Contents

12.1 BIW assembly

12.1.1 Characteristics of plastic materials

Considering that some parts may be deformed by heating during repair, the characteristics of the plastic parts (solvent resistance and heat resistance) shall be confirmed, the repair materials shall be selected with reference to materials of plastic parts, and only a small amount of alcohol shall be applied for degreasing within a short time so as to avoid damages to materials. If necessary, remove parts in advance.

Code	Material name	Heat-resistant temperature ℃ (℉)	Remarks
AAS	Acrylonitrile - acrylic acid - styrene copolymer	80 (176)	Avoid gasoline and organic or aromatic solvents.
ABS	Acrylonitrile - butadiene - styrene copolymer	80 (176)	Avoid gasoline and organic or aromatic solvents.
AES	Acrylonitrile - ethylene - styrene copolymer	80 (176)	Avoid gasoline and organic or aromatic solvents.
ASA	Acrylonitrile - styrene - acrylate copolymer	80 (176)	Avoid gasoline and organic or aromatic solvents.
EPDM	EPDM rubber	100 (212)	Avoid gasoline, brake fluid, wax, degreaser and organic solvents. Avoid alkaline substances.
EVA	Ethylene - vinyl acetate copolymer	70 (158)	Avoid gasoline and organic or aromatic solvents.
PA	Polyamide (nylon)	80 (176)	Avoid battery acid.
PBT	Polybutylene terephthalate	160 (320)	Most solvents do no harm to materials.
PC	Polycarbonate	120 (248)	Avoid gasoline, brake fluid, wax, degreaser and organic solvents. Avoid alkaline substances.
PE	Polyethylene	80 (176)	Most solvents do no harm to materials.
PET	Polyethylene terephthalate	75 (167)	Most solvents do no harm to materials.
PMMA	Polymethylmethacrylate	80 (176)	Avoid immersion in alcohol, gasoline, solvents, etc.
POM	Polyoxymethylene	100 (212)	Most solvents do no harm to materials.
PP	Polypropylene	80 (176)	Most solvents do no harm to materials.
PPE (PPO)	Polyphenylene ether	100 (212)	Avoid immersion in alcohol, gasoline, solvents, etc. Fast application of a small amount of alcohol for degreasing does no harm to materials.
PS	Polystyrene	60 (140)	Avoid immersion in alcohol, gasoline, solvents, etc.
PUR	Polyurethane	80 (176)	Avoid immersion in alcohol, gasoline, solvents, etc.
PVC	Polyvinyl chloride	80 (176)	Avoid immersion in alcohol, gasoline, solvents, etc.
TPE	Thermoplastic elastomer	80 (176)	Most solvents do no harm to materials. However, immersion in gasoline, solvents, etc. shall be avoided.
TPO	Thermoplastic polyolefin	80 (176)	Most solvents do no harm to materials. However, immersion in gasoline, solvents, etc. shall be avoided.

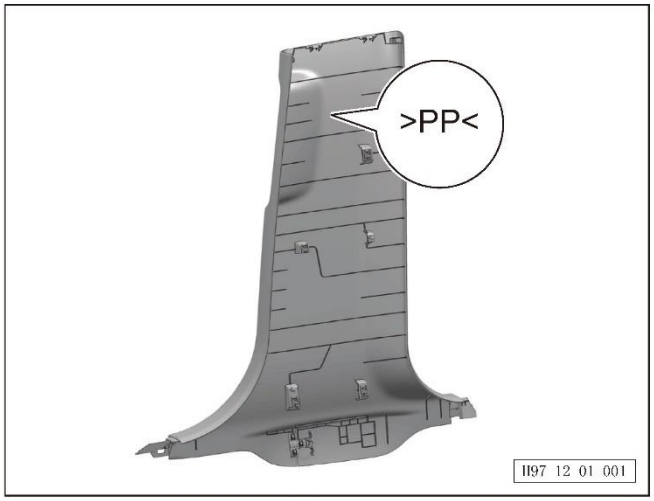
Code	Material name	Heat-resistant temperature ℃ (℉)	Remarks
TPU	Thermoplastic polyurethane - elastomer	80 (176)	Avoid immersion in alcohol, gasoline, solvents, etc.
UP	Unsaturated polyester	110 (233)	Avoid alkaline substances.

Note:

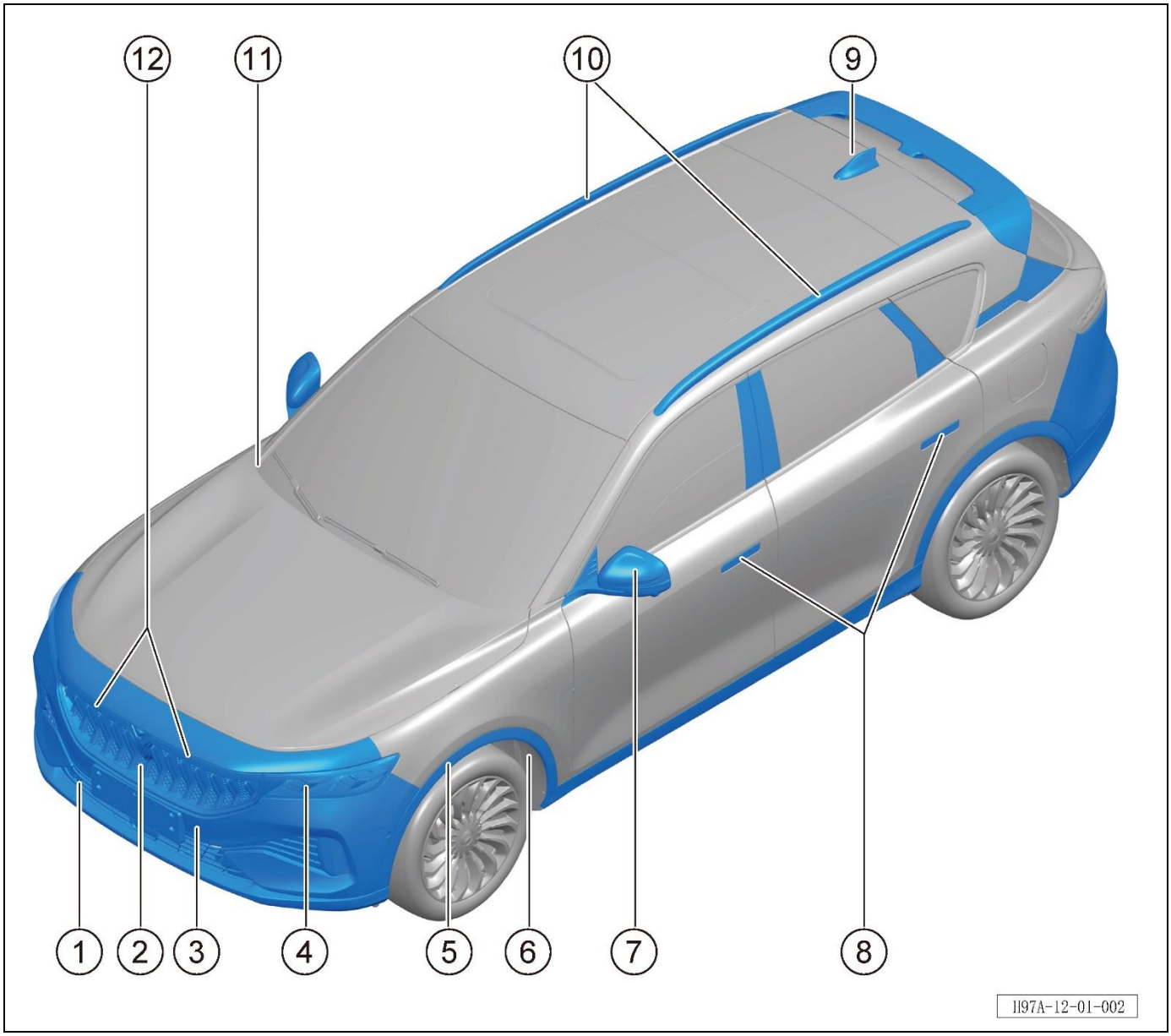
– The heat-resistant temperature means a temperature under which thermal deformation may occur during working.

– Immersion means soaking in liquids.

12.1.2 Plastic body parts BOM



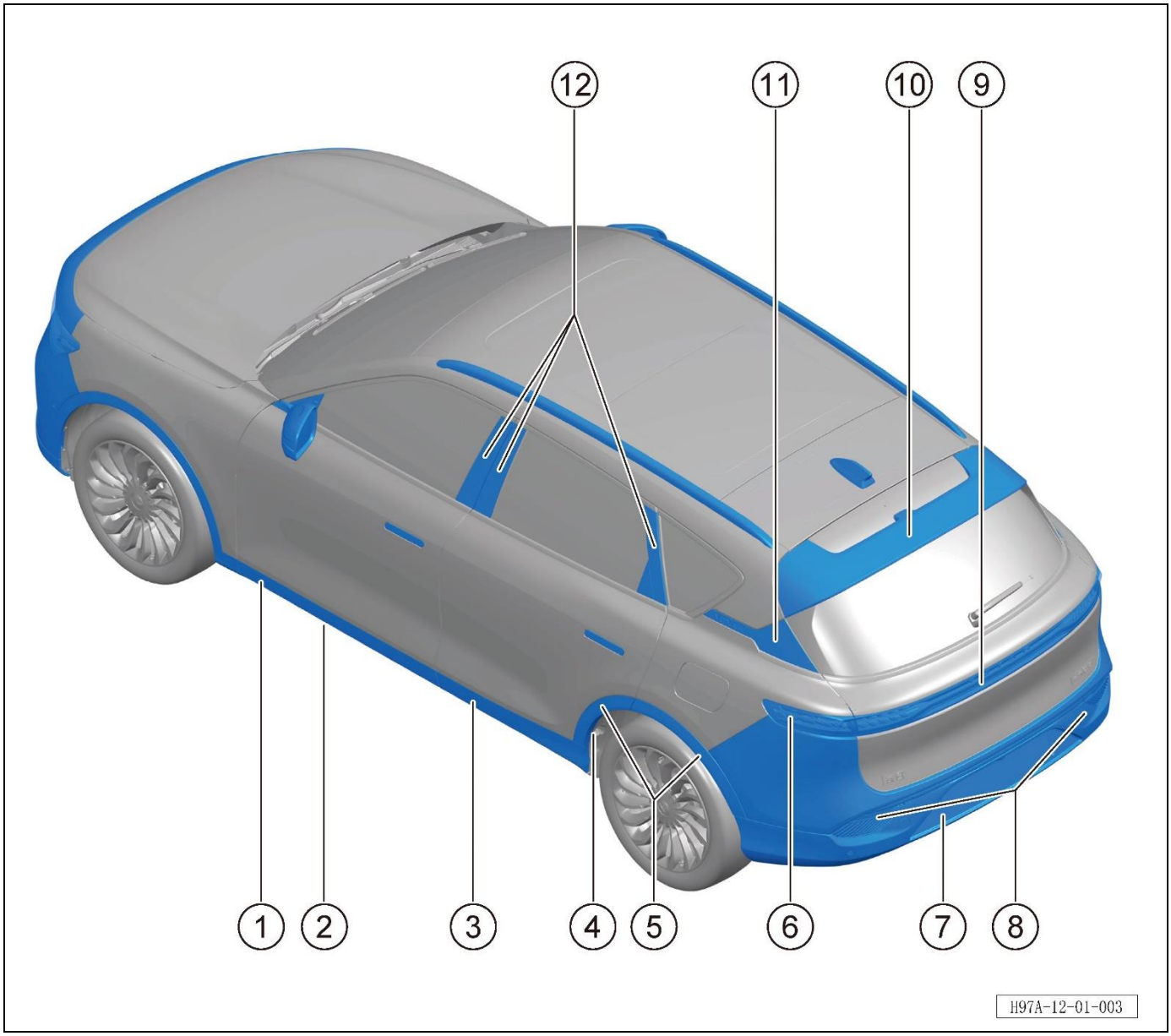
Standard symbols are stamped on plastic parts during repair to indicate the type of materials used.



1. Front bumper lower grille
2. Front grille
3. Front bumper
4. Headlamp
5. Front wheel trim
6. Front wheel housing mudguard
7. Exterior rearview mirror cover
8. Door outside handle and door trim cover
9. Shark fin antenna
10. Roof luggage rack
11. Windshield lower trim panel
12. Front position lamp

Note:

- "/" means it is composed of two or more materials.



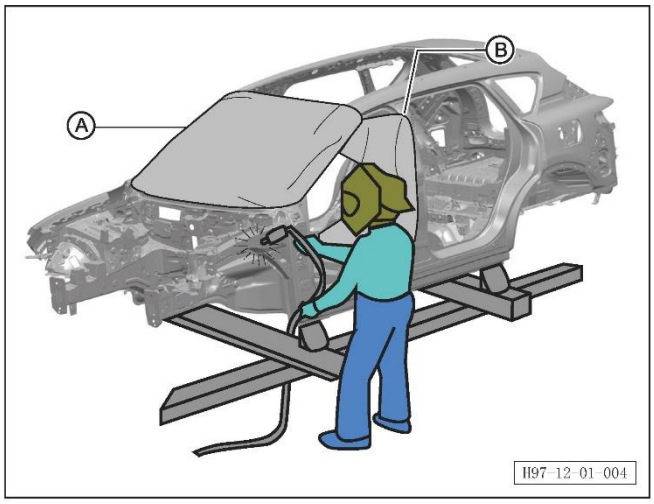
1. Front door guard strip
2. Lower skirt plate
3. Rear door guard strip
4. Rear wheel housing mudguard
5. Rear wheel trim
6. Rear combination lamp fixing side
7. Rear bumper
8. Rear fog lamp
9. Rear combination lamp moving side
10. Rear deflector
11. Side rear wall D-pillar trim panel clip plate
12. Door pillar trim panel

Note:

- "/" means it is composed of two or more materials.

12.1.3 Collision repair

12.1.3.1 Precautions



Vehicle protection

Protect paint surfaces, windows, seats and carpets using heat-resistant and fire-resistant protective covers during welding, including glass protective cover A and seat protective cover B.

Safety precautions

Warning!

- Observe national safety regulations during body repair. If you have any doubts, consult relevant department.

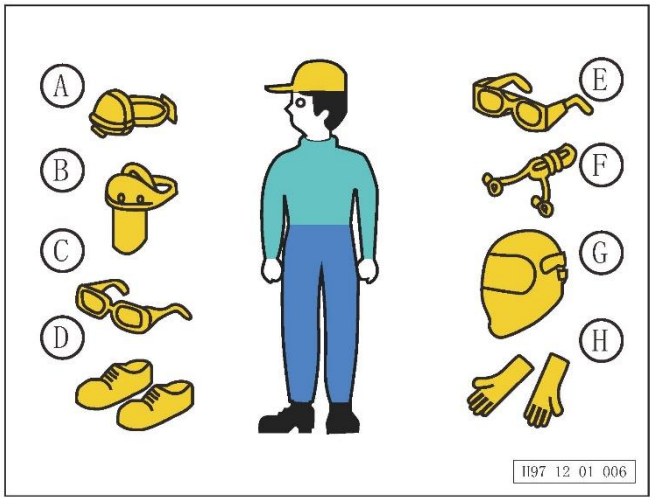
- Do not park an unprotected vehicle in body repair shop (because splashing sparks may cause fire, or damages to paints and windows).

Safety tips

- Check for fuel leakage, and if any, dealt with it in advance.

- In case welding is to be performed near the fuel tank, you need to remove the fuel tank, drain the fuel pipeline and then block it.

- Make sure the body repair shop is well ventilated.



Safety protection

Note:

- All operations must be performed by technicians who have obtained relevant national qualifications, and safety protection measures must be taken.

- Wear safety goggles, gloves, safety shoes, earplugs and other device according to specific conditions.

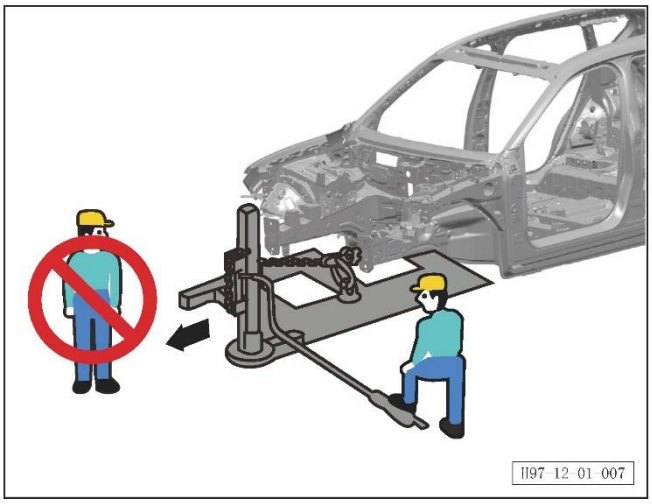
Symbol	Name
A	Dust cover
B	Dust face shield
C	Safety goggles
D	Safety shoes
E	Welder's goggles
F	Earplug
G	Welder's shield
H	Welder's gloves

Safe use of calibration bracket

Warning!

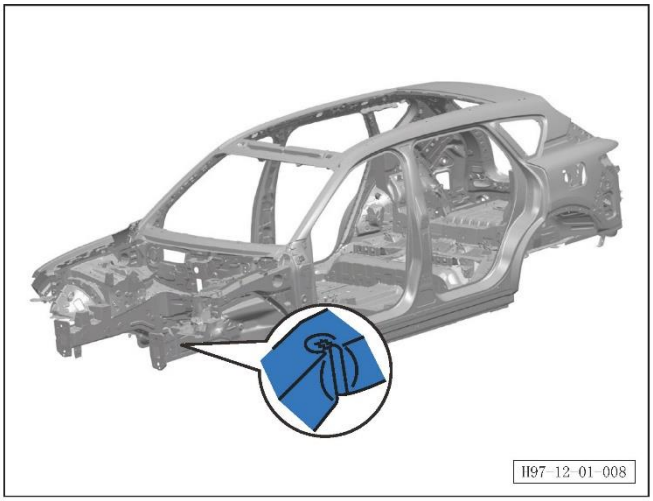
- When a body calibration bracket hydraulic device or traction device is used to correct a vehicle damaged in an accident, a large force will be applied to body, thereby injuring other persons.

- Ensure the safety of persons in working area.



Pulling of body

It is forbidden to stand in a straight line with the traction chain when a puller is used to pull the body or the frame. Safety cables must be used.



Twisting of structural steel plate

Once the steel plate is found twisted, replace it.

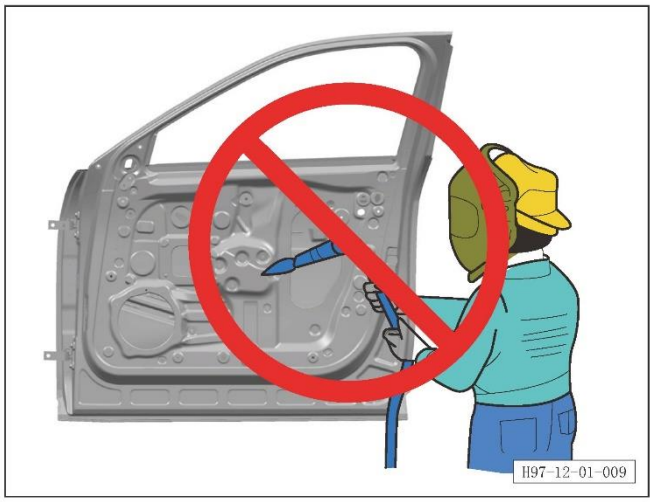
Warning!

- According to the design requirements, the structural steel plate must have a shape same as original designed shape.

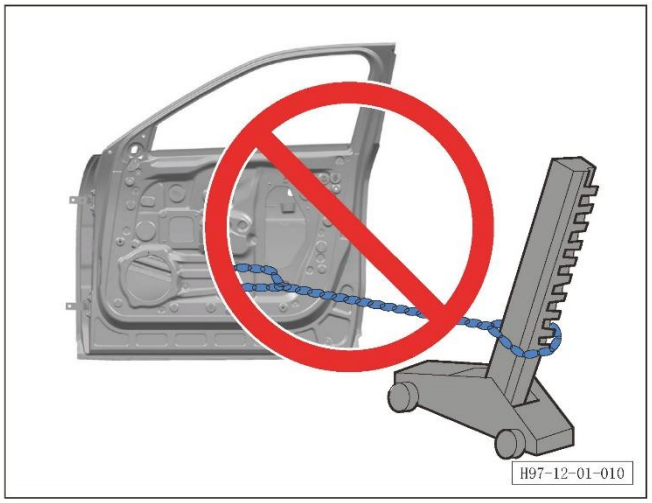
- Structural steel plates deformed in an accident or reused structural steel plates after repair do not have safety performances as required by original designs.

Once the steel plate is found twisted, replace it.

Repair of anti-collision steel beam



It is prohibited to weld anti-collision steel beam

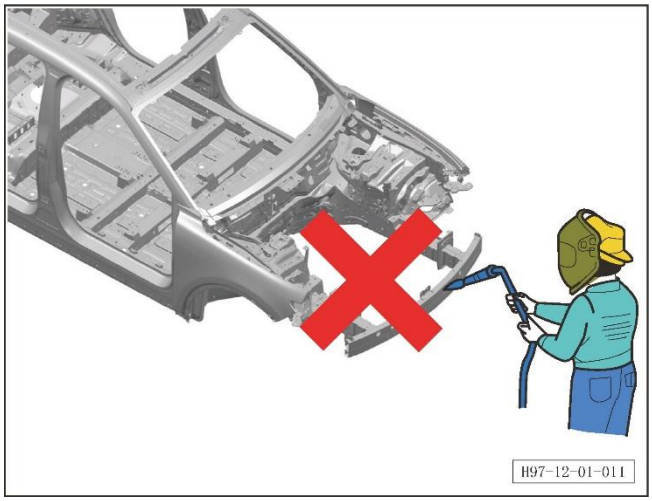


It is prohibited to pull anti-collision steel beam

Warning!

- Anti-collision steel beam and bracket are of great importance, and they can reduce the possibility of injury to occupants in the vehicle in the event of a side collision.

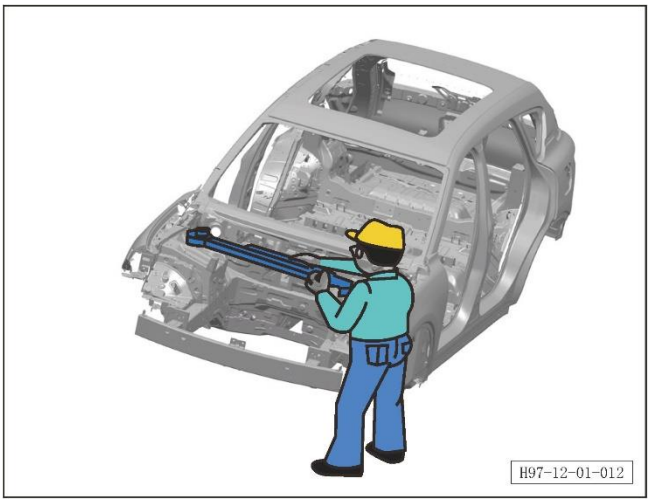
- If the anti-collision steel beam or bracket is damaged, replace the door assembly.



It is prohibited to weld the front anti-collision beam

The front anti-collision beam is designed to fully play its role providing it is remained in original shape. However, if the front anti-collision beam has been repaired, its performance will decrease.

12.1.3.2 Sequence of accident repair



1. Important components to be checked

a. If you suspect that the body suspension is damaged or deformed, check vehicle suspension on body calibration bracket and carry out calibrations if necessary.

b. Check whether the steering gear and steering tie rod are normal, and visually check for deformation and cracks.

c. Check all chassis components.

d. Check wheels and tires for damage, and check their concentricity and balance.

e. Check tire tread and sidewall for cracks, and check tire pressure.

f. Check exhaust device and suspension for damages.

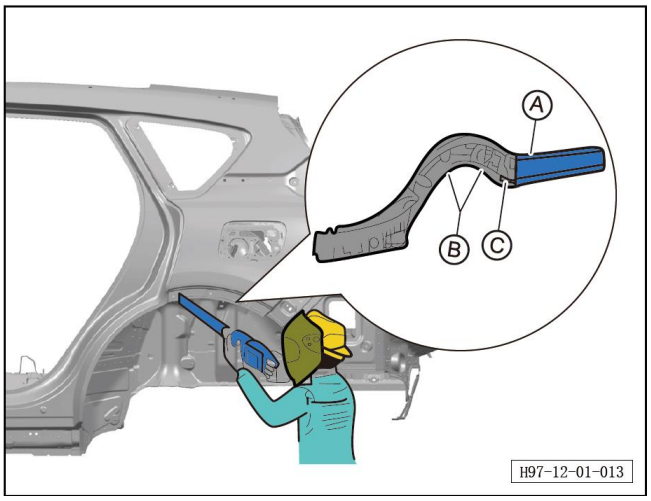
g. After repair, carry out road tests on real vehicles to check whether they can run safely and whether their safety performances are satisfactory.

Note:

- In case the vehicle is under great pressure, you must check the components as mentioned above, and simultaneously carry out vehicle positioning tests.

2. Measurement

Before removal and cutting, measure according to body dimension drawings, and use a puller to straighten the damaged body or frame.



3. Removal

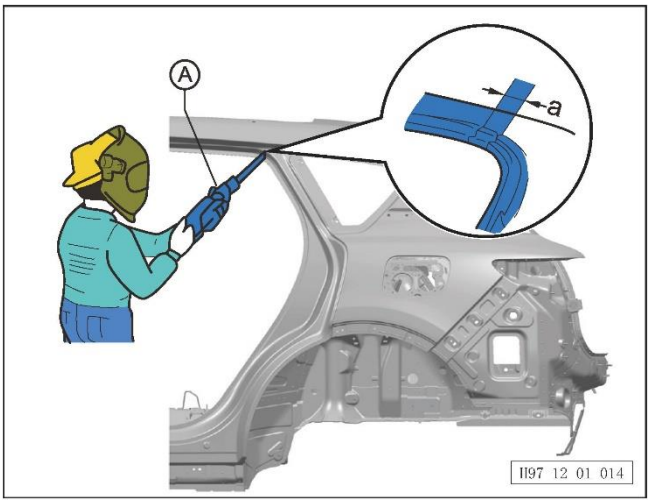
Cutting position

A	Allowable cutting position
B	Bending position
C	Reinforcement

Note:

- Cutting must be performed in a straight line and avoid reinforcements.

- Cutting can affect the strength of the body. Therefore, treatments in terms of reliability and safety must be done according to the relevant regulations of this manual.



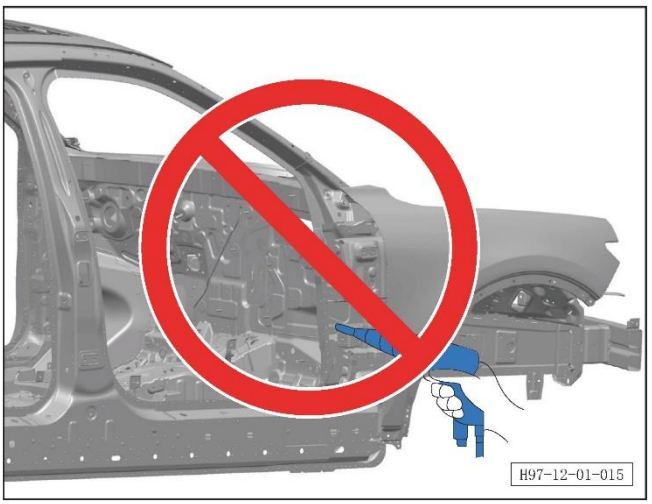
Repair tool A	Pneumatic saw
-a- position size	20 - 30mm

Note:

- Do rough cutting on new parts in joining area. 20 mm-30 mm length must be reserved at position -a- part for overlapping.

CAUTION:

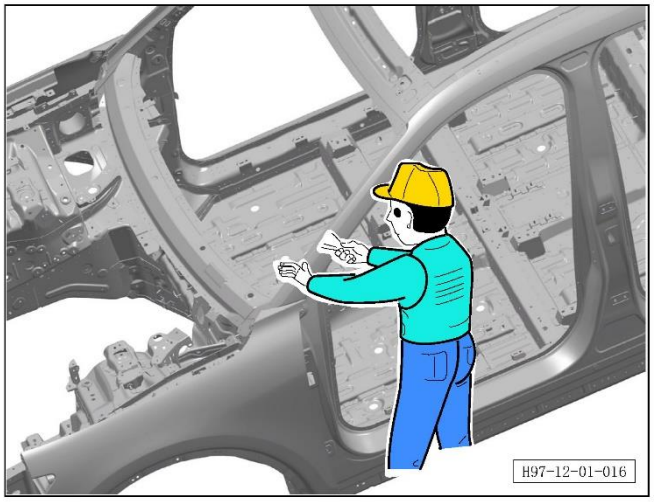
- When cutting panels, be careful not to damage surrounding panels or any panels below them. If any panel is damaged, it must be repaired.



It is prohibited to drill or cut in areas where harnesses are installed.

Note:

- Check that hoses or wires at drilled or cut positions are not damaged.



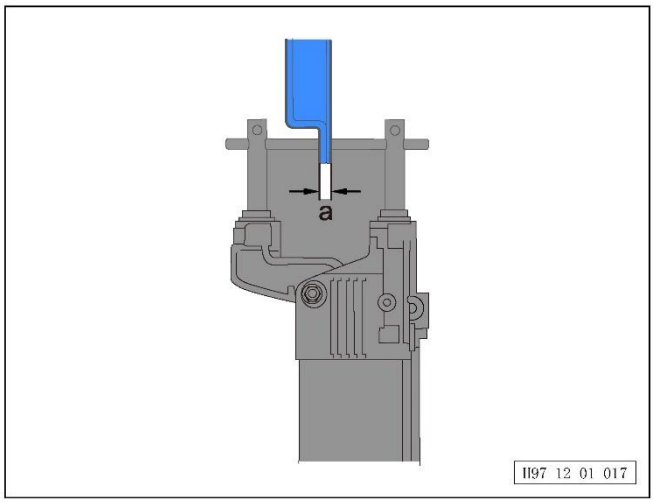
Removal of adjacent components

When removing adjacent components, attach protective tapes around the body and on the removal tool to avoid damage to the components.

CAUTION:

- If the paint film is damaged, be sure to repaint.

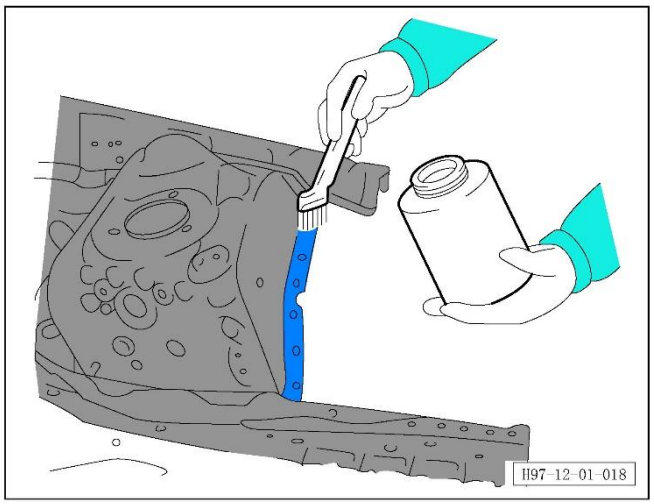
4. Matters about spot welding:



In general, if the total thickness -a- of the welded plate exceeds 3 mm, a MIG welder should be used for fillet welding.

Note:

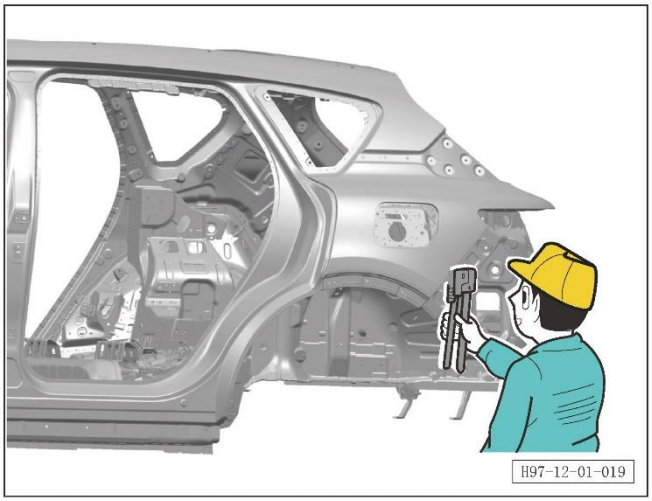
- Providing the total thickness of the steel plate exceeds 3 mm, then spot welding cannot guarantee sufficient durability.



Remove new parts and body paint film that need to be welded, then apply a spot weld sealant (or penetration weld primer).

CAUTION:

- Do not apply spot weld sealant (or penetration weld primer) to the outside of the contact surface.

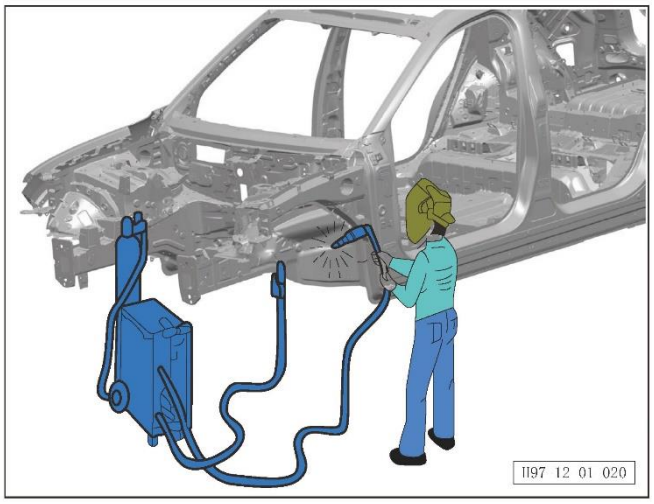


Use a hole punch to create holes for fillet welding

Reference value (unit: mm)	
Thickness at welded position	Fillet size
<1.0	>Φ5
1.0~1.6	>Φ6.5
1.7~2.3	>Φ8
Above 2.4	> Φ10

Note:

- At positions where spot welding is impossible, use a hole punch or drill to create holes for fillet welding.



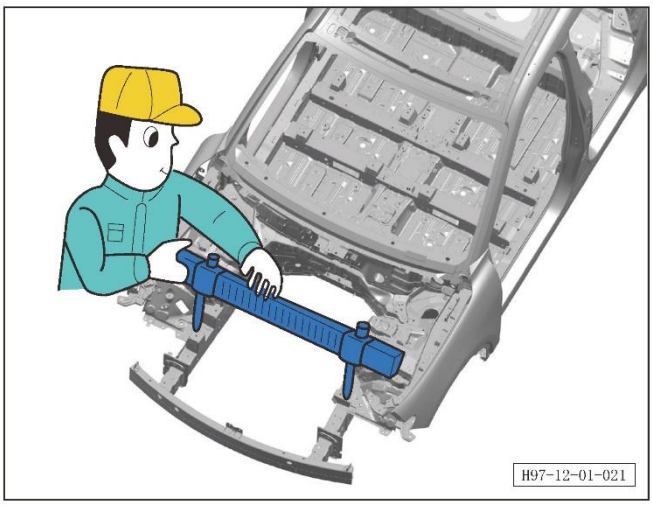
Operations of electronic components

Note:

- During welding, electronic components may be damaged by electric current flowing through the body from the welder.

- Before welding, disconnect the negative terminal of the battery and ground near the welding part of the body.

5. Refitting

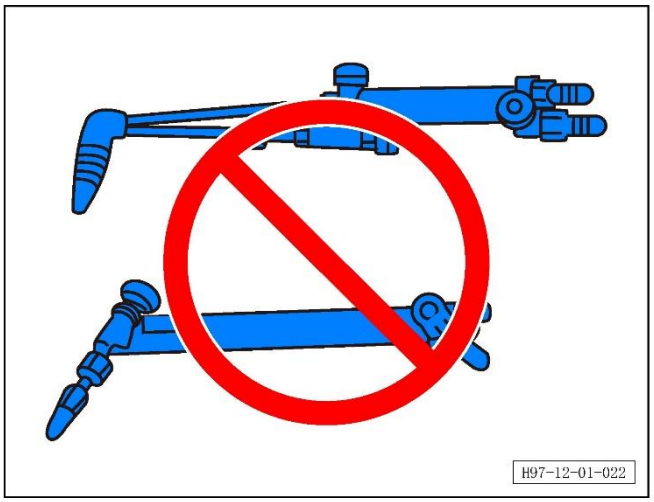


Measurement before welding

Note:

- Before refitting new parts, measure the dimensions according to body dimension drawings to ensure proper assembly.

Check for proper assembly after refitting.



Precautions for welding

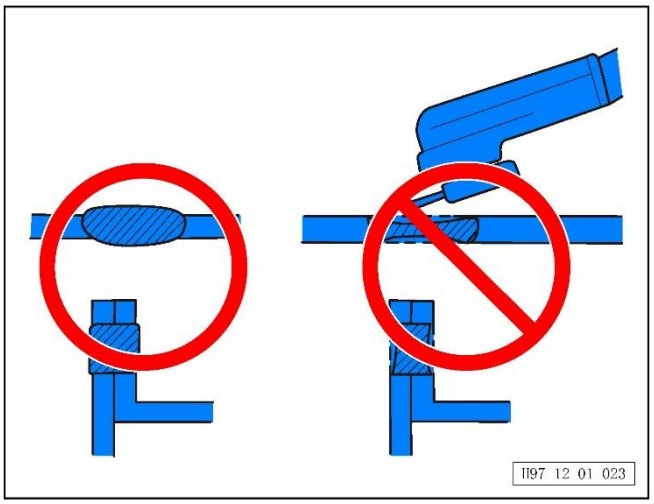
- Spot welding: Generally, the number of spot welding points is 1.3 times that of welding points as specified by the manufacturer.

- Fillet welding: Generally, the number of fillet welding points is more than that of welding points as specified by the manufacturer.

CAUTION:

- A MIG (metal inert gas) welder shall be used in fillet welding.

- It is not allowed to carry out gas welding or fillet welding at areas other than those specified on steel plate.

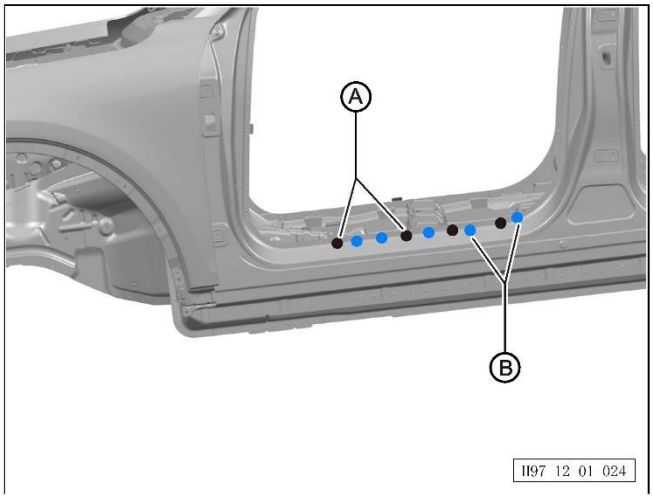


Grinding process after welding.

Note:

- After welding, check that firm welding is performed in welding positions.

- When grinding the welding area with a disc grinder, do not over-grind, otherwise the strength of the welding position will be reduced.

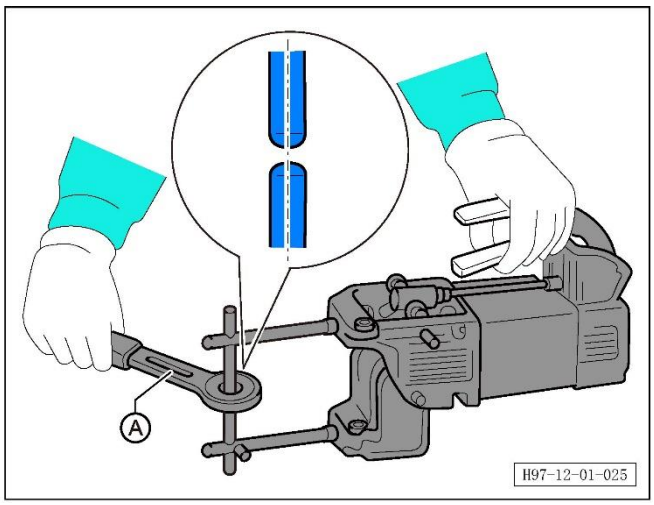


Spot welding position.

-A- Old welding point position.

Note:

- Do not overlap old welding positions.



Precautions for welding:

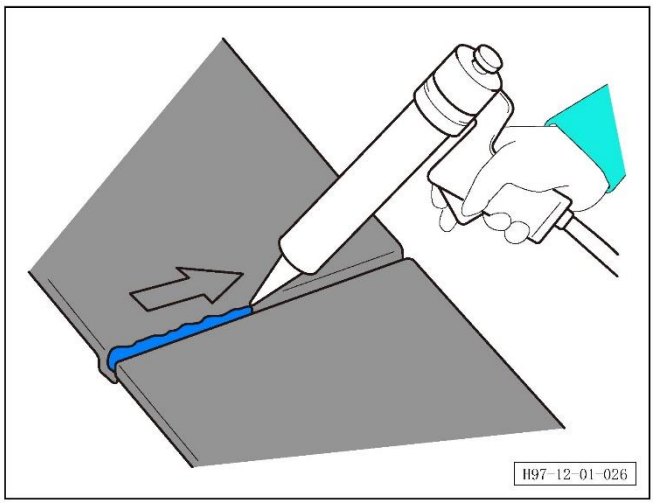
- The shape of the tip of the spot welder can affect welding strength. Therefore, the tip shall have a proper shape and it shall cool down after five or six times of spot welding.

- Completely remove paint film from spot welding position, including joints and surfaces in contact with the welding head.

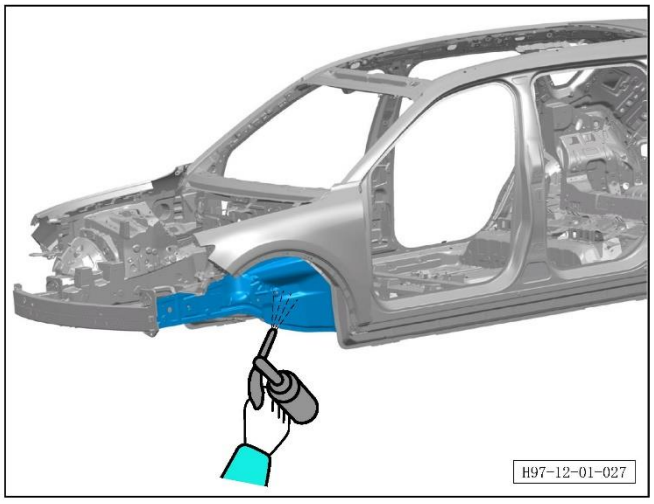
- Use a grinder to remove burrs formed during spot welding.

-A- Spot welding electrode tip scraper

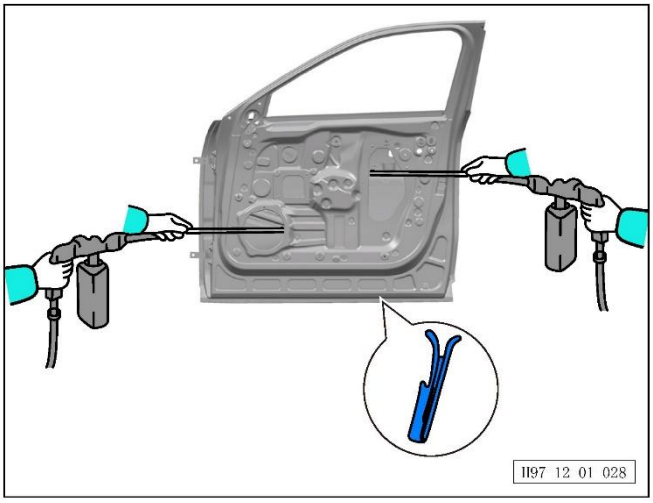
6. Rust prevention (before painting)



To prevent water from getting into body panels and thus rusting the panels, apply body sealant to body panel seams and edges of doors, engine hood, etc.



To prevent corrosion and protect the body from being damaged by impacts of gravel, it is important to apply sufficient amount of anti-rock coating to the underbody and the inside of the wheel housing.



7. Rust prevention (after painting)

For parts that are difficult to spray (such as doors, hinges, and other closed-section structures), apply sufficient amount of anti-rust agent (wax) through access holes or mounting holes on components.

12.1.4 Specifications

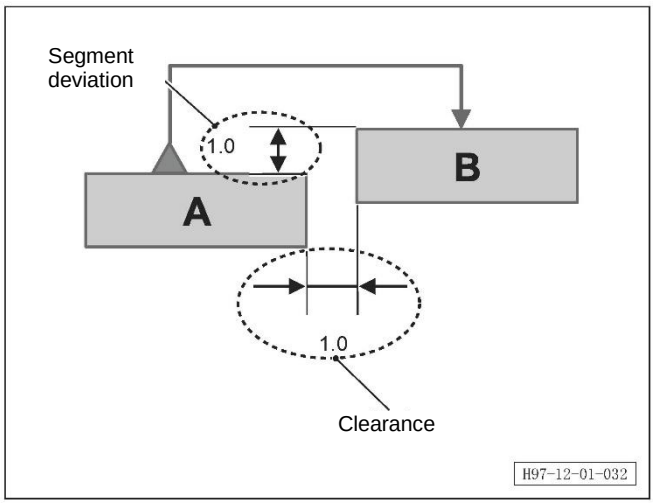
12.1.4.1 Collision repair materials

Generally, body collision accidents may lead to structural deformation, cracking of steel plates, incomplete penetration at welding points, etc., and sometimes may result in local damages to other assembly parts such as the chassis.

Adhesives, sealants, anti-loosening agents, surface protection materials, and anti-rust materials may be used for body collision repairs. You should operate in strict accordance with the purpose, scope of application and usage specifications in the product manual when using these materials. For the purpose of body repairs, repair materials with same functions shall be selected according to the functional requirements of the parts and materials. The following table lists the repair materials that may be used in body repair, it is only used for reference.

Product	Substrate	Application
Vehicle sealant	One-component polyurethane	It is used for bonding body panels, interiors and exteriors, body structures and other components. This kind of sealant shall have strong adhesion and cohesion to ensure good adhesion with metals and various paint surfaces.
Seam sealant	One-component polyurethane	This is a type of curing adhesive used under room temperature for sealing of body welds and fine sealing of doors, engine hood and tailgate hems. -
Anti-stone chip primer	Rubber and resin	This is a type of curing anti-collision sealant used under room temperature for chassis protection; it forms a permanent anti-aging elastic corrosion-resistant protective coating at the underbody and the wheel housings without any cracks at low temperatures. It performs well in rust prevention, sound insulation, stone chip resistance, anti-oxidation, coating protection, etc.
Windshield sealant	One-component polyurethane	It is a curing polyurethane adhesive used under room temperature for direct bonding and sealing of vehicle window glasses. This adhesive performs well in bonding. It reacts with moisture in the air and then cures to have excellent properties including high strength, aging resistance, vibration fatigue resistance, low temperature resistance, and corrosion resistance, etc.
Pressure sensitive tape	Acrylic tape	It is used for bonding of guard strips, nameplates, protective plates, mudguards, door edge protections, trim strips of the body, etc. This tape must have excellent weather resistance and durability.
Primer	-	Before applying windshield sealant, primer shall be applied on the body and glass to make the windshield bond with the body firmly.
Cleaning agent	-	It is used to clean all surfaces in contact with primers and adhesives.
Heat sensitive tape	Acrylic tape	It is mainly applicable to rubber sealing strip systems on the vehicle. This type of tape must have strong bonding force and sealing performance to avoid clearances and corrosions caused by weak bonding.
Tape primer	-	The primer is selected according to materials of the bonding surface. The bonding surface must be clean. After the surface is completely dry, use a brush to apply the primer evenly on the bonding surface, and when the primer dries, attach the tape to the surface. This tape has strong adhesion.

12.1.4.2 Assembly standard/adjustment method



Description of body clearance and segment deviation

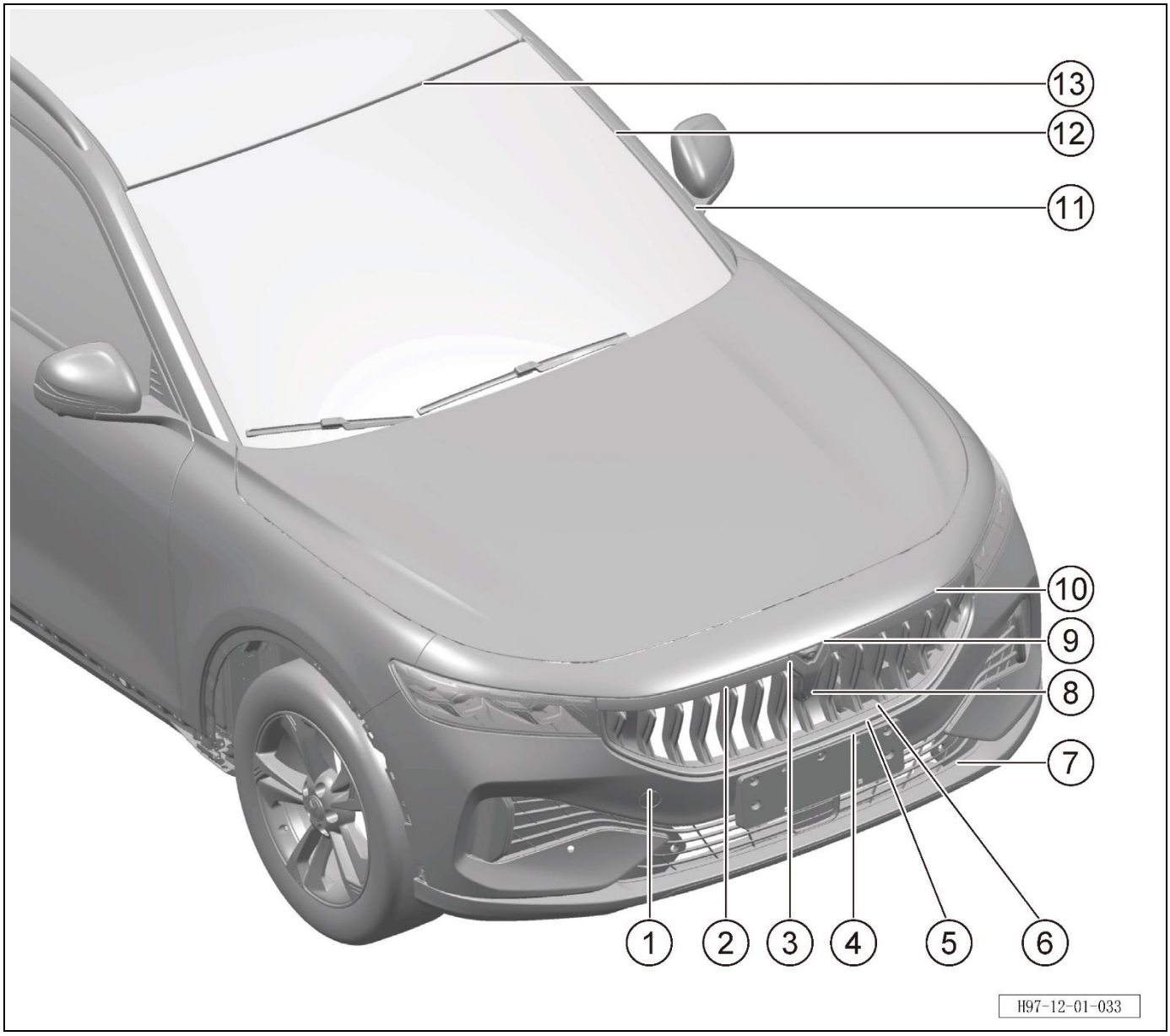
- The clearance and segment deviation between parts are defined as shown.

- As shown, the clearance between part A and part B is 1.0 (mm).

- As shown, part A is the reference plane for measurement, and part B is measured surface. If the measurement value is "+", then part B is higher than part A; if the measurement value is "-", part B is lower than part A.

12.1.4.3 Body surface clearance

Front face



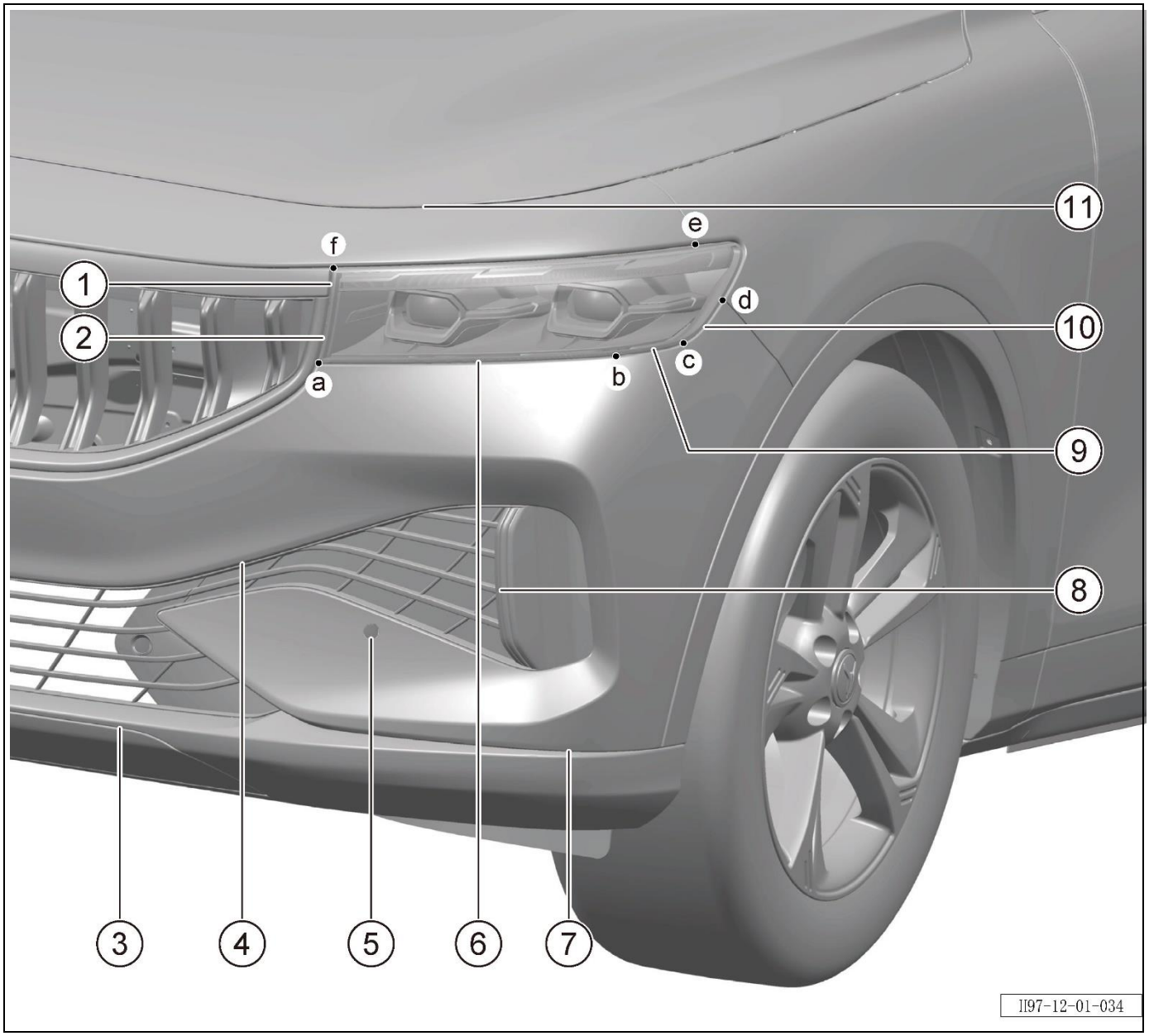
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Front face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Front bumper to tow hook cover plate	0.5 ± 0.3	-0.5 ± 0.3
2	Position lamp to grille	1.0 ± 0.8	-
3	Front logo to position lamp	2.0 ± 1.0	-
4	Front bumper to license plate protective plate	0.5 ± 0.5	-
5	Front bumper to grille bright bar	0.5 ± 0.5	-
6	Front grille to grille bright bar	0.5 ± 0.3	-
7	Front bumper lower grille to front bumper lower body	0.5 ± 0.3	-
8	Front logo to grille	0.9 ± 0.8	-
9	Front bumper to front logo	1.0 ± 0.8	-
10	Front bumper to position lamp	1.0 ± 0.8	-
11	Side wall to front windshield trim strip	0/fit	-1.0 ± 1.0
12	Front windshield to front windshield trim strip	0/fit	-
13	Roof to front windshield	2.9 ± 1.2	-2.9 ± 1.2

Front face



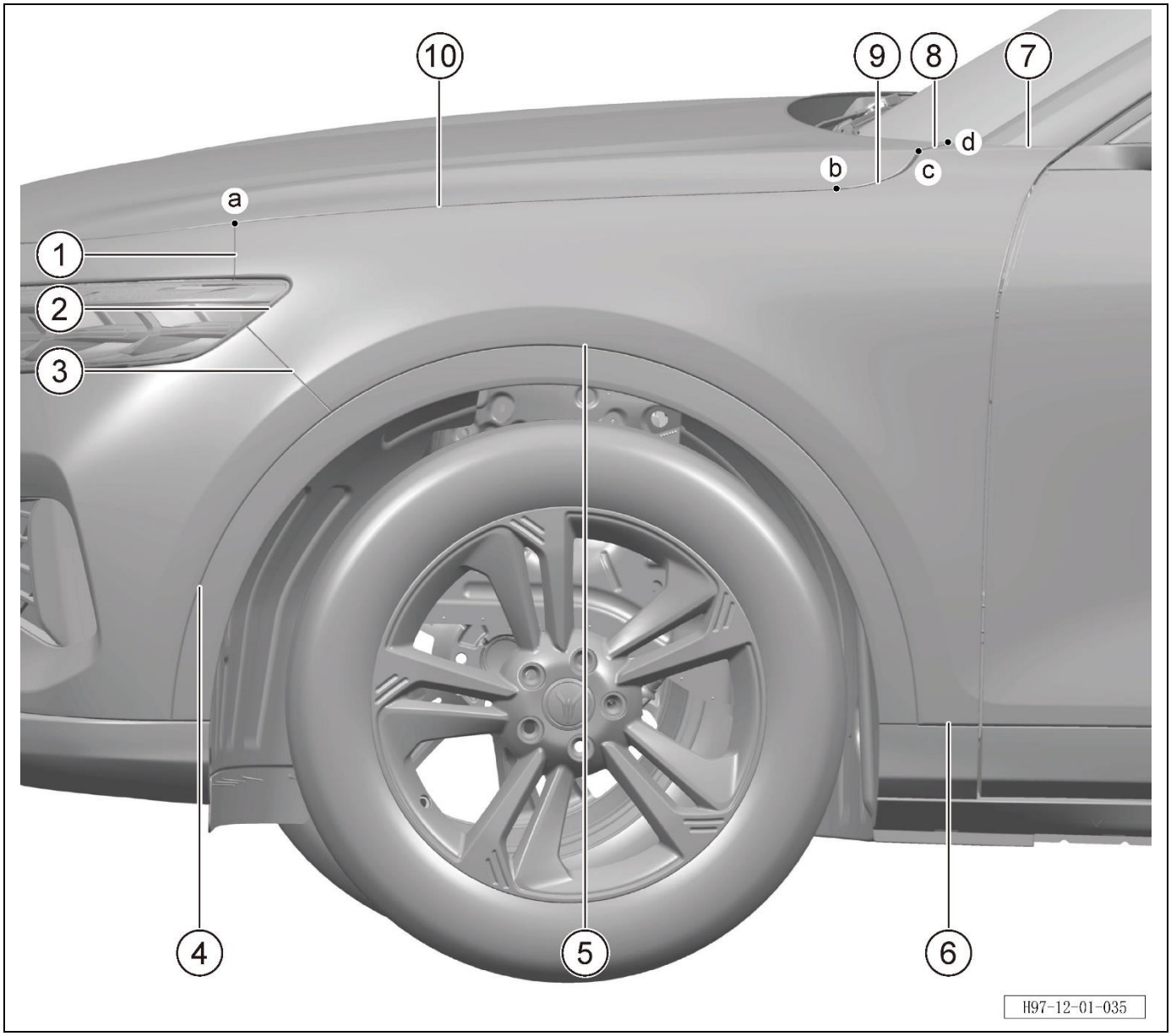
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Front face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Position lamp to headlamp	2.0 ± 1.5	0 ± 1.0
2	Headlamp to grille bright bar	1.5 ± 1.5	-
3	Front bumper lower body to front bumper lower protective plate	0 fit	-1.0 ± 1.0
4	Front bumper lower body to front bumper lower grille	0.5 ± 0.3	-
5	Front bumper to radar probe	0.3 ± 0.3	-0.3 ± 0.3
6	Front bumper to headlamp (a-b) (e-f)	1.5 ± 1.0	-
7	Front bumper upper body to front bumper lower body	0.5 ± 0.3	-
8	Front bumper grille to front bumper lower grille trim strip	0.5 ± 0.3	-1.0 ± 1.0
9	Front bumper to headlamp (b-c)	1.2~1.5±1.0	-
10	Front bumper to headlamp (c-d)	1.2 ± 1.0	-
11	Front bumper to engine hood	3.5 ± 1.0	-10 ± 1.2

Front face



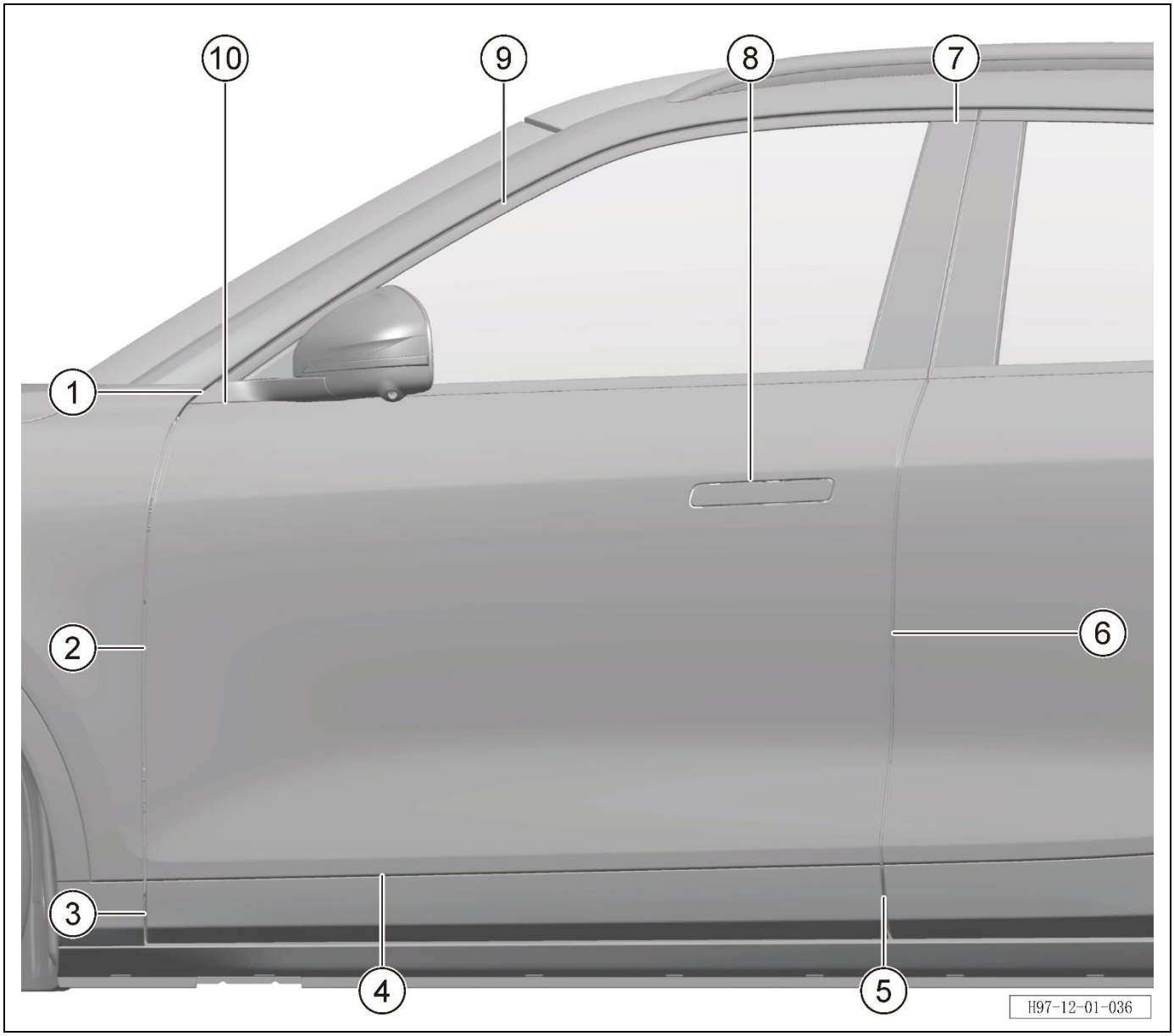
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Front face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Fender to front bumper (upper section)	0+0.5/0	0 ± 0.5
2	Fender to headlamp	1.2 ± 1.0	-
3	Fender to front bumper (lower section)	0+0.5/0	-0.5 ± 0.5
4	Front bumper to front wheel trim	0.5 ± 0.5	-
5	Fender to front wheel trim	0.5 ± 0.5	-
6	Fender to front wheel trim	0.5 ± 0.5	-1.5 ± 0.8
7	Side wall to fender	2.0 ± 1.0	-
8	Fender to engine hood (c-d)	3.5 ± 1.0	0 ± 1.0
9	Fender to engine hood (b-c)	3.5~4.0±1.0	-1.0~0±1.0
10	Fender to engine hood (a-b)	3.5 ± 1.0	-1.0 ± 1.0

Side face



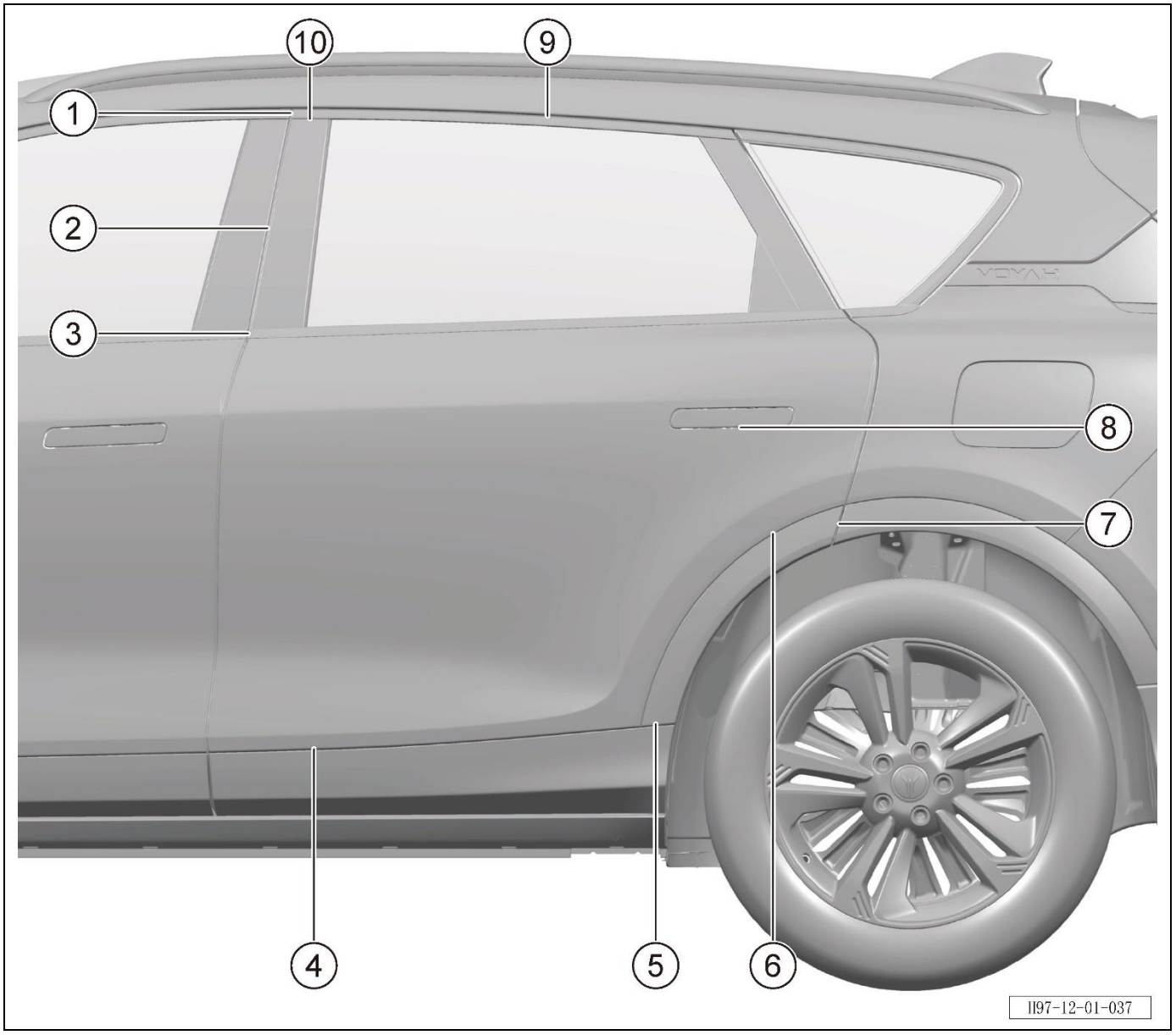
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Side face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Fender to exterior rearview mirror	3.5 ± 1.2	-
2	Front door to fender	3.5 ± 1.0	0 ± 1.0
3	Front door outer guard strip to front wheel trim	3.8 ± 1.2	0 ± 1.5
4	Front door to front door outer guard strip	0.5 ± 0.5	-
5	Rear door outer guard strip to front door outer guard strip	4.5 ± 1.2	0 ± 1.5
6	Rear door to front door	4.0 ± 1.0	0 ± 1.0
7	Front door window guide slot bright bar to front door B-pillar trim panel	1.0 ± 0.7	-
8	Front door to front door outside handle	2.5 ± 0.7	-0.5 ± 0.7
9	Side wall to front door window guide slot bright bar	4.0 ± 1.5	Symmetry: ±1.5
10	Exterior rearview mirror to front door	1.6 ± 1.0	-

Side face



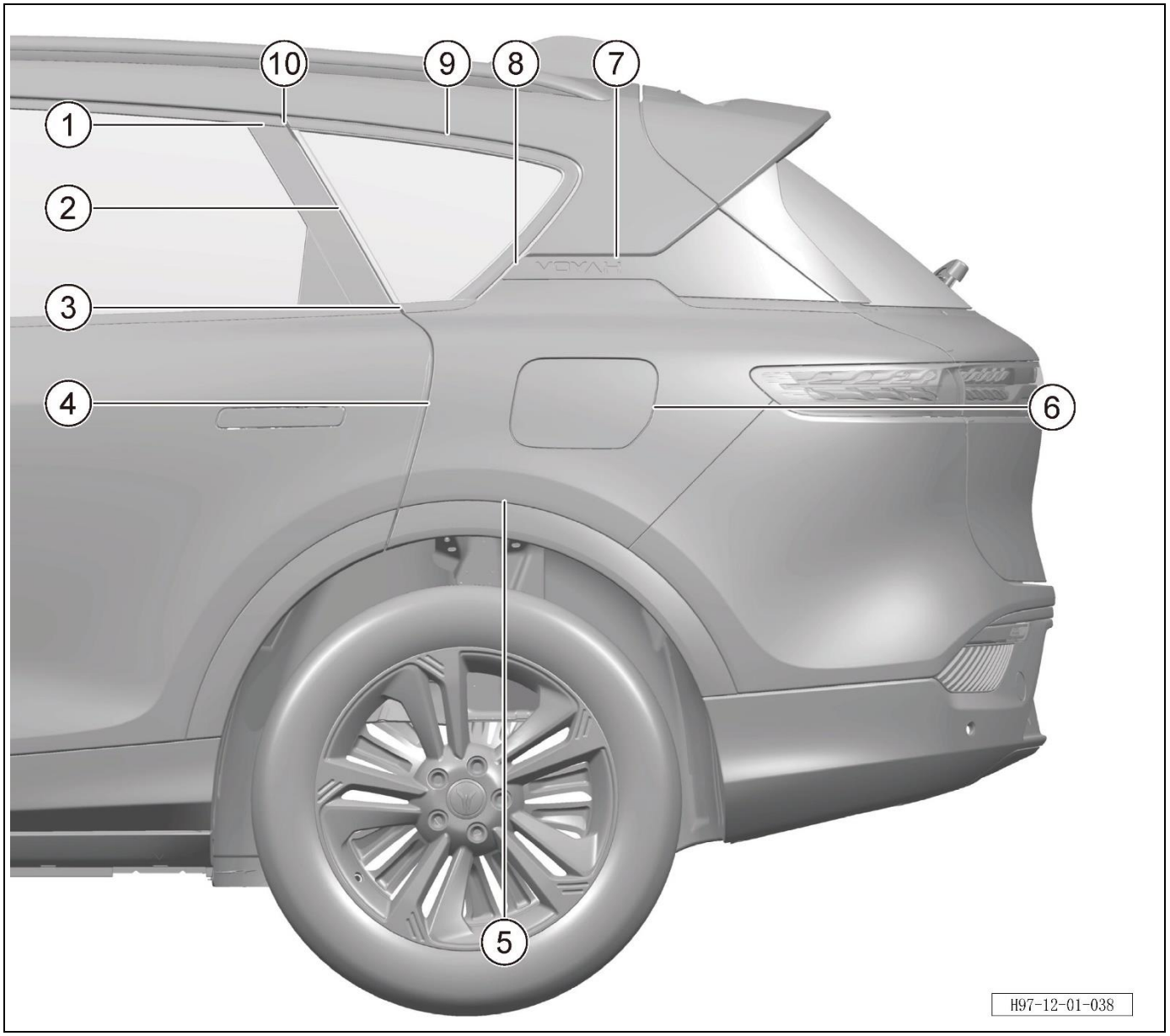
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Side face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Front door window guide slot bright bar to rear door window guide slot bright bar	4.0 ± 1.2	0 ± 1.2
2	Rear door B-pillar trim panel to front door B-pillar trim panel	4.0 ± 1.2	0 ± 1.2
3	Front door weather strip to rear door weather strip	4.0 ± 1.2	0 ± 1.2
4	Rear door to rear door guard strip	0.5 ± 0.5	-
5	Rear wheel trim front section to rear door outer guard strip	0.5 ± 0.5	-1.5 ± 0.8
6	Rear wheel trim front section to rear door	0.5 ± 0.5	-
7	Rear wheel trim front section to rear wheel trim rear section	3.5 ± 1.2	0 ± 1.2
8	Rear door to rear door outside handle	2.5 ± 0.7	-0.5 ± 0.7
9	Side wall to rear door window guide slot bright bar	4.0 ± 1.5	-
10	Side rear door window guide slot to rear door B-pillar trim panel	1.0 ± 0.7	-

Side face



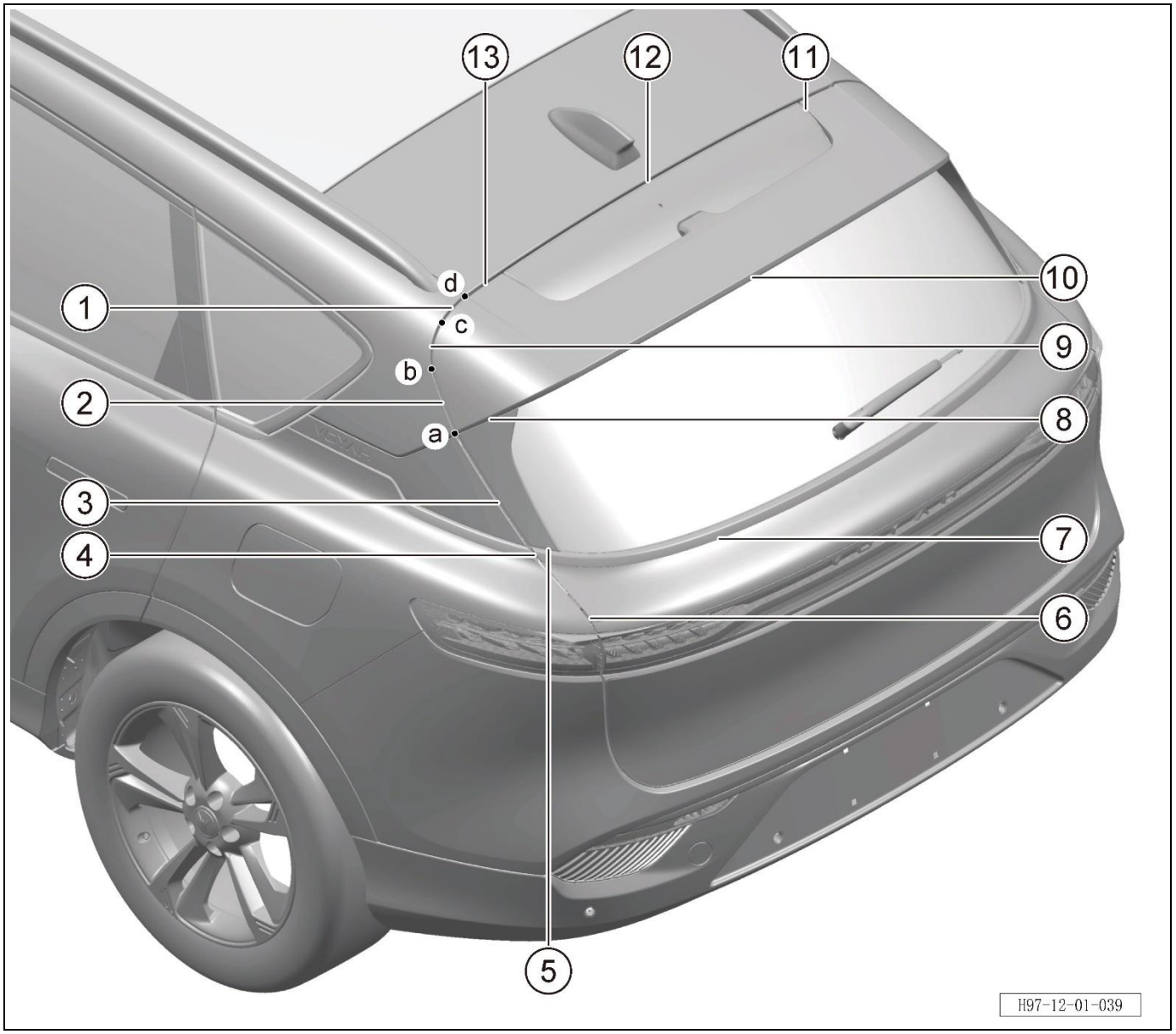
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Side face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Rear door window guide slot to rear door B-pillar trim panel	1.0 ± 0.7	-
2	Rear quarter glass to door C-pillar trim panel	4.0 ± 1.2	-0.5 ± 1.2
3	Rear door weather strip to rear quarter glass bright bar (left lower)	3.5 ± 1.2	0 ± 1.2
4	Side wall to rear door	3.5 ± 1.0	0 ± 1.0
5	Side wall to rear wheel trim rear section	0.5 ± 0.5	-
6	Side wall and charging port cover	2.0 ± 0.7	-0.5 ± 0.7
7	Side wall to rear wall D-pillar trim panel	0.5 ± 0.5	-
8	Rear wall D-pillar trim to rear quarter glass bright bar (left upper)	4.0 ± 1.0	-1.5 ± 1.0
9	Side panel to rear quarter glass bright bar (left upper)	4.0 ± 1.0	-
10	Rear door glass guide slot to rear quarter glass bright bar (left upper)	4.0 ± 1.2	0 ± 1.2

Rear face



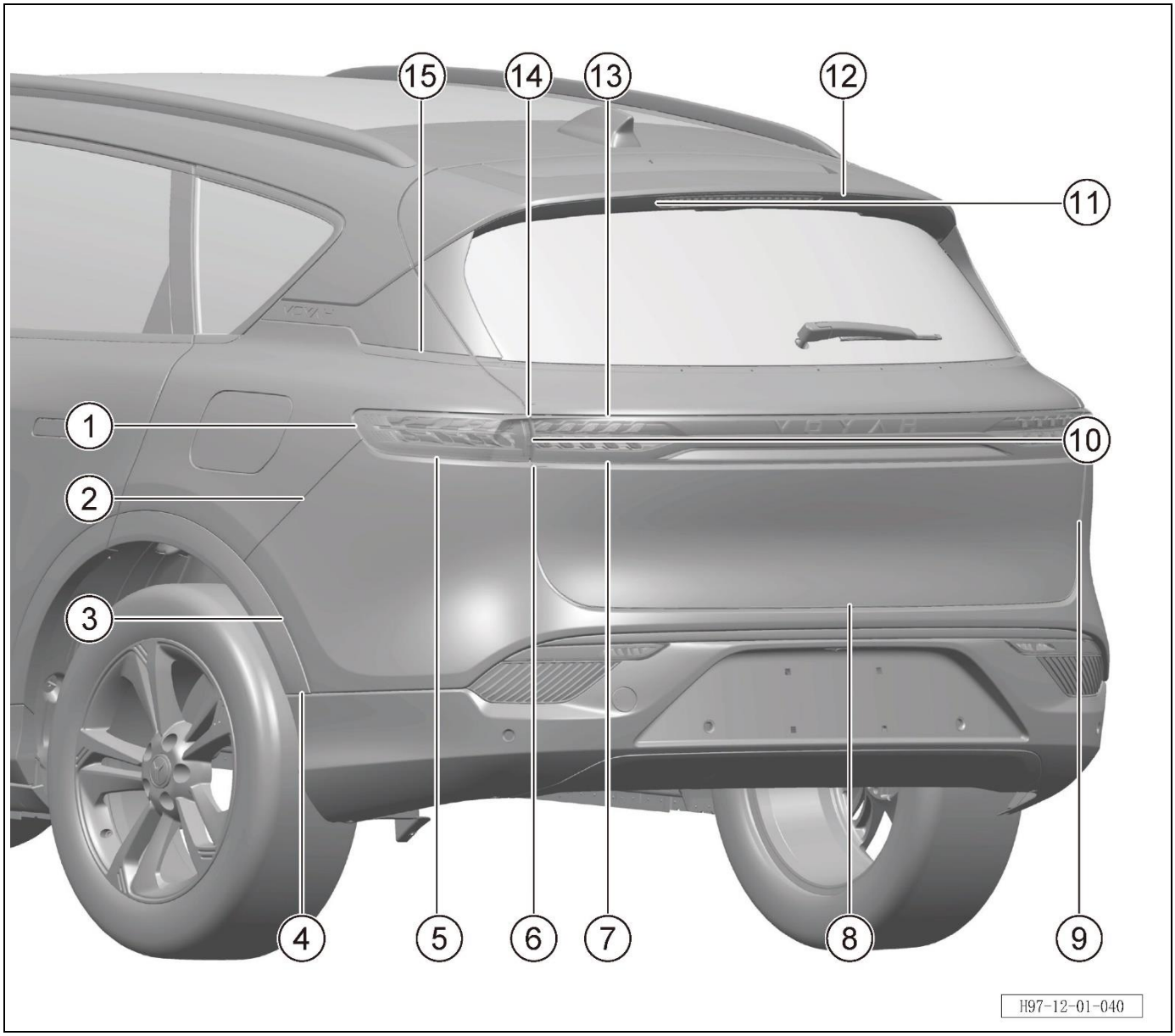
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Rear face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Side wall to spoiler (c-d)	4.5 ± 1.5	-1.5 ± 1.5
2	Side wall to spoiler (a-b)	4.0 ± 1.5	-1.5 ± 1.5
3	Tailgate spoiler trim to rear wall D-pillar trim panel	4.0 ± 1.5	1.5 ± 1.5
4	Rear wall D-pillar trim panel bright bar to tailgate trim strip	4.0 ± 1.5	0 ± 1.5
5	Tailgate deflector trim to tailgate trim strip	1.5 ± 1.5	-
6	Side wall outer panel to tailgate	4.0 ± 1.0	-
7	Tailgate trim strip to tailgate	0 fit	-
8	Spoiler to tailgate spoiler trim	0.5 ± 0.5	-
9	Side wall to spoiler (b-c)	4.0~4.5±1.5	-1.5 ± 1.5
10	Spoiler to tailgate window	2.0 ± 1.2	-
11	Spoiler to tailgate	1.0 ± 0.7	0 ± 0.7
12	Roof to tailgate	5.5 ± 1.5	-1.5 ± 1.5
13	Roof to spoiler	5.5 ± 1.5	-1.5 ± 1.5

Rear face



Note:

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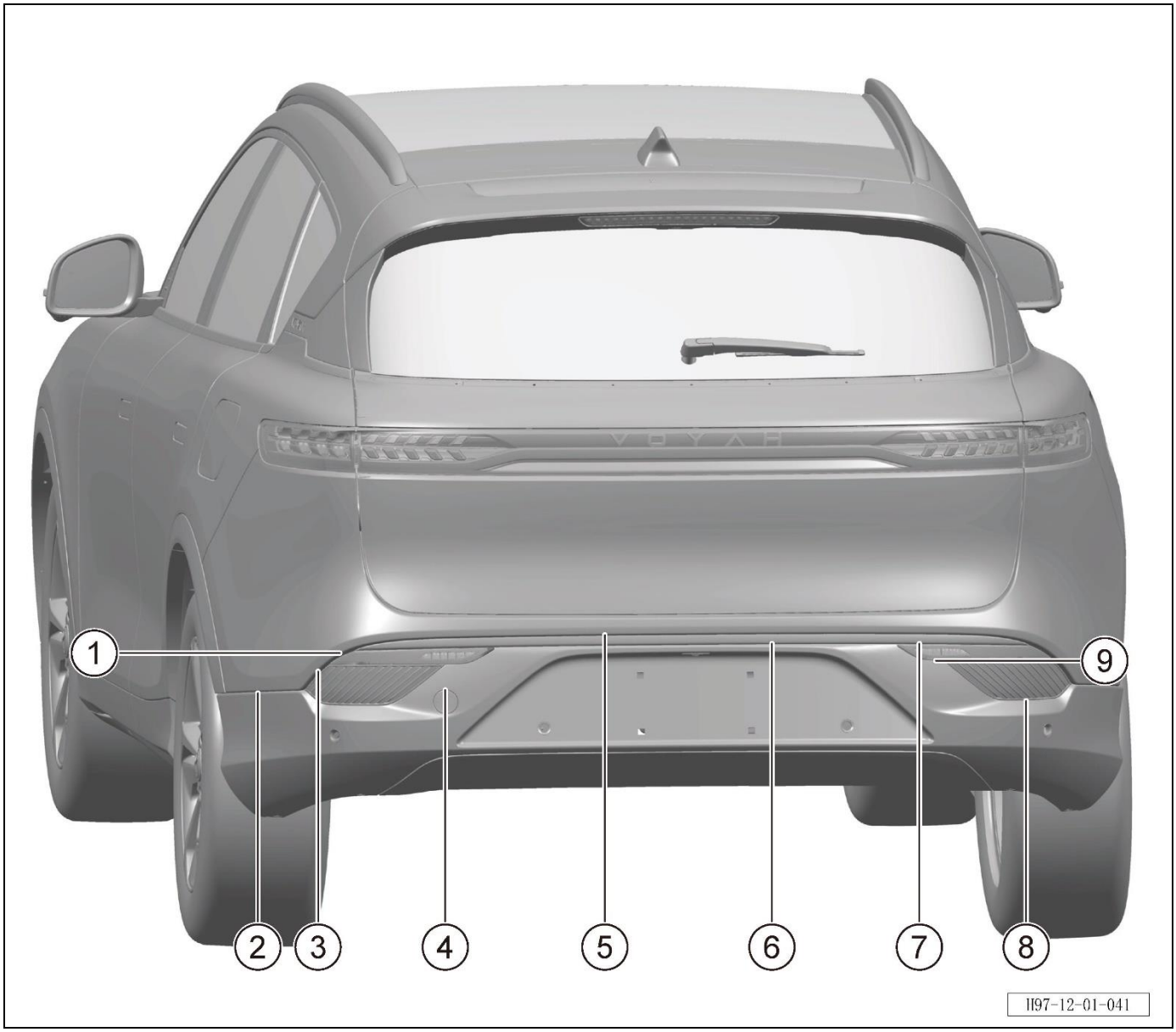
Rear face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Side wall to rear combination lamp (fixing side)	1.2 ± 1.0	0 ± 1.0
2	Side wall to rear bumper	0+0.5/0	-0.5 ± 0.5
3	Rear bumper to rear wheel trim (left rear)	0.5 ± 0.5	-
4	Rear wheel trim (left rear) to rear bumper	0.5 ± 0.5	-1.5 ± 0.8
5	Rear combination lamp (fixing side) to rear bumper	1.2 ± 1.0	-
6	Rear bumper to tailgate	4.0 ± 1.5	-
7	Rear combination lamp (movable side) to tailgate	1.2 ± 1.0	-
8	Rear bumper to tailgate (Z direction)	5.0 ± 1.5	-
9	Rear bumper to tailgate (Y direction)	4.0 ± 1.5	(-1.5~ -2.2)±1.5
10	Rear combination lamp (fixing side) to rear combination lamp (movable side)	4.0 ± 1.5	1.0 ± 1.5
11	Spoiler inner panel to high-mounted brake lamp	0.7 ± 0.5	-
12	Spoiler outer panel to spoiler inner panel	0.5 ± 0.5	-0.5 ± 0.5
13	Rear combination lamp (movable side) to tailgate	1.2 ± 1.0	-
14	Rear combination lamp (fixing side) to rear combination lamp (movable side)	4.0 ± 1.5	0 ± 1.5
15	D-pillar trim panel to D-pillar trim panel bright bar	0.5 ± 0.5	-

Rear face



Note:

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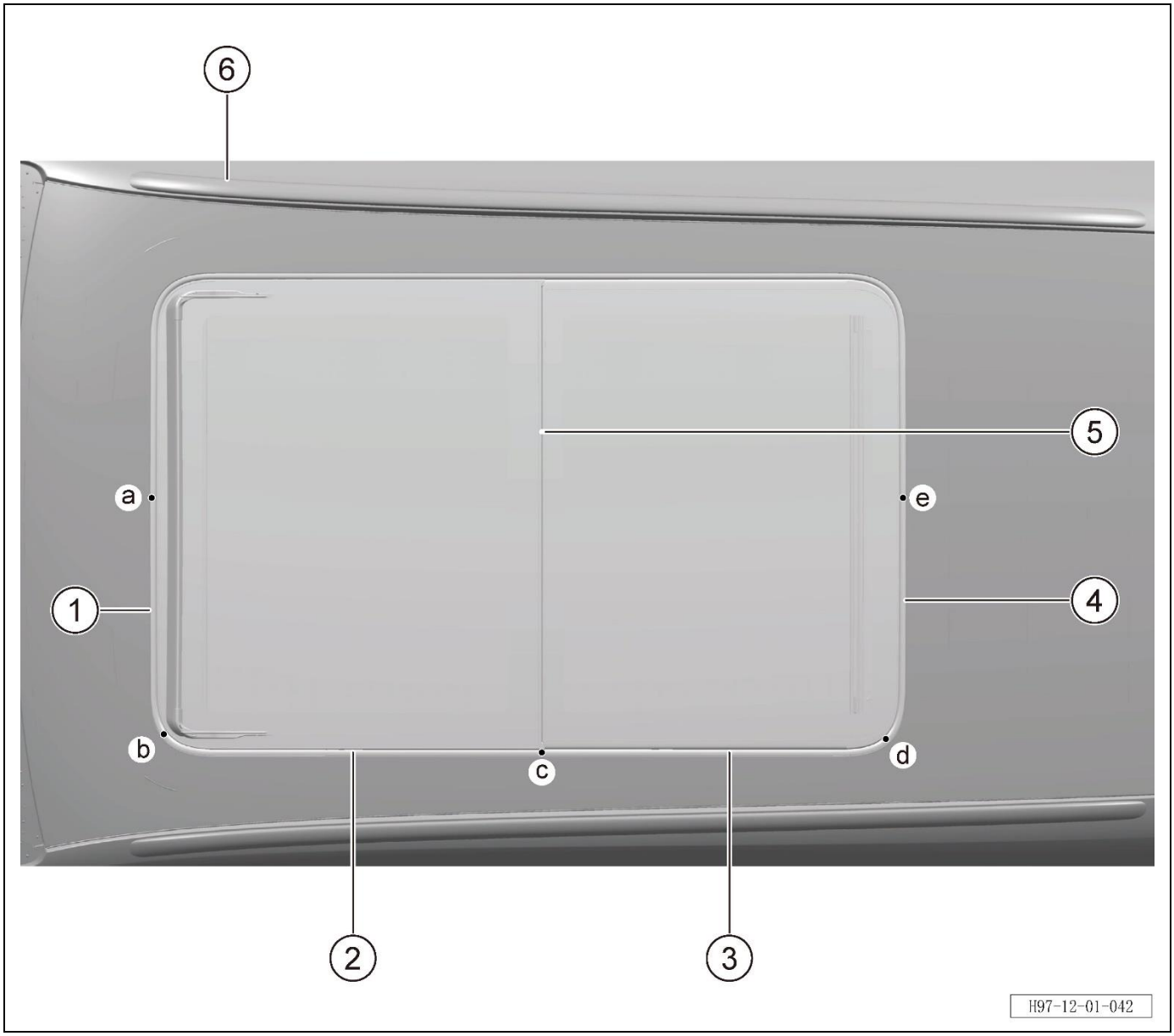
Rear face assembly standard

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Rear bumper upper body to rear fog lamp	1.0 ± 0.8	-
2	Rear bumper upper body to rear bumper lower body	0.5 ± 0.3	-
3	Rear bumper upper body to rear fog lamp trim panel	1.0 ± 0.5	-
4	Rear bumper lower body to rear tow hook cover	0.3 ± 0.3	-0.5 ± 0.3
5	Rear bumper upper body to rear bumper bright bar	1.0 ± 1.0	-
6	Rear bumper lower body to bright bar	0.5 ± 0.5	-
7	Rear bumper bright bar to rear fog lamp	1.0 ± 0.8	-
8	Rear bumper lower body to rear fog lamp trim panel	0.5 ± 0.5	-
9	Rear fog lamp to rear bumper lower body	1.0 ± 0.8	-

Roof section - with sunroof



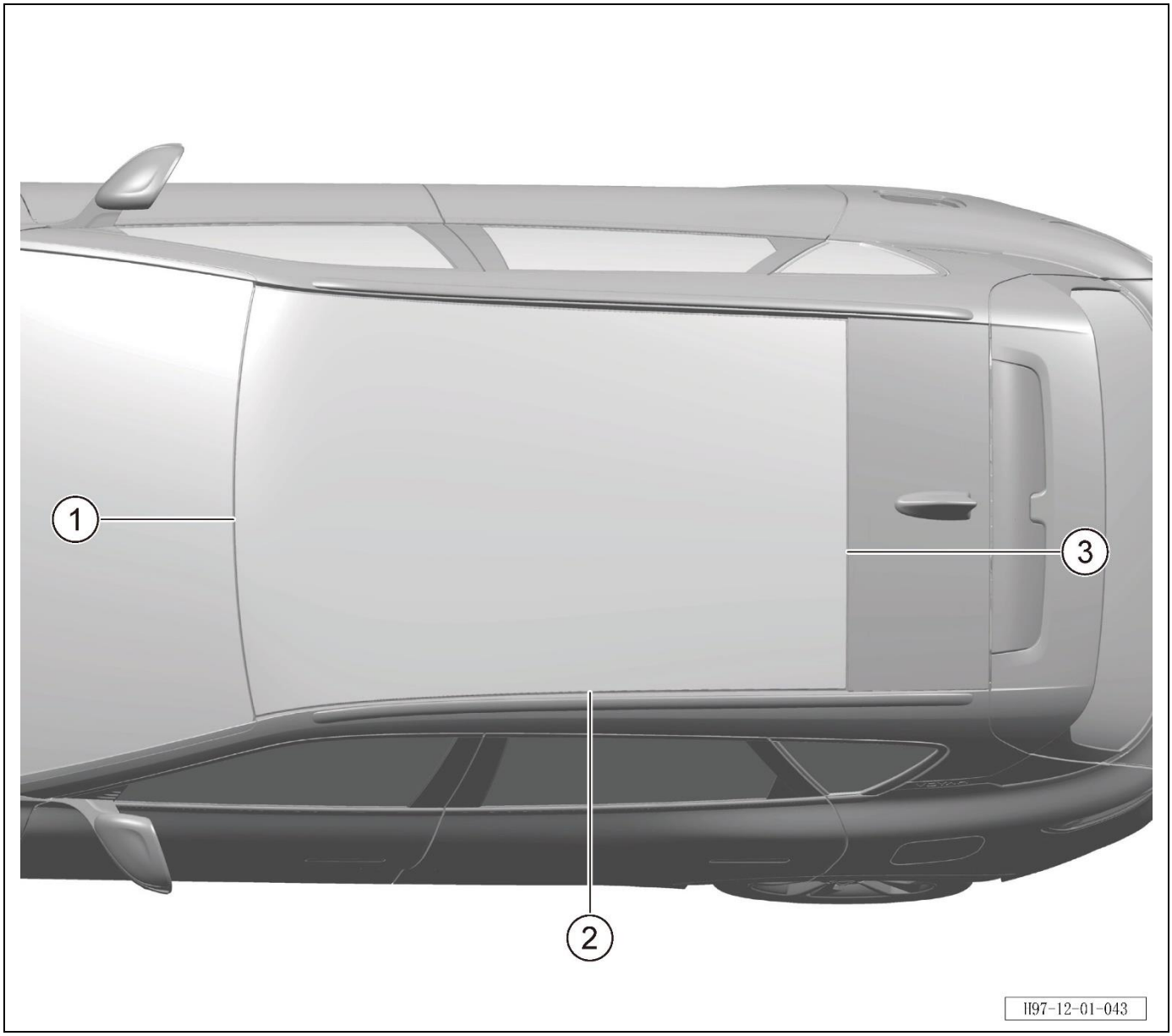
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of roof section - with sunroof

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Roof to sunroof front section (a-b)	0 fit	-1.8±1.5
2	Roof to sunroof front section (b-c)	0 fit	-1.3~0±1.5
3	Roof to sunroof rear section (c-d)	0 fit	-0.8~0.5±1.5
4	Roof to sunroof rear section (d-e)	0 fit	1.4~1.7+1.0
5	Sunroof rear section to sunroof front section	1.5±1.5	1.3~1.5±0.5
6	Luggage rack to side wall	1.5±1.0	-

Roof section - with moonroof



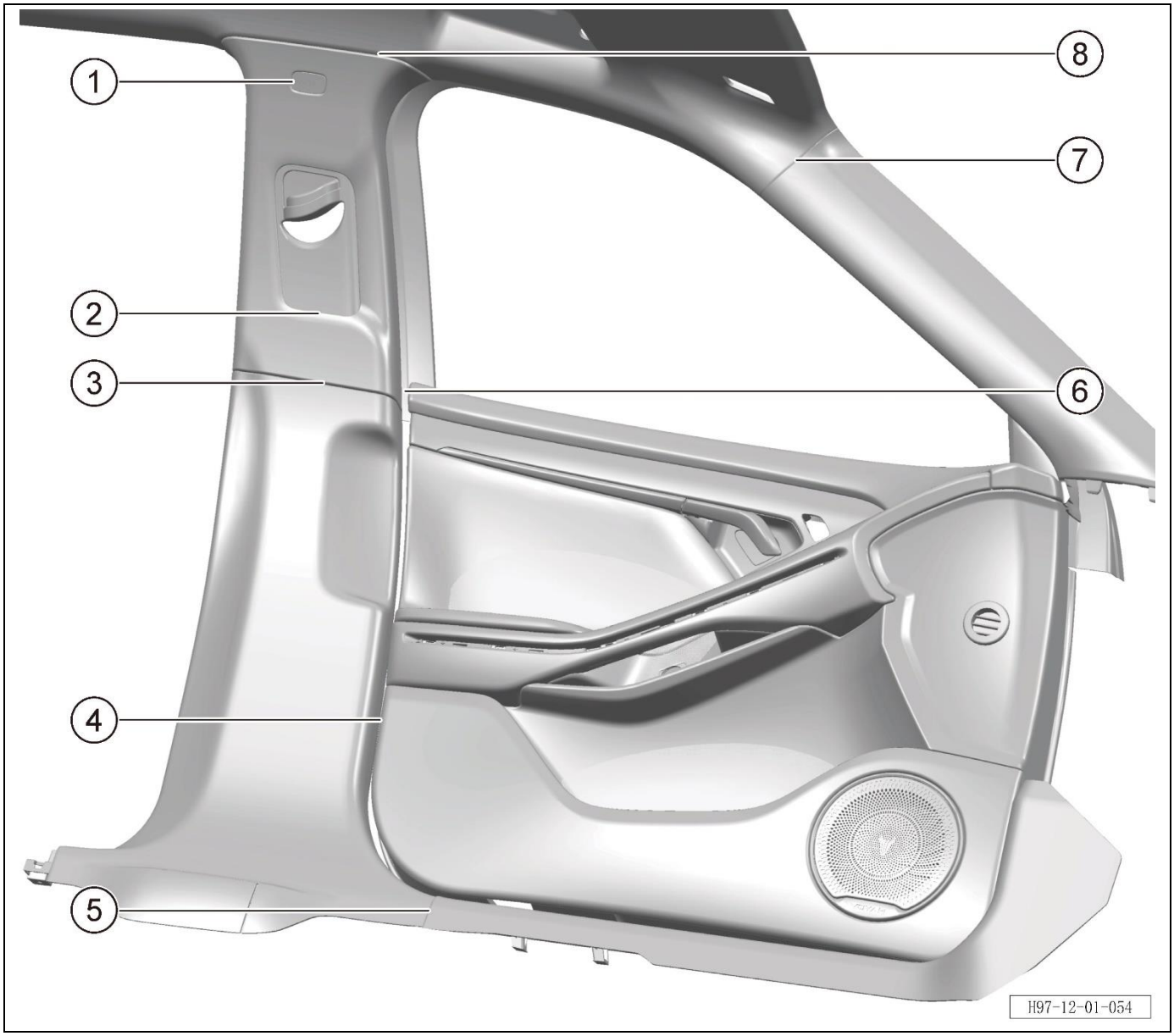
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of roof section - with moonroof

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Moonroof glass to front windshield	3.0±1.5	-3.0±1.5
2	Side wall to fixing glass roof	0 fit	-
3	Roof to fixing glass roof	2.9±1.5	0.5±1.5

B-pillar protective plate inner trim



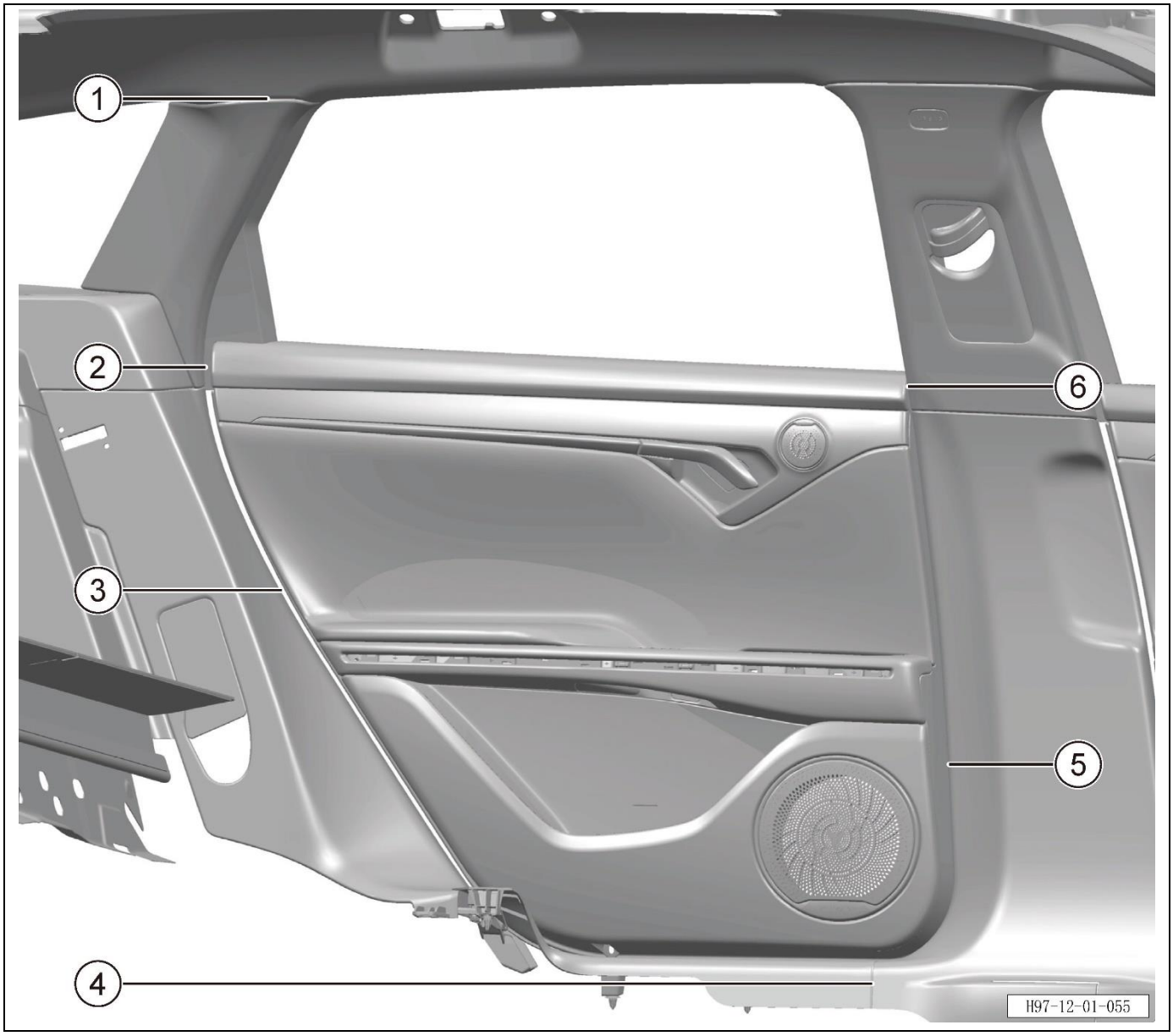
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of B-pillar protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Airbag logo to B-pillar upper protective plate	0/0.5	-0.5±0.5
2	Seat belt sliding plate to B-pillar upper protective plate	0.5±0.5	-
3	B-pillar lower protective plate to B-pillar upper protective plate	0.5±0.5	-0.5±0.5; X-direction: 0±0.5
4	B-pillar lower part to front door panel	8 ± 2	-
5	B-pillar lower protective plate to A-pillar lower protective plate	0/0.5	-
6	B-pillar upper part to front door panel	8 ± 2	-
7	A-pillar upper protective plate to ceiling	0/0.5	-
8	B-pillar upper protective plate to ceiling	0/0.5	-

Rear door panel inner trim



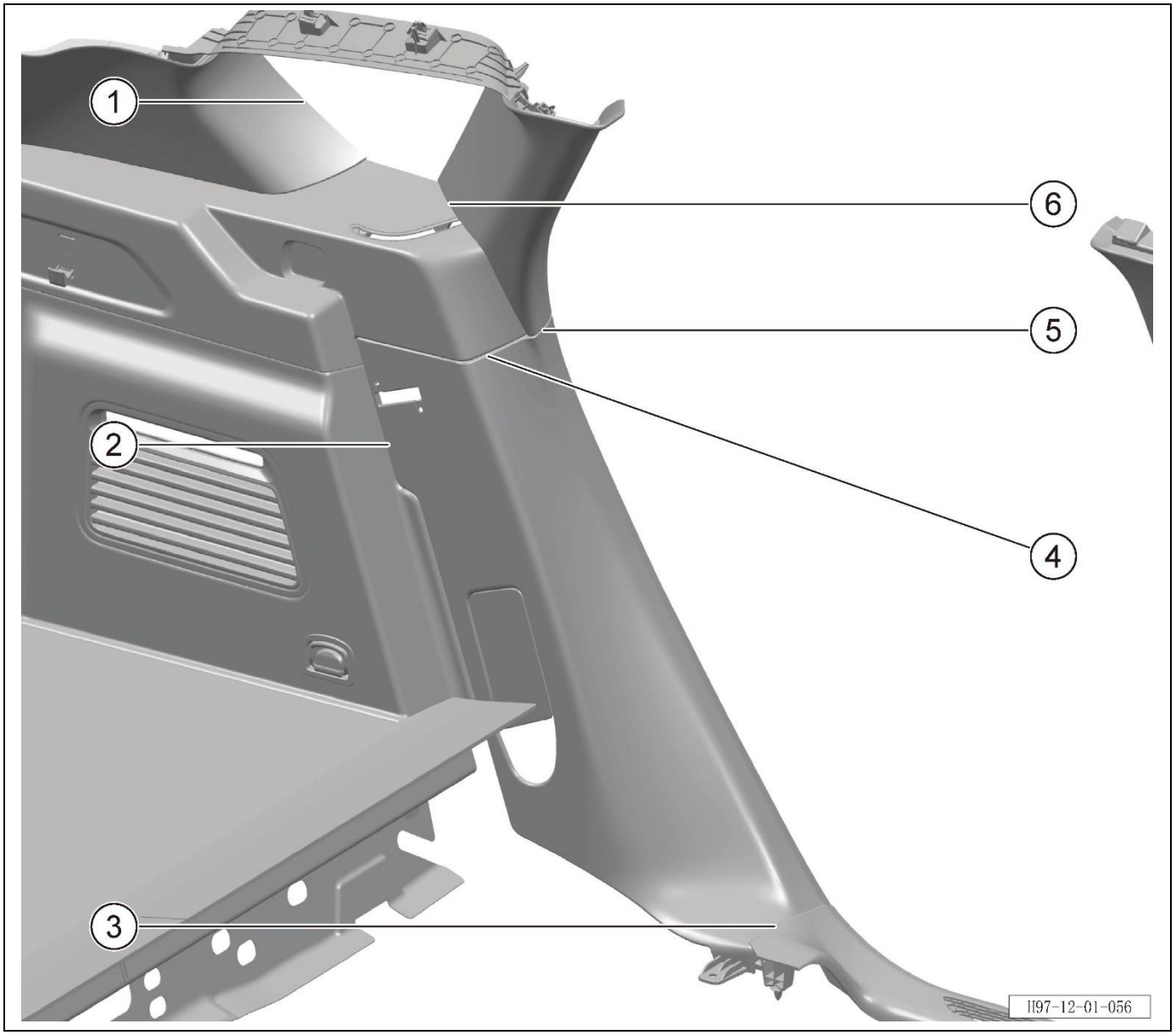
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of rear door panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	C-pillar upper protective plate to ceiling	0/0.5	-
2	C-pillar upper part to rear door panel	7.5±2	-
3	C-pillar lower part to rear door panel	10 ± 2	-
4	B-pillar lower protective plate to rear door sill	0/0.5	-
5	B-pillar lower part to rear door panel	9.5±2	-
6	B-pillar upper part to rear door panel	7.5±2	-

C-pillar interior



Note:

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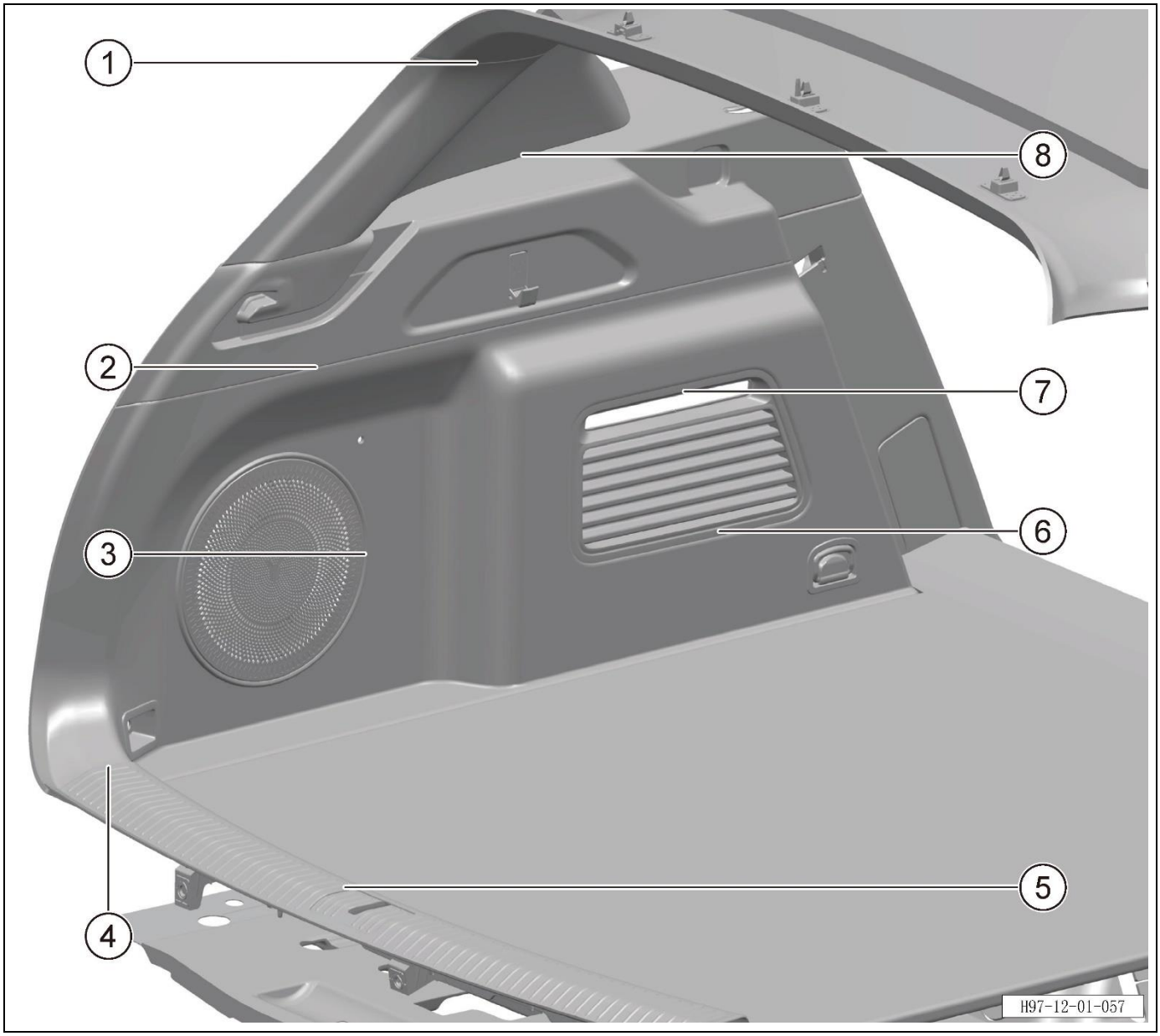
Assembly standard of C-pillar inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	D-pillar protective plate to triangular window glass	3 ± 2	-
2	C-pillar lower part to trunk protective plate	0/0.5	-
3	C-pillar lower protective plate to rear door sill	0/0.5	-
4	Coat rack shelf to C-pillar lower protective plate	0.5±0.5	-0.5±0.5
5	C-pillar lower protective plate to C-pillar upper protective plate	0/0.5	-
6	C-pillar upper protective plate to coat rack shelf	0.5±0.5	-

Trunk inner trim



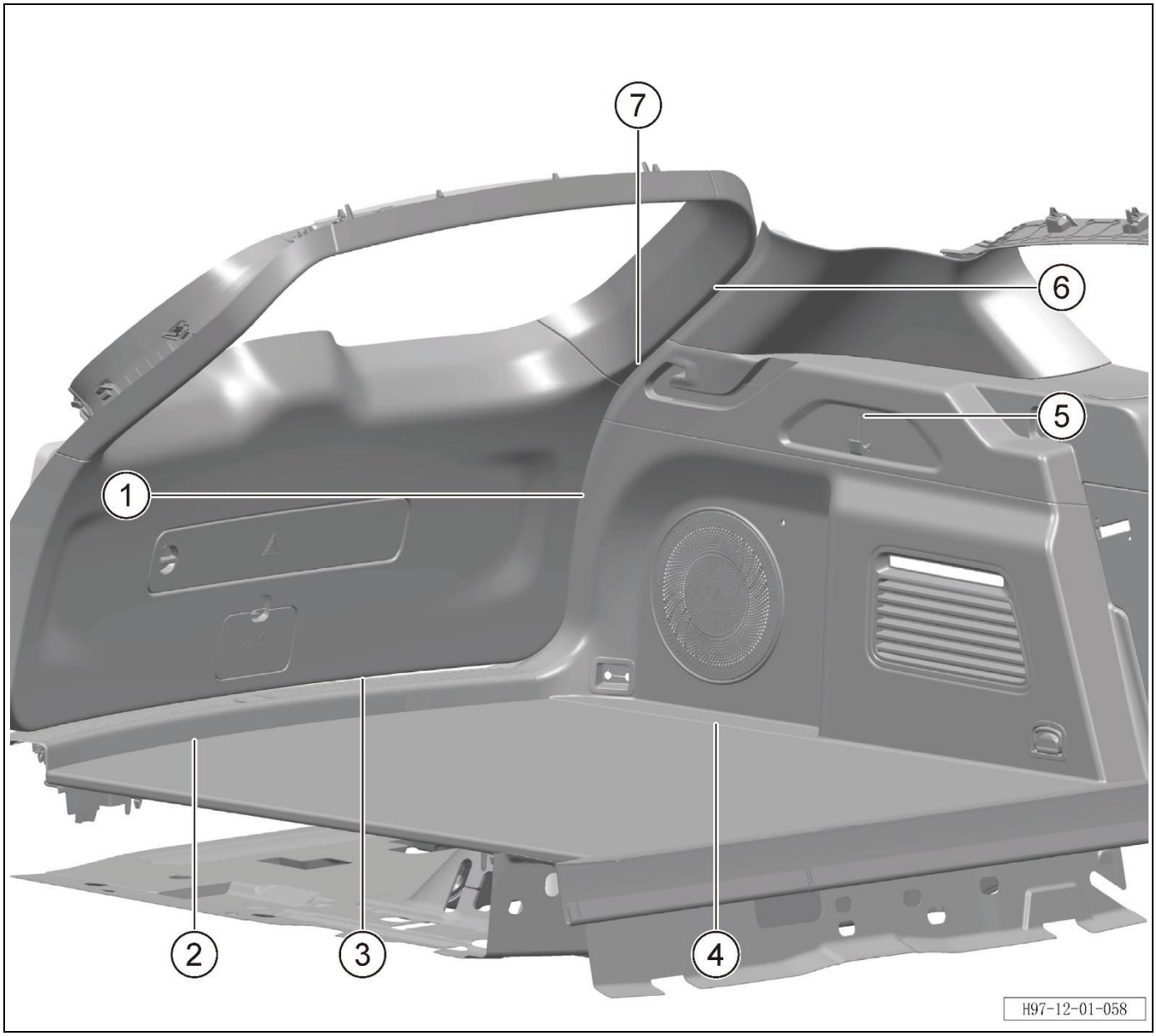
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard for trunk inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	D-pillar protective plate to ceiling	0/0.5	-
2	Trunk protective plate and coat rack shelf	0/0.5	-
3	Trunk protective plate and speaker trim strip	0/0.3	-
4	Trunk protective plate to tailgate sill	0/0.5	-
5	Tailgate sill and tailgate lock trim	0/0.5	-
6	Ventilation cover plate to trunk protective plate	0/0.5	-
7	Ventilation frame trim panel and trunk lamp	0.3±0.3	-
8	D-pillar protective plate to coat rack shelf	0.5±0.5	-

Trunk inner trim



Note:

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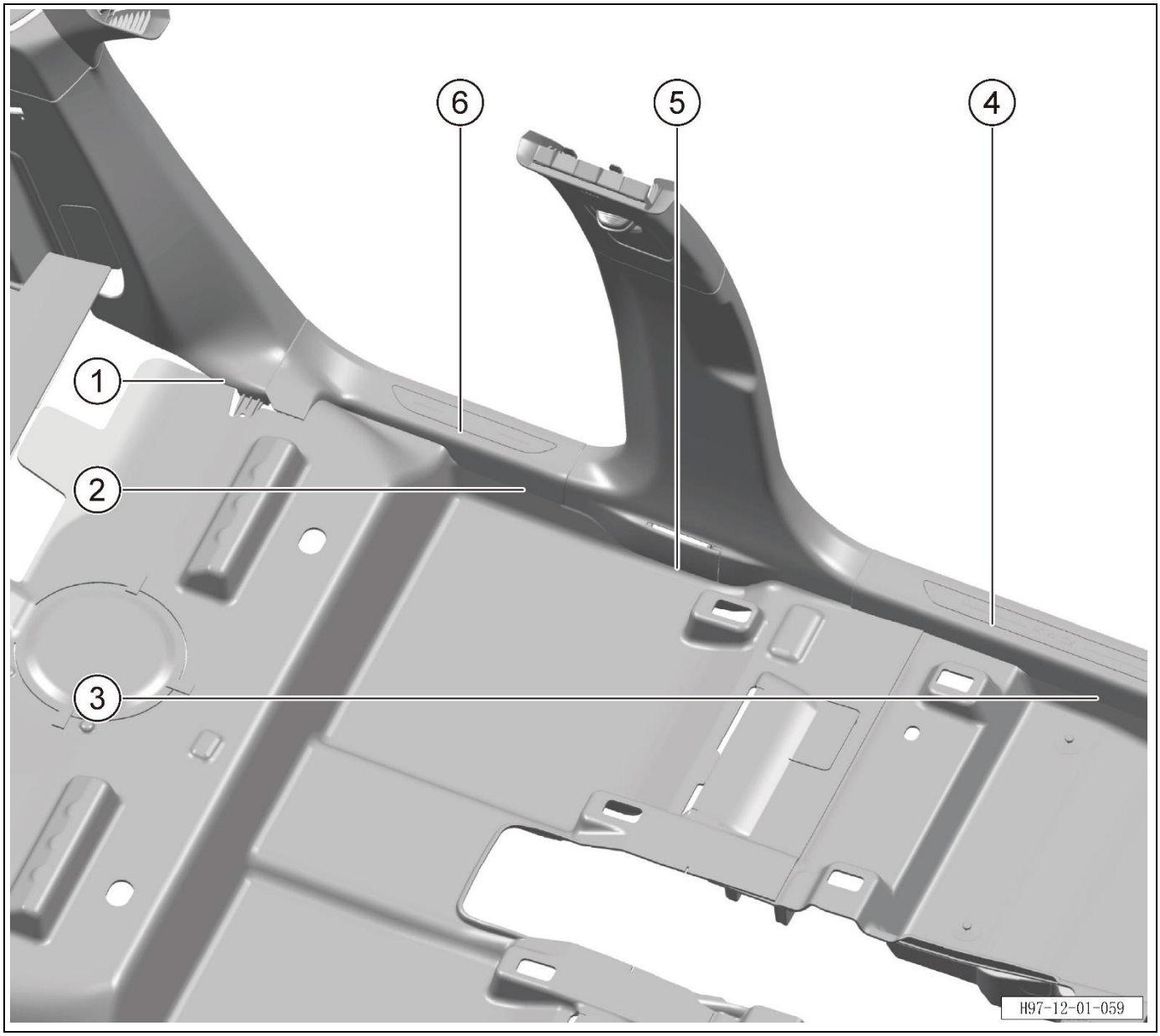
Assembly standard for trunk inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Trunk protective plate to tailgate lower trim panel	10 ± 2	-
2	Trunk carpet to tailgate sill	0/0.5	-
3	Tailgate lower protective plate to tailgate sill	10 ± 2	-
4	Trunk protective plate to trunk carpet	1 ± 2	-
5	Coat rack shelf and coat hook	0.5±0.5	-0.5±0.5
6	D-pillar trim panel to tailgate side trim panel	12 ± 2	-
7	Coat rack shelf to tailgate side trim panel	12 ± 2	-

Carpet inner trim



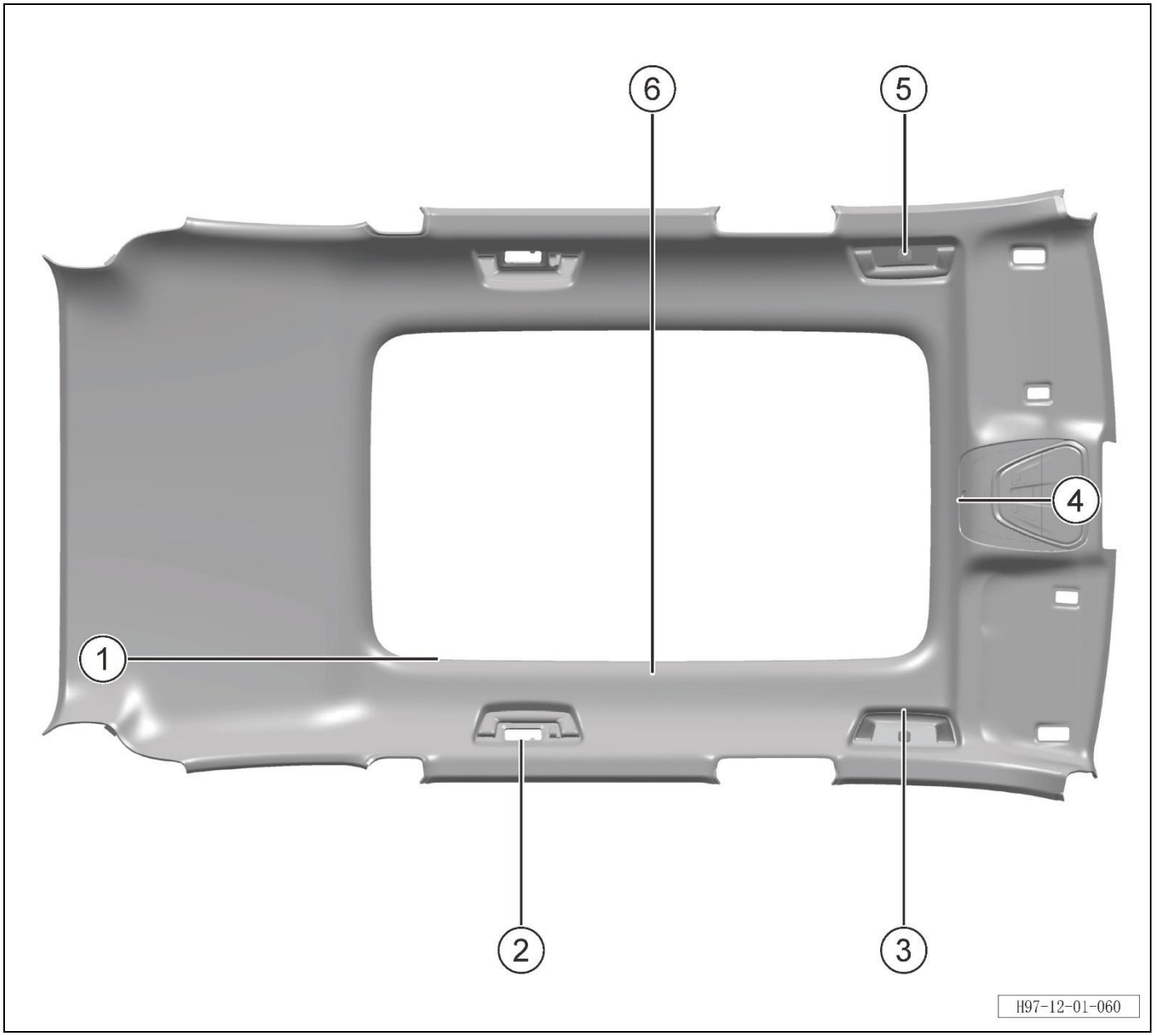
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of carpet inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	C-pillar lower trim panel to carpet	0/0.5	-
2	Rear door sill trim panel to carpet	0/0.5	-
3	A-pillar lower trim panel to carpet	0/0.5	-
4	Front courtesy pedal to A-pillar lower trim panel	0.3±0.3	-
5	B-pillar lower trim panel to carpet	0/0.5	-
6	Rear courtesy pedal to rear door sill	0.3±0.3	-

Ceiling inner trim - with sunroof



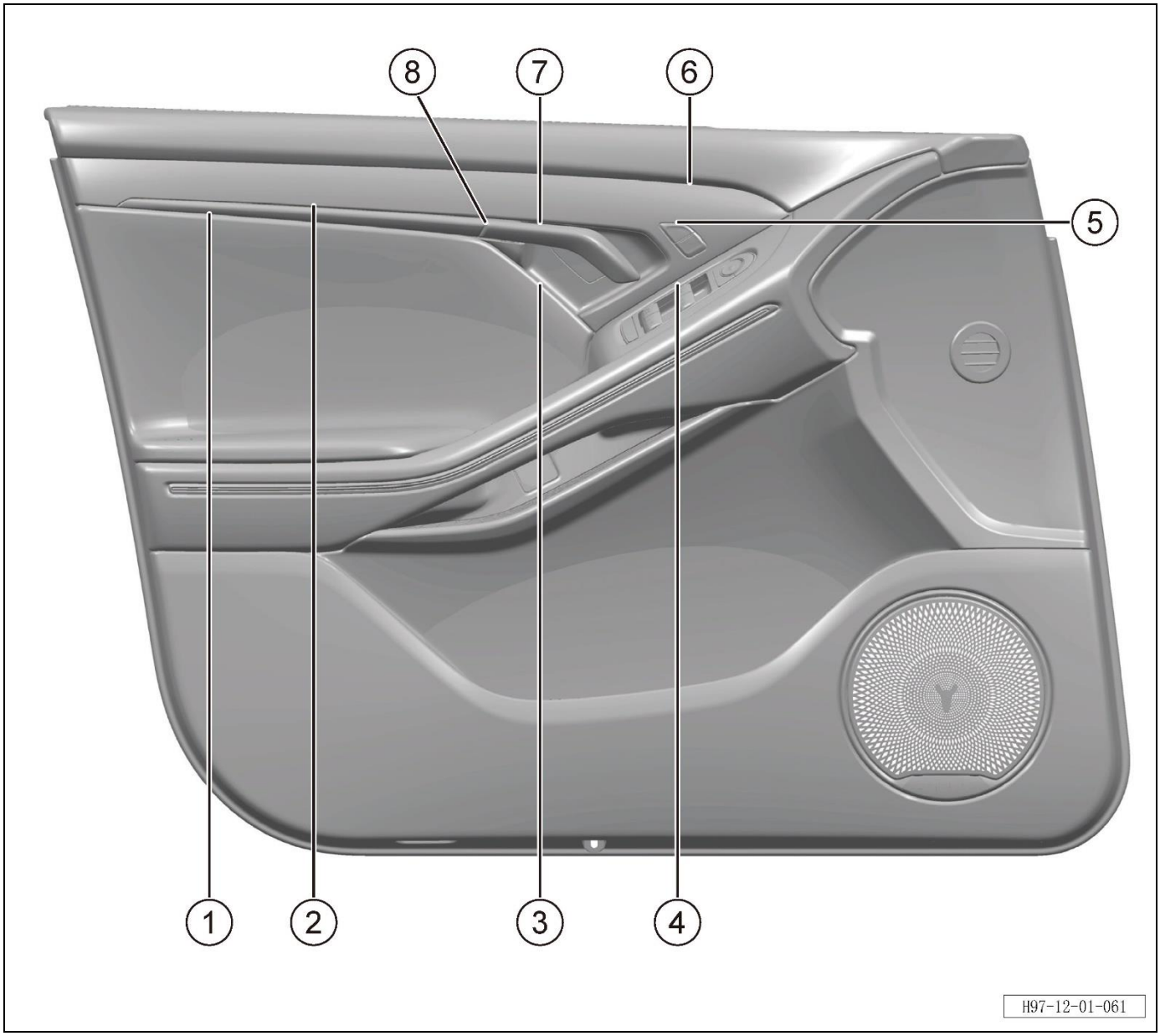
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of ceiling inner trim - with sunroof

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Ceiling assembly to panoramic moonroof	3±1.5	-
2	Ceiling to rear reading lamp	0/0.3	-
3	Ceiling body to ceiling handle	5 ± 2	-
4	Ceiling body to front ceiling lamp panel	0/0.3	-
5	Ceiling to microphone cover plate	0/0.3	-
6	Ceiling assembly to sunroof assembly	3±1.5	-

Front door trim panel inner trim



Note:

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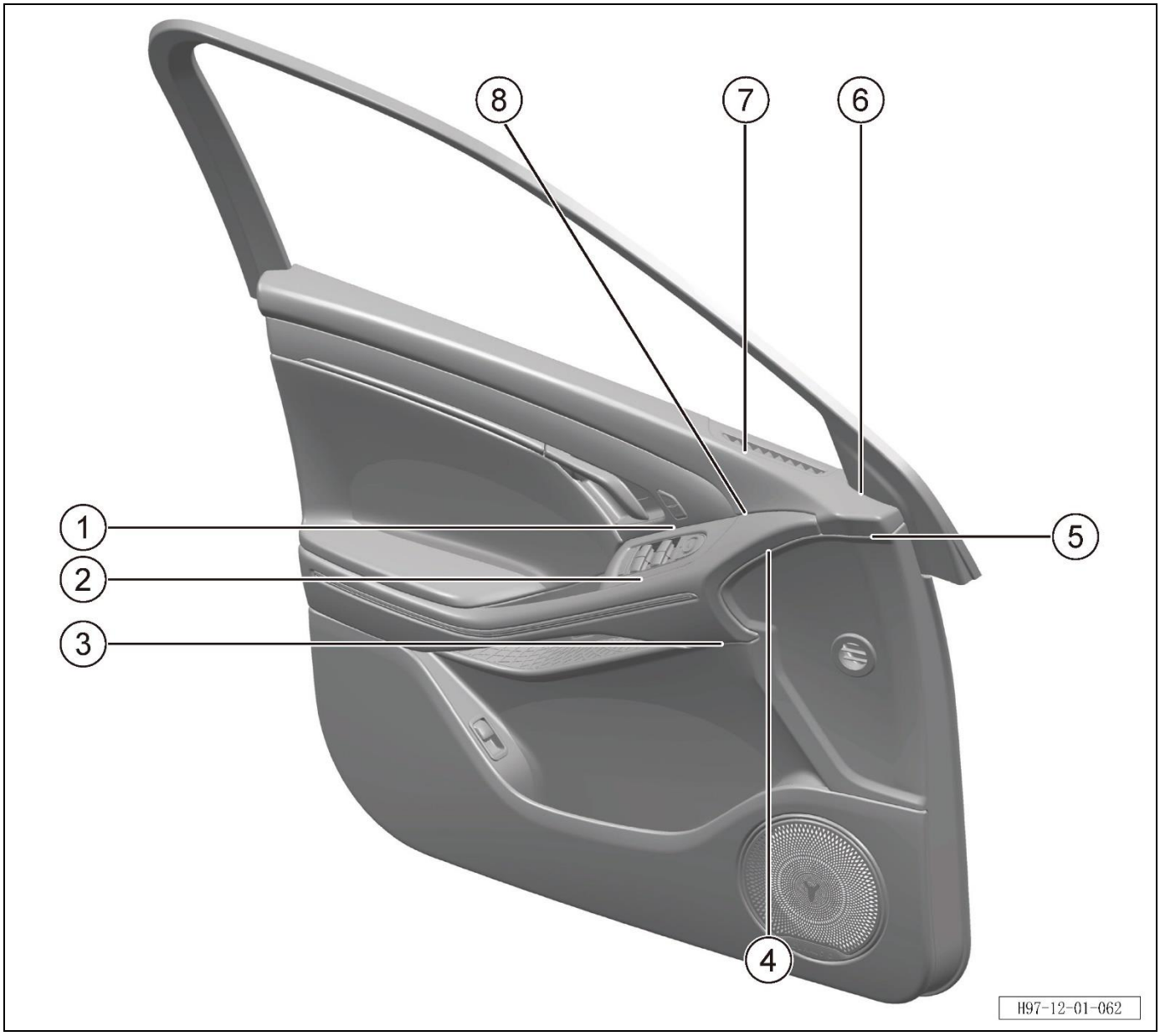
Assembly standard of front door trim panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Armrest to inside handle bright strip	0/0.3	-
2	Front door trim panel to inside handle bright strip	0.6±0.5	-
3	Armrest to inside handle box	0/0.3	-2±0.7
4	Inside handle box to front door trim panel	0/0.5	-0.4±0.3
5	Front door trim panel to front door lock switch	0.5±0.5	-
6	Front door trim panel to male mold bodywork	0/0.3	-
7	Front door trim panel to handle	1.5±0.5	-
8	Inside handle bright strip to handle	1.5±0.8	-

Body inner trim



Note:

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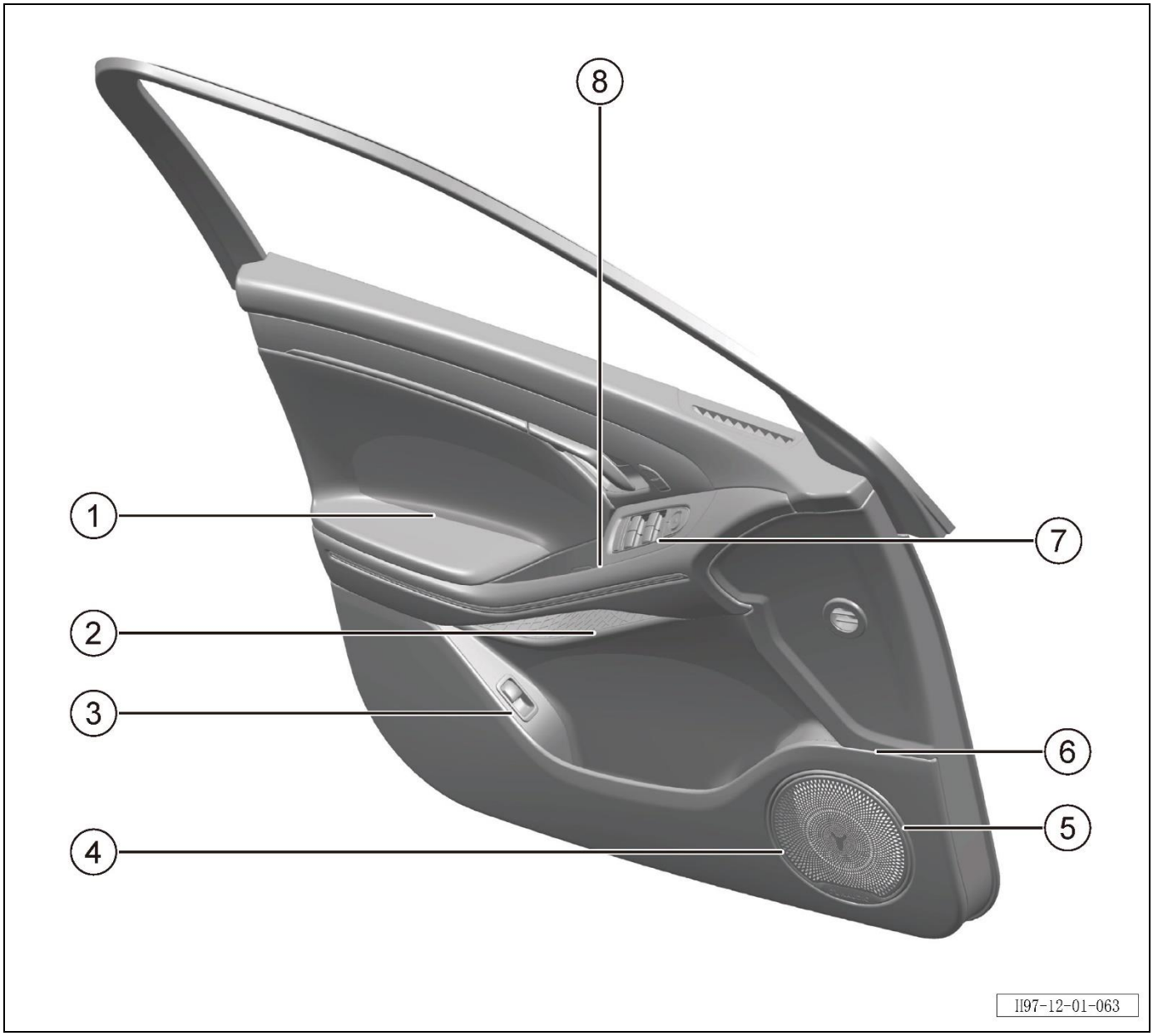
Assembly standard of body inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Switch panel to trim panel	0.5±0.5	-
2	Switch panel to mid-piece	0/0.3	3±0.5
3	Body to mid-piece	0/0.3	-
4	Body to mid-piece	0/0.3	-
5	Body to male mold bodywork	0/0.5	-
6	Window frame trim to male mold bodywork	0/0.3	-
7	Male mold bodywork to side defroster vent	0/0.3	-1±0.5
8	Male mold bodywork to mid-piece	0/0.3	-

Body inner trim



Note:

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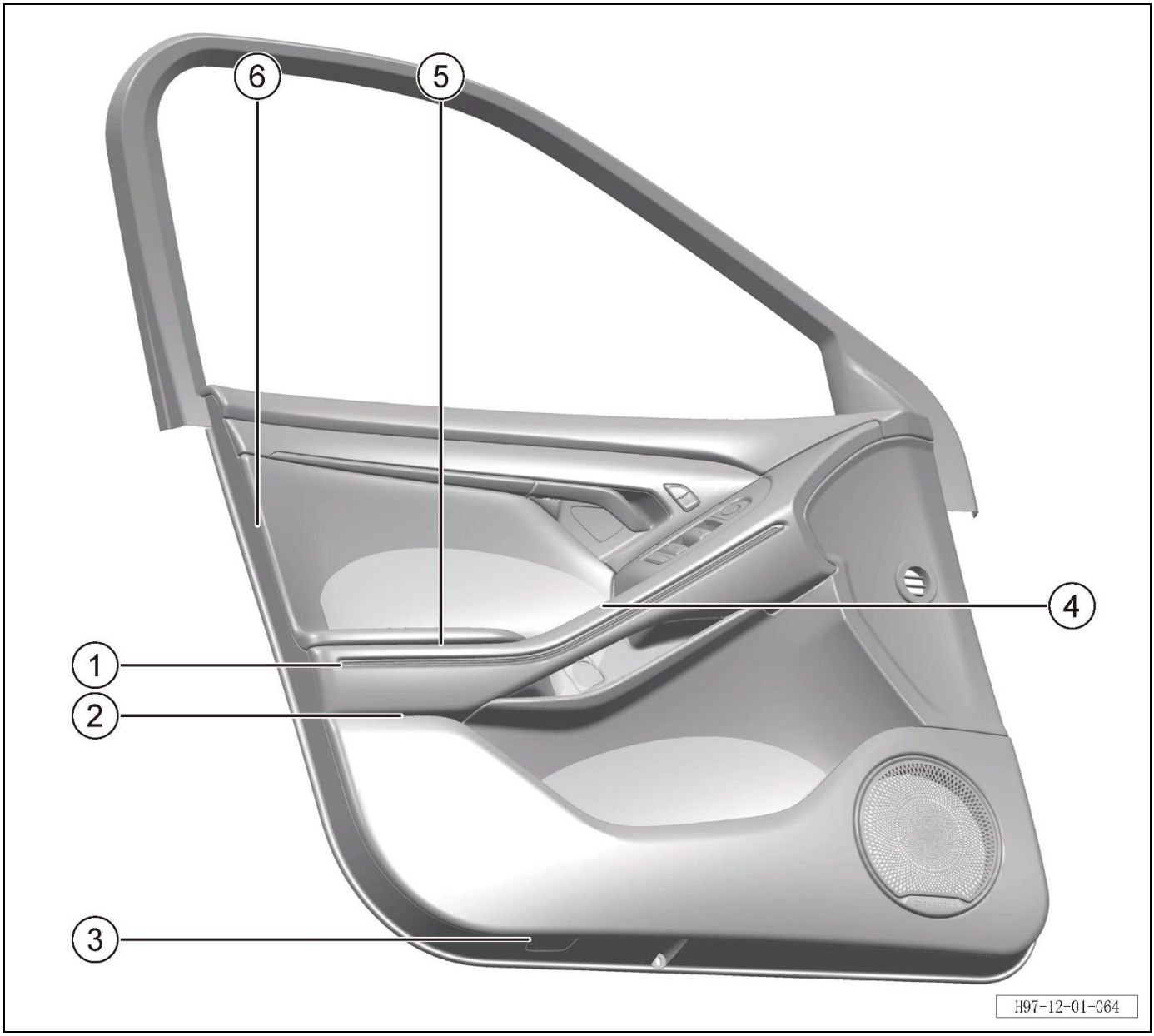
Assembly standard of body inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Armrest to handle box housing	0/0.3	-
2	Body to handle box housing	0.3±0.3	-
3	Body to tailgate opening switch	0/0.5	-
4	Metal mesh to woofer trim bright strip	0.5±0.3	-
5	Map pocket cover plate to woofer trim bright strip	0/0.3	-
6	Body to map pocket cover plate	0/0.3	-
7	Front door window regulator switch to switch panel	0.5±0.3	-
8	Handle box housing to switch panel	0.5±0.5	1±0.5

Body inner trim



Note:

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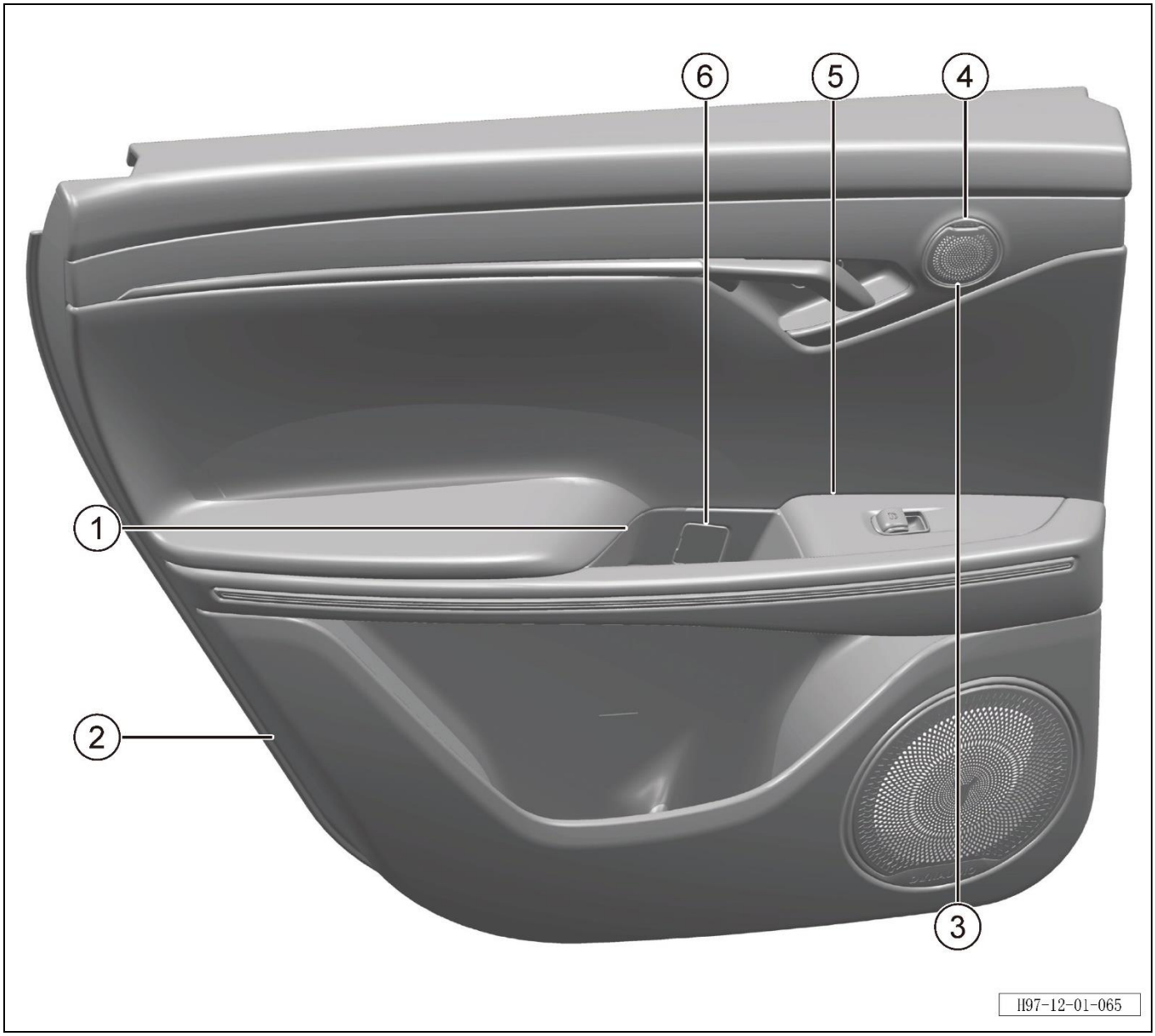
Assembly standard of body inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Mid-piece to ambient lamp	0/0.3	-
2	Map pocket cover plate to mid-piece	0/0.3	-
3	Body to floor lamp	0.5±0.5	-0.5±0.5
4	Mid-piece to handle	0/0.3	-
5	Mid-piece to armrest	0/0.3	-
6	Body to armrest	0/0.3	2±0.7

Body inner trim



Note:

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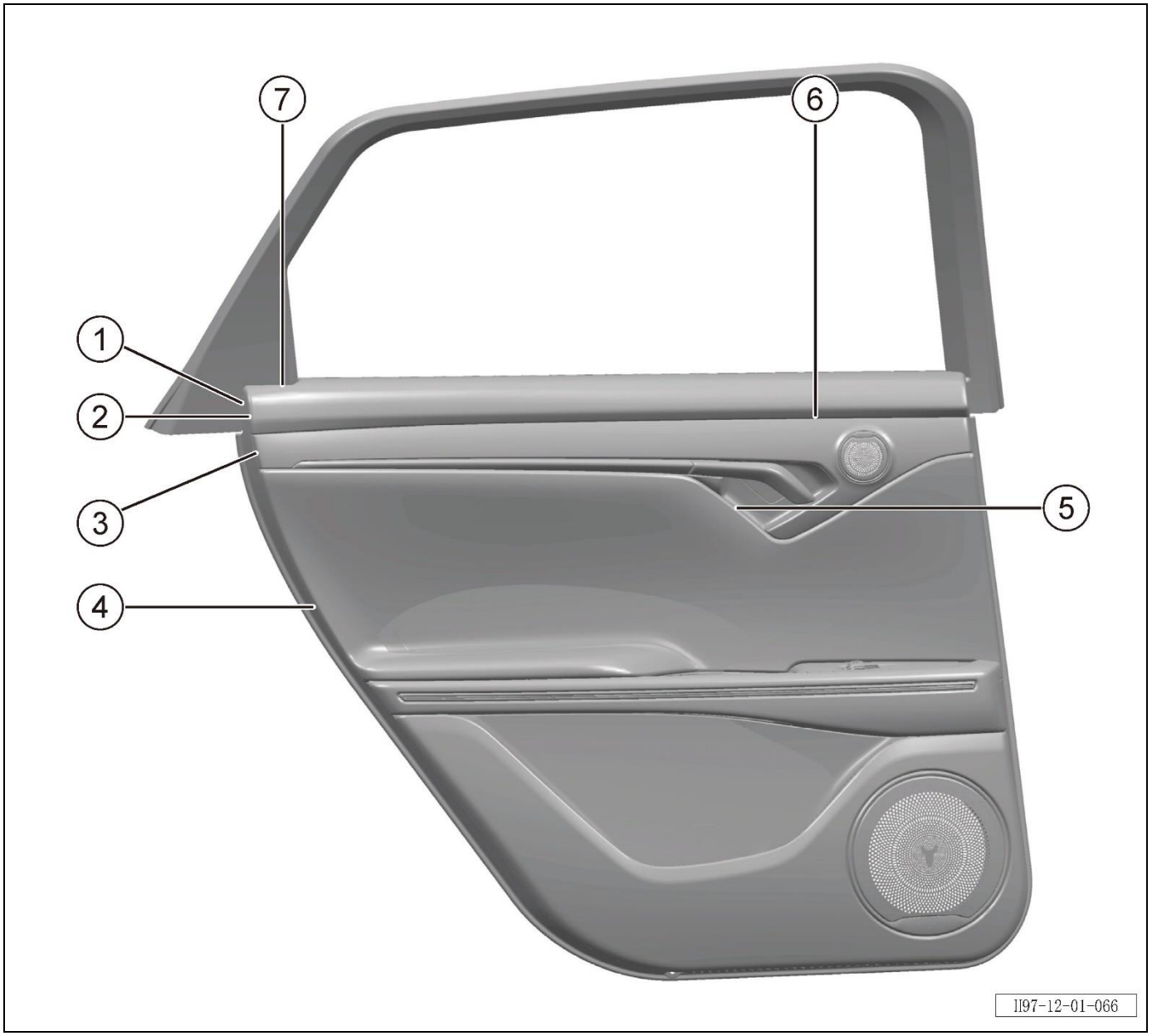
Assembly standard of body inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Body to handle box housing	0.5±0.3	-
2	Body to map pocket cover plate	0/0.3	2±0.5
3	Rear door metal mesh to rear door tweeter trim ring	0.3±0.3	-
4	Rear door trim panel to rear door tweeter trim ring	0.3±0.3	-
5	Switch panel to armrest	0/0.3	-
6	Handle box housing to handle box screw cover plate	0.5±0.3	-0.5±0.3

Body inner trim



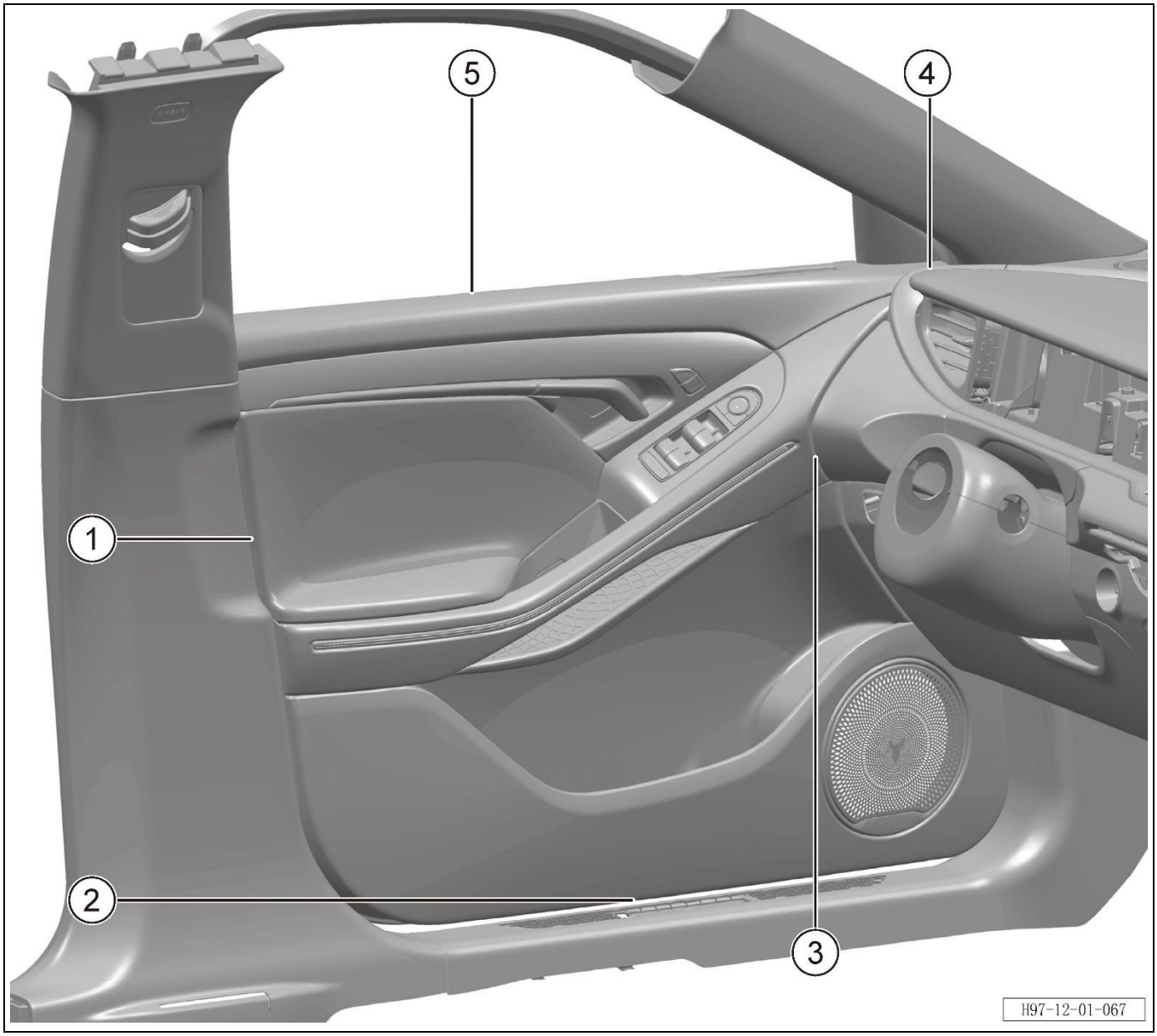
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of body inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Body to male mold bodywork	0/0.3	2±0.5
2	Window frame trim to door panel body	1-1/0	-
3	Body to trim panel	0.5±0.5	0.5±0.5
4	Body to armrest	0/0.3	2±0.5
5	Inside handle box to inside handle box base	0.3±0.3	-0.5±0.3
6	Rear door trim panel to male mold bodywork	0/0.5	-
7	Window frame trim to male mold bodywork	0/0.5	-

Door panel inner trim



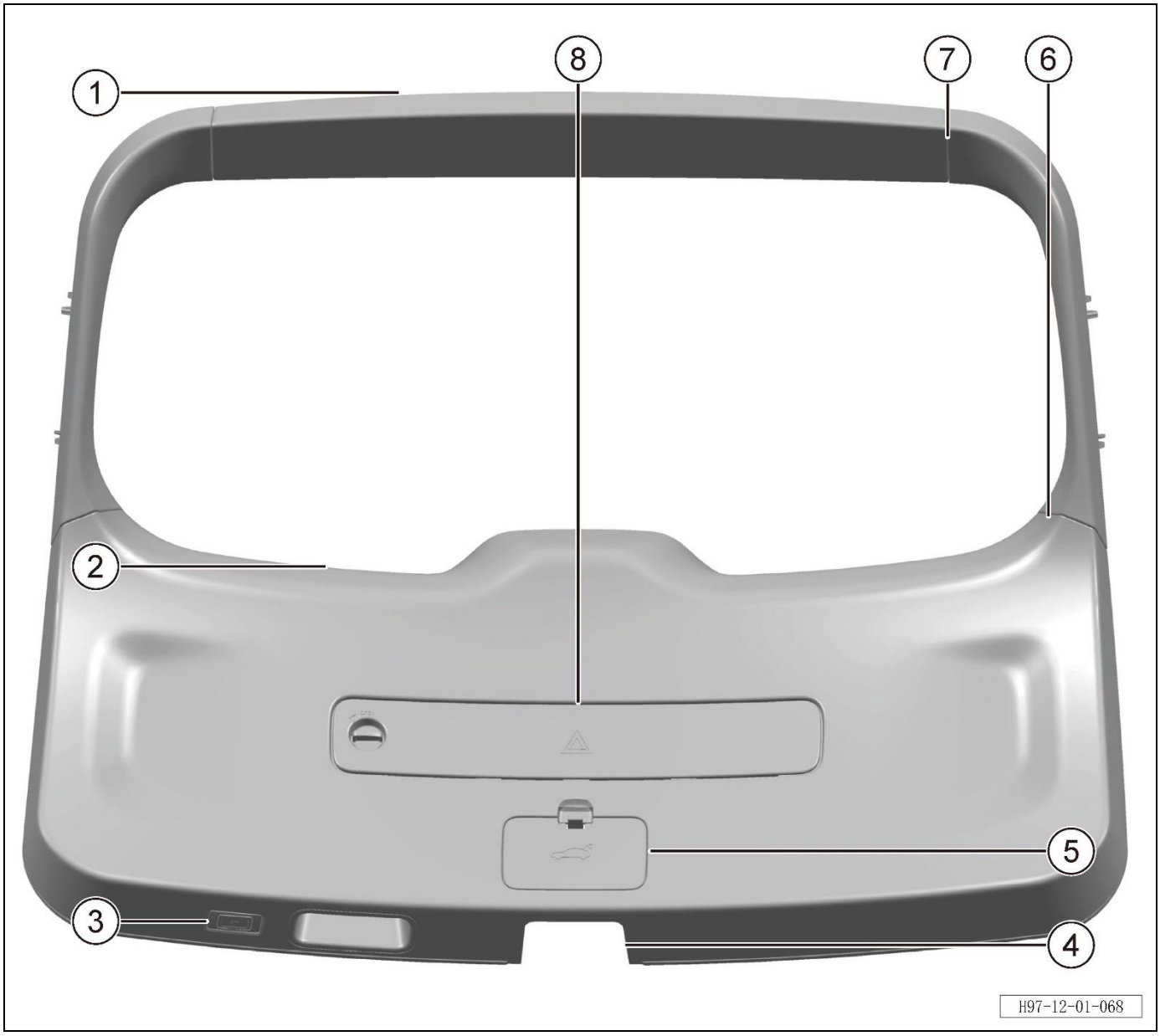
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of door panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Door panel assembly to B-pillar assembly	8 ± 2	-
2	Door panel assembly to door sill assembly	13 ± 2	-
3	IP assembly to door panel assembly	5 ± 2	-
4	IP assembly to door panel assembly	5 ± 2	0 ± 2
5	Door panel assembly to side window glass assembly	5 ± 2	-

Tailgate inner trim



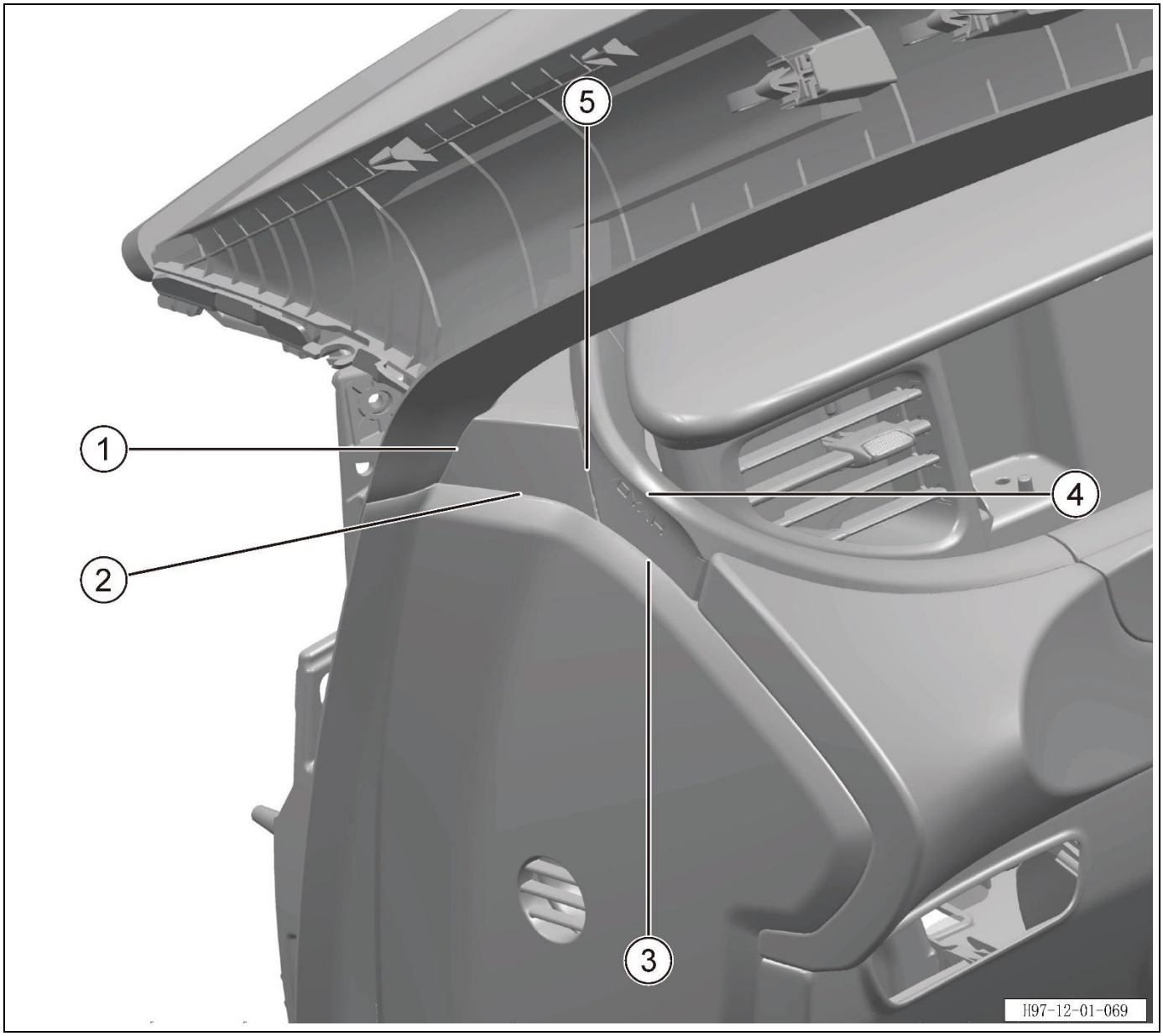
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of tailgate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Tailgate assembly to ceiling assembly	12 ± 2	-
2	Tailgate assembly to rear windshield	3 ± 2	-
3	Tailgate body to trunk close switch	0.5±0.3	-
4	Tailgate body to tailgate lock shell	0.5±0.3	-
5	Tailgate body to escape cover plate	0.5±0.3	-
6	Tailgate side protective plate to tailgate body	0.5±0.5	-0.5±0.5
7	Tailgate side protective plate to tailgate upper protective plate	0.5±0.5	-0.5±0.5
8	Tailgate body to warning triangle cover plate	2±0.5	-0.5±0.3

Tailgate inner trim



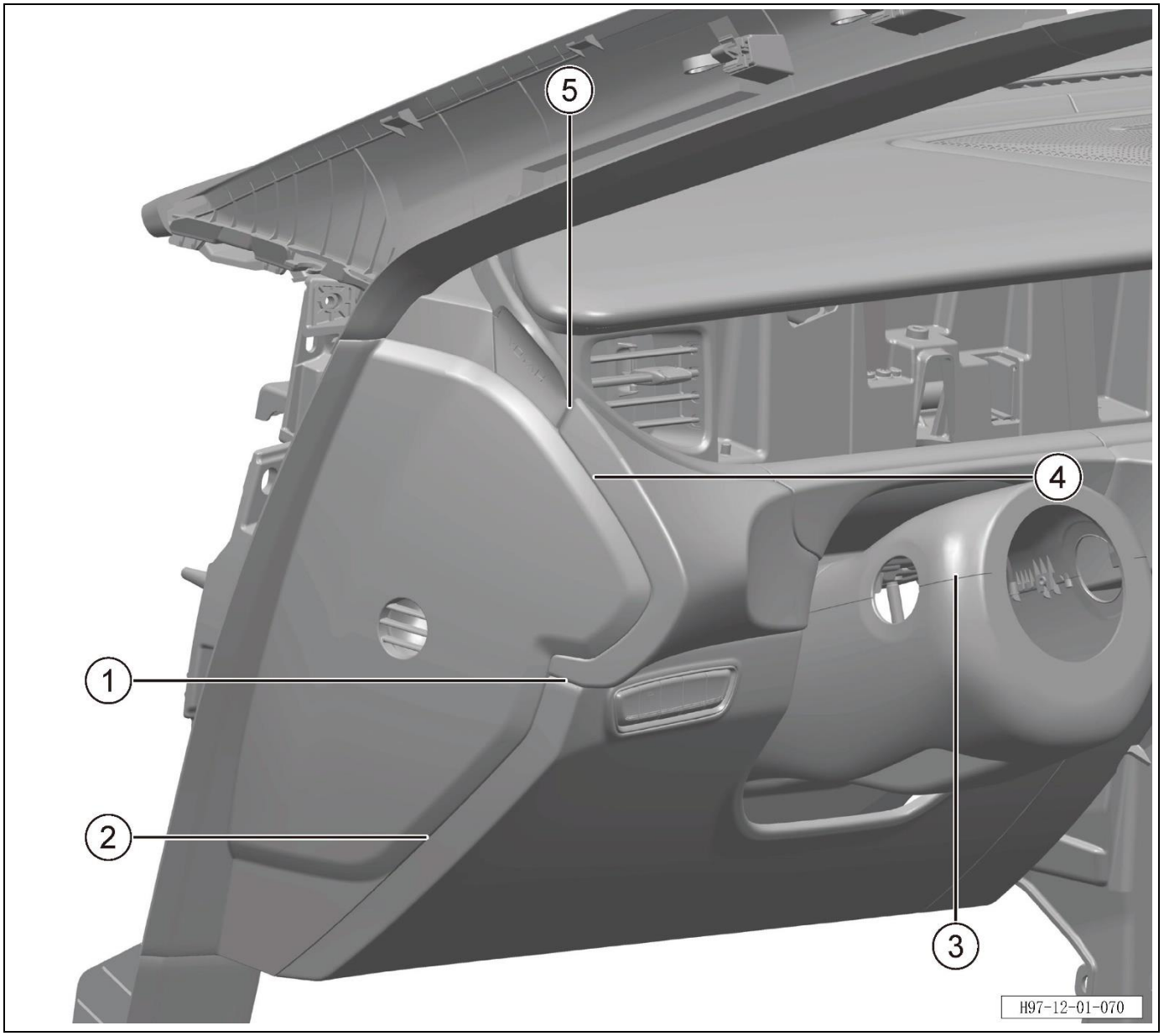
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of tailgate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Front defroster cover plate and A-pillar upper protective plate	0.5±0.5	-
2	Front defroster cover plate and side end cover plate	0.5±0.5	-
3	Side end trim cover plate and side end cover plate	0.5±0.5	-
4	Bright strip to side end trim cover plate	0.3±0.3	-0.5±0.3
5	Front defroster cover plate and side end trim cover plate	0.5±0.5	-0.7±0.5

Left lower protective plate inner trim



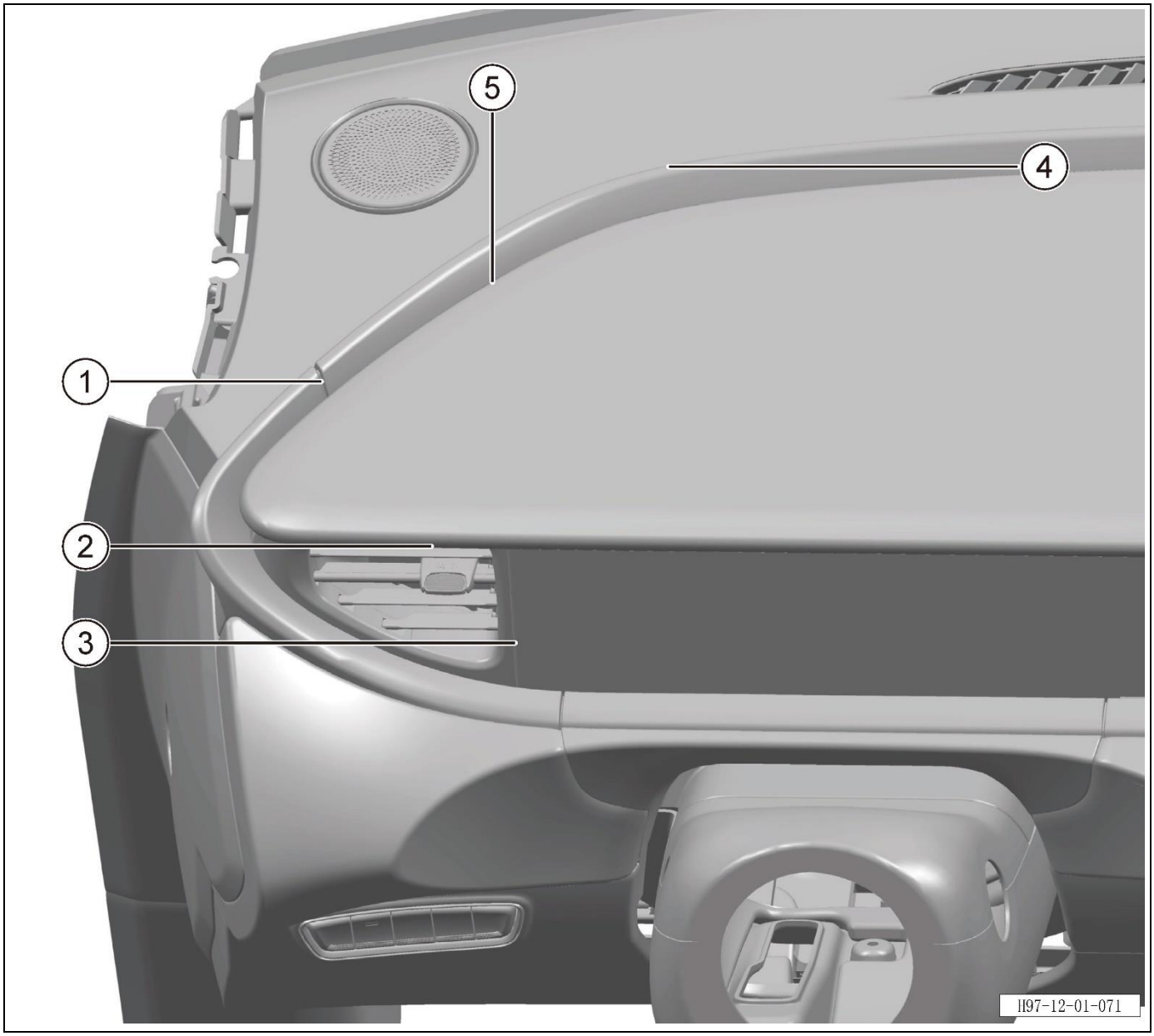
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of left lower protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Covering trim and lower left protective plate	0/0.5	-1±0.7
2	Left lower protective plate and side end cover plate	0.5±0.3	-
3	Steering upper shield to steering lower shield	0.5±0.3	0±0.3
4	Left side covering trim panel and side end cover plate	0/0.3	-
5	Side trim cover plate and covering trim panel	0/0.3	-

Driver side air outlet inner trim



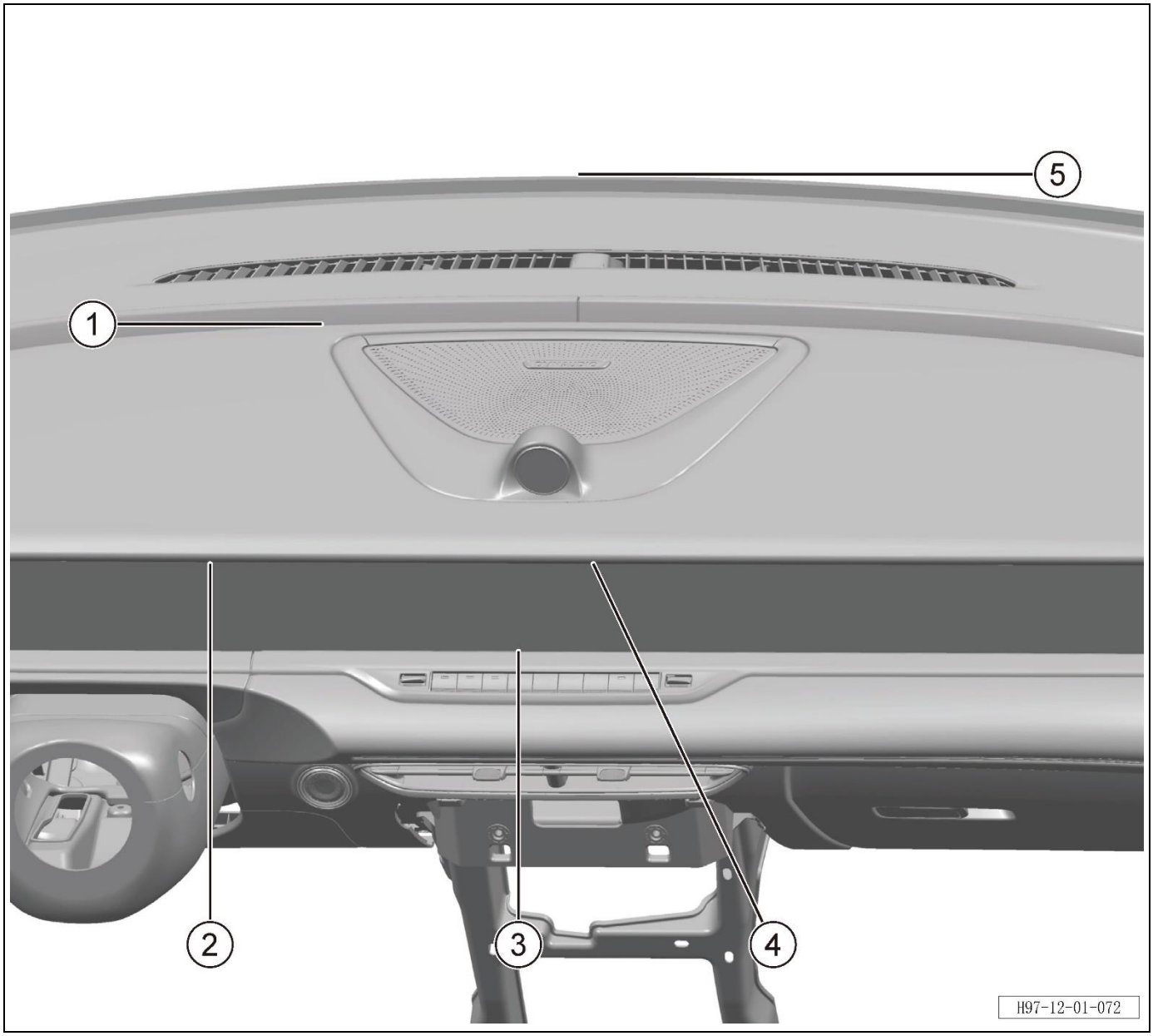
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of driver side air outlet inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	IP left bright strip and IP front bright strip	1.5±1	0±0.5
2	Driver side air outlet and brim lower cover plate	2.5±1	-
3	Driver side air outlet and upgraded screen	0.5±0.5	0.5±0.5
4	Front defroster cover plate and IP left bright strip	0.5±0.3	-
5	IP left bright strip and left shielding plate	4±2.5	-

Brim inner trim



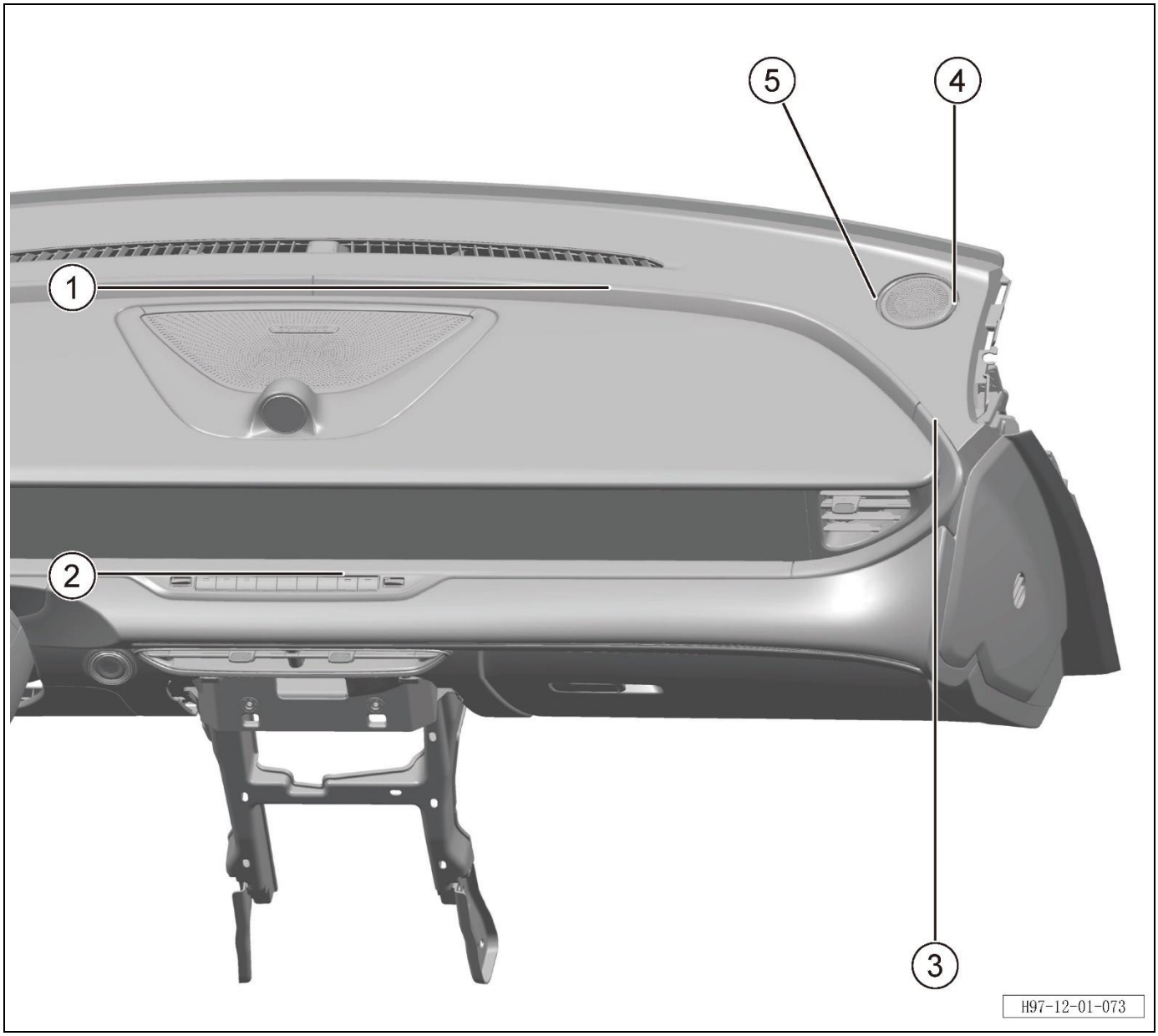
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of brim inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	IP left front bright strip and brim middle shielding plate	4±2.5	-
2	Brim and brim lower trim panel	0/0.3	-
3	IP rear bright strip and lift screen	4.5±2.5	-
4	Brim lower trim panel and lift screen	3 ± 1	-
5	Front defroster cover plate to front windshield	5±2.5	-

IP inner trim



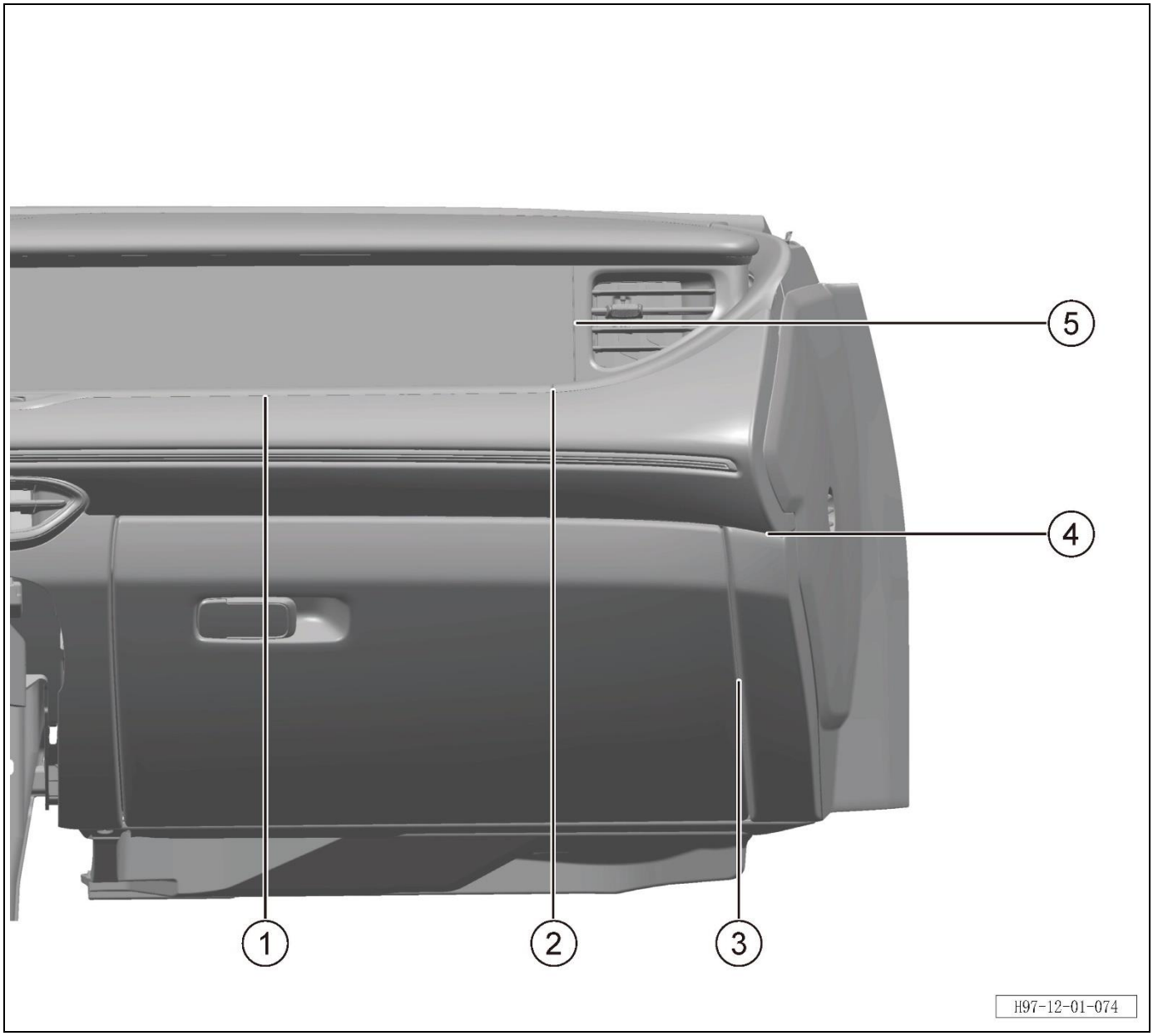
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of IP inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	IP right front bright strip and front defroster cover plate	0.5±0.3	-
2	IP rear bright strip and A/C button	0.5±0.4	-
3	IP front bright strip and IP right bright strip	1.5±1	0±0.5
4	Tweeter bright strip and metal mesh	0.5±0.3	-
5	Front defroster cover plate and tweeter bright strip	0.5±0.3	-

IP right lower protective plate inner trim



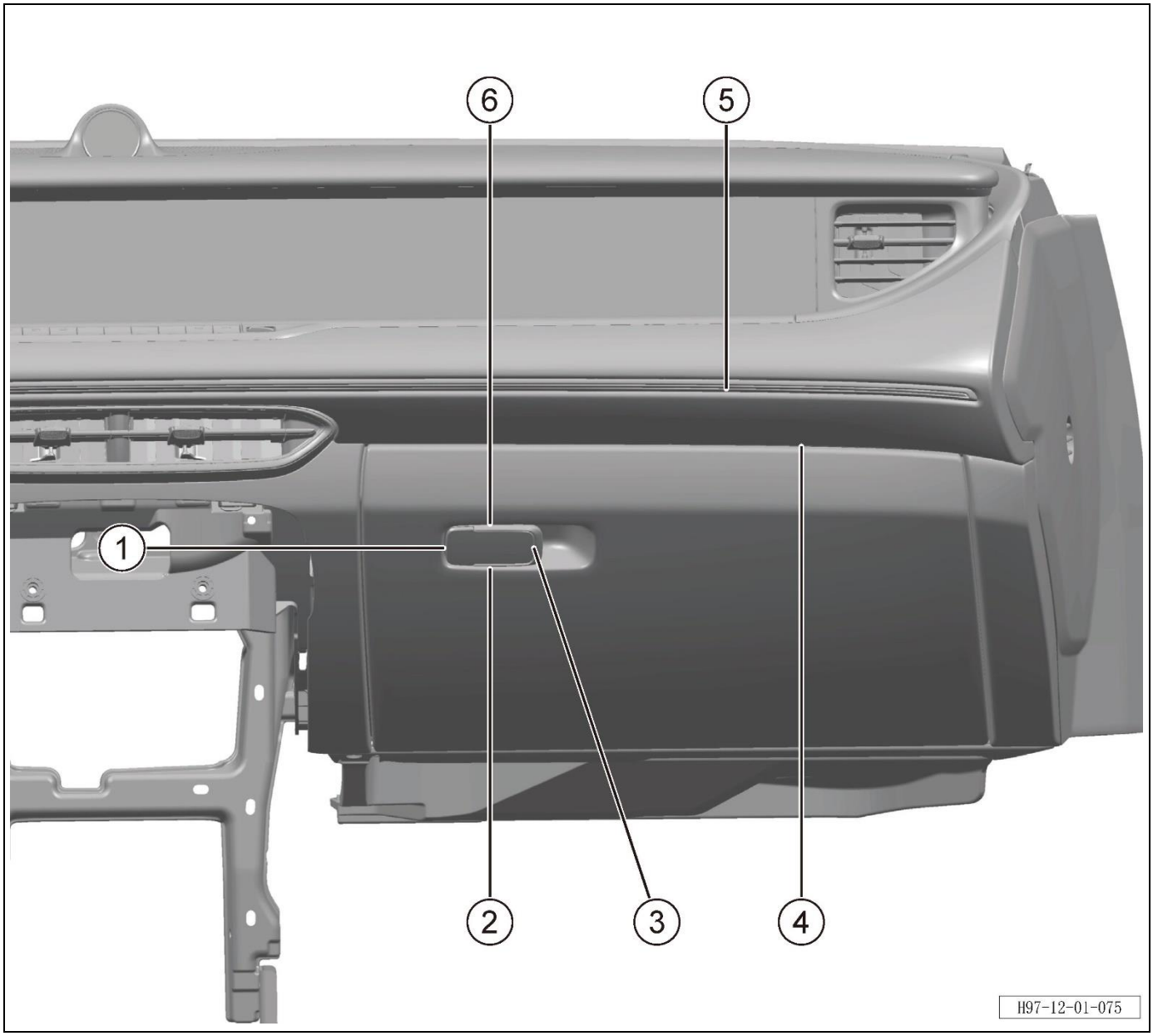
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of IP right lower protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	IP rear bright strip and right covering trim panel	0/0.3	-
2	IP rear bright strip and the IP right bright strip	1 ± 1	0±0.5
3	Glove box outer cover plate and IP right lower protective plate	2 ± 1	-1.5±1
4	Right covering trim panel and IP right lower protective plate	0/0.3	-
5	Passenger side air outlet and lift screen	0.5±0.5	0.5±0.5

Glove box inner trim



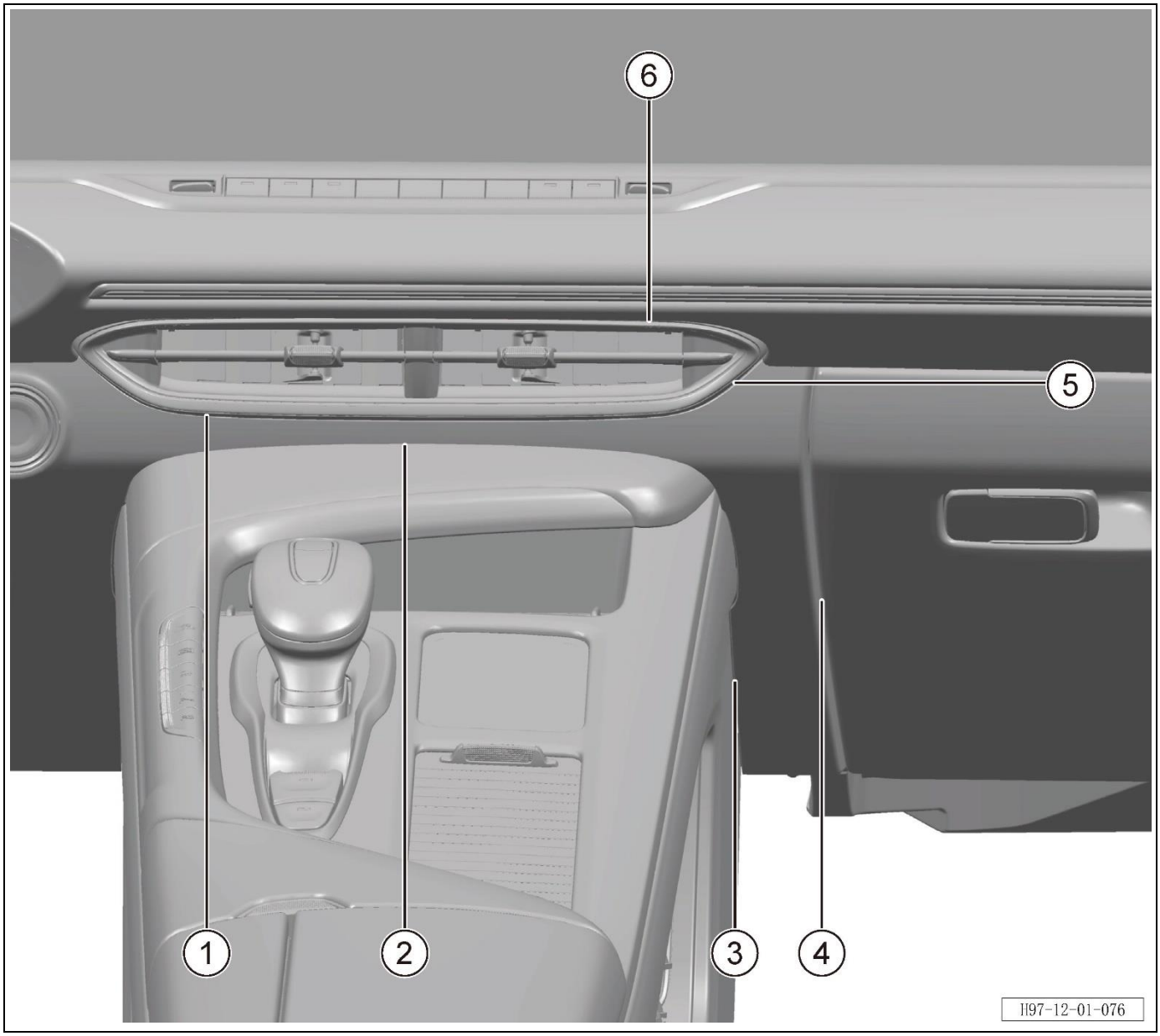
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of glove box inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Glove box outer cover plate and glove box handle	1.7±0.7	0±0.5
2	Glove box outer cover plate and glove box handle base	1.3~1.9±0.5	-
3	Glove box handle outer cover plate and glove box handle bright strip	0.5±0.3	-0.5±0.3
4	Right covering trim panel and glove box outer cover plate	2.2±1.5	-
5	Right covering trim panel and ambient lamp	0/0.3	-
6	Glove box outer cover plate and glove box handle base	1~1.5±0.5	-

Central air outlet inner trim



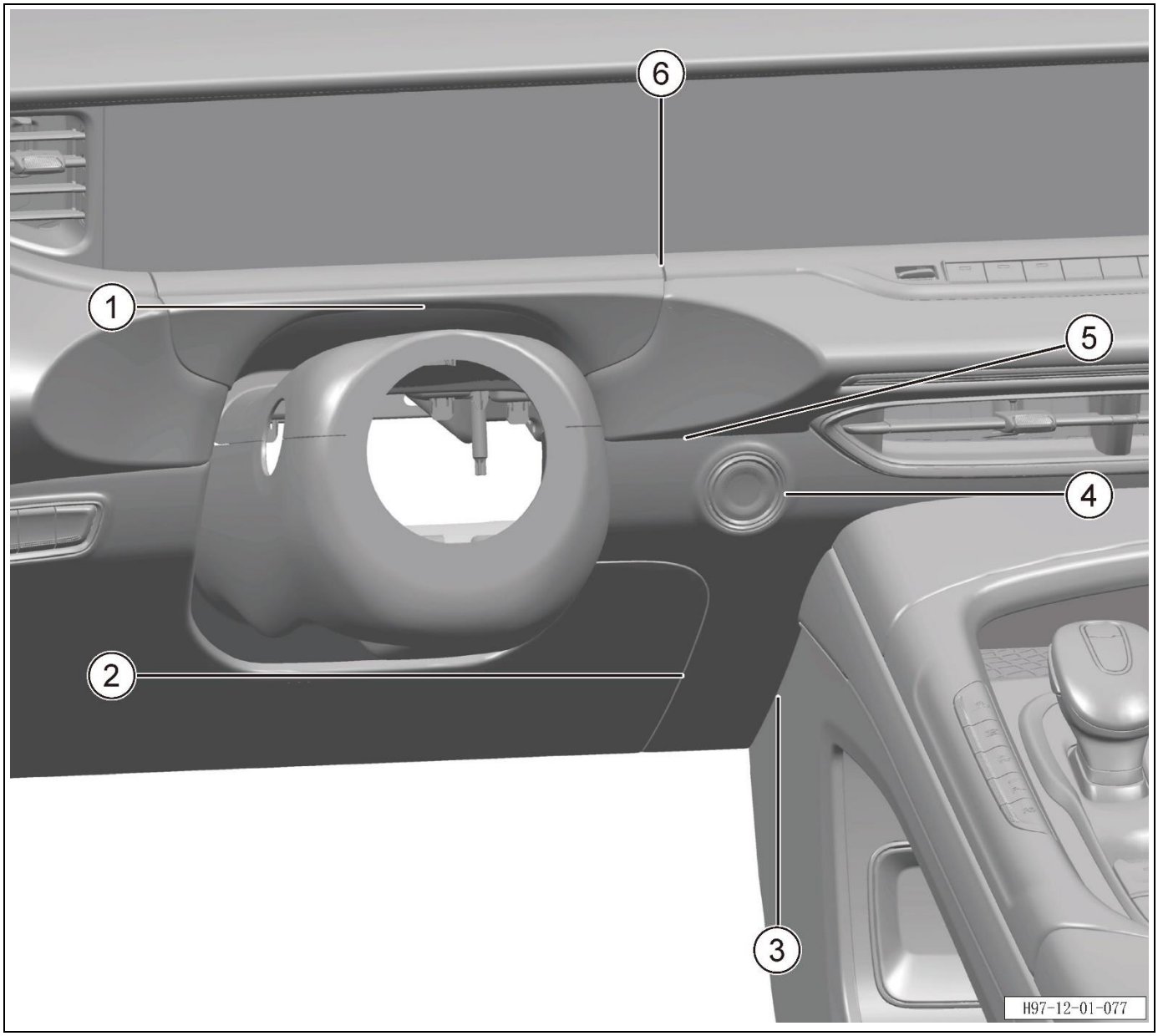
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of central air outlet inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Central air outlet bright strip and central air outlet cover plate	0.2±0.2	-0.5±0.3
2	IP middle lower protective plate and console upper cover plate	0/0.5	-
3	IP middle lower protective plate and console right cover plate	1±0.5	-
4	IP middle lower protective plate and glove box outer cover plate	2 ± 1	-1.5±1
5	Center air outlet cover plate and IP middle lower protective plate	0.5±0.5	-
6	Center air outlet cover plate and right covering trim panel	0/0.5	-

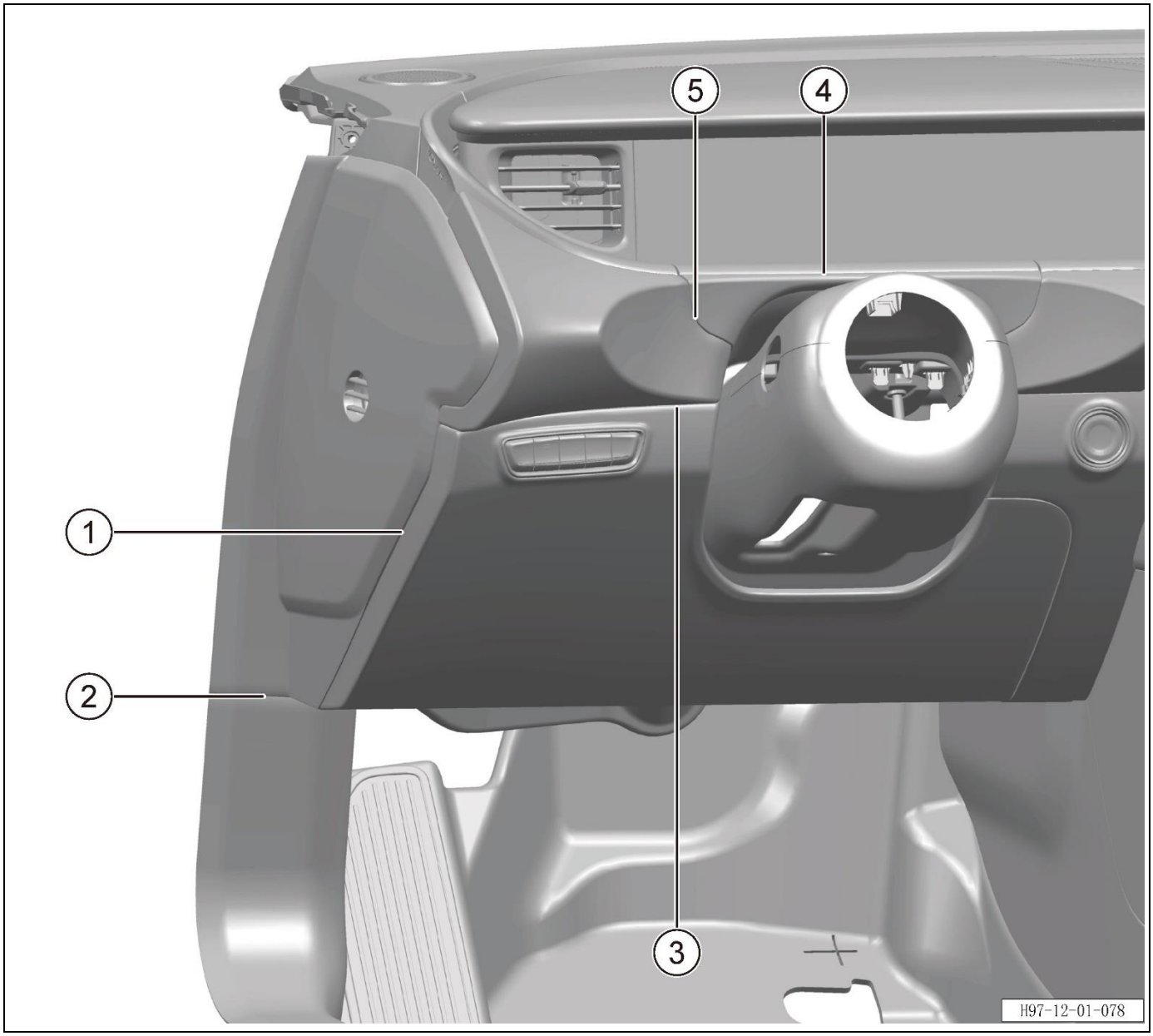
IP middle lower protective plate inner trim



Assembly standard of IP middle lower protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Steering shield cover and steering upper shield	0/0.3	0±0.5
2	IP left lower protective plate and IP middle lower protective plate	0.5±0.5	-0.5±0.5
3	IP middle lower protective plate and console right cover plate	1±0.5	-
4	IP middle lower protective plate and engine start/stop button	0.5±0.3	-
5	Right covering trim panel and IP middle lower protective plate	0/0.3	-
6	IP front bright strip and steering shield cover bright strip	1 ± 1	0±0.5

Left lower protective plate inner trim



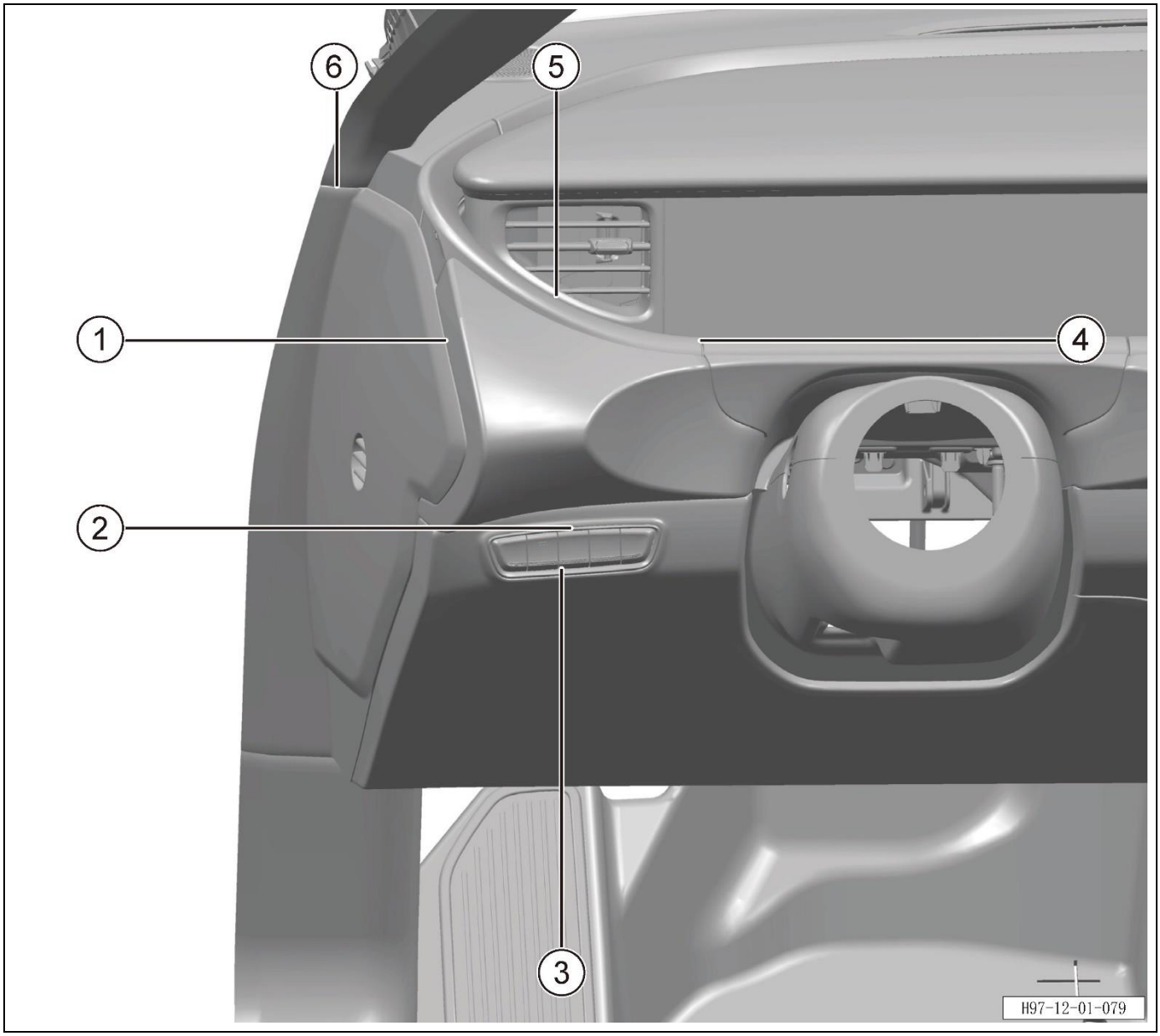
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of left lower protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Left lower protective plate and door panel	7 ± 2	-
2	Side end cover plate and A-pillar lower trim panel	0/0.5	-
3	Left covering trim panel and left lower protective plate	0/0.3	-
4	IP left bright strip and left covering trim panel	0.5±0.5	-
5	Driver side covering trim panel and leather cover strip	0/0.5	-

IP inner trim



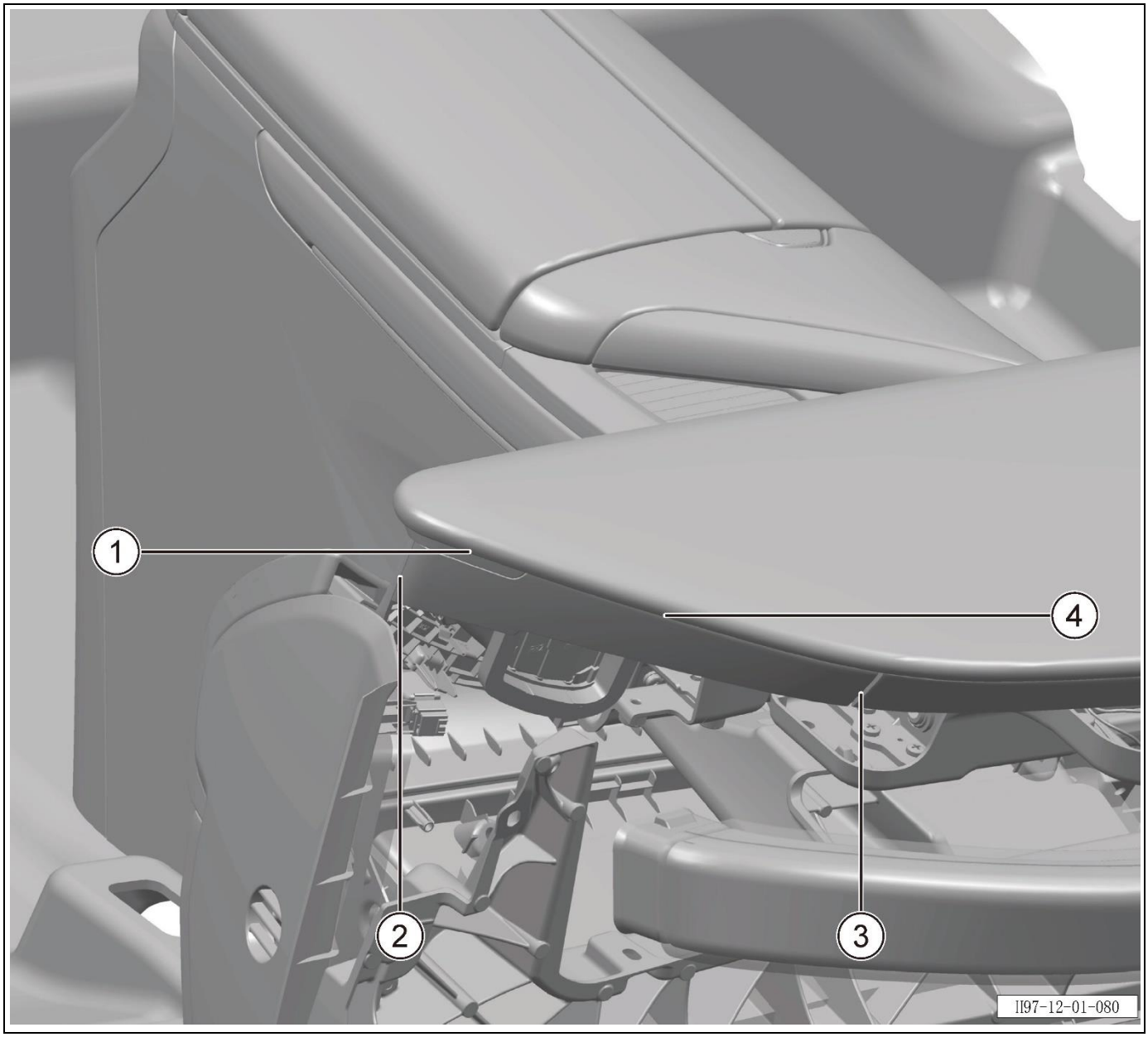
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of IP inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Left covering trim panel and door panel	5 ± 2	-
2	Headlamp switch bright strip and left lower protective plate	0.5±0.3	-
3	Headlamp switch and headlamp switch bright strip	0.5±0.3	-
4	IP left bright strip and steering shield leather bright strip	1 ± 1	0±0.5
5	IP left bright strip and driver side air outlet	4±2.5	-
6	A-pillar upper protective plate and side end cover plate	0/0.5	-

Brim inner trim



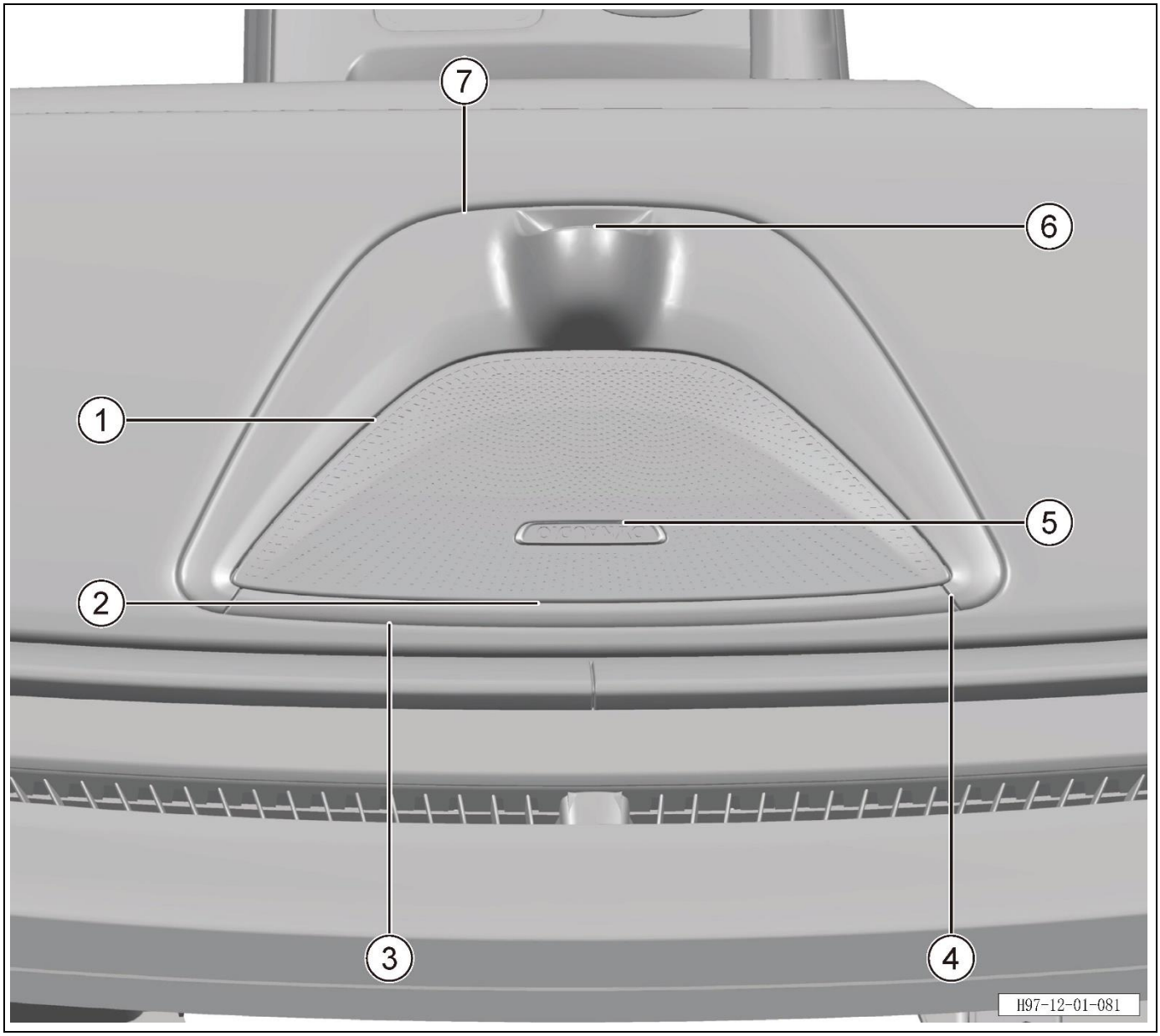
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of brim inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Brim lower trim panel and brim frame shielding plate	0.5±0.5	0.5±0.5
2	Side air outlet and brim frame shielding plate	0.3±0.3	0±0.3
3	Brim frame shielding plate and brim frame shielding plate - middle	1.5±1	0±0.5
4	Brim frame shielding plate and brim	0/0.3	-

Speaker panel inner trim



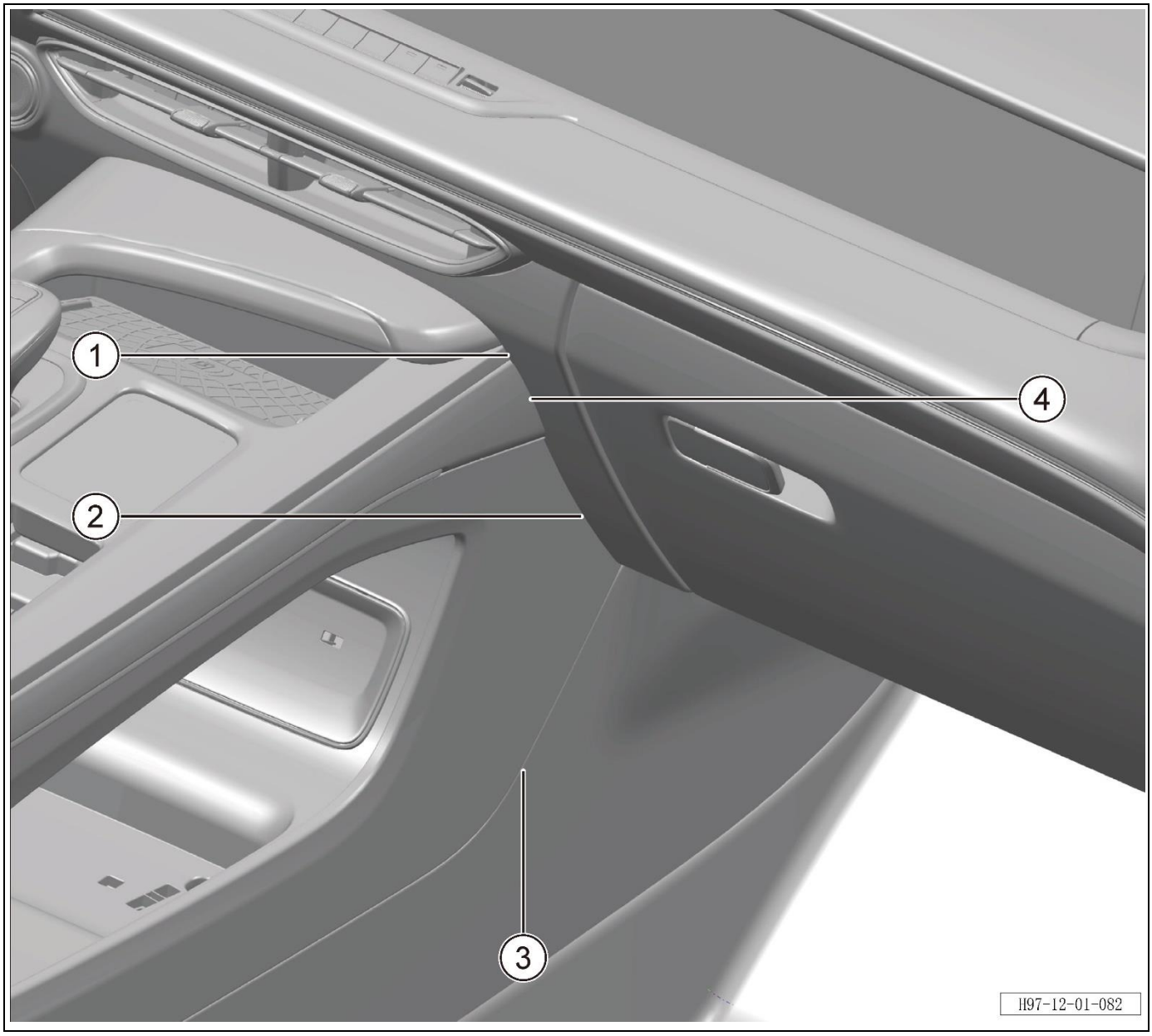
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of speaker panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Speaker cover plate and DMS cover	0.5±0.3	-
2	Speaker panel trim strip and speaker mesh	0.5±0.3	-
3	Speaker panel trim strip and brim	0/0.3	-
4	Speaker panel trim strip and DMS panel	0.5±0.5	-0.5±0.5
5	Speaker panel and speaker logo	0.3±0.3	-
6	DMS mesh and DMS	0.5±0.3	-
7	DMS cover and brim	0/0.3	-

IP middle lower protective plate inner trim



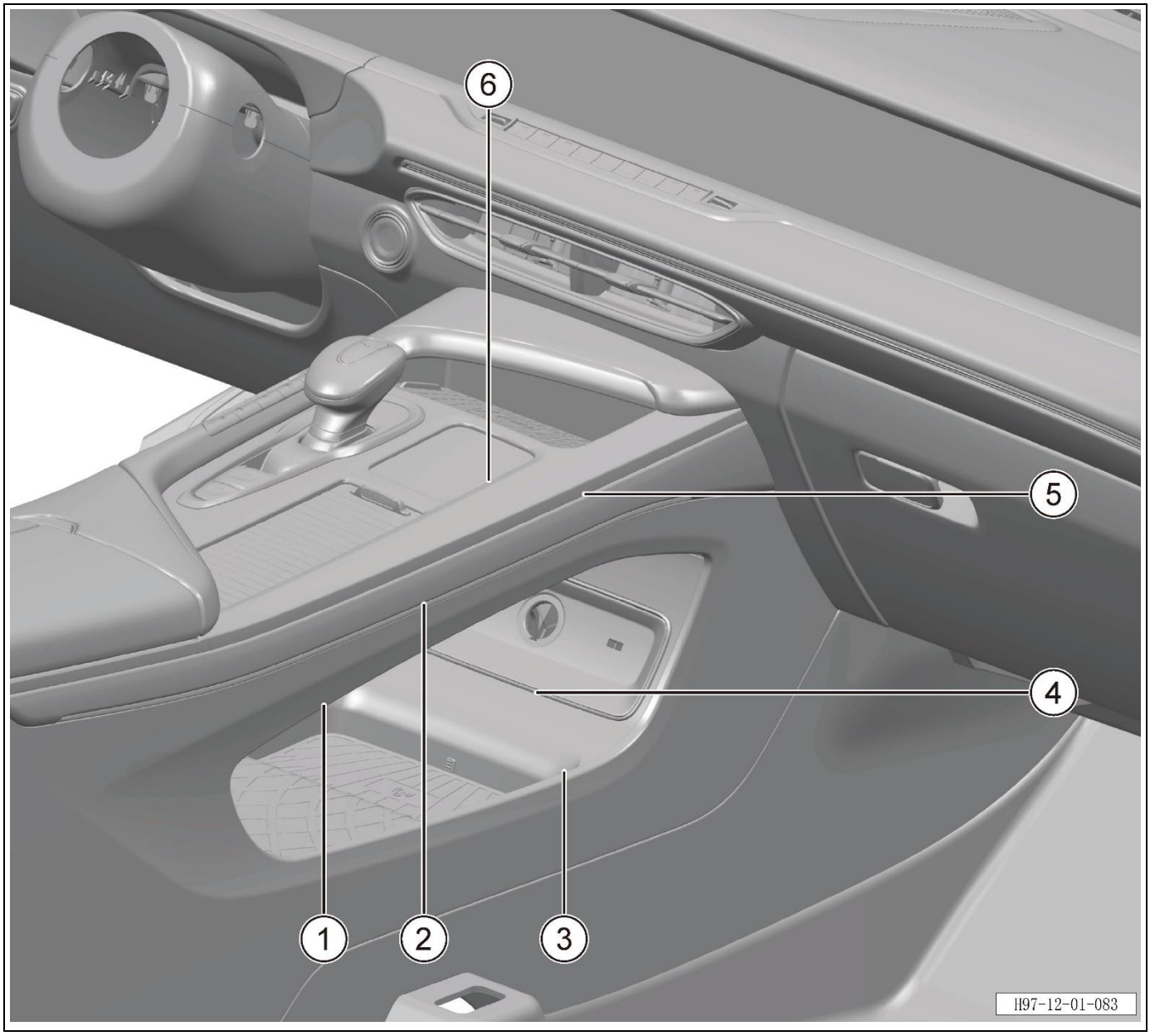
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of IP middle lower protective plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	TC upper panel to IP middle lower protective plate	1±0.5	-
2	Right side plate to IP middle lower protective plate	1±0.5	-
3	Right front extension plate to right side plate	0.5±0.3	1±0.5
4	Right covering to IP middle lower protective plate	1±0.5	-

Right side plate inner trim



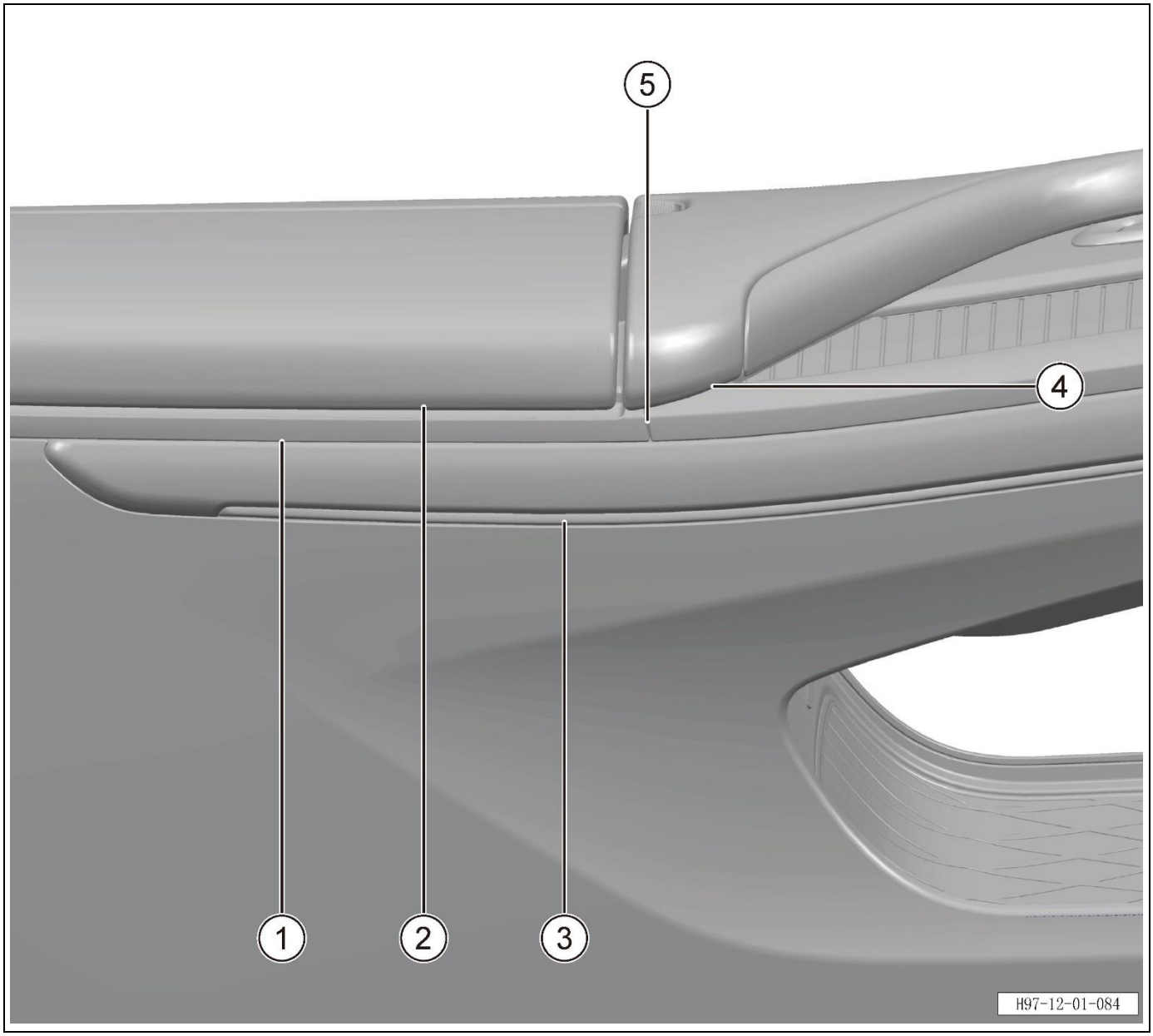
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of right side plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Right side plate to axle hole upper panel	0.5±0.5	0.5±0.5
2	Right trim strip to right covering	0/0.3	-
3	Right side plate to axle hole lower panel	0.5±0.5	0.5±0.5
4	USB panel trim strip to USB panel	0.5±0.3	-
5	Upper panel to right covering	0/0.3	-
6	Upper panel to multimedia control module	0.5±0.5	-

Upper panel inner trim



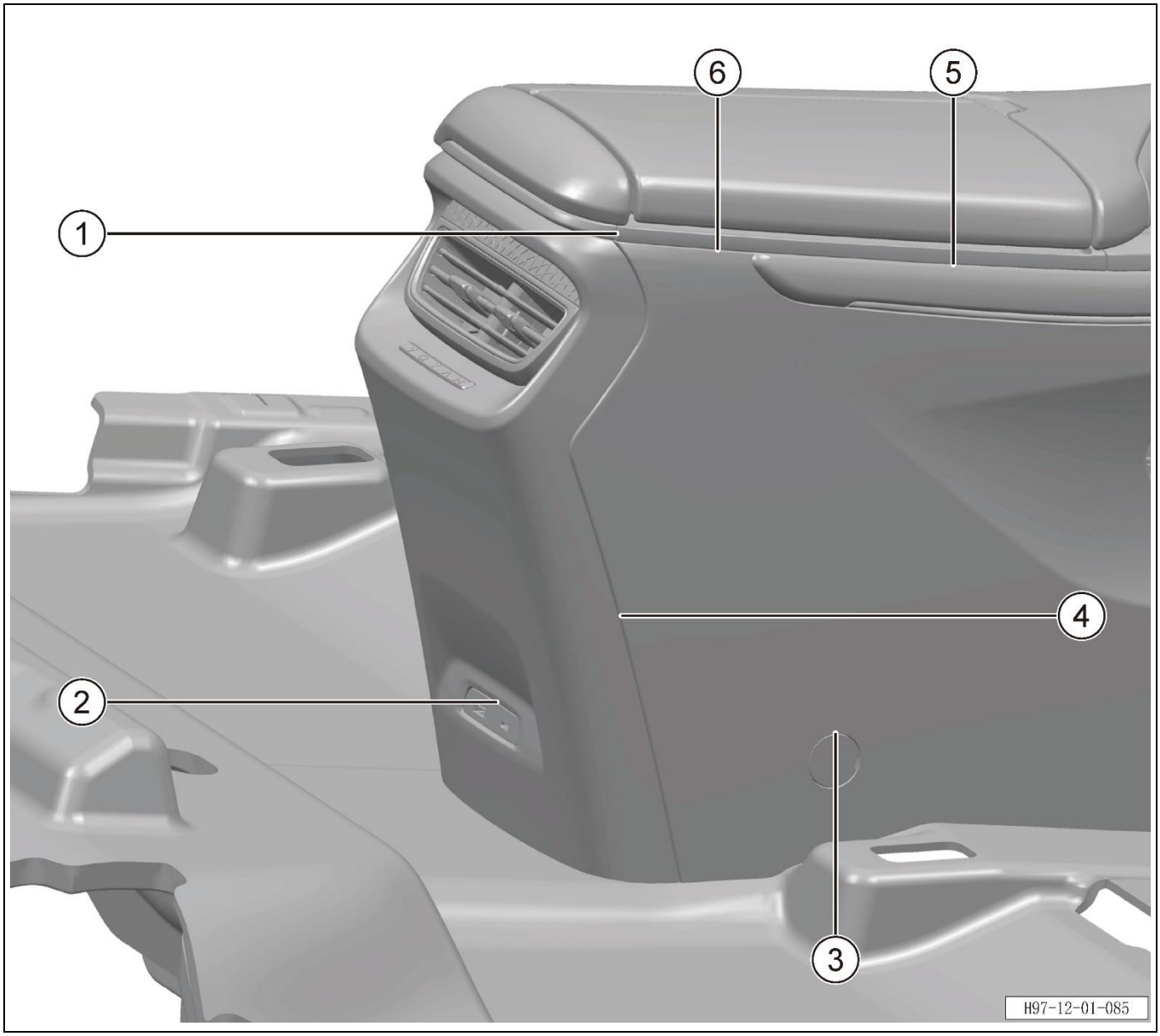
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of upper panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Right armrest lower trim strip to right trim strip	0/0.3	-
2	Right armrest to right armrest lower trim strip	3.5±1	-
3	Right side plate to right trim strip	0.5±0.5	-
4	Upper panel rear covering to upper panel	0/0.3	-
5	Upper panel to right armrest lower trim strip	0.5±0.5	0±0.3

Rear cover plate inner trim



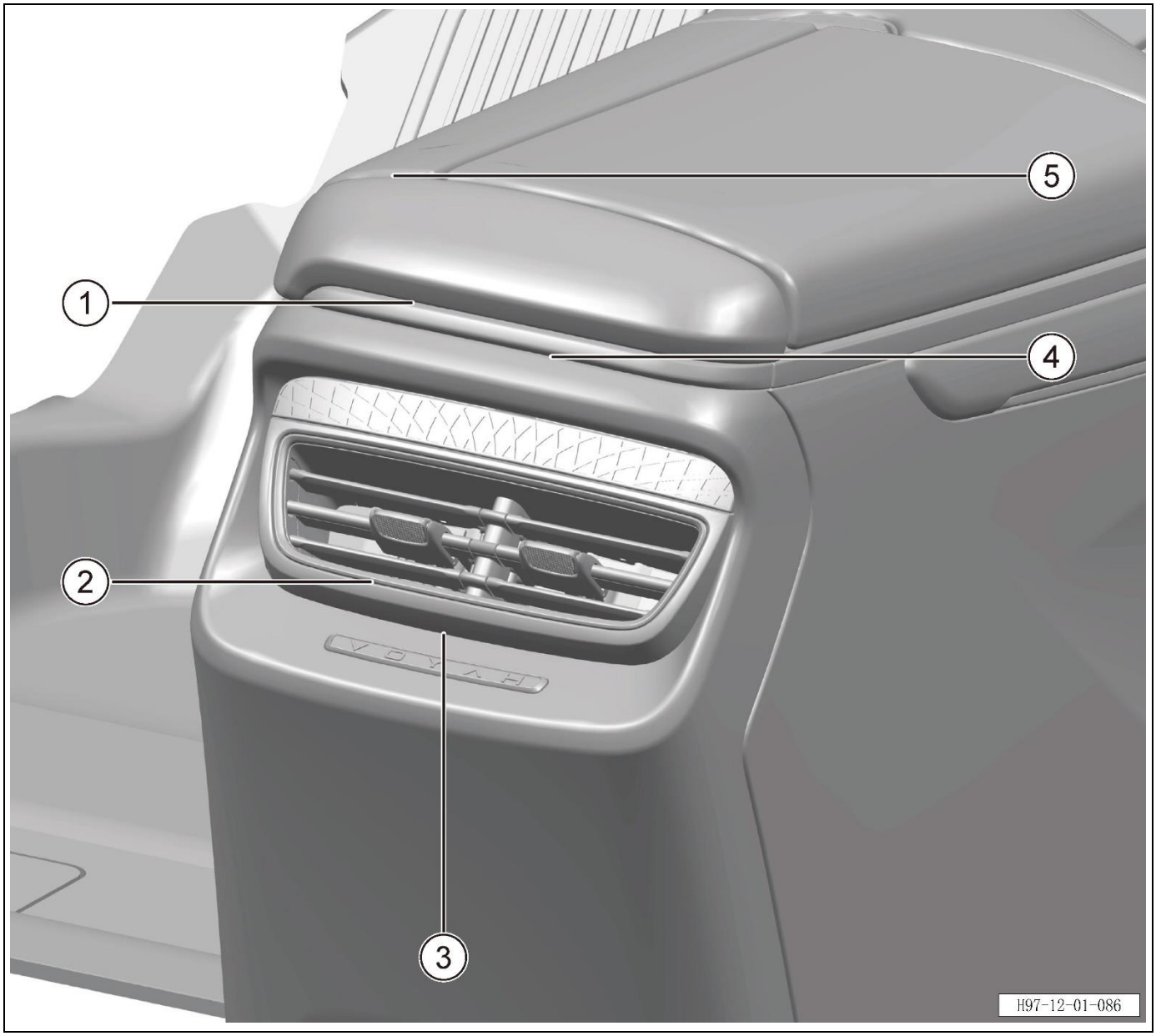
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of rear cover plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Right armrest lower trim strip to armrest rear trim strip	0.5±0.4	-0.5±0.5
2	Rear cover plate to rear USB	0.5±0.3	-
3	Screw plug to side cover plate	0.3±0.2	0.5±0.3
4	Rear cover plate to right side plate	0.5±0.4	-0.5±0.5
5	Right armrest lower trim strip to right covering	0/0.3	-
6	Right armrest lower trim strip to right side plate	0.5±0.5	-

Rear air outlet cover plate inner trim



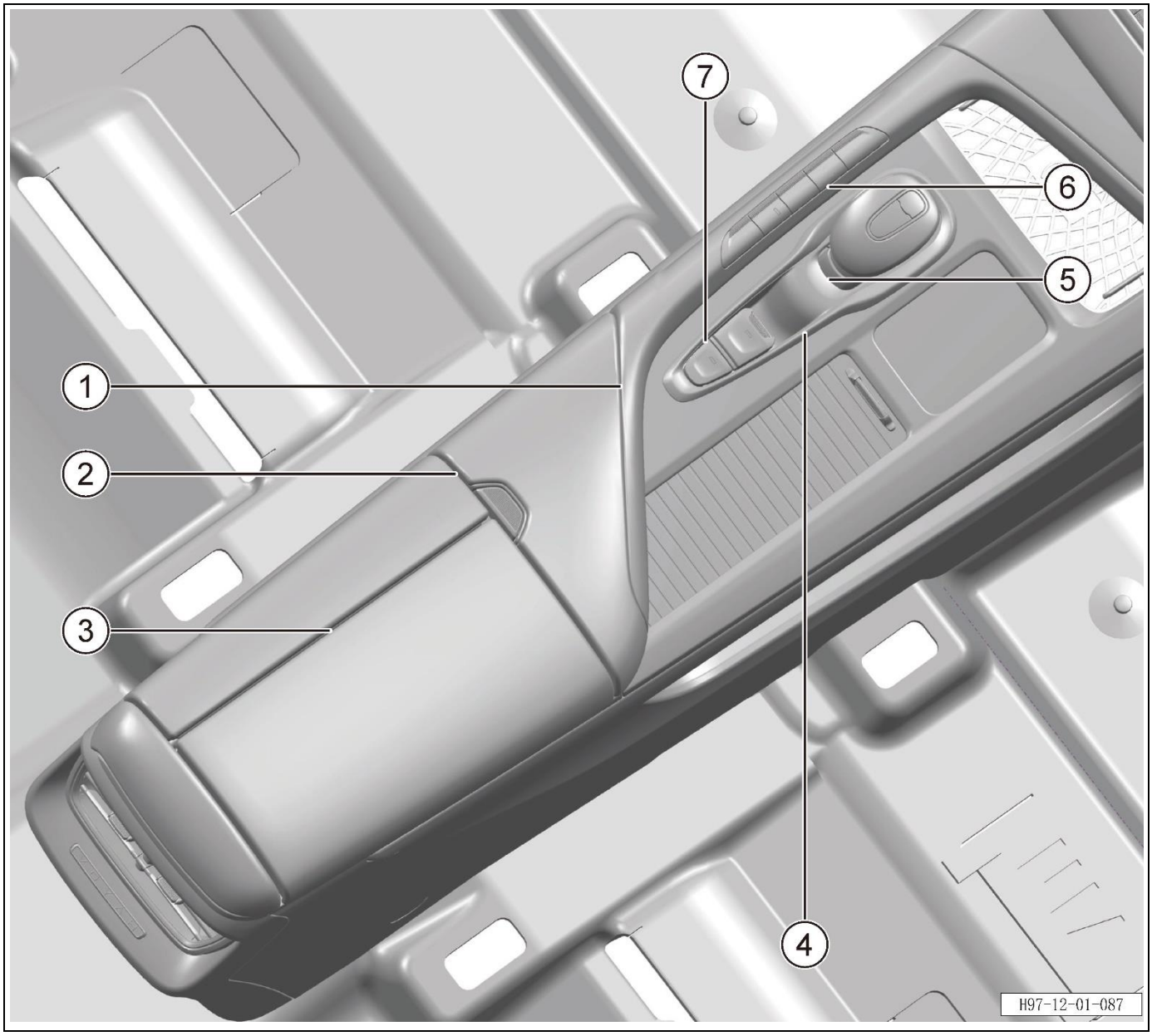
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of interior part of rear air outlet cover plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Rear armrest covering to armrest rear trim strip	0/0.3	-
2	Rear air outlet cover plate to rear air outlet trim strip	0.3±0.3	-
3	Rear air outlet cover plate to rear cover plate	0.5±0.3	-
4	Armrest rear trim strip to rear cover plate	0.5±0.3	-
5	Rear armrest covering to left armrest box cover	2.5±1.2	-

Upper panel inner trim



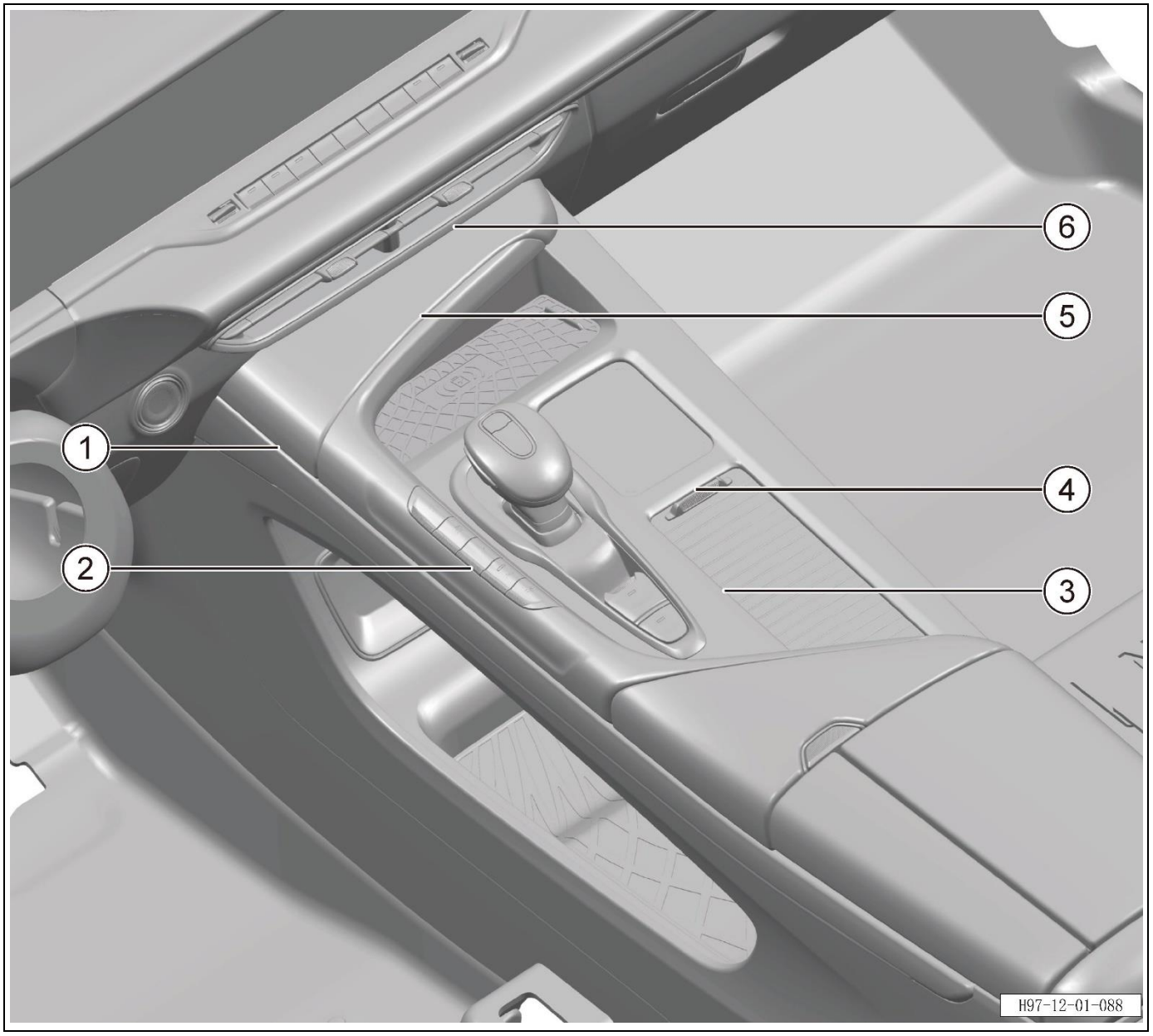
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of upper panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Upper panel rear covering to upper panel trim	0/0.3	-
2	Left armrest box cover to upper panel rear covering	2.5±1.2	-
3	Left armrest box cover to right armrest box cover	2.0±1.2	0±1.2
4	Shift trim strip to upper panel	0.3±0.3	-0.5±0.3
5	Shift panel to shift mechanism	1.8±0.8	-
6	Upper panel trim to upper panel	0.5±0.5	-
7	EPB switch to upper panel	0.7±0.5	-

Upper panel inner trim



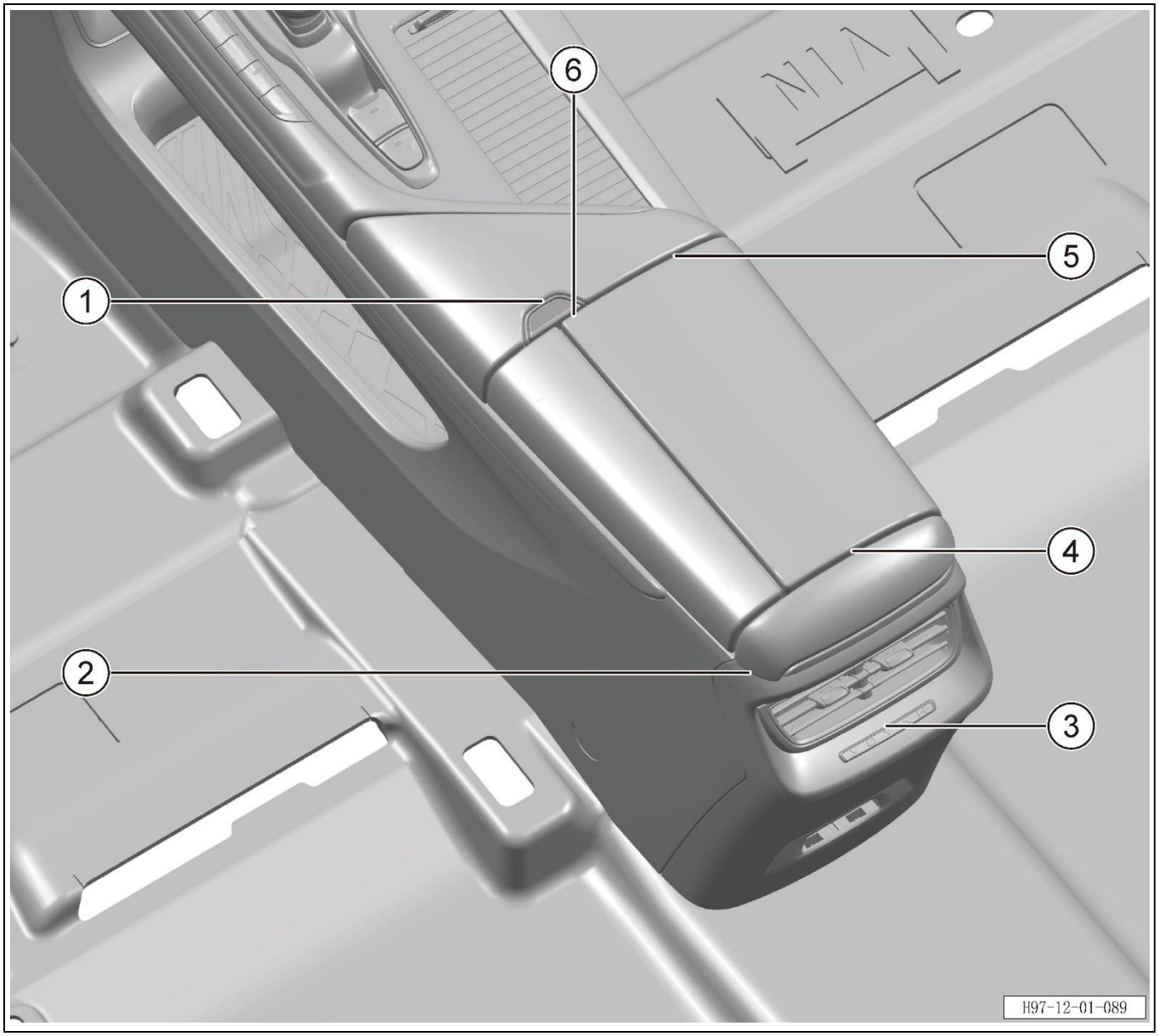
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of upper panel inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Upper panel front covering to left covering	0/0.3	-
2	Combination switch to upper panel trim	0.5±0.3	-
3	Upper panel to cup holder roller blind	1±0.5	-
4	Cup holder roller blind pick to cup holder roller blind	0/0.3	-
5	Upper panel front covering to upper panel trim	0/0.3	-
6	Console upper cover plate to IP middle lower trim panel	0/0.5	-

Right armrest box cover inner trim



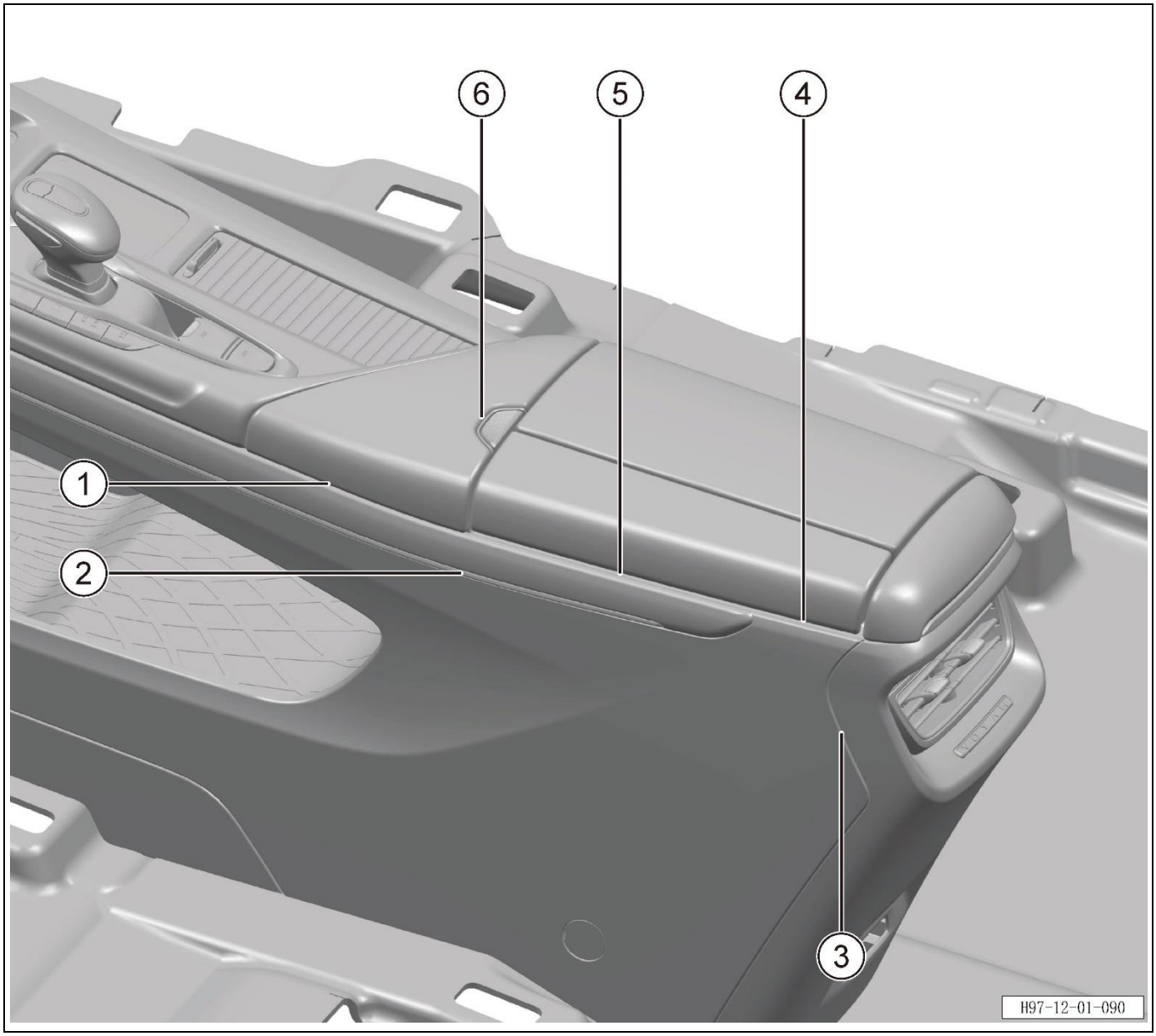
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of right armrest box cover inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Armrest switch to armrest switch trim strip	0.5±0.3	-
2	Armrest rear cover covering to rear cover plate	0/0.3	-
3	LOGO trim strip to rear cover plate	0.3±0.2	-
4	Right armrest box cover to rear armrest covering	2.5±1.2	-
5	Right armrest box cover to upper panel rear covering	2.5±1.2	-
6	Right armrest box cover to armrest switch trim strip	2.7±1.2	-

Left armrest box cover inner trim



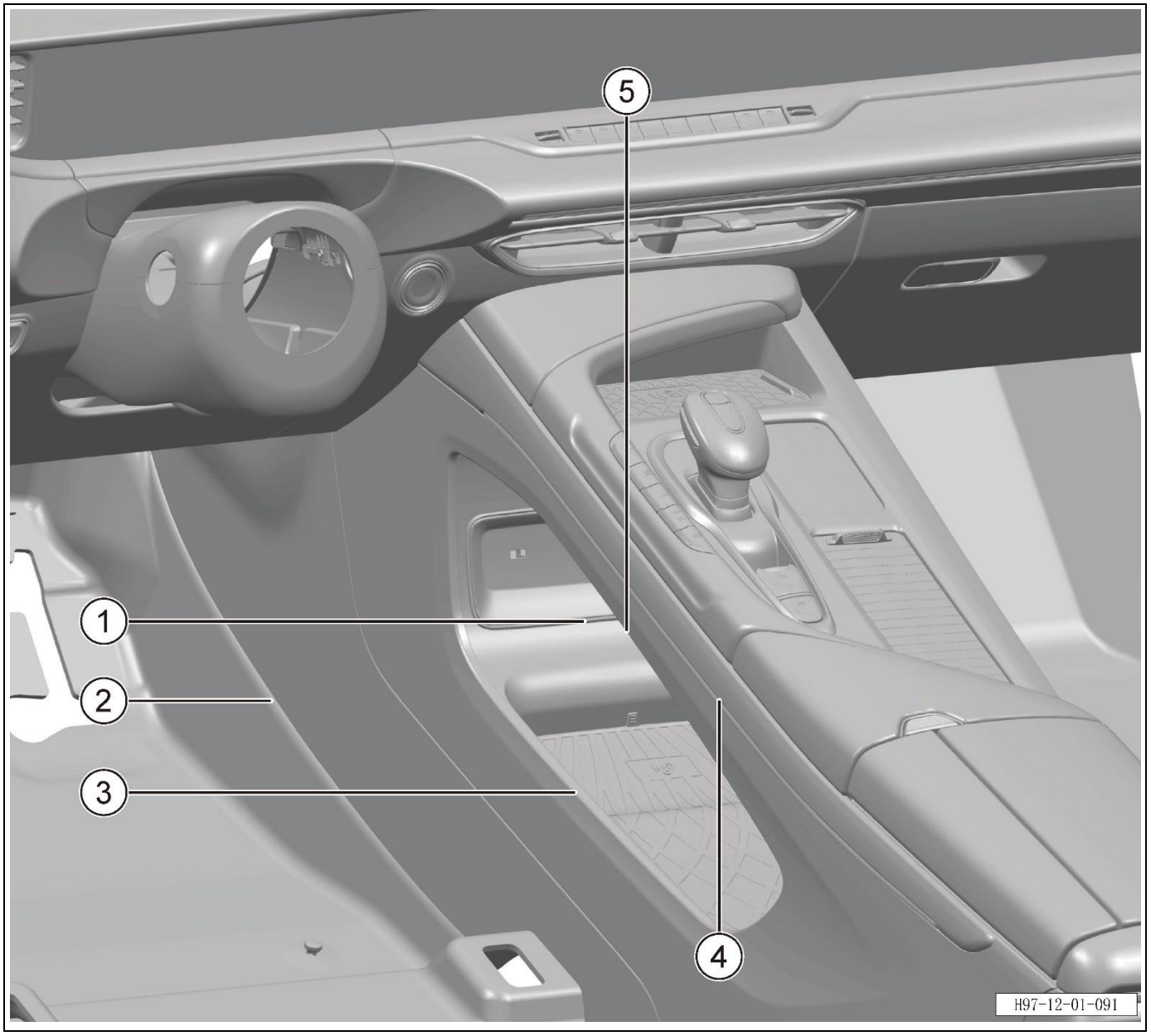
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of left armrest box cover inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Left covering to upper panel rear covering	0/0.3	-
2	Left trim strip to left covering	0/0.3	-
3	Rear cover plate to left side plate	0.5±0.4	-0.5±0.3
4	Left armrest box cover to left side plate	3.5±1	-
5	Left armrest box cover to left covering	3.5±1	-
6	Armrest switch trim strip to upper panel rear covering	0/0.3	-

Left side plate inner trim



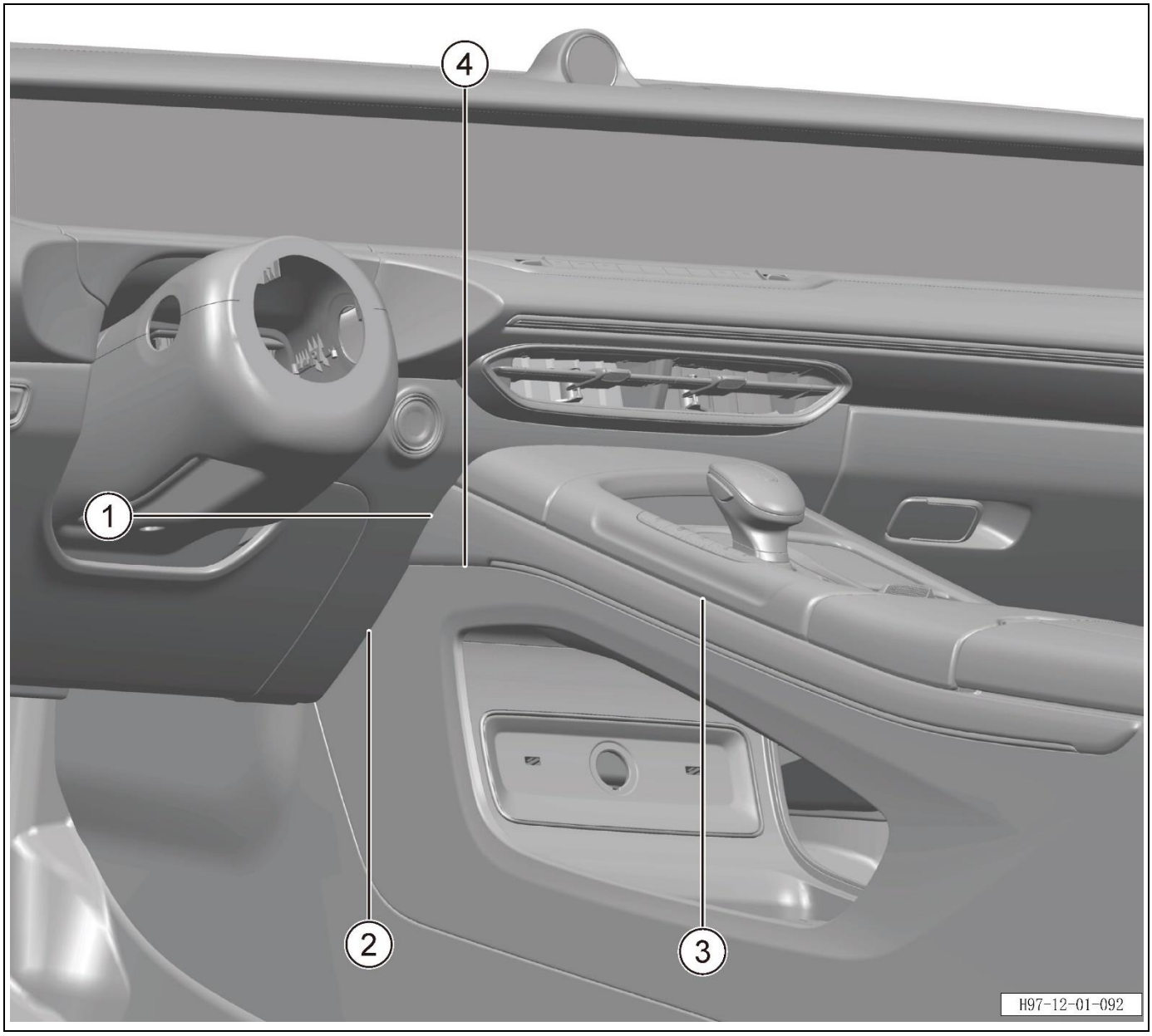
Note:

- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of left side plate inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	USB trim strip to axle hole lower trim panel	0.5±0.5	-
2	Left front extension plate to left side plate	0.5±0.3	-1±0.5
3	Left side plate to lower axle hole trim panel	0.5±0.5	0.5±0.5
4	Left trim strip to left side plate	0.5±0.5	-
5	Left side plate to axle hole upper trim panel	0.5±0.5	0.5±0.5

Left covering inner trim



Note:

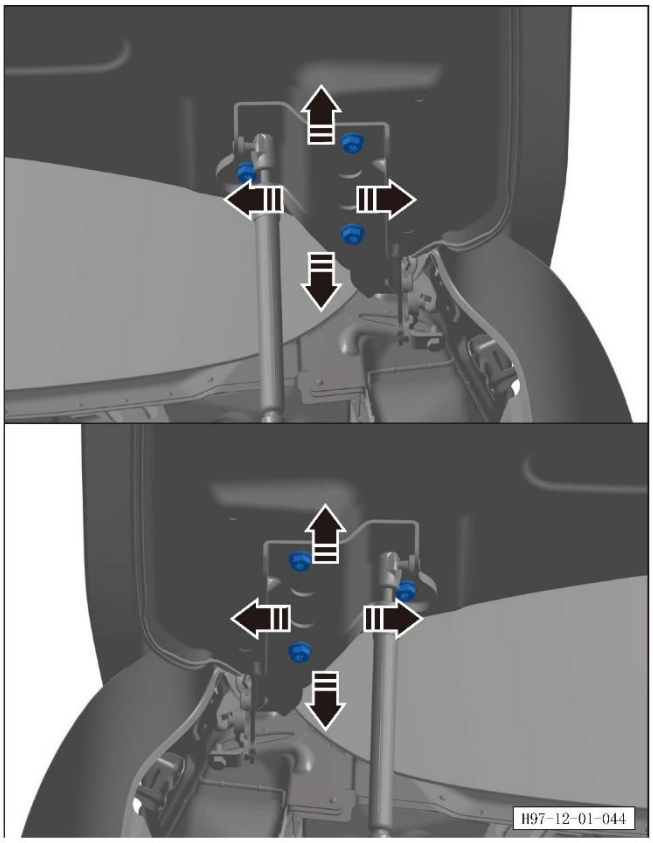
- To adjust or check the clearance, a plastic clearance gauge shall be used.

Assembly standard of left covering inner trim

S/N	Position	Allowable clearance (mm)	Allowable segment deviation (mm)
1	Left covering to IP middle lower trim panel	1±0.5	-
2	Left side plate to IP middle lower trim panel	1±0.5	-
3	Upper panel trim to left covering	0/0.3	-
4	Upper panel front covering to left trim panel	0/0.3	-

12.1.5 Adjustment method of body opening and closing parts

12.1.5.1 Adjustment of engine hood



1. Loosen 6 hinge bolts on engine hood.

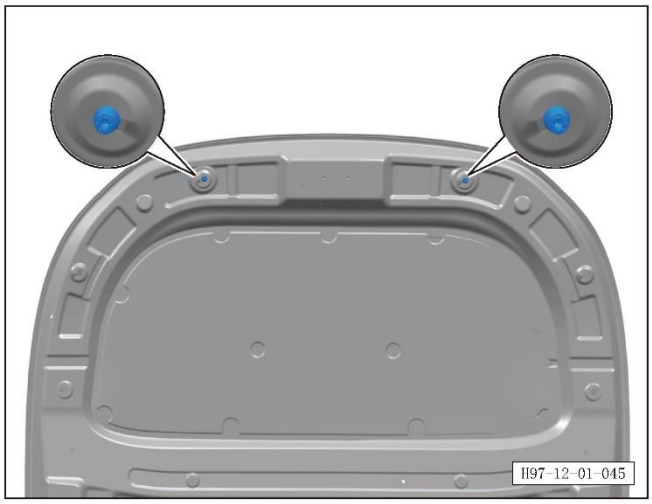
2. Move the engine hood to adjust the clearance between the hood and the fender.

3. After adjustment, tighten 6 hinge bolts.

Tightening torque of bolt: 20±3Nm.

CAUTION:

- Mark the position of the hinge relative to hood sheet metal assembly for easy positioning during removal and refitting.



4. Rotate the rubber pad to adjust the height of the front end of the hood.

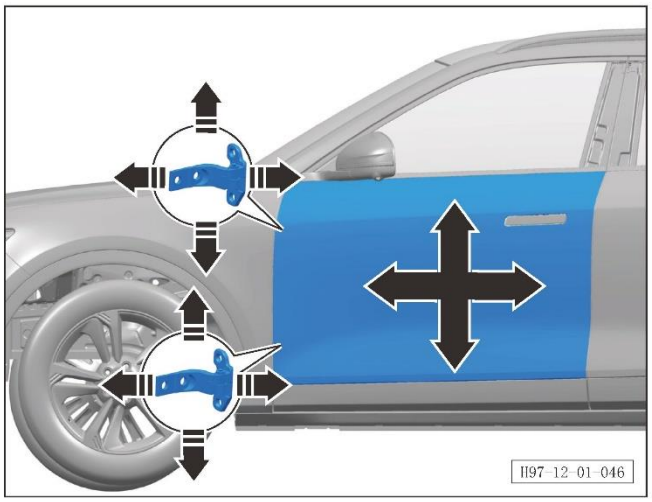
12.1.5.2 Adjustment of front door

Note:

- Park the vehicle on level road and keep it stationary before adjusting the front door.

- Make adjustments with the assistance of a maintenance technician.

1. Remove the fender.



2. Loosen (but do not unscrew) the fixing bolts of the upper and lower hinges on body side, and move the door forward, backward, up and down in the direction of the arrow. When the clearance at any position when the door is closed is uniform, no inward indent or outward bulge is found and the contours are aligned, it means the adjustment of front door is completed.

3. Tighten the hinge bolts.

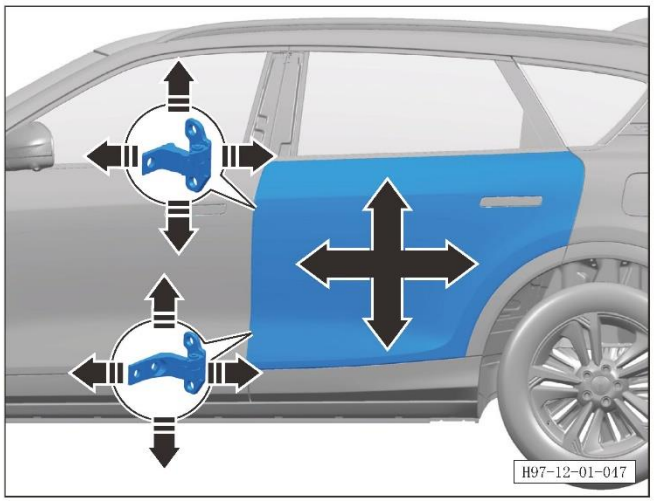
Tightening torque of bolt: 30±3Nm.

12.1.5.3 Adjustment of rear door

Note:

- Park the vehicle on level road and keep it stationary before adjusting the rear door.

- Make adjustments with the assistance of a maintenance technician.



1. Loosen (but do not unscrew) the fixing bolts of the upper and lower hinges on body side, and move the door forward, backward, up and down in the direction of the arrow. When the clearance at any position when the door is closed is uniform, no inward indent or outward bulge is found and the contours are aligned, it means the adjustment of rear door is completed.

2. Tighten the hinge fixing bolts.

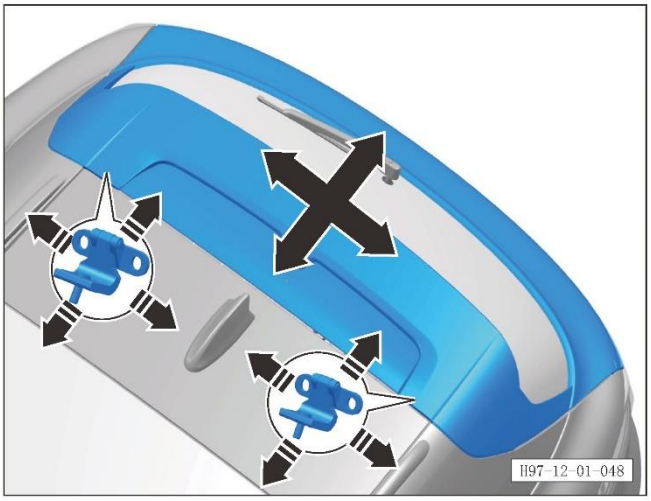
Tightening torque of bolt: 30±3Nm.

12.1.5.4 Adjustment of tailgate

Note:

- Park the vehicle on level road and keep it stationary before adjusting the tailgate.

- Make adjustments with the assistance of a maintenance technician.

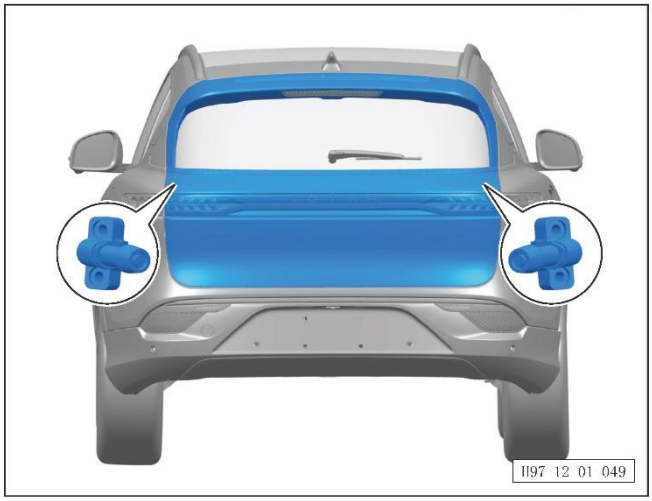


1. Remove the rear deflector.

2. Loosen (but do not unscrew) the fixing bolts of the left and right hinges on body, and move the tailgate in the direction of the arrow. When the clearance at any position when the tailgate is closed is uniform, no inward indent or outward bulge is found and the contours are aligned, it means the adjustment of tailgate is completed.

3. Tighten the hinge bolts.

Tightening torque of bolt: 10±2Nm.



4. Rotate the tailgate stopper to align the tailgate with the rear bumper.

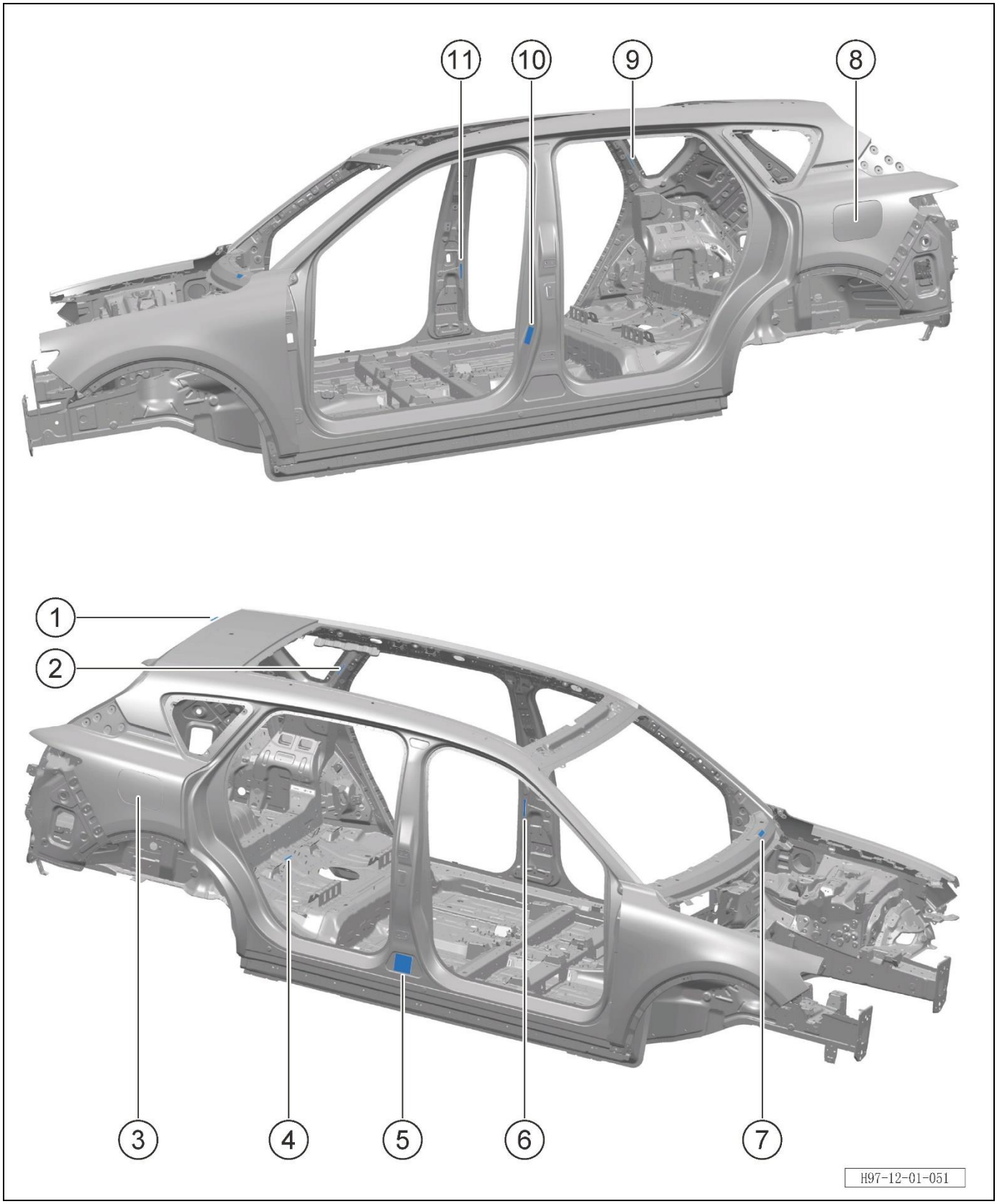
Note:

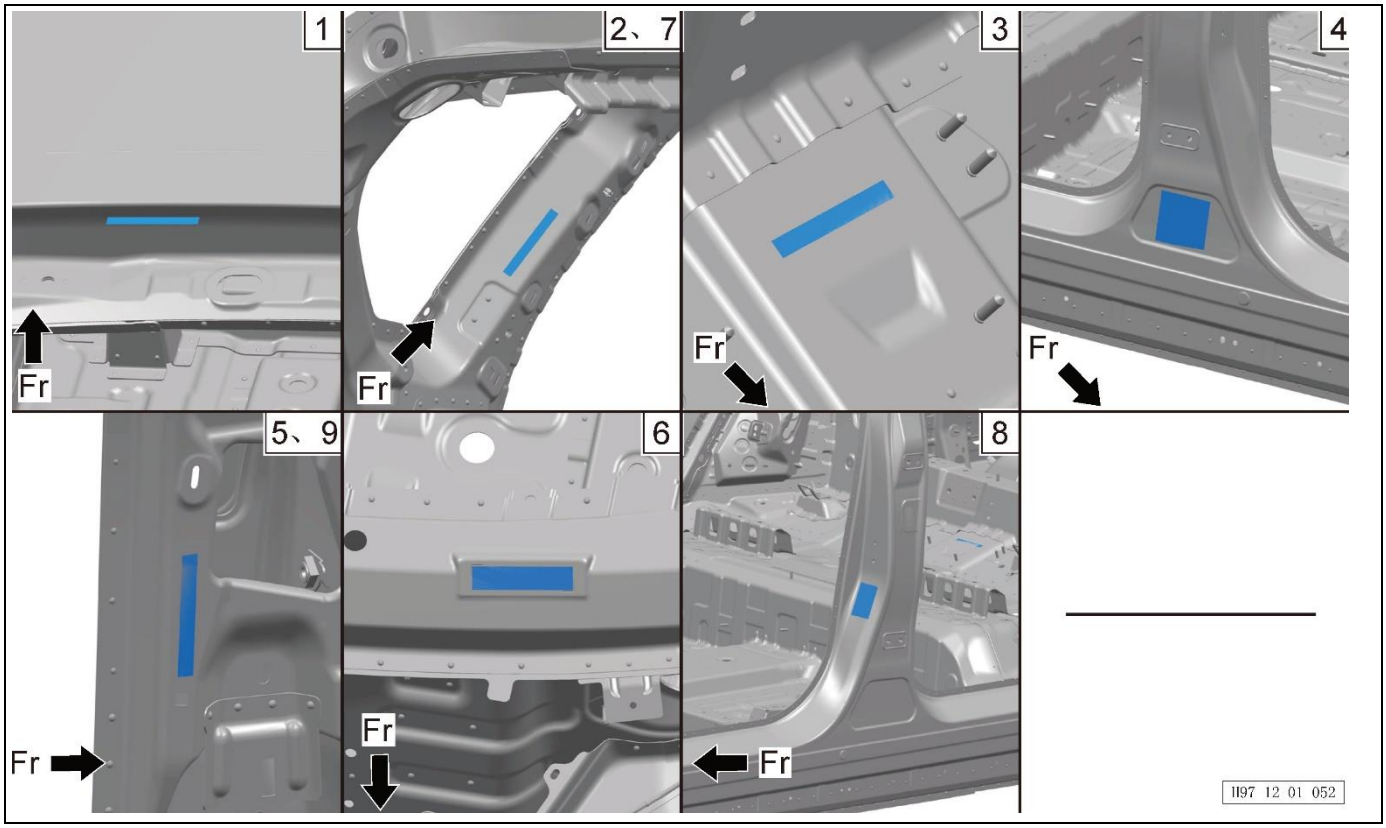
- Raise or lower the tailgate by rotating the tailgate stopper rubber pad.

12.1.5.5 Logo paste position

1. VOYAH logo 2. FREE logo

12.1.5.6 Plate/label paste position




1
Fr
2、7
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3
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4
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5、9
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6
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8
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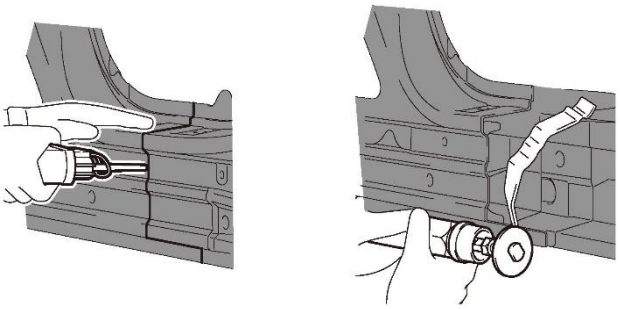
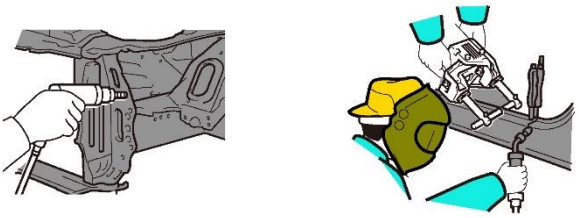
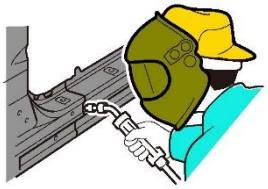
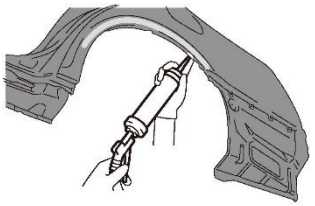
1197 12 01 052

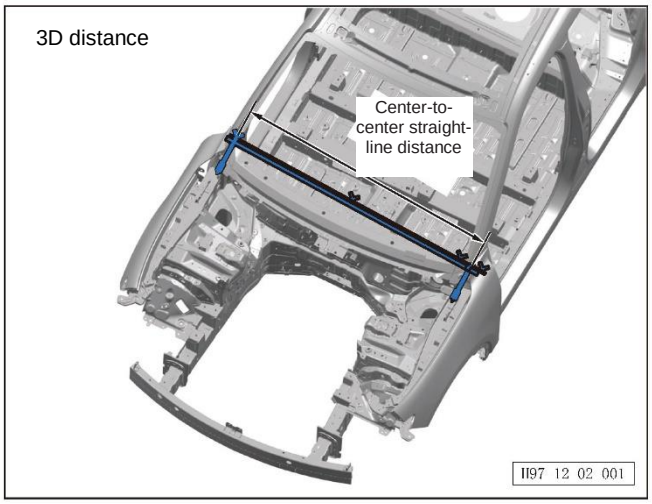
S/N	Plate/label name	Plate/label name paste position
1	VIN label	Tailgate hinge fixing plate left side
2	VIN label	Left C-pillar inner side
3	Refueling warning label	Fuel filler cap inside
4	VIN label	Rear floor cross member middle part
5	Product nameplate	Right B-pillar outer lower part
6	VIN label	Left B-pillar inner middle part
7	VIN label	Front wall left side
8	Charging indication label	Charging port cover inside
9	VIN label	Right C-pillar inside
10	Tire pressure warning label	Left B-pillar outer lower part
11	VIN label	Right B-pillar inner middle part

12.1.5.7 Symbol interpretation

Operation symbol		Diagram
	Cutting	
	Spot welding/fillet welding	
	Welding	
	Body sealant	
	Body sealant (trimmed)	
	Body sealant (not trimmed)	

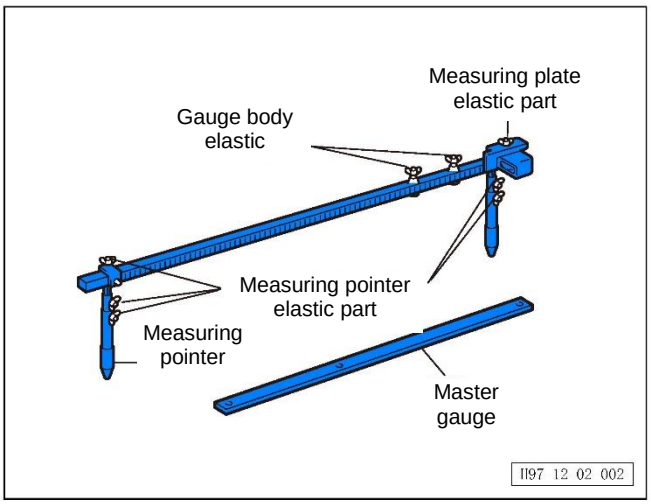
12.1.5.8 Body dimension

Basic dimension



3D distance

Straight-line distance between the centers of two measurement points.

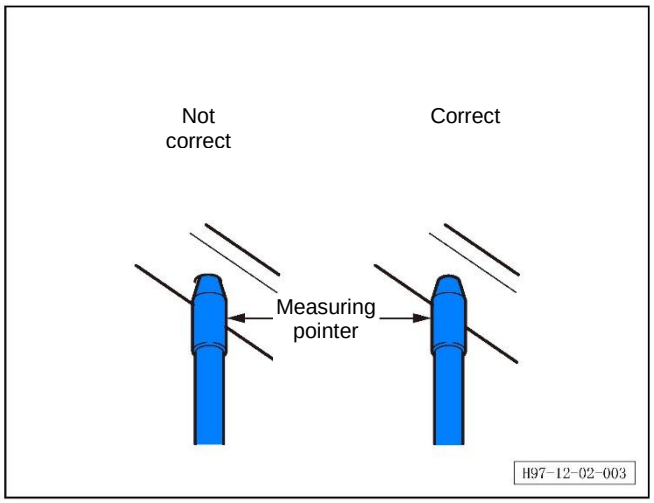


Measurement

All measurements during maintenance must be completed with a gauge meter, and in case the gauge meter cannot be used, a measuring tape can be used.

CAUTION:

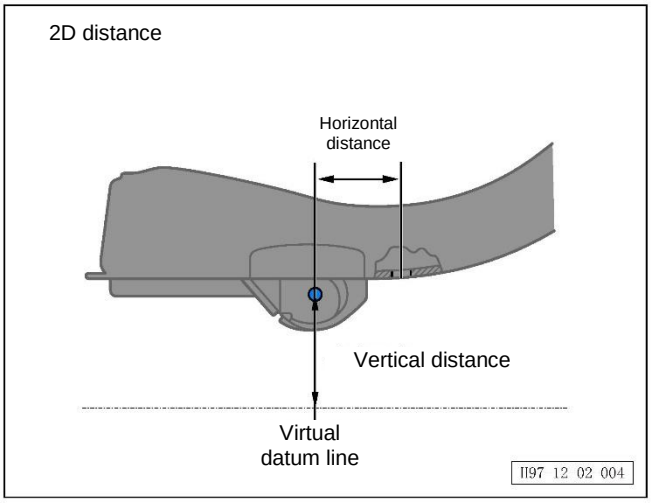
- Do not twist and bend the measuring tape when it is used.



When using the gauge meter, the gauge body, measuring plate or measuring pointer must not be loosened.

CAUTION:

- The left and right measuring pointers must be at the same height.
- Be sure to calibrate the gauge meter before measuring or after adjusting the height of the measuring pointer.
- Prevent the gauge meter from falling or being affected by vibration when it is used.
- Confirm that the measuring pointer is fixed in measuring hole.



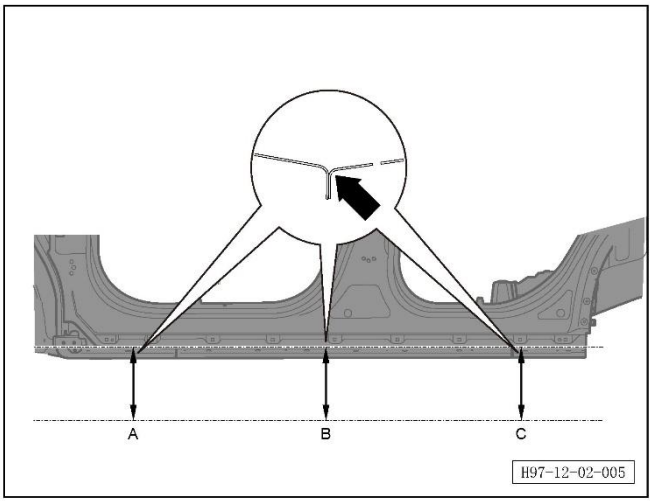
2D distance

- The horizontal distance in front/rear direction between the centers of the two measurement points.

- The vertical distance between the measurement point and the virtual datum line.

CAUTION:

- If only one dimension is provided, it means left-right symmetry.



Virtual datum line

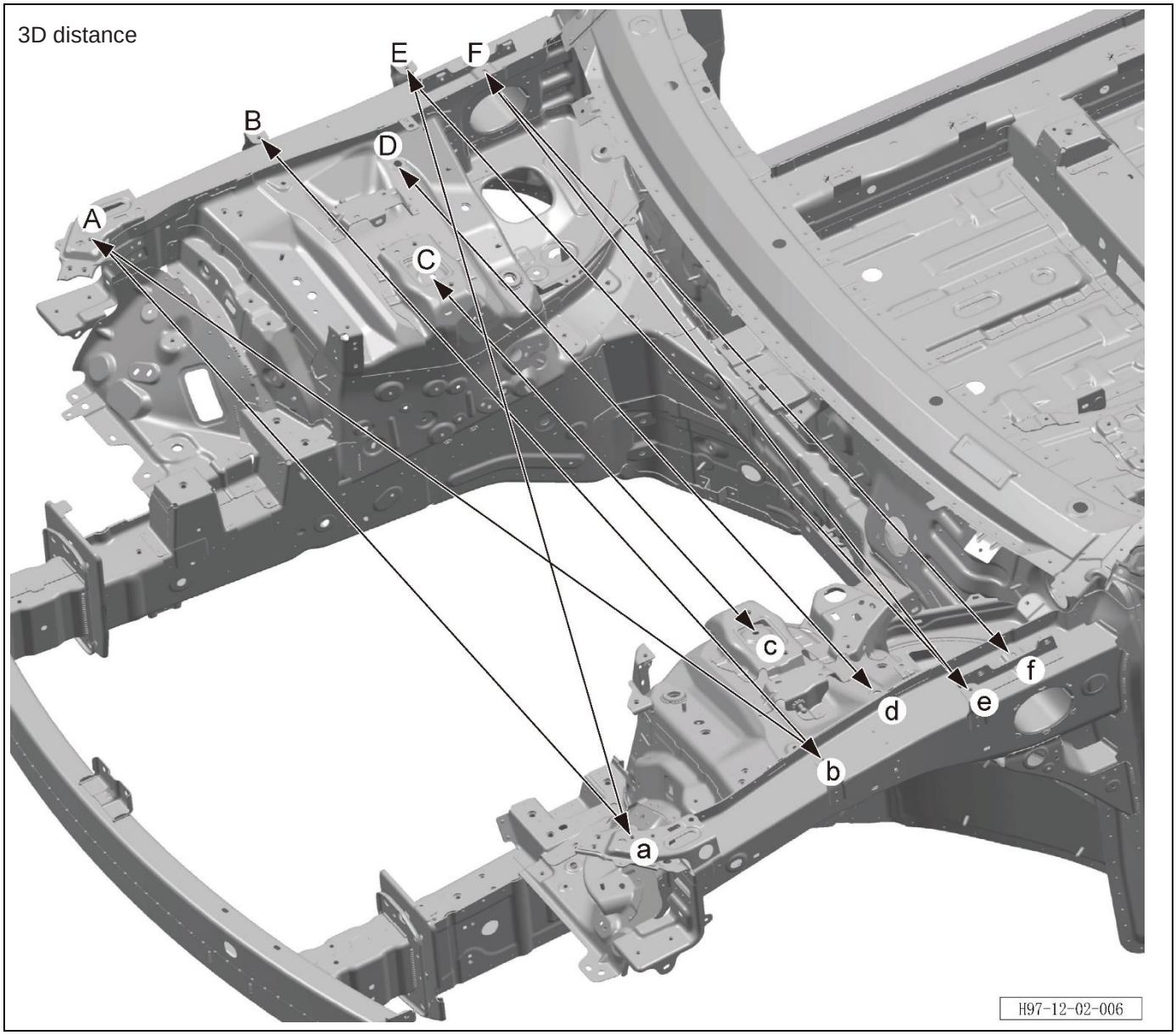
Virtual datum line is a line connecting the datum points described in the table below.

Point symbol	Datum point
A	This point is on the lower surface of the door sill beam at the center of body front lift point
B	This point is on the lower surface of the door sill beam at the center between body front lift point and body rear lift point
C	This point is on the lower surface of the door sill beam at body rear lift point

Definition of measurement point symbol

Symbol	Definition
	Center of round hole
	Center of oval hole
	Sheet metal angle position (only arrow is provided)
	Vehicle head direction

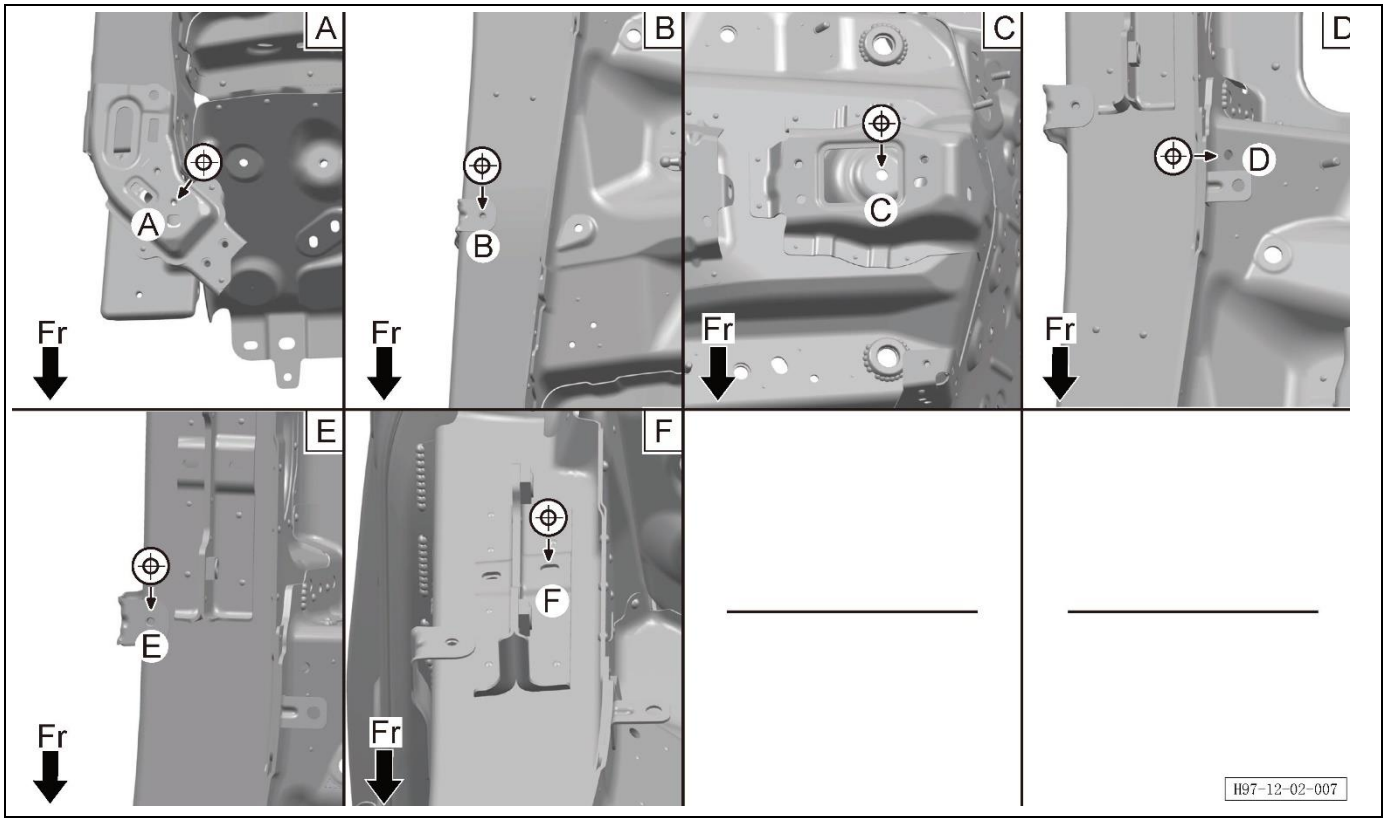
Engine compartment (REV body)



Note:

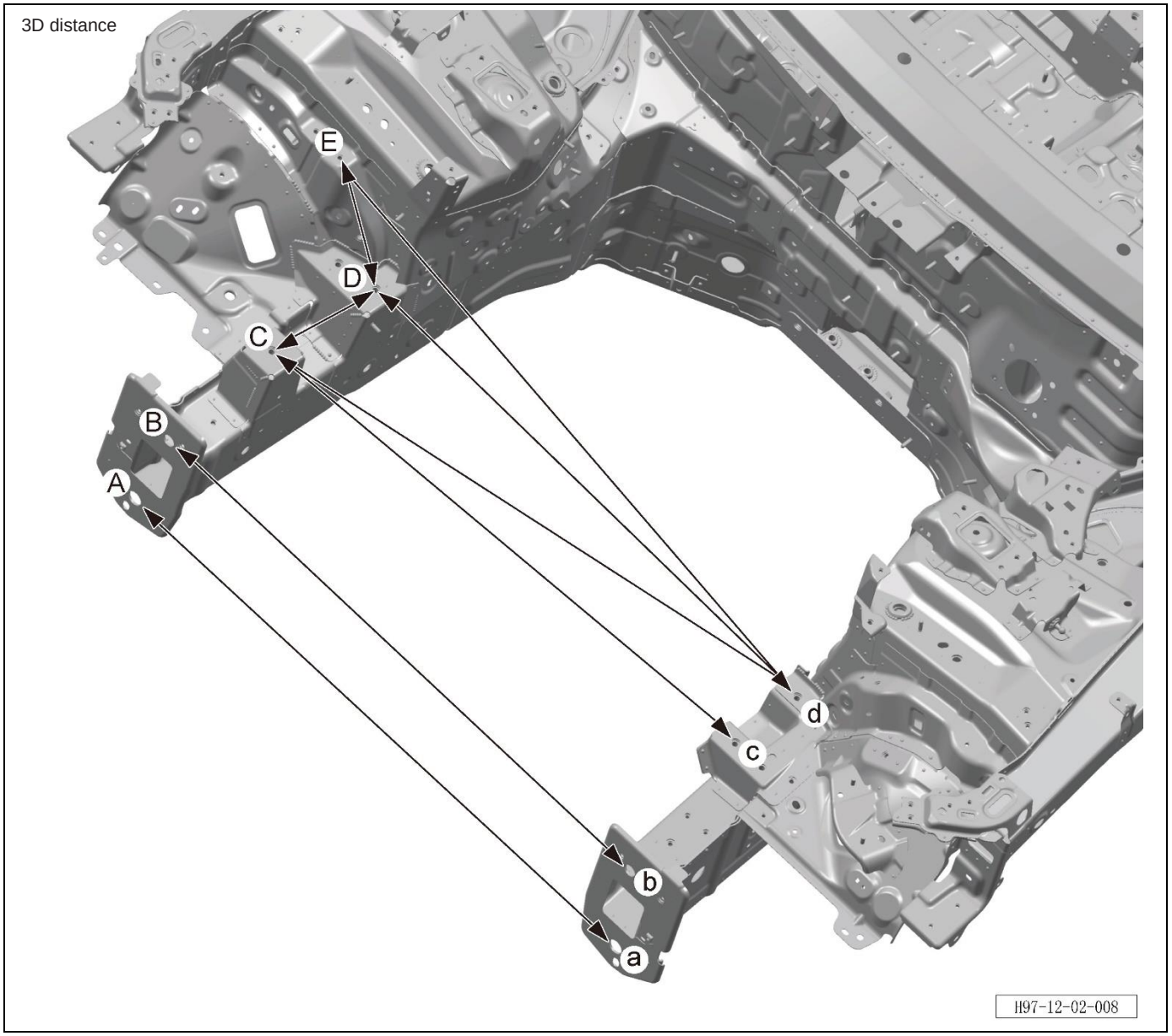
- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1549	A-b	1610	B-b	1613	C-c	923
D-d	1370	E-e	1610	E-a	1673	F-f	1511
F-e	1563	-	-	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Headlamp cross member connecting plate process hole for	φ7	B, b	Front fender mounting bracket I process hole	φ7
C, c	Front shock absorber cover plate process hole	φ10	D, d	Front shock absorber cover plate process hole	φ12
E, e	Front fender mounting bracket process hole	φ7	F, f	Hood hinge nut plate process hole	—

Engine compartment (REV body)

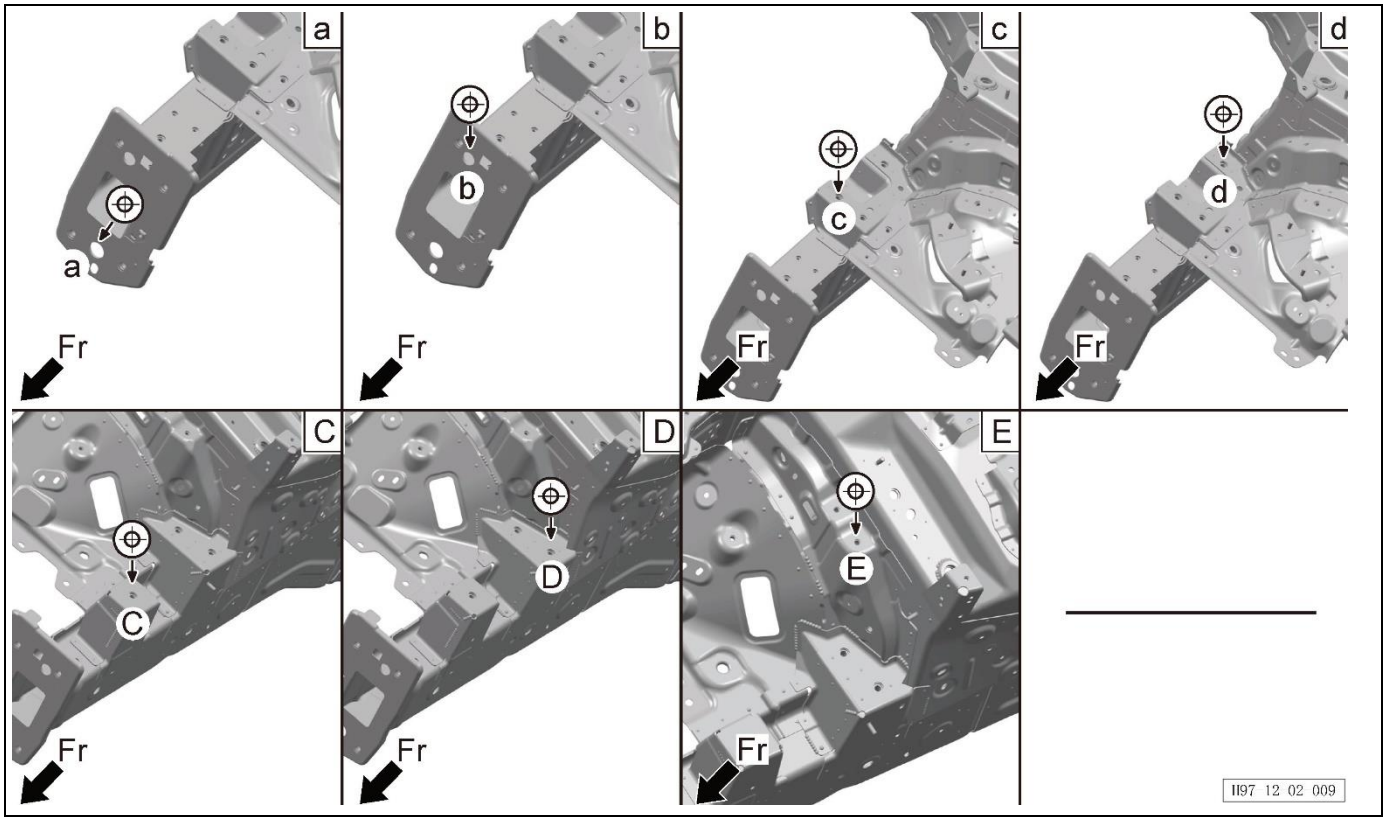


Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

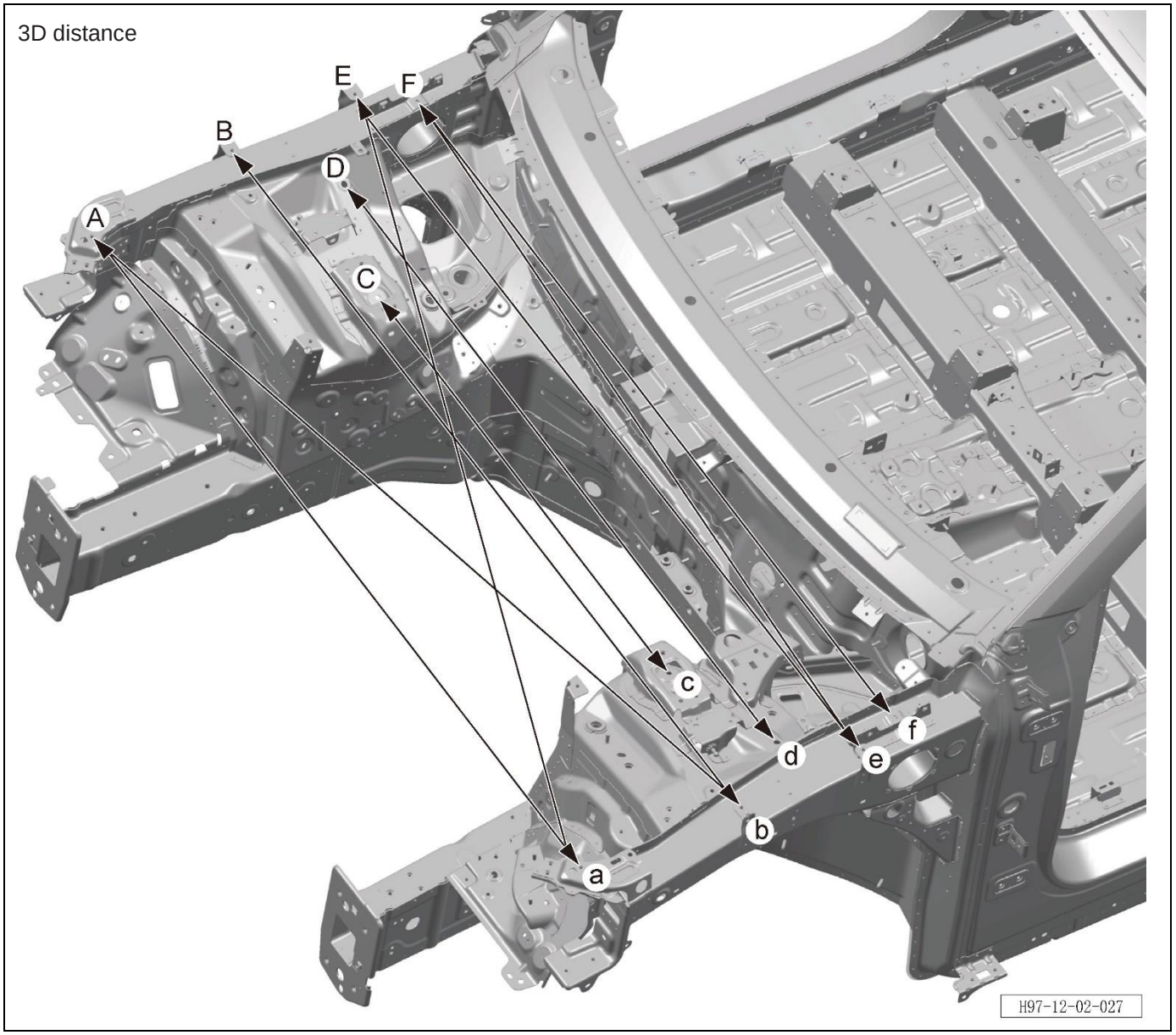
- Point C and point D on body are not symmetrical.

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	952	B-b	914	C-c	859
C-D	194	C-d	878	D-d	837
D-E	196	d-E	993	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Front anti-collision beam mounting plate process hole	φ24	B, b	Front anti-collision beam mounting plate process hole	φ20
c	Mounting outer plate process hole	φ14	C	Engine mount mounting plate I (right) process hole	φ14
d	Mounting outer plate process hole	φ14	D	Mounting bracket I (right) process hole	φ14
E	Front wheel housing front section reinforcement plate II (right) process hole	φ9	-	-	-

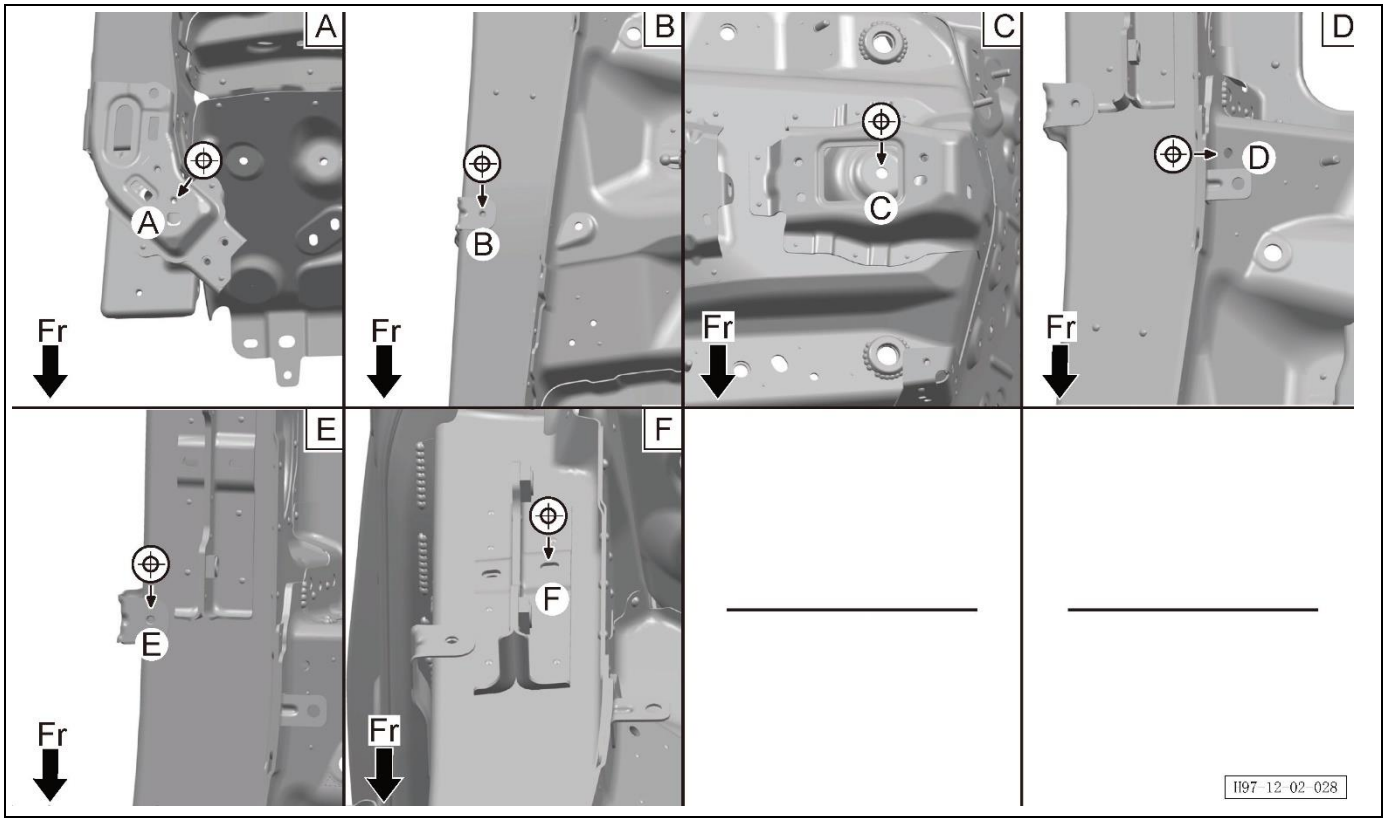
Engine compartment (EV body)



Note:

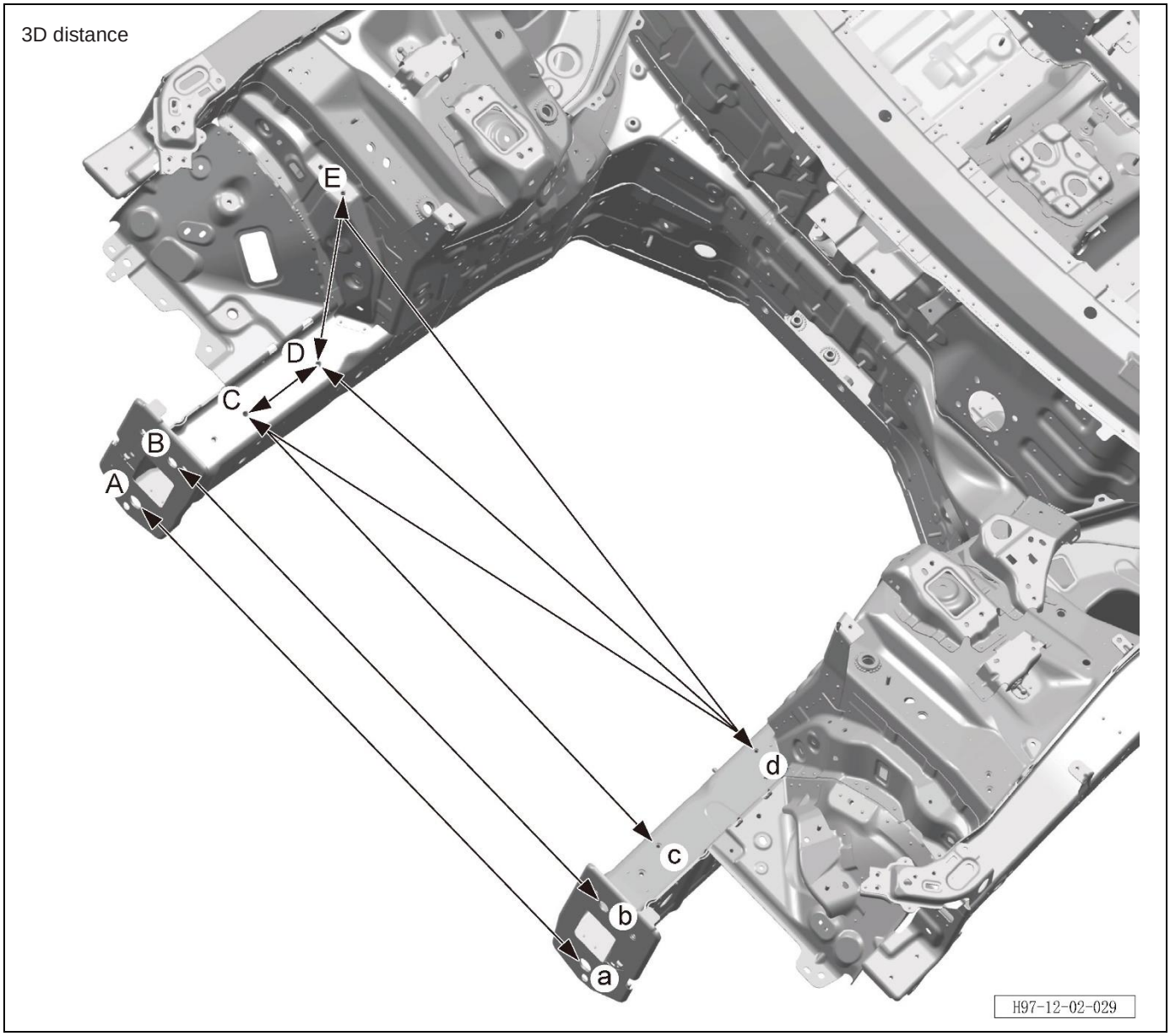
- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1549	A-b	1610	B-b	1613	C-c	923
D-d	1370	E-e	1610	E-a	1673	F-f	1511
F-e	1563	-	-	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Headlamp cross member connecting plate process hole for	φ7	B, b	Front fender mounting bracket I process hole	φ7
C, c	Front shock absorber cover plate process hole	φ10	D, d	Front shock absorber cover plate process hole	φ12
E, e	Front fender mounting bracket process hole	φ7	F, f	Hood hinge nut plate process hole	—

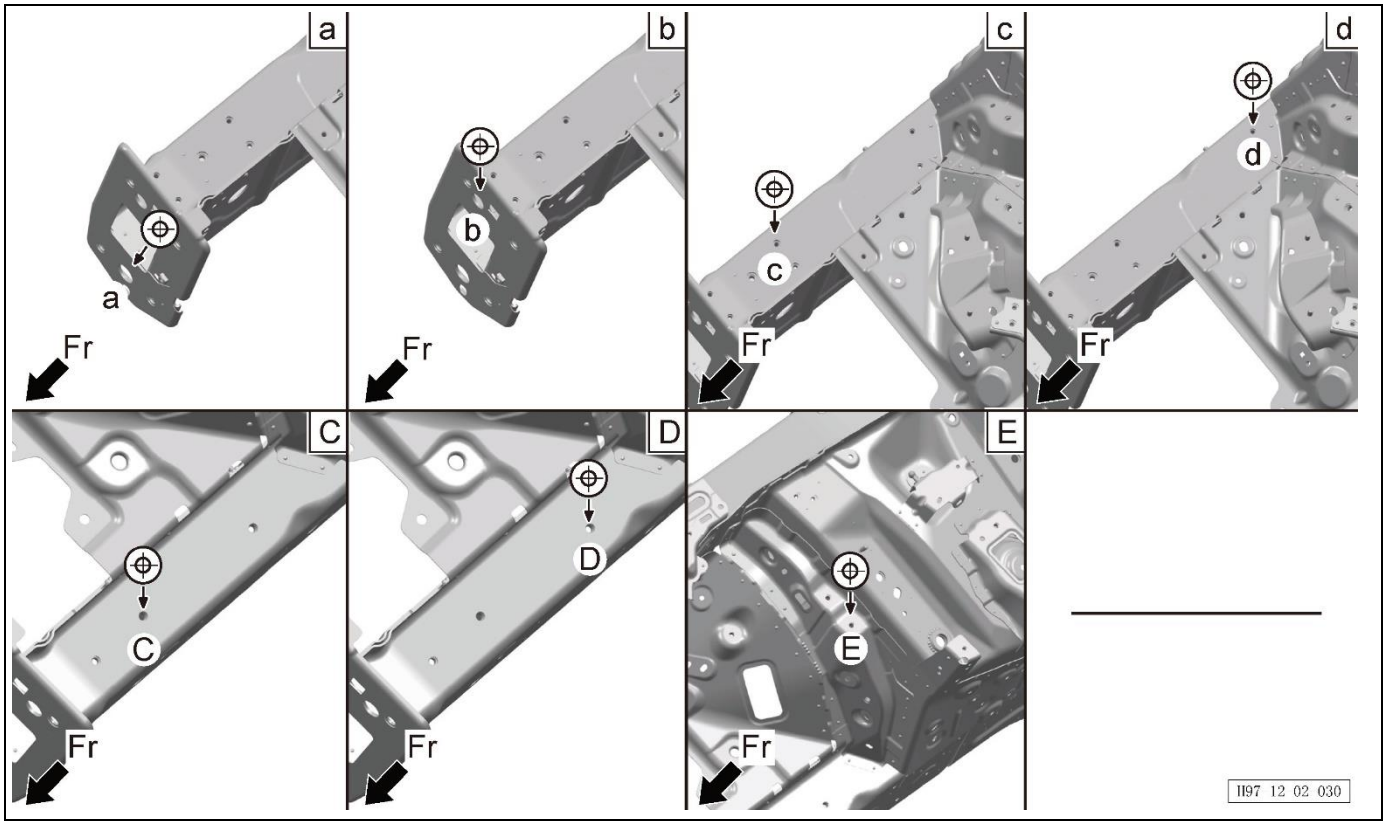
Engine compartment (EV body)



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).
- Point C and point D on body are not symmetrical.

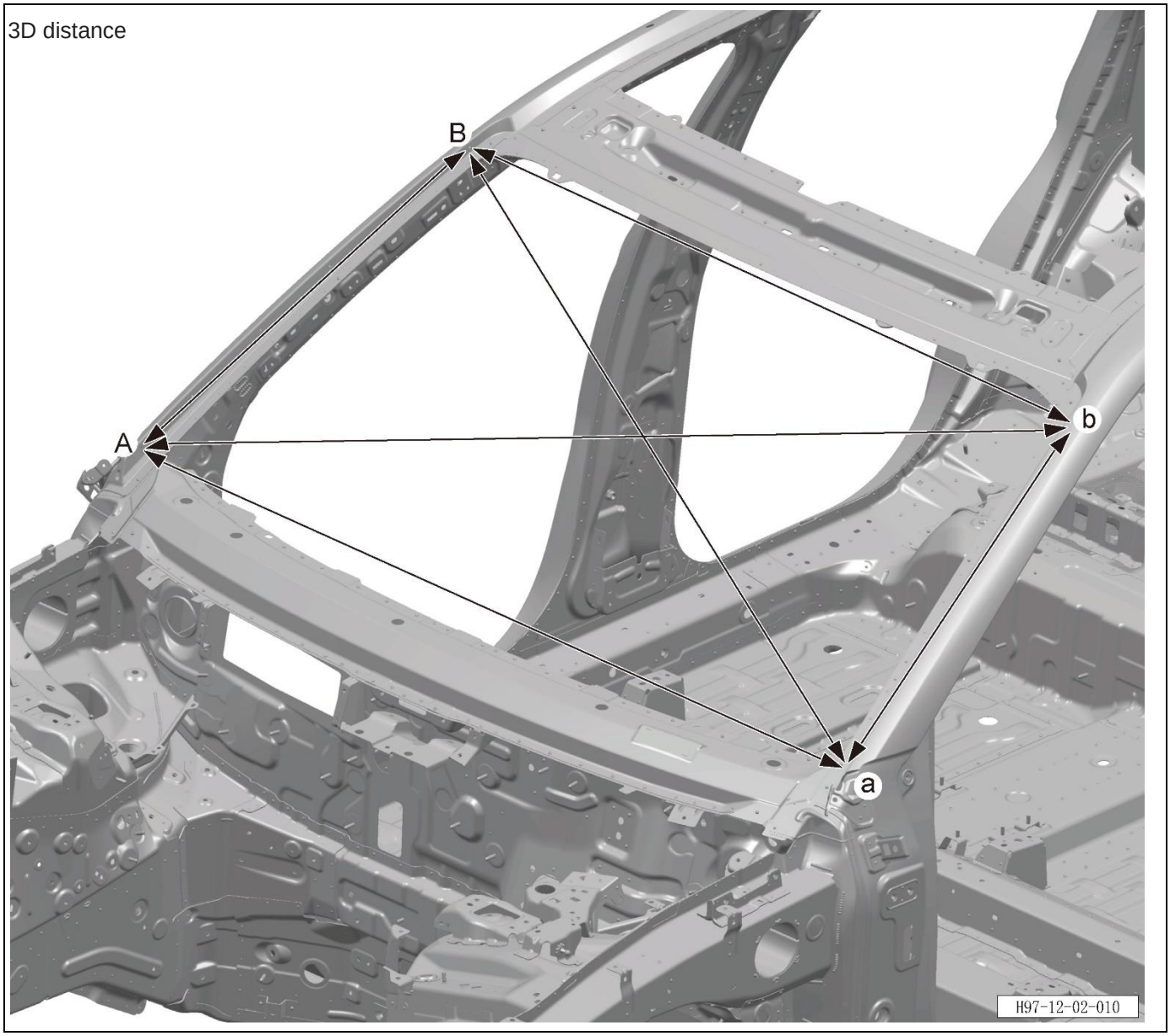
Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	952	B-b	913	C-c	882
C-D	139	C-d	892	D-d	857
D-E	283	d-E	1010	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Front anti-collision beam mounting plate process hole	φ24	B, b	Front anti-collision beam mounting plate process hole	φ20
c	Side member front section inner plate (left) process hole	φ9	C	Side member front section inner plate (right) process hole	φ9
d	Side member front section inner plate (left) process hole	φ7	D	Side member front section inner plate (right) process hole	φ9
E	Front wheel housing front section reinforcement plate II (right) process hole	φ9	-	-	-

Front windshield

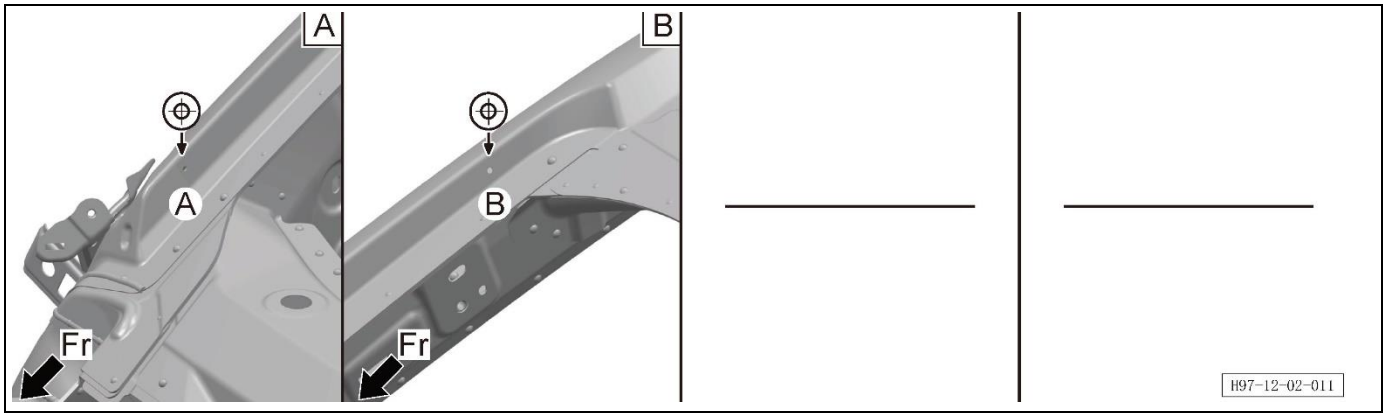
3D distance



Note:

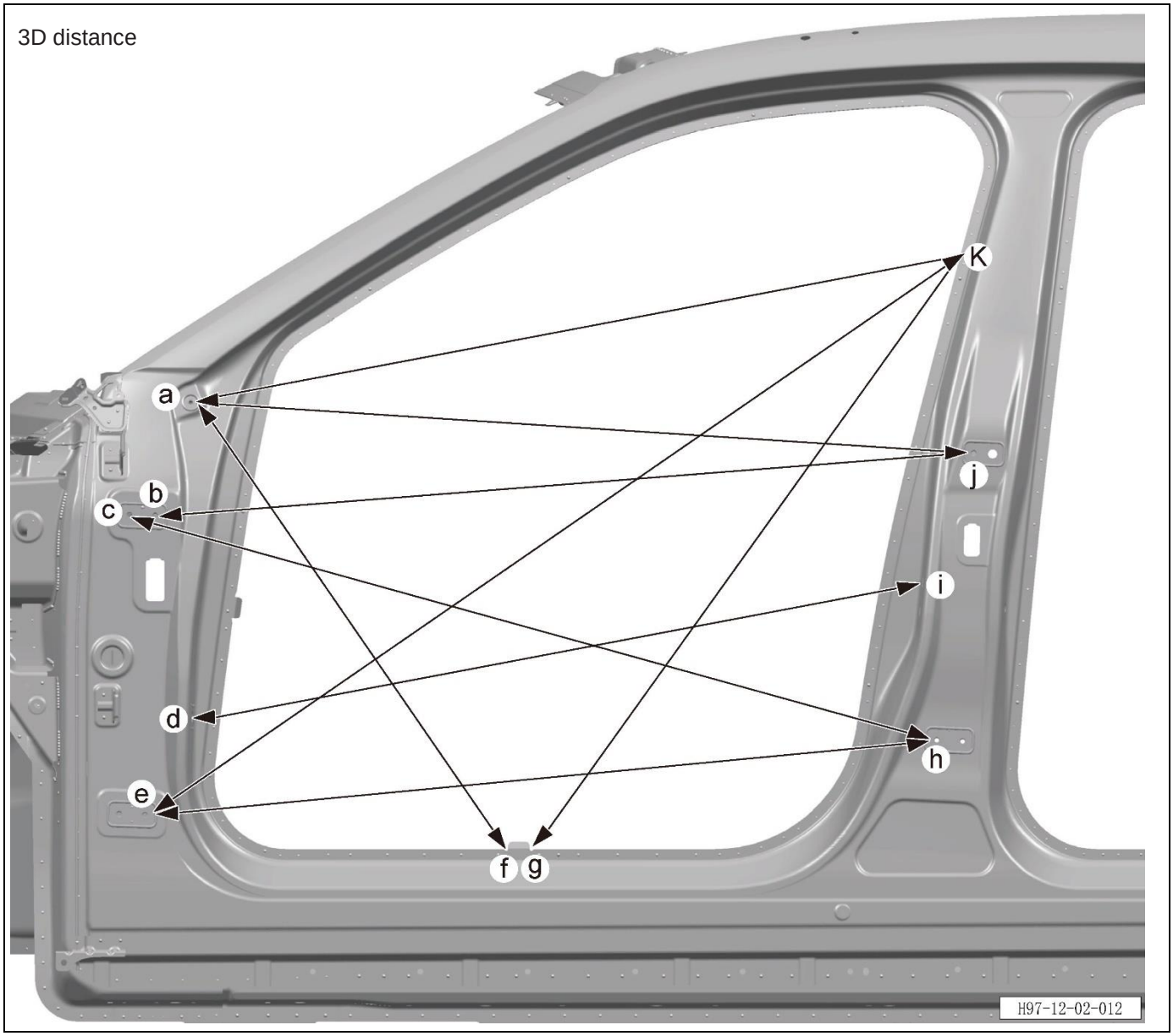
- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1511	A-B	708	A-b	1560
B-a	1560	B-b	1280	a-b	708



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Side wall outer plate process hole	φ3.2	B, b	Side wall outer plate process hole	φ3.2

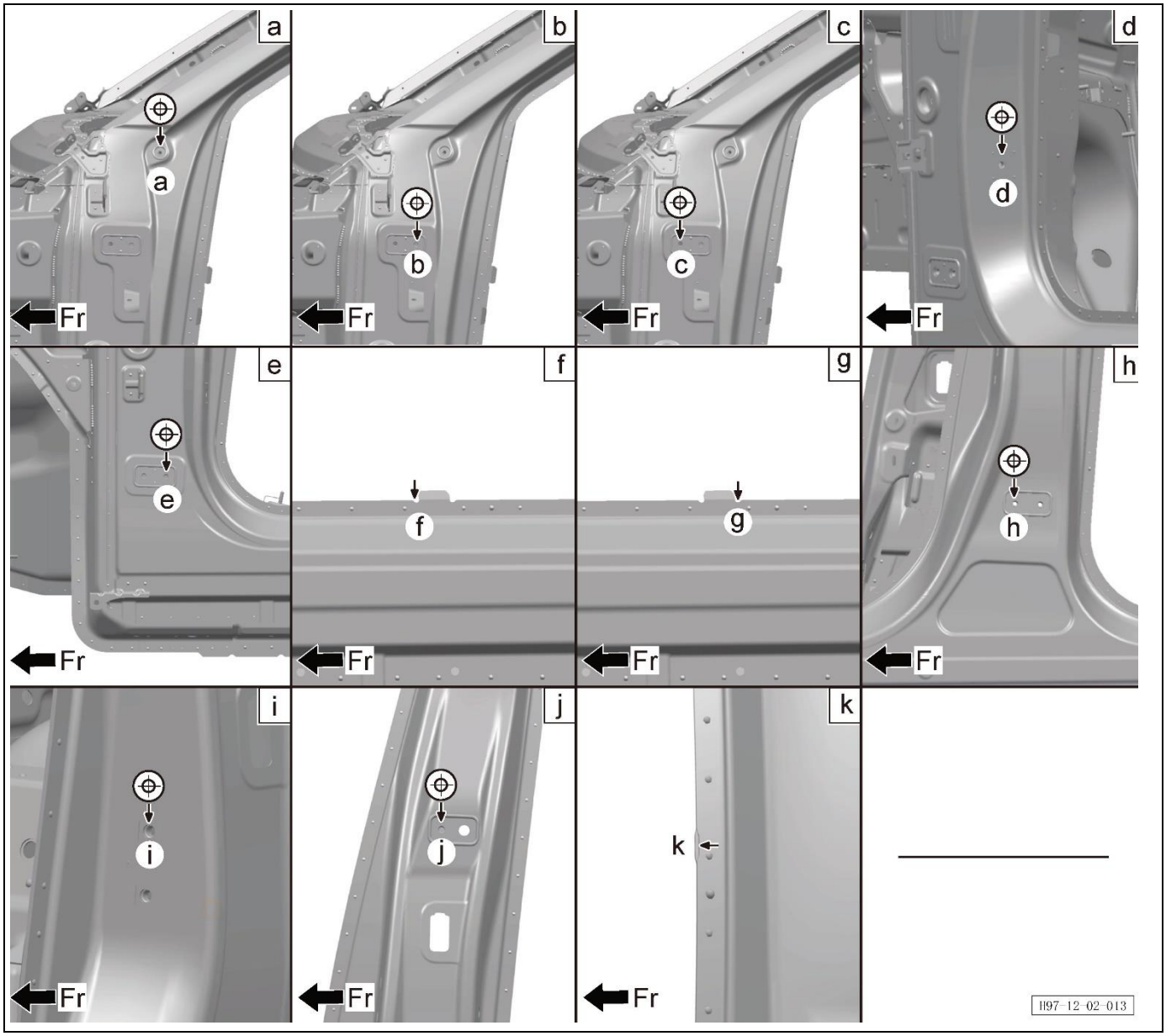
Front door



Note:

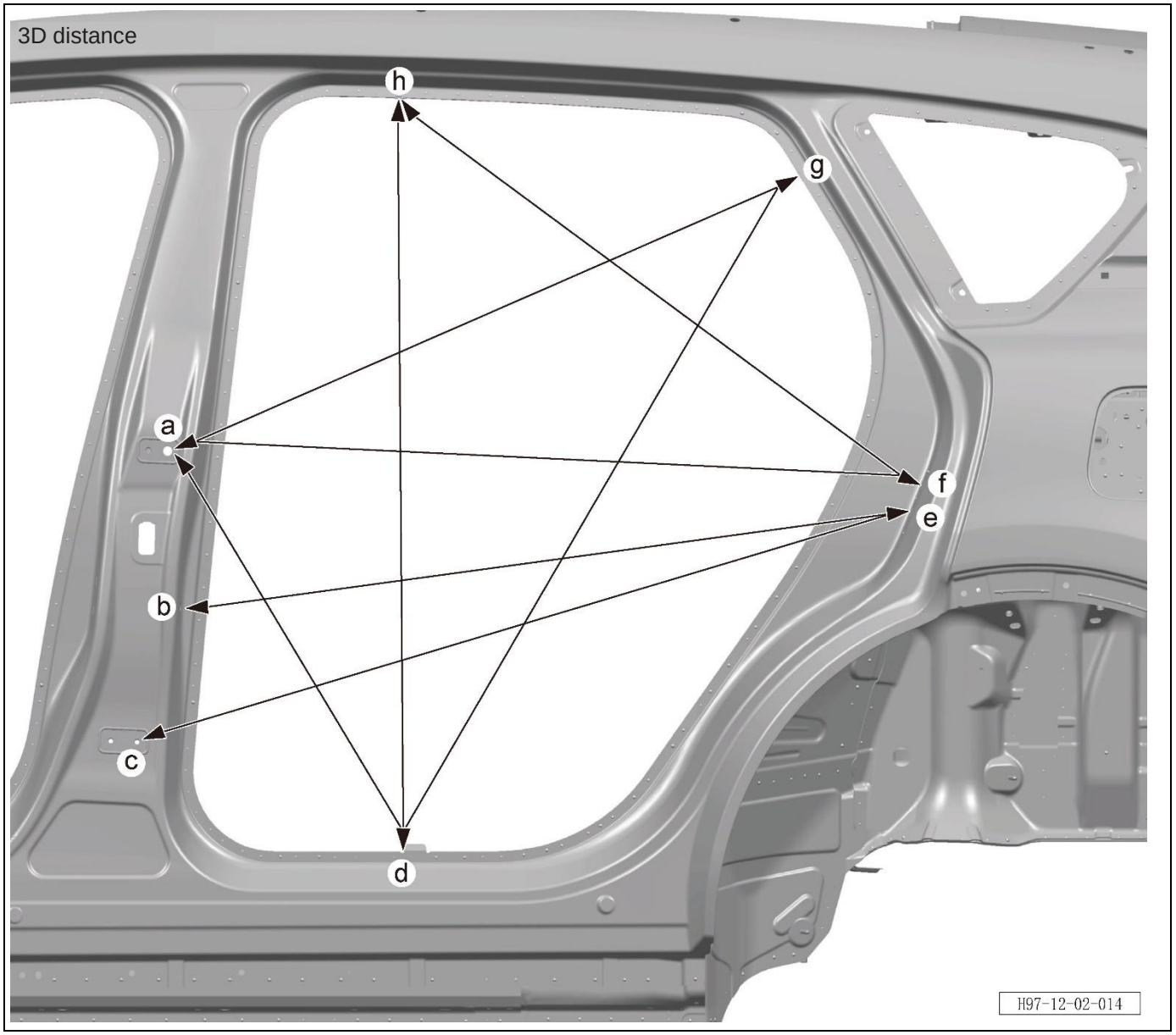
- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
a-k	1095	a-j	1096	a-f	761	b-j	1146
c-h	1170	d-i	1041	e-h	1110	e-k	1382
g-k	1026	-	-	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Fender assembly mounting hole	φ6.75	B, b	Front door upper hinge mounting hole	φ8
C, c	Front door upper hinge mounting hole	φ8	D, d	Front door stopper mounting hole	φ11
E, e	Front door lower hinge mounting hole	φ8	F, f	Door frame notch	-
G, g	Door frame notch	-	H, h	Rear door lower hinge mounting hole	φ8
I, i	Side door lock latch mounting hole	φ8	J, j	Rear door upper hinge mounting hole	φ8
K, k	Door frame notch	-	-	-	-

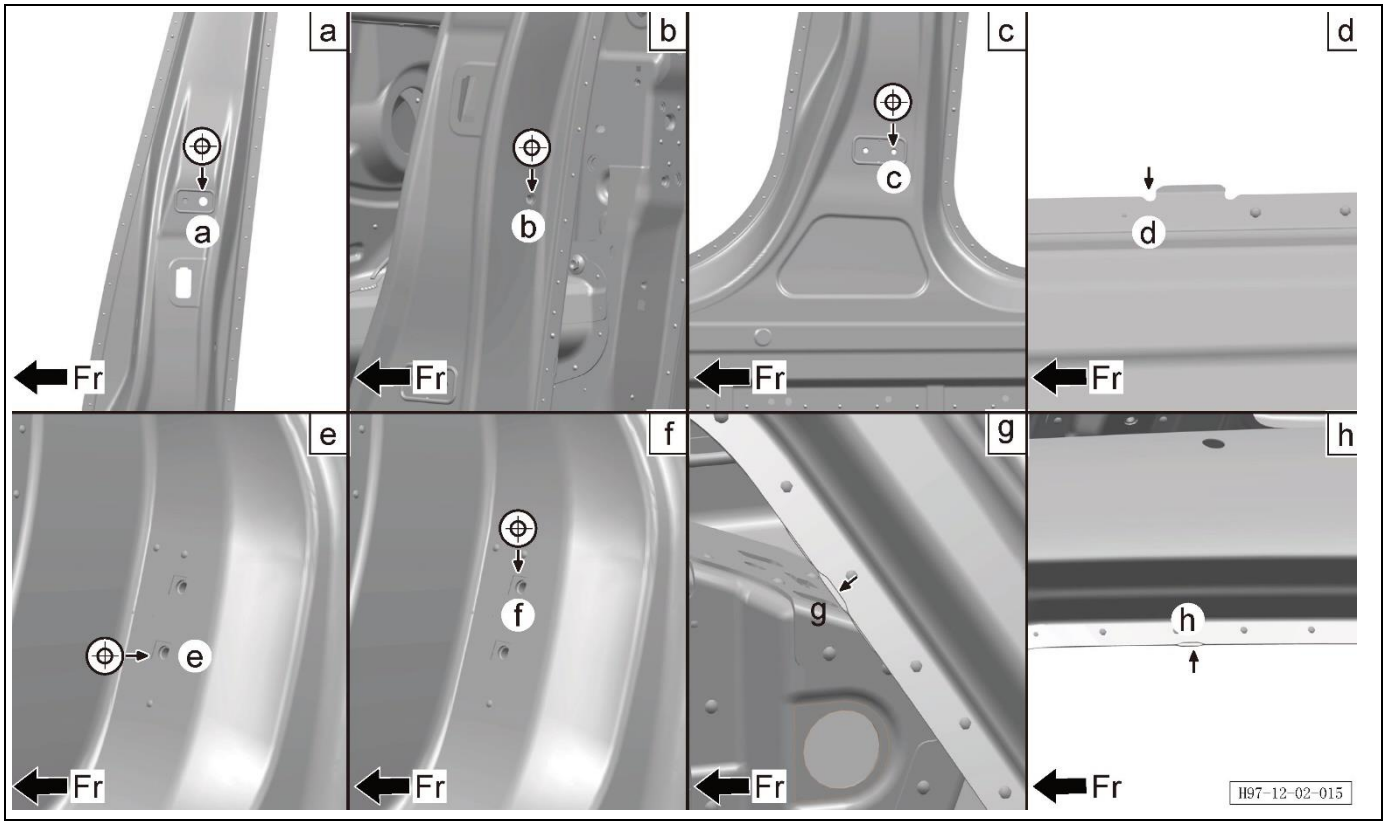
Rear door



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

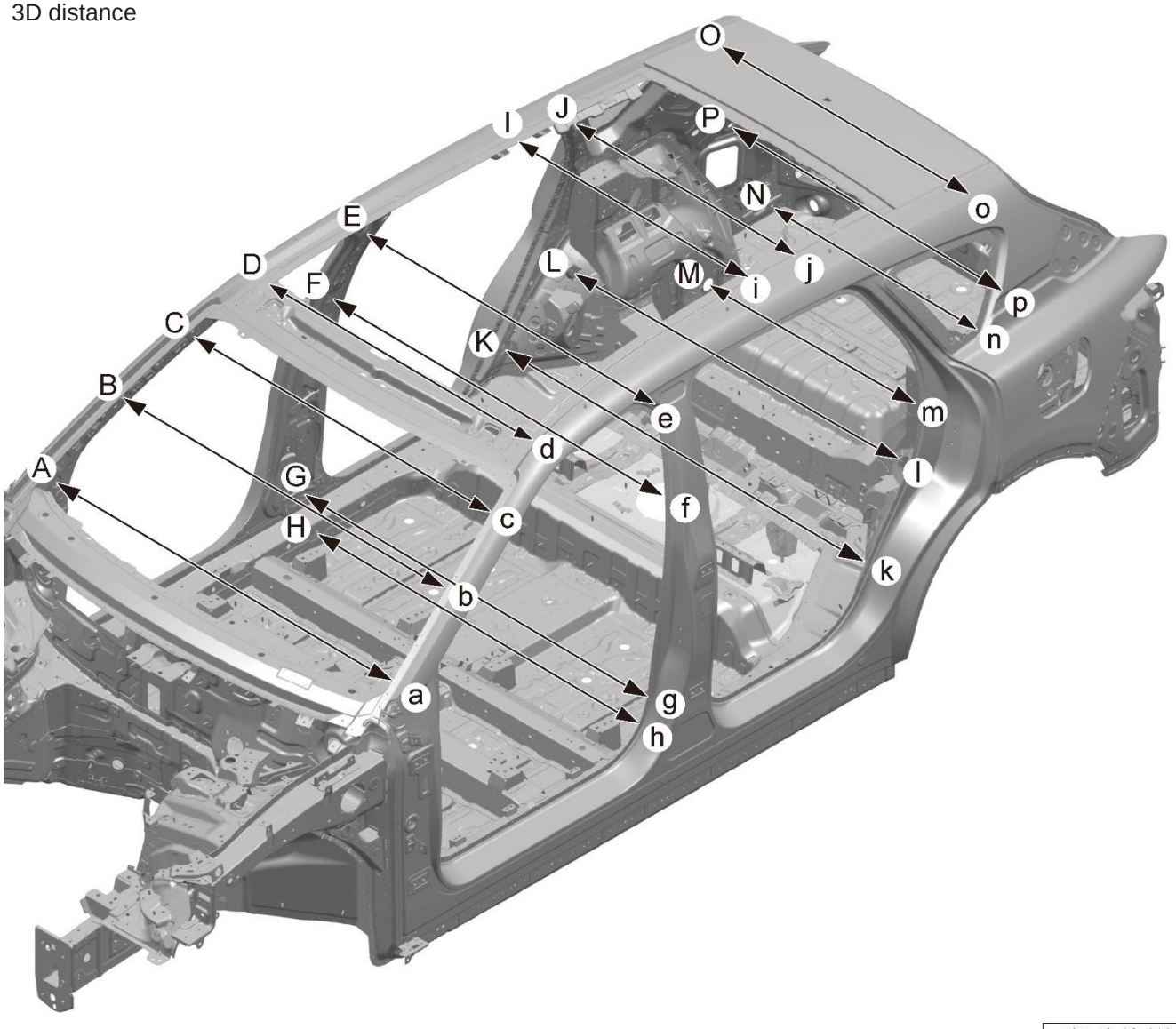
Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
a-d	639	a-f	1039	a-g	966	b-e	1011
c-e	1110	d-g	1084	d-h	1050	f-h	925



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Rear door upper hinge mounting hole	φ8	B, b	Rear door stopper mounting hole	φ11
C, c	Rear door lower hinge mounting hole	φ8	D, d	Door frame notch	-
E, e	Side door lock latch mounting hole	φ8	F, f	Side door lock latch mounting hole	φ8
G, g	Door frame notch	-	H, h	Door frame notch	-

Body middle part

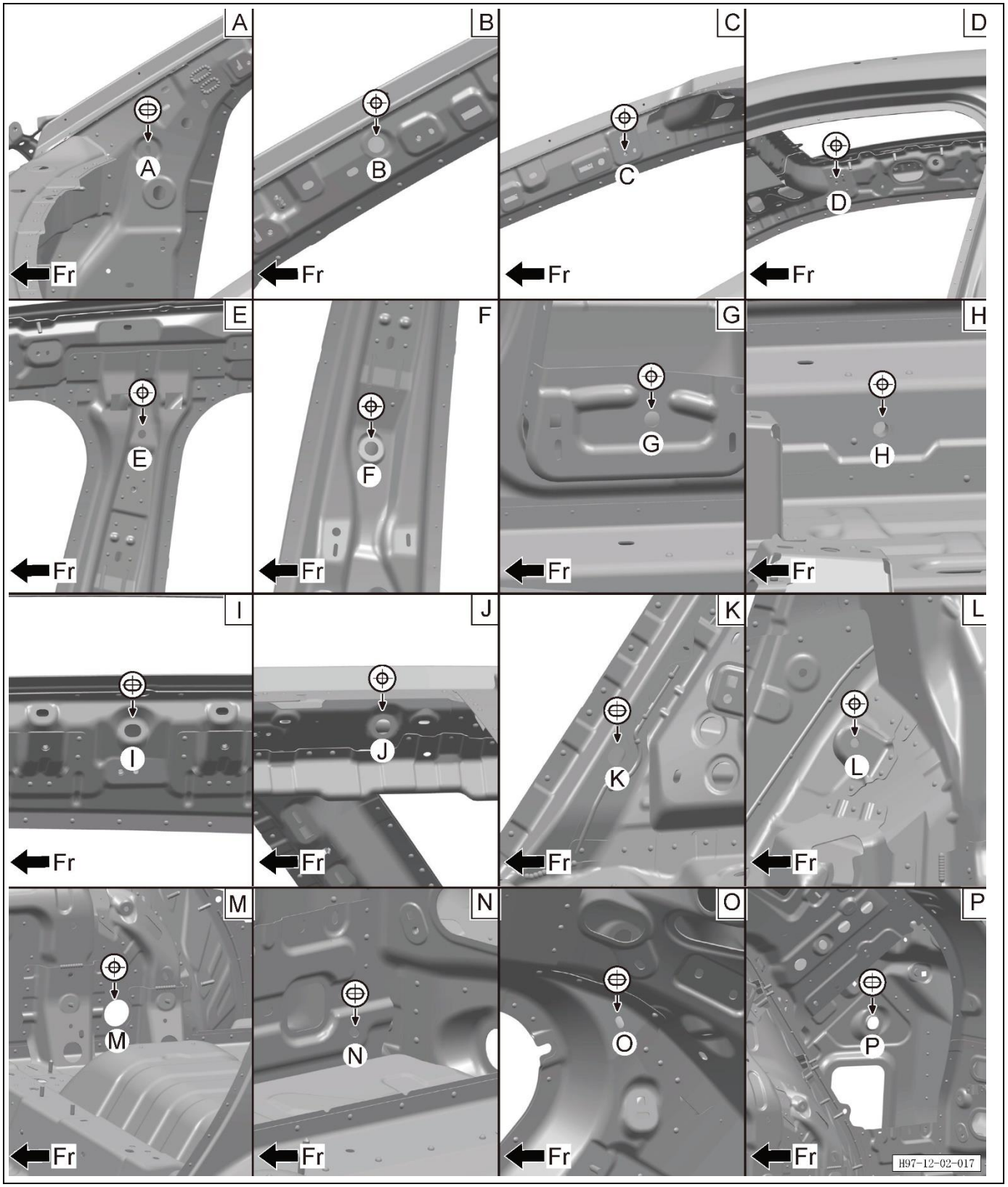
3D distance



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1448	B-b	1371	C-c	1270	D-d	1142
E-e	1232	F-f	1445	G-g	1474	H-h	1416
I-i	1063	J-j	1060	K-k	1499	L-l	1378
M-m	992	N-n	1493	O-o	1199	P-p	1647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Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	IP cross member mounting plate mounting hole	φ7	B, b	Side wall upper reinforcement plate process hole	φ16
C, c	A-pillar inner trim panel mounting hole	φ6	D, d	Roof front cross member connecting plate process hole	φ6
E, e	Middle pillar inner plate upper process hole	φ12	F, f	Middle pillar inner plate middle process hole	φ16
G, g	Front seat belt retractor fixing hole	φ12	H, h	Front seat belt fixing hole	φ11
I, i	Middle pillar inner upper plate process hole	φ12	J, j	Rear wheel housing outer plate upper process hole	φ16
K, k	Rear wheel housing outer plate middle process hole	φ14	L, l	C-pillar protective plate mounting hole	φ8.5
M, m	Rear wheel housing inner plate process hole	φ40	N, n	Rear wheel housing outer plate rear process hole	φ8
O, o	Rear wheel housing outer plate upper process hole	φ7	P, p	Side wall outer plate process hole	φ24

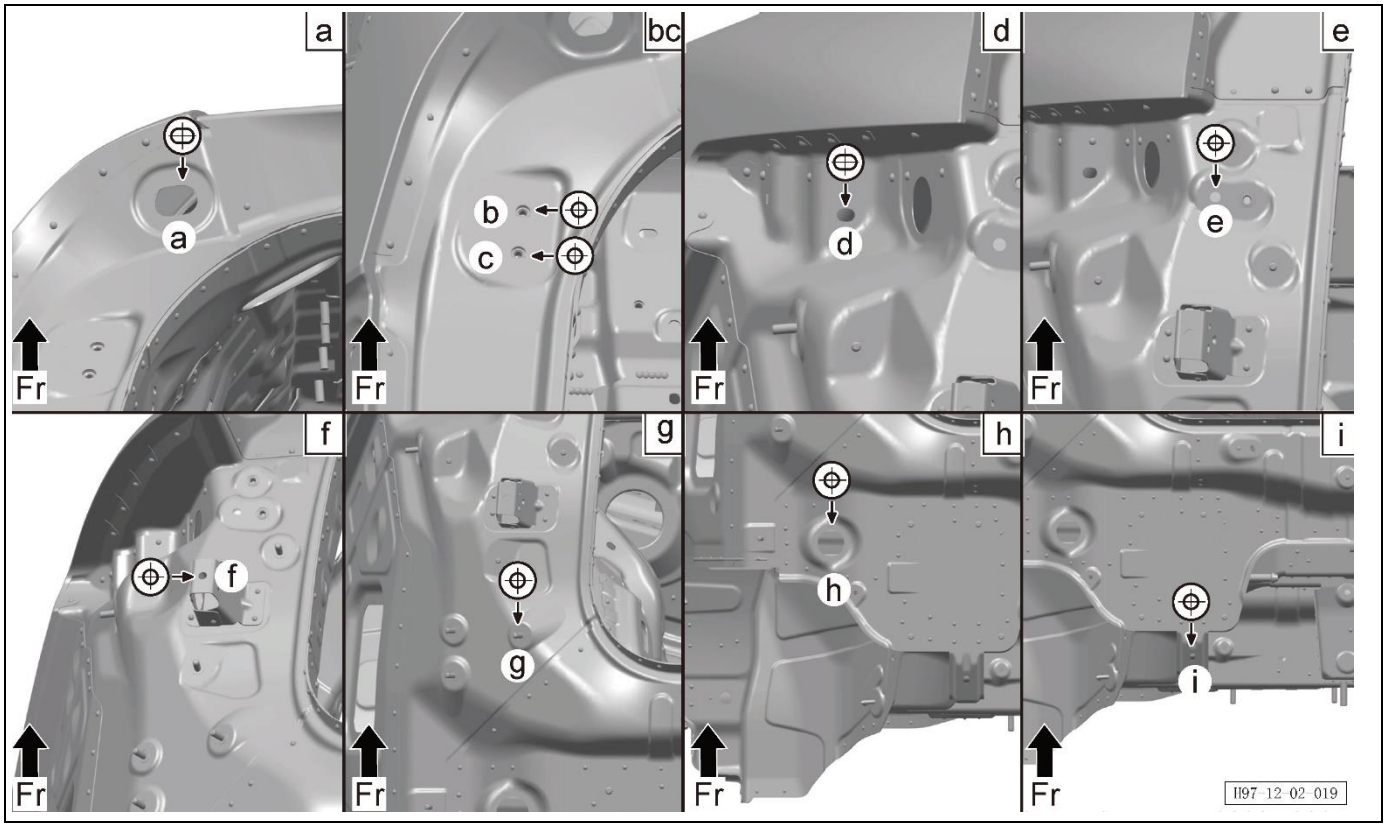
Body rear part

3D distance

Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

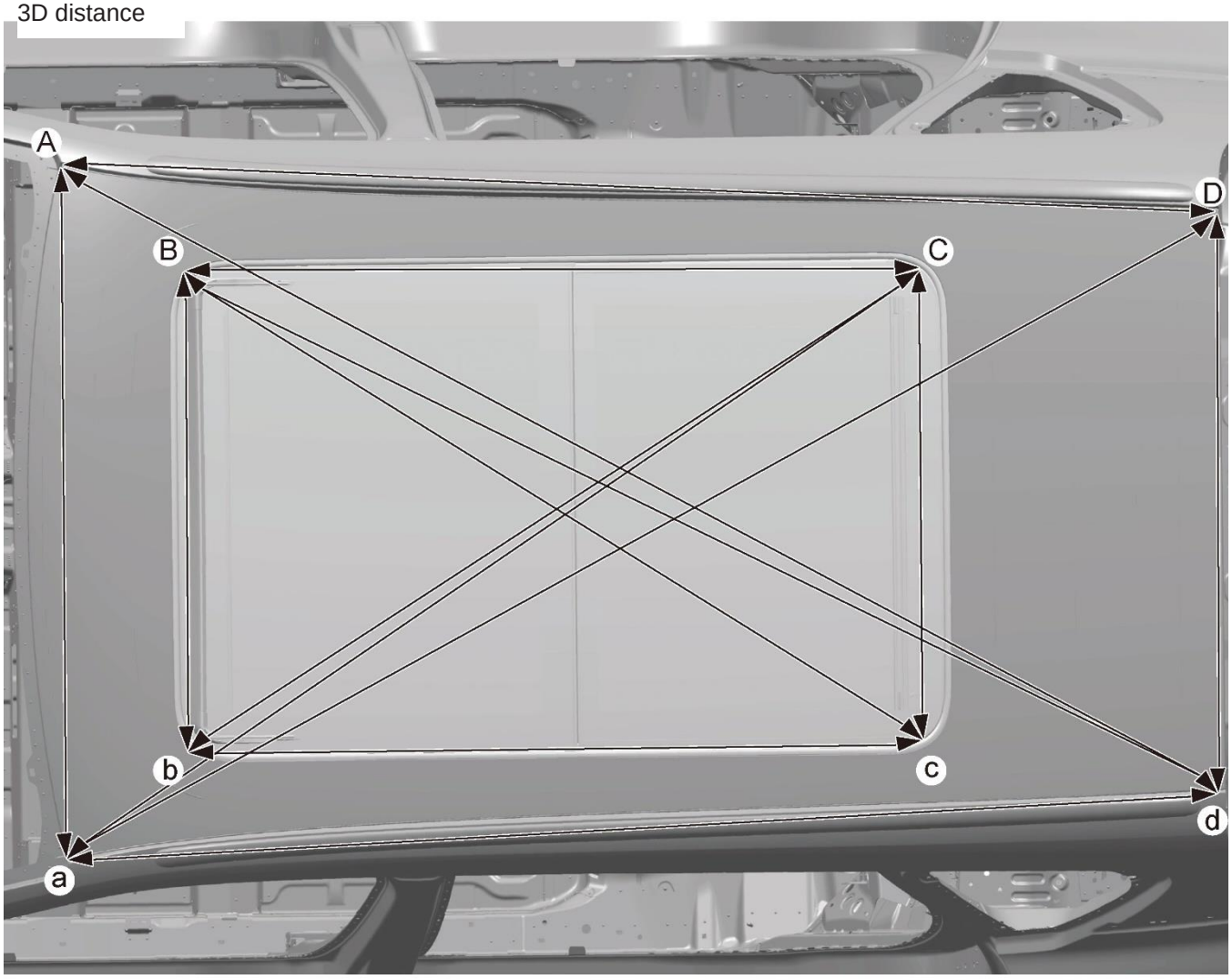
Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1024	A-g	1480	A-G	927	a-G	1495
a-g	902	B-b	1123	C-c	1130	D-d	1507
E-e	1321	F-f	1361	G-g	1344	H-h	1346
I-i	980	-	-	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Rear drip channel bracket process hole	φ20	B, b	Tailgate strut upper bracket mounting hole	φ10
C, c	Tailgate strut upper bracket mounting hole	φ10	D, d	Rear combination lamp mounting hole	φ8
E, e	Rear combination lamp mounting hole	φ8	F, f	Tailgate buffer block mounting hole	φ8
G, g	Rear combination lamp mounting plate welding stud	φ4	H-h	Rear wall rear cross member outer plate process hole	φ36
I, i	Rear bumper lower fixing bracket mounting hole	φ8			

Body top (with sunroof)

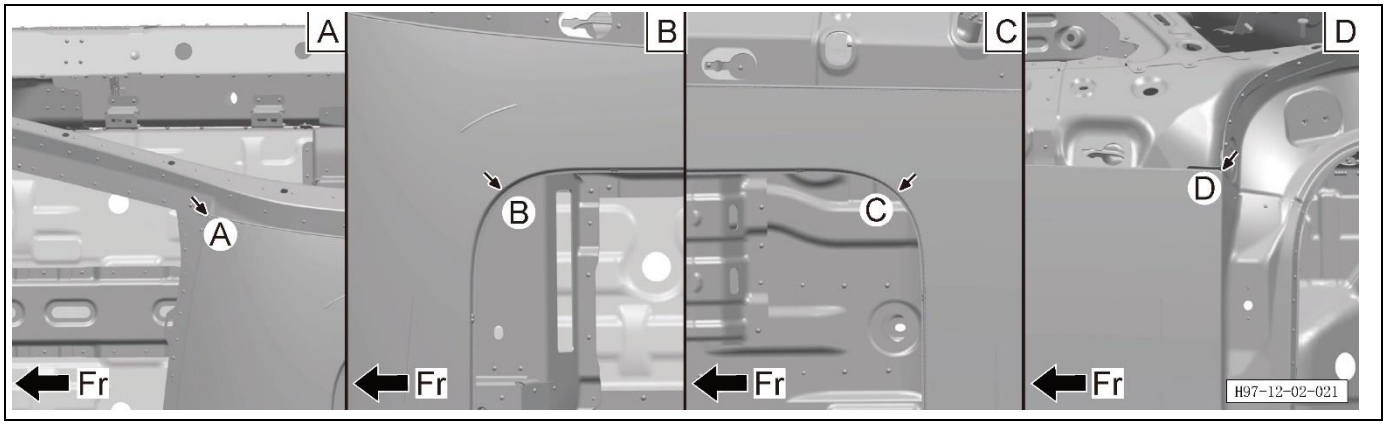
3D distance



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

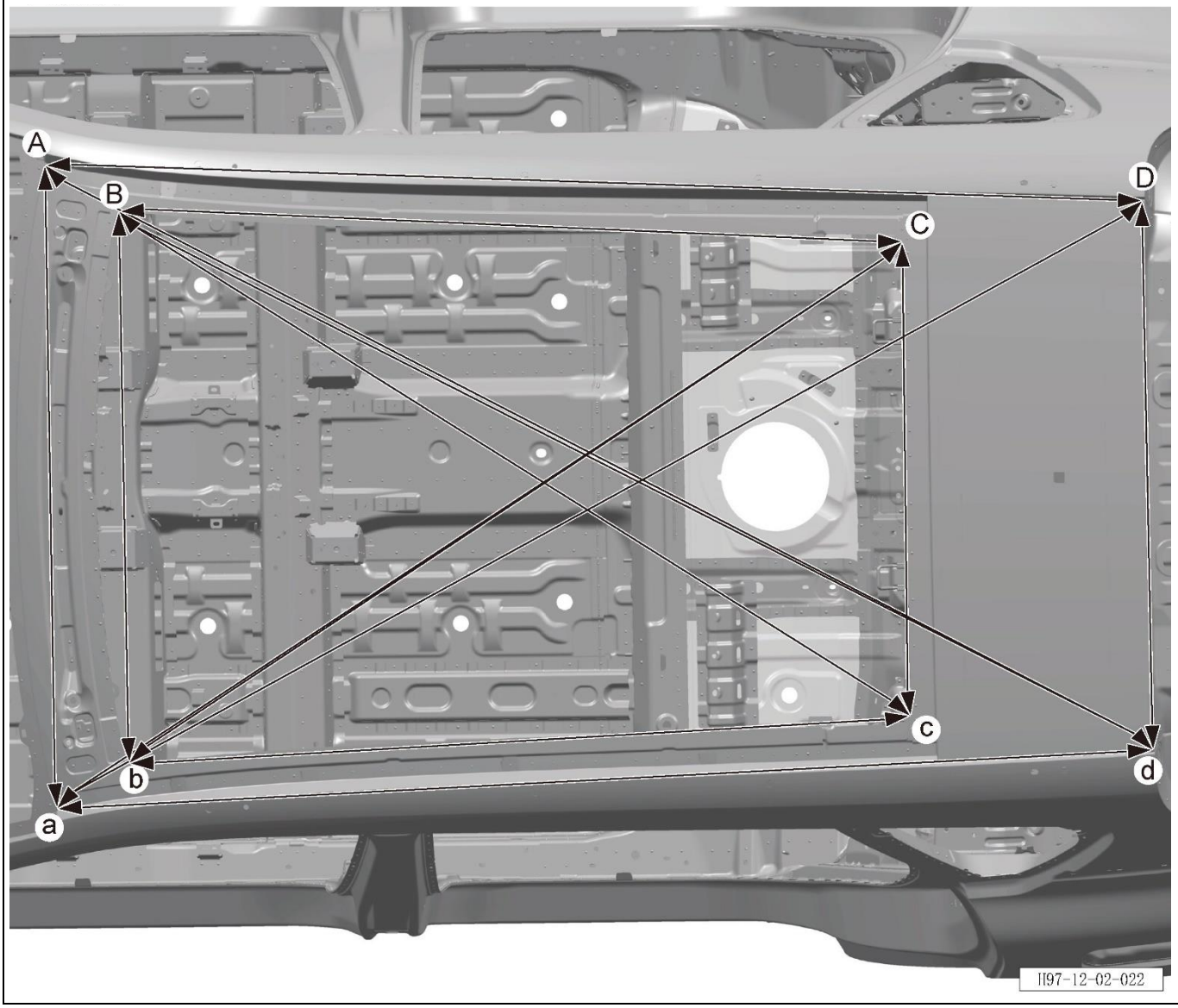
Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1201	A-D	2032	A-d	2310	a-c	1817
a-D	2310	a-d	2032	B-b	817	B-C	1280
B-c	1528	B-d	2029	b-C	1528	b-c	1280
C-c	852	D-d	1006	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Roof sharp corner	—	B, b	Sunroof opening angle position	—
C, c	Sunroof opening angle position	—	D, d	Roof sharp corner	—

Body top (with moonroof)

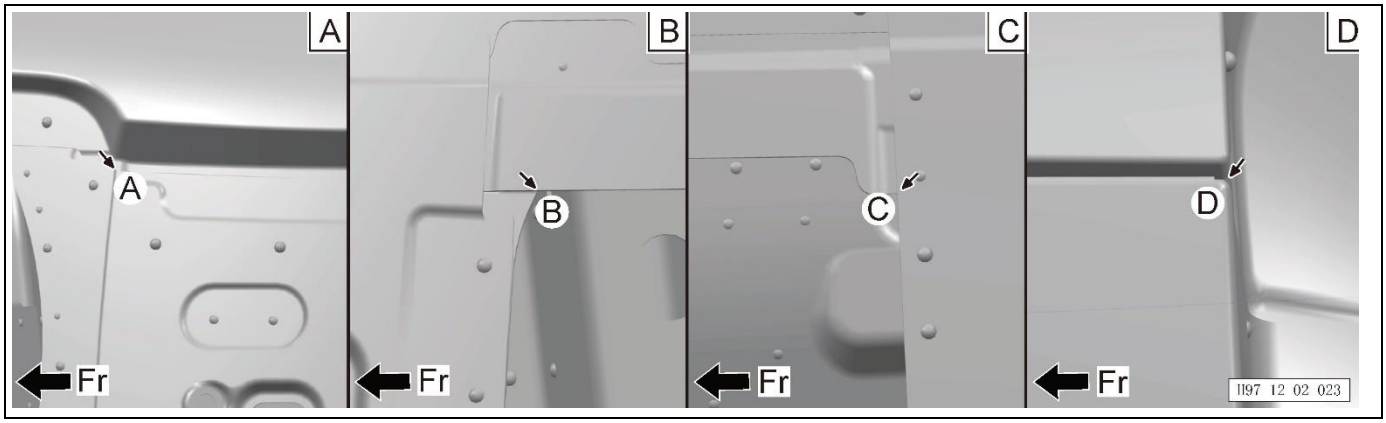
3D distance



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

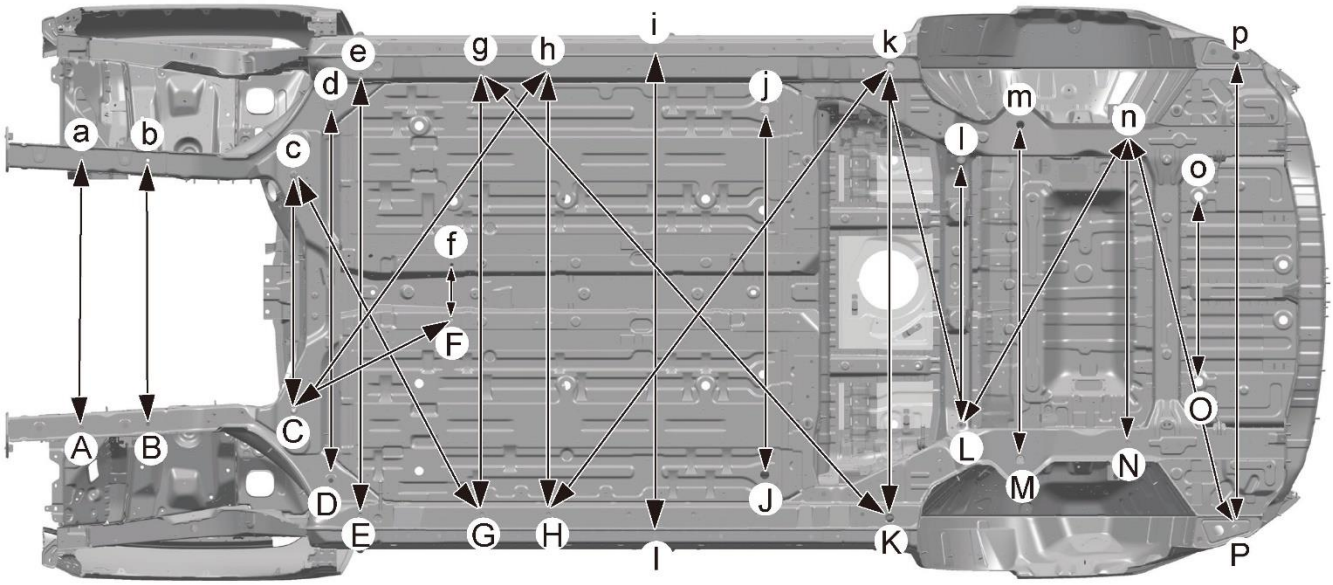
Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	1176	A-D	2035	A-d	2307	a-c	1895
a-D	2307	a-d	2035	B-b	1014	B-C	1452
B-c	1729	B-d	2142	b-C	1729	b-c	1452
C-c	870	D-d	1006	-	-	-	-



Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Roof sharp corner	—	B, b	Sunroof glass top opening angle position	—
C, c	Sunroof glass top opening angle position	—	D, d	Roof sharp corner	—

Underbody (REV body)

3D distance

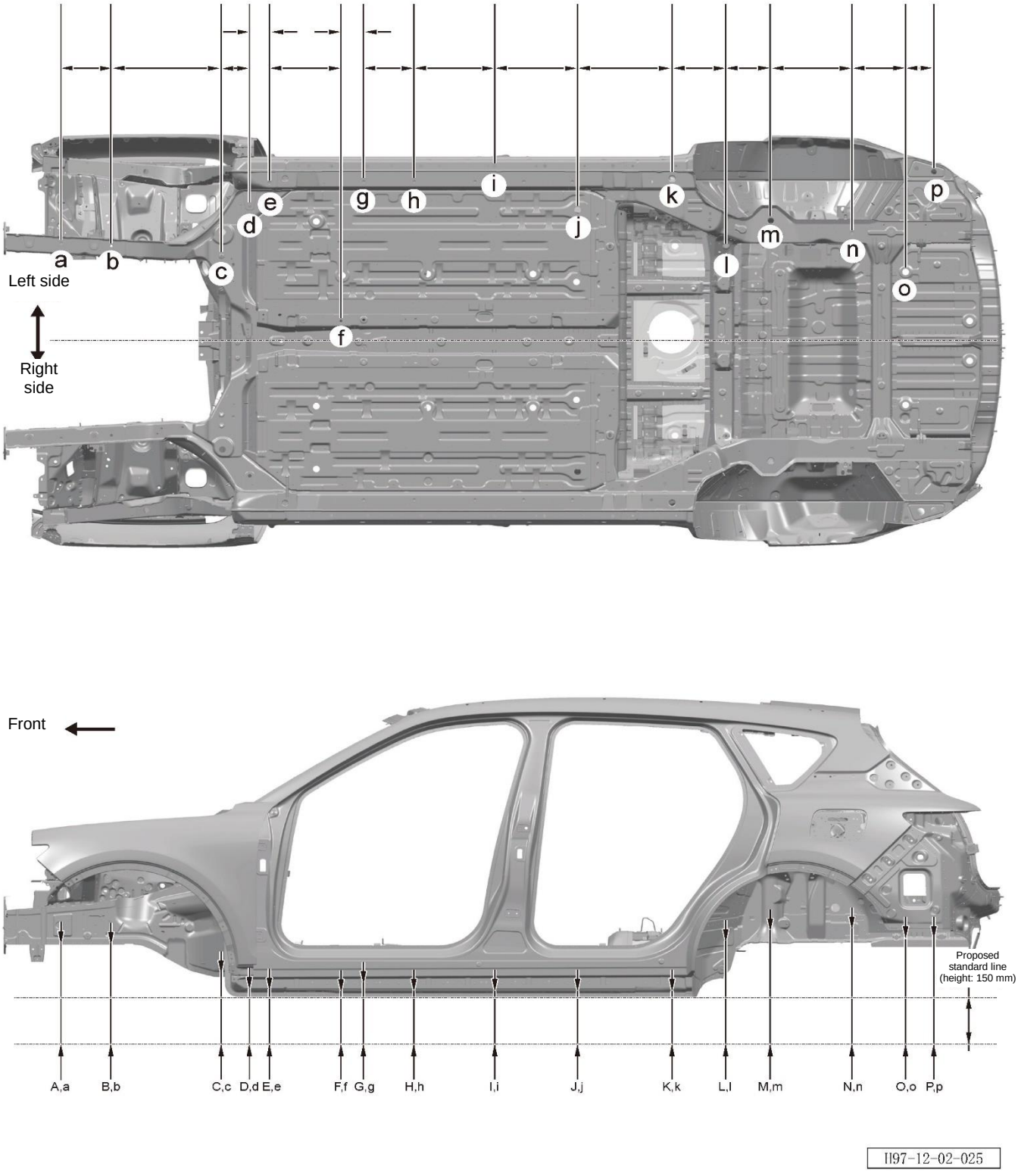


Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	910	B-b	886	C-c	790	C-F	610
C-h	1425	c-G	1303	D-d	1260	E-e	1485
F-f	182	G-g	1485	g-K	2029	H-h	1485
H-k	1885	I-i	1632	J-j	1220	K-k	1514
k-L	1242	L-l	887	L-n	1101	M-m	1120
N-n	1008	n-P	1344	O-o	621	P-p	1578

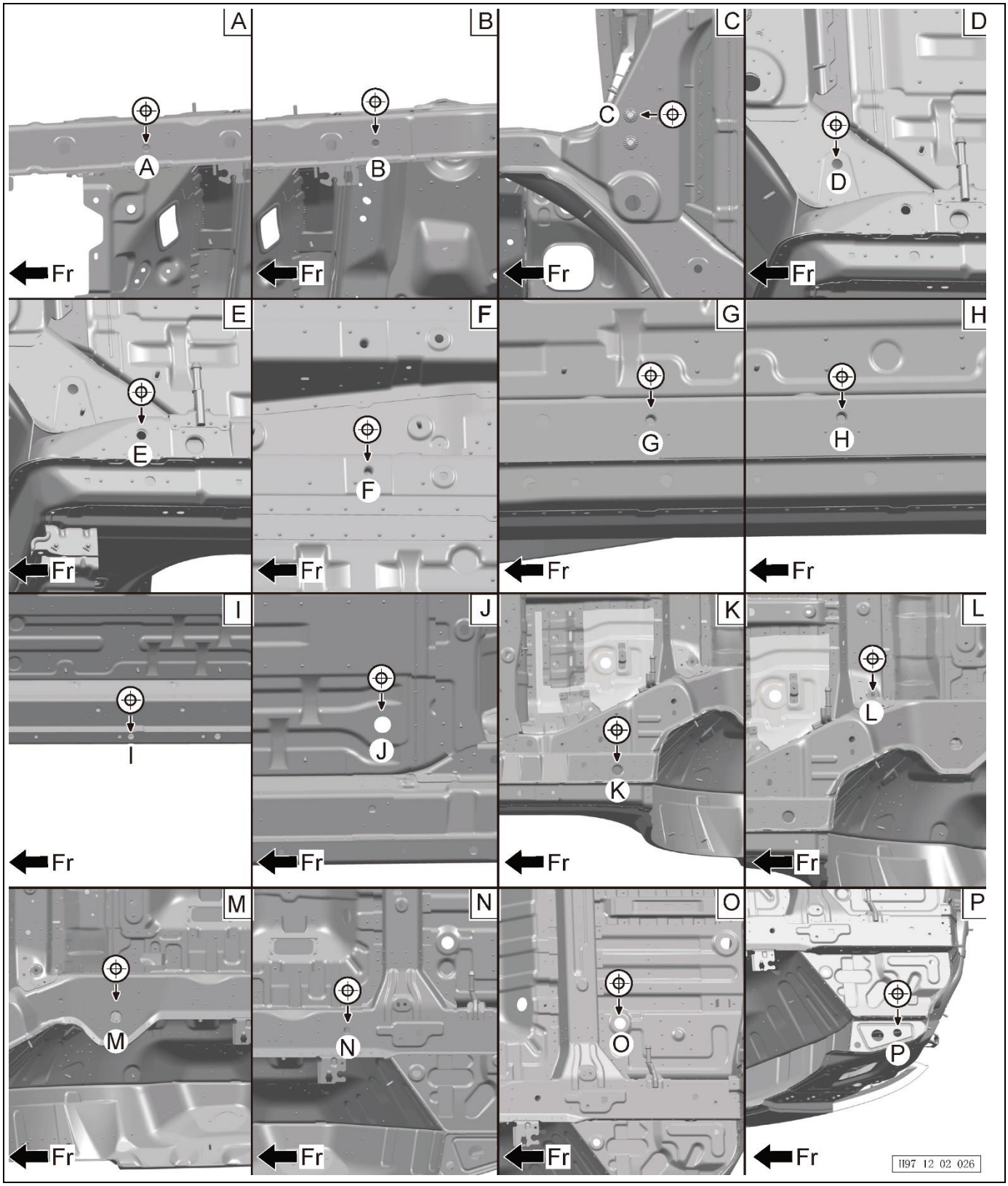
2D distance



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).
- The 2D distance is the horizontal projected distance between the measurement points.

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
a-b	222	b-c	489	c-d	76	d-e	49
e-f	404	f-g	101	g-h	224	h-i	356
i-j	368	j-k	419	k-l	239	l-m	200
m-n	360	n-o	236	o-p	124	-	-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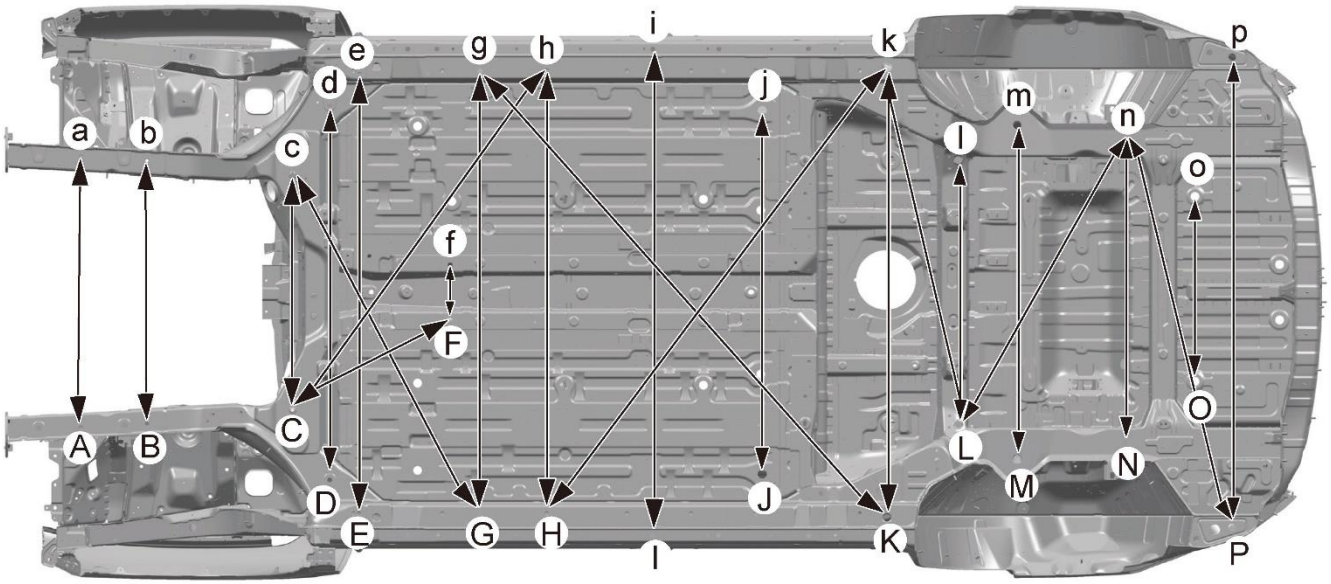
Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Front subframe mounting hole	φ14	B, b	Front subframe mounting hole	φ14
C, c	Front suspension rear mounting threaded pipe	φ12	D, d	Side member middle section connecting plate process hole	φ16
E, e	Door sill front support plate process hole	φ14	F, f	Middle channel lower reinforcement connecting plate process hole	φ14
G, g	Door sill inner plate process hole	φ14	H, h	Door sill inner plate process hole	φ14
I, i	Door sill reinforcement beam process hole	φ16	J, j	Front floor process hole	φ30
K, k	Door sill side member rear section reinforcement plate process hole	φ25	L, l	Fuel tank rear lifting lug cross member process hole	φ10
M, m	Rear floor side member reinforcement plate process hole	φ26	N, n	Rear suspension rear mounting reinforcement plate process hole	φ16
O, o	Rear floor rear section process hole	φ30	P, p	Sealing plate process hole	φ25

Underbody (EV body)

3D distance

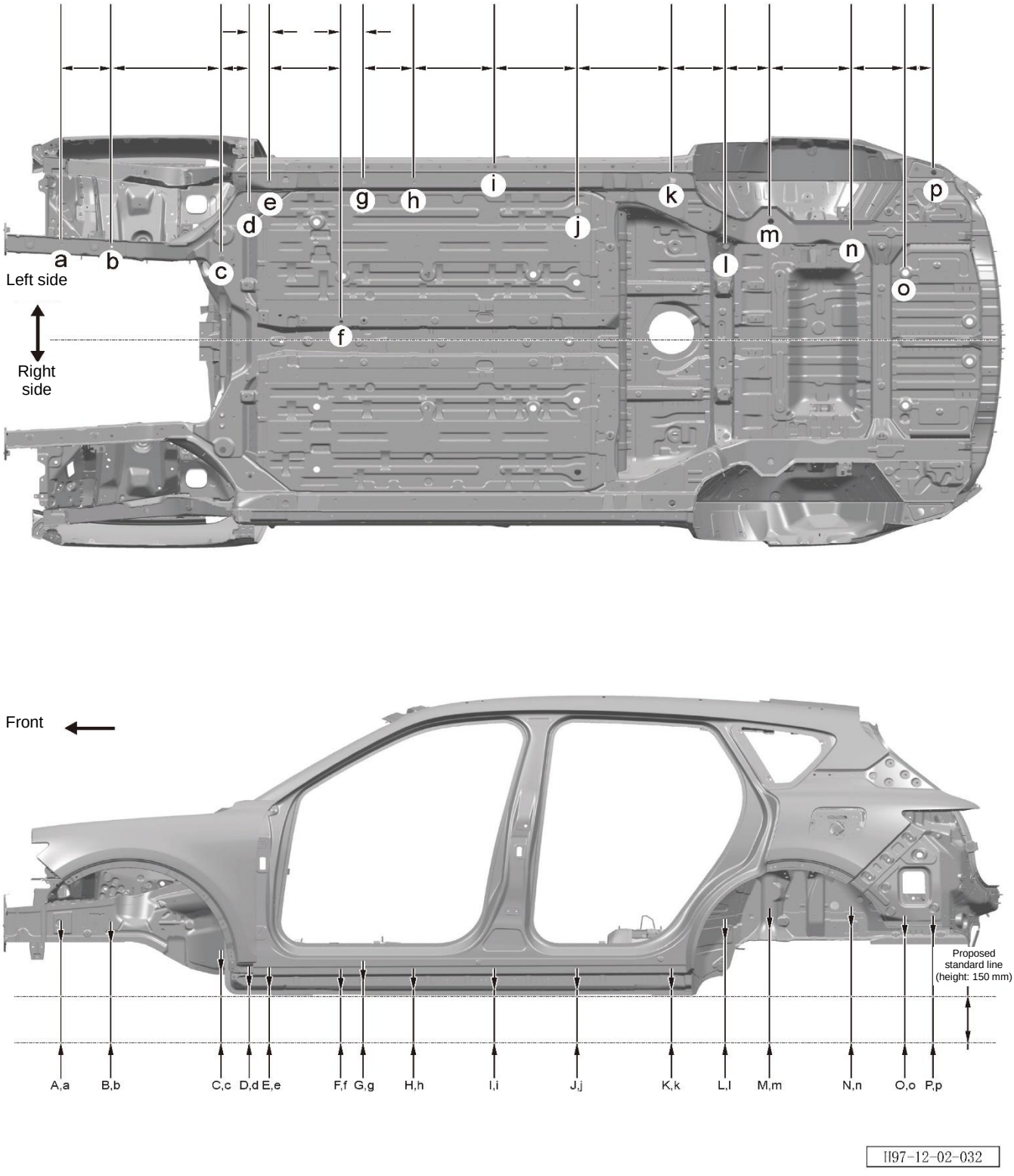


Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
A-a	910	B-b	886	C-c	790	C-F	610
C-h	1425	c-G	1303	D-d	1260	E-e	1485
F-f	182	G-g	1485	g-K	2029	H-h	1485
H-k	1885	I-i	1632	J-j	1220	K-k	1514
k-L	1242	L-l	887	L-n	1101	M-m	1120
N-n	1008	n-P	1344	O-o	621	P-p	1578

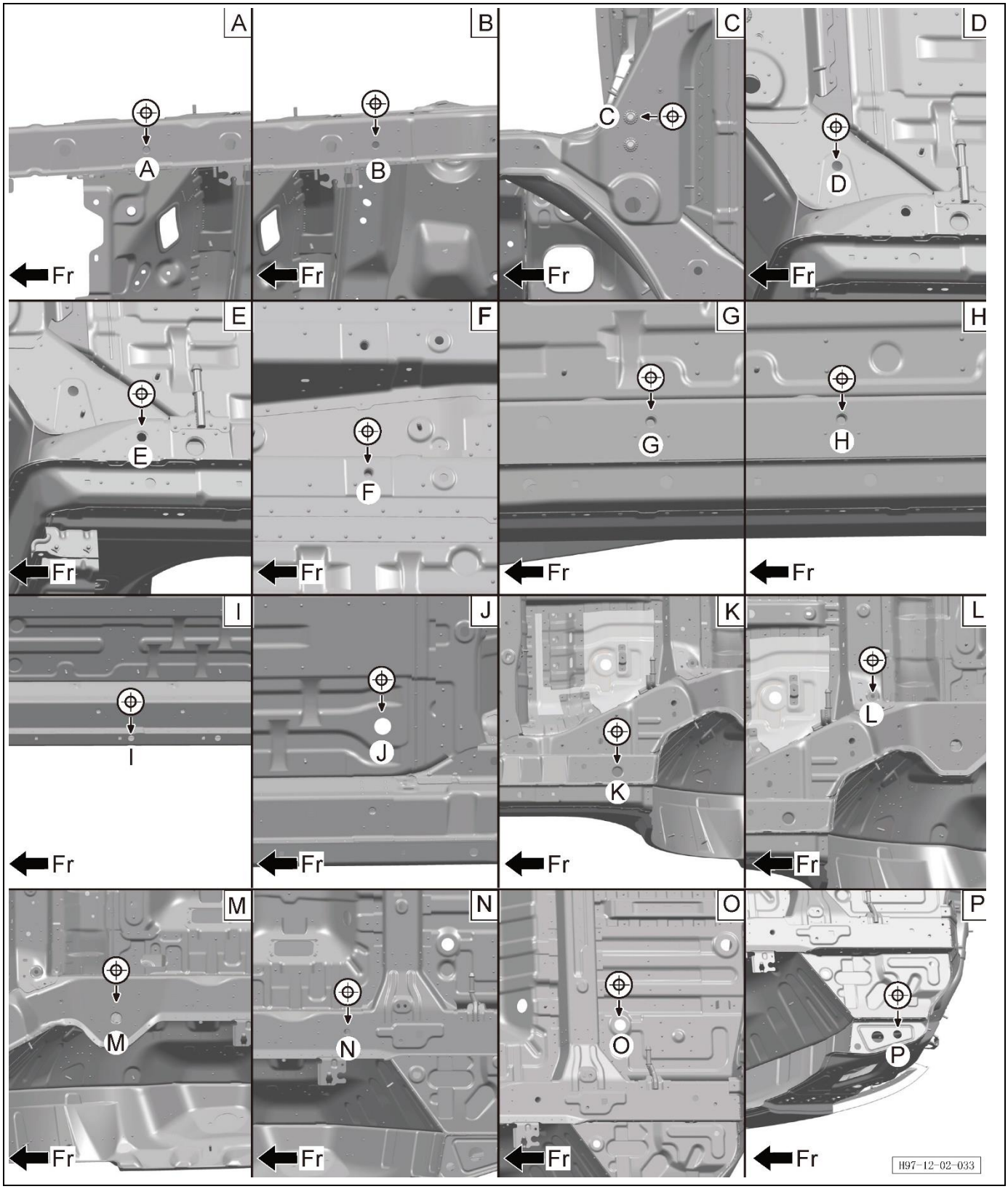
2D distance



Note:

- Symbols in capital letters refer to the right side of the body, and symbols in lower case letters refer to the left side of the body (looking forward from the rear of the vehicle).
- The 2D distance is the horizontal projected distance between the measurement points.

Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)	Measuring position	Dimension (mm)
a-b	222	b-c	489	c-d	76	d-e	49
e-f	404	f-g	101	g-h	224	h-i	356
i-j	368	j-k	419	k-l	239	l-m	200
m-n	360	n-o	236	o-p	124	-	-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Point symbol	Position	Hole diameter (mm)	Point symbol	Position	Hole diameter (mm)
A, a	Front subframe mounting hole	φ14	B, b	Front subframe mounting hole	φ14
C, c	Front suspension rear mounting threaded pipe	φ12	D, d	Side member middle section connecting plate process hole	φ16
E, e	Door sill front support plate process hole	φ14	F, f	Middle channel lower reinforcement connecting plate process hole	φ14
G, g	Door sill inner plate process hole	φ14	H, h	Door sill inner plate process hole	φ14
I, i	Door sill reinforcement beam process hole	φ16	J, j	Front floor process hole	φ30
K, k	Door sill side member rear section reinforcement plate process hole	φ25	L, l	Fuel tank rear lifting lug cross member process hole	φ10
M, m	Rear floor side member reinforcement plate process hole	φ26	N, n	Rear suspension rear mounting reinforcement plate process hole	φ16
O, o	Rear floor rear section process hole	φ30	P, p	Sealing plate process hole	φ25

12.1.6 Sealing and rust prevention

12.1.6.1 Precautions for rust prevention

General requirements and instructions for application of body anti-rust sealant:

- The body anti-rust sealant is mainly used to seal the body so as to prevent the penetration of liquid and impurities and improve the corrosion resistance of the body.

- All welds that need to be sealed are indicated by thick lines; for gaps that are difficult to identify and need to be sealed, cross-sectional diagrams should be provided for illustration.

- The sealant shall be applied continuously without omissions and it shall seal the welds completely while maintaining aesthetics.

- The performance of the sealant used must conform to technical standards concerning relevant materials.

Observe the following conditions when applying weld sealant:

1. Follow the instructions of sealant manufacturers.

2. Clean the area to be sealed with degreaser before applying weld sealant.

3. Make sure the sealant is visible when the parts being sealed are in the correct position.

4. When applying sealant to engine compartment, front/rear floor holes and opening slots, etc., make sure the appearance of the sealant is as consistent with the original one as possible.

5. Remove the sealant at stops until the R angle position.

6. When removing the sealant at positions having matching relationship, the allowable tolerance of the starting and ending points is 0/+10 mm.

7. It is required that no sealant shall remain within 10 mm from the edge of the hole/stud at stud/bolt and mounting hole positions.

8. For holes having a size larger than 3 mm×3 mm, it is allowed to apply finger pressing sealant as the case may be if process permits.

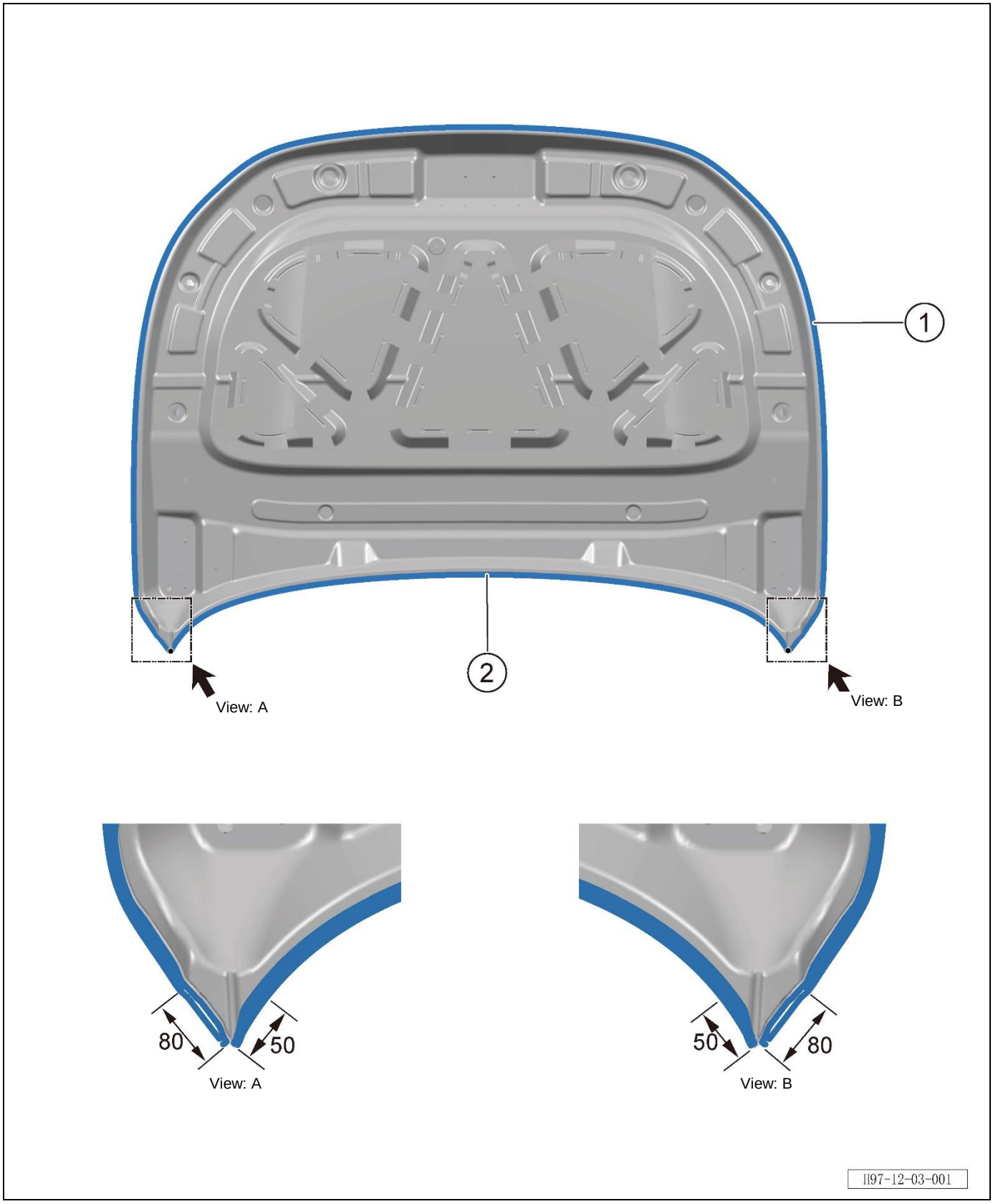
9. Sealant cracks are allowed on underfloor positions providing they do not affect the performance.

12.1.6.2 Definition of gluing dot symbol

Symbol	Definition
•	Sealant starting and ending points
●	Special sealant application point

12.1.6.3 Body seal area

Applying sealant to engine hood on body



Essentials:

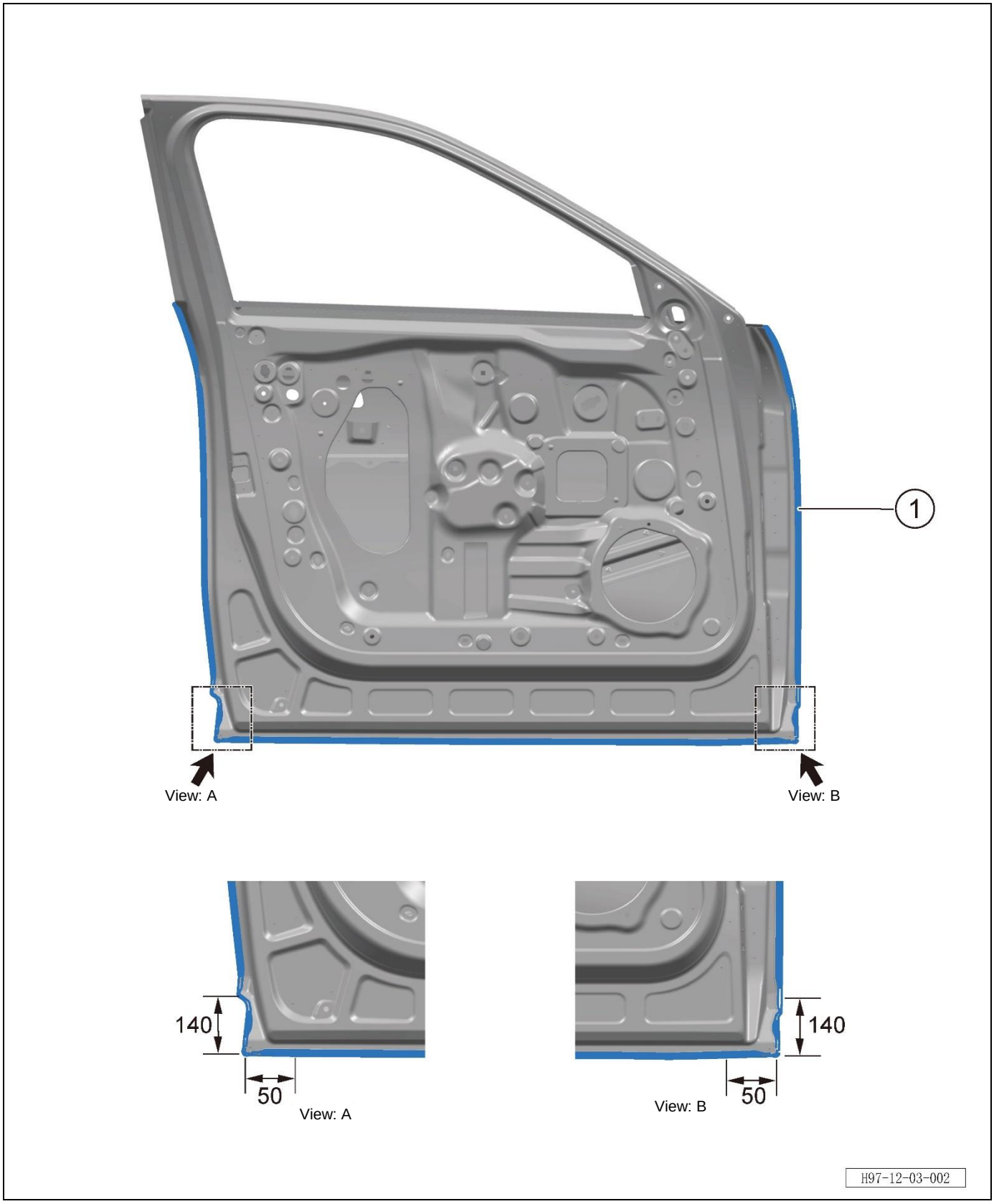
- Apply sealant to sealing positions at the edge of the engine hood with a flat-tube dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

- Note the length (mm) of the sealant to be removed at the marked position in views A and B.

Technical parameters of sealant application on engine hood

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Hood inner plate	-	Hood outer plate	1.81		1.81		●	●	Appearance sealant
2	Hood inner plate	-	Hood outer plate	1.64		1.64		●	●	Appearance sealant

Applying sealant to front door area



Essentials:

- The left side and right side are symmetric; the picture is only shown for left side which can be generally referred to when it comes to coating on right side.

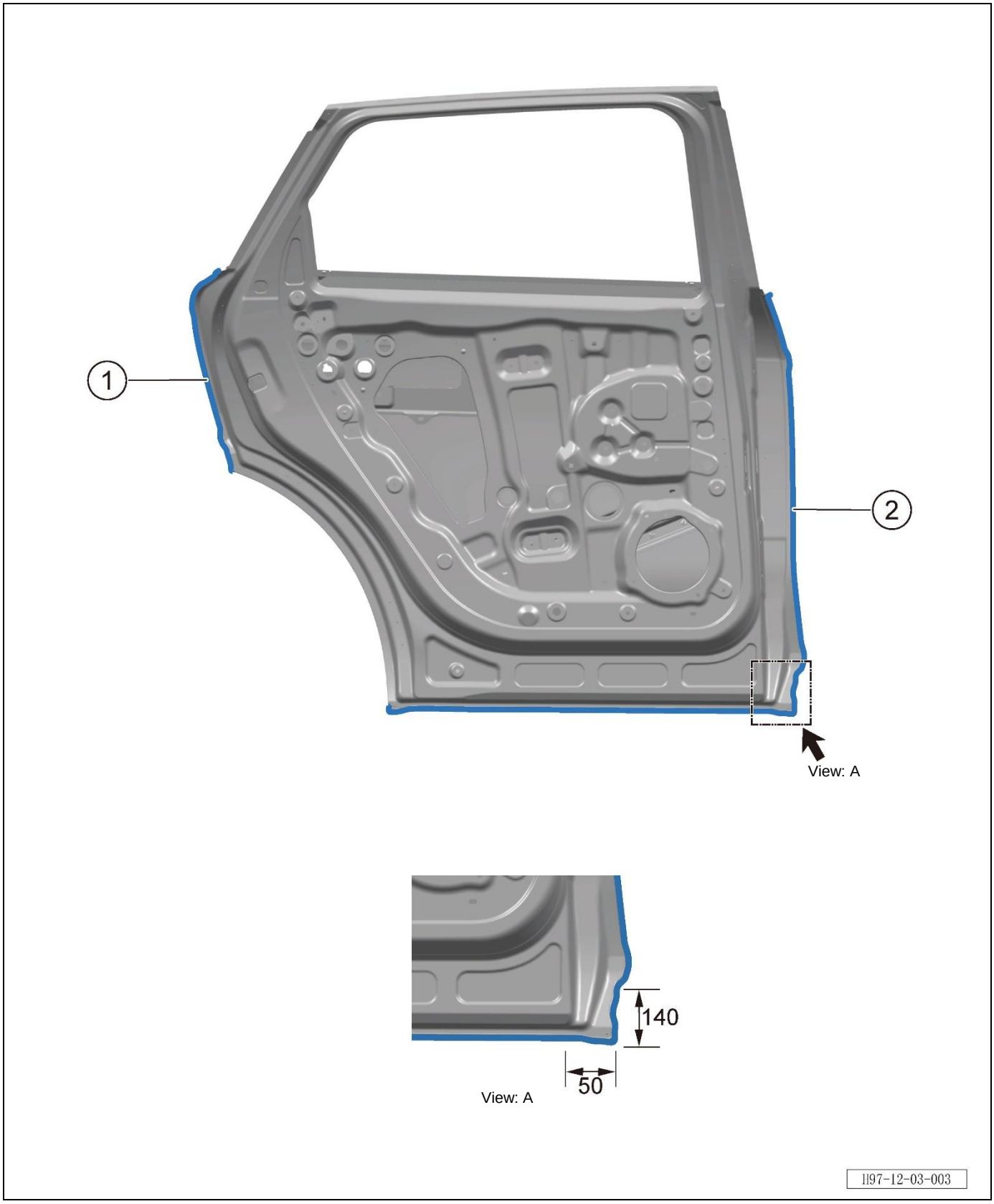
- Use a flat-nosed straight gun to apply sealant to door folding seam. Thereafter, use a scraper to scrape the joint of two strips and put scrapped sealant on stacked gauze. The sealant applied on joints shall be smooth and natural without residue sealant at surroundings. Use an elbow tip and long nose gun to seal the upper part of the door as shown in the figure.

- Note the length (mm) of the sealant to be removed at the marked position in views A and B.

Technical parameters of sealant application in front door area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Front door outer plate	-	Front door inner plate	2.88	2.88	5.76		●	●	Appearance sealant

Applying sealant to rear door area



Essentials:

- The left side and right side are symmetric; the picture is only shown for left side which can be generally referred to when it comes to coating on right side.

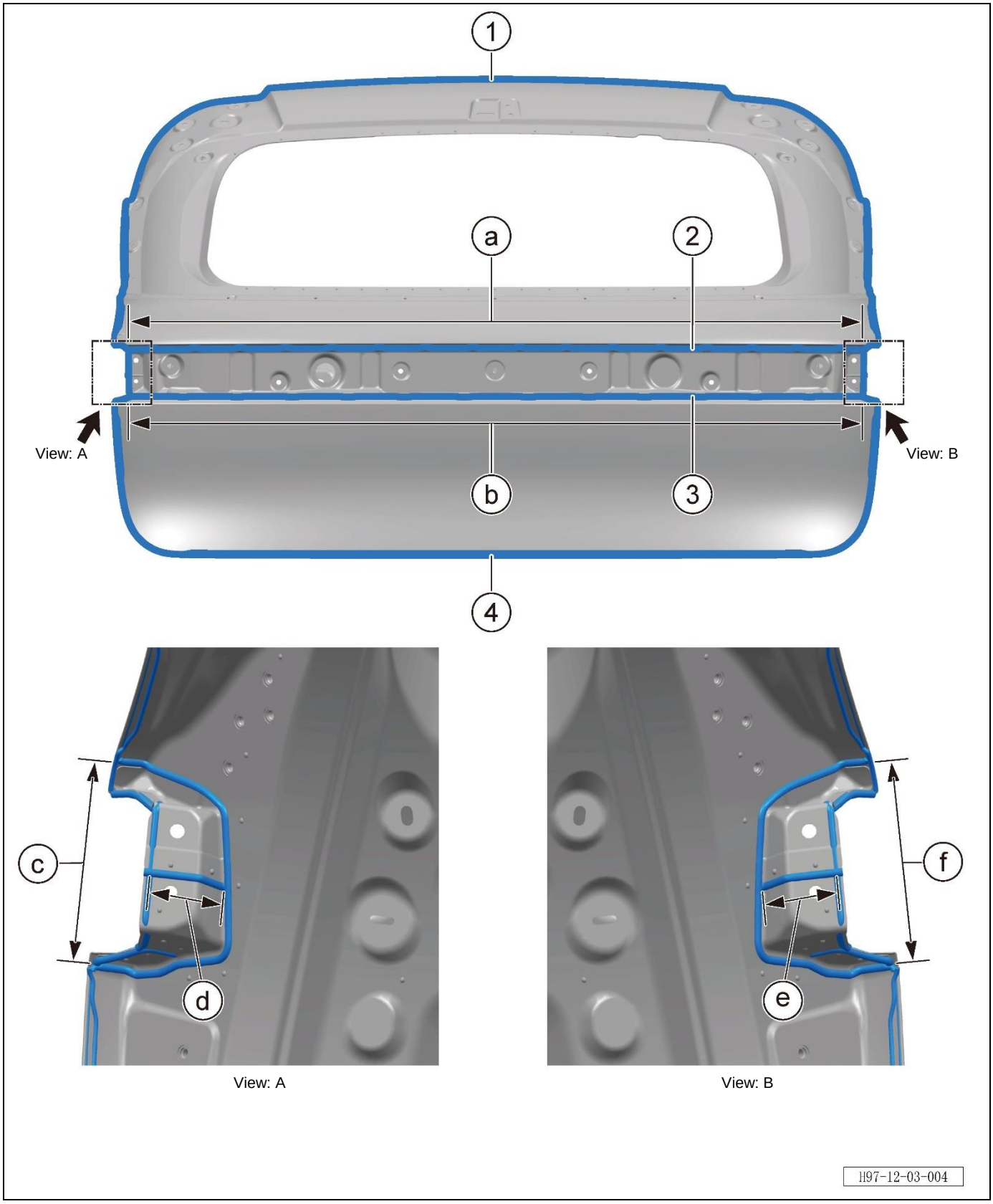
- Use a flat-nosed straight gun to apply sealant to door folding seam. Thereafter, use a scraper to scrape the joint of two strips and put scrapped sealant on stacked gauze. The sealant applied on joints shall be smooth and natural without residue sealant at surroundings.

- Note the length (mm) of the sealant to be removed at the marked position in view A.

Technical parameters of sealant application in rear door area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Rear door outer plate	-	Rear door inner plate	0.50	0.50	1.00		●	●	Appearance sealant
2	Rear door outer plate	-	Rear door inner plate	1.69	1.69	3.38		●	●	Appearance sealant

Applying sealant on tailgate area



Essentials:

- Use a flat-nosed straight gun to apply sealant to tailgate folding seam. Thereafter, use a scraper to scrape the joint of two strips and put scrapped sealant on 4×40 gauze. The sealant applied on joints shall be smooth and natural without residue sealant at surroundings.

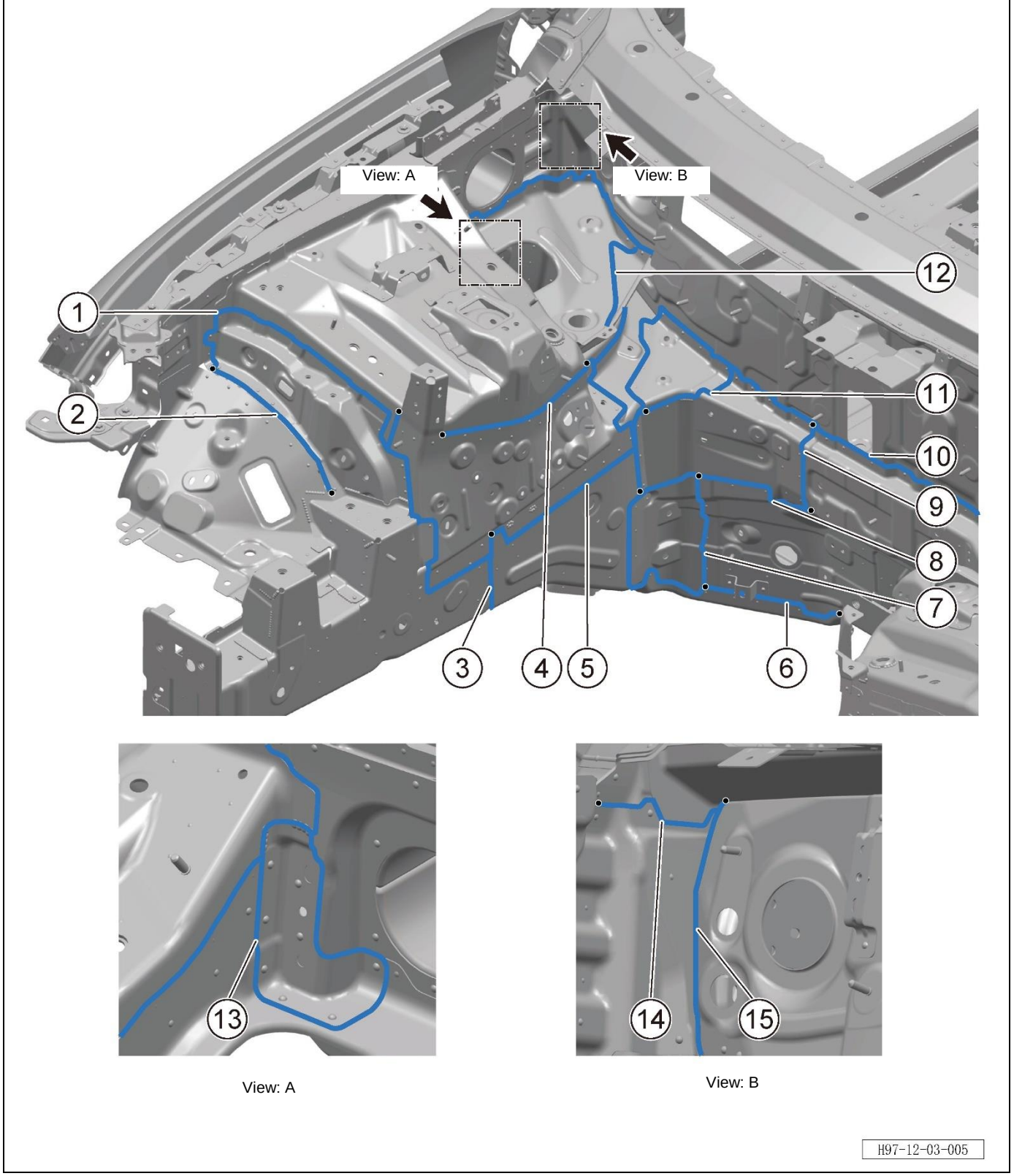
- The vertical edge as shown in dotted frame should be scrapped after applying sealant.

- The sealant on positions marked a, b, c, d, e and f as shown in the picture shall be scrapped as entire sections.

Technical parameters of sealant application in tailgate area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Tailgate upper plate	-	Tailgate inner plate	2.52		2.52		●	●	Appearance sealant
2	Tailgate upper plate	-	Tailgate middle reinforcement plate	1.38		1.38		●	●	Appearance sealant
3	Tailgate lower plate	-	Tailgate middle reinforcement plate	1.38		1.38		●	●	Appearance sealant
4	Tailgate lower plate	-	Tailgate inner plate	1.84		1.84		●	●	Appearance sealant

Applying sealant to engine compartment area



View: A

View: B

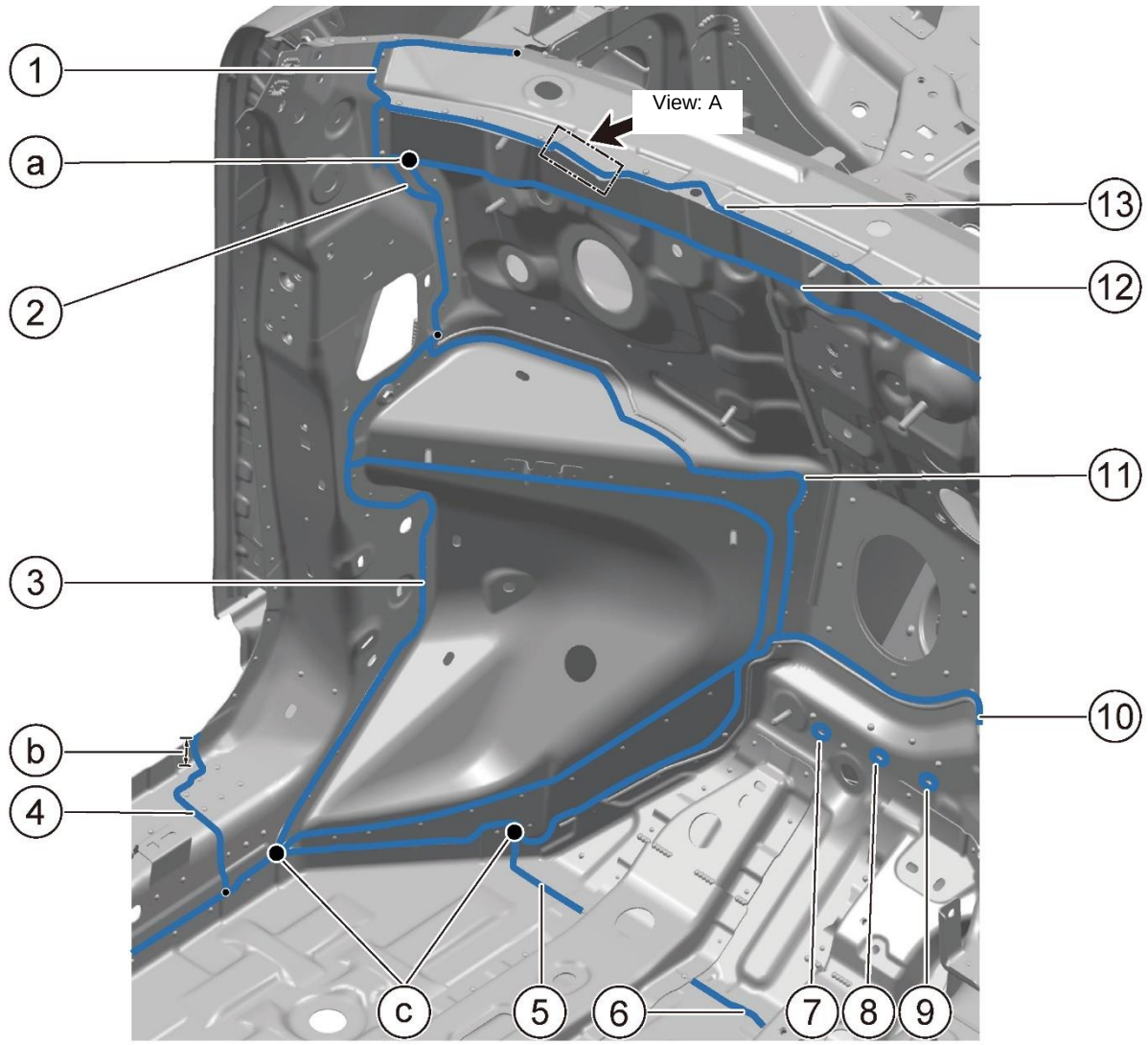
Essentials:

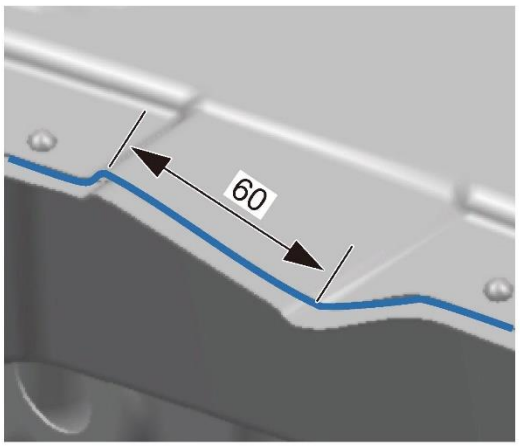
- Apply sealant to sealing positions as shown with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

Technical parameters of sealant application in engine compartment area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Front wheel housing front section	-	Front wheel housing front section reinforcement plate	0.27	0.27	0.54			●	
2	Front wheel housing middle part	-	Front side member	1.42	1.42	2.84			●	
3	Front side member front section	-	Front side member middle section	0.21	0.21	0.42			●	
4	Front side member middle section	-	Front shock absorber mounting plate	0.33	0.33	0.66			●	
5	Front side member middle section	-	Front wall cross member connecting plate	0.36	0.36	0.72			●	
6	Front wall reinforcement beam (lower)	-	Front wall upper reinforcement beam	0.38	0.38	0.76			●	
7	Front wall reinforcement beam	-	Front wall upper reinforcement beam	0.18	0.18	0.36			●	
8	Front wall cross member	-	Front wall upper reinforcement beam	1.12		1.12			●	
9	Front wall cross member	-	Front wall cross member	0.17	0.17	0.34			●	
10	Front wall cross member	-	Front wall plate	0.96		0.96			●	
11	Front wall cross member (right)	-	Front wall cross member connecting plate	0.16	0.16	0.32			●	
12	Drip channel assembly	-	Front wheel housing/front wall/ Engine compartment sealing plate	1.20	1.20	2.40			●	
13	Front shock absorber mounting reinforcement plate	-	Front shock absorber mounting plate	0.28	0.28	0.56			●	
14	Front wall plate	-	A-pillar inner plate	0.18	0.18	0.36	●	●	●	
15	Front wall drip channel	-	A-pillar inner plate	0.18	0.18	0.36	●	●	●	

Applying sealant to front wall area





View: A

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Essentials:

- Apply sealant to sealing positions as shown with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

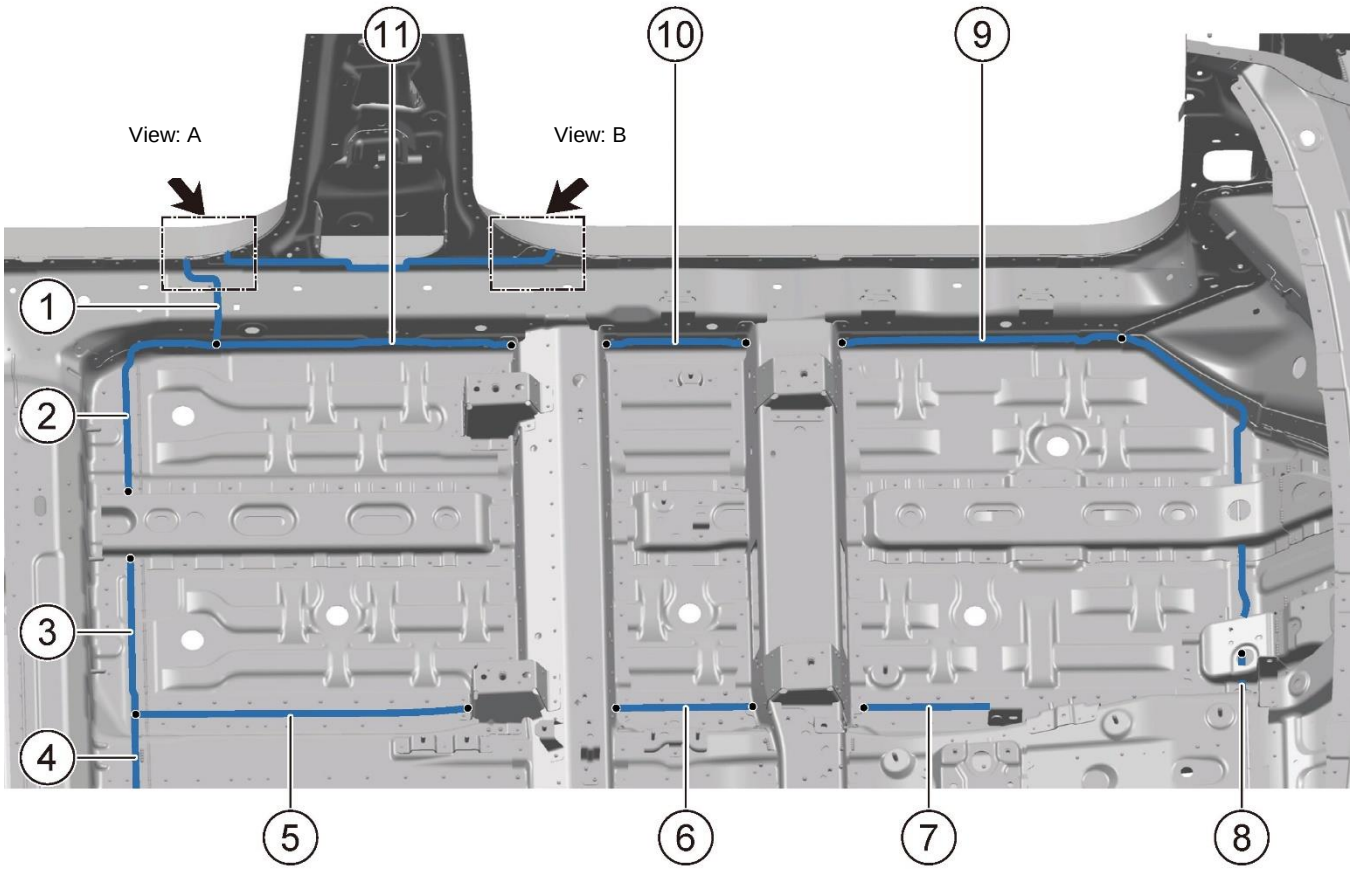
- The sealant on raise sheet metal at 5 positions on front windshield lower cover plate - front windshield drip channel and the position as shown in view A shall be scrapped; the length of each section is 60 mm.

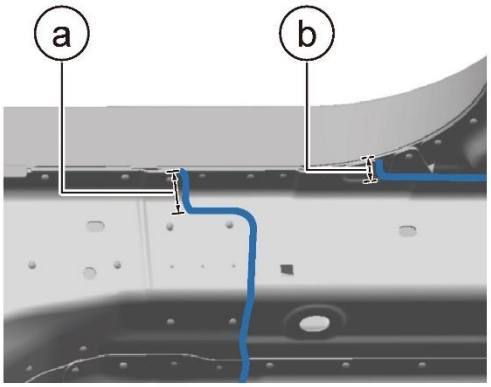
- The sealant on inner and outer welds at positions marked a and c as shown in the figure should be overlapped; the sealant on the position marked b should be scrapped.

Technical parameters of sealant application in interior front wall area

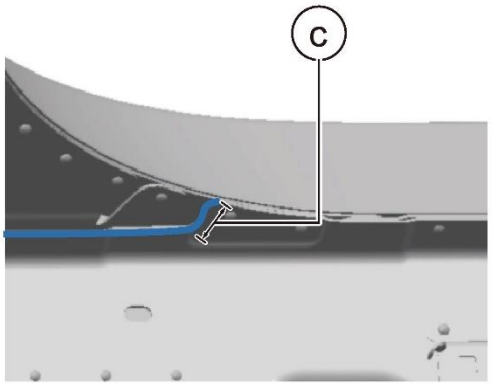
No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	A-pillar inner plate lower assembly	-	Front wall welding assembly	0.48	0.473	0.95	●	●		
2	A-pillar inner plate lower assembly	-	Engine compartment sealing plate	0.08	0.071	0.15	●	●		
3	A-pillar inner plate lower assembly	-	Side member middle section connecting plate	0.62	0.61	1.23	●	●		
4	A-pillar inner plate lower assembly	-	Door sill inner plate	0.19	0.19	0.38	●	●		
5	Front floor	-	Front wall lower plate	0.09	0.09	0.18	●	●		
6	Front floor	-	Front wall lower plate	0.08	0.08	0.16	●	●		
7	Front wall cross member	-	Front wall lower plate	0.02	0.015	0.04	●	●		
8	Front wall cross member	-	Front wall lower plate	0.02	0.015	0.04	●	●		
9	Front wall cross member	-	Front wall lower plate	0.02	0.015	0.04	●	●		
10	Front wall plate	-	Front wall lower plate	0.94		0.94	●	●		
11	Side member middle section connecting plate	-	Front wall plate	1.01	1.002	2.01	●	●		
12	Front wall plate	-	Front windshield drip channel	1.62		1.62	●	●		
13	Front windshield lower cover plate	-	Front windshield drip channel	1.62		1.62	●	●		

Applying sealant to interior front floor area





View: A



View: B

H97-12-03-007

Essentials:

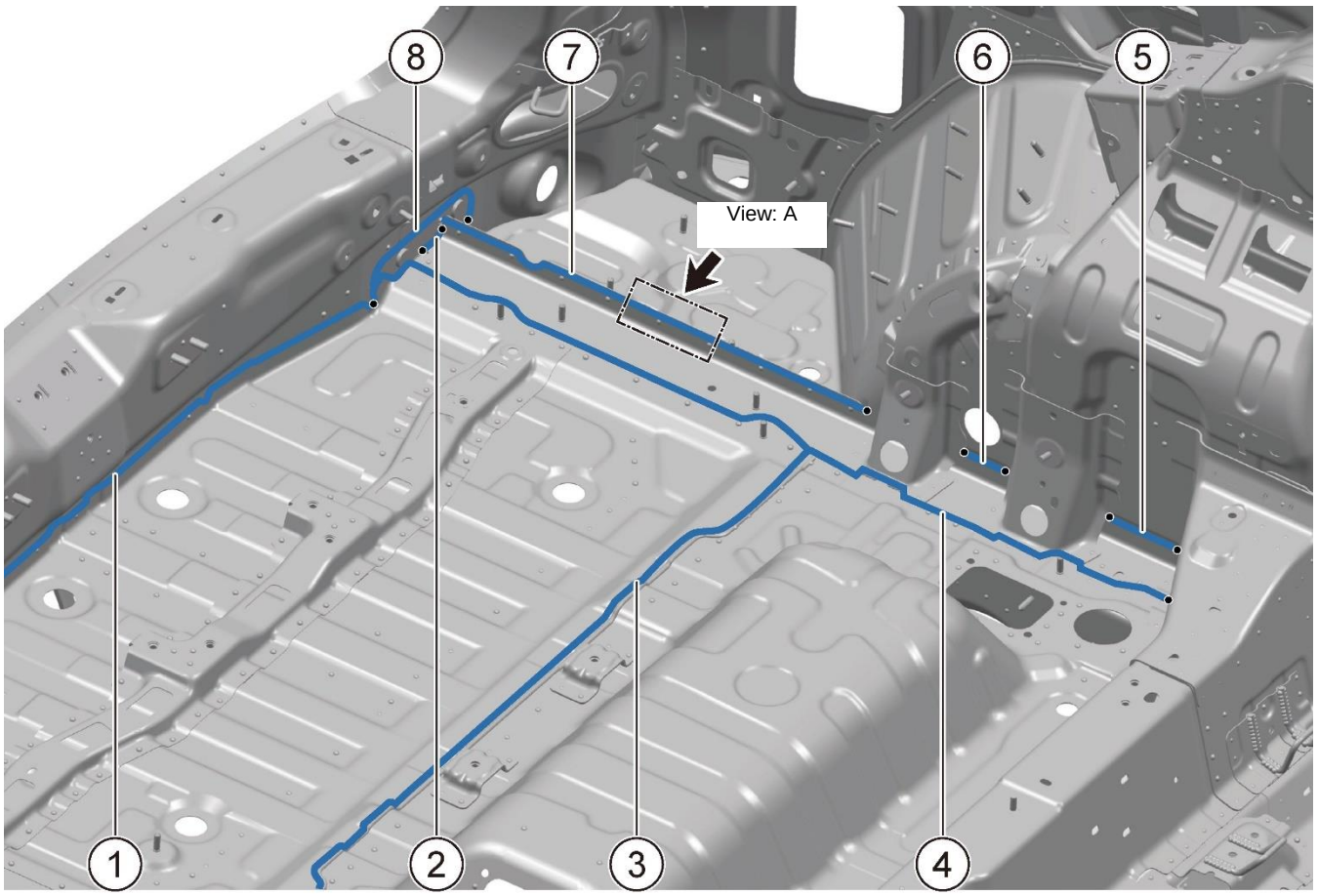
- Apply sealant to sealing positions as shown with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

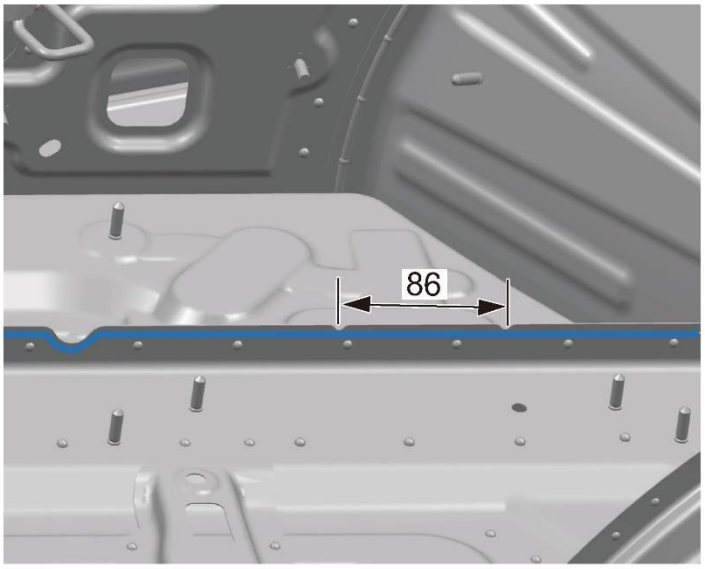
- The sealant on positions marked a, b, and c as shown in the figure should be scrapped.

Technical parameters of sealant application in interior front floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Side member	-	Door sill inner plate	0.19	0.19	0.38	●	●		
2	Front floor	-	Rear floor front reinforcement plate	0.28	0.28	0.56	●	●		
3	Front floor	-	Rear floor front reinforcement plate	0.67	0.67	1.34	●	●		
4	Floor middle channel	-	Rear floor reinforcement plate	0.4		0.4	●	●		
5	Front floor	-	Floor middle channel	0.21	0.21	0.42	●	●		
6	Front floor	-	Floor middle channel	0.42	0.42	0.84	●	●		
7	Front floor	-	Floor middle channel	0.15	0.15	0.30	●	●		
8	Floor middle channel	-	Front wall lower plate	0.64		0.64	●	●		
9	Front floor	-	Door sill inner plate	0.38	0.38	0.76	●	●		
10	Front floor	-	Door sill inner plate	0.19	0.19	0.38	●	●		
11	Central pillar inner plate	-	Door sill inner plate	0.39	0.39	0.78	●	●		

Applying sealant to interior rear floor area





View: A

H97-12-03-008

Essentials:

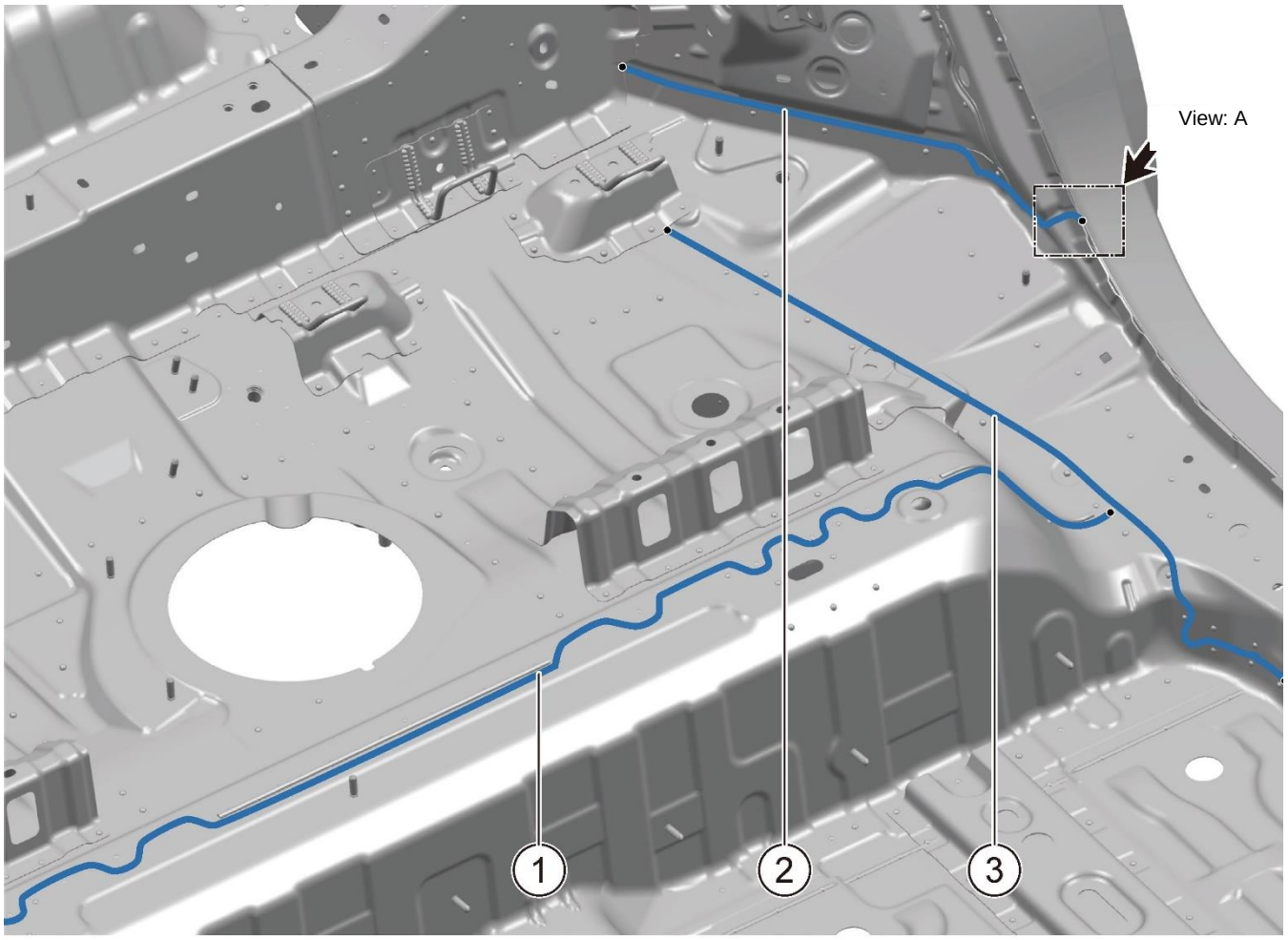
- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

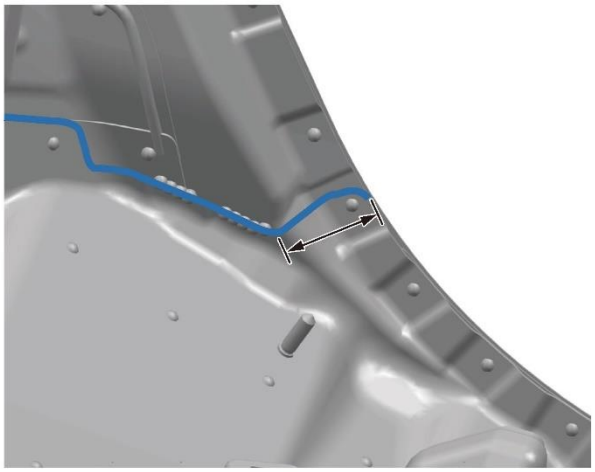
- The sealant on the marked position as shown in view A should be scrapped; its length is 86 mm; refer to characteristics of the notch for the starting and ending points.

Technical parameters of sealant application in interior rear floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Rear wall plate	-	Rear floor rear section	0.95		0.95	●	●		
2	Rear Side Member	-	Anti-collision beam connecting plate	0.1	0.1	0.20	●	●		
3	Rear motor cover	-	Rear floor rear section	0.95		0.95	●	●		
4	Rear Side Member	-	Rear floor	0.85	0.85	1.70	●	●		
5	Rear Side Member	-	Rear wheel housing inner plate	0.09	0.09	0.18	●	●		
6	Rear Side Member	-	Rear wheel housing inner plate	0.05	0.05	0.10	●	●		
7	Rear Side Member	-	Rear side member connecting plate sealing plate	0.48	0.48	0.96	●	●		
8	Rear wall plate	-	Anti-collision beam connecting plate	0.26	0.26	0.52	●	●		

Applying sealant to interior rear floor area





View: A

H97-12-03-009

Essentials:

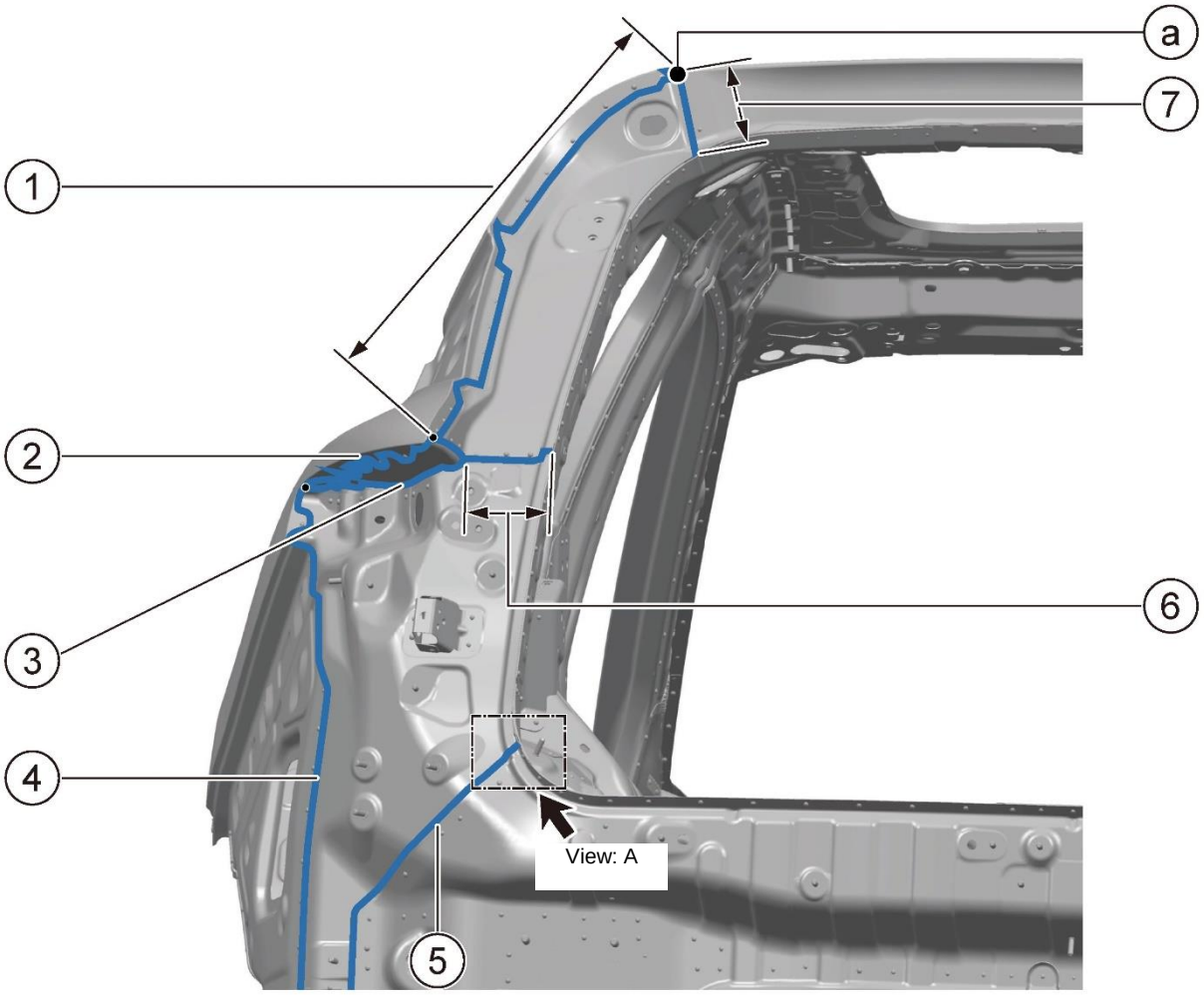
- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

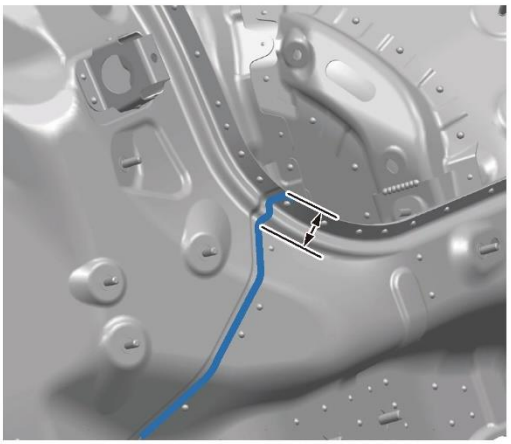
- The sealant on the marked position as shown in view A should be scrapped.

Technical parameters of sealant application in interior rear floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Rear floor	-	Rear floor reinforcement plate	2.1		2.1	●	●		
2	Rear Side Member	-	Rear wheel housing inner plate	0.42	0.42	0.84	●	●		
3	Rear Side Member	-	Rear floor	0.66	0.66	1.32	●	●		

Applying sealant to exterior upper body - (with sunroof) area





View: A

H97-12-03-010

Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

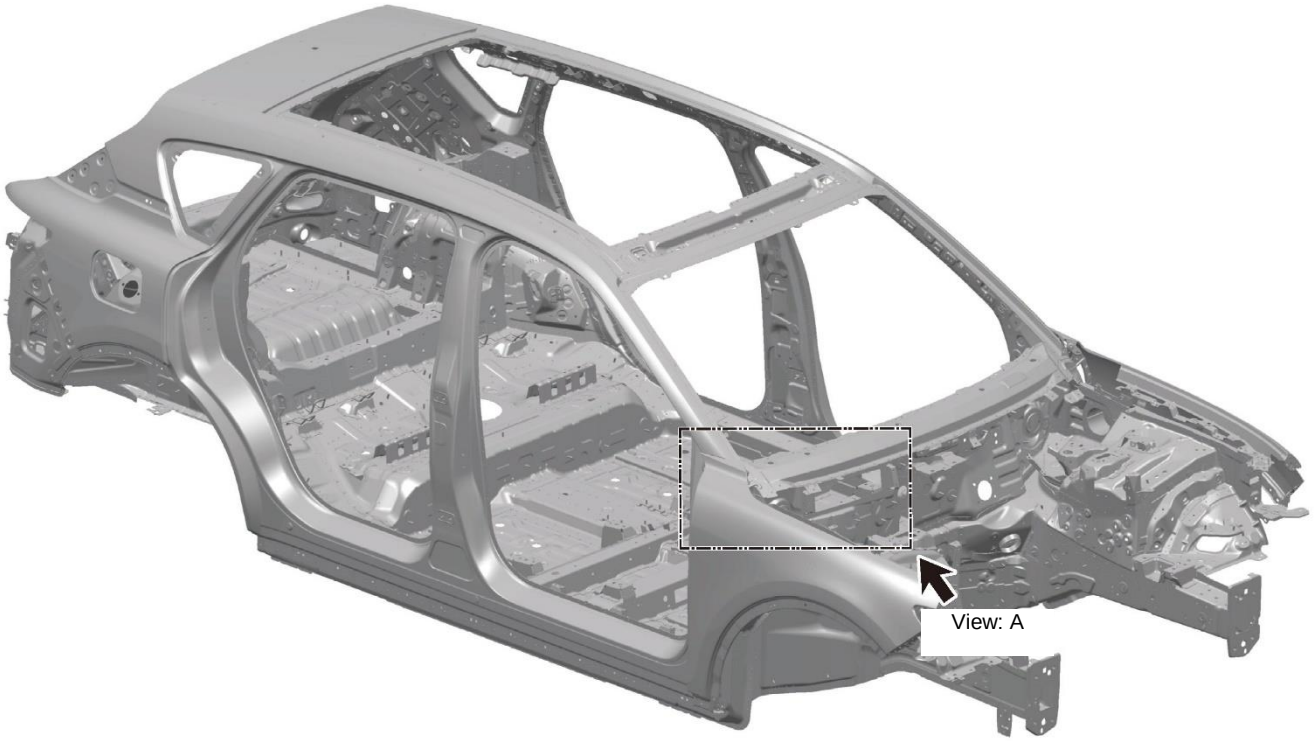
- The sealant on positions ①, ⑥ and ⑦ as shown and on marked position as shown in view A should be scrapped.

- At the marked position a as shown in the figure, laser welding should be performed for overlapping.

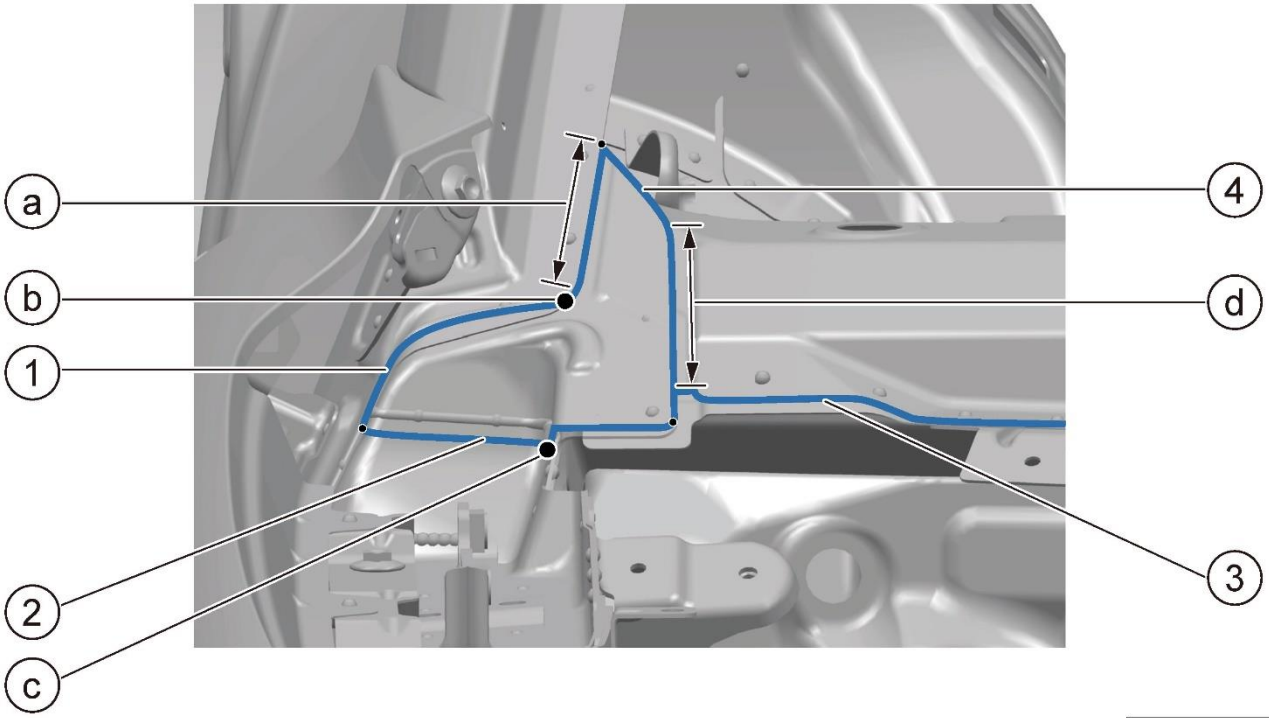
Technical parameters of sealant application in exterior upper body - (with sunroof) area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Side wall outer plate	-	Drip channel	0.80	0.80	1.60	●	●	●	Appearance sealant
2	Side wall outer plate	-	Side wall outer plate connecting plate	0.58	0.58	1.16	●	●	●	
3	Tail lamp holder	-	Side wall outer plate connecting plate	0.34	0.34	0.68	●	●	●	
4	Side wall outer plate	-	Tail lamp holder	0.61	0.61	1.22	●	●	●	
5	Rear wall plate	-	Tail lamp holder	0.37	0.37	0.74	●	●	●	
6	Drip channel	-	Tail lamp holder	0.23	0.23	0.46	●	●	●	Appearance sealant
7	Drip channel	-	Roof outer panel	0.16	0.16	0.32	●	●	●	Appearance sealant

Applying sealant to exterior upper body - (with sunroof) area



View: A



Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

- The sealant on positions marked a and d as shown in the figure should be scrapped.

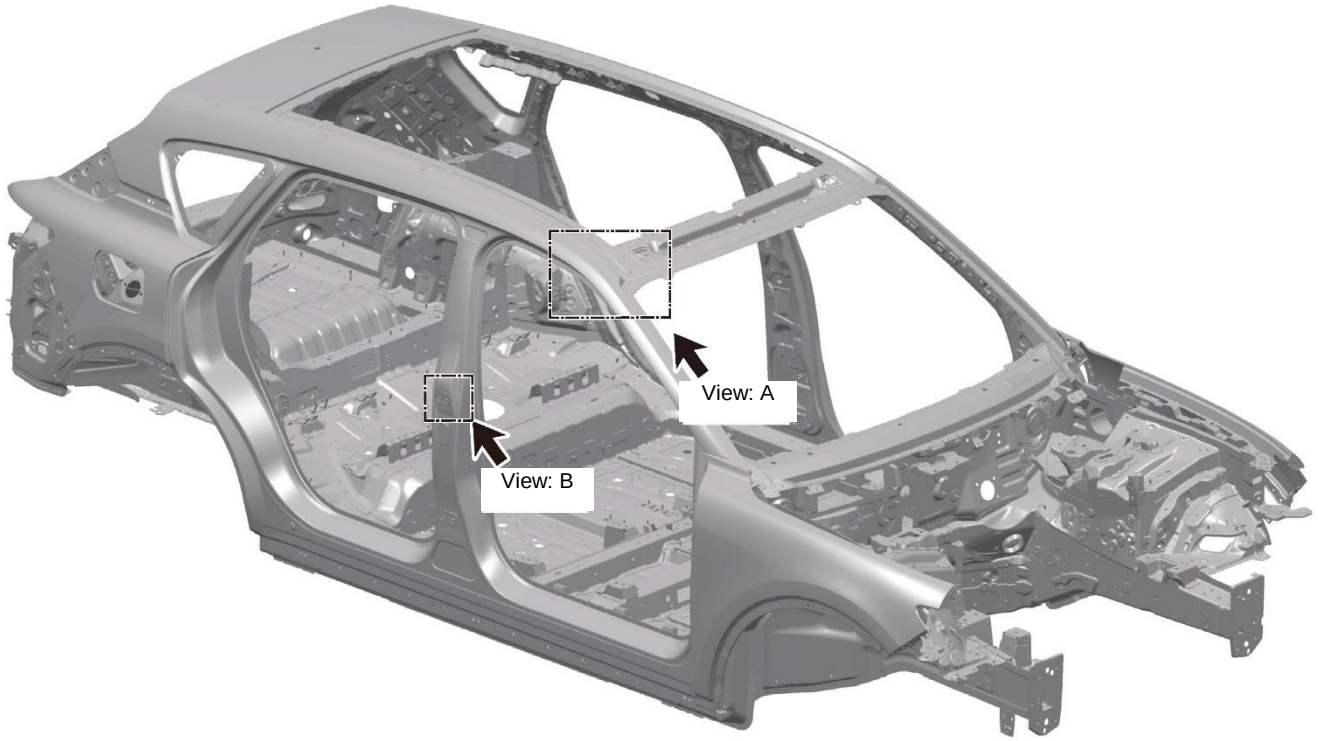
- At the marked positions b and c as shown in the figure, welding sealant should be overlapped.

- The sealant applied at positions ① and ② as shown in the figure are used to prevent against water, and it should not be scrapped and brushed because of the lack of operating space.

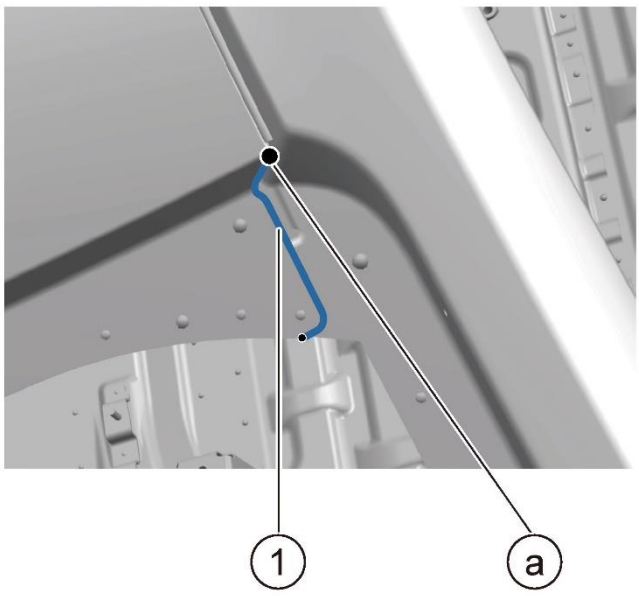
Technical parameters of sealant application in exterior upper body - (with sunroof) area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Side wall outer plate	-	A-pillar inner plate	0.19	0.19	0.38	●	●	●	
2	A-pillar frame lower reinforcement plate	-	A-pillar inner plate	0.15	0.15	0.30	●	●	●	
3	Front windshield lower cover plate	-	Front windshield drip channel	1.62		1.62	●	●	●	
4	Front windshield lower cover plate	-	A-pillar inner plate	0.15	0.15	0.30	●	●	●	

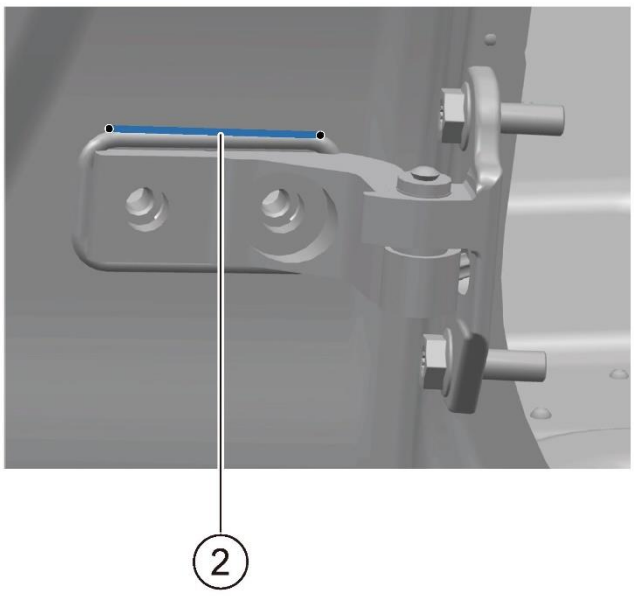
Applying sealant to exterior upper body - (with sunroof) area



View: A



View: B



H97-12-03-012

Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

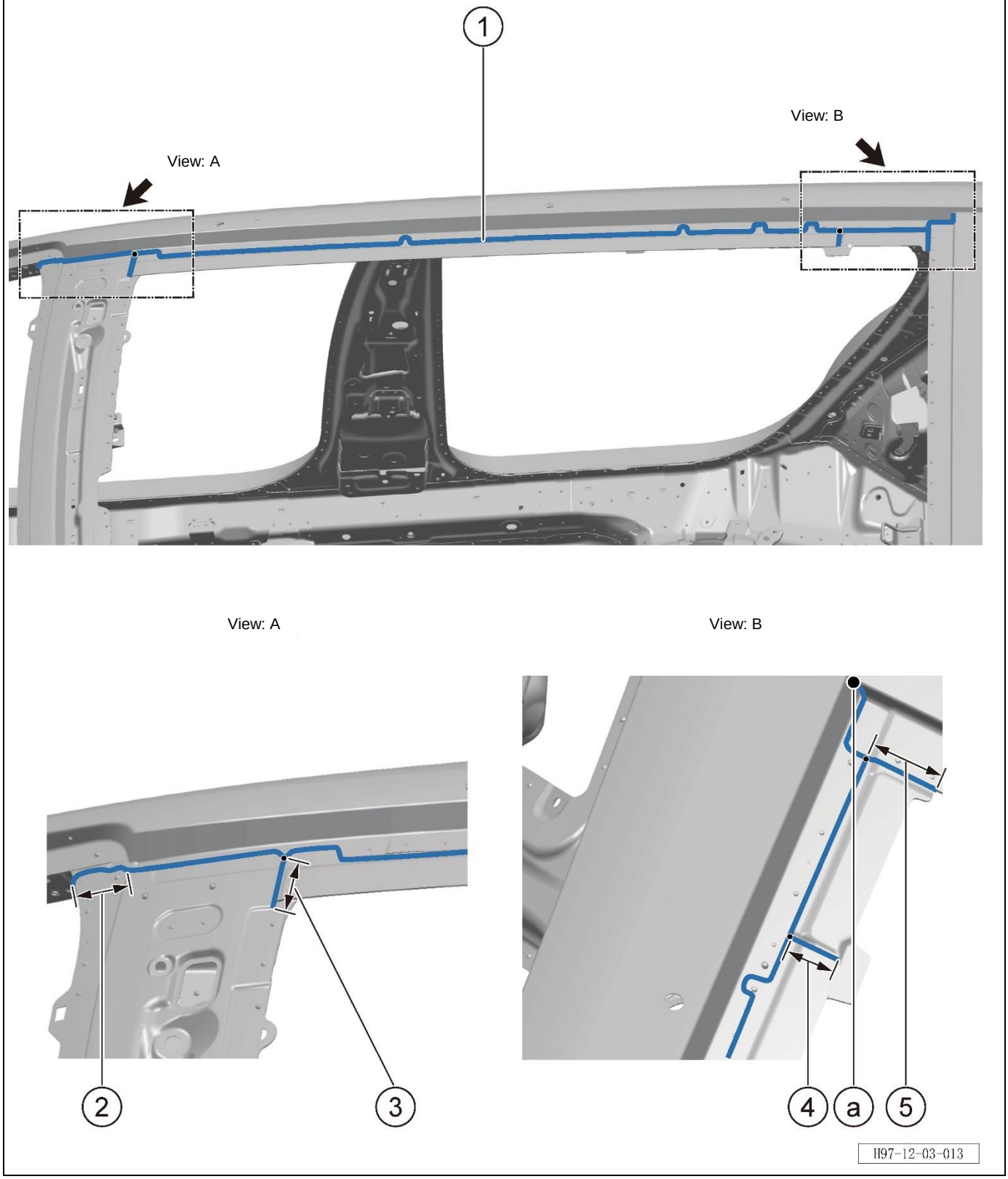
- At the marked position a as shown in the figure, laser welding should be performed for overlapping.

- The position ② as shown in the figure refers to the rear door upper hinge on which sealant is applied; this figure can be generally referred to when it comes to application of sealant to rear door lower hinge and front door upper/lower hinge.

Technical parameters of sealant application in exterior upper body - (with sunroof) area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Right side wall outer plate	-	Roof outer panel	0.07	0.07	0.14	●	●	●	
2	Side wall	-	Rear door upper hinge	0.05	0.05	0.10			●	
3	Side wall	-	Rear door lower hinge	0.06	0.06	0.12			●	
4	Side wall	-	Front door upper hinge	0.06	0.06	0.12			●	
5	Side wall	-	Front door lower hinge	0.06	0.06	0.12			●	

Applying sealant to exterior upper body - (with moonroof)



Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

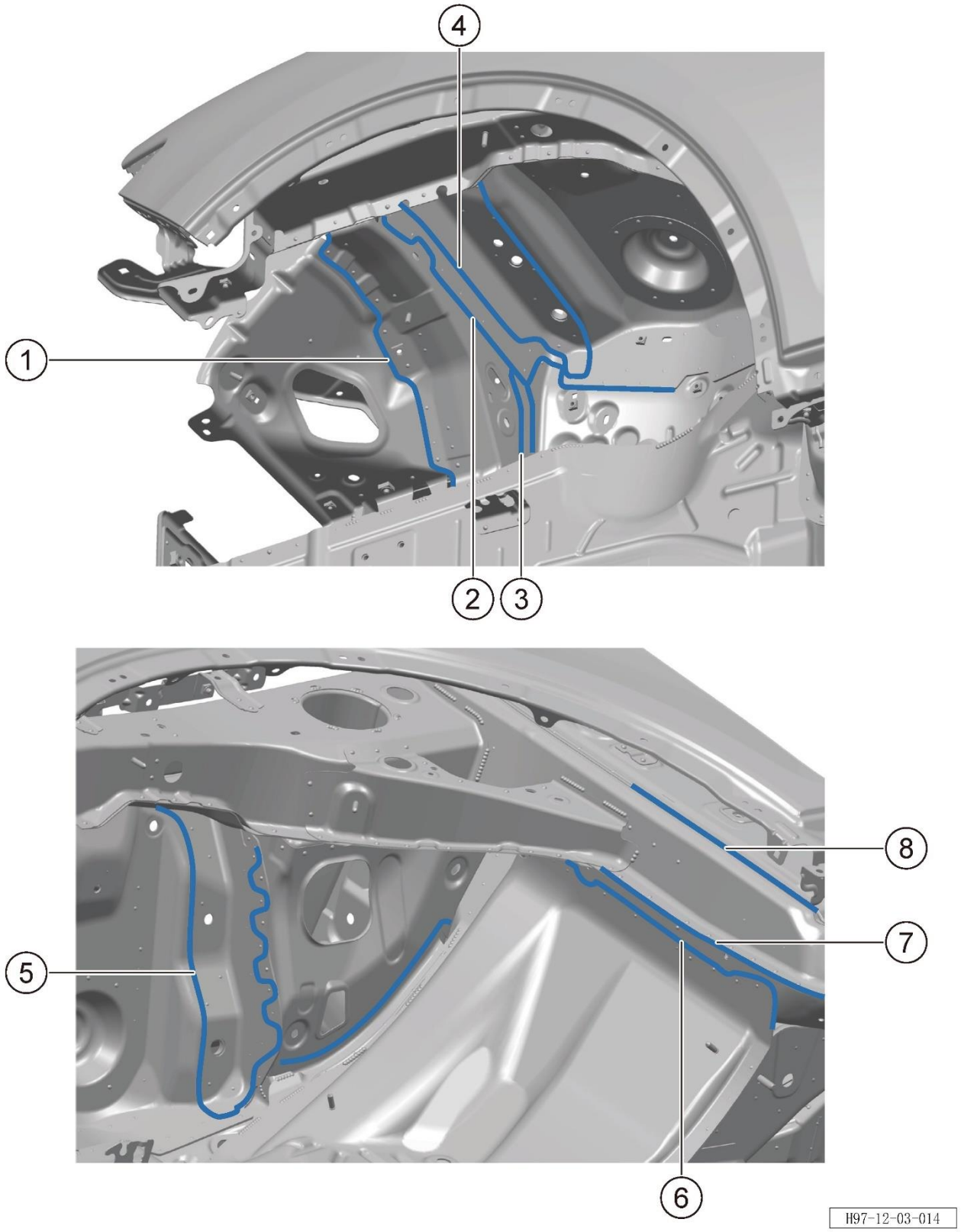
- The sealant on marked positions ②, ③, ④ and ⑤ as shown in the figure should be scrapped.

- At the marked position a as shown in the figure, laser welding should be performed for overlapping.

Technical parameters of sealant application in exterior upper body - (with moonroof) area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Side wall outer plate	-	A-pillar frame upper reinforcement plate	1.42	1.42	2.84	●	●	●	
2	Side wall outer plate	-	Roof front cross member outer plate	0.21	0.21	0.42	●	●	●	
3	Roof front cross member outer plate	-	A-pillar frame upper reinforcement plate	0.06	0.06	0.12	●	●	●	
4	A-pillar frame upper reinforcement plate	-	Rear pillar inner plate corner plate	0.05	0.05	0.10	●	●	●	
5	Roof outer panel	-	Side wall	0.12	0.12	0.24	●	●	●	

Applying sealant to exterior lower body - front wheel housing area



Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

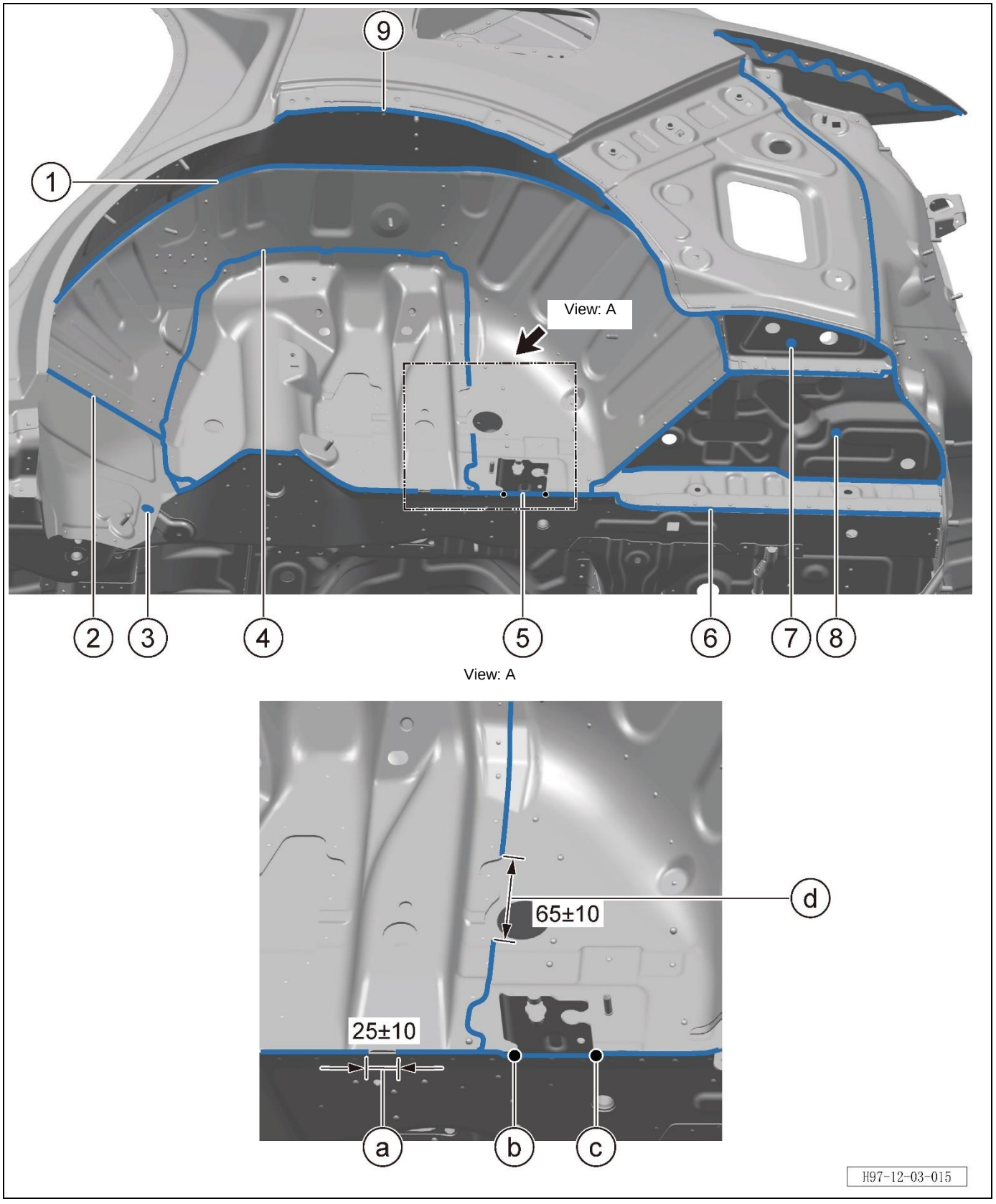
- The front mounting surfaces ④ and ⑤ as shown in the figure should be free of any residual sealant.

- The starting and ending points at position ⑧ as shown in the figure should refer to the edge of the hinge mounting boss.

Technical parameters of sealant application in exterior lower body - front wheel housing area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Front wheel housing front part	-	Front wheel housing front section reinforcement plate	0.31	0.31	0.62			●	
2	Front shock absorber mounting plate	-	Front wheel housing front section reinforcement plate	0.46	0.46	0.92			●	
3	Front wheel housing front section reinforcement plate	-	Front wheel housing middle part	0.14	0.14	0.28			●	
4	Front shock absorber mounting plate	-	Front shock absorber mounting reinforcement plate I	0.50	0.50	1.00			●	
5	Front shock absorber mounting plate	-	Front shock absorber mounting reinforcement plate II	0.96	0.96	1.92			●	
6	Side member front section outer plate	-	A-pillar inner plate lower part	0.39	0.39	0.78	●	●	●	
7	A-pillar frame lower reinforcement plate	-	A-pillar inner plate lower part	0.40	0.40	0.80	●	●	●	
8	A-pillar frame lower reinforcement plate	-	Side wall outer plate	2.38	2.38	4.76	●	●	●	

Applying sealant to exterior lower body - rear wheel housing area



Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

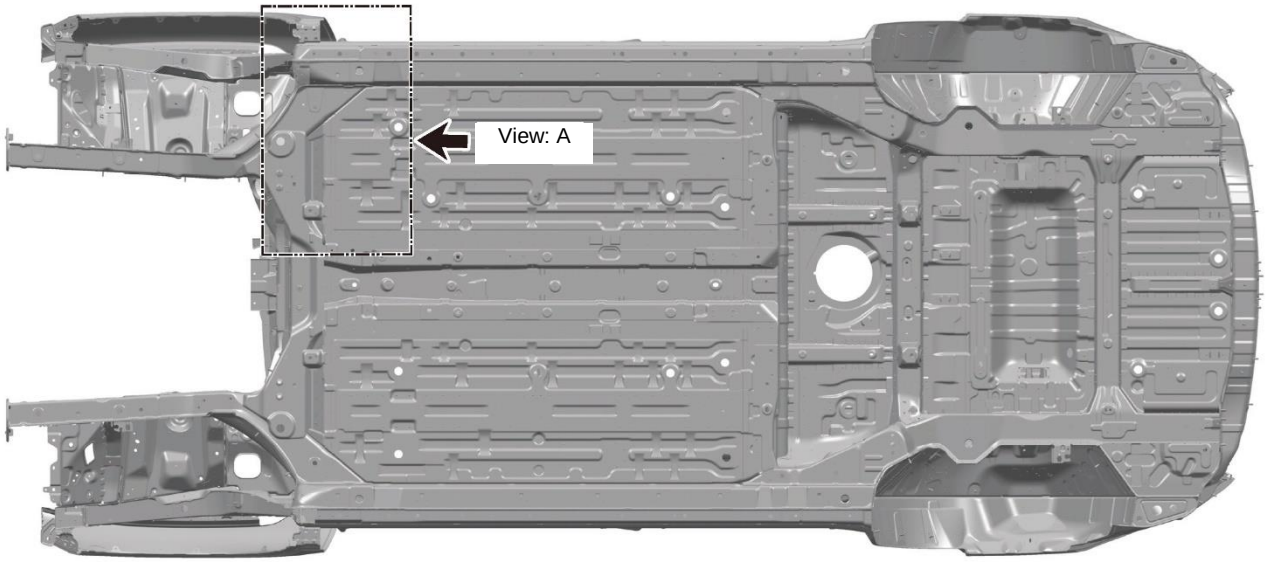
- Position a (length: 25 mm±10 mm) and position d (length: 65 mm±10 mm) as shown in the figure should be disconnected before they are applied with sealant; refer to characteristics of the sheet metal for the starting and ending points.

- The sealant on inner and outer welds at positions marked b and c as shown in the figure should be overlapped.

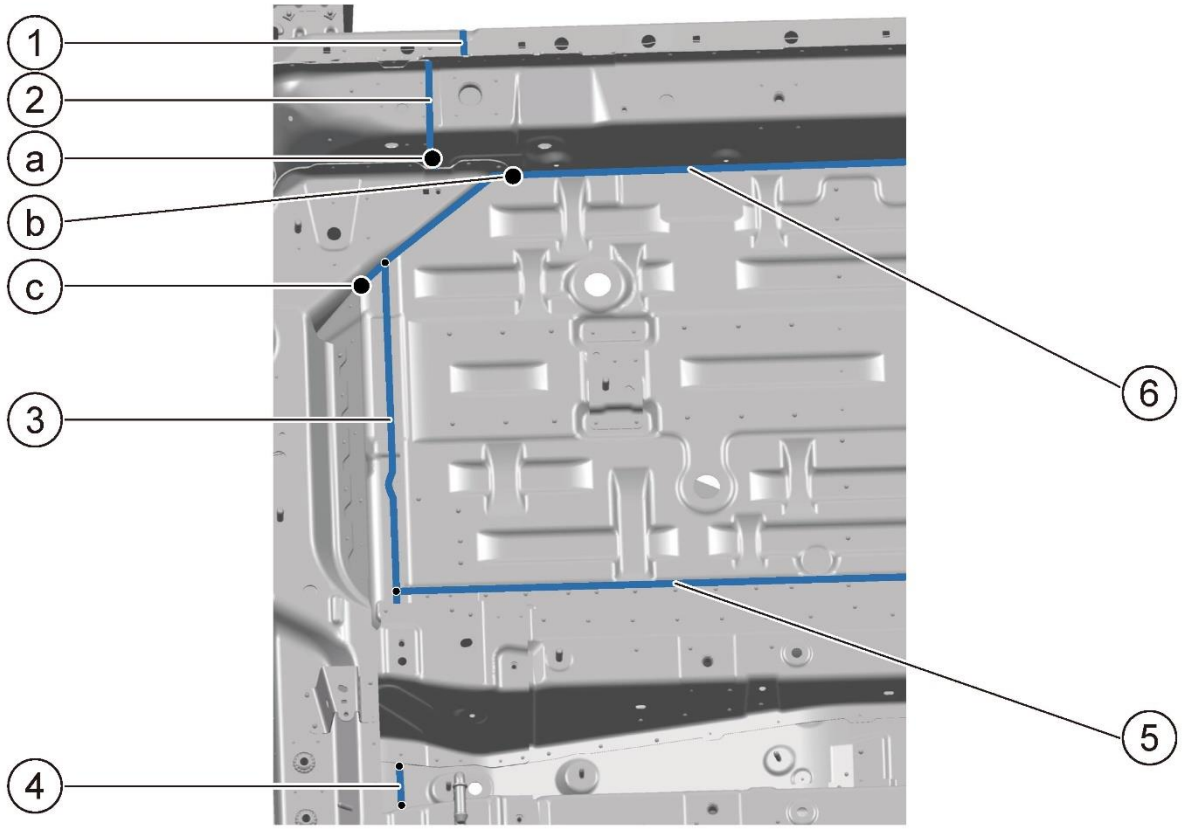
Technical parameters of sealant application in exterior lower body - rear wheel housing area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Rear wheel housing inner plate	-	Rear wheel housing outer plate	1.62	1.62	3.24	●	●	●	
2	Rear wheel housing inner plate	-	Rear wheel housing inner plate connecting plate	0.28	0.28	0.56	●	●	●	
3	Rear subframe mounting reinforcement plate	-	Rear wheel housing inner plate connecting plate	0.02	0.02	0.04	●	●	●	
4	Rear wheel housing inner plate	-	Rear shock absorber mounting plate	1.16	1.16	2.32			●	
5	Rear side member lower plate	-	Brake fluid pipe rear bracket	0.07	0.07	0.14	●	●	●	
6	Rear side member lower plate	-	Beam rear connecting plate sealing plate/rear wheel housing inner plate	0.80	0.80	1.60	●	●	●	
7	Sealing plate	-	Side wall outer plate/rear wheel housing outer plate/rear side member	0.64	0.64	1.28	●	●	●	
8	Rear side member rear connecting plate	-	Rear wheel housing inner plate/rear side member rear connecting plate	0.91	0.91	1.82	●	●	●	
9	Side wall outer plate	-	Rear wheel housing outer plate	1.62	1.90	3.52	●	●	●	

Applying sealant to exterior lower body - floor area



View: A



H97-12-03-016

Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

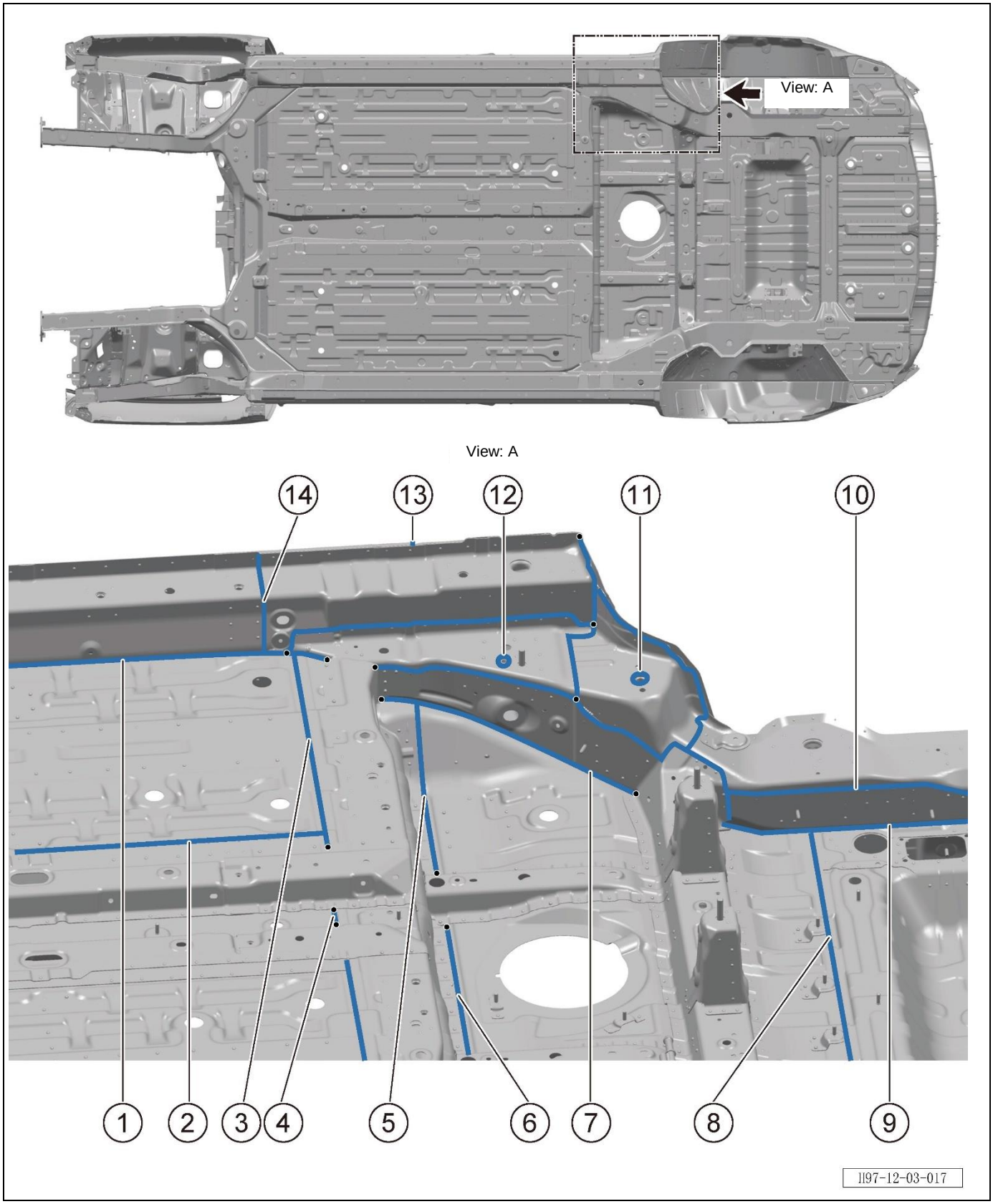
- At the marked position a as shown in the figure, welding sealant should be overlapped.

- The sealant on inner and outer welds at positions marked b and c as shown in the figure should be overlapped.

Technical parameters of sealant application in exterior lower body - floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	A-pillar frame lower reinforcement plate	-	Door sill reinforcement beam	0.18	0.18	0.36	●	●	●	
2	A-pillar inner plate lower plate	-	Door sill inner plate	0.16	0.16	0.32	●	●	●	
3	Front wall lower plate	-	Front floor	0.43	0.43	0.86	●	●	●	
4	Front wall lower plate	-	Floor middle channel	0.07		0.07	●	●	●	
5	Front floor	-	Floor middle channel	1.44	1.44	2.88	●	●	●	
6	Front floor	-	Door sill inner plate	1.58	1.58	3.16	●	●	●	

Applying sealant to exterior lower body - floor area



Essentials:

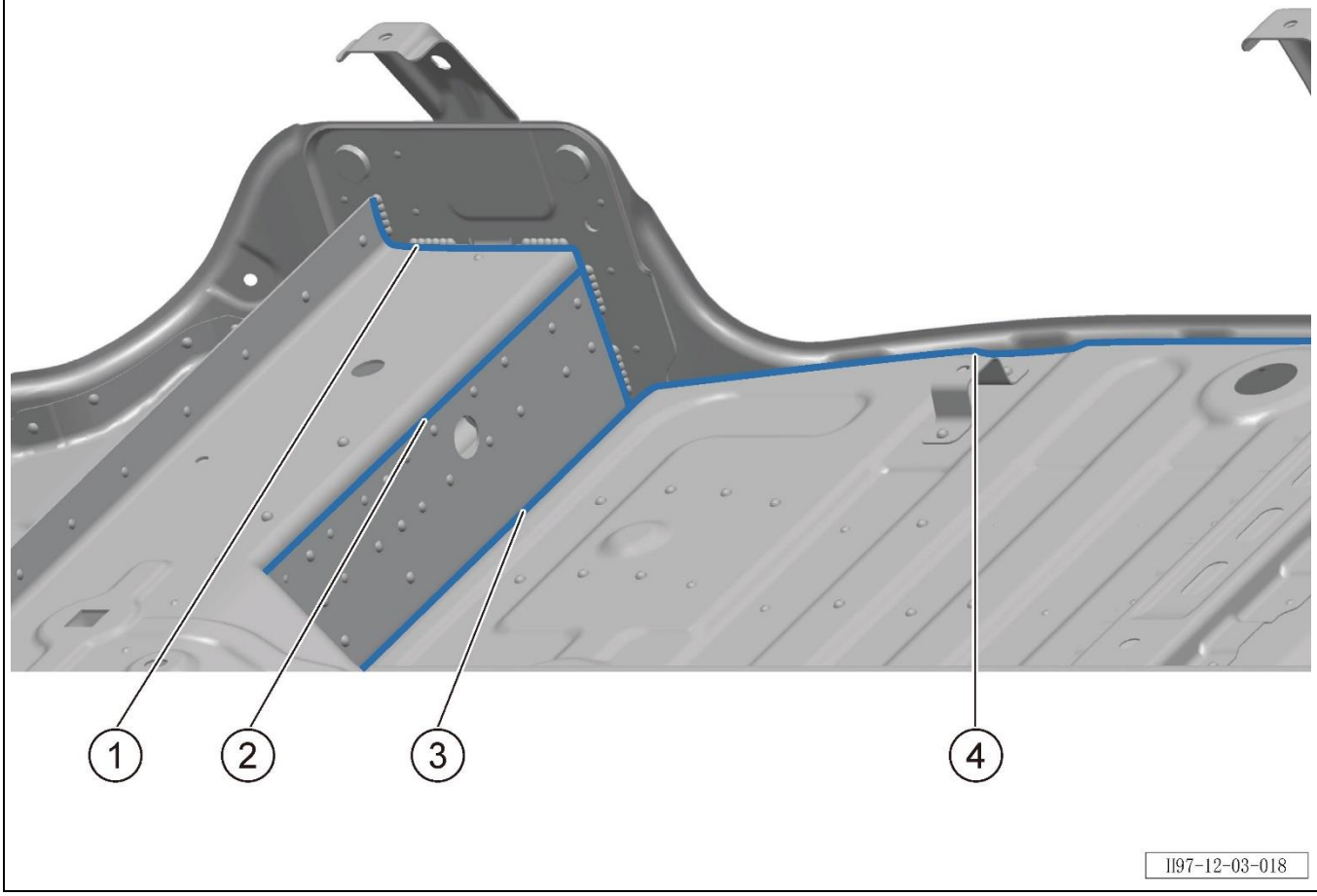
- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

Technical parameters of sealant application in exterior lower body - floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Front floor	-	Door sill inner plate	1.58	1.58	3.16	●	●	●	
2	Front floor	-	Floor middle channel	1.44	1.44	2.88	●	●	●	
3	Front floor	-	Rear floor front reinforcement plate	0.55	0.55	1.10	●	●	●	
4	Floor middle channel	-	Rear floor front reinforcement plate	0.08		0.08	●	●	●	
5	Rear floor front reinforcement plate	-	Rear floor	0.40	0.40	0.80	●	●	●	
6	Rear floor front reinforcement plate	-	Rear floor	0.38		0.38	●	●	●	
7	Left rear side member	-	Rear floor	0.43	0.43	0.86	●	●	●	
8	Rear motor cover	-	Rear floor	0.94	0.94	1.88	●	●	●	
9	Left rear side member lower plate	-	Rear motor cover/rear floor	0.55	0.55	1.10	●	●	●	
10	Left rear side member lower plate	-	Left rear side member	0.55	0.55	1.10	●	●	●	
11	Rear subframe left mounting bracket	-	Rear wheel housing inner panel connecting plate/left rear side member (lower)	0.86	0.86	1.72	●	●	●	
12	Left rear side member lower plate	-	Door sill side member rear section/left rear side member/rear floor	0.98	0.98	1.96	●	●	●	
13	Left door sill reinforcement beam	-	Left rear door sill reinforcement beam	0.09	0.09	0.18	●	●	●	
14	Door sill side member rear section	-	Door sill inner plate	0.18	0.18	0.36	●	●	●	

Applying sealant to exterior lower body - floor area

View: A



Essentials:

- Apply sealant to sealing positions on floor with a straight cylindrical pipe dispensing gun. Thereafter, use a sealant brush to brush positions with accumulated sealant or poorly sealed and looking unsightly. Remove residual PVC sealant on process holes and bolts with gauze.

Technical parameters of sealant application in exterior lower body - floor area

No.	Applied position			Sealant length (m)			Function			Remarks
				Left side	Right side	Total	Water seal	Air seal	Anti-corrosion	
1	Left rear side member lower plate	-	Anti-collision beam connecting plate	0.21	0.21	0.42	●	●	●	
2	Left rear side member lower plate	-	Left rear side member	0.27	0.27	0.54	●	●	●	
3	Rear floor rear section	-	Left rear side member	0.27	0.27	0.54	●	●	●	
4	Rear floor rear section	-	Rear wall plate cross member outer plate	0.90		0.90	●	●	●	

12.1.7 Damage diagnosis

12.1.7.1 Description and precautions

Damage diagnosis

Damages should be diagnosed based on the following criteria:

- Damaged position.

- Range of affected area.

- Extent of damage.

The three points as mentioned above are directly related to the quality, efficiency and cost of damage repair. Thus, they must be properly determined.

Determine collision conditions:

- Size, shape, position, stiffness, etc. of other vehicles involved in collision.

- Speed of the two vehicles at collision.

- Collision angle and direction.

- Number of occupants and their positions at collision.

- Size, shape, hardness, etc. of the load in the vehicle.

- History of damaged position, date of collision and extent of affected area.

Appearance

Do not overlook consequential damage during body repair. In this regard, it will be necessary to carry out mechanical and structural analysis on the body.

1. Observe the vehicle:

- Extent of impact damage.

- Twist, bending and inclination of the vehicle.

- Amount of damage and damaged position: Check by inspecting the vehicle (e.g., cracked or stressed paint, cracked glass, etc.).

2. Observe the vehicle in detail:

- Check for any clearance or misalignment in panel welds, or any cracks in paint film, primer or sealing materials.

3. Observe the fitting:

- Check the assembly at all positions:

• Check door positioning (damage to body and hinge parts).

• Check positioning of engine hood and tailgate.

• Check opening/closing of doors, engine hood and tailgate.

• Check whether the window lifts or lowers smoothly.

4. Check for mechanical damage:

- Damage analysis includes the checking of mechanical, steering and suspension components for damage.

- Check the mechanical parts for signs of damage (e.g., bent or damaged parts, fluid leakage and sluggish or noisy rotation of steering wheel).

Key points for selection of repair methods

- Do not reduce the strength when repairing the panel. Avoid excessive hammering, because this may cause stretching of the panel, and prevent prolonged heating.

- Do not increase the strength of the shock-absorbing part unnecessarily. It is prohibited to repair these parts.

- Select proper measurement methods of the body.

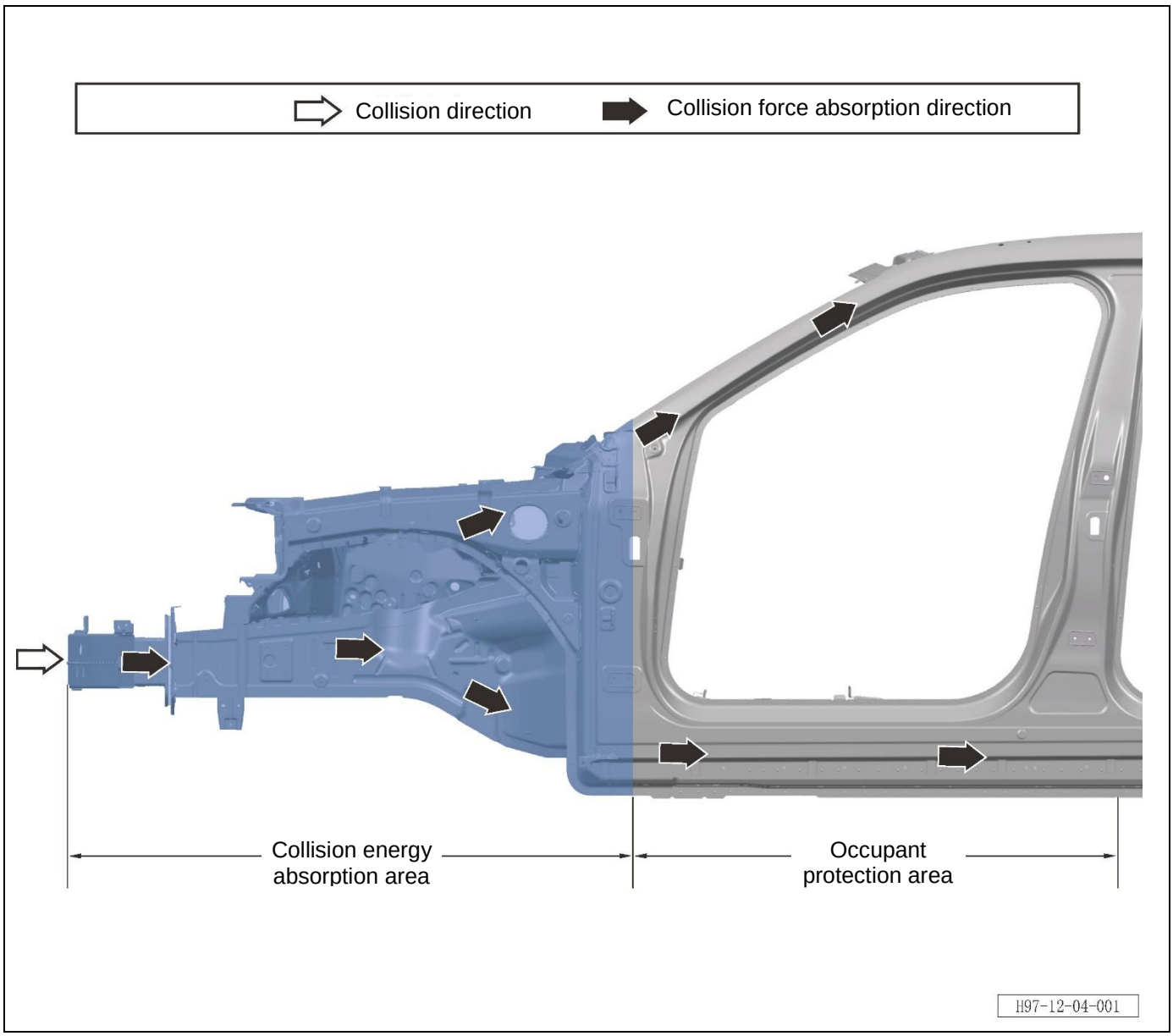
- Check the parts to be replaced and the repair methods regarding previous collision damages (necessary to correctly determine the range of repairs).

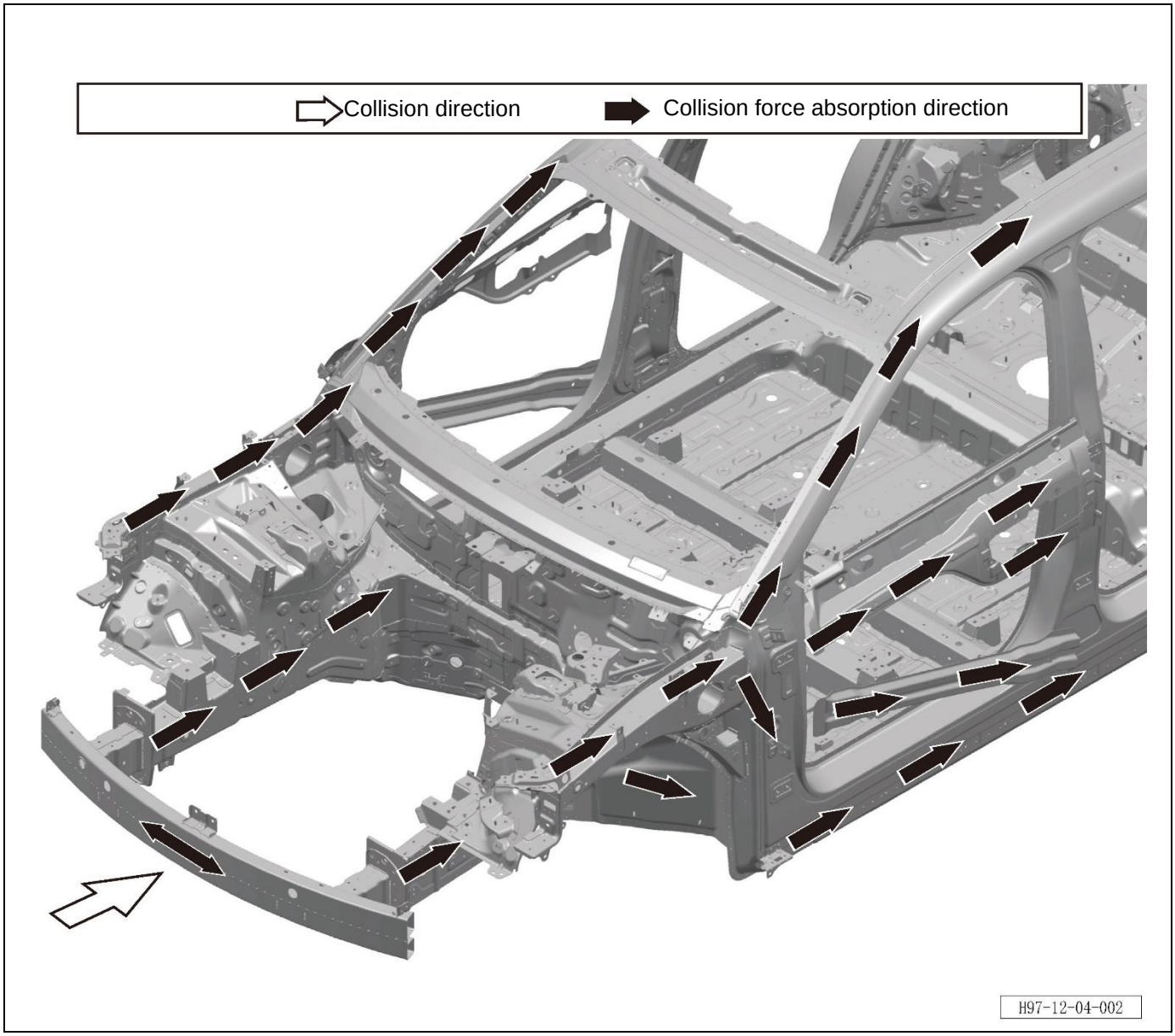
- It is prohibited to repair high-strength steel parts by means of heating, because this method may reduce the strength of the parts.

- It is prohibited to repair the door side anti-collision beam; if the door side anti-collision beam is damaged, replace the door assembly.

12.1.7.2 Collision force transmission path

Frontal collision

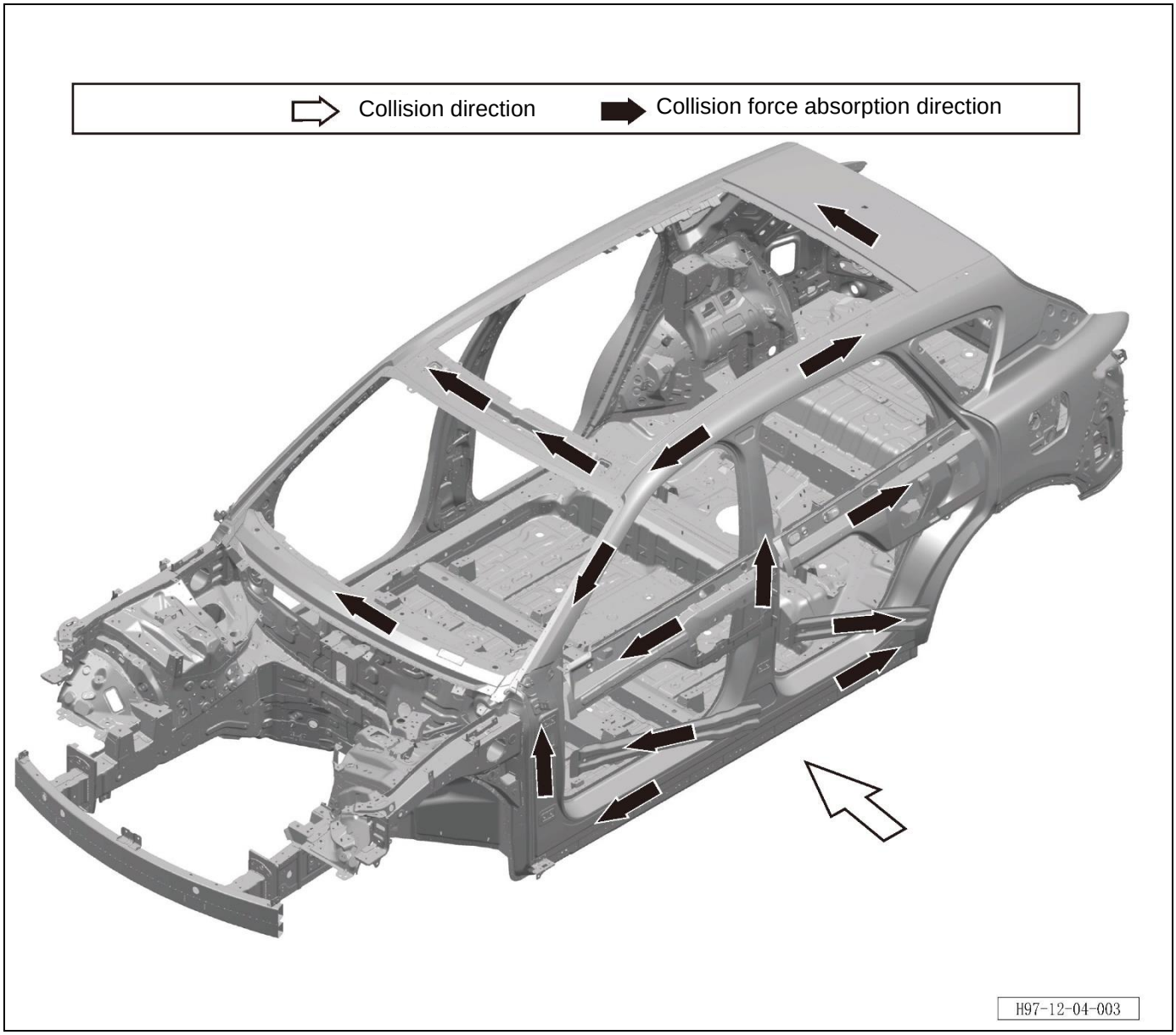


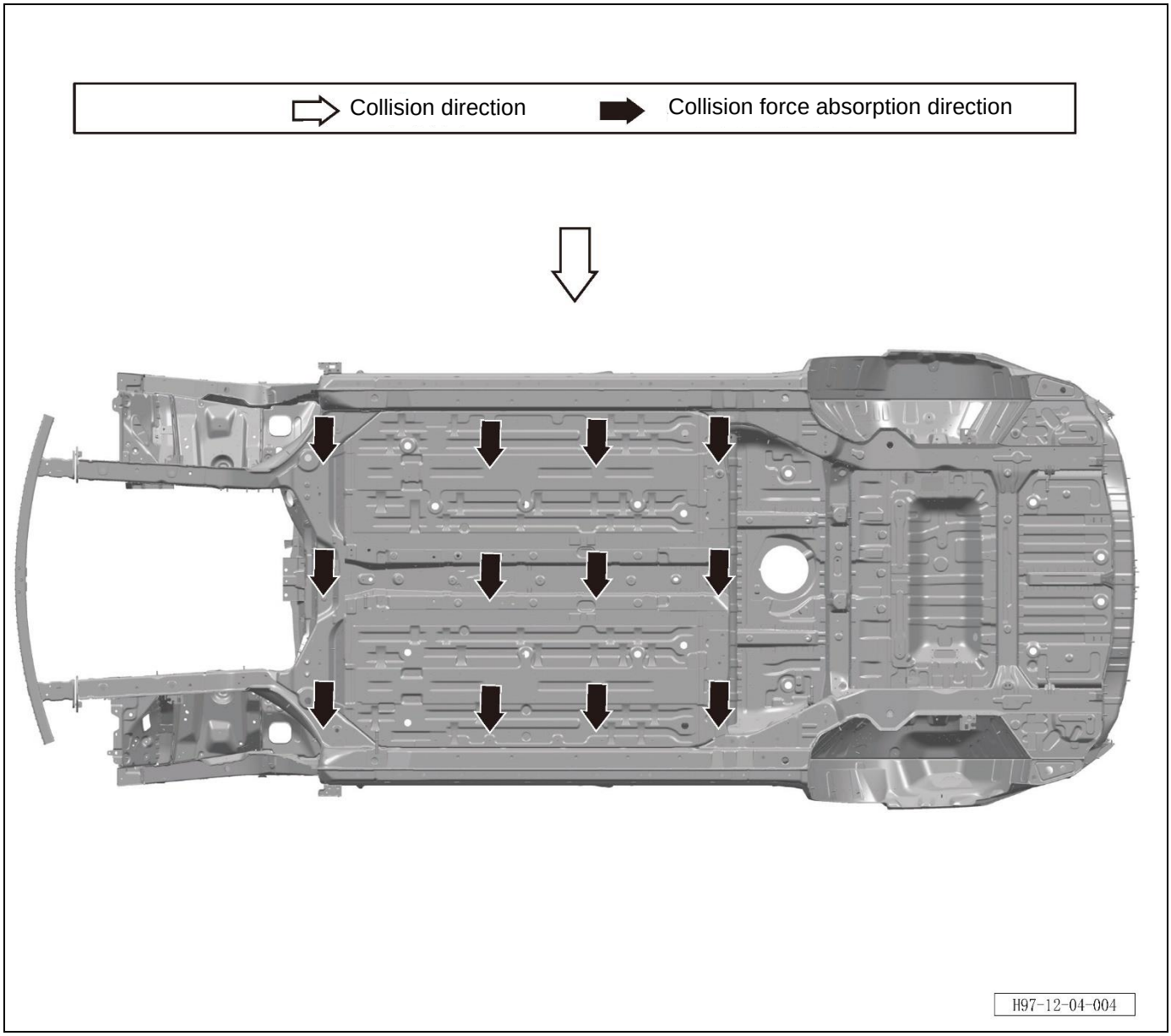


The vehicle has a comprehensively upgraded collision structure and an optimally designed side collision structure. These structures can absorb and disperse the collision energy to the maximum extent.

The front structure of the body is designed using most advanced technologies for collision energy absorption control, and it transmits the force in a scientific manner so as to achieve stable impact bearing capacity; this structure will collapse to absorb collision energy in the event of frontal collision, realizing high-safety collision protection.

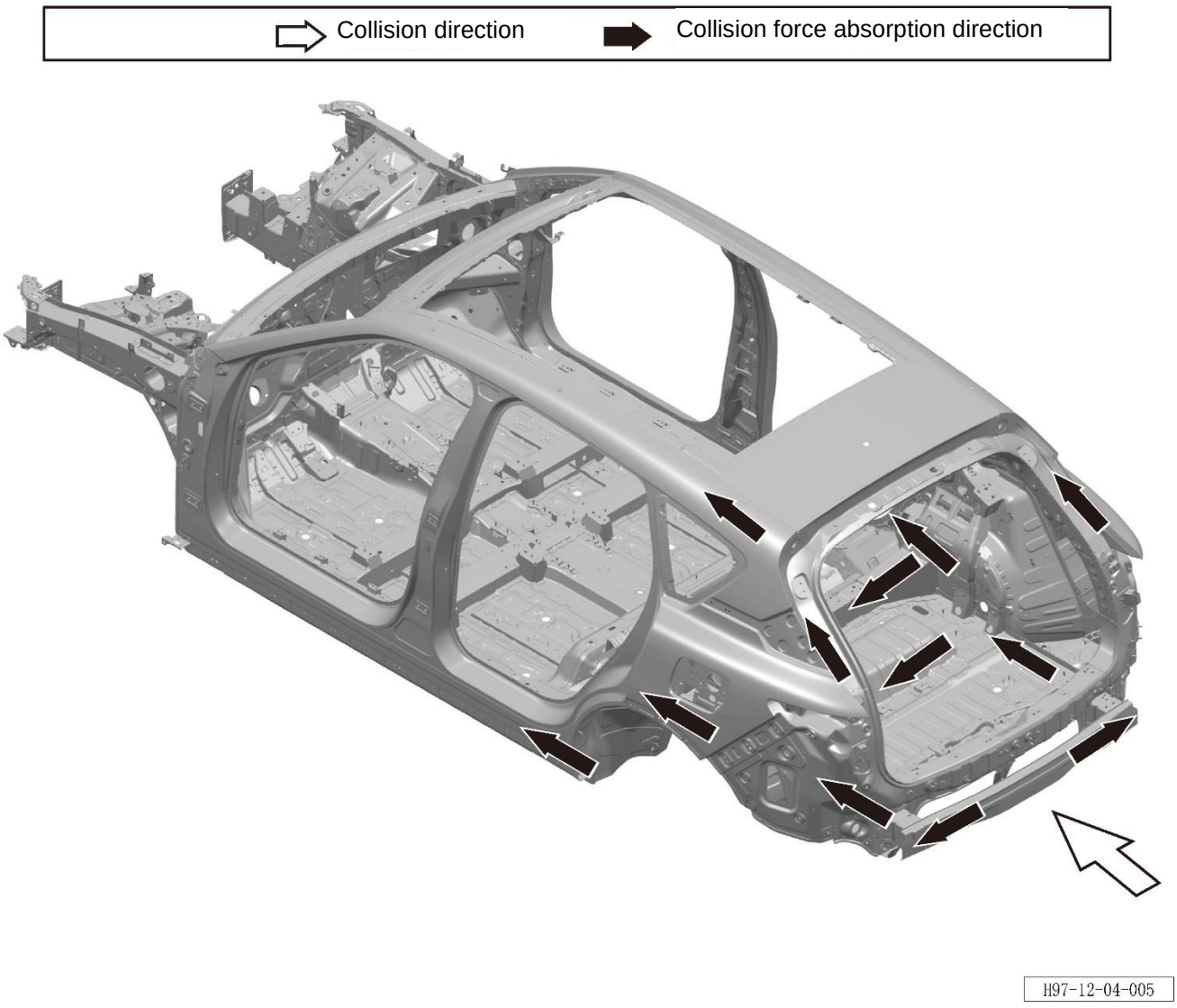
Side collision





The side structure of the body includes a side four-direction vertical force transmission structure and a \/-type door anti-collision structure. They reasonably and subtly disperse side collision force, protecting occupants in side collision to the greatest extent and thereby realizing side safety protection.

Rear collision



The rear structure of the body is designed using most advanced technologies for collision energy absorption control, and it transmits the force in a scientific manner so as to achieve stable impact bearing capacity; this structure will collapse to absorb collision energy in the event of rear collision, realizing high-safety collision protection.

12.1.8 Exploded view of parts

12.1.8.1 Description and precautions

1. Characteristics of high strength steel

- High tensile strength.

- High yield point (the point at which the material changes from elastic to plastic).

- High yield class (yield point and tensile strength).

2. Ultra-high strength hot-formed steel plate

- During stamping, the steel plate will be heated to 900°C and softened. Then the steel parts will cool down to normal temperature in stamping die. This can improve the hardening process and reach a tensile strength of 1,500 MPa. This process is called hot stamping.

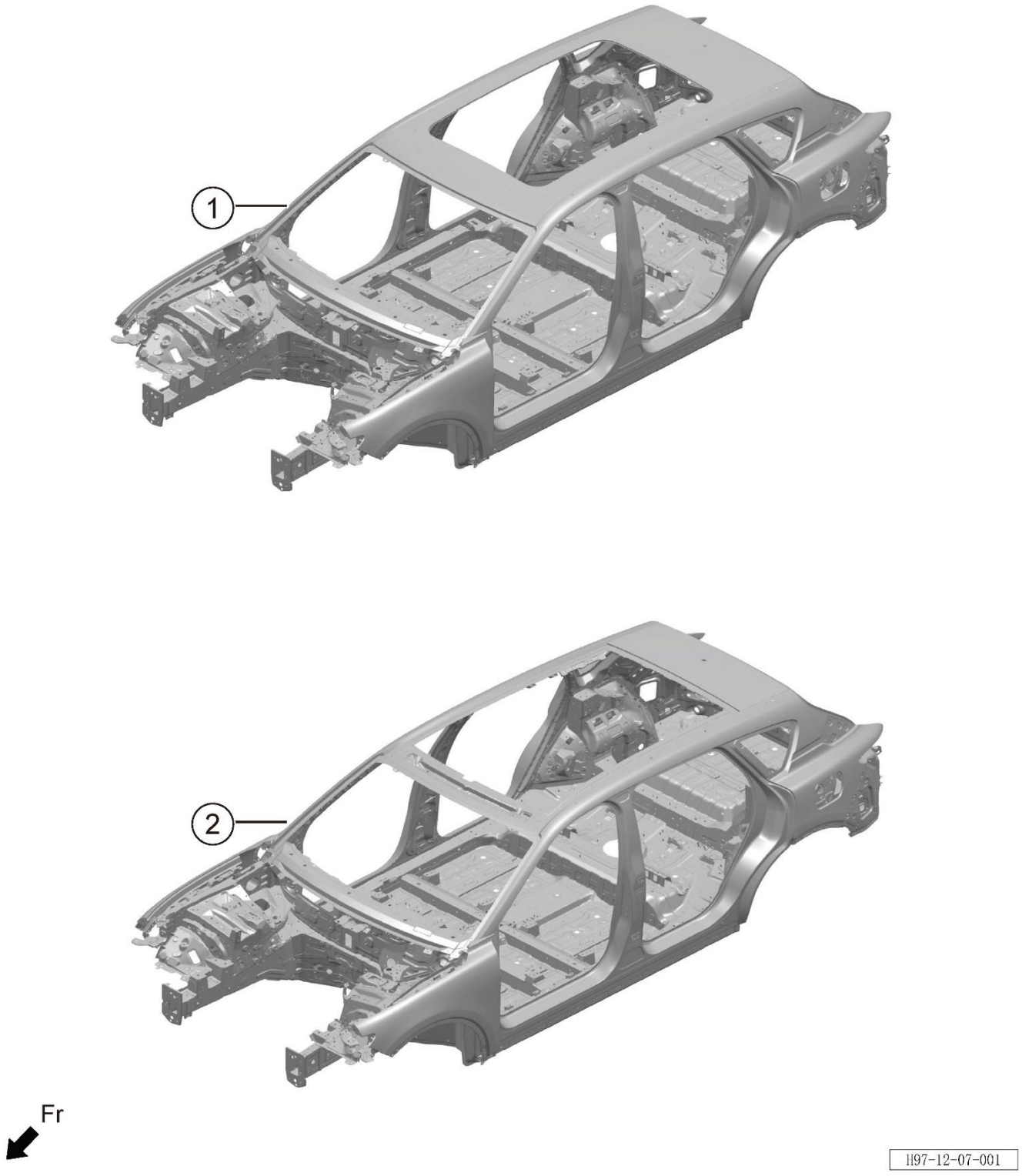
- Compared with ordinary steel plate stamping process, hot stamping can significantly improve the strength of the parts. Therefore, thinner materials (compared with ordinary stamping) can be used to produce parts with same strength using this process. This can reduce vehicle weight and improved fuel efficiency.

Warning!

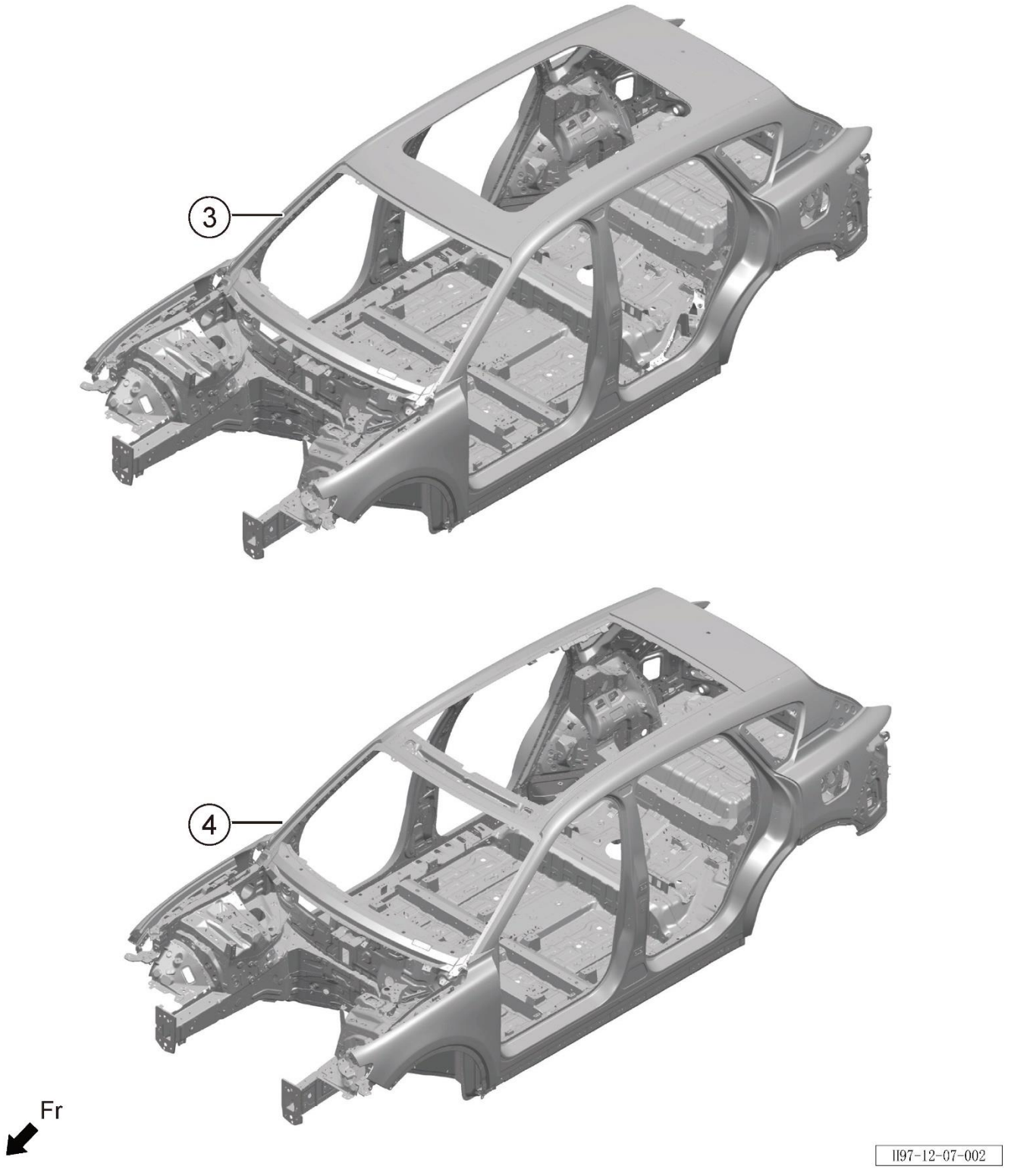
- Do not cut ultra-high strength steel parts or perform butt welding. Otherwise, the strength of steel plates may be reduced significantly and unable to return to the level before damages.

12.1.8.2 Body diagram

1. BIW body (REV)

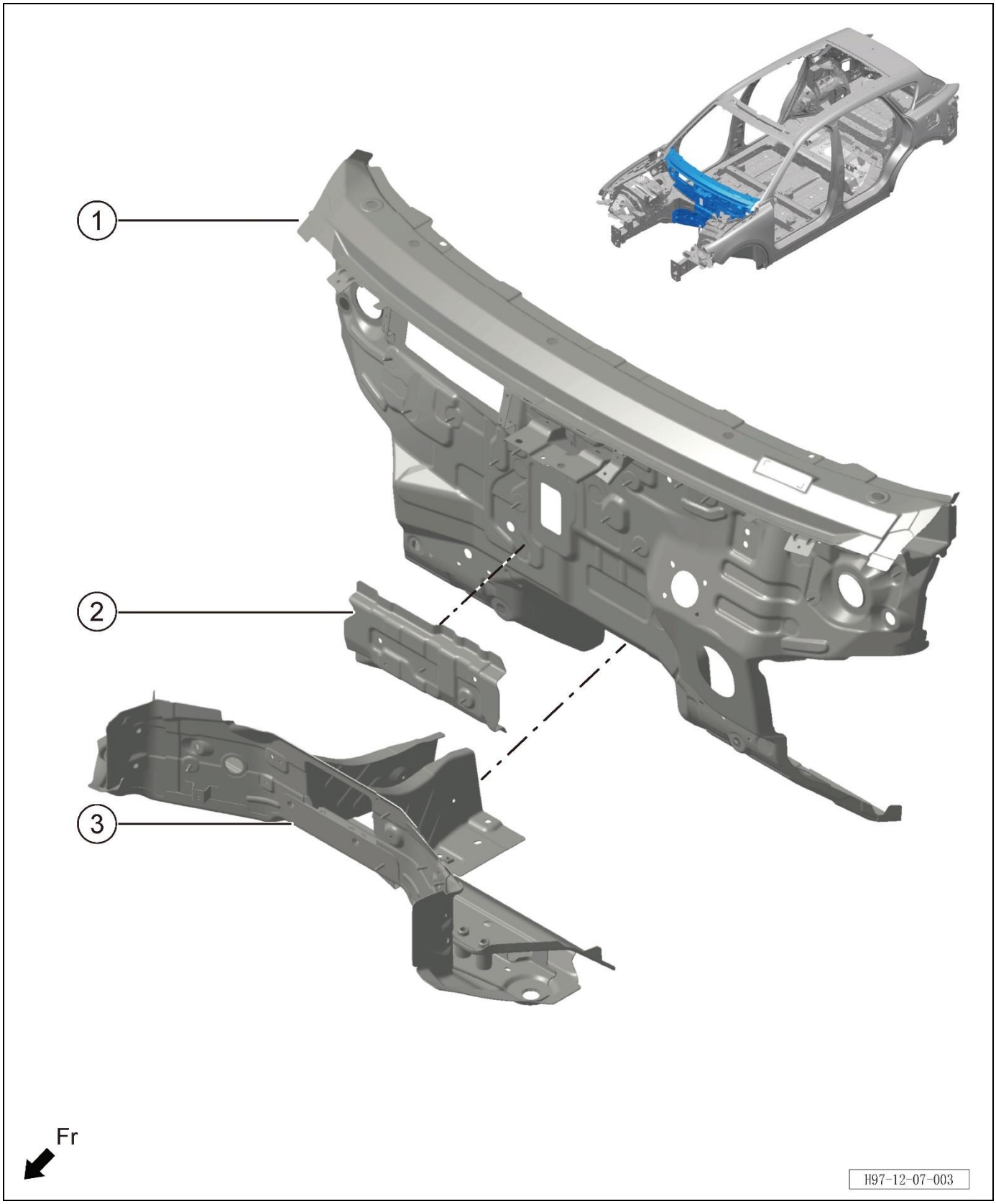


2. BIW body (EV)



S/N	Part name	Loading quantity	Remarks
1	BIW assembly	1	REV, with sunroof
2	BIW assembly	1	REV, with moonroof
3	BIW assembly	1	EV, with sunroof
4	BIW assembly	1	EV, with moonroof

12.1.8.3 Structure diagram of front wall

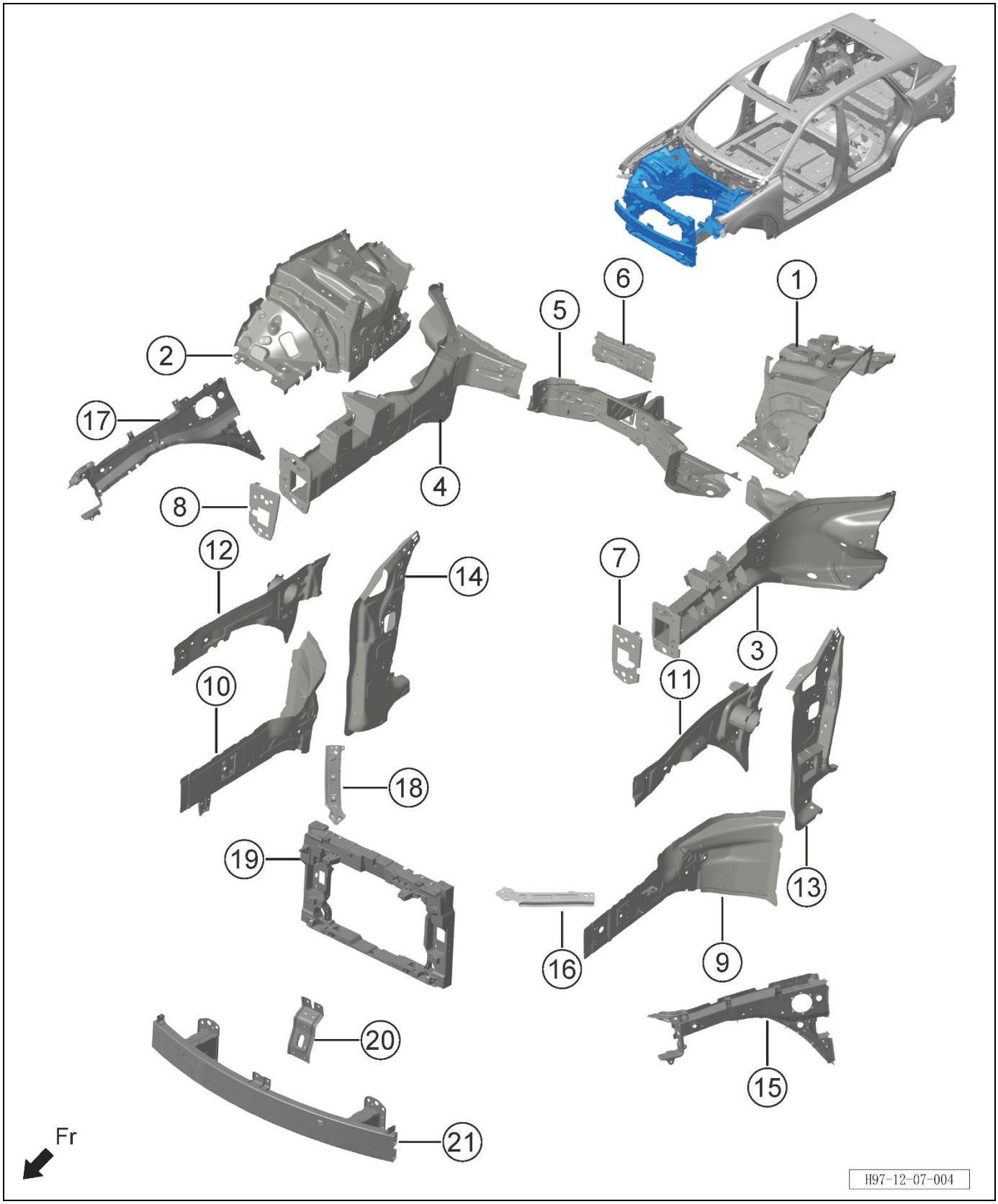


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Front wall welding assembly	1	
2	Front wall cross member assembly	1	
3	Front wall reinforcement beam assembly	1	

12.1.8.4 Structure diagram of engine compartment (REV)

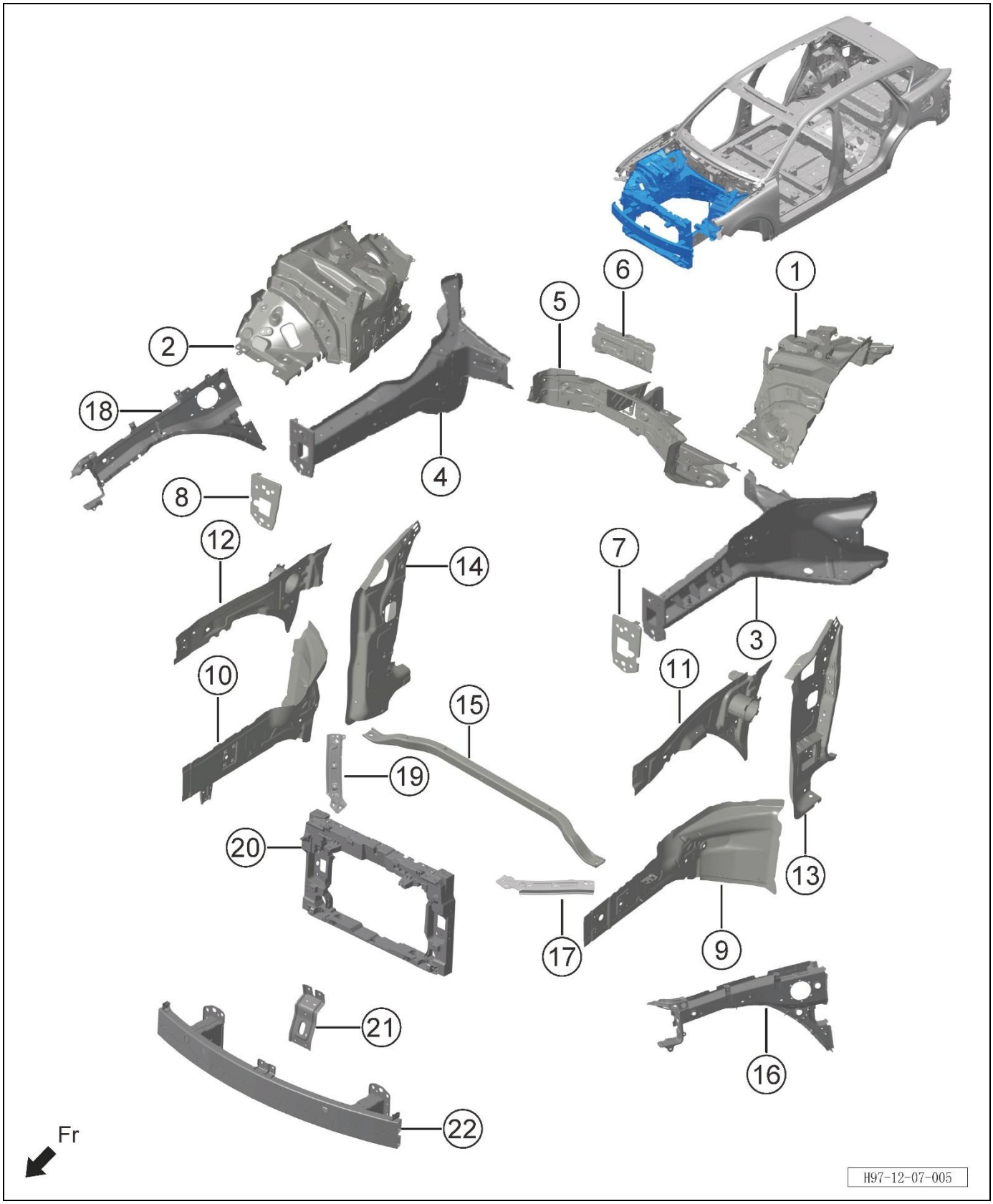


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Front wheel housing assembly (left)	1	REV
2	Front wheel housing assembly (right)	1	REV
3	Side member front section inner plate assembly (left)	1	REV
4	Side member front section inner plate assembly (right)	1	REV
5	Front wall cross member assembly	1	
6	Front wall reinforcement beam assembly	1	REV
7	Front anti-collision beam connecting plate (left)	1	
8	Front anti-collision beam connecting plate (right)	1	
9	Side member front section outer plate welding assembly (left)	1	
10	Side member front section outer plate welding assembly (right)	1	
11	Engine compartment sealing plate subassembly (left)	1	
12	Engine compartment sealing plate subassembly (right)	1	
13	Left A-pillar inner plate lower assembly	1	
14	Right A-pillar inner plate lower assembly	1	
15	Engine compartment sealing plate reinforcement plate assembly (left)	1	
16	Water tank upper cross member left mounting plate	1	
17	Engine compartment sealing plate reinforcement plate assembly (right)	1	
18	Water tank upper cross member right mounting plate assembly	1	
19	Front end module framework	1	
20	Front end module lock bracket assembly	1	
21	Front anti-collision beam welding assembly	1	

12.1.8.5 Structure diagram of engine compartment (EV)

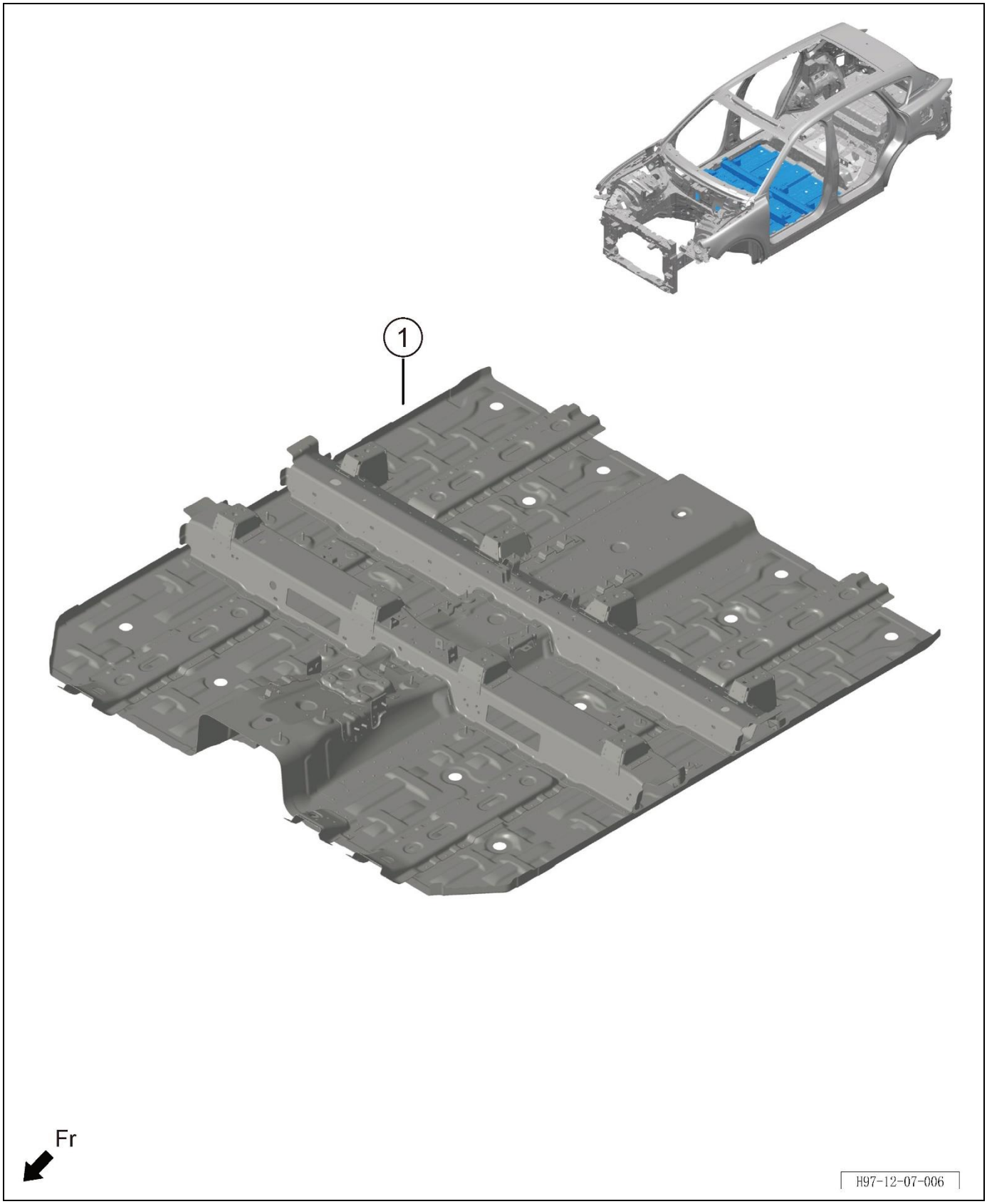


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Front wheel housing assembly (left)	1	EV
2	Front wheel housing assembly (right)	1	EV
3	Side member front section inner plate assembly (left)	1	EV
4	Side member front section inner plate assembly (right)	1	EV
5	Front wall cross member assembly	1	
6	Front wall reinforcement beam assembly	1	EV
7	Front anti-collision beam connecting plate (left)	1	
8	Front anti-collision beam connecting plate (right)	1	
9	Side member front section outer plate welding assembly (left)	1	
10	Side member front section outer plate welding assembly (right)	1	
11	Engine compartment sealing plate subassembly (left)	1	
12	Engine compartment sealing plate subassembly (right)	1	
13	Left A-pillar inner plate lower assembly	1	
14	Right A-pillar inner plate lower assembly	1	
15	Engine compartment cross member assembly	1	
16	Engine compartment sealing plate reinforcement plate assembly (left)	1	
17	Water tank upper cross member left mounting plate	1	
18	Engine compartment sealing plate reinforcement plate assembly (right)	1	
19	Water tank upper cross member right mounting plate assembly	1	
20	Front end module framework	1	
21	Front end module lock bracket assembly	1	
22	Front anti-collision beam welding assembly	1	

12.1.8.6 Structure diagram of front floor

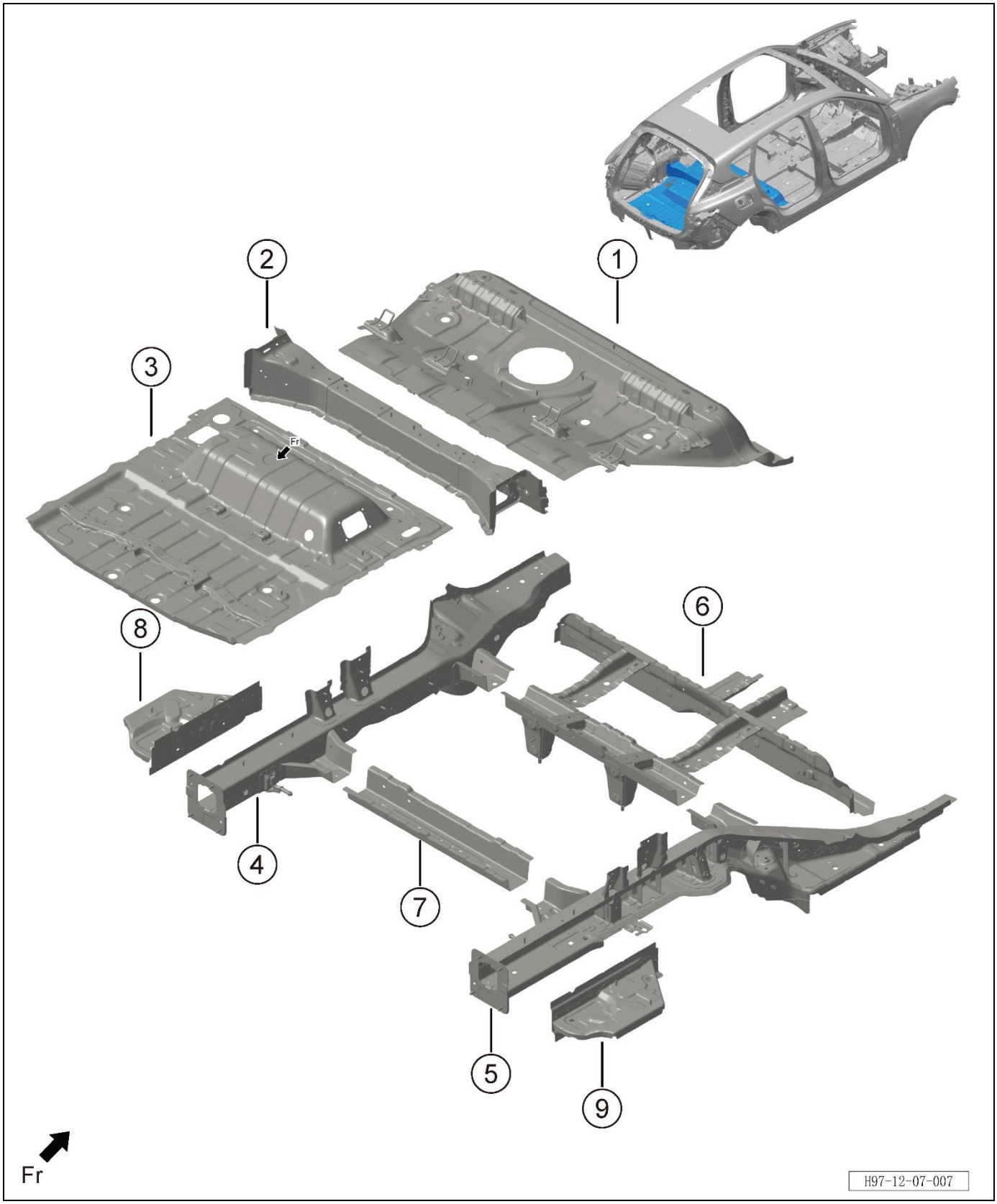


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Front floor welding assembly	1	

12.1.8.7 Structure diagram of rear floor

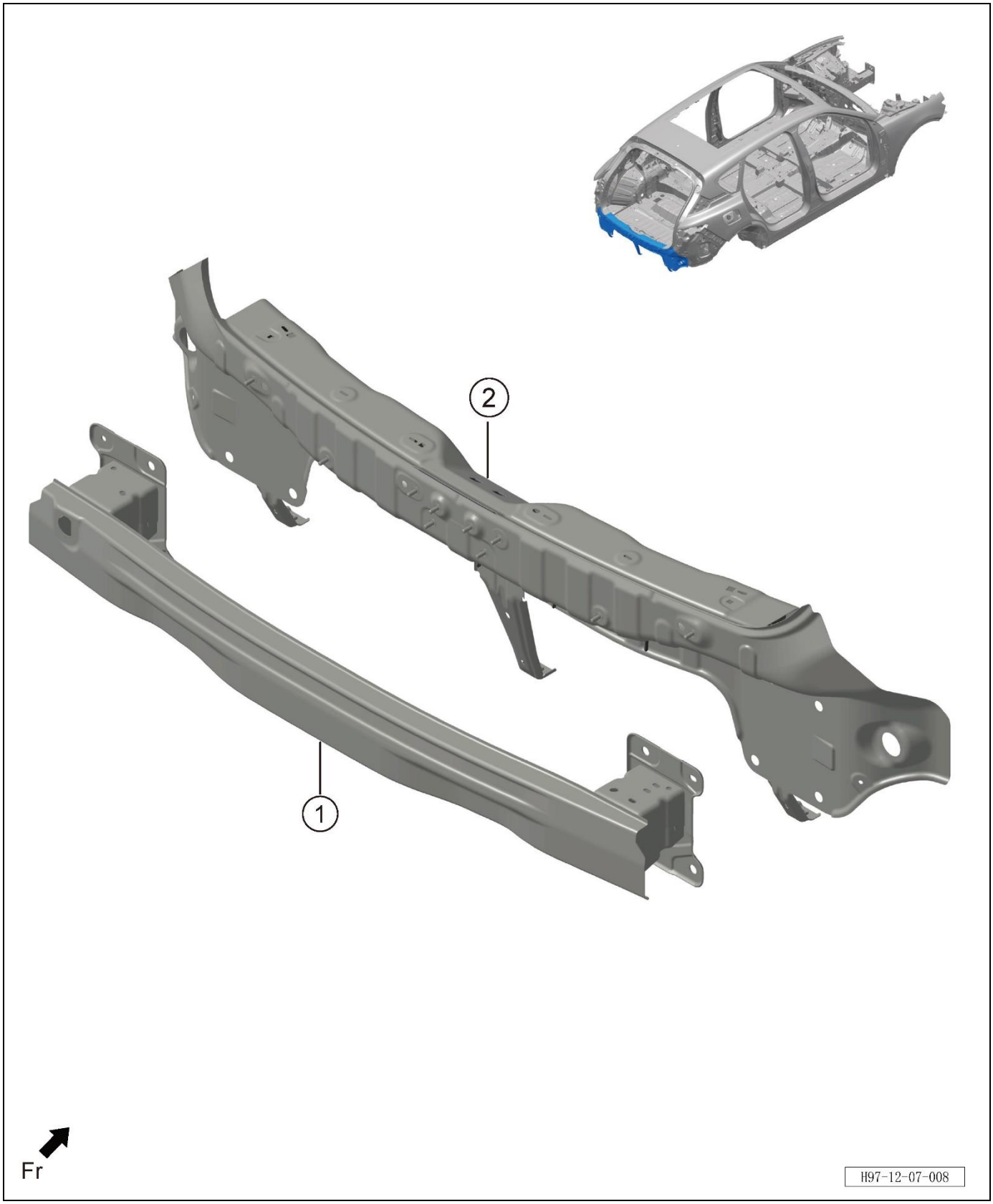


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Rear floor subassembly	1	
2	Rear seat backrest cross member assembly	1	
3	Rear floor body welding subassembly	1	
4	Rear floor left rear side member assembly	1	
5	Rear floor right rear side member assembly	1	
6	Frame rear cross member assembly	1	
7	Rear floor rear cross member	1	
8	Left rear side member connecting plate sealing plate assembly	1	
9	Right rear side member connecting plate sealing plate assembly	1	

12.1.8.8 Structure diagram of rear wall

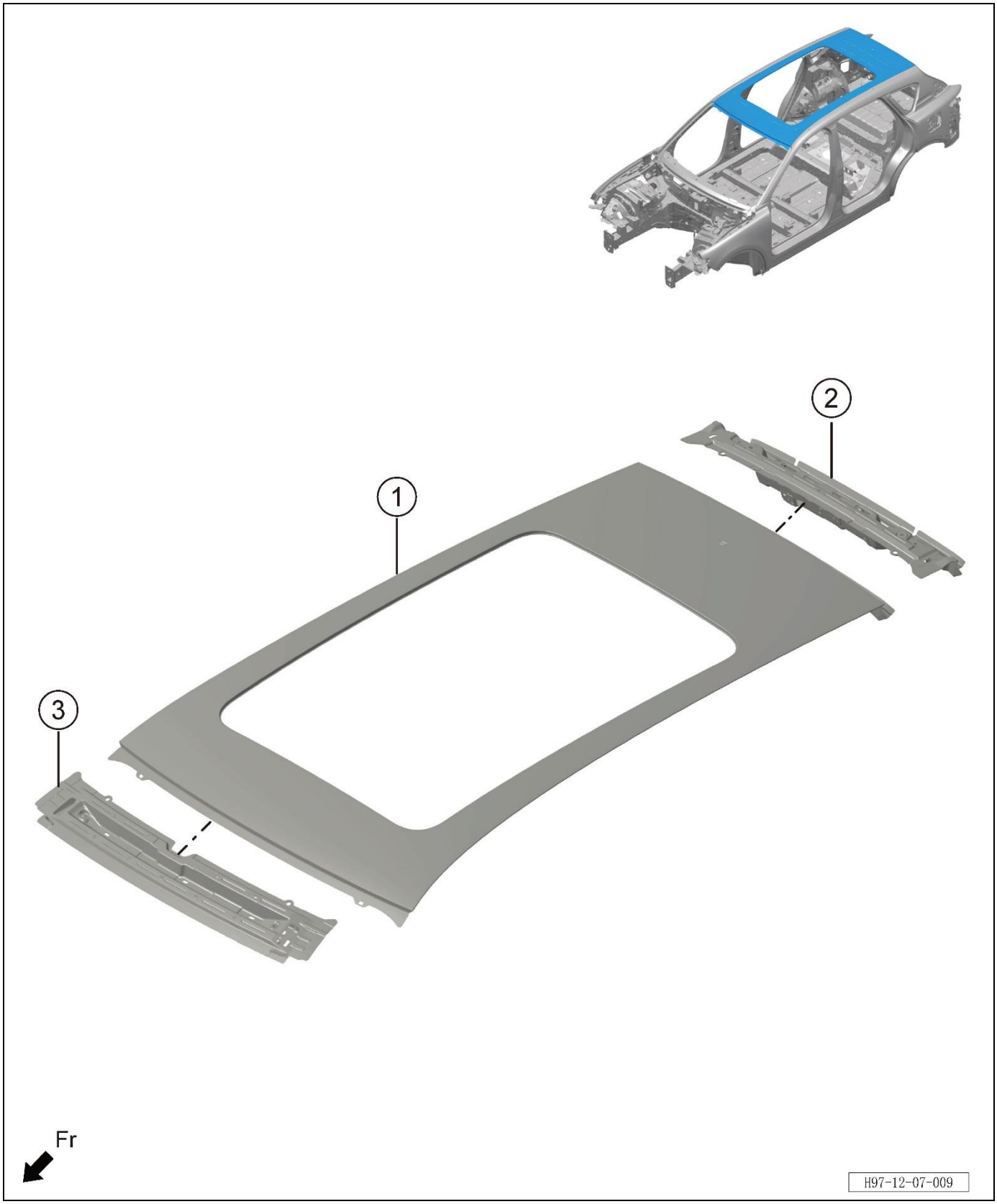


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Rear anti-collision beam welding assembly	1	
2	Rear wall plate welding assembly	1	

12.1.8.9 Structure diagram of roof (with sunroof)

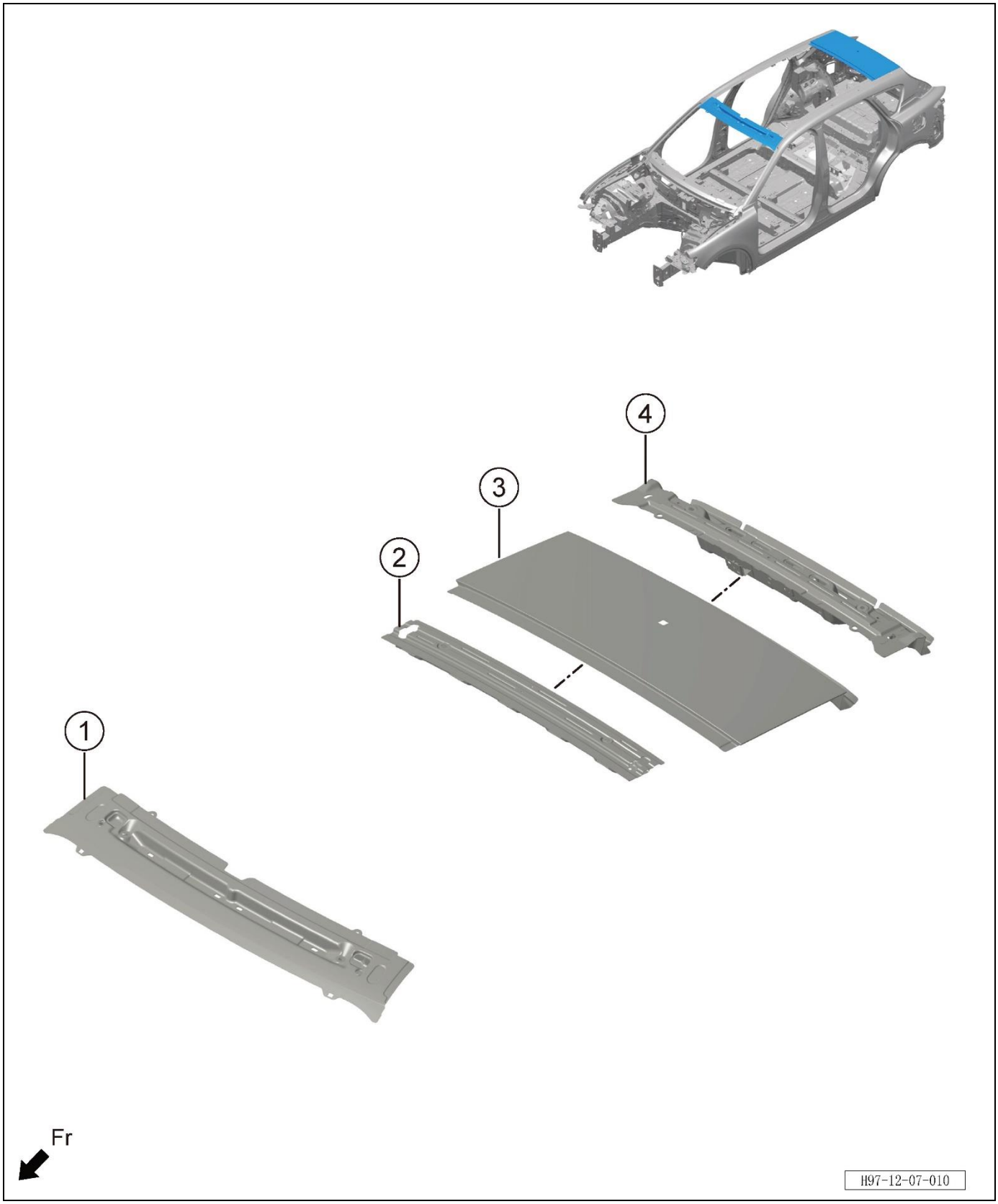


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Roof welding assembly	1	
2	Roof rear cross member welding assembly	1	
3	Roof front cross member welding assembly	1	

12.1.8.10 Structure diagram of roof (with moonroof)

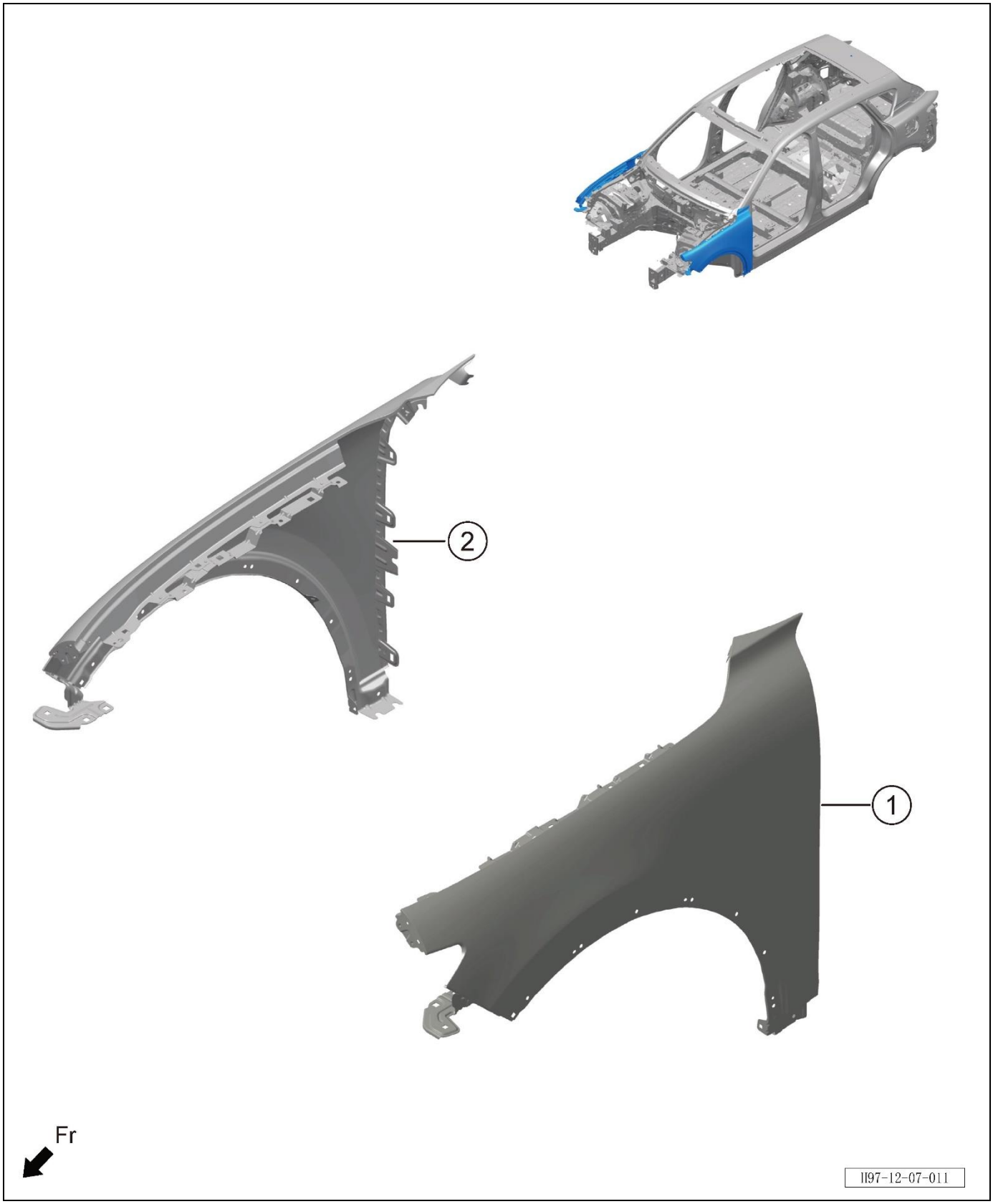


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Roof front cross member welding assembly	1	
2	Roof middle rear cross member welding assembly	1	
3	Roof outer panel	1	
4	Roof rear cross member welding assembly	1	

12.1.8.11 Structure diagram of fender (with moonroof)

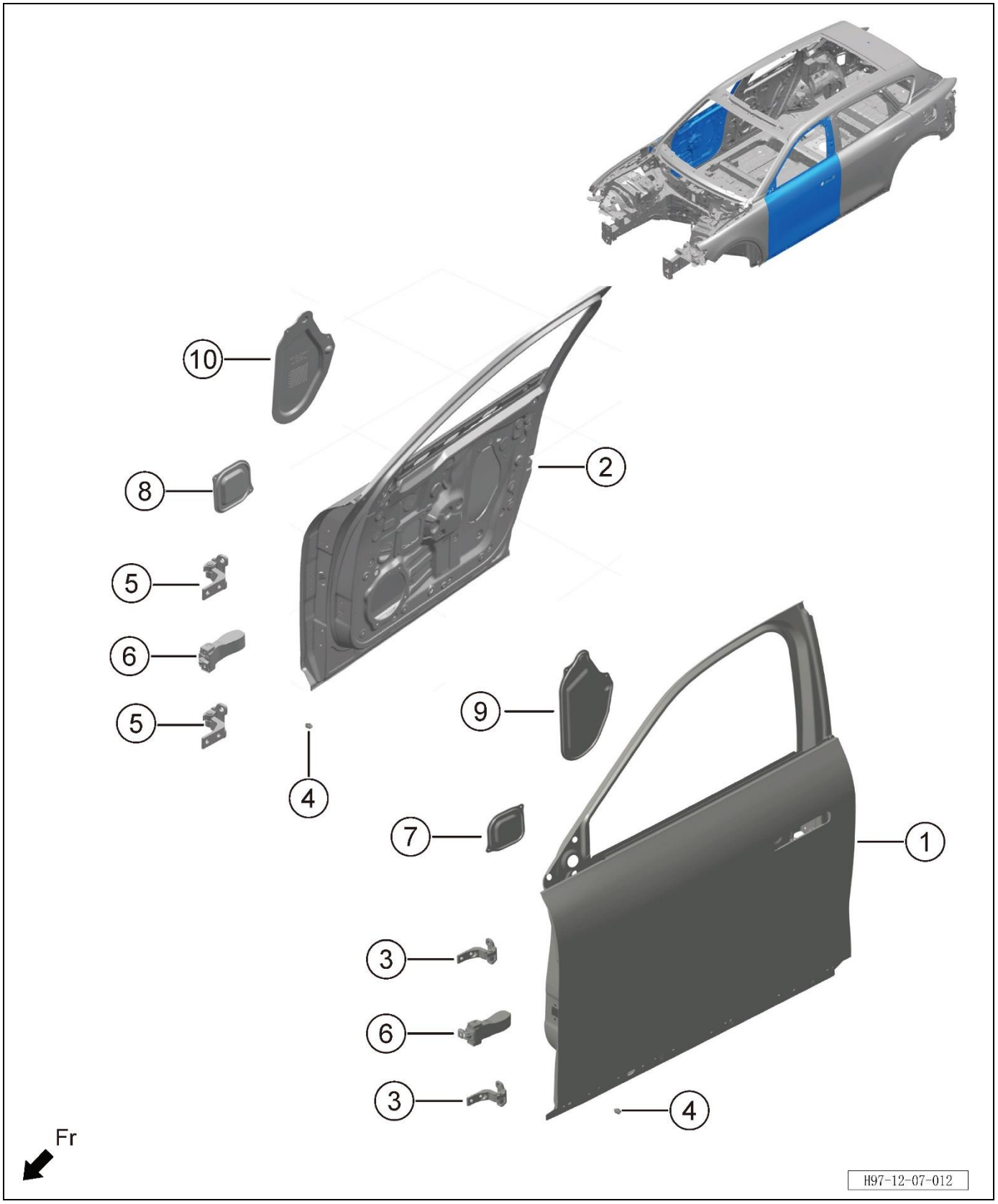


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Left front fender welding assembly	1	
2	Right front fender welding assembly	1	

12.1.8.12 Structure diagram of front door

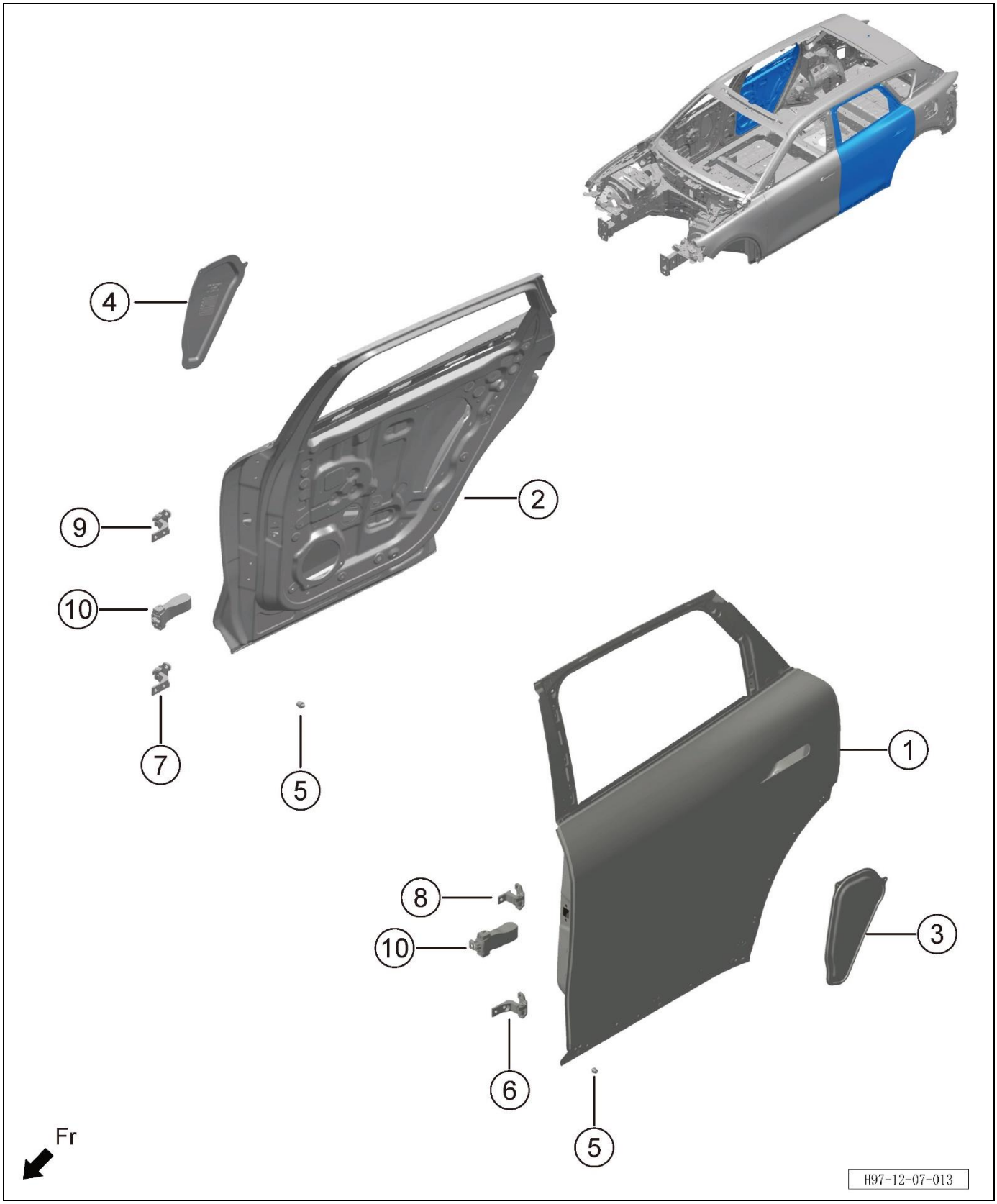


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Left front door panel assembly	1	
2	Right front door plate assembly	1	
3	Front door upper hinge assembly (left)	2	
4	Front door buffer pad	2	
5	Front door upper hinge assembly (right)	1	
6	Front door stopper assembly	2	
7	Left front door front waterproof membrane	1	
8	Right front door front waterproof membrane	1	
9	Left front door waterproof membrane	1	
10	Right front door waterproof membrane	1	

12.1.8.13 Structure diagram of rear door

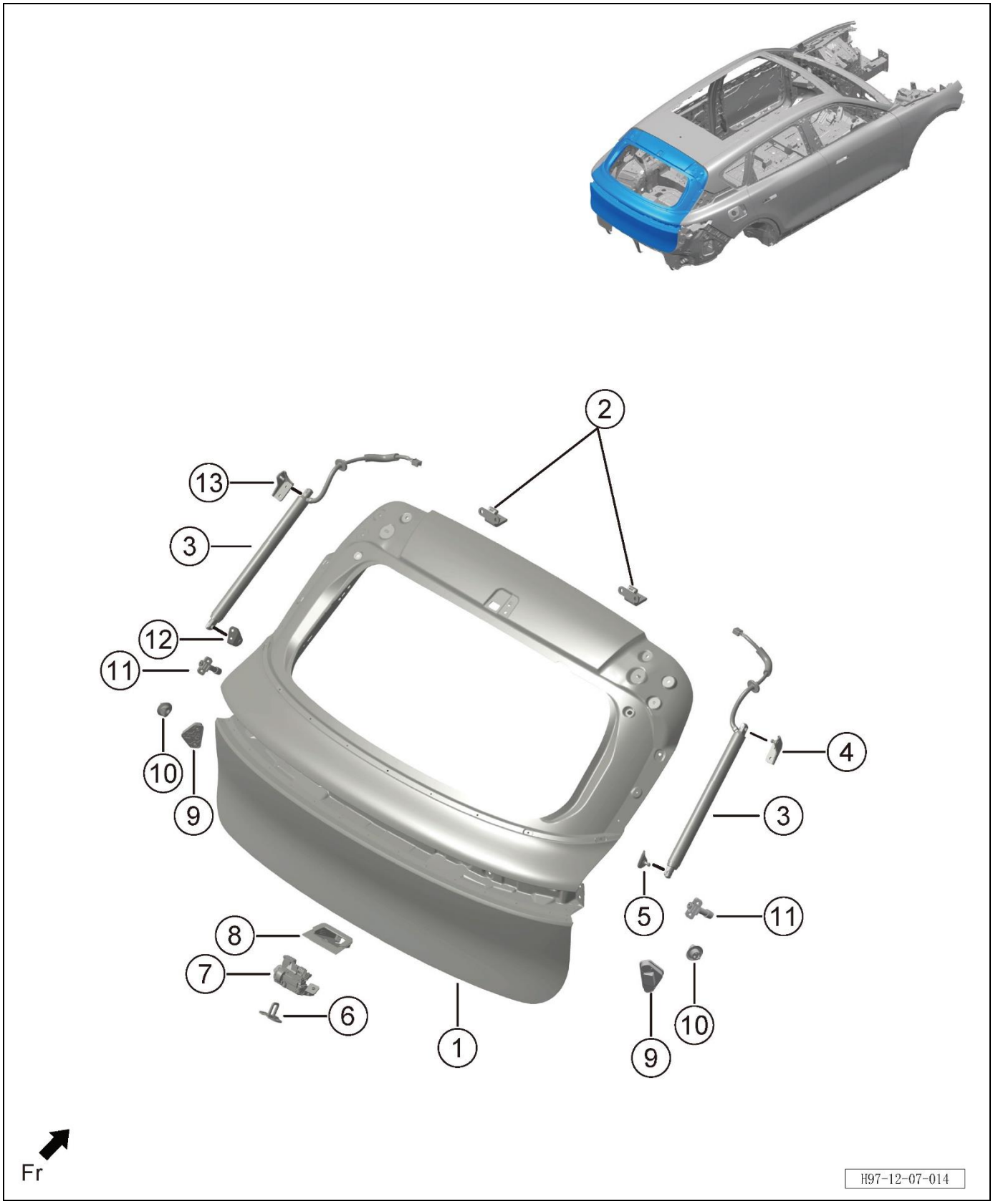


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Left rear door panel assembly	1	
2	Right rear door plate assembly	1	
3	Left rear door waterproof membrane	1	
4	Right rear door waterproof membrane	1	
5	Rear door buffer pad	2	
6	Front door upper hinge assembly (left)	1	
7	Front door upper hinge assembly (right)	1	
8	Rear door upper hinge assembly (left)	1	
9	Rear door upper hinge assembly (right)	1	
10	Rear door stopper assembly	2	

12.1.8.14 Structure diagram of tailgate

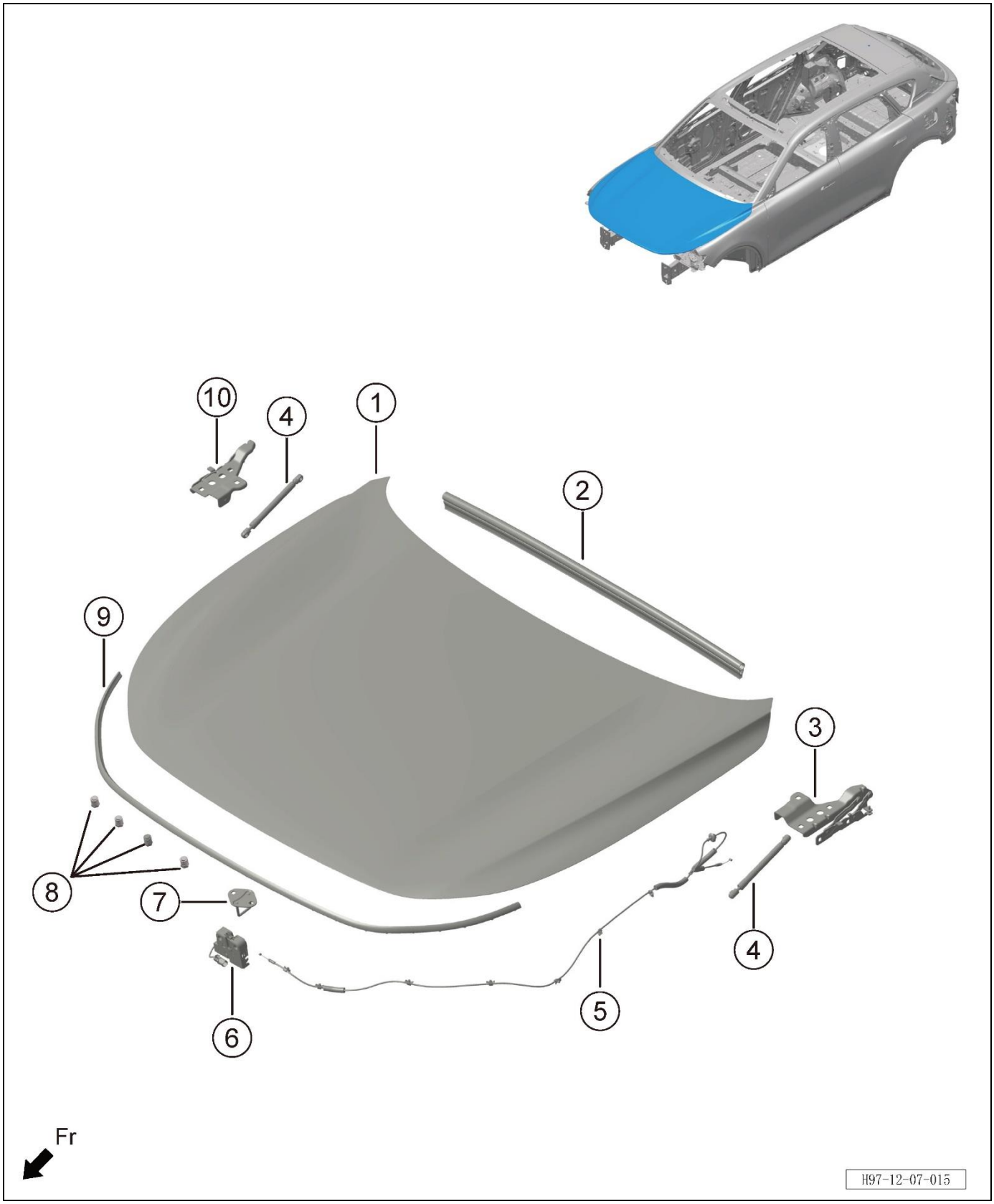


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Tailgate panel assembly	1	
2	Tailgate hinge assembly	2	
3	Tailgate electric strut assembly	2	
4	Tailgate right strut upper bracket assembly	1	
5	Tailgate right strut lower bracket assembly	1	
6	Tailgate buckle assembly	1	
7	Tailgate lock assembly	1	
8	Tailgate lock cover	1	
9	Tailgate stopper on the body	2	
10	Tailgate stopper on the door	2	
11	Tailgate stopper	2	
12	Tailgate left strut lower bracket assembly	1	
13	Tailgate left strut upper bracket assembly	1	

12.1.8.15 Structure diagram of engine hood

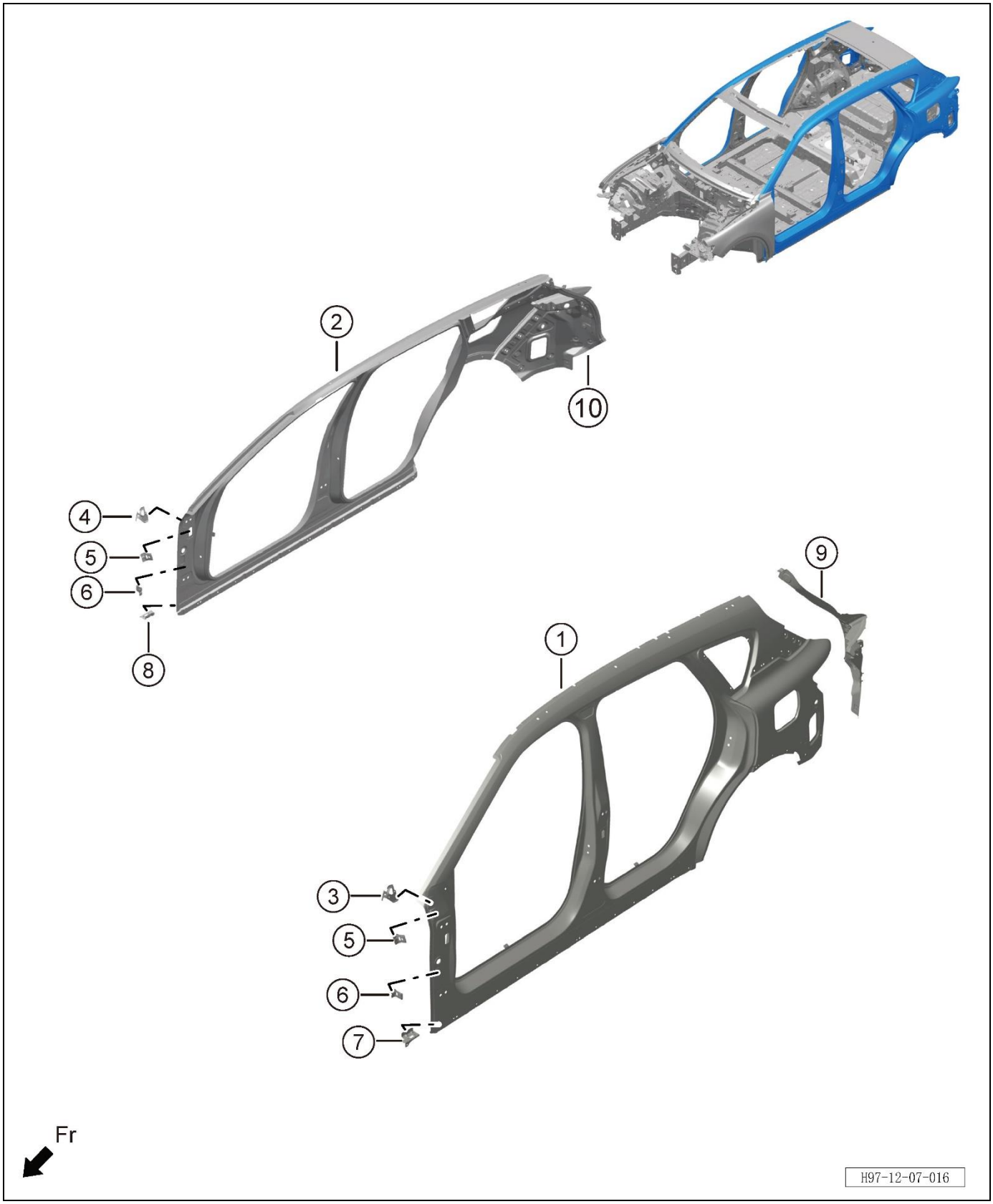


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Engine hood panel assembly	1	
2	Engine hood rear sealing strip assembly	1	
3	Engine hood left hinge assembly	1	
4	Engine hood pneumatic strut	2	
5	Engine hood lock cable	1	
6	Engine hood lock	1	
7	Engine hood buckle	1	
8	Front engine compartment cushion	4	
9	Engine hood front sealing strip assembly	1	
10	Engine hood right hinge assembly	1	

12.1.8.16 Structure diagram of side wall

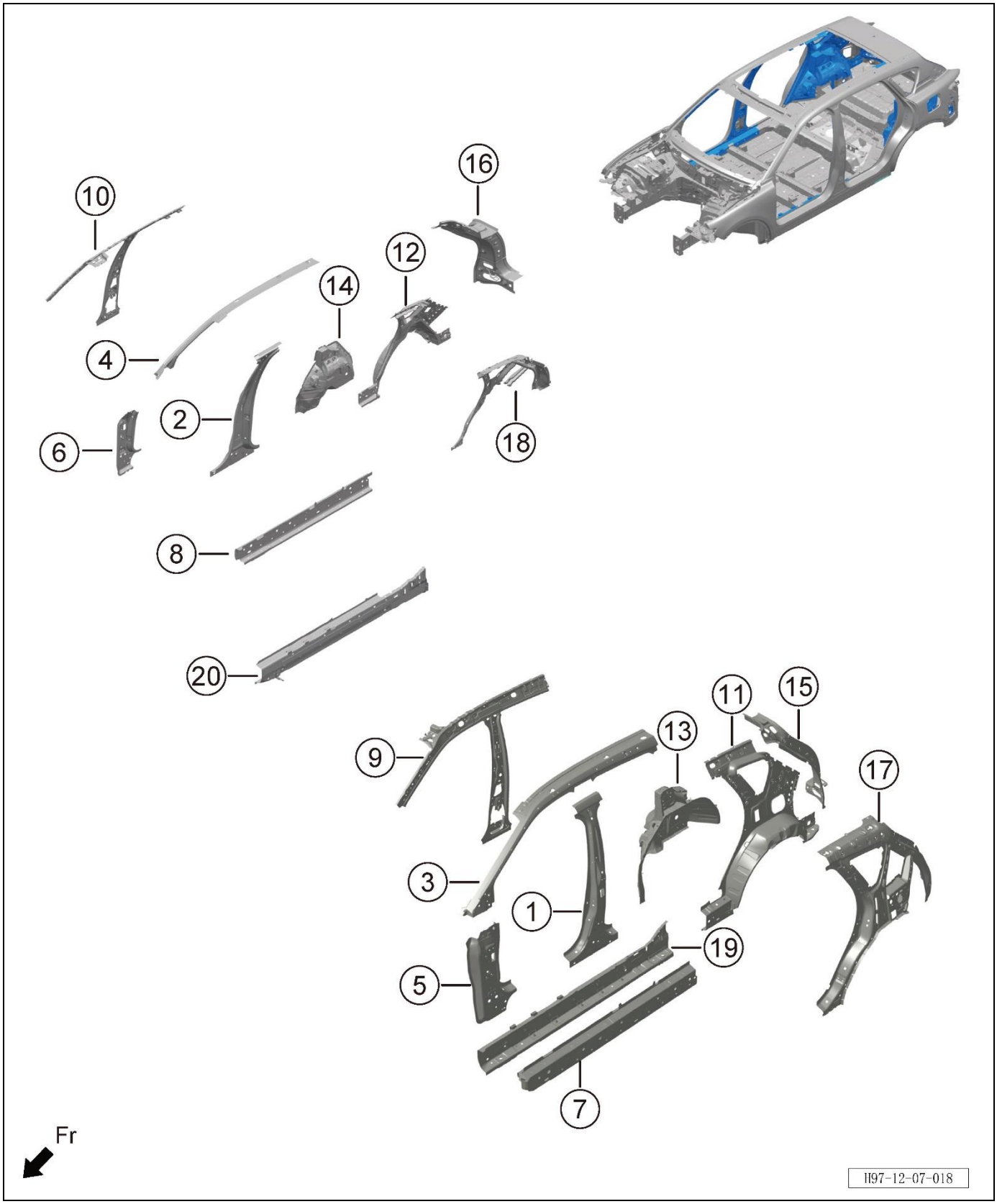


Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Left side wall outer plate	1	
2	Right side wall outer plate	1	
3	Left front fender rear upper mounting bracket assembly	1	
4	Right front fender rear upper mounting bracket assembly	1	
5	Front fender rear middle mounting bracket	2	
6	Fender lower mounting bracket assembly	2	
7	Left body kits front end fixing bracket assembly	1	
8	Right body kits front end fixing bracket assembly	1	
9	Left rear drip channel assembly	1	
10	Right rear drip channel assembly	1	

12.1.8.17 Structure diagram of body pillar



Note:

- To determine the parts which are sold as repair parts, refer to parts catalog in Parts Manual.

S/N	Part name	Loading quantity	Remarks
1	Left B-pillar frame reinforcement plate assembly	1	
2	Right B-pillar frame reinforcement plate assembly	1	
3	Left A-pillar frame upper reinforcement plate assembly	1	
4	Right A-pillar frame upper reinforcement plate assembly	1	
5	Left B-pillar frame lower reinforcement plate assembly	1	
6	Right B-pillar frame lower reinforcement plate assembly	1	
7	Left door sill reinforcement plate assembly	1	
8	Right door sill reinforcement plate assembly	1	
9	Left rear drip channel assembly	1	
10	Right rear drip channel assembly	1	
11	Left side wall inner plate assembly	1	
12	Right side wall inner plate assembly	1	
13	Left rear wheel housing inner plate assembly	1	
14	Right rear wheel housing inner plate assembly	1	
15	Left D-pillar inner plate assembly	1	
16	Right D-pillar inner plate assembly	1	
17	Left rear side wall reinforcement plate assembly	1	
18	Right rear side wall reinforcement plate assembly	1	
19	Door sill inner plate assembly (left)	1	
20	Door sill inner plate assembly (right)	1	

12.1.9 Repair method of body sheet metal

12.1.9.1 Type of vehicle sheet metal parts damages

The majority of body sheet metal parts are mass-produced, and molded on mechanical equipment. In most cases, manual operations are applied to auxiliary processing. But single-part processing or repair is mainly completed by applying manual operations. Common manual skills applied to sheet metal production include bending, edge closing, edge laying, edge pulling, arching and crimping, edging and correction, etc. At the meantime, welding, splicing and other methods are used to achieve permanent connection between sheet metal parts.

1. The body sheet metal parts may be damaged in a variety of ways when they are used. Common damages include: wear, corrosion, fracture, unevenness or tearing on metal plate surface, wrinkle, bending and twist, etc. Damages generated in vehicle operations include wear, corrosion, crack, etc. Mechanical damages include bumps, tears, buckling, bending and twist caused during accidents. Damages may be found in sheet metal parts every now and then because of designs, for example, insufficient structural strength, or unreasonable process design.

2. Damages (if any) in sheet metal parts are of various types. Therefore, when repairing, you should check and analyze the damages and apply proper repair methods and sequences so that the results are satisfying.

12.1.9.2 Repair of wrinkles and concave-convex

Wrinkles and concave-convex caused by external impacts or squeezing are defined as elastic deformations if they are minor damages and no extension of metal occurs. Those having major significance and leading to metal extension are defined as plastic deformations. Serious impact or squeezing may lead to tearing. The exposed parts of body sheet metal parts may have damages like wrinkles and concave-convex.

1. Convex surface repair:

For repair of convex surface with large curvature, methods including hammering or top-pulling can be applied in case of concave-convex damages. In the event of minor concave-convex damages, you can put a pad iron at the back of the lowest part of the concave, hit with a hammer, and then change the position of the pad iron accordingly. When the convexes are basically knocked flat, most of the concaves will recover under the reaction force of the pad iron. Thereafter, observe the overall smoothness of panel surface, and make slight adjustments in a targeted manner so as to repair concave and convex damages.

2. Larger concave:

You can put a backing plate at the back of the concave, and then directly lift it with a top supporter.

It is necessary to heat the concave until it becomes dark red so as to reduce the jacking force. During jacking, you should take into account that rebound may result in "hypercorrection". If there are large ductile protrusions on the surface, the metal at the extension can be properly shrunk. If it is difficult to put pad iron in damaged positions, drill as few holes as possible in concave positions and the hole diameter should be as small as possible, then fold a wire into a hook shape in the hole and fasten it from the inside of the hole, and finally stretch it under external force. When the results are satisfying, pull out the wire, weld the hole, and grind it flat.

3. Wrinkle damage repair:

In the event of wrinkle damages, apply an external force (in a direction opposite to the impact force) at the wrinkles to unfold the wrinkles. The damage will then change into concave-convex damage. Thereafter, you can repair using repair methods for concave-convex damages. A manual hoist can be used as a repair tool. When using it, fix one end at the wrinkle of the sheet metal part and the other end on a solid column or wall, and then pull the guide chain. The wrinkle will gradually unfold in this condition. You should observe the degree of extension at any time to avoid tearing.

12.1.9.3 Repair of bends and twists

Many reasons can be explained for bends and twists generated in external impacts or squeezing. The most common one is an accident.

1. Generally speaking, bend and twist deformation near the center of impact or squeezing is serious and easy to find. While the degree of slight deformation is determined by comparing data measured by detection tool and the design data. Sometimes it can also be determined by observing the relative position of adjacent positions of sheet metal parts.

2. The deformation of body frame, beam and column can be corrected using stretching method, and the direction of the support-pull force should be opposite to that of the deformation force. Here is an example. If the right front corner of the roof collapses after being hit, the right front corner of right door frame and windshield frame may be deformed, and the door will be unable to close. The focus of frame deformation is at the upper right corner of the door frame. Use a top supporter to jack between the upper right corner and the lower left corner of the door frame, and rotate the handle to extend the screws at both ends. When the top supporter screw extends, the upper right corner of the roof will gradually rise, the windshield frame will reset accordingly, and the door frame will also gradually restore. Another example is given as follows. If the left side of the vehicle is hit, the central pillar between the two doors on left side will become concave. In this case, a manual hoist can be used. You can fix one end at the damaged position on central pillar and the other end on a solid column or wall, and then pull the guide chain. The iron chain will shorten and the concave on central pillar will gradually reset.

3. When calibrating the body frame, beam and column by stretching method, a backing plate should be placed at the contacts between body sheet metal parts and the stretching tool to avoid new damages.

12.1.9.4 Repair of tearing

Tearing caused by external impact or squeezing may lead to minor consequences such as extension of sheet metal materials or major consequences such as loss of partial sheet metal materials.

1. In the event of minor damages, repair and smooth the torn positions, then perform welding (preferably CO2 gas shielded welding if conditions permit, and smooth welded junctions), and finally measure whether there is a ductile convex (repair it with repair methods for concave-convex damages if necessary). In the event of major damages and loss of materials, patching or replacing damaged parts with new ones can be taken into account depending on the degree and shape of damages.

2. If patching is required, dig a simple geometric shape as much as possible at the position with missing materials, measure the size of the hole and then fill it with sheet metal material same as the material used in original part with same thickness. Generally, when using materials, there is a no more than 1 mm welded junction in the surrounding area, and it is better to conduct CO2 gas shielded welding to reduce the deformation of the workpiece after welding, thereby improving rust resistance. The welding wire contains a small amount of hydrogen, which gives it perfect crack resistance and high structural strength after welding.

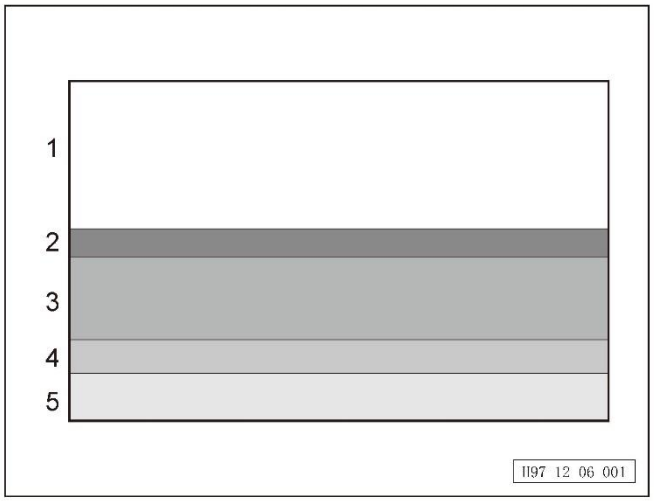
12.2 Paint coating

12.2.1 Specifications

Refer to technical specifications provided by material suppliers.

12.2.2 Description and operation

12.2.2.1 Description of paint coating



1. Clear paint (clear top coat)
2. Pigmented paint
3. Intermediate paint
4. Electrophoretic primer
5. Body sheet metal parts

1. Main function of clear paint
The clear paint is usually the final coat of paint that is applied to entire paint surface. Its main functions are as follows:

a. Resist ultraviolet rays in sunlight because it contains anti-ultraviolet materials.

b. Resist corrosion on paint surface as a result of environmental dust (acid rain).

c. Give the paint surface rubbing resistance.

d. Give the paint surface better lustre.

2. Main function of pigmented paint

a. Add colors.

b. Ensure lustre.

3. Main function of intermediate paint

a. Fillability.

b. Isolation/sealing.

c. Reflect pigmented paint.

4. Main function of electrophoretic primer

a. Prevent rusts.

b. Improve adhesion.

c. Improve limited fillability.

- Paint is a type of mixed liquid that can be applied on various substrates; after the paint dries, a solid paint film is formed to protect the substrate and beautify the appearance. The vehicle has been sprayed with four layers of paint (as shown in left figure) when it is delivered from the factory, giving it good corrosion resistance and lustre.

- It is required to restore the repaired positions to original appearance when spraying paint; the repair must be performed in strict accordance with the paint spraying process specified by manufacturers. Refer to "Rigid surface spray painting process".

12.2.2.2 Daily maintenance of vehicle paint surface

When carrying out daily maintenance of vehicle paint surface, observe the followings:

1. During vehicle maintenance, be careful not to touch the paint surface of the body with dirty oily hands or wipe the paint surface with an oil rag or place tools with oil stains or wipes containing organic solvents on the body. If any, wipe it off in time.

2. In case serious scratches, dents or peelings are found on paint surface, repair it in time.

3. Remove certain extremely corrosive traces (such as asphalt, bird droppings, insects, etc.) in time.

4. Before and after the use of the vehicle, remove dust from the body in time to minimize the adsorption of dust by body static electricity.

5. Rinse promptly after rain. After rain, rain stains on body will gradually decrease, making the concentration of acidic substances in rainwater gradually increase. And this will damage the paint surface over time if the rain stains are not removed with water as soon as possible.

6. The vehicle should be washed providing it cools down. Do not wash the vehicle in the hot sun or under high temperature.

7. Wax the paint surface at an irregular interval for protection, and drive the vehicle to VOYAH Service Center for maintenance at a regular interval (once a quarter) so as to restore the lustre of the body paint surface in time.

CAUTION:

- Poor adhesion between coatings.
- Incomplete curing.
- Reduced lustre.
- Poor color accuracy.
- Damaged coatings (pits, blistering, orange peel, and tarnish).

12.2.2.3 Warnings and precautions for paint mixing and spray painting

Warning!

Take into account the followings during paint mixing:

- Be sure to use the matching products of the brand manufacturer; products of different brands cannot be mixed.
- Store and mix color masterbatches in plastic containers free of release agents.
- Thoroughly stir prepared color masterbatches before use.
- Determine the pigments by spraying the pigment on test panel and comparing the colors.
- The test panel for spraying must be an aluminum panel or a primed and fully edged iron panel.
- Keep the electronic scale clean, and do not put the electronic scale in a place prone to vibration or air interference.

CAUTION:

- Do not mix paint systems of different manufacturers with substitute products. Mixing incompatible products will lead to peeling primer coat.

12.2.2.4 Precautions for maintenance and repair of clear paint

CAUTION:

- Do not wash the vehicle in direct sunlight.

- Do not use a brush or broom to remove snow or ice from the body.

- Do not use strong soaps or chemical detergents containing acids and bases.

- After thorough cleaning, wipe off any remaining rinse water immediately so as to prevent it from drying on surfaces. It is recommended to wipe off water with a soft towel.

- Polish the vehicle only when it has been confirmed that the defects on clear paint coat can be eliminated by polishing. In case the defects are not so serious, narrow the polishing range as much as possible. Do not remove too much clear paint. Otherwise, premature damage may occur to clear paint.

- Use electric polishing equipment strictly in accordance with the requirements recommended by the polishing equipment manufacturer. Do not cover vortex prints with wax or silicone-based products (because the prints may appear soon, thus dissatisfying users).

12.2.2.5 Precautions for preservative treatment

CAUTION:

- When spraying anti-corrosion materials, take measures to prevent spraying to openings of relevant parts (such as door lock, window regulator slot and window regulator switch, etc.) and to any moving or rotating parts, especially the parking brake cable. After spraying the materials, make sure that the leakage holes of the relevant parts are not blocked and free of anti-corrosion materials.

- Wear special protective glasses, gloves and safety shoes when performing this procedure.

- The sheet metal parts have been sprayed with electrophoretic primer when the vehicle is delivered from the factory. After repair and/or replacement of parts, all exposed metal surfaces of the sheet metal parts must be sprayed with anti-rust primer for corrosion protection.

- If the original electrophoretic coating or anti-corrosion material of the sheet metal parts is damaged during welding, clean them and take anti-corrosion measures.

- The metal may be exposed during collision repair. Therefore, the metal surfaces must be repainted with special anti-corrosion materials.

- In addition to water and dust prevention, the sealant can also prevent against corrosion. If sealing positions are damaged during repair, correct by resealing. The joints of the new plates shall be resealed. The sealant used must remain flexible after curing and painting. Add high consistency filler to open seams that are sealed with sealant. Follow instructions for selected materials.

12.2.3 Diagnostic information and procedures

12.2.3.1 Examples of common defects in vehicle paint surface and treatment

Name	Cause	Countermeasures
Chalking	- The paint film has been eroded heavily, for example by strong ultraviolet rays. - - Incorrect paint ratio during construction. - Poor light and weather resistance of coatings. - The vehicle is not washed often or not cleaned completely. - The selected vehicle cleaner is not suitable or the polishing wax is too coarse.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair. ■
Paint peeling on plastic parts	- Poor adhesion between the coating and the substrate or too hard topcoat relative to undercoat. - The paint film is too thick, and it is corroded by moisture in the air, acidic substances or alkaline substances. - The undercoat has poor recoatability or is not properly handled; the topcoat has defects such as pinholes and exposed bottom.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair. ■
Cracking	- Primer paint is not mixed completely before spraying. - Too thick topcoat is applied. - Too thick intermediate coat is sprayed applied.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair. ■
Bird dropping damage	- Erosion caused by bird droppings.	- Perform polishing (slight erosion). ■ - Carry out regular grinding and polishing (moderate erosion). ■ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair (major erosion). ■
Scratches	- Low paint film hardness. - Scratches by hard objects.	- Perform polishing (slight scratch). ■ - Carry out regular grinding and polishing (coarse scratch). ■ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair (scratch). ■
Corrosion	- The paint film on the edges is thin. - Corrosion caused by bumps. - Corrosion by acidic or alkaline substances.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair (in case of severe corrosion, repair sheet metal and spray paint). ■

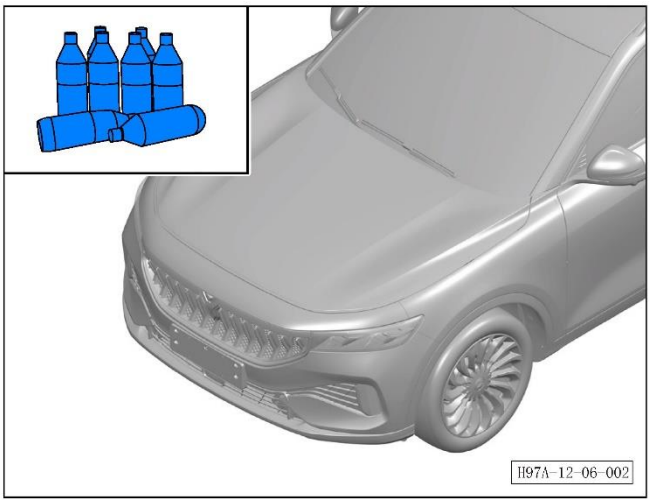
Paint peeling	- Poor adhesion between the coating and the substrate or too hard topcoat relative to undercoat. - The paint film is too thick, and it is corroded by moisture in the air, acidic substances or alkaline substances. - The undercoat has poor recoatability or is not properly handled. - The topcoat has defects such as pinholes and exposed bottom.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair (in case of severe corrosion, repair sheet metal and spray paint). ■
Blistering	- The paint film is exposed to a humid environment for a long time, and water vapor penetrates into the paint film and lead to blistering. - The substrate is corroded by infiltrating substances. - The paint film is corroded by gasoline, acidic or alkaline substances, etc.	- Perform polishing. □ - Carry out regular grinding and polishing. □ - Carry out deep grinding and polishing for refurbishment. □ - Spray paint locally for repair (in case of severe corrosion, repair sheet metal and spray paint). ■

CAUTION:

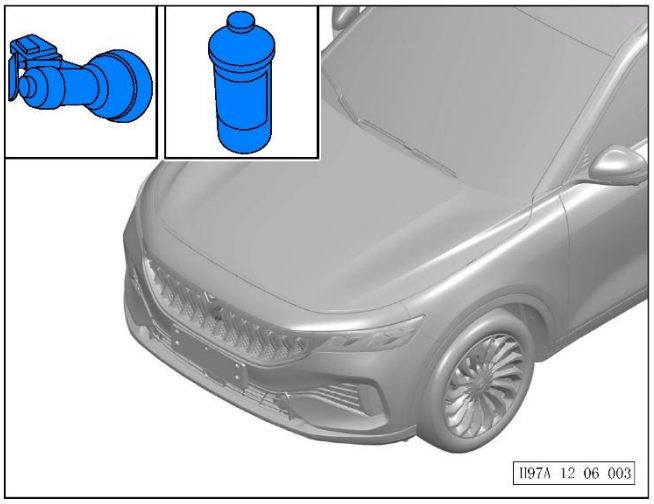
The blacked box in the table means this method is applied to remove the corresponding defect.

12.2.4 Removal and refitting

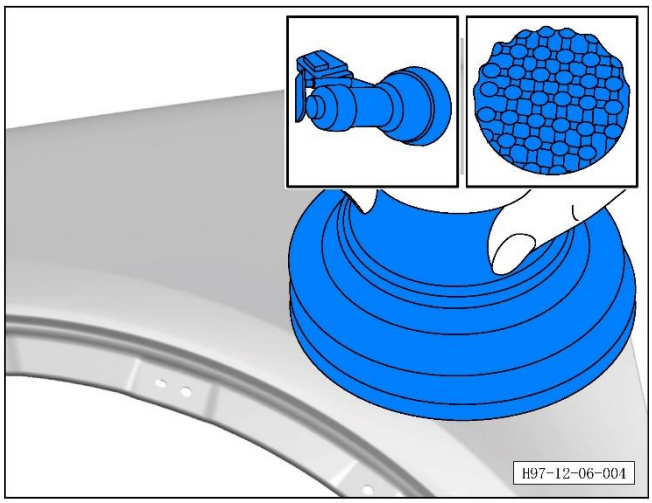
12.2.4.1 Example of common paint film defect treatment process



1. Clean the surface to be polished with degreasing material before polishing.



2. Fully wet the sponge polishing disc, squeeze out any excess water, apply a small amount of polishing wax on the surface to be polished, and adjust the speed of the polishing machine.



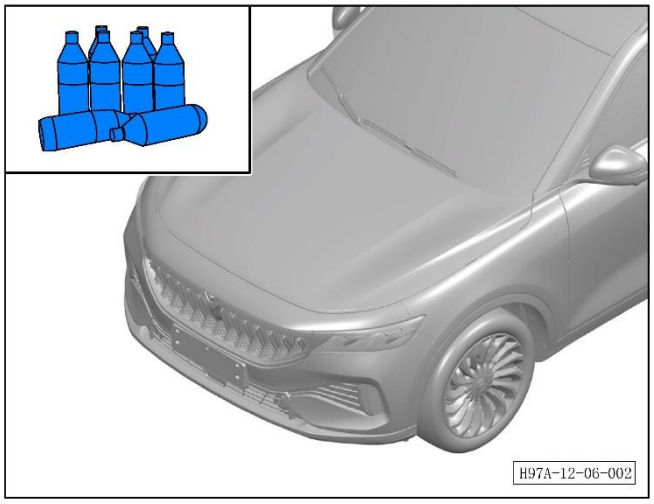
3. Press the sponge polishing disc against the paint surface, turn on the polishing machine and adjust the speed of the polishing machine to (2,500-3,000) r/min, then slightly press (3-5) s for polishing.

CAUTION:

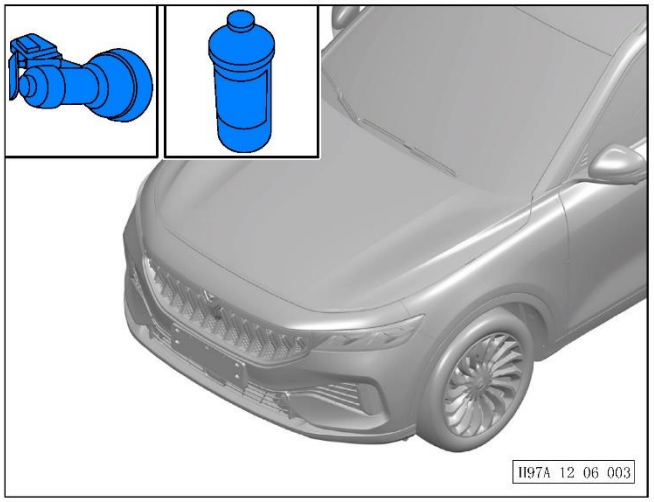
- Keep the machine moving smoothly and gently during operation, and do not take too much time to avoid overheating and burning of paint surface.

4. Wipe off excess polishing wax with a vehicle cleaning wipe.

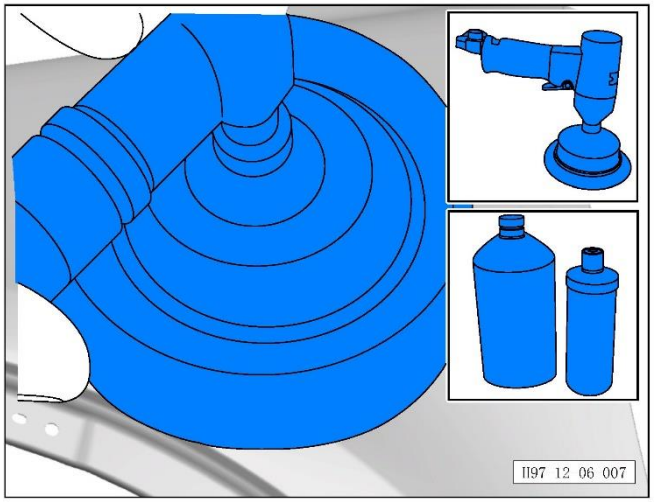
12.2.4.2 Example of routine grinding and polishing treatment process



1. Clean the surface to be polished with degreasing material before polishing.



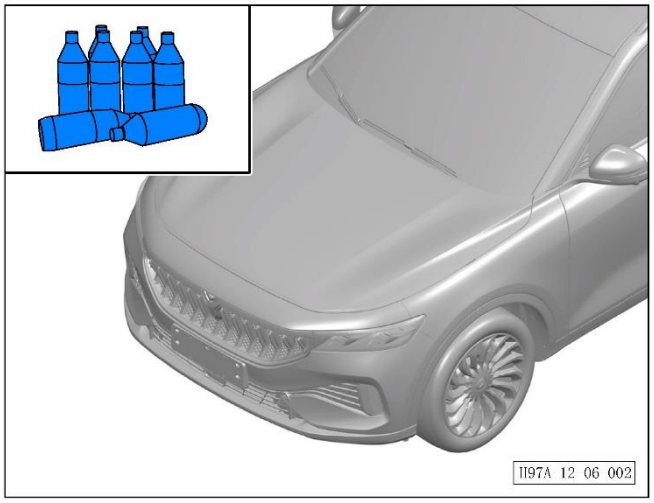
2. Apply an appropriate amount of polishing agent to the surface to be polished and adjust the speed of the polishing machine.



3. Press the wool polishing disc against the paint surface, then turn on the machine and adjust the speed to (2,500-3,000) r/min.

CAUTION:

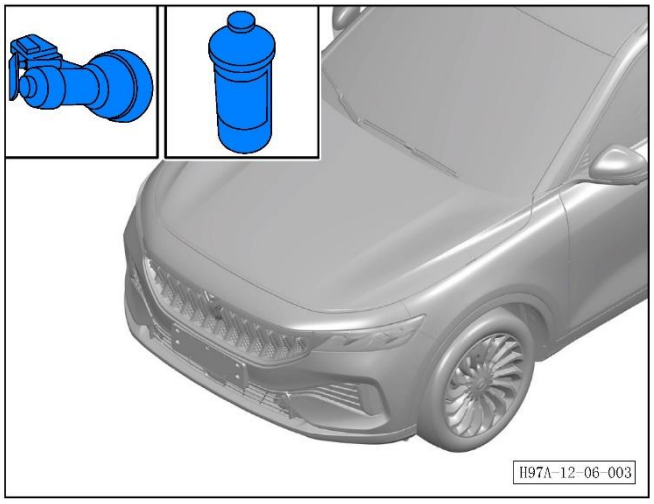
- Keep the machine moving smoothly and gently, and do not over grind. Keep the grinding time as short as possible and the grinding area as small as possible.



4. Fully wet the sponge polishing disc and squeeze out excess water; apply a small amount of polishing wax to the surface to be polished, press the sponge polishing disc against the paint surface, turn on the machine and adjust the speed to (2,500-3,000) r/min, then slightly press (3-5) s for polishing.

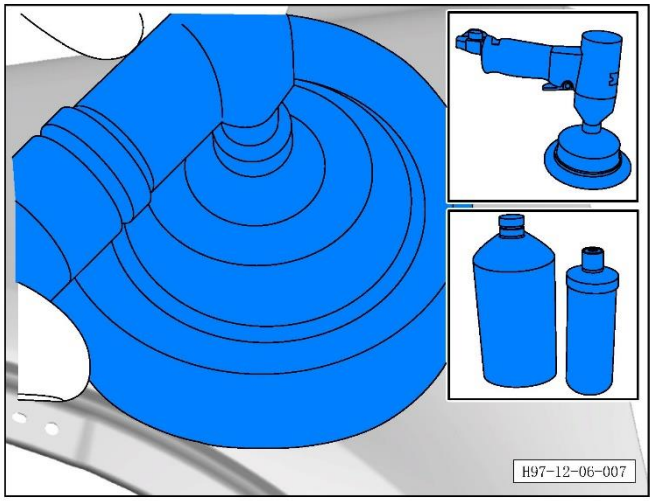
CAUTION:

- Keep the machine moving smoothly and gently during operation, and do not take too much time to avoid overheating and burning of paint surface.

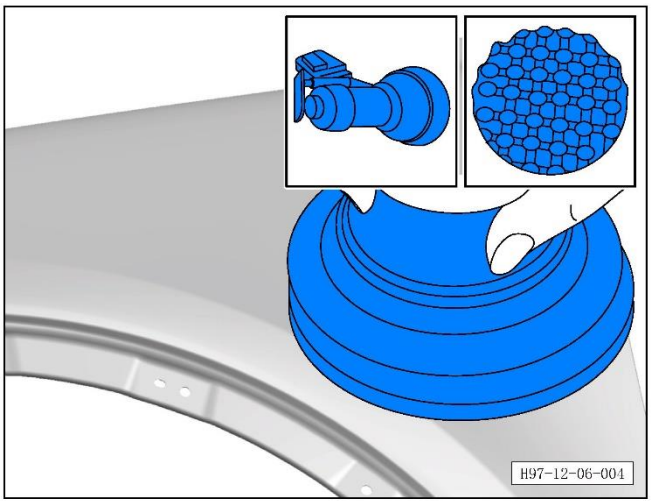


5. Wipe off excess polishing wax with a vehicle cleaning wipe.

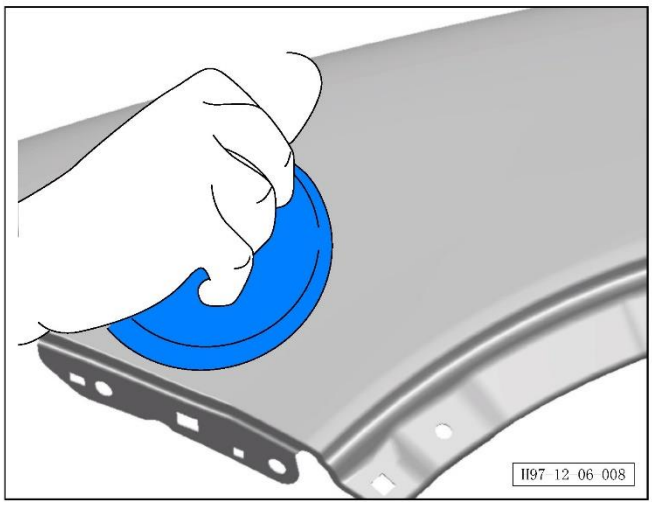
12.2.4.3 Example of deep grinding and polishing process



1. Use 2000 # water sandpaper to grind the damaged paint surface. The sandpaper shall be parallel to and close to the paint surface to be ground. The grinding shall be circular grinding.



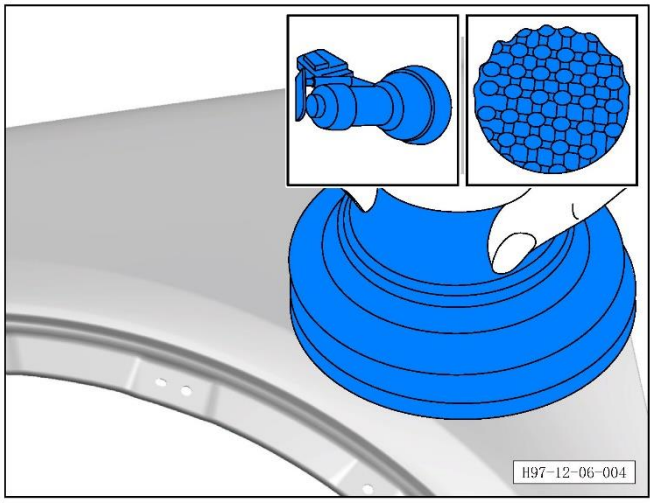
2. Apply an appropriate amount of polishing agent to the surface to be polished and adjust the speed of the polishing machine.



3. Press the wool polishing disc against the paint surface, then turn on the machine and adjust the speed to (2,500-3,000) r/min.

CAUTION:

- Keep the machine moving smoothly and gently, and do not over grind. Keep the grinding time as short as possible (3s-5s) and the grinding area as small as possible.



4. Fully wet the sponge polishing disc and squeeze out excess water; apply a small amount of glazing wax to the surface to be polished, press the sponge against the paint surface, then turn on the machine and adjust the speed to (2,500-3,000) r/min. Slightly press 3 s-5 s for polishing.

CAUTION:

- Keep the machine moving smoothly and gently during operation, and do not take too much time to avoid overheating and burning of paint surface.

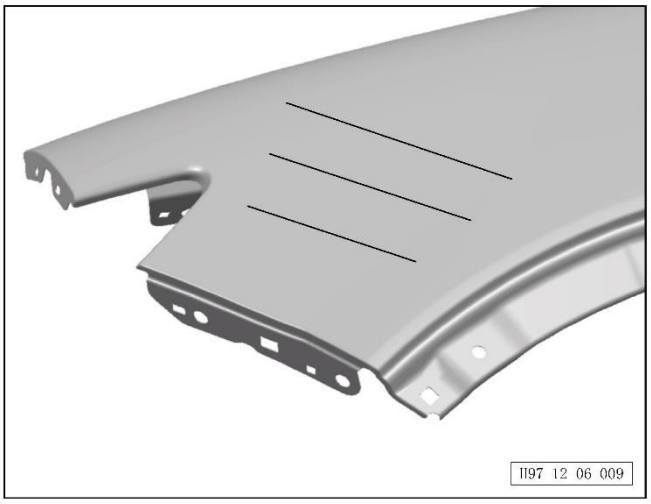
5. Wipe off excess polishing wax with a vehicle cleaning wipe.

12.2.4.4 Rigid surface spray painting process

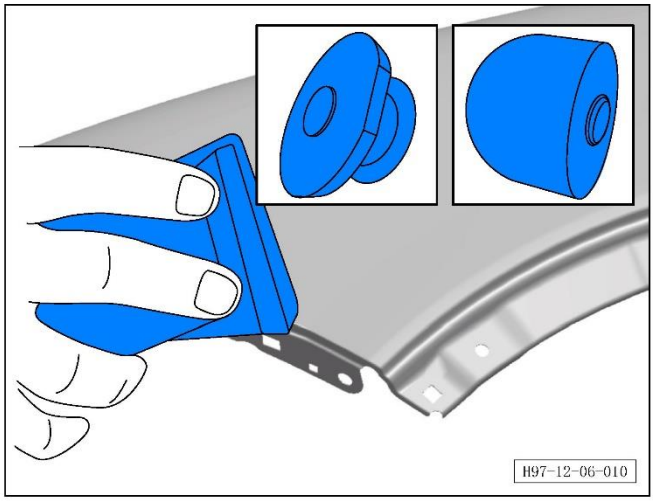
In the following, the process of partial spraying (paint repair) will be illustrated by taking the fender as an example.

CAUTION:

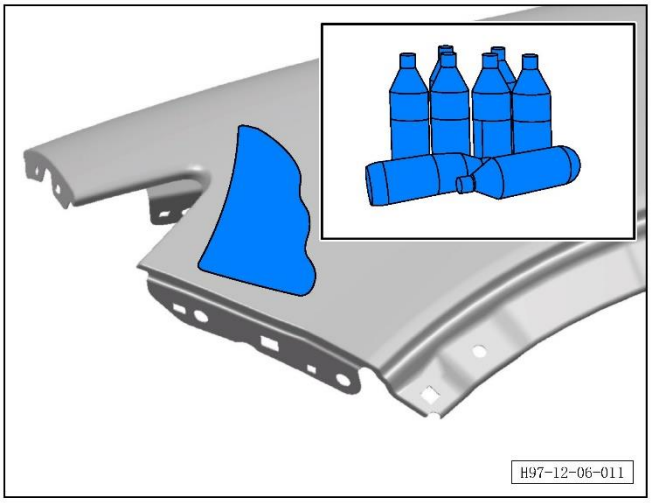
- Paint repairs on rigid surfaces must be in accordance with standards developed by Division H. Confirm the repair area and the repair range, for example, partial repair, block repair, or vehicle repair; in the event of collision damages, repair the sheet metal according to the extent of damages, or spray paint after replacement of damaged parts.



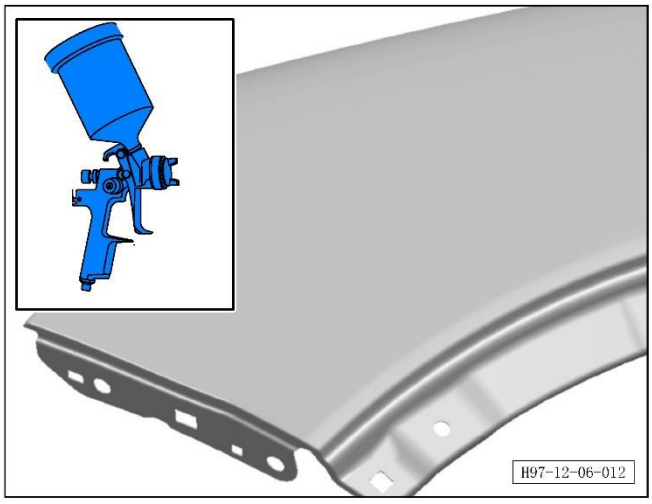
1. If the fender is seriously scratched, perform partial spraying (paint repair).



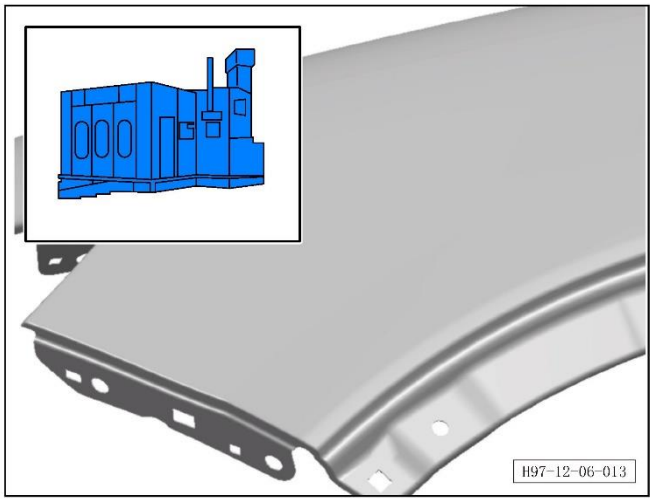
2. Grind on damaged paint surface with P500 # wet (waterproof) sandpaper (circular grinding).



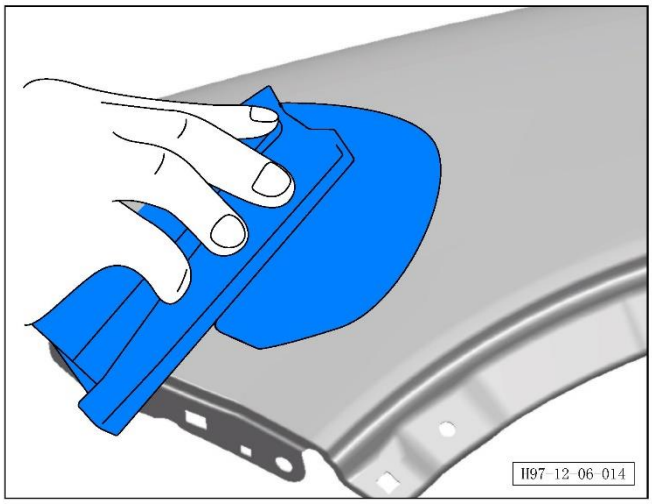
3. After grinding, use degreaser to remove oil and clean.



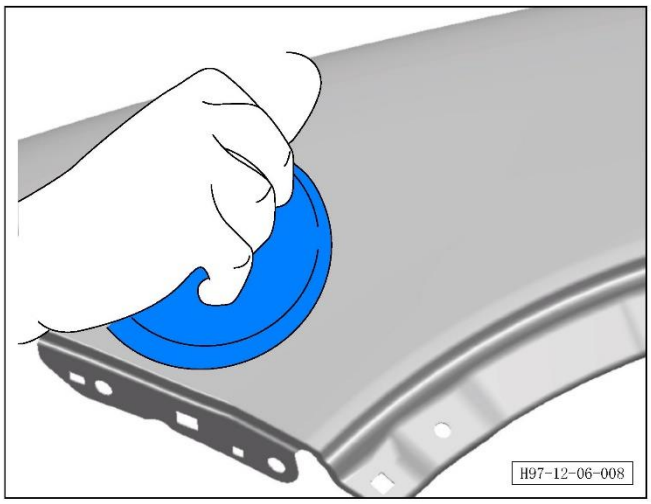
4. When spraying primer, try to control the application range of the primer, and maintain gradual coating at edges instead of stepped coatings.



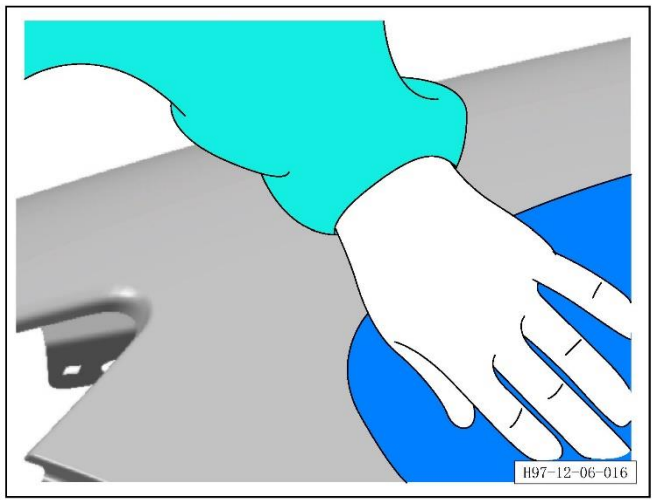
5. Flash dry for (4-5) min and then bake for (20-30) min. Set the spray booth temperature to (70-80)°C/(158-176)°F.



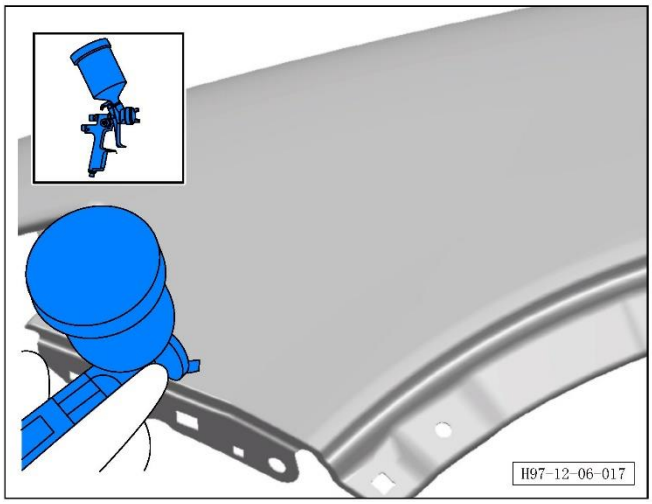
6. After baking, use (P800-P1000) # sandpaper to carry out wet grinding.



7. Grind with P2000 # fine (waterproof) sandpaper within a larger grinding area.



8. After grinding, use sticky gauze to remove dust before paint spraying.



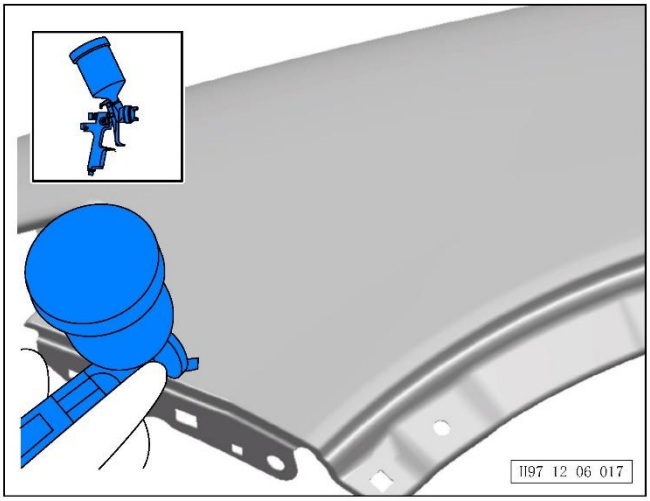
9. Spray primer.

a. Set air pressure to (150-200) kPa/(21.8-29.0) psi.

b. Maintain at a spraying distance of (20-30) cm/(7.87-11.81) in.

CAUTION:

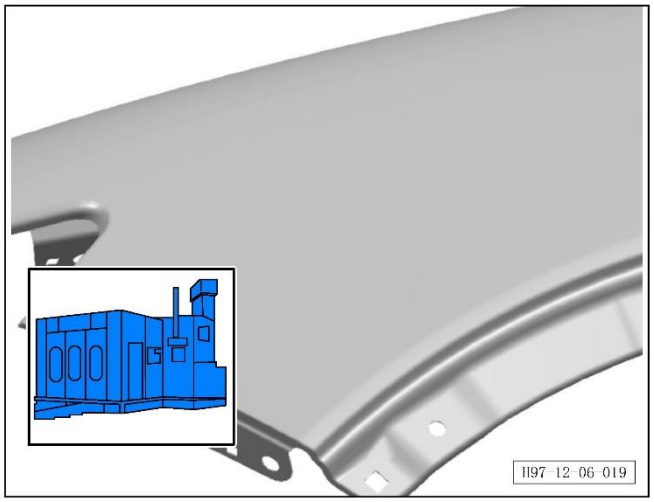
- The subsequent spray area becomes slightly wider for transition.



10. After flash drying for (2-3) minutes, spray the second layer of primer until the interface position is no longer obvious.

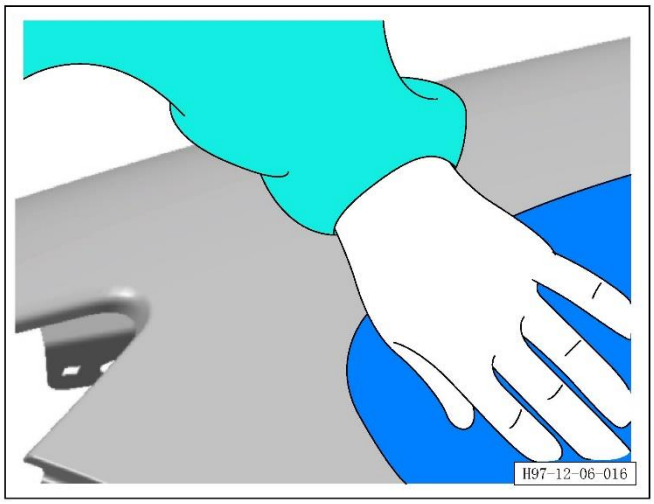
Set air pressure to (150-200) kPa/(21.8-29.0) psi.

Maintain at a spraying distance of (20-30) cm/(7.87-11.81) in.

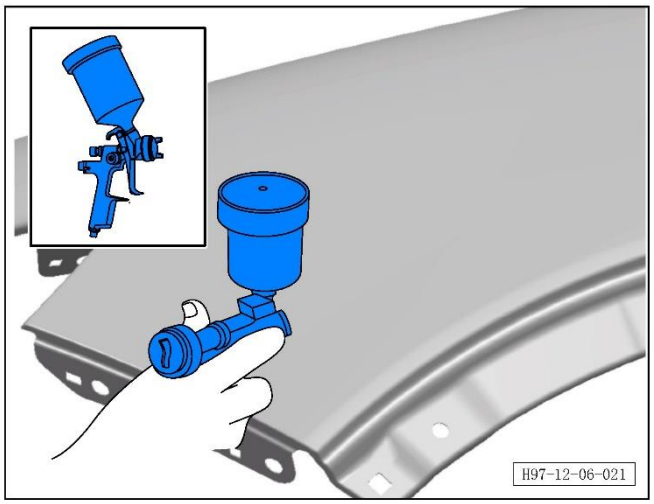


11. Flash dry for (4-5) min, and then dry for (20-30) min.

Set the spray booth temperature to (70-80)°C/(158-176)°F.



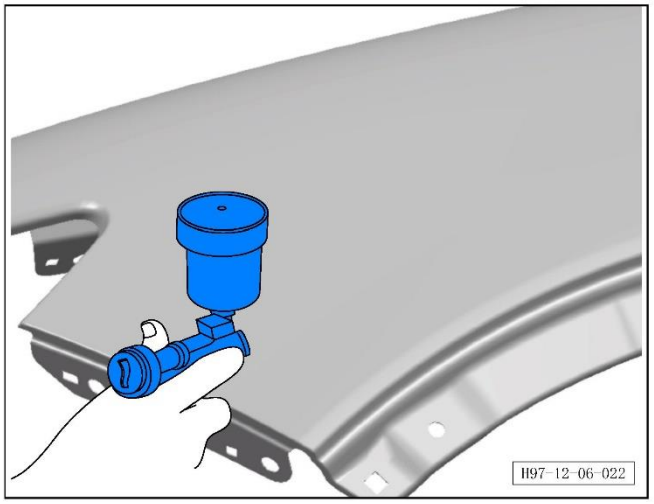
12. After drying, use sticky gauze to remove dust before varnishing.



13. Spray clear paint until the spray range completely covers the primer range.

Set air pressure to (150-200) kPa/(21.8-29.0) psi.

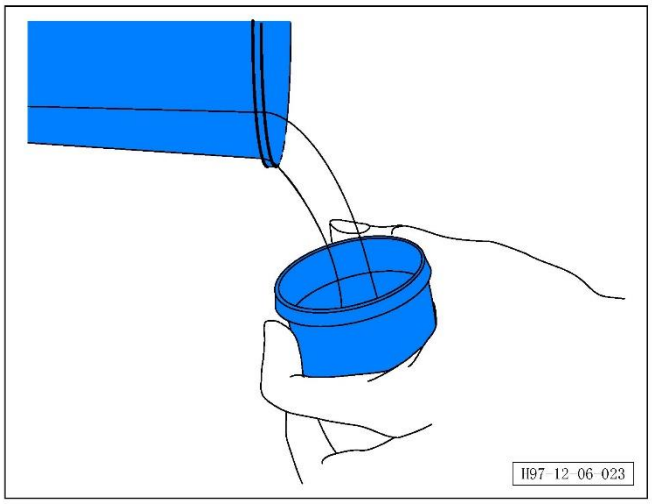
Maintain at a spraying distance of (20-30) cm/(7.87-11.81) in.



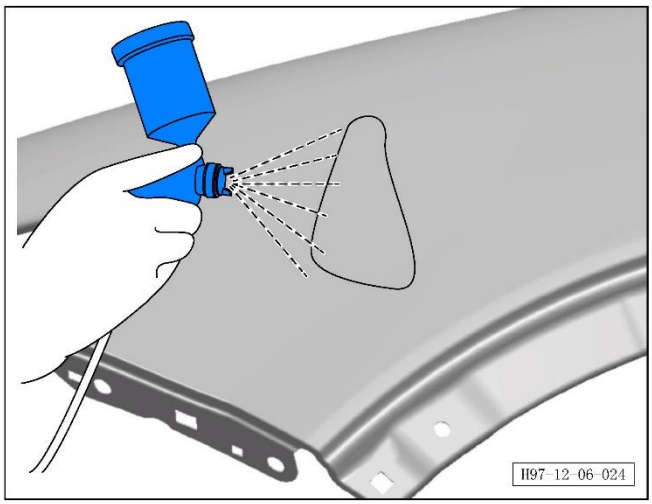
14. Flash dry for (2-3) min, and then spray the second layer of clear paint until the spray range completely covers the range of the first layer of clear paint.

Set air pressure to (150-200) kPa/(21.8-29.0) psi.

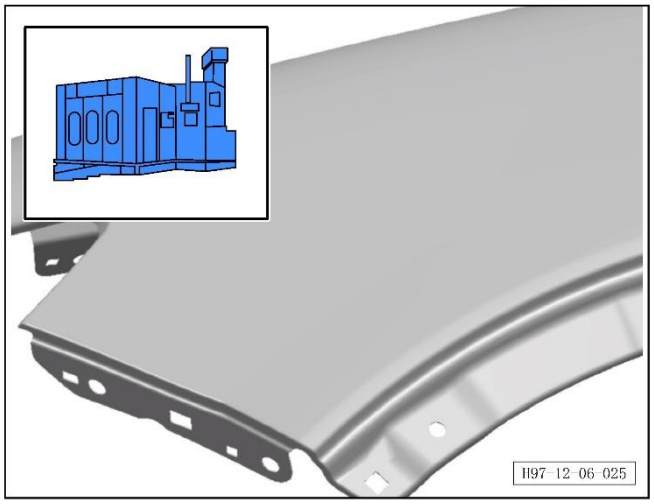
Maintain at a spraying distance of (20-30) cm/(7.87-11.81) in.



15. After spraying clear paint, add interface additives or thinners to original clear paint immediately.



16. Spray diluted clear paint at the interface 2-3 times.



17. Dry in spray booth for (20-30) minutes.

Set the spray booth temperature to (70-80)°C/(158-176)°F.

12.2.4.5 Painting of rigid surface after sheet metal repair

The paint spraying procedure for rigid surfaces after sheet metal repair is similar to that for rigid surfaces. The only difference is that the following steps are added after primer grinding and before spraying primer:

1. Apply and scrape putty;
2. Grind putty;
3. Blow dust, degrease and clean;
4. Apply and scrape spot putty;
5. Grind on the surface of old paint film;
6. Clean, degrease, and mask unpainted areas.

12.2.4.6 Paint repair procedure of plastic part surface

Paint repair procedure of plastic part surface: The paint repair on surfaces of plastic parts can refer to above-mentioned paint spraying process on rigid surfaces with attention paid to the temperature of the spray booth.

Description

Set the spray booth temperature to (70-80)°C/(158-176)°F for (20-30) min.

CAUTION:

Three basic requirements are imposed on paint repair on surfaces of plastic parts:

- Certain adhesion should be ensured between the paint and the plastics without loss of mechanical properties.
- The paint film should be flexible enough and be able to deform with the plastic without cracking.
- Original grain and rough texture on surfaces of some plastic parts should be reflected.