

FOREWORD

This Body Repair Manual contains information and instructions for repairing the body structure of the 1998 NISSAN ALTIMA (L30) model. In order to achieve reliable repair work and ensure customer satisfaction, the technician should study this manual and become familiar with appropriate sections before starting repair and rebuilding work.

This Body Repair Manual is prepared for use by technicians who have attained a high level of skill and experience in repairing collision-damaged vehicles and also use modern service tools and equipment. Persons unfamiliar with body repair techniques should not attempt to repair collision-damaged vehicles by using this manual.

Technicians are also encouraged to read the 1998 NISSAN ALTIMA (L30) Service Manual and Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warnings, that are not included in this manual. Technicians should refer to both manuals to ensure proper repairs.

Please note that these manuals are prepared for worldwide usage, and as such, certain procedures might not apply in some regions or countries. In the U.S.A. it is recommended that a M.I.G. welder be used by a trained technician.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

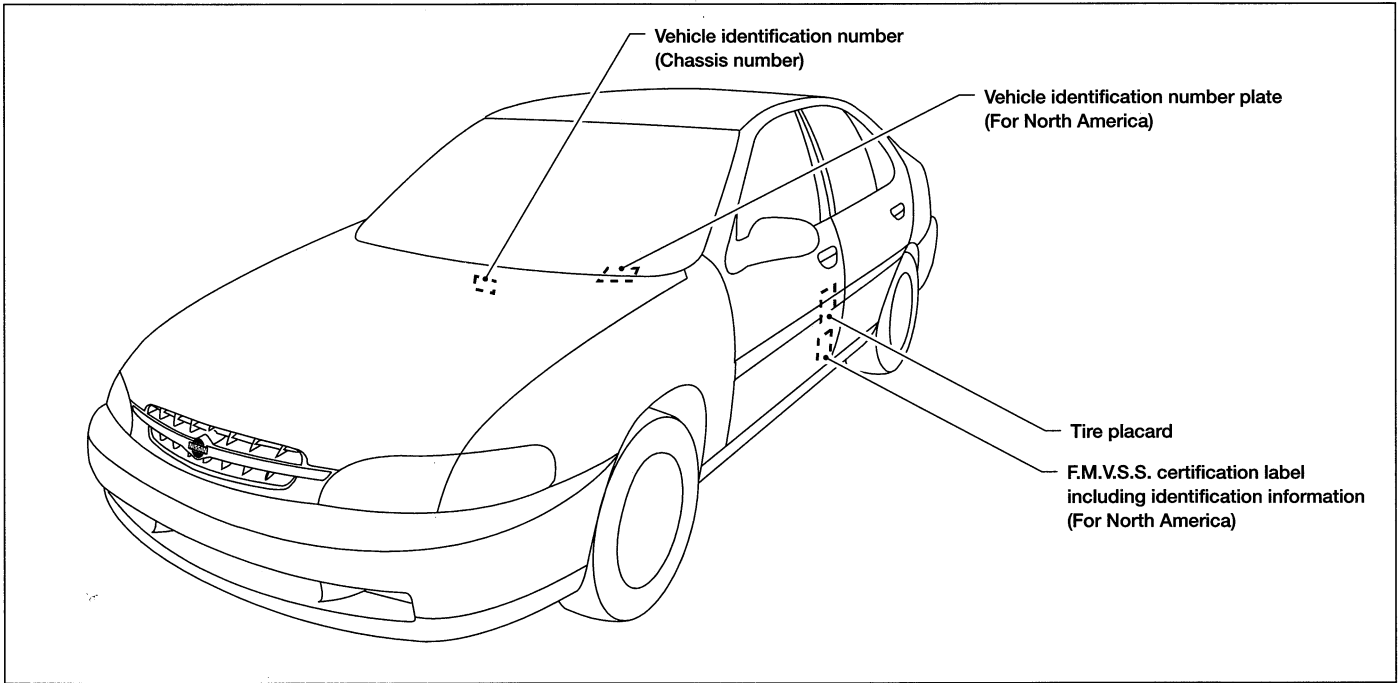
© 1997 NISSAN NORTH AMERICA, INC. Printed in U.S.A.

All rights reserved. No part of this Body Repair Manual may be reproduced or stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Nissan North America, Inc., Torrance, California.

CONTENTS

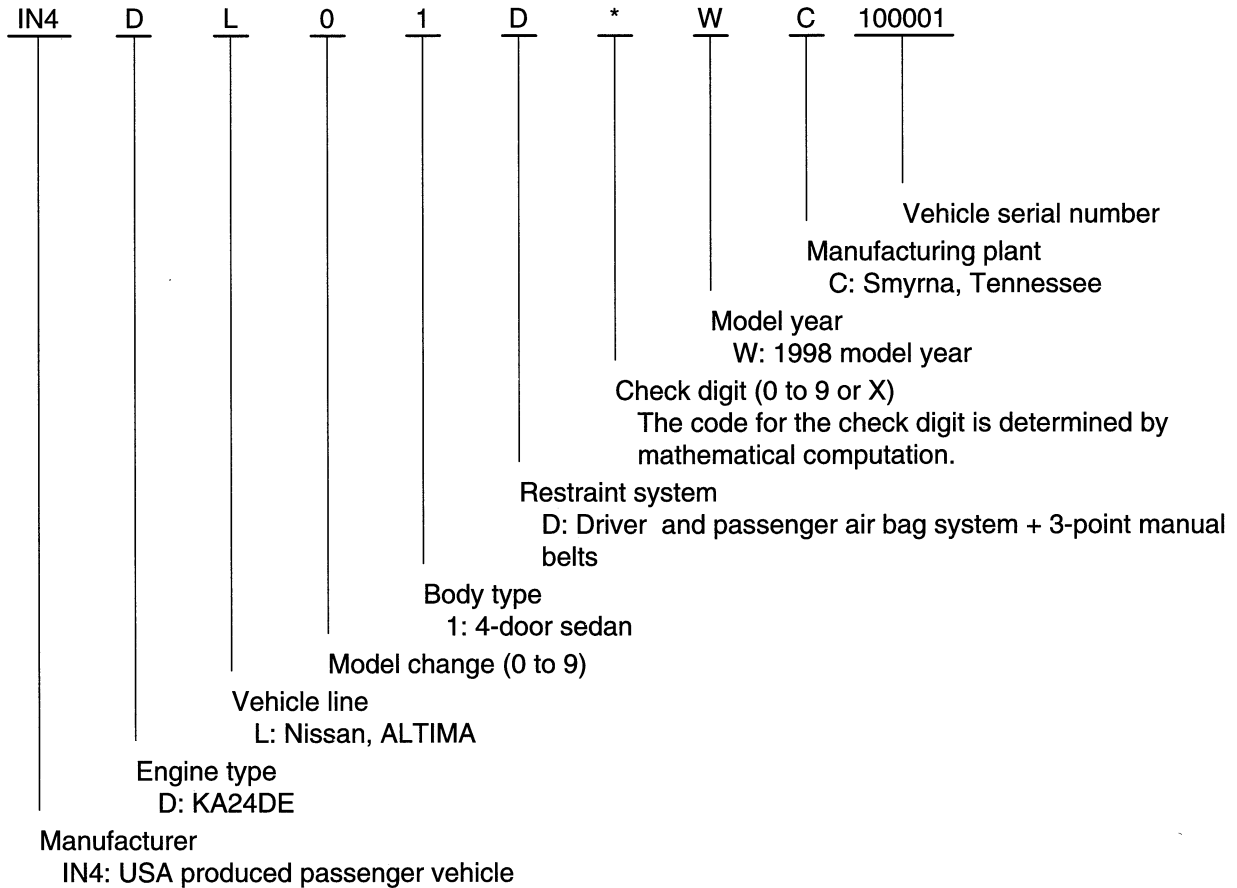
GENERAL INFORMATION	1
Identification Number	1
BODY COMPONENT PARTS	3
Underbody Component Parts	3
Body Component Parts	4
CORROSION PROTECTION	5
Description	5
Anti-Corrosive Wax	6
Undercoating	7
Stone Guard Coat	8
BODY CONSTRUCTION	9
Body Construction	9
BODY ALIGNMENT	10
Body Center Marks	10
Panel Parts Matching Marks	11
Description	13
Engine Compartment	13
Underbody	15
Passenger Compartment	17
Rear Body	19
HANDLING PRECAUTIONS FOR PLASTICS	20
Handling Precautions for Plastics	20
Location of Plastic Parts	21
REPLACEMENT OPERATIONS	23
Description	23
Radiator Core Support	24
Radiator Core Support (Partial Replacement)	25
Hoodledge (Partial Replacement)	26
Front Side Member (Partial Replacement)	27
Front Pillar	28
Center Pillar	29
Outer Sill	30
Rear Fender	31
Rear Floor Rear	32
Rear Side Member Extension	33

Identification Number



VEHICLE IDENTIFICATION NUMBER

Prefix and suffix designations:
(For North America)



Identification Number (Cont'd)


F.M.V.S.S. CERTIFICATION LABEL

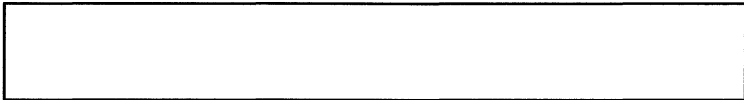

For U.S.A.

MANUFACTURED BY NISSAN MOTOR CO. LTD

DATE
GYWR/PNBV
GAYR/PNBE FR.
GAYR/PNBE RR.
COLOR TRIM TRANS
AXLE ENGINE

PASSENGER CAR

MODEL:  0Z000





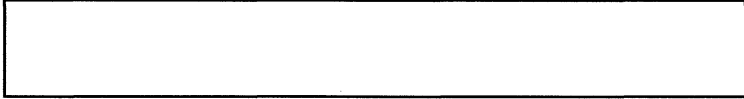

For Canada

MANUFACTURED BY NISSAN MOTOR CO. LTD

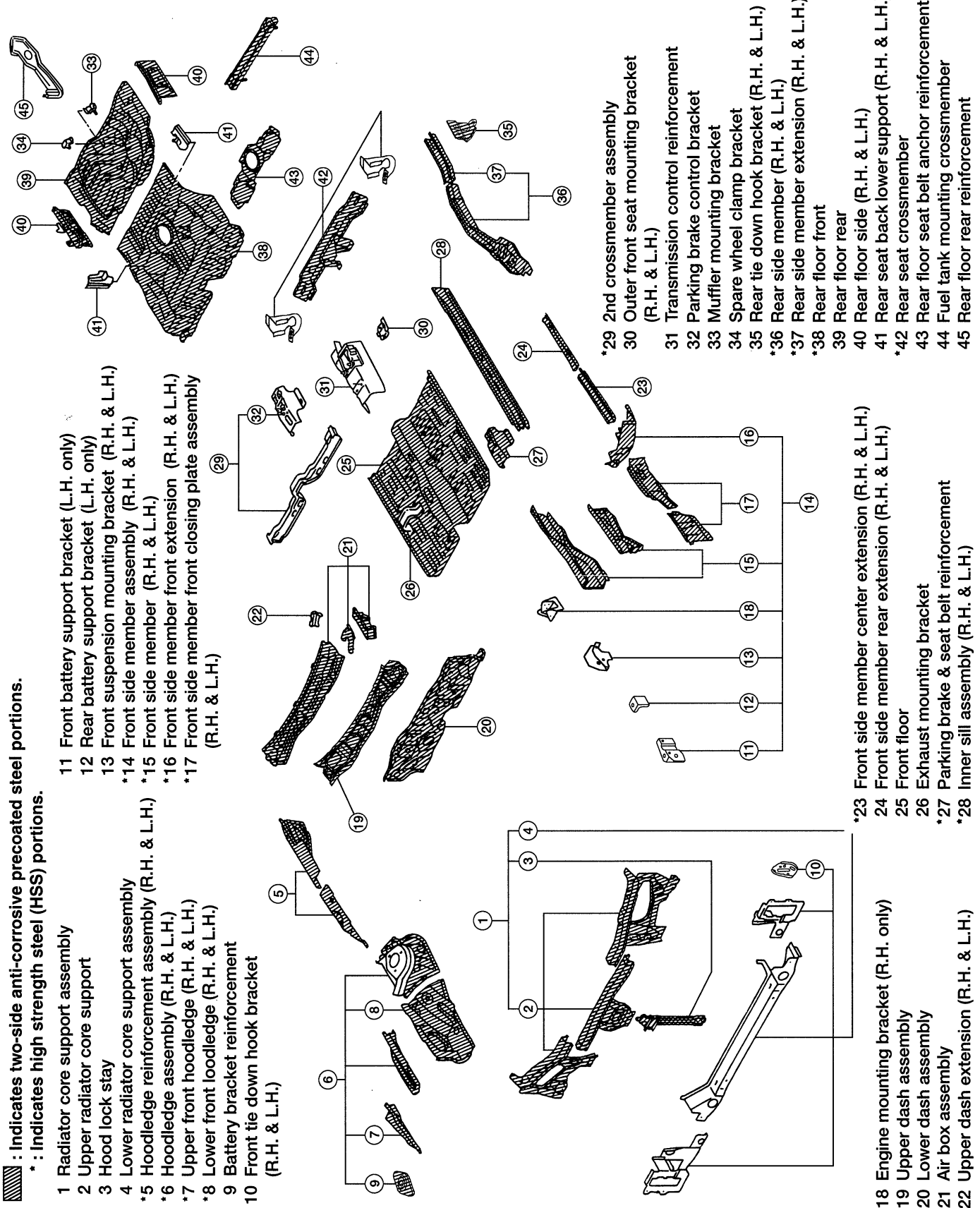
DATE
GYWR/PNBV
GAYR/PNBE FR.
GAYR/PNBE RR.
COLOR TRIM TRANS
AXLE ENGINE

PC/VT

MODEL:  0Z000

Underbody Component Parts

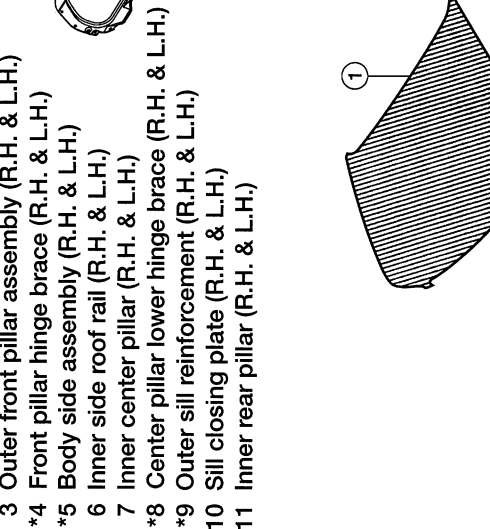
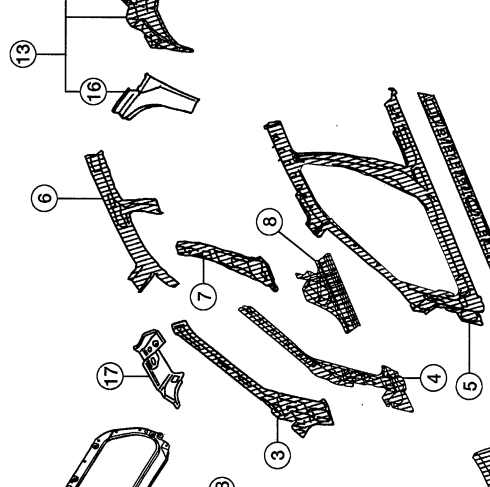
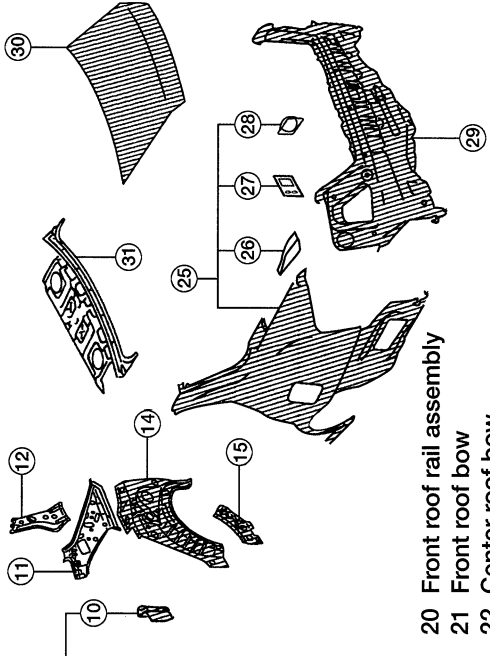
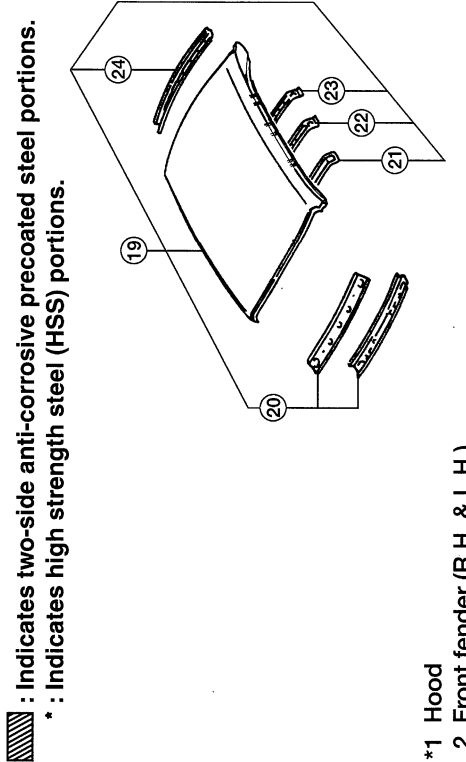
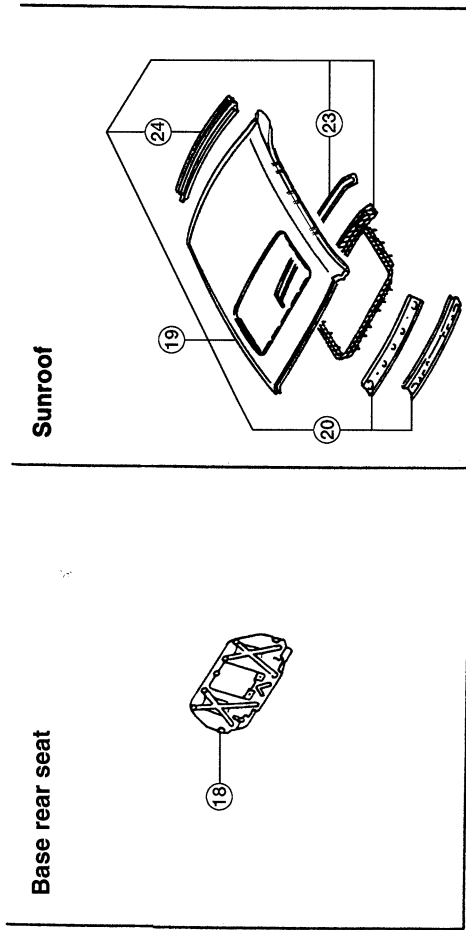


: Indicates two-side anti-corrosive pre-coated steel portions.
 * : Indicates high strength steel (HSS) portions.

- 1 Radiator core support assembly
- 2 Upper radiator core support
- 3 Hood lock stay
- 4 Lower radiator core support assembly
- *5 Hoodledge reinforcement assembly (R.H. & L.H.)
- *6 Hoodledge assembly (R.H. & L.H.)
- *7 Upper front hoodledge (R.H. & L.H.)
- *8 Lower front hoodledge (R.H. & L.H.)
- 9 Battery bracket reinforcement
- 10 Front tie down hook bracket (R.H. & L.H.)
- 11 Front battery support bracket (L.H. only)
- 12 Rear battery support bracket (L.H. only)
- 13 Front suspension mounting bracket (R.H. & L.H.)
- *14 Front side member assembly (R.H. & L.H.)
- *15 Front side member (R.H. & L.H.)
- *16 Front side member front extension (R.H. & L.H.)
- *17 Front side member front closing plate assembly (R.H. & L.H.)

- 18 Engine mounting bracket (R.H. only)
- 19 Upper dash assembly
- 20 Lower dash assembly
- 21 Air box assembly
- 22 Upper dash extension (R.H. & L.H.)
- 23 Front side member center extension (R.H. & L.H.)
- 24 Front side member rear extension (R.H. & L.H.)
- 25 Front floor
- 26 Exhaust mounting bracket
- *27 Parking brake & seat belt reinforcement
- *28 Inner sill assembly (R.H. & L.H.)
- 29 2nd crossmember assembly
- 30 Outer front seat mounting bracket (R.H. & L.H.)
- 31 Transmission control reinforcement
- 32 Parking brake control bracket
- 33 Muffler mounting bracket
- 34 Spare wheel clamp bracket
- 35 Rear tie down hook bracket (R.H. & L.H.)
- *36 Rear side member (R.H. & L.H.)
- *37 Rear side member extension (R.H. & L.H.)
- *38 Rear floor front
- 39 Rear floor rear
- 40 Rear floor side (R.H. & L.H.)
- 41 Rear seat back lower support (R.H. & L.H.)
- *42 Rear seat crossmember
- 43 Rear floor seat belt anchor reinforcement
- 44 Fuel tank mounting crossmember
- 45 Rear floor rear reinforcement

Body Component Parts



 : Indicates two-side anti-corrosive pre-coated steel portions.
 * : Indicates high strength steel (HSS) portions.

- *1 Hood
- 2 Front fender (R.H. & L.H.)
- 3 Outer front pillar assembly (R.H. & L.H.)
- *4 Front pillar hinge brace (R.H. & L.H.)
- *5 Body side assembly (R.H. & L.H.)
- 6 Inner side roof rail (R.H. & L.H.)
- 7 Inner center pillar (R.H. & L.H.)
- *8 Center pillar lower hinge brace (R.H. & L.H.)
- *9 Outer sill reinforcement (R.H. & L.H.)
- 10 Sill closing plate (R.H. & L.H.)
- 11 Inner rear pillar (R.H. & L.H.)
- 12 Inner rear pillar reinforcement (R.H. & L.H.)
- 13 Inner rear wheelhouse (R.H. & L.H.)
- 14 Outer rear wheelhouse (R.H. & L.H.)
- 15 Outer rear wheelhouse extension (R.H. & L.H.)
- 16 Rear seat back side support (R.H. & L.H.)
- 17 Side parcel shelf (R.H. & L.H.)
- 18 Seat back support
- 19 Roof assembly
- 20 Front roof rail assembly
- 21 Front roof bow
- 22 Center roof bow
- 23 Rear roof bow
- 24 Rear roof rail
- 25 Rear fender (R.H. & L.H.)
- 26 Rear fender corner (R.H. & L.H.)
- 27 Striker retainer (R.H. & L.H.)
- 28 Fuel filler base
- 29 Rear panel
- *30 Trunk lid
- 31 Rear waist & parcel shelf
- 32 Front door assembly (R.H. & L.H.)
- 33 Outer front door panel (R.H. & L.H.)
- 34 Rear door assembly (R.H. & L.H.)
- 35 Outer rear door panel (R.H. & L.H.)

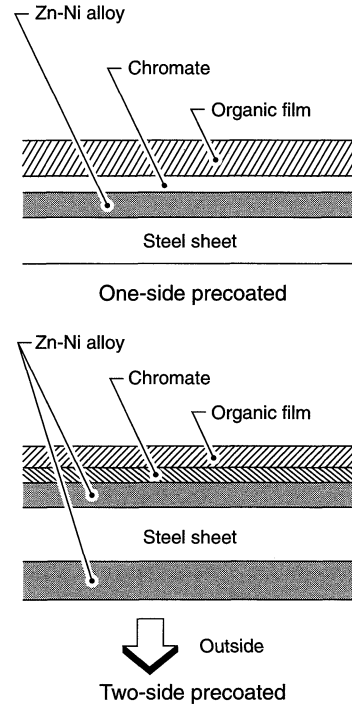
Description

To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in our production plants. When repairing or replacing body panels, it is necessary to use these same anti-corrosive measures.

ANTI-CORROSIVE PRECOATED STEEL (DURASTEEL)

To improve repairability and corrosion resistance, a new type of anti-corrosive pre-coated steel sheet has been adopted replacing conventional zinc-coated steel sheet. Durasteel is electroplated zinc-nickel alloy under organic film, which provides excellent corrosion resistance.

Durasteel is classified as either one-side pre-coated steel or two-side pre-coated steel. The two-side pre-coated steel provides excellent corrosion resistance.



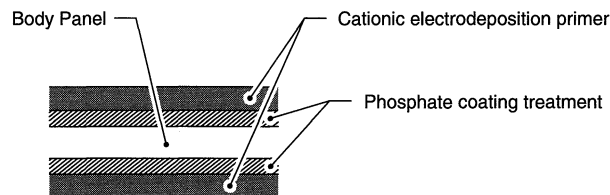
Nissan Genuine Service Parts are fabricated from durasteel sheets. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

A phosphate coating treatment and a cationic electrodeposition primer, which provide excellent corrosion protection, are employed on all body components.

Caution:

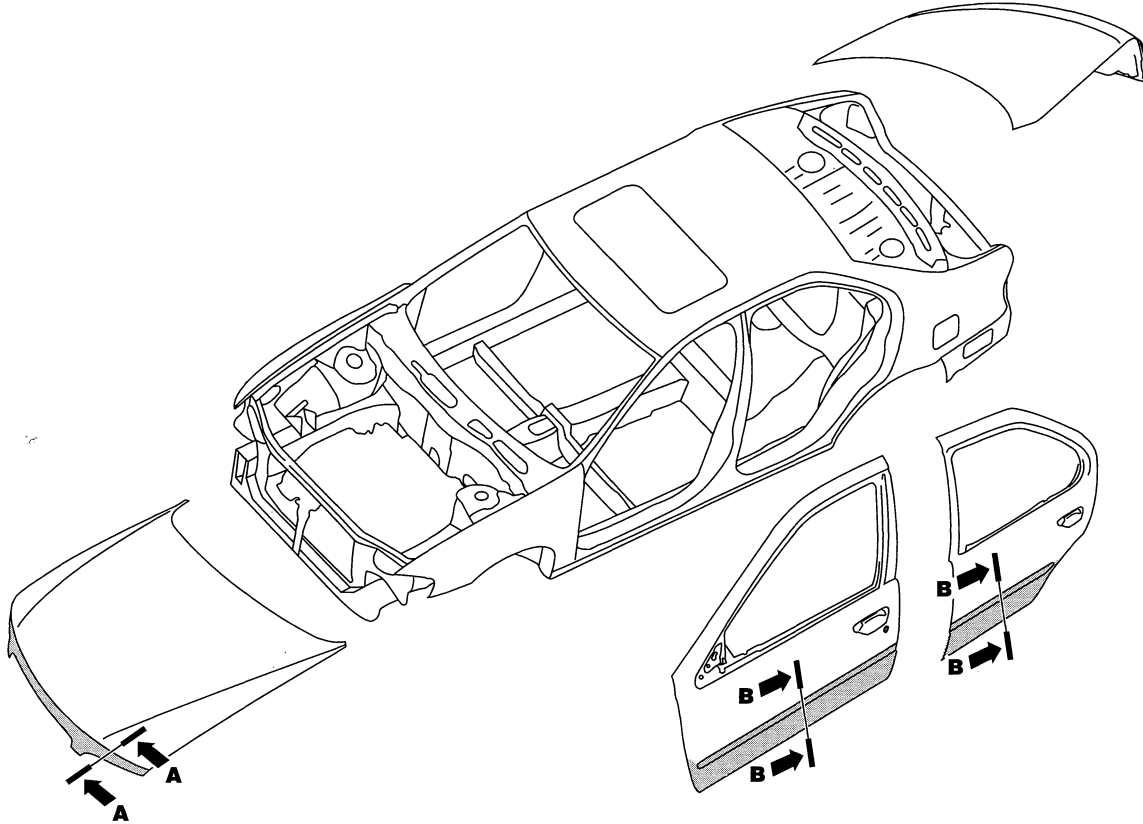
Confine paint removal during welding operations to an absolute minimum.




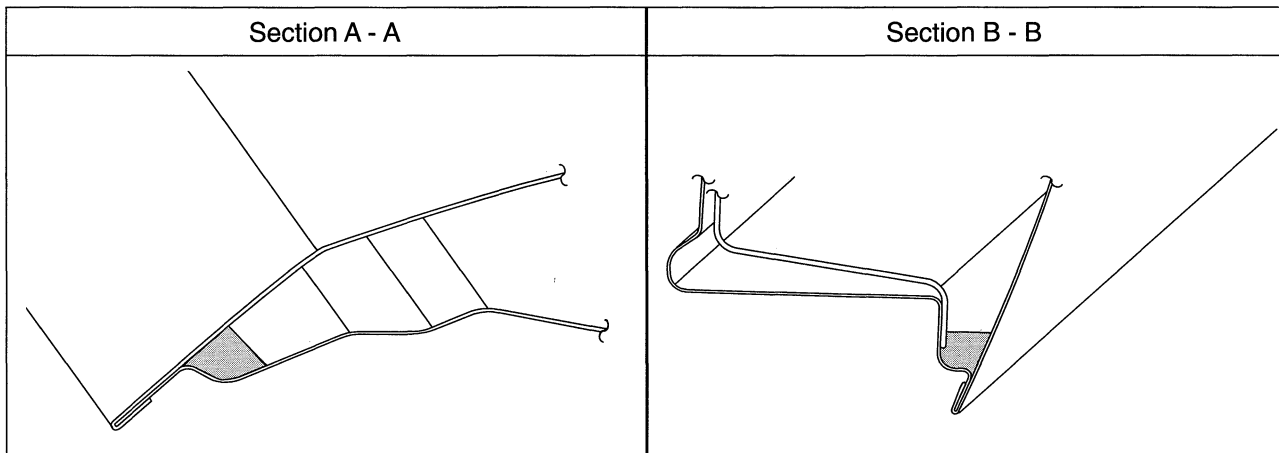
Nissan Genuine Service Parts are also treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

Anti-Corrosive Wax

To improve corrosion resistance, anti-corrosive wax is applied inside the body sill and inside other closed sections. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the appropriate areas of the new parts. Select an excellent anti-corrosive wax which will penetrate after application and has a long shelf life.



 : Indicates anti-corrosive wax coated portions.



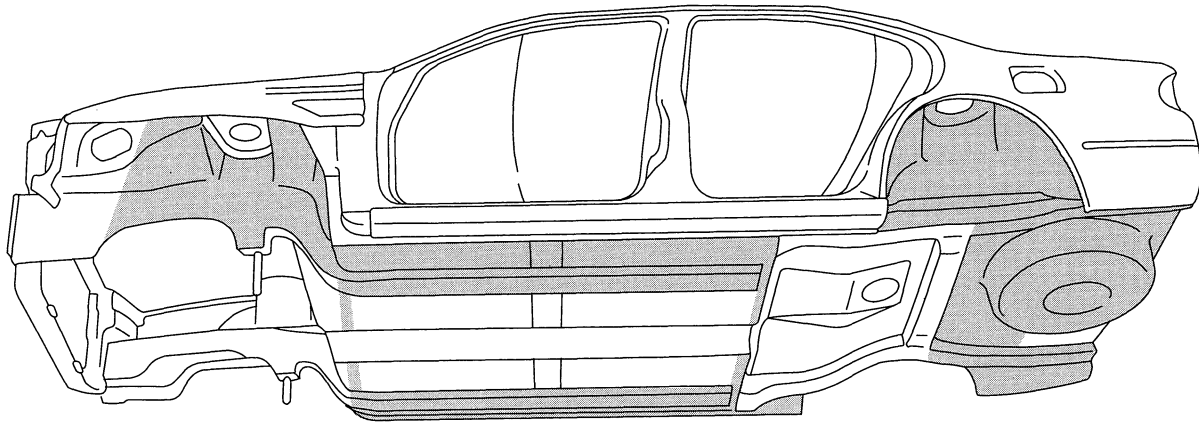
Undercoating

The underside of the floor and wheelhouse are undercoated to prevent rust, vibration, noise and stone chipping. Therefore, when such a panel is replaced or repaired, apply undercoating to that part. Use an undercoating with the following properties: rust preventive, soundproofing, vibration-proofing, shock-resistant, adhesive, and durable.

Precaution in undercoating


1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and catalytic converter which are subjected to heat).
2. Do not undercoat the exhaust pipe or other parts which become hot.
3. Do not undercoat rotating parts.
4. Apply bitumen wax after applying undercoating.

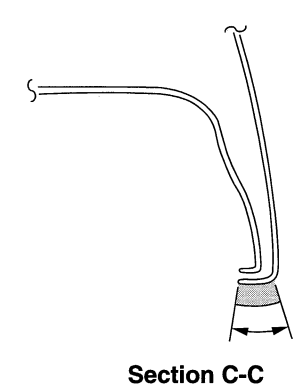
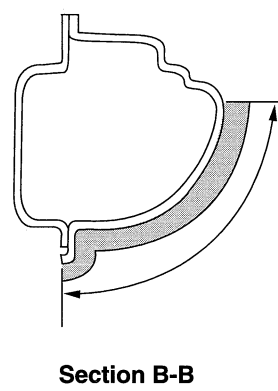
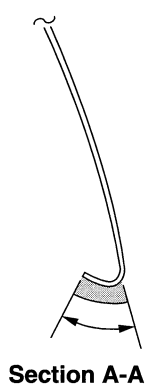
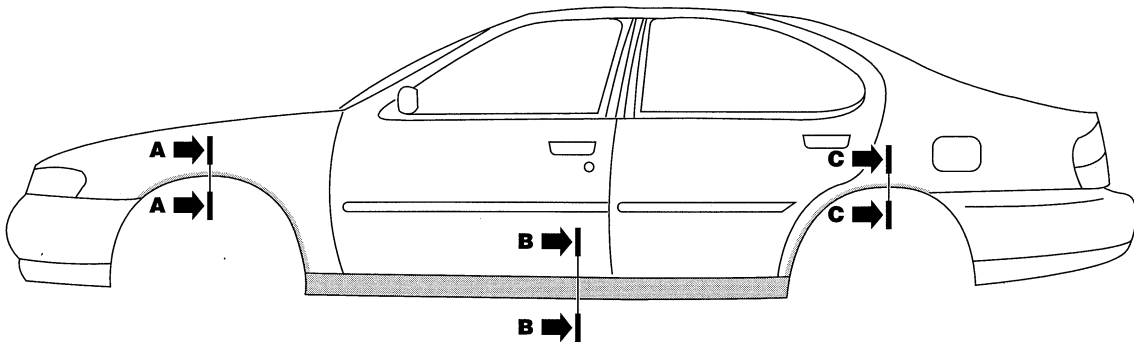
 : Indicates undercoated portions.



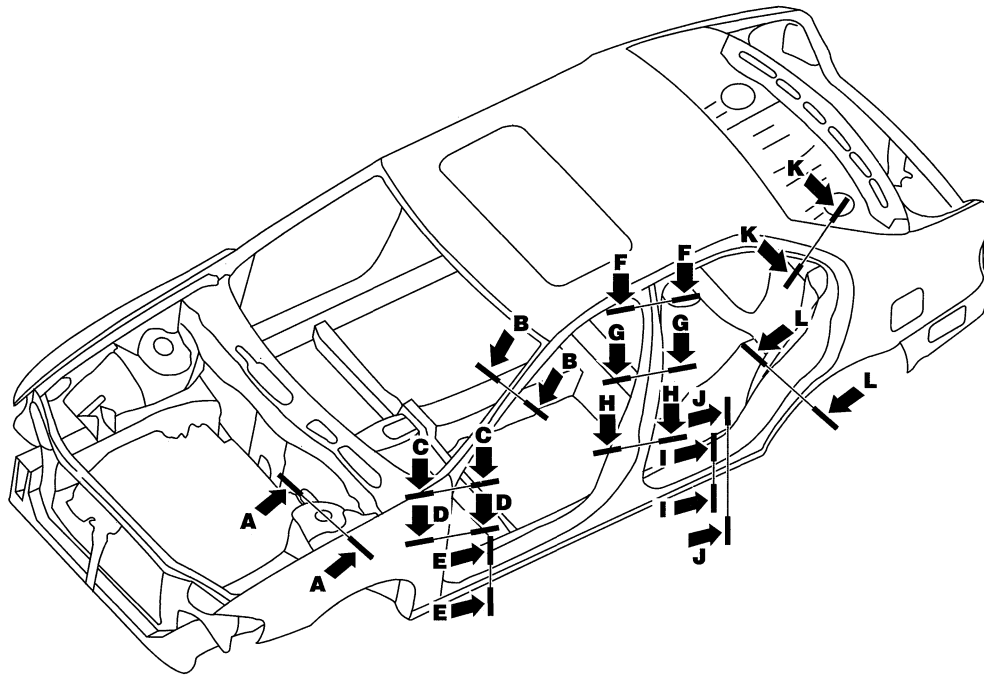
Stone Guard Coat

To prevent damage caused by stones, the lower outer body panel (fender, door, etc.) have an additional layer of Stone Guard coating over the ED primer coating. When replacing or repairing these panels, apply undercoating to the same portions as before. Use a coating which is rust preventive, durable, shock-resistant and has a long shelf life.

 : Indicates Stone Guard coated portions.



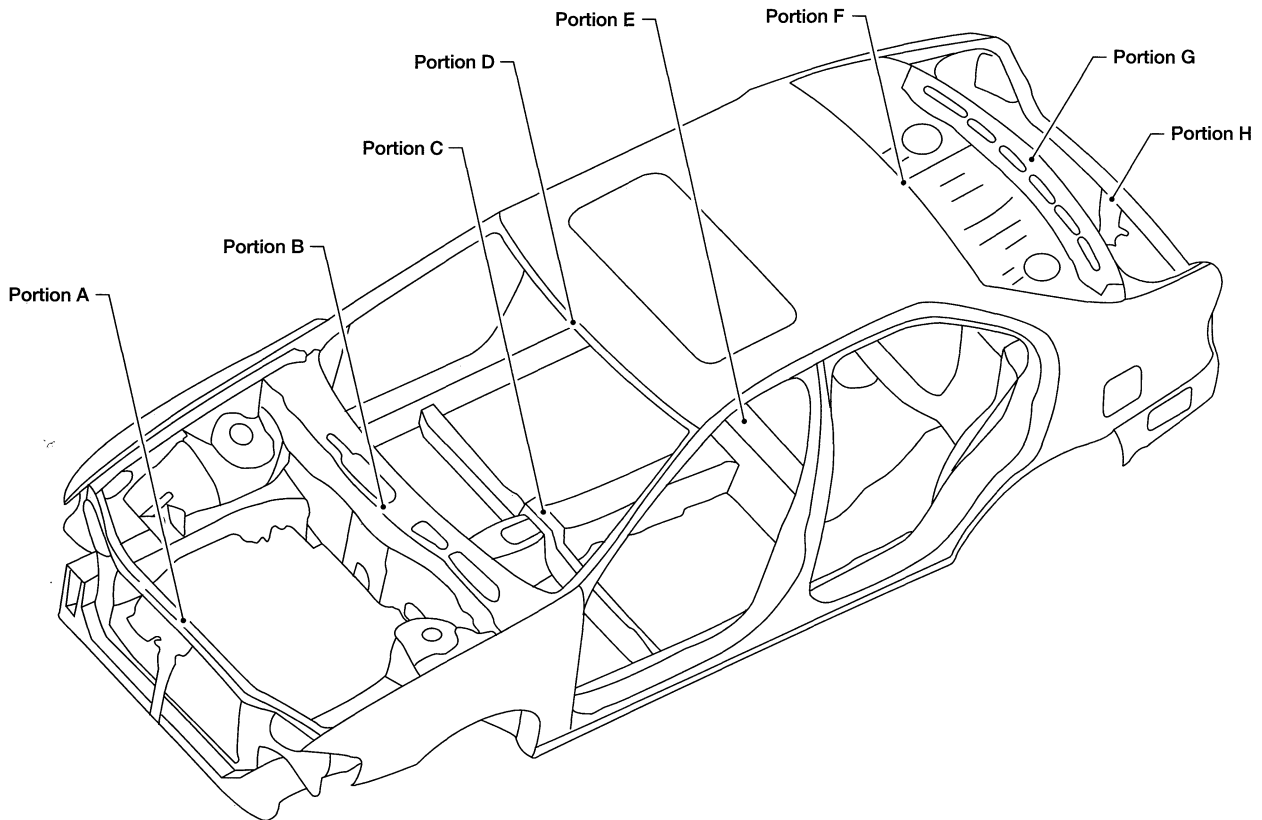
Body Construction



Section A - A	Section B - B	Section C - C	Section D - D
Section E - E	Section F - F	Section G - G	Section H - H
Section I - I	Section J - J	Section K - K	Section L - L

Body Center Marks

A mark has been placed on each part of the body to indicate the vehicle center. When repairing parts damaged by an accident which might affect the vehicle frame (members, pillars, etc.) more accurate, effective repair will be possible by using these marks together with body alignment data.

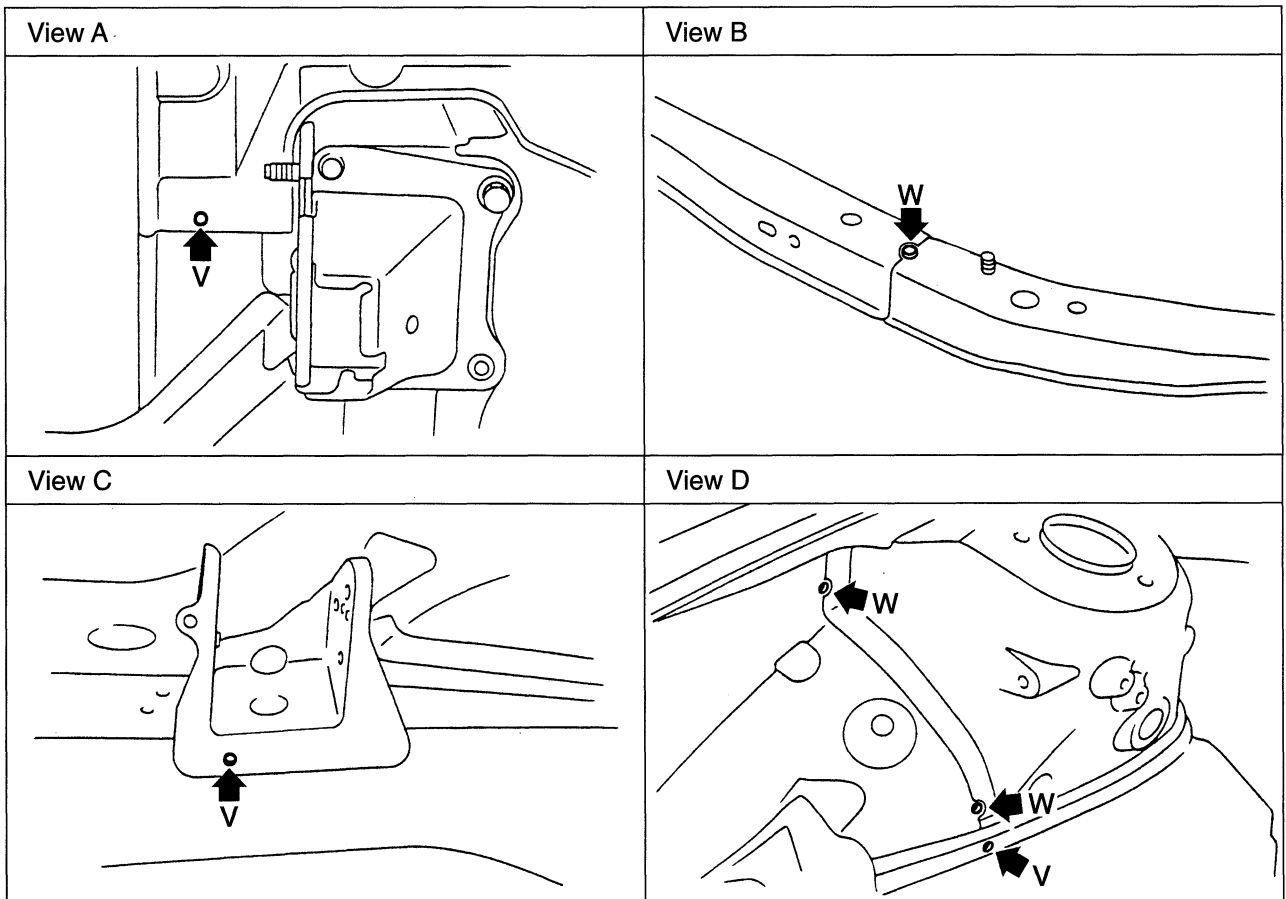
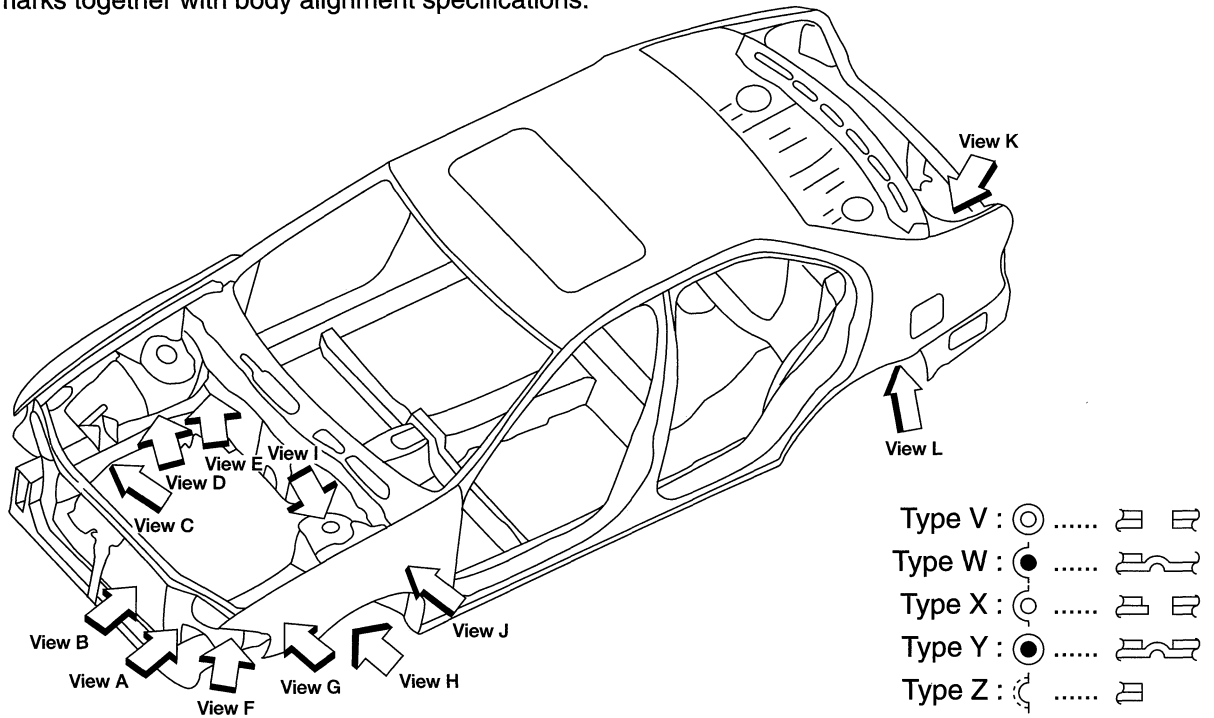


Unit: mm

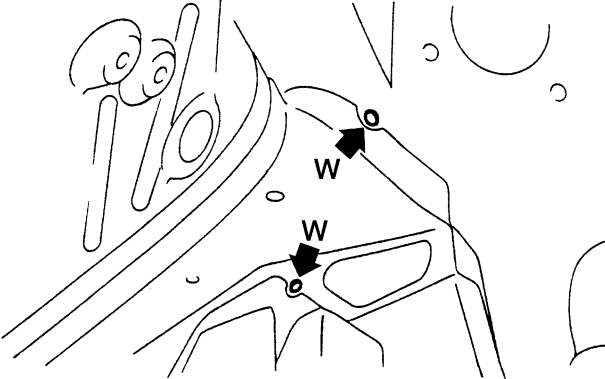
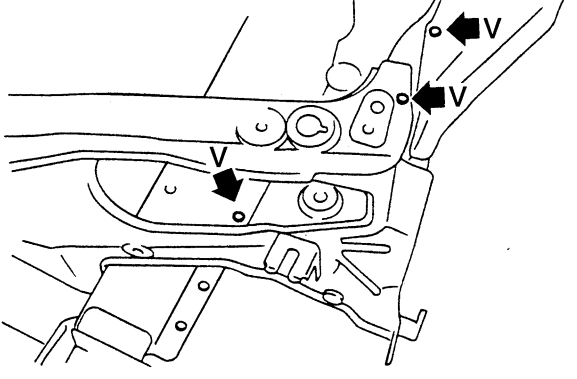
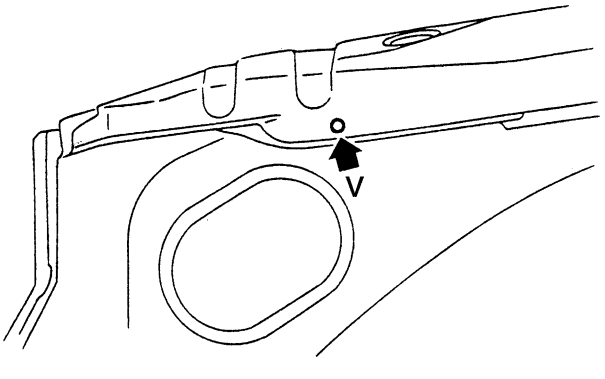
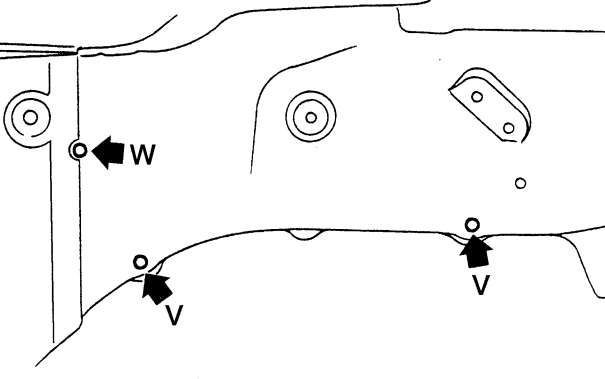
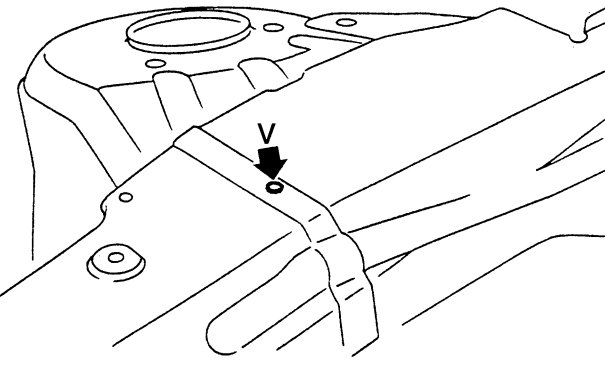
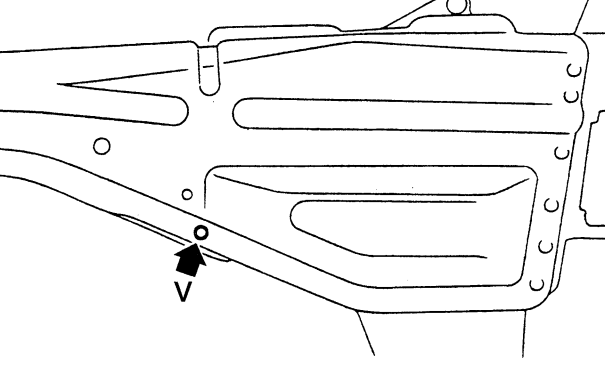
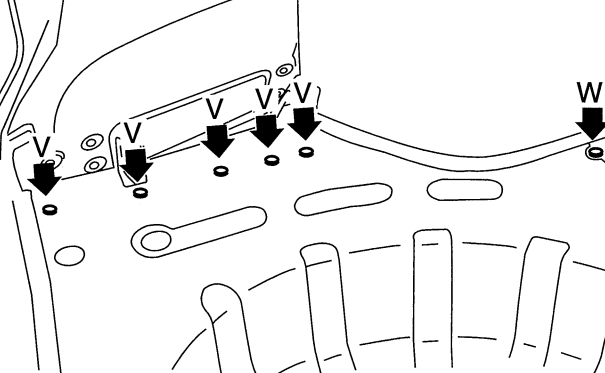
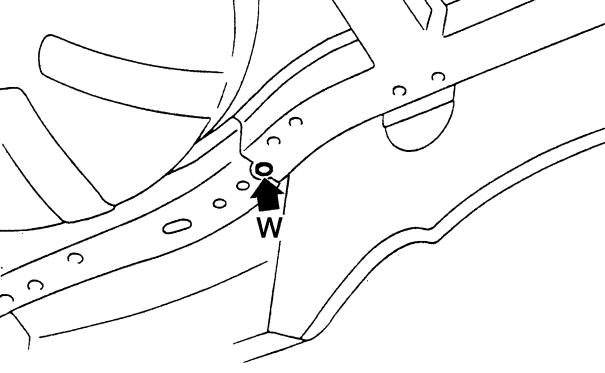
Portion A	Portion B	Portion C	Portion D
<p>Hole (4 dia.)</p> <p>● Upper radiator core support</p>	<p>Hole (5 dia.)</p> <p>● Cowl top</p>	<p>Hole (8 dia.)</p> <p>● 2nd crossmember</p>	<p>Embossing</p> <p>● Front roof</p>
Portion E	Portion F	Portion G	Portion H
<p>Hole (8 dia.)</p> <p>● Rear floor front</p>	<p>Embossing</p> <p>● Rear roof</p>	<p>Embossing</p> <p>● Rear panel</p>	<p>Embossing</p> <p>● Rear panel</p>

Panel Parts Matching Marks

A mark has been placed on each body panel to indicate the parts' matching positions. When repairing parts damaged by an accident which might affect the vehicle structure (members, pillars, etc.) more accurate, effective repair will be possible by using these marks together with body alignment specifications.

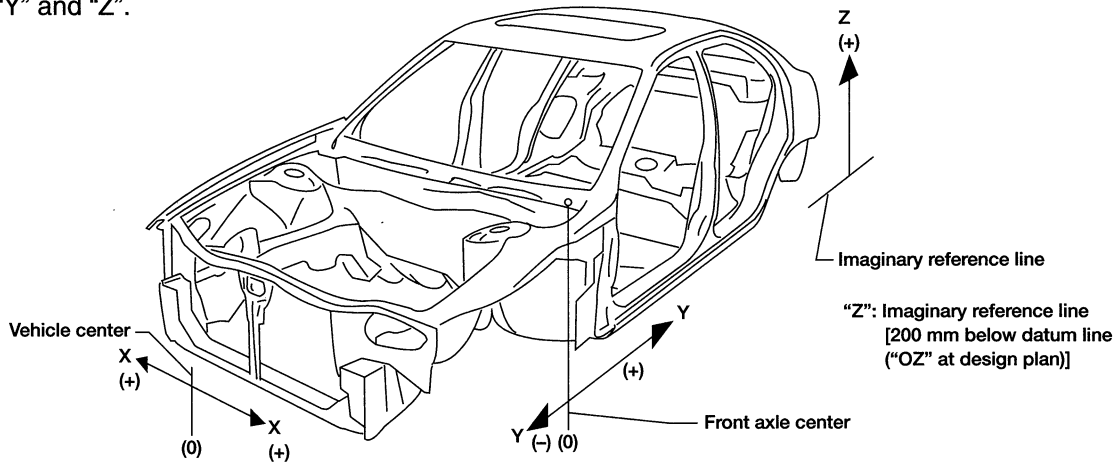


Panel Parts Matching Marks (Cont'd)

View E	View F
	
View G	View H
	
View I	View J
	
View K	View L
	

Description

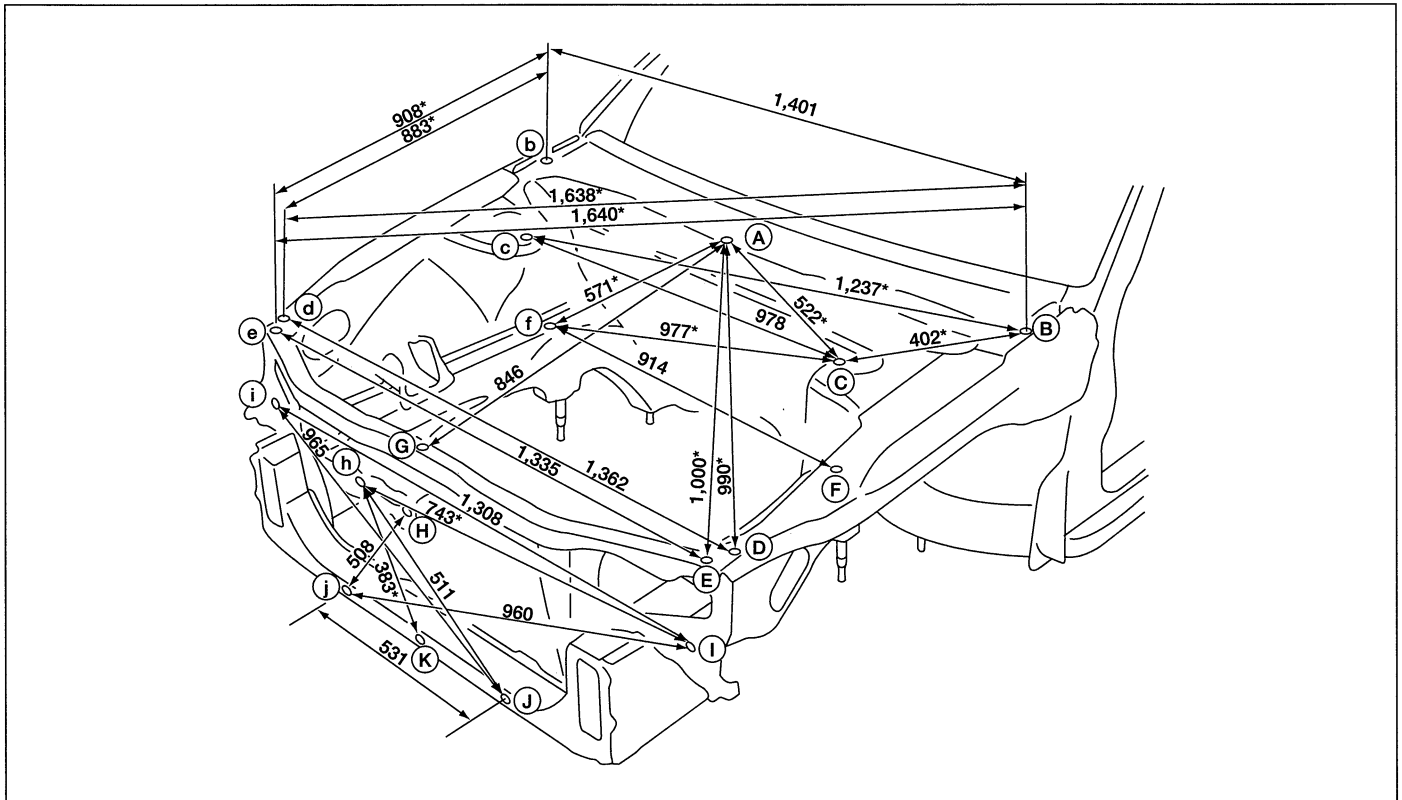
- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length. Then check the pointers and the gauge to make sure there is no free play.
- When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
- Measurements should be taken at the center of the mounting holes.
- An asterisk (*) following the value at the measuring point indicates that the measuring point on the other side is symmetrically the same value.
- The coordinates of the measurement points are the distances measured from the standard line of "X", "Y" and "Z".



Engine Compartment

MEASUREMENT

Unit: mm

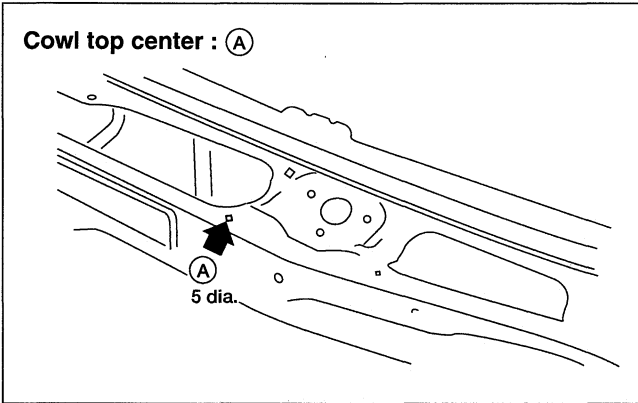


Engine Compartment (Cont'd)

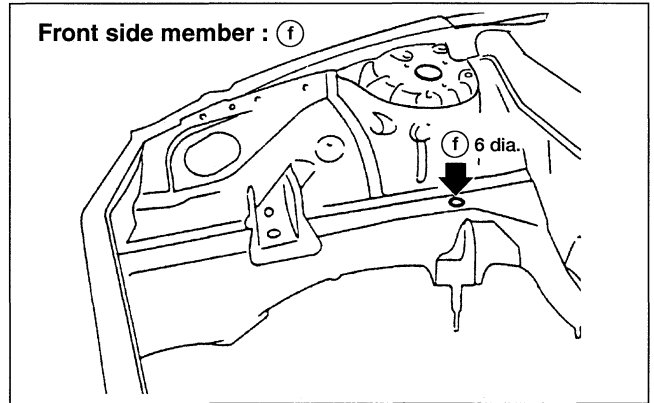
MEASUREMENT POINTS

Unit: mm

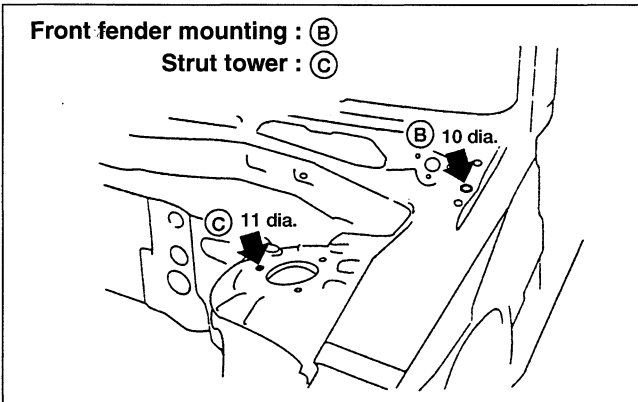
Cowl top center : (A)



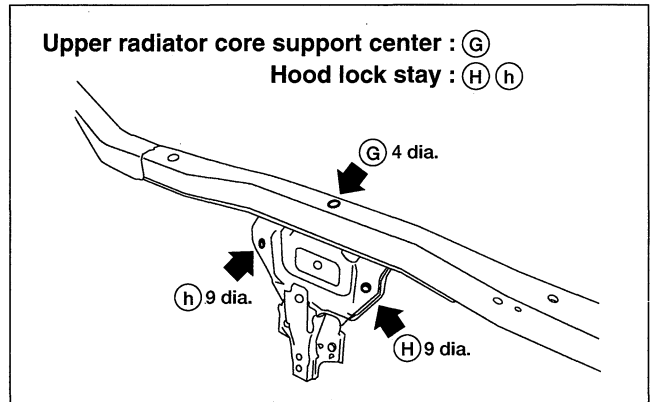
Front side member : (f)



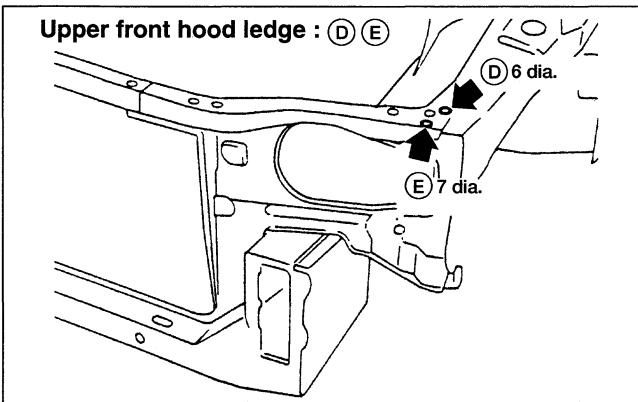
Front fender mounting : (B)
Strut tower : (C)



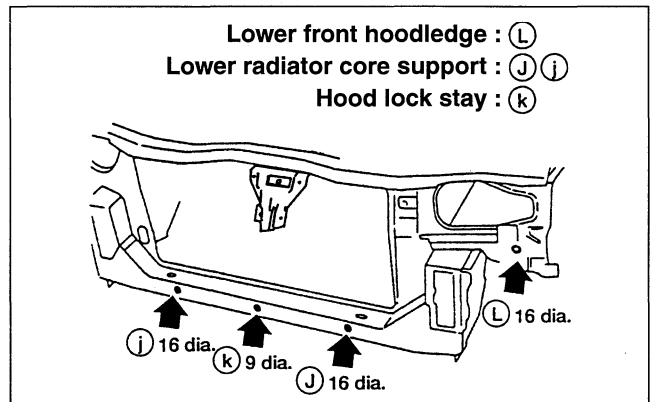
Upper radiator core support center : (G)
Hood lock stay : (H) (h)



Upper front hood ledge : (D) (E)



Lower front hoodledge : (L)
Lower radiator core support : (J) (j)
Hood lock stay : (k)

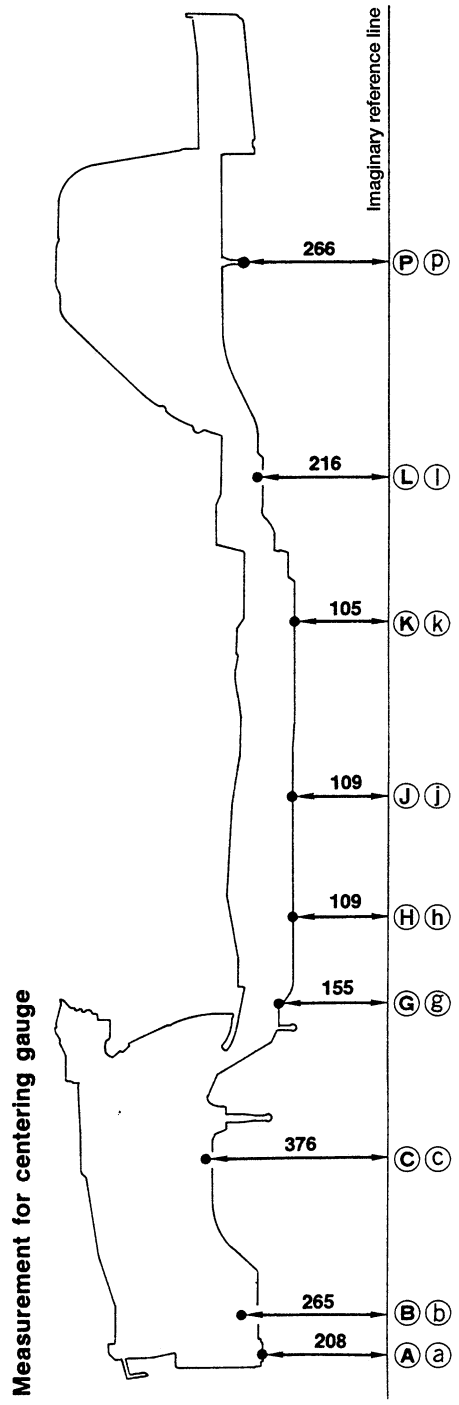
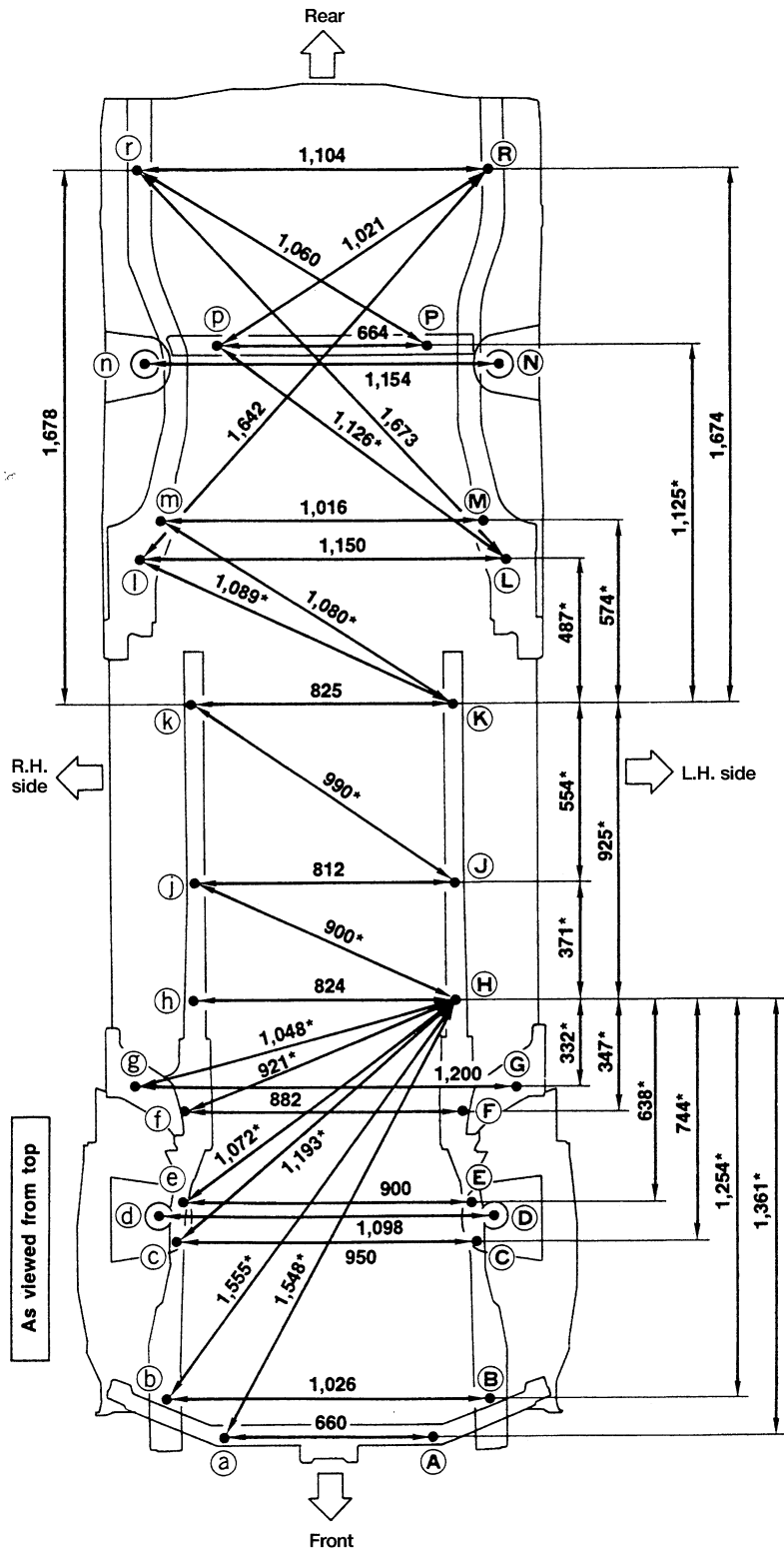


BODY ALIGNMENT

Underbody

MEASUREMENT

Unit: mm



BODY ALIGNMENT

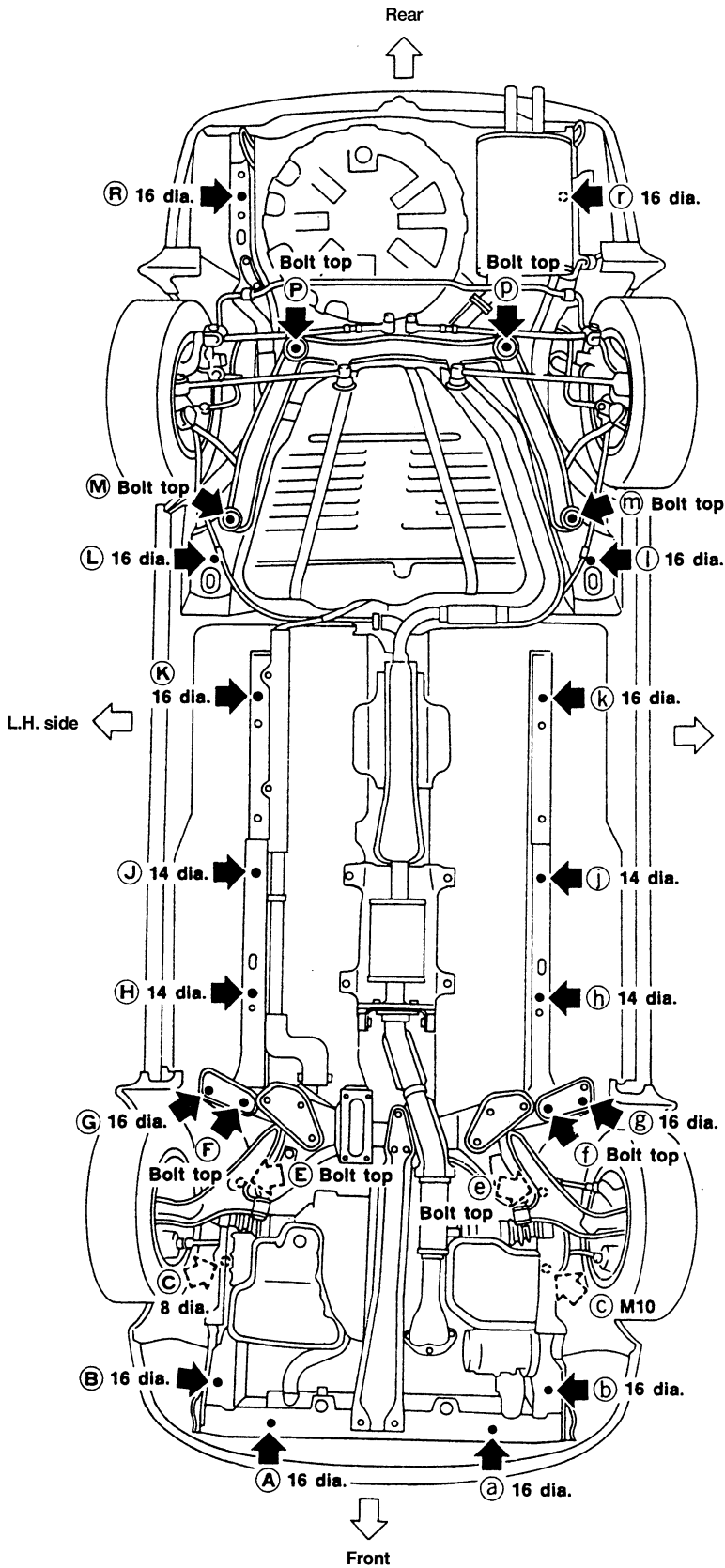
Underbody (Cont'd)

MEASUREMENT POINTS

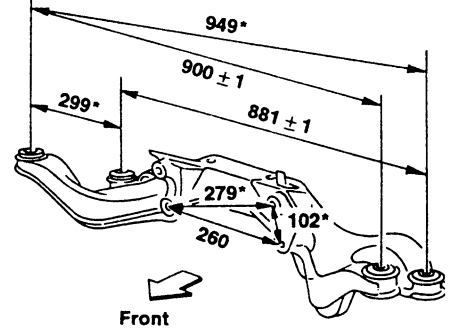
Unit: mm

Coordinates:

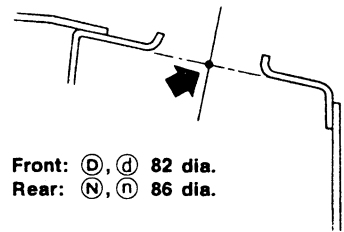
- (A, a)
X: 330
Y: -655
Z: 208
- (B, b)
X: 513
Y: -540
Z: 265
- (C, c)
X: 475
Y: -52
Z: 376
- (D, d)
X: 549
Y: 27
Z: 756
- (E, e)
X: 450
Y: 68
Z: 189
- (F, f)
X: 441
Y: 354
Z: 112
- (G, g)
X: 600
Y: 430
Z: 155
- (H, h)
X: 412
Y: 700
Z: 109
- (J, j)
X: 408
Y: 1,071
Z: 109
- (K, k)
X: 413
Y: 1,625
Z: 105
- (L, l)
X: 575
Y: 2,070
Z: 216
- (M, m)
X: 508
Y: 2,190
Z: 133
- (N, n)
X: 577
Y: 2,674
Z: 813
- (P, p)
X: 332
Y: 2,735
Z: 266
- (R, r)
X: 529
Y: 3,280
Z: 327
- (r)
X: 575
Y: 3,280
Z: 327



Suspension link mounting hole
Front suspension member



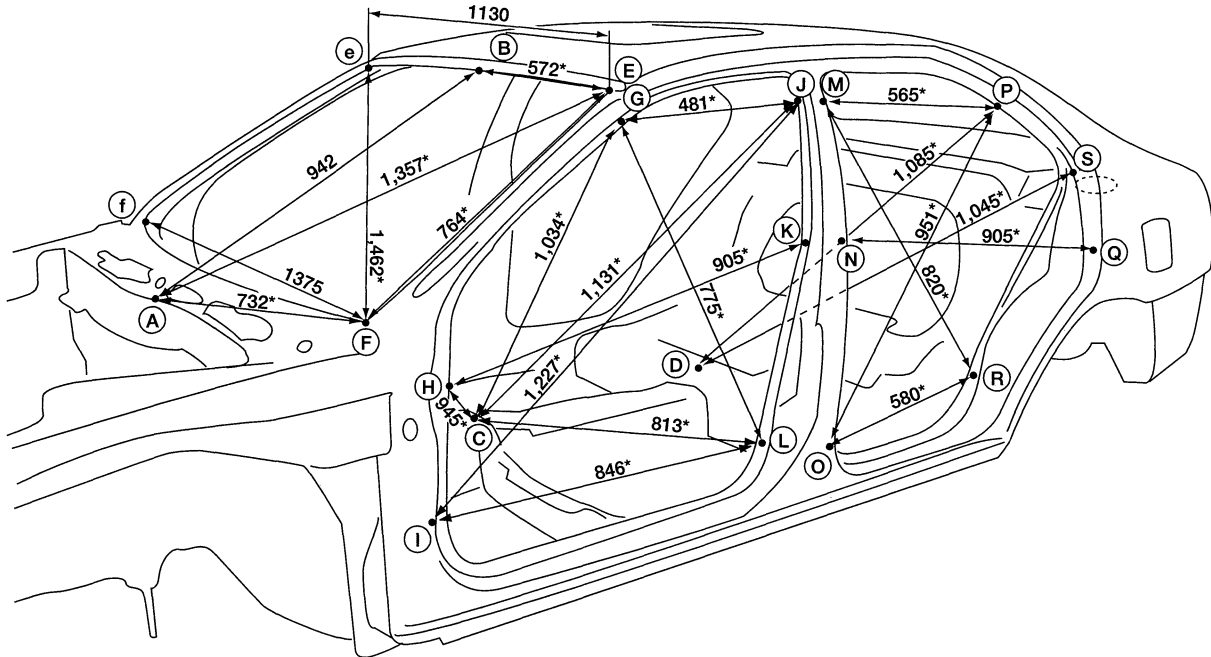
Front and rear strut tower centers



Passenger Compartment

MEASUREMENT

Unit: mm



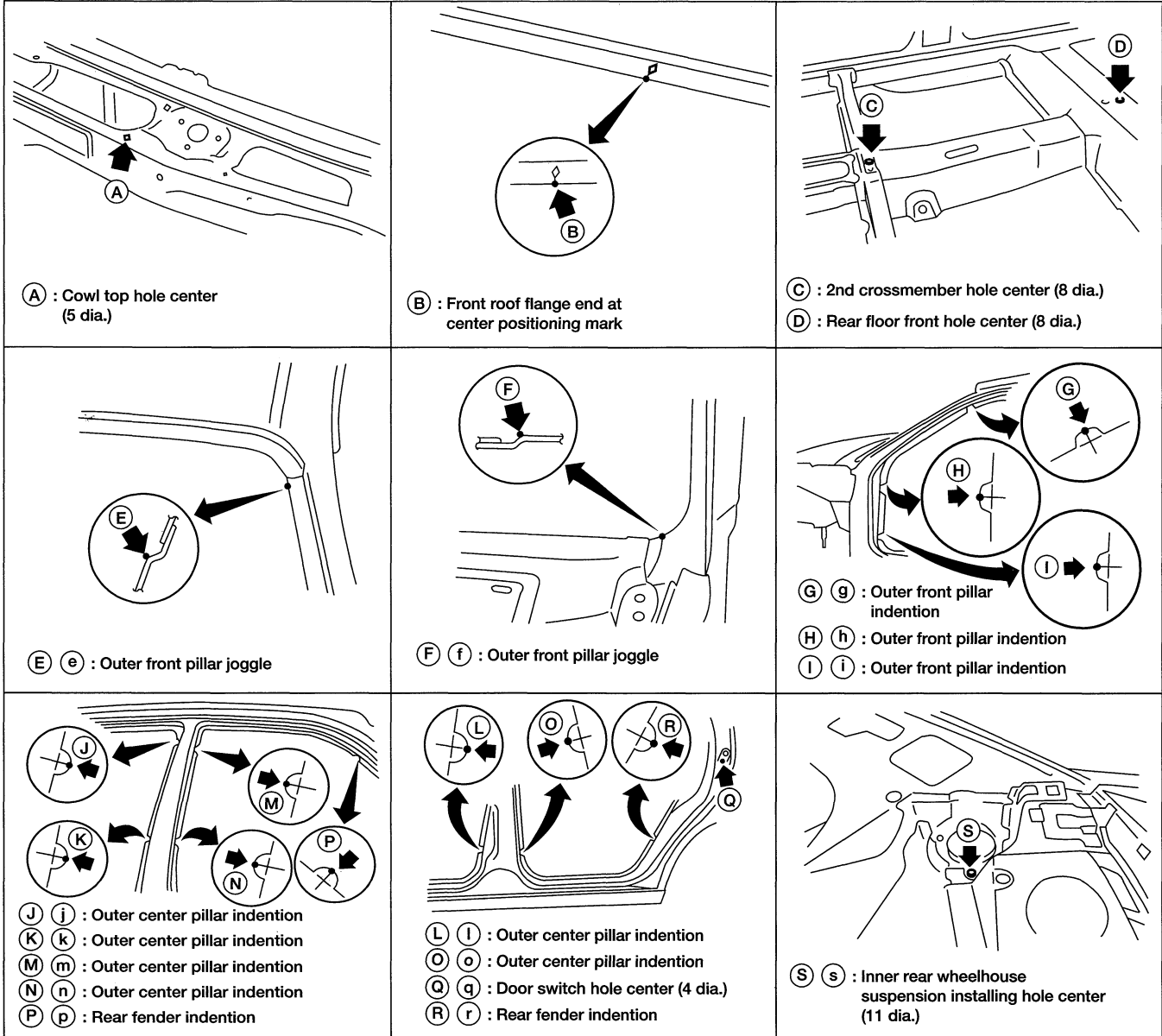
Figures marked with a * indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.

Point	Dimension	Point	Dimension	Point	Dimension
G - g	1,210	K - k	1,444	O - o	1,442
H - h	1,426	L - l	1,442	P - p	1,180
I - i	1,440	M - m	1,285	R - r	1,436
J - j	1,283	N - n	1,442	S - s	1,035

Passenger Compartment (Cont'd)

MEASUREMENT POINTS

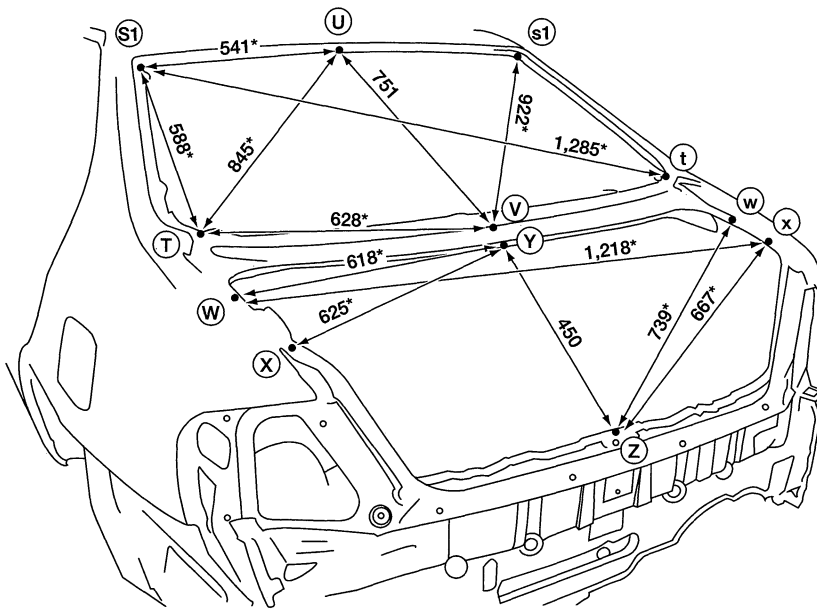
Unit: mm



Rear Body

MEASUREMENT

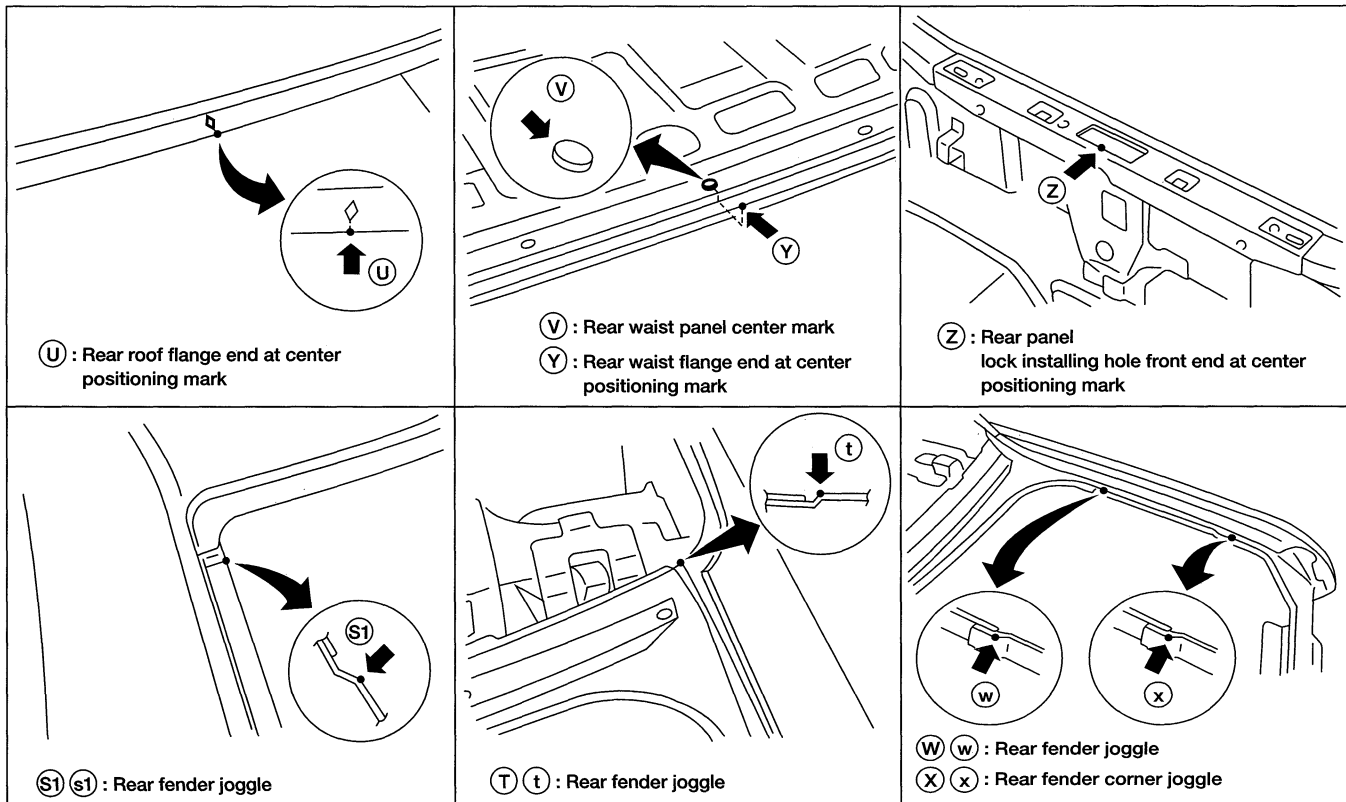
Unit: mm



Point	Dimension
W - w	1,230
X - x	1,200
S1 - s1	1,080
T - t	1,206

Figures marked with a * indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.

MEASUREMENT POINTS

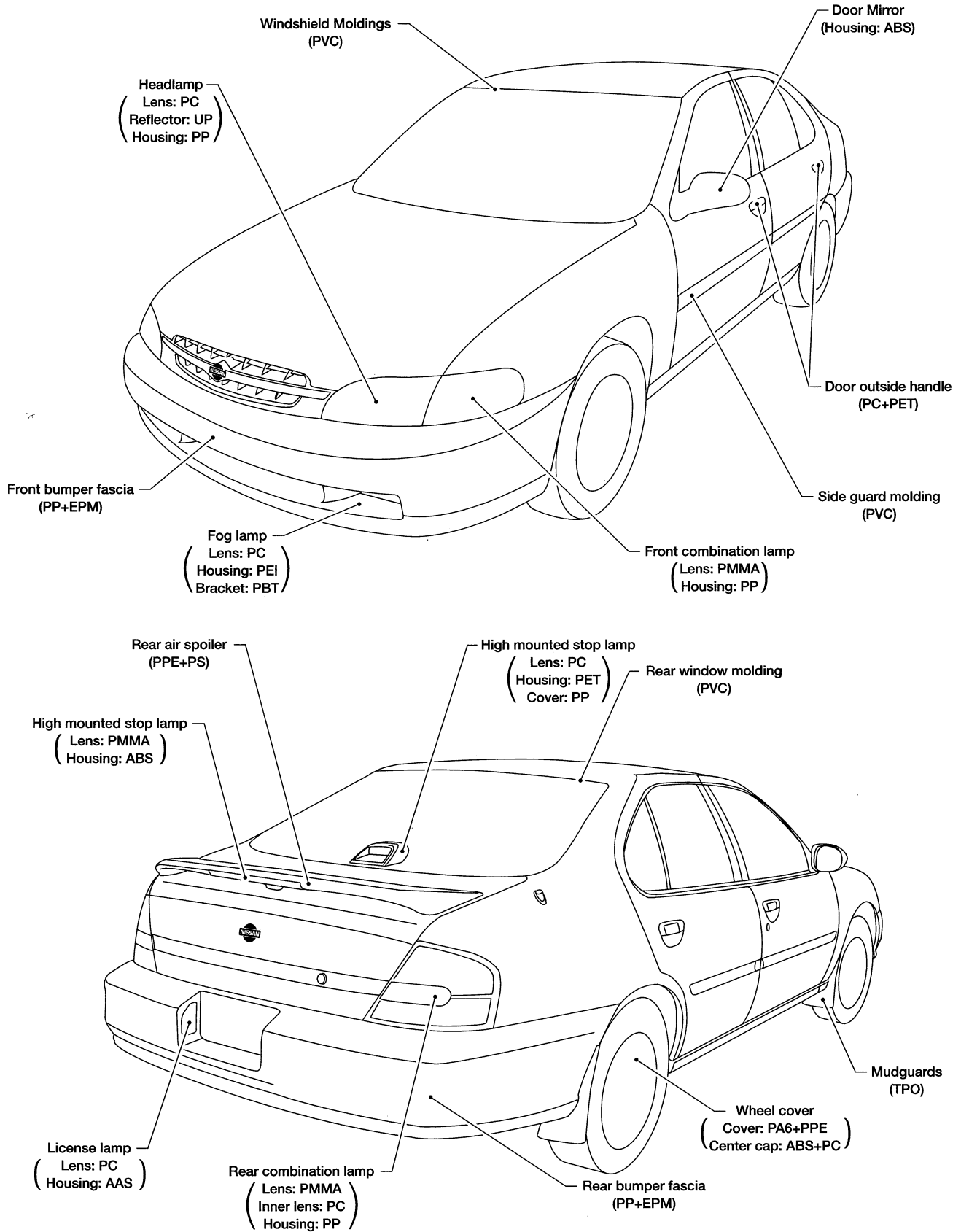


Handling Precautions for Plastics

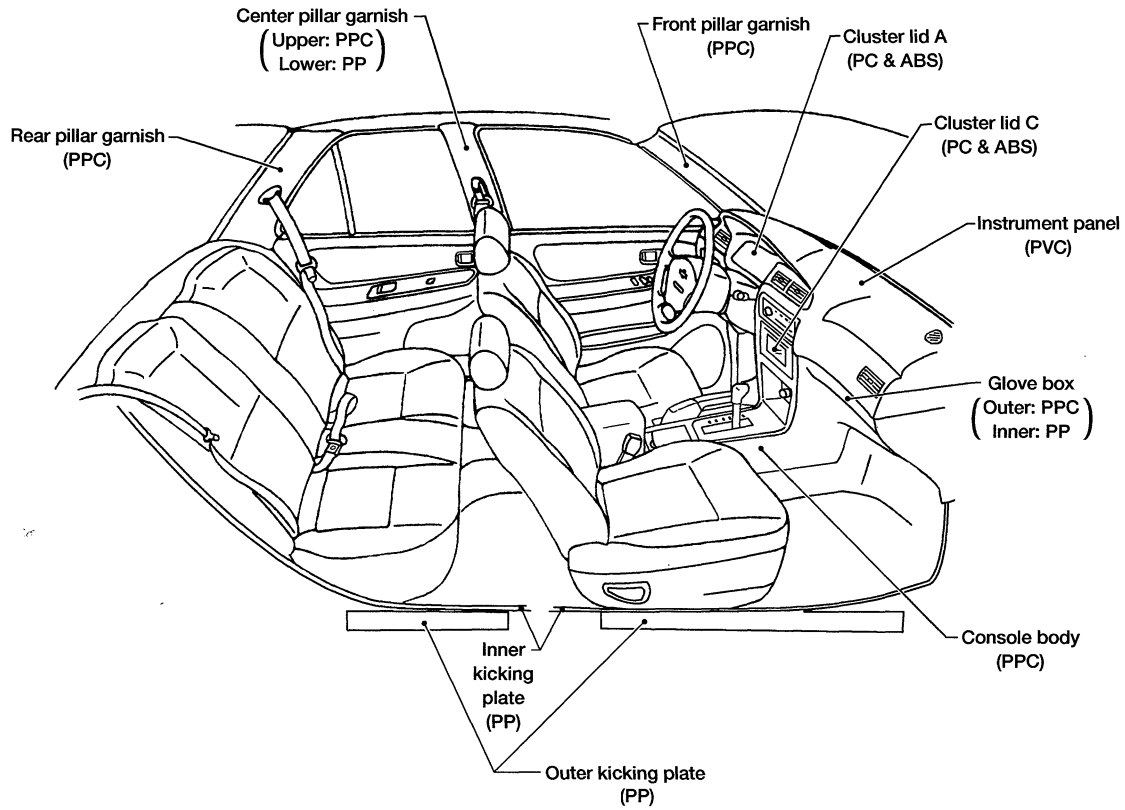
Abbreviation	Material name	Heat resisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PET	Polyethylene terephthalate	180 (356)	Gasoline and most solvents are harmless.	
PVC	Polyvinyl chloride	80 (176)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Poison gas is emitted when burned.
PP	Polypropylene	90 (194)	Same as PVC. Also avoid battery acid.	Flammable
UP	Polyester thermoset	90 (194)	Same as PP.	Flammable
ABS	Acrylonitrile butadiene styrene resin	80 (176)	Avoid gasoline and solvents.	
PMMA	Polymethyl methacrylate	85 (185)	Avoid gasoline and solvents.	
AAS	Acrylonitrile acrylic rubber styrene	85 (185)	Avoid gasoline and solvents.	
PC	Polycarbonate	120 (248)	Avoid gasoline and solvents.	
PPC	Polypropylene composite	115 (239)	Gasoline and most solvents are harmless.	Flammable
PBT	Polybutylene terephthalate	140 (284)	Gasoline and most solvents are harmless.	
TPO	Polyolefinic	80 (176)	Avoid gasoline and solvents.	
PPE	Polyphenylene ether	85 (185)	Avoid gasoline and solvents.	
PS	Polystyrene	80 (176)	Avoid solvents.	Flammable
EPM	Ethylene propylene rubber	80 (176)	Same as PVC.	Flammable
PEI	Polyetherimide	200 (392)	Gasoline and most solvents are harmless.	
PA6 + PPE	Polyphenylene oxide/ Polyamide	90 (194)	Gasoline and most solvents are harmless.	

1. When repairing and painting a portion of the body adjacent to plastic parts, consider their characteristics (influence of heat and solvent) and remove them if necessary or take suitable measures to protect them.
2. Plastic parts should be repaired and painted using methods suiting the materials' characteristics.

Location of Plastic Parts


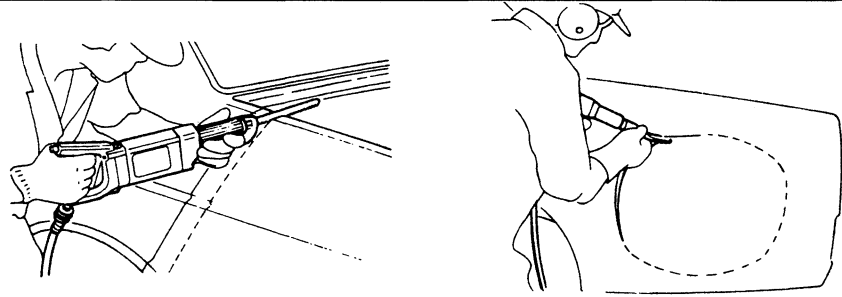
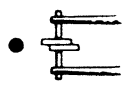
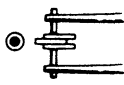

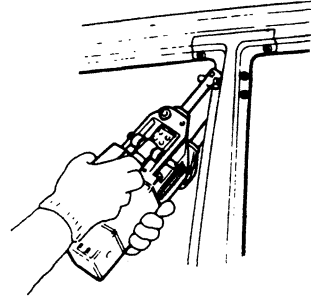

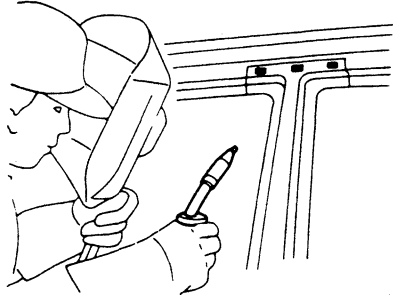
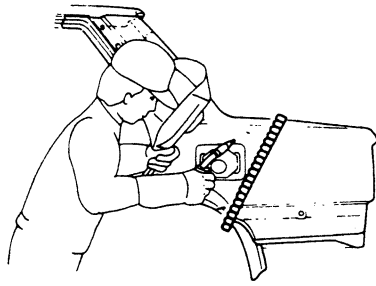




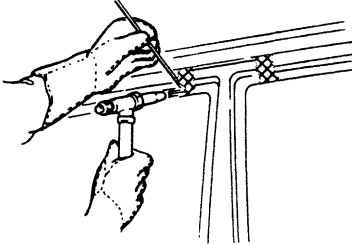

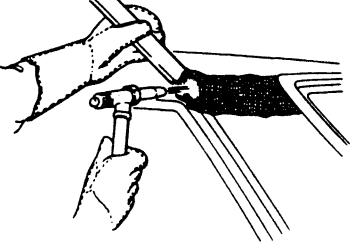
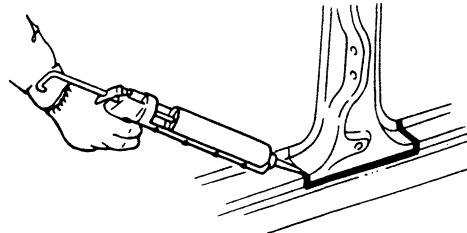


Location of Plastic Parts (Cont'd)



Description

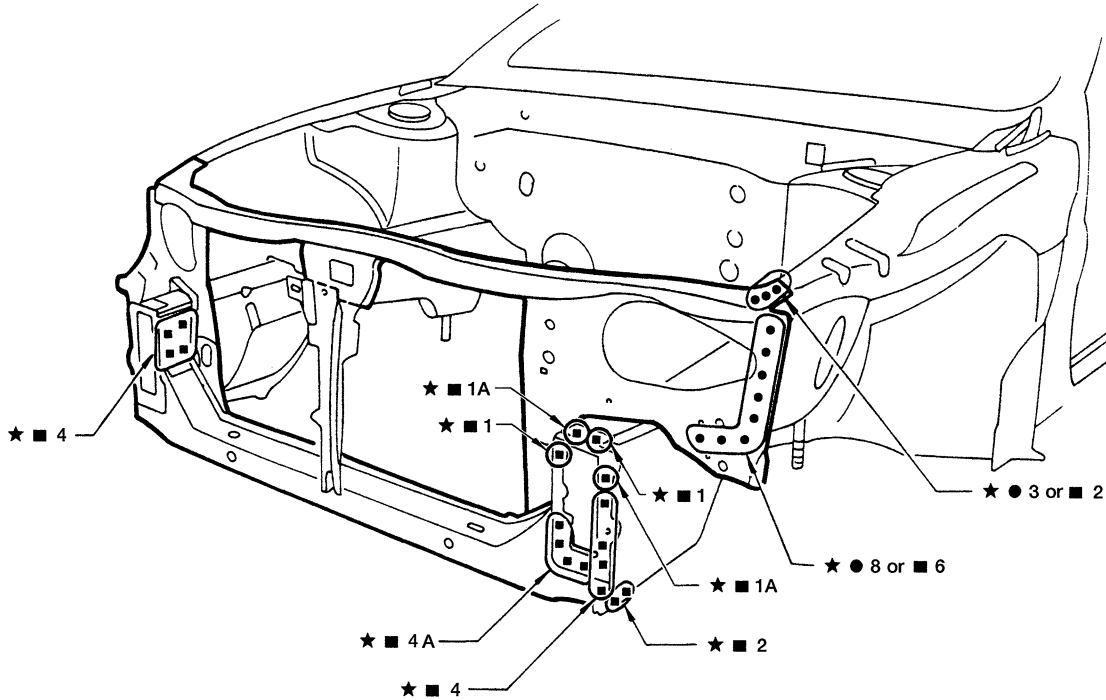
The identification for the cutting and the welding/brazing symbols used throughout this guide are given in the following pages.

 <p>Saw cut or air chisel cut</p>	
<p>Spot weld</p> <p>● ● ● ●</p> <p>2-spot welds</p>  <p>○ ○ ○ ○</p> <p>3-spot welds</p> 	<p>2-spot welds (2-panel overlapping portions)</p>  <p>3-spot welds (3-panel overlapping portions)</p> 
<p>■ ■ ■</p> <p>M.I.G. plug weld</p> 	 
<p>⌒ ⌒ ⌒ ⌒</p> <p>M.I.G. seam weld/ Point weld</p> 	 
<p>⊞ ⊞ ⊞</p> <p>Brazing</p> 	
<p>■ ■ ■ ■</p> <p>Soldering</p> 	
<p>—————</p> <p>Sealing</p>	

Radiator Core Support

Service Joint

★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side.



2-spot welds

3-spot welds

M.I.G plug weld

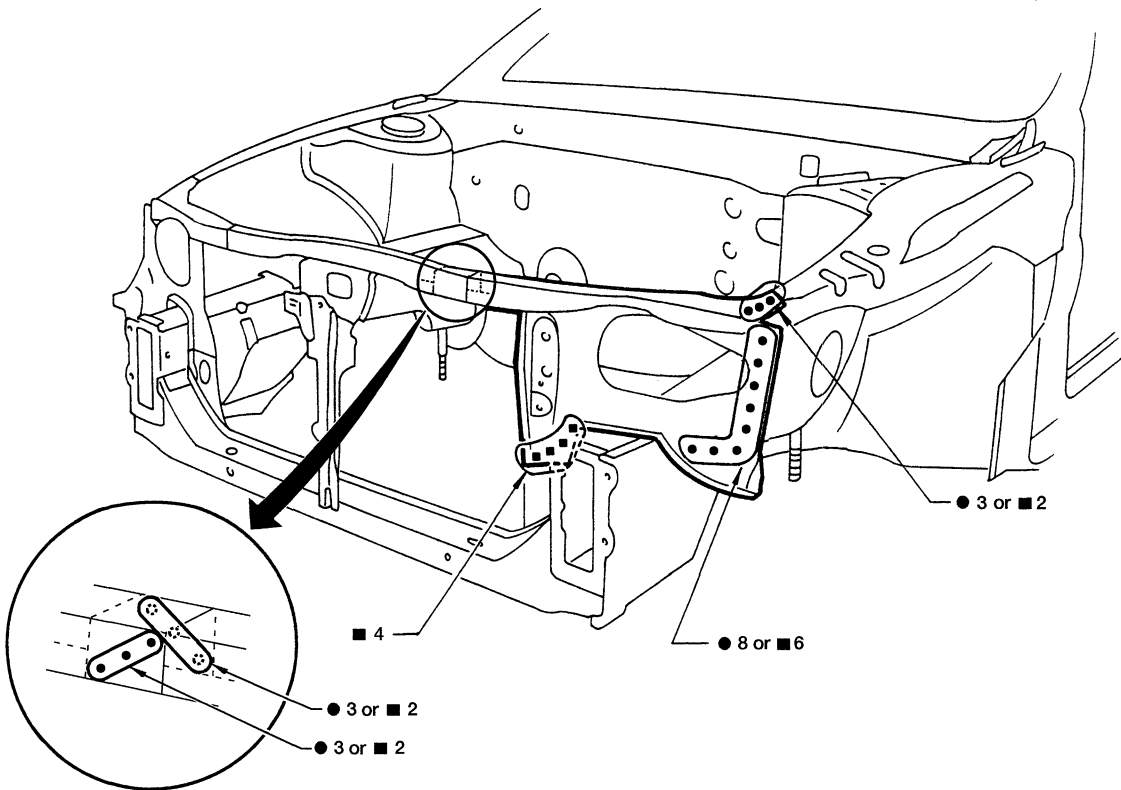
For 3 panels plug weld method

M.I.G seam weld/
Point weld



Radiator Core Support (Partial Replacement)

Service Joint



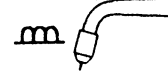
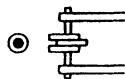
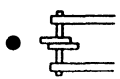
2-spot welds

3-spot welds

M.I.G plug weld

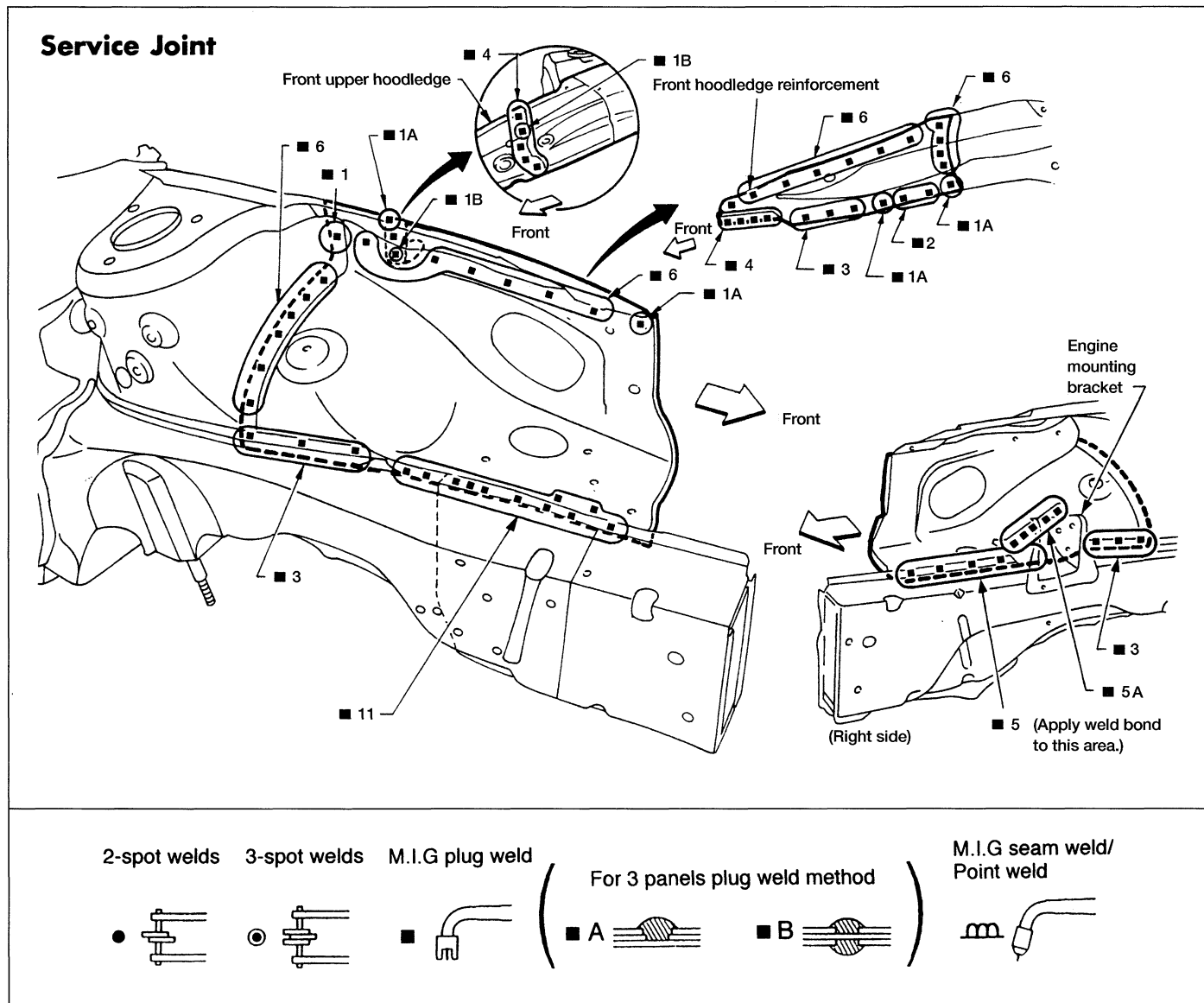
For 3 panels plug weld method

M.I.G seam weld/
Point weld



Hoodledge (Partial Replacement)

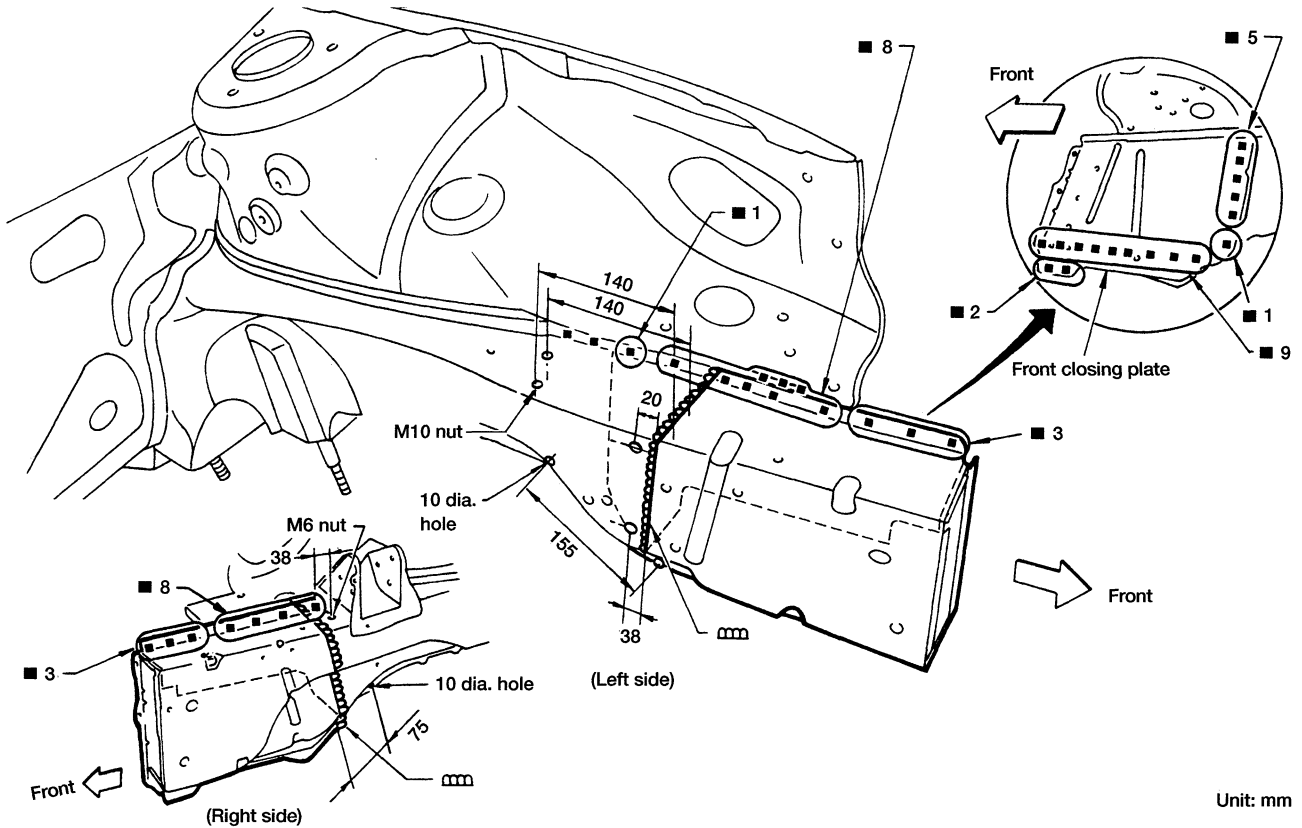
- Work after radiator core support has been removed.



Front Side Member (Partial Replacement)

- Work after radiator core support has been removed.

Service Joint



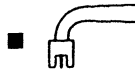
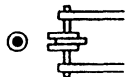
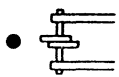
2-spot welds

3-spot welds

M.I.G plug weld

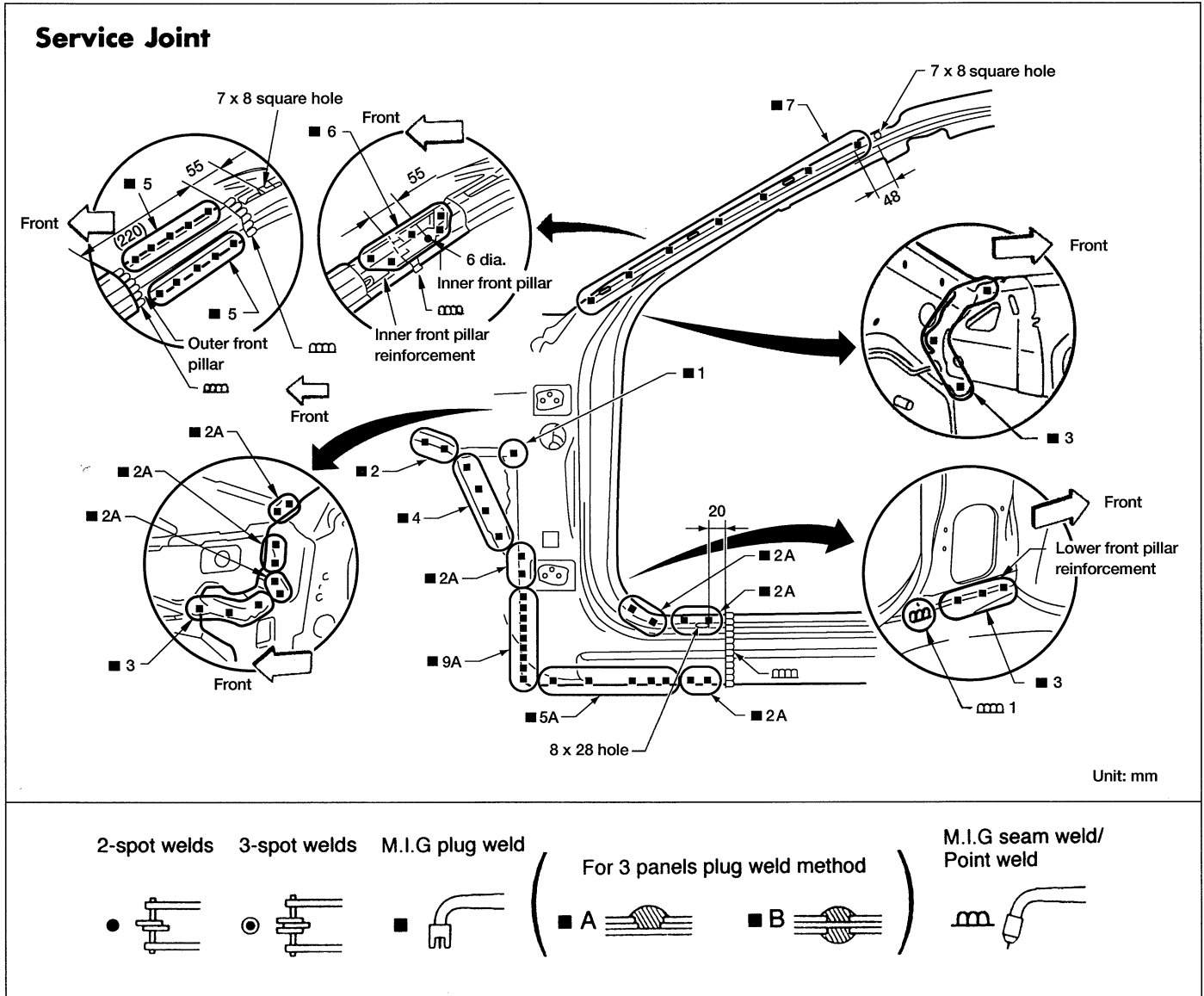
(For 3 panels plug weld method)

M.I.G seam weld/
Point weld



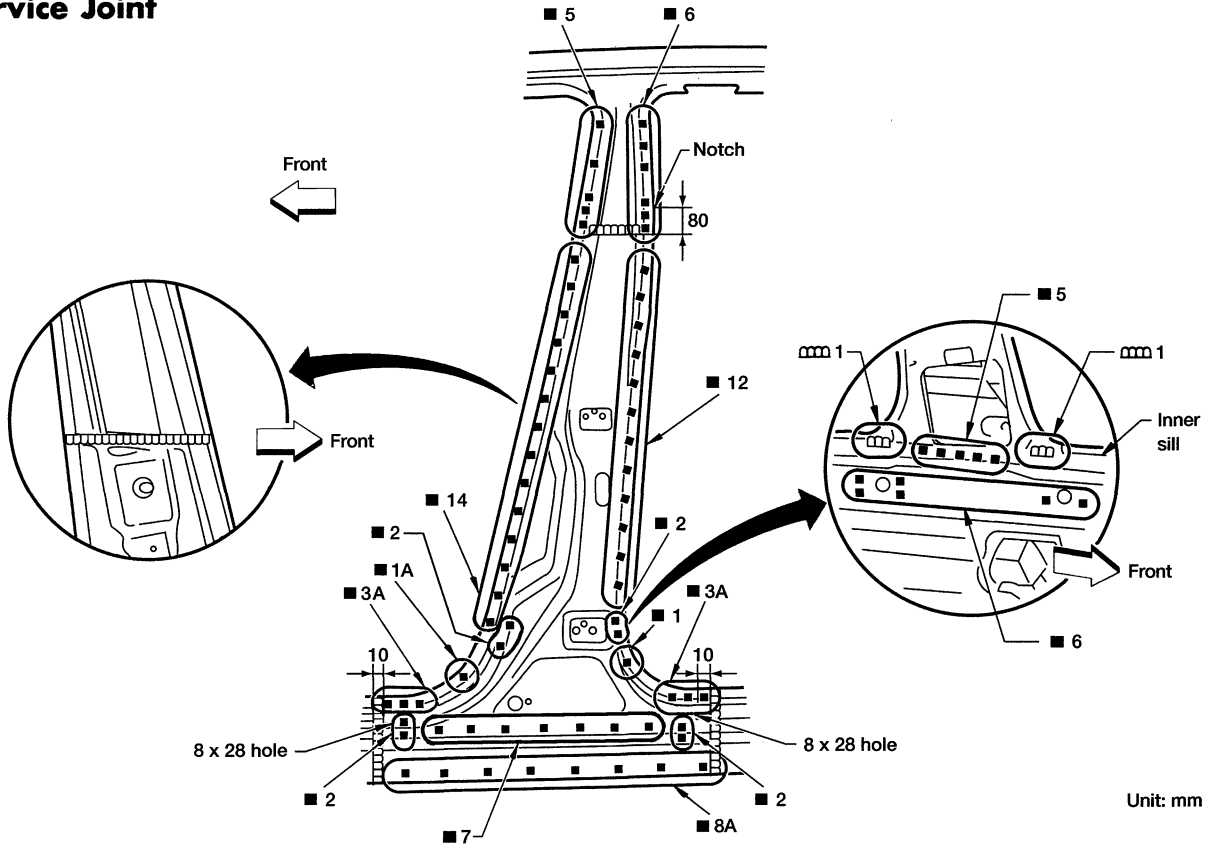
Front Pillar

- Work after hoodledge reinforcement has been removed.



Center Pillar

Service Joint



Unit: mm

2-spot welds

3-spot welds

M.I.G plug weld

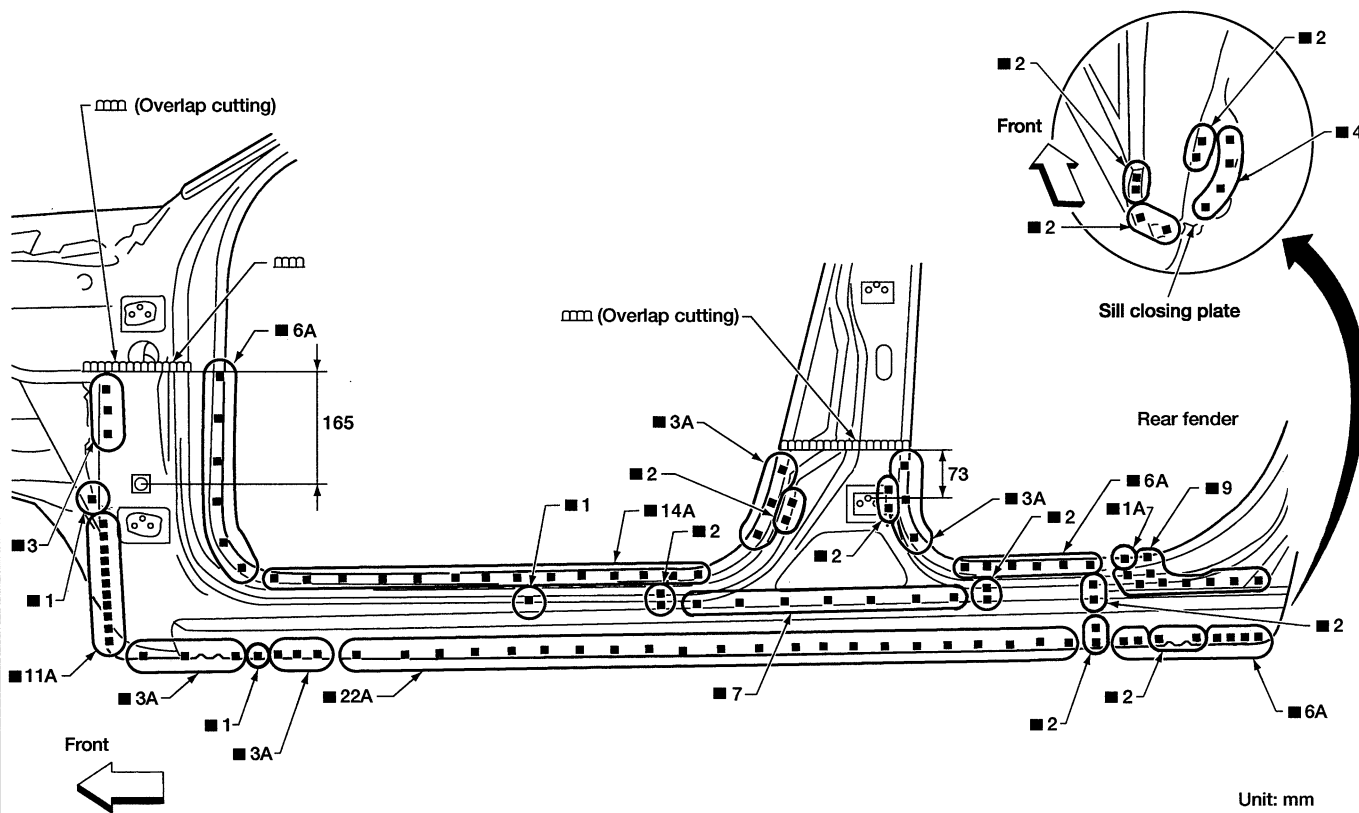
For 3 panels plug weld method

M.I.G seam weld/
Point weld



Outer Sill

Service Joint



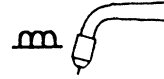
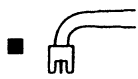
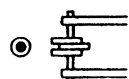
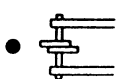
2-spot welds

3-spot welds

M.I.G plug weld

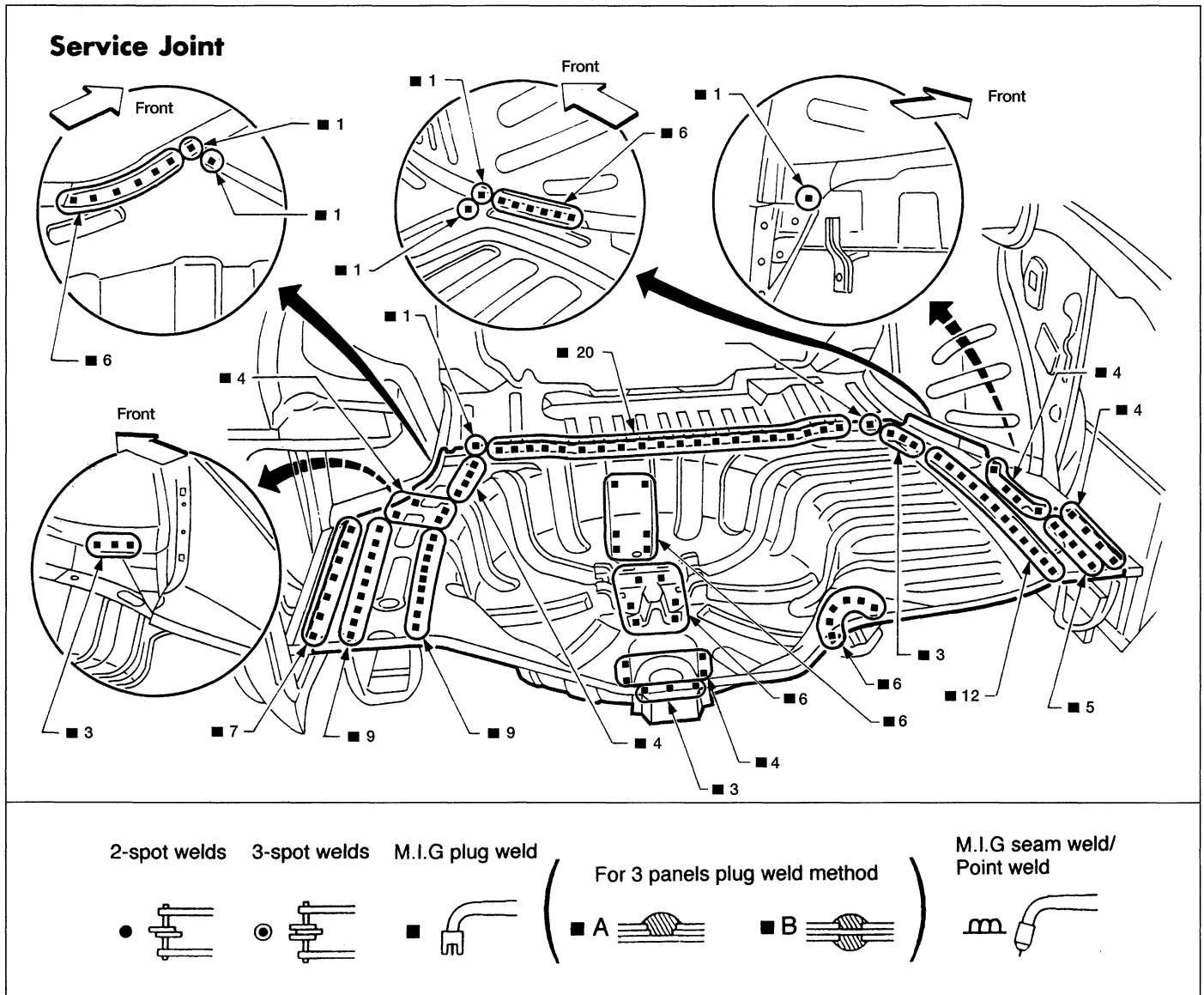
For 3 panels plug weld method

M.I.G seam weld/
Point weld



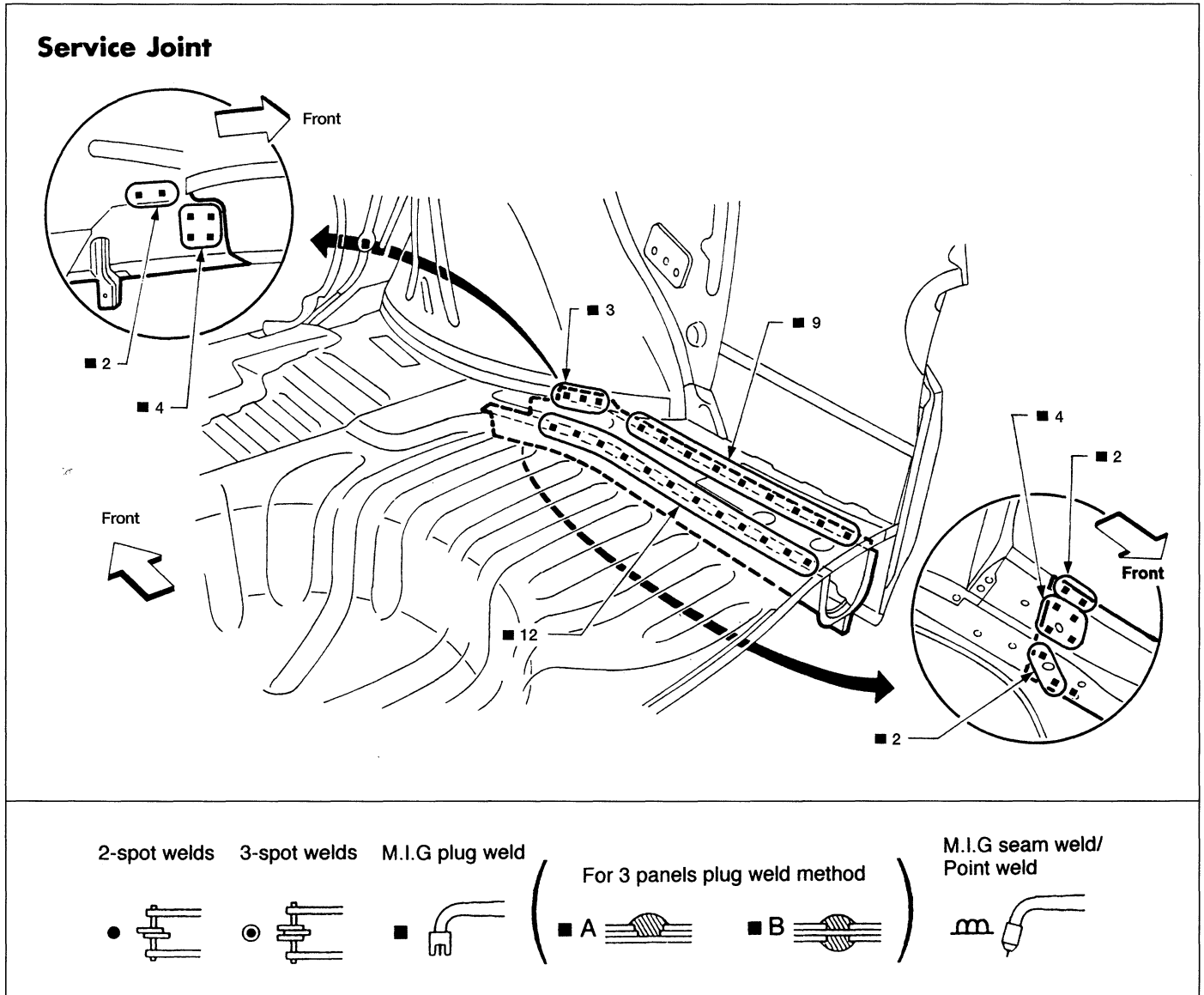
Rear Floor Rear

- Work after rear panel has been removed.



Rear Side Member Extension

- Work after rear panel has been removed.



Notes

Notes

Notes