2)	0.5 m (1.6 ft)	Indicates a point 0.5 m (1.6 ft) away from the vehicle (bumper) rear end. Displayed in red.
(3)	1.0 m (3.3 ft)	Indicates a point 1.0 m (3.3 ft) away from the vehicle (bumper) rear end. Displayed in yellow.
(4)	2.0 m (6.6 ft)	Indicates a point 2.0 m (6.6 ft) away from the vehicle (bumper) rear end. Displayed in green.
(5)	3.0 m (9.8 ft)	Indicates a point 3.0 m (9.8 ft) away from the vehicle (bumper) rear end. Displayed in green.
(6)	Cross lines	Indicates a point 0.5 m (1.6 ft) away from the vehicle (bumper) rear end as well as shows the center of the vehicle. Displayed in red.

5-16 Interior Equipment

A: TRIM

1. ROOF TRIM

- A tricot with cushion is adopted for the trim skin to provide a feel of soft touch and high quality equivalent to existing models.
- Due to the enlargement of body size, the overhead clearance is also improved to a one rank higher level.
- The joint lines between lights and A pillar are made flush with each other. The feel of unified design and openness for interior ceiling has been improved.

2. PILLAR TRIM

- The bright interior colors and continuous shaping with roof trims provide improved feel of unity and openness in the area from ceiling to windows.
- The blind caps for curtain airbag bolts have been all abolished and unnecessary parting lines have been reduced to improve the feel of unity further.
- The B pillar lower is designed by focusing on the continuos shaping with front and rear door trims. The natural feel of continuity improves the quality feel.

3. DOOR TRIM

- Ornament panels with sense of continuity to the instrument panel are provided according to the grade. (metallic, woodgrain)
- The armrests with urethane pad are finished by stitching, offering a feel of softness and high quality to the users when they place their arms.
- A large capacity pocket is provided to all seats, which can accommodate a 24 ounce plastic bottle with 75 mm (3 in) diameter or a low profile tissue box. The front boxes can store both simultaneously.
- A pull handle that can be utilized as a compartment is provided to all seats. They can accommodate a cellular phone and cigarette box simultaneously.

B: SUN VISOR

- A tricot is adopted for the skin material as same as the roof trim, and the vanity mirror position is optimized for better usability.
- A lighted vanity mirror is provided to both the driver's and passenger's seats for all models to improve the quality level of the interior equipment.
- A larger sun visor is adopted to offer sufficient light block area and improve the active safety performance further.

C: ASSIST RAIL

- The enlarged grip handle and ergonomic layout offer reduced feel of fatigue and improved operation feel to the users.

D: OVERHEAD CONSOLE

- All models are equipped with an overhead console to improve the quality level of interior equipment.
- A door open/close synchronizing switch has been added to the map light. The light distribution to occupants is optimized and the light intensity upon ingress is increased.
- A shower light has been added which provides natural lighting to the shift lever area from above, creating a high quality image.
- A Bluetooth® microphone is added (models with 6 CD in-dash CD changer) to allow handsfree telephone operations (except models for Canada) for improved active safety performance.

E: SIDE SILL COVER

A SUS plate is provided to the front sills to offer a high quality image. (2.5 i Limited, 2.5 GT Limited, 3.6 R Limited)

F: FLOOR MAT

Cut-pile material is used to all mat surfaces to provide unified and improved quality feel for all grades.

G: TRUNK AREA OF SEDAN

1. REAR SHELF

- The adoption of a LED high-mounted stop light has reduced the oppressive feeling in the rearward view.
- The color lineup now offers the same two colors as used for the lower panel, creating an unified image in the interior.

2. TRUNK TRIM

- The adoption of damper hinges for the trunk lid has expanded the cargo room capacity. (SAE: 14.66 cu ft)
- Up to four 9-inch golf bags can be stored.
- The trunk lid clips are of two-piece type which can be removed without any special tool. This offers improved serviceability for replacement of finisher light and license plate light bulbs.
- The light source direction of the trunk light has been changed so as to illuminate the entire cargo area for better usability in nighttime.

3. SUB TRUNK

The partition for sub trunk has been modified for better usability. The capacity is also expanded by +2L.

H: LUGGAGE AREA OF OUTBACK

1. LUGGAGE AREA

1) Loading capacity

An equivalent loading capacity to existing models is secured.

- Accommodates four large Samsonite suits cases.
- Accommodates four golf bags

2) Extended width

Due to the enlarged vehicle body size, the width of the luggage area is also extended.

- Rear wheel to apron, existing models: 1075 mm (42.3 in) → new models: 1090 mm (42.9 in)
- Maximum width of luggage area (at rear pocket), existing models: 1375 mm (54.1 in) → new models: 1410 mm (55.5 in)

3) Interior color

The luggage area is colored in black only so that any contamination is not easily visible.

2. REAR FLOOR MAT

- The rear floor mat is designed to be integrated with the backside of rear seat to improve the appearance and convenience of the luggage area. This also creates a flat luggage space together with the seat reclining feature.
- By lifting the center section and removing the side sections of the mat, the tonneau cover can be stored, offering the another convenient feature.
- Dilour type needle punched carpet is adopted to improve the appearance and offer a high finish level.

3. REAR APRON TRIM

- As in the existing models, two hooks are provided just below the the window sills and four hooks are provided on the side walls of the luggage area.
- The rear section is now shaped like a pocket (the lid previously present has been abolished) to improve the roominess and utility of the luggage area.
- To the wheel housing, a carpet is fitted (plain needle punched carpet) for improved appearance.
- In the models with high grade audio (harman/kardon®), a woofer speaker grille is provided at the right pocket.

4. REAR GATE TRIM

- To reduce the feel of thickness for the D pillar, the coloring is unified in black.
- As in the existing models, an opening/closing handle is provided at the bottom.

5. SUB TRUNK

- A compartment with 26L capacity is provided under the luggage area.

6. TONNEAU COVER

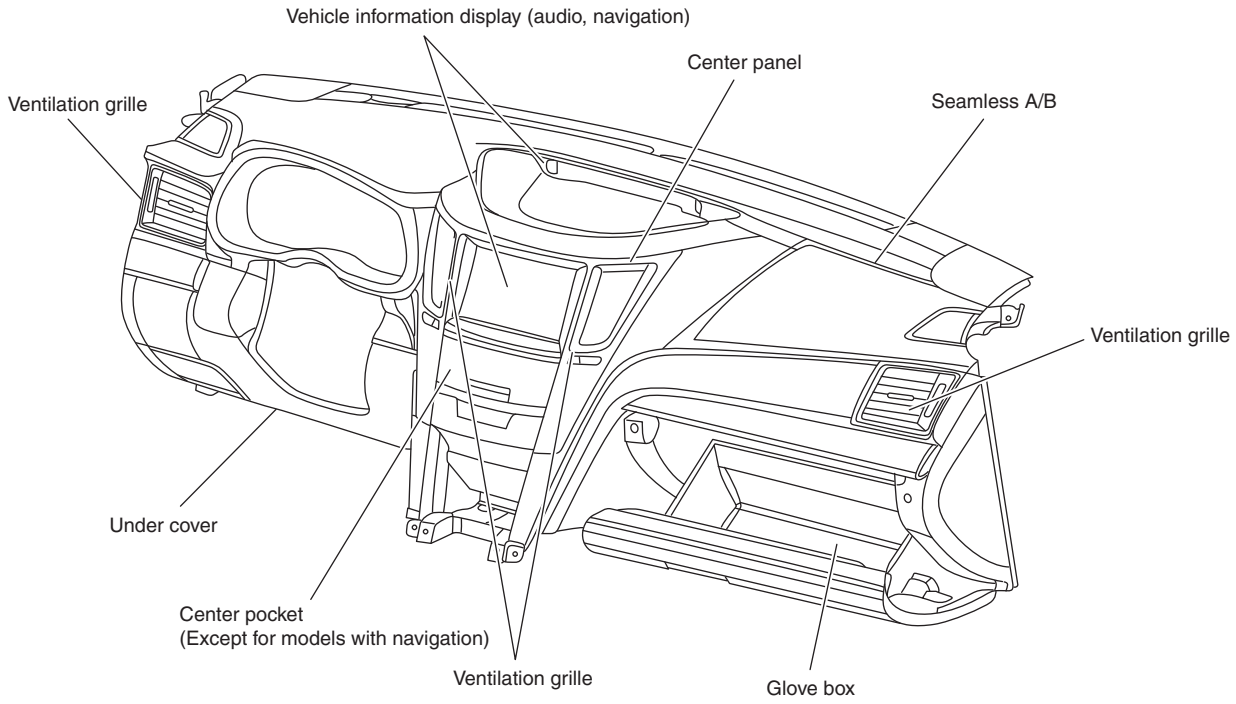
- While continuing the aluminum case adopted in existing models for weight reduction and appearance improvement, a winding tonneau cover is provided. (Except some grades)
- The separate flap present in existing models has been abolished for better convenience.

I: INSTRUMENT PANEL

1. GENERAL DESCRIPTIOIN

- For the full model change, the instrument panel has been totally redesigned to improve the driving comfort and product appeal.
- An easy-to-use basic layout is achieved for AV equipment (audio, navigation, vehicle information display, heater control).
- The instrument panel upper is adopted to built in the seamless airbag.

2. LAYOUT



EI-02484

1) Vehicle information display/audio/navigation

The vehicle information display, audio and navigation panels are arranged in easily visible positions. (No trade-off effect to clock layout)

2) Instrument panel upper

The instrument panel upper is adopted to built in the seamless airbag.

3) Glove box

The glove box is a large kangaroo type that offers sufficient storage capacity. (Accommodates 31 compact discs.) Moreover, a night light and damper are provided to all models for improved quality feel and a tray for car registration (including owner's manual) is provided in the glove box for storage convenience.

4) Center panel

A large and appealing center panel is adopted, which is given metallic taste with silver coating and hairline texture applied to the surface.

5) Ventilation grille

The adoption of double fin-type grilles with shutter for all seats makes it easier to control the air distribution.

6) Center pocket

A pocket with lid is provided under the audio module for further storage. (No lid for some grades)

7) Under cover

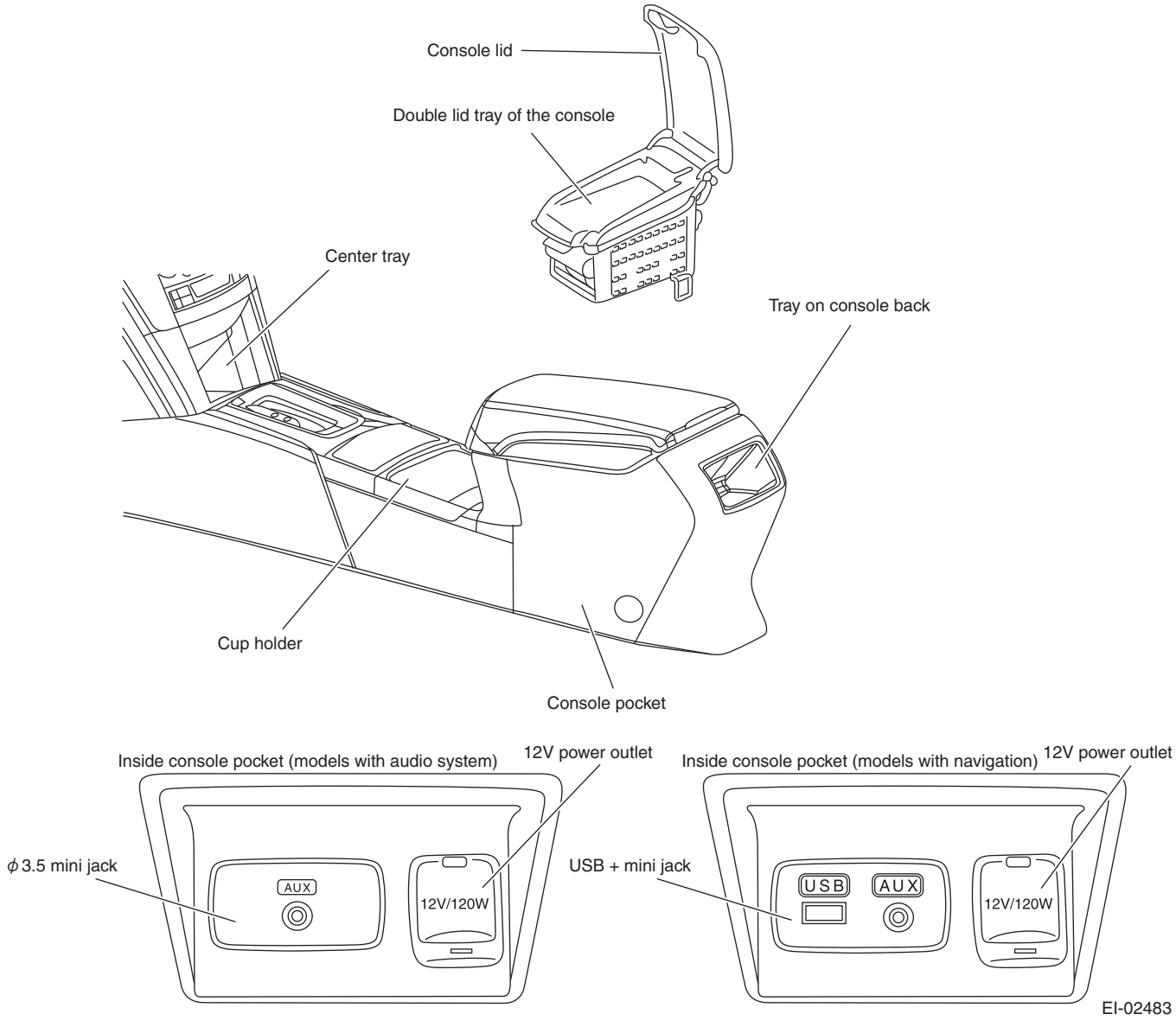
An under cover is attached to the driver's and passenger's footwells for interior quietness and neat footwell layout.

J: CONSOLE

1. GENERAL DESCRIPTIOIN

- For the full model change, the console has been totally redesigned to improve the product appeal including utility and storage capacity.
- The enlarged armrest and increased cushion layer has improved the driving comfort.
- Various storage compartments are provided such as open tray in front of shift lever, double lid tray of console lid, and large capacity console pocket.
- An AUX input terminal and power outlet are prepared in the console to support the use of external devices such as iPod.

2. LAYOUT



1) Console lid

To improve the armrest comfort, the armrest body is enlarged (AT only) and the cushion layer is increased (all models). In addition, a storage space for iPod and cellular phone is provided by adopting a double lid structure. (3 compact discs can be stored)

2) Center tray

An open tray is provided in front of the shift lever. This is used as a temporary storage for small articles.

3) Cup holder

To improve the usability, a lateral layout is adopted.

4) Console pocket

Compared with existing models, the console pocket has been enlarged. (19 compact discs can be stored)

5) AUX and 12 V power outlet

An AUX terminal and 12 V power outlet are provided in the console. In combination with the double lid tray or pocket of the console, these features offer further convenience for iPod or cellular phone users.

6) Tray on console back

A compartment is provided on the back of the console. This is used as a temporary storage for a cellular phone.

5-17 SRS Airbag

A: AIRBAG SENSING SYSTEM

1. GENERAL DESCRIPTIOIN

The airbag sensor layout is optimized to the body structure of new models.

- To improve the side impact detection performance, the side impact safing sensor is located at the cross point with the floor crossmember on the floor tunnel.
- The simple system configuration is adopted, which integrates the side impact safing sensor inside airbag ECM and thus improves the reliability.
- For OUTBACK, a rollover sensor is installed. When the rollover sensor integrated in ECM detects a rollover, the curtain airbags are deployed and the seat belt pretensioners are activated to prevent occupants from being thrown out or hit by internal components.

2. SPECIFICATIONS

Occupant protection device	Sedan	OUTBACK
Driver's seat and passenger's seat airbags	2 stages	2 stages
Driver's seat belt pretensioner	Single	Single
Passenger's seat belt pretensioner	Single	Single
Side airbag	Yes	Yes
Curtain airbag	Yes	Yes
Rollover sensing	None	Yes
Occupant detection system	Yes	Yes

3. SENSOR LAYOUT

1) Frontal collision sensors

To attain stable sensing at an early phase of a frontal collision, a sensor is located on the radiator panel side in the crash zone. To detect a collision successfully, another sensor (integrated in airbag ECM) is located on the floor tunnel in non-crash zone.

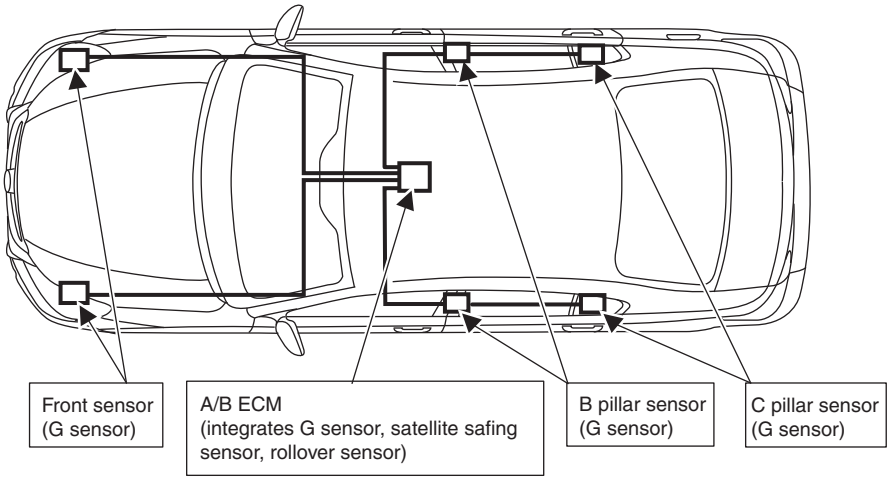
2) Side impact sensors

- To detect a side impact, a sensor is provided in the lower section of the B pillar.
- To control the curtain airbags optimally, a sensor is provided to the rear wheel apron.
- To attain the safing judgment for side impact (judgment whether to activate airbags), the satellite safing sensor (integrated in airbag ECM) is located on the floor tunnel.

3) Rollover sensor

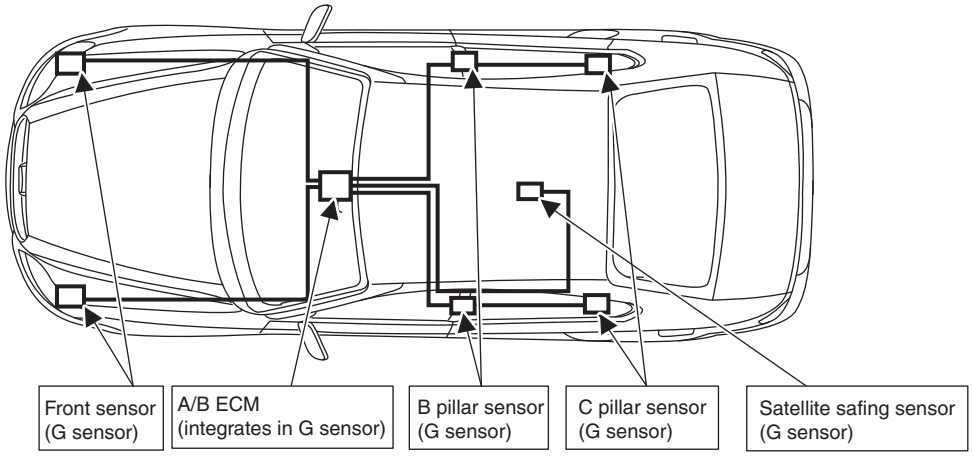
To detect any vehicle rollover reliably, the rollover sensor (integrated in airbag ECM) is located on the tunnel at the lateral center of vehicle width. (OUTBACK)

New models



Rollover sensor is for OUTBACK model only.

Existing models



Although the vehicle indicates sedan, the layout is the same for OUTBACK model.

AB-02416

4. ADOPTION OF NEW OCCUPANT DETECTION SYSTEM

1) General description

The occupant detection method has been changed from the bladder (pressure) system in existing models to the sensor mat (*electrostatic) system. The belt tensioner sensor, which was used also for occupant detection, is now dispensed with in the new system and the reliability is improved by the sensor mat alone while maintaining the equivalent performance.

*Electrostatic type: A rubber mat located between two sensor plates causes an electrostatic change when exposed to load and this change is detected.

2) Features

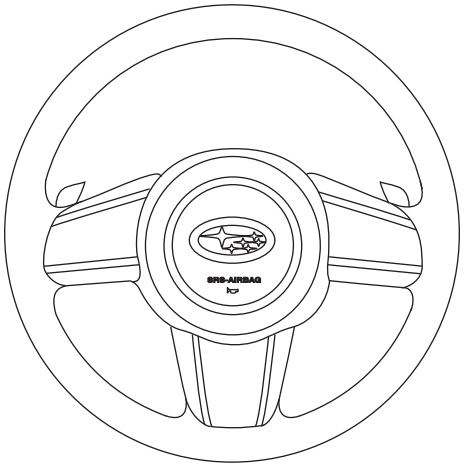
- Because of the small cell divisions, the sensing system can perform more detailed pattern recognition and distinguish individual occupants, resulting in improved identification of a child.
- The electrostatic system, not affected by environmental changes, contributes to achieving correct user distinction and safe airbag deployment control.

B: AIR BAG MODULE

1. SRS DRIVER'S AIRBAG MODULE

The SRS driver's airbag module is totally redesigned for the internal structure to provide a compact and sporty shape. In addition, the pad positioning method is changed to improve the appearance of the parting line with the bezel.

Driver's airbag module



AB-02264

2. SRS PASSENGER'S AIRBAG MODULE

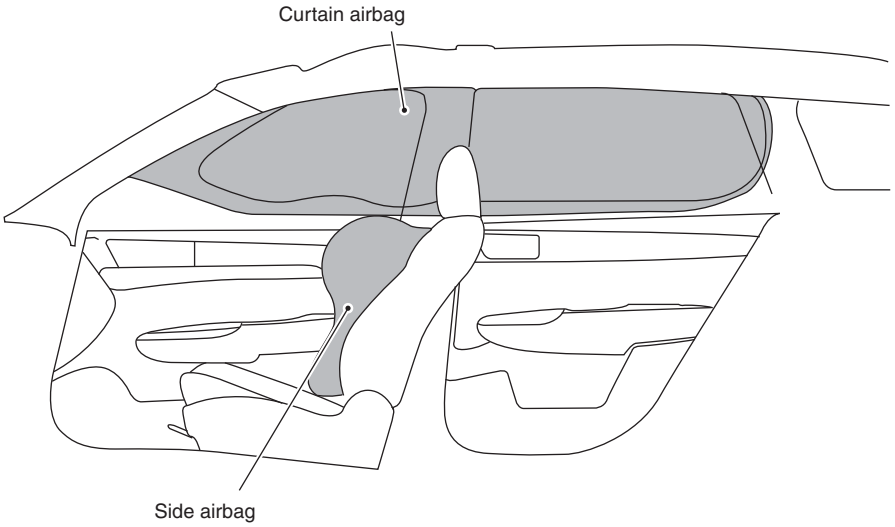
The SRS passenger's airbag module adopts a seamless structure integrated into the instrument panel with no visible parting line for improved interior quality feel.

3. SRS SIDE AIRBAG MODULE

A large airbag is adopted to protect the chest and hip of an occupant.

4. SRS CURTAIN AIRBAG MODULE

The curtain airbag with significantly expanded head protection section achieves occupant protection for a wide variety of human body types and seating positions.



AB-02247

5-18 HVAC System

A: GENERAL DESCRIPTION

- The upper grades are equipped with a dual automatic air conditioner and others are equipped with a manual air conditioner.
- For all models, a variable capacity compressor is adopted to contribute to fuel economy.
- The dual automatic heater control is provided with the DUAL switch. By setting the DUAL switch to OFF and changing the driver's side temperature setting, the user can easily adopt the same temperature setting for both the driver's and passenger's sides.
- The display symbols for maximum and minimum temperature settings are changed to "HI" and "LO" respectively so that the user can easily recognize the maximum heating and maximum cooling.
- The manual heater control is fully electrical for reducing the operation effort of temperature adjustment dial.
- With the increased unit capacity and reduced airflow resistance, the interior air conditioning performance is improved even if the unit size is compact.
- All models are fitted with a dust filter to improve the interior environment.
- All grilles are given a shutter, which can be used to adjust the airflow according to the preference of each occupant.

B: AIR CONDITIONER SYSTEM

- All models are equipped with an externally variable capacity compressor. It varies the compression capacity according to the cooling load and thus reduces the engine load, contributing to fuel economy improvement.
- For the condenser, a sub scroll type is adopted to reduce the refrigerant amount and improve the cooling performance.

C: HEATER UNIT AND BLOWER UNIT

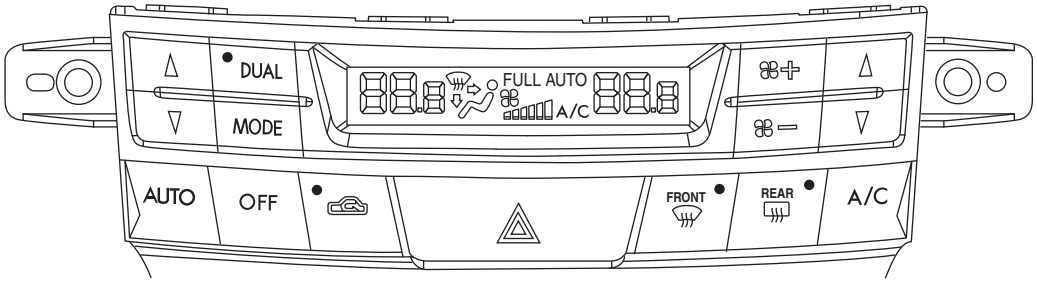
- To reduce the weight and improve the performance (airflow, noise reduction), a semi-center unit incorporating a cooling unit (A/C unit) is adopted.
- To improve the defroster and demister performance, the side vent outlets are constantly supplied with airflow.
- All models are fitted with an air conditioning filter.

D: HEATER CONTROL

1. DUAL FULL AUTOMARIC AIR CONDITIONER (UPPER GRADES)

- A full automatic air conditioner system is adopted. When the AUTO button is selected, the system automatically controls the air conditioning operation according to the interior and exterior environments so that the interior temperature is regulated at the user setting. (The automatic control is performed by means of various input signals such as in-vehicle sensor, ambient sensor, sunload sensor, and thermo sensor.)
- If the air distribution control is in the automatic mode, the FACE/FOOT mode operates in two steps to alleviate air pressure to the occupant face when the air distribution is changed from FOOT to FACE/FOOT.
- All operating buttons are of push type to offer a neat design face.
- When any switch is operated in the full automatic mode, only the function of the operated switch is changed to the manual mode.
- To distinguish the full automatic mode and the partial automatic mode, "FULL AUTO" is displayed for the full automatic mode and "AUTO" is displayed for partial automatic mode.
- The DUAL switch is adopted. By setting the DUAL switch to OFF and changing the driver's side temperature setting, the user can easily adopt the same temperature setting for both the driver's and passenger's sides at the same time.
- The display symbols for maximum and minimum temperature settings are changed to "HI" and "LO" respectively so that the user can easily recognize the maximum heating and maximum cooling.

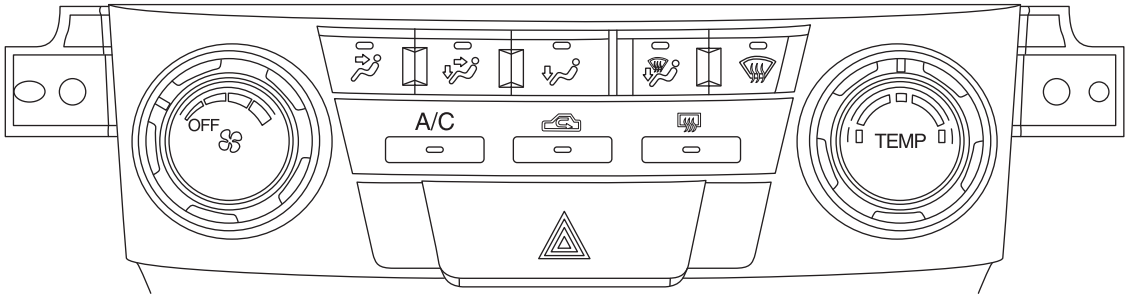
• When DEF or DEF/FOOT is selected, the A/C compressor is turned on and the intake mode is changed automatically to FRESH to prevent window fogging.



AC-02081

2. MANUAL AIR CONDITIONER (EXCEPT UPPER GRADES)

• The temperature adjustment switch and airflow adjustment switch frequently used are of dial type for better operability.
• The control is fully electrical for reducing the operation effort of temperature adjustment dial.
• When DEF or DEF/FOOT is selected, the A/C compressor is turned on and the intake mode is changed automatically to FRESH to prevent window fogging.



AC-002082

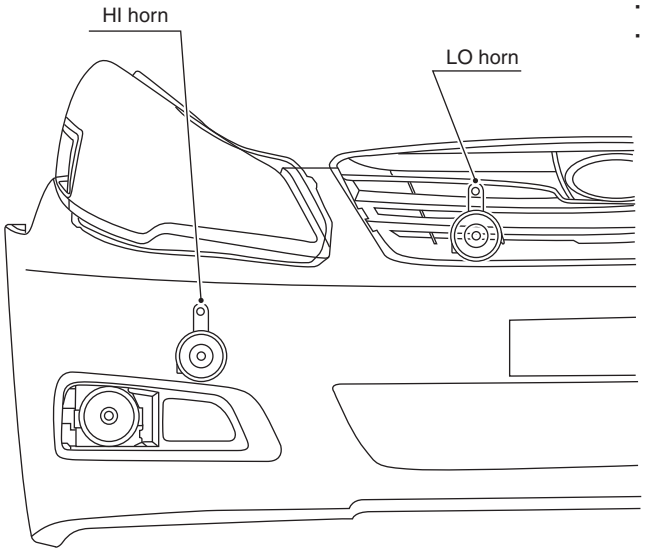
E: VENTILATION

• All grilles are given a shutter, which can be used to adjust the airflow according to the preference of each occupant.
• The airflow rate is increased according to the passenger compartment size for improved interior comfort.
• The constant airflow side vent function is adopted to improve the defroster and demister performance.
• Rear heater ducts are provided to all models as standard feature for improved heating performance for rear occupants.

5-19 Horn

A: GENERAL DESCRIPTION

- A flat type horn is adopted.
- The following layout is adopted according to the new shaping.



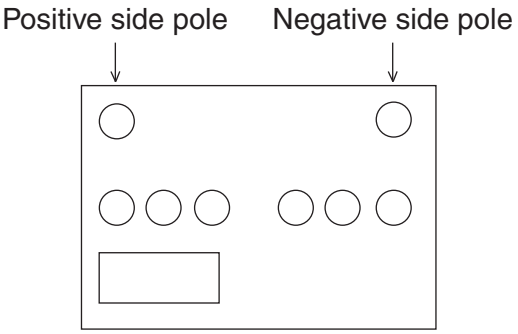
・Layout inside the grille → LO horn
・Layout inside the fender → HI horn

COM00077

5-20 Battery

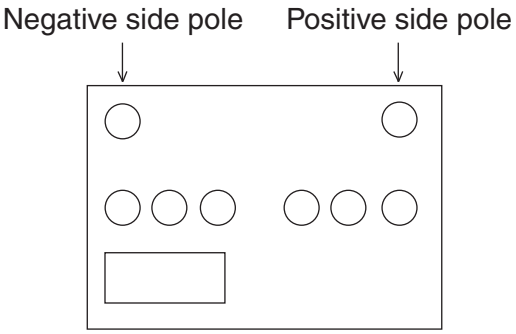
- To support the new styling, the battery layout has been changed from lateral (existing models) to longitudinal (new models). Therefore, the positive and ground pole positions are exchanged with each other.
- The size is 12 V-52AH (75D23R) for all models.

<Existing model>



* Battery viewed from above

<New model>



* Battery viewed from above

COM00078