

# FOREWORD

This Body Repair Manual contains information and instructions for repairing the body structure of the 1996 Pathfinder (R50) 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 are assumed to have a high level of skill and experience in repairing collision-damaged vehicles and also use modern servicing tools and equipment. It is not recommended that persons unfamiliar with body repair techniques attempt to repair collision-damaged vehicles by using this manual.

**Technicians are also encouraged to read the 1996 Pathfinder (R50) 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 technician trained to weld structural body parts.

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.

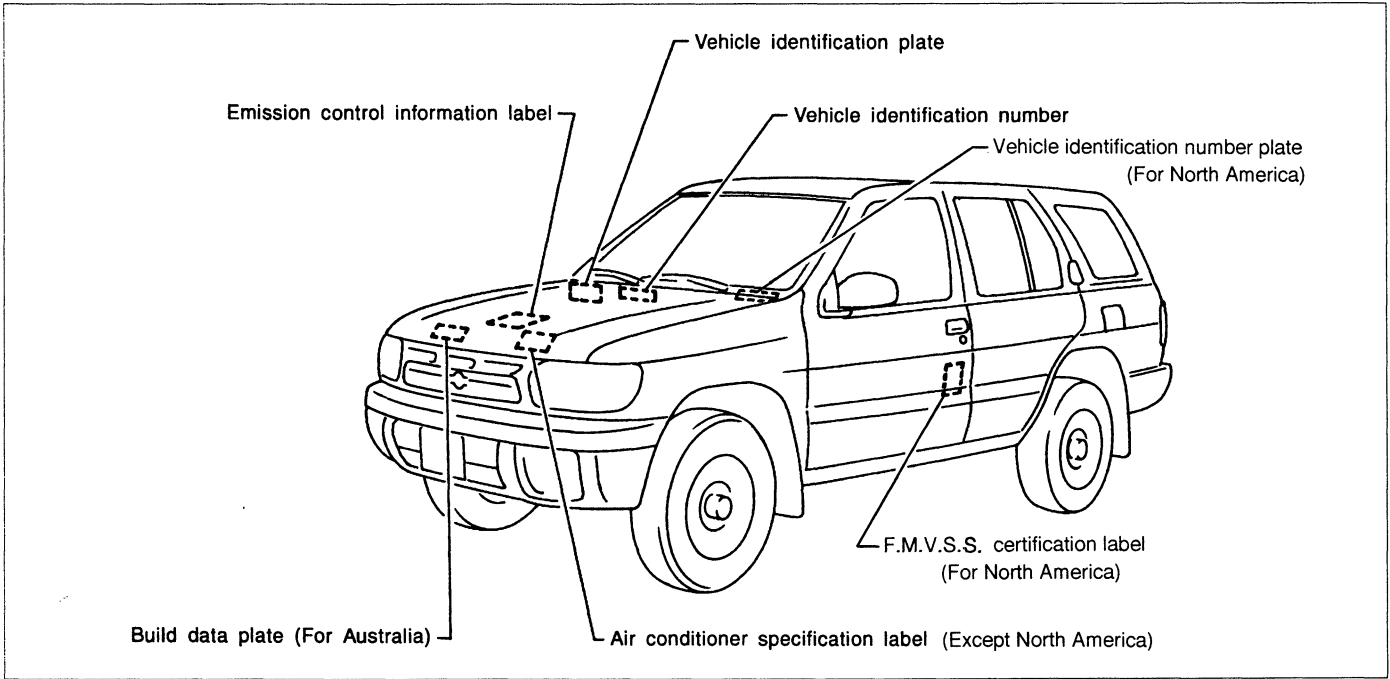
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# CONTENTS

<b>GENERAL INFORMATION</b> .....	1
Identification Number .....	1
<b>BODY COMPONENT PARTS</b> .....	3
Underbody Component Parts .....	3
Body Component Parts .....	4
<b>CORROSION PROTECTION</b> .....	5
Description .....	5
Anti-Corrosive Wax .....	6
Undercoating .....	7
Stone Guard Coat .....	8
<b>BODY CONSTRUCTION</b> .....	9
Body Construction .....	9
<b>BODY ALIGNMENT</b> .....	10
Body Center Marks .....	10
Panel Parts Matching Marks .....	11
Description .....	12
Engine Compartment .....	12
Underbody .....	14
Passenger Compartment .....	16
Rear Body .....	18
<b>HANDLING PRECAUTIONS FOR PLASTICS</b> .....	19
Handling Precautions for Plastics .....	19
Location of Plastic Parts .....	20
<b>REPLACEMENT OPERATIONS</b> .....	22
Description .....	22
Radiator Core Support (Partial Replacement) .....	23
Hoodledge (Partial Replacement) .....	24
Front Side Member (Partial Replacement) .....	25
Front Pillar .....	26
Center Pillar .....	27
Outer Sill .....	28
Rear Fender .....	29
Rear Floor Rear Panel .....	30
Rear Side Member Extension .....	31

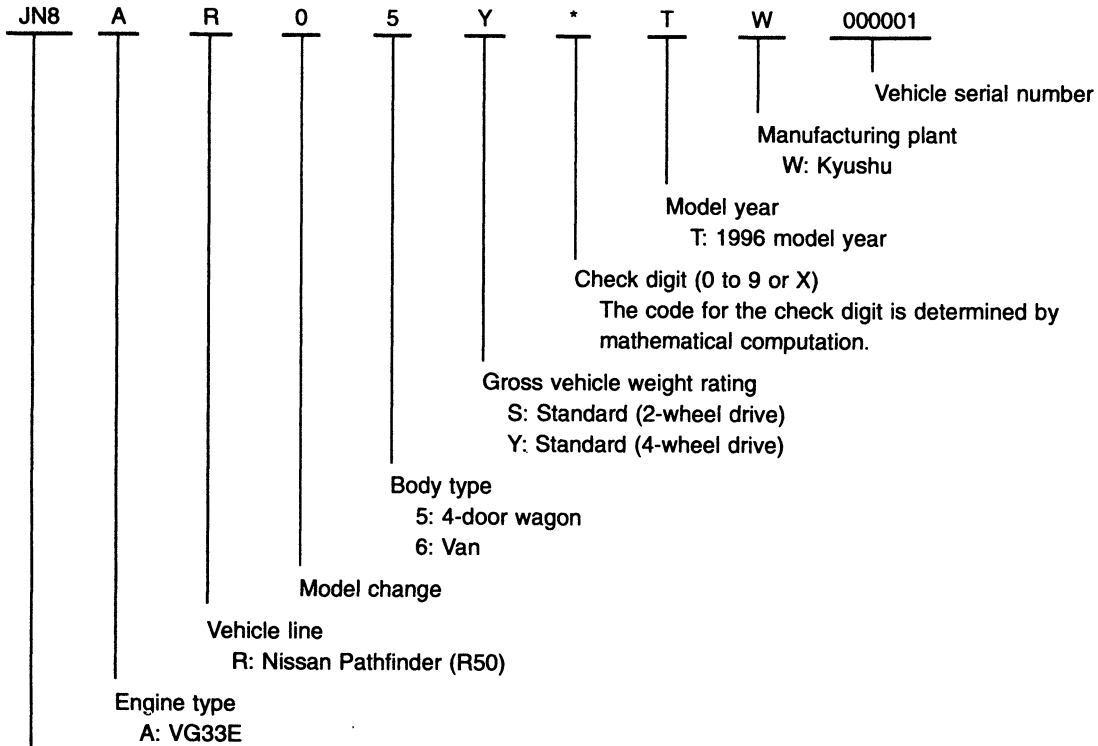
# Identification Number



## VEHICLE IDENTIFICATION NUMBER

### Prefix and suffix designations:

(For North America)



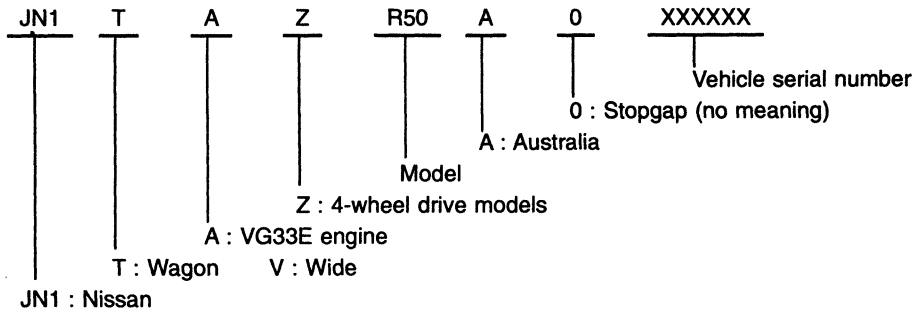
#### Manufacturer

JN6: Japan produced truck

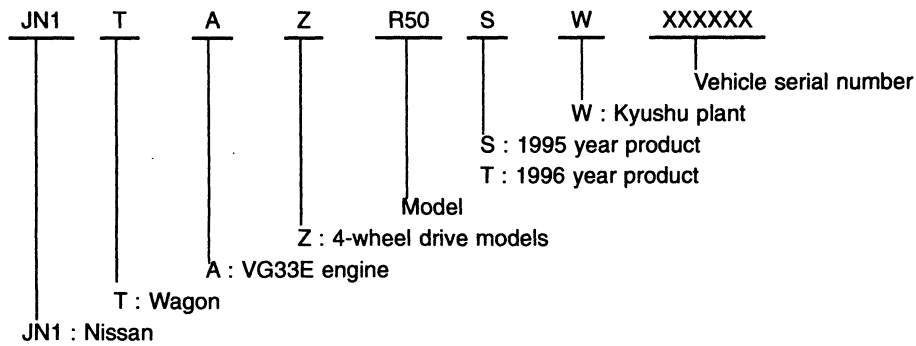
JN8: Japan produced multi-purpose passenger vehicle

Identification Number (Cont'd)

(For Australia)



(For Brazil)



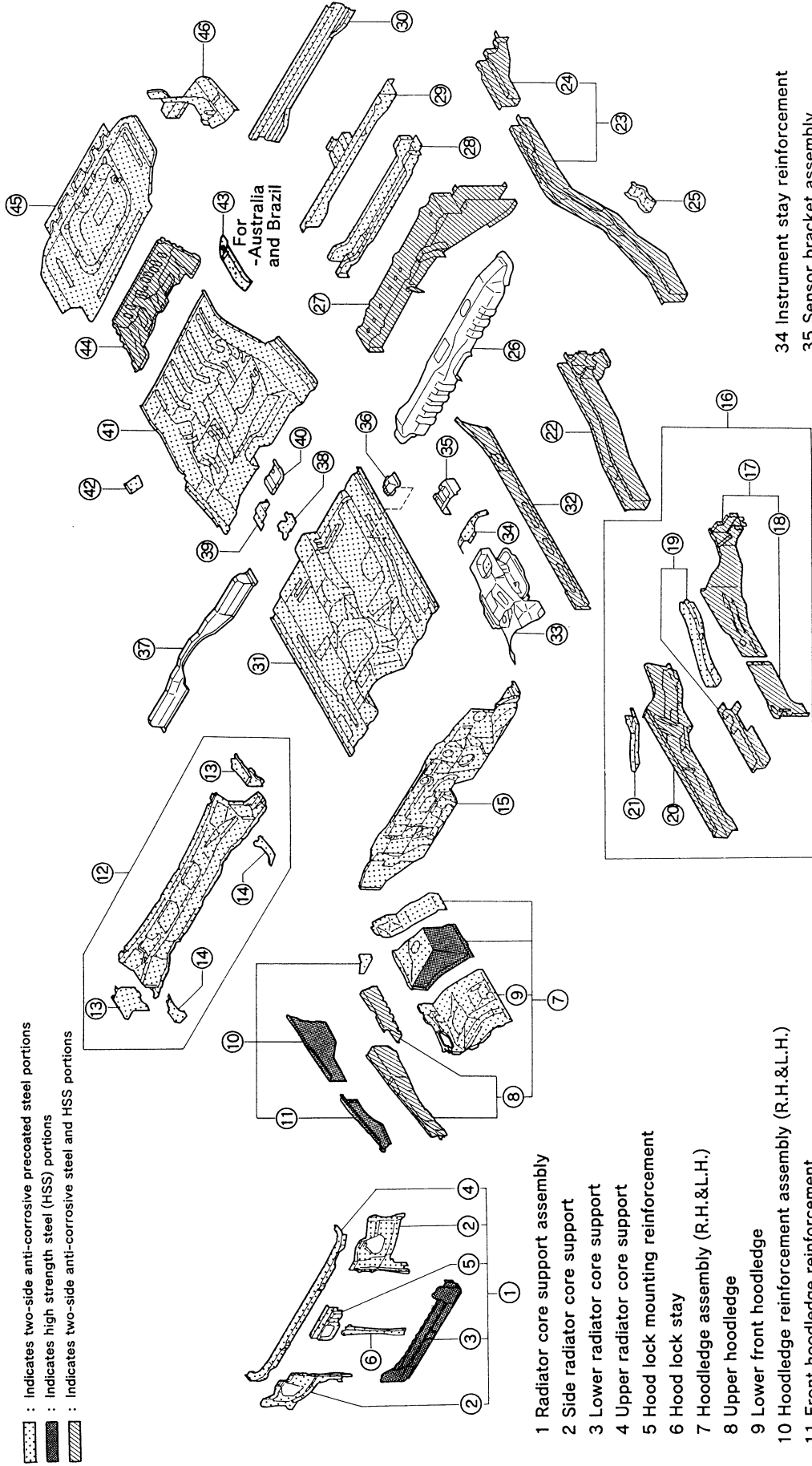
IDENTIFICATION PLATE




NISSAN MOTOR CO., LTD. JAPAN			
型式	TYPE TIPO	△1	
CHASSIS NO. NO. DE CHASIS		△2	
MODEL MODELO		△3	
○ カラー-COLOR TRIM トリム-COLOR GUARNICION		△4 △5	○
エンジン ENGINE ジン MOTOR		△6 △7	CC
ミッション TRANS, AXLE アクスル TRANS, EJE		△8 △9	
	工場	PLANT PLANTA	
日産自動車株式会社		MADE IN JAPAN	

- 1 Type
- 2 Vehicle identification number (Chassis number)
- 3 Model
- 4 Body color code
- 5 Trim color code
- 6 Engine model
- 7 Engine displacement
- 8 Transmission model
- 9 Axle model

SGI756-A

# Underbody Component Parts






 : Indicates two-side anti-corrosive precoated steel portions  
 : Indicates high strength steel (HSS) portions  
 : Indicates two-side anti-corrosive steel and HSS portions

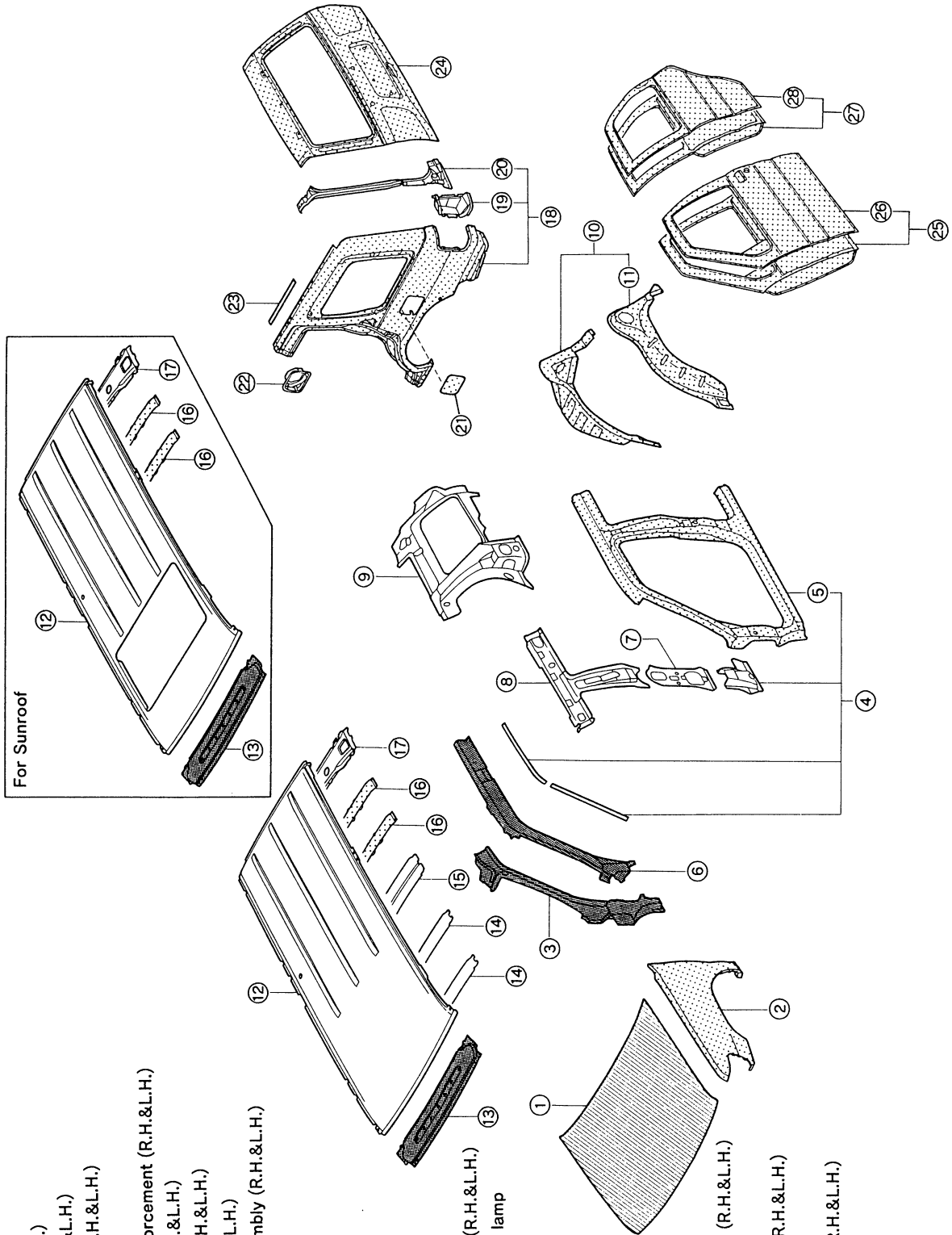
- 1 Radiator core support assembly
- 2 Side radiator core support
- 3 Lower radiator core support
- 4 Upper radiator core support
- 5 Hood lock mounting reinforcement
- 6 Hood lock stay
- 7 Hoodledge assembly (R.H.&L.H.)
- 8 Upper hoodledge
- 9 Lower front hoodledge
- 10 Hoodledge reinforcement assembly (R.H.&L.H.)
- 11 Front hoodledge reinforcement
- 12 Air box assembly
- 13 Side cowl top
- 14 Side cowl top brace
- 15 Lower dash assembly
- 16 Front side member assembly (R.H.&L.H.)
- 17 Front side member closing plate assembly (R.H.&L.H.)
- 18 Front side member front closing plate
- 19 Front side member reinforcement assembly
- 20 Front side member
- 21 Front side member brace
- 22 Front side member front extension (R.H.&L.H.)
- 23 Rear side member (R.H.&L.H.)
- 24 Rear side member extension
- 25 Fuel tank mounting rear outer reinforcement
- 26 Rear seat crossmember
- 27 3rd crossmember
- 28 Spare wheel crossmember
- 29 Inner end rear crossmember
- 30 Outer end rear crossmember
- 31 Front floor
- 32 Inner sill (R.H.&L.H.)
- 33 Hand brake & seat belt reinforcement
- 34 Instrument stay reinforcement
- 35 Sensor bracket assembly
- 36 Front seat mounting outer bracket
- 37 2nd crossmember assembly
- 38 Fuel tank mounting bracket assembly
- 39 Jack mounting bracket
- 40 Fuel tank mounting rear reinforcement
- 41 Rear floor front
- 42 Rear seat reclining device bracket
- 43 Rear floor extension (R.H.&L.H.)
- 44 Rear seat belt anchor reinforcement
- 45 Rear floor rear panel
- 46 Rear floor side (R.H.&L.H.)

For  
-Australia  
and Brazil

# Body Component Parts

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

- 1 Hood
- 2 Front fender (R.H.&L.H.)
- 3 Inner front pillar (R.H.&L.H.)
- 4 Body side assembly (R.H.&L.H.)
- 5 Outer body side
- 6 Upper front pillar reinforcement (R.H.&L.H.)
- 7 Inner center pillar (R.H.&L.H.)
- 8 Inner side roof rail (R.H.&L.H.)
- 9 Inner rear pillar (R.H.&L.H.)
- 10 Rear wheelhouse assembly (R.H.&L.H.)
- 11 Outer rear wheelhouse
- 12 Roof
- 13 Front roof rail
- 14 No.1 roof bow
- 15 No.2 roof bow
- 16 No.3 roof bow
- 17 Rear Roof rail
- 18 Rear fender assembly (R.H.&L.H.)
- 19 Base rear combination lamp
- 20 Outer back pillar
- 21 Fuel filler lid
- 22 Base fuel filler lid
- 23 Rear roof drip channel (R.H.&L.H.)
- 24 Back door
- 25 Front door assembly (R.H.&L.H.)
- 26 Outer front door panel
- 27 Rear door assembly (R.H.&L.H.)
- 28 Outer rear door panel



## Description

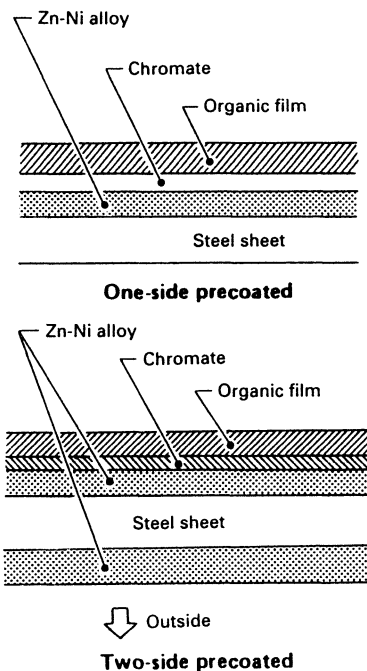
To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in our production plants. When repairing or replacing body panels, it is necessary to use these same anti-corrosive measures.

**ANTI-CORROSIVE PRECOATED STEEL  
(DURASTEEL)**

To improve repairability and corrosion resistance, a new type of anti-corrosive pre-coated steel sheet has been adopted taking the place of 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.



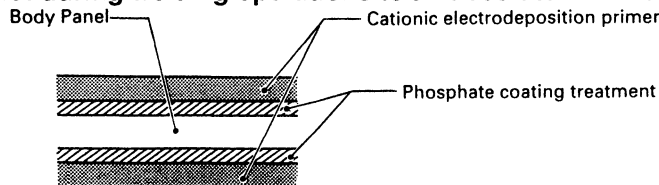
Nissan Genuine Service Parts are fabricated from durasteel sheets. Therefore, it is recommended that GENUINE NISSAN PARTS be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

**PHOSPHATE COATING TREATMENT AND  
CATIONIC ELECTRODEPOSITION PRIMER**

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

**Caution:**

**Confine paint removal during welding operations to an absolute minimum.**

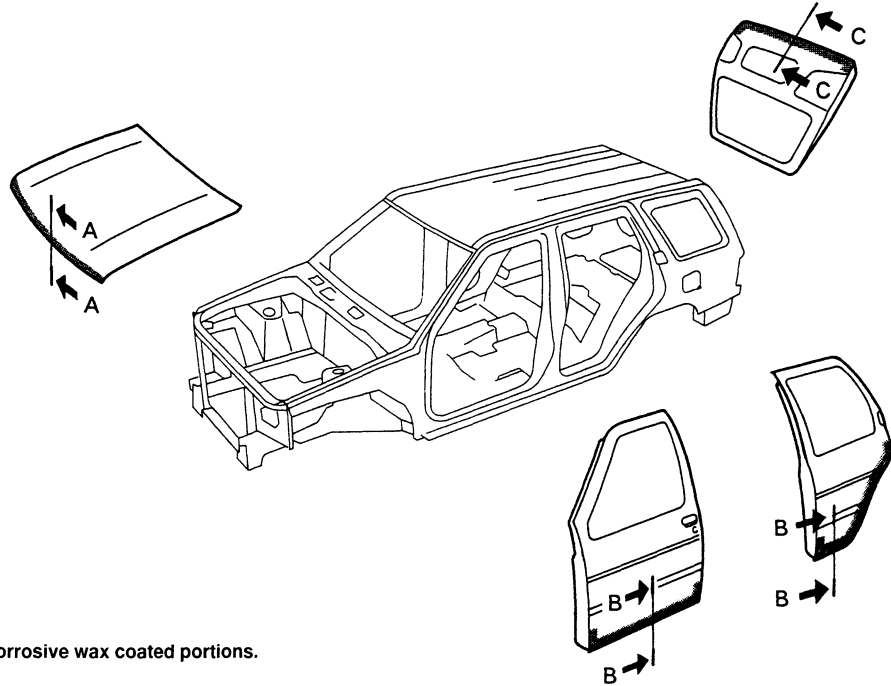


Nissan Genuine Service Parts are also treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

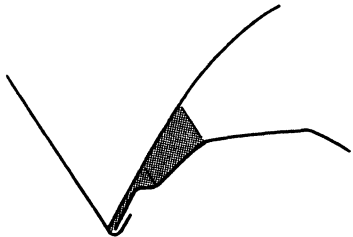
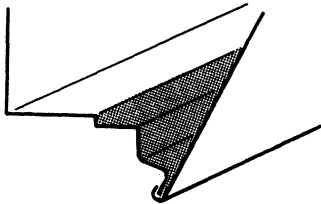
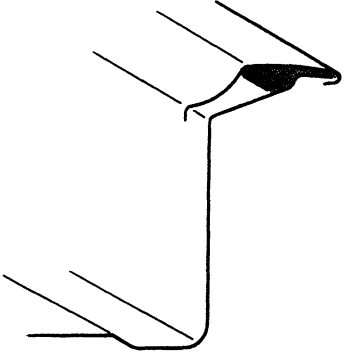


# Anti-Corrosive Wax

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.


Section A-A	Section B-B	Section C-C
		

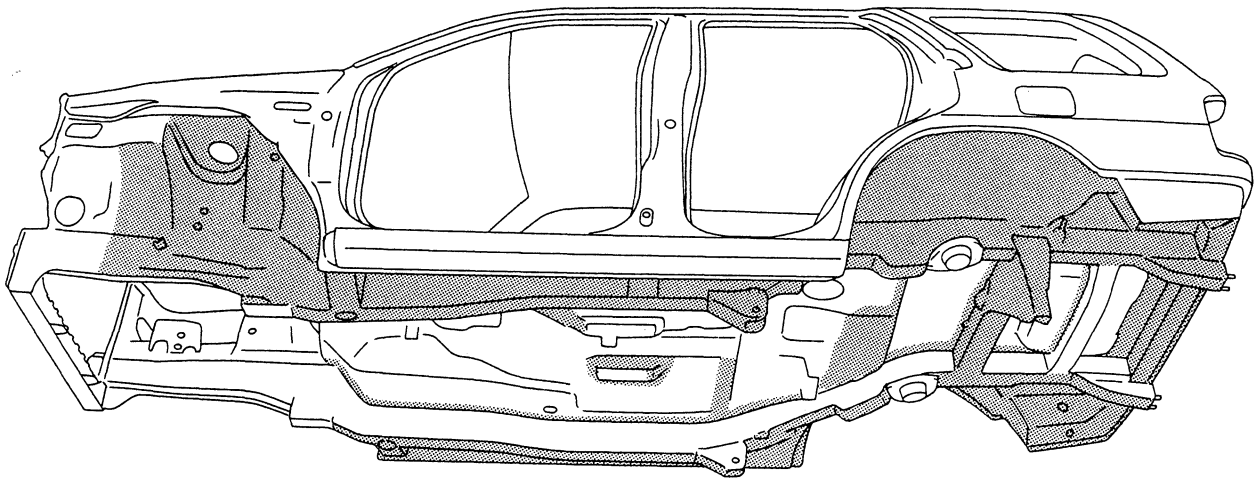
## Undercoating

The undersides 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-resistance, adhesive, and durable.

### Precautions 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.

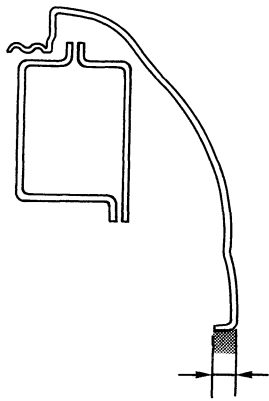
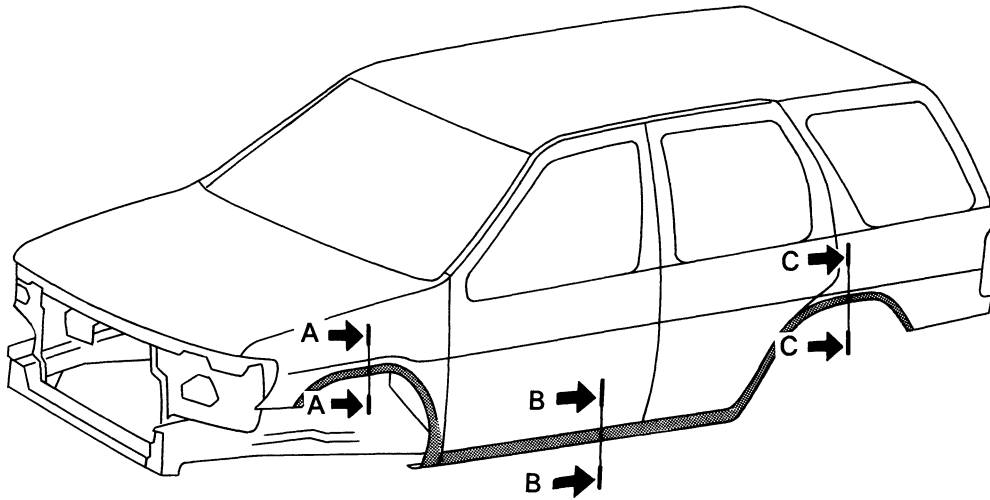
 : Indicates undercoated portions.



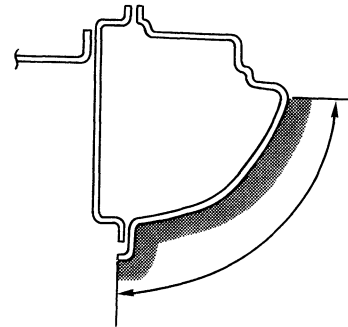
# Stone Guard Coat

To prevent damage caused by stones, the lower outer body panels (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.

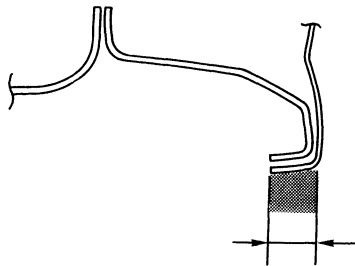
 : Indicates stone guard coated portions.



Section A - A  
(Except models with over fender)

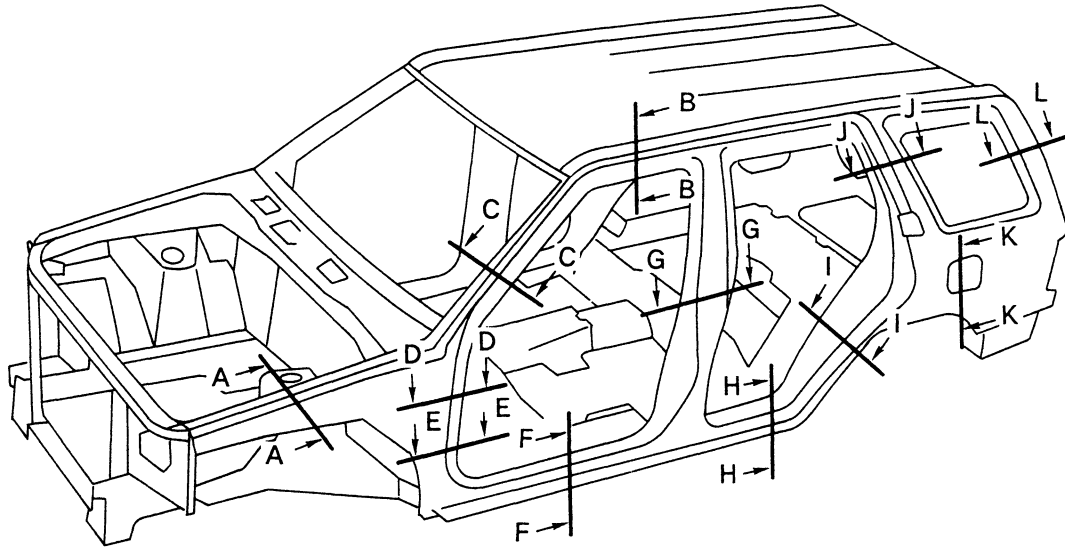


Section B - B



Section C - C  
(Except models with over fender)

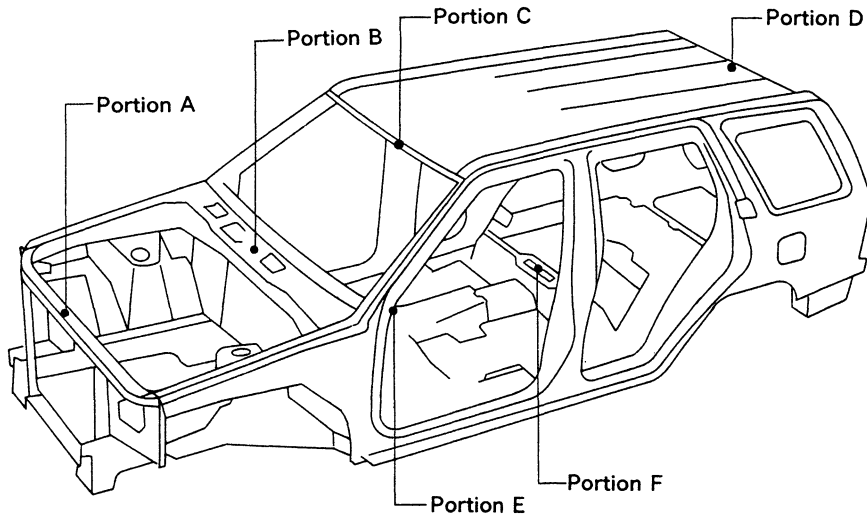
# Body Construction



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.

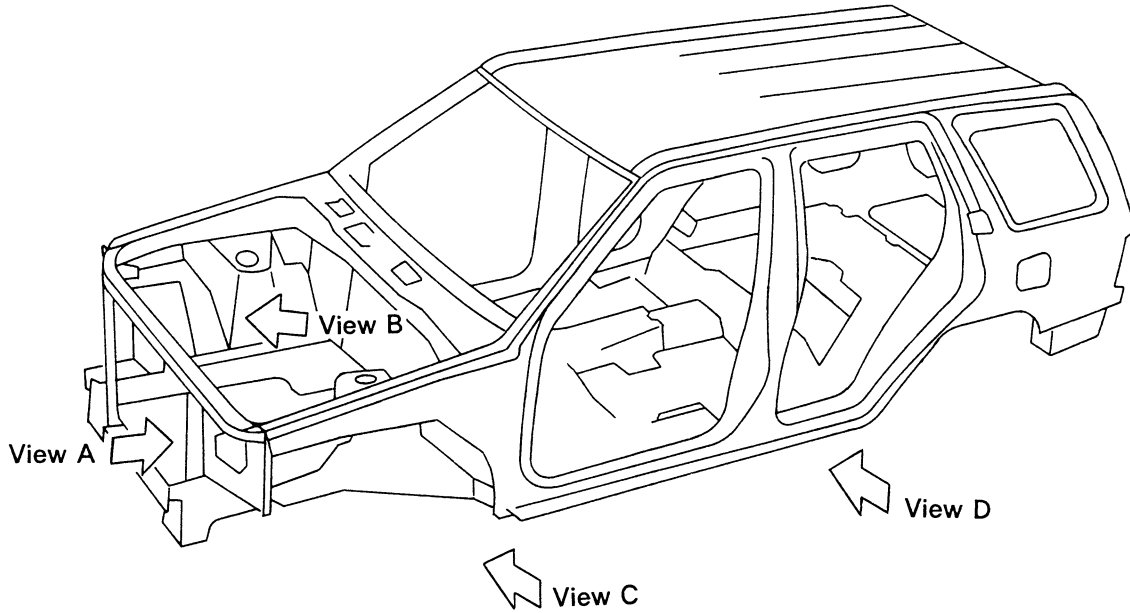


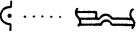
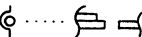
Unit: mm

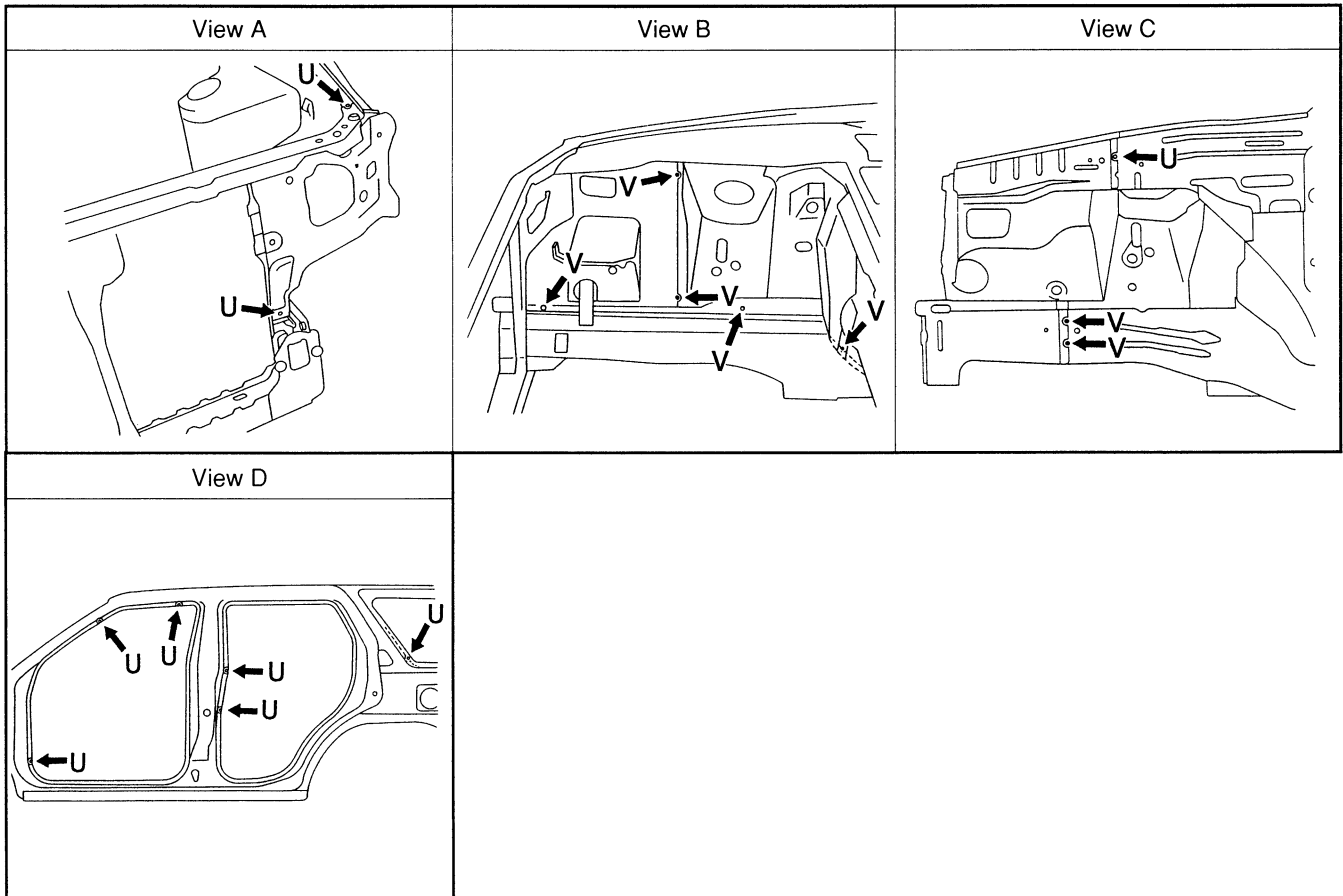
Portion A	Portion B	Portion C
<p>Hole(5 dia)</p> <p>● Upper radiator core support</p>	<p>Hole(5 dia)</p> <p>● Cowl top</p>	<p>Emboss</p> <p>● Front roof</p>
Portion D	Portion E	Portion F
<p>Notch</p> <p>● Rear roof</p>	<p>Hole(5.4 dia)</p> <p>● Front floor seat crossmember</p>	<p>Emboss</p> <p>● Rear floor front</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 frame (members, pillars, etc.) more accurate, effective repair will be possible by using these marks together with body alignment data.

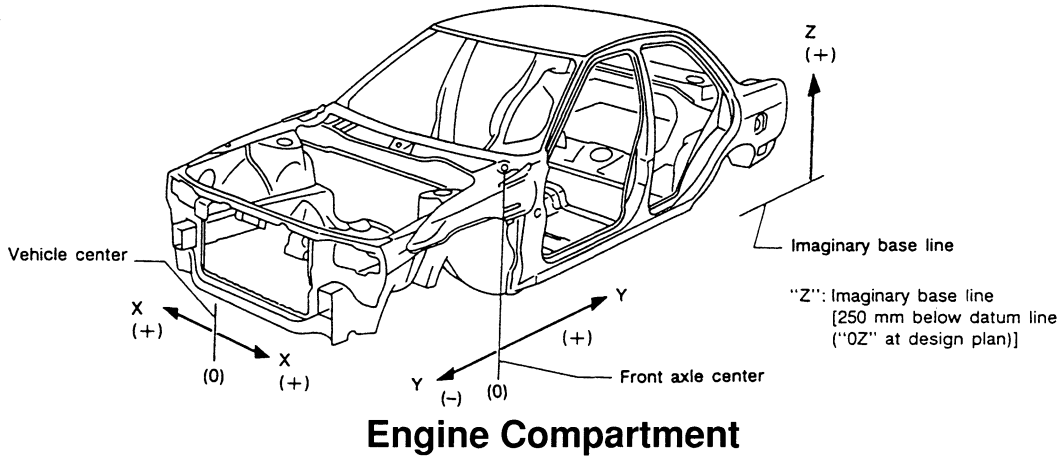


Type V:   
 Type U: 

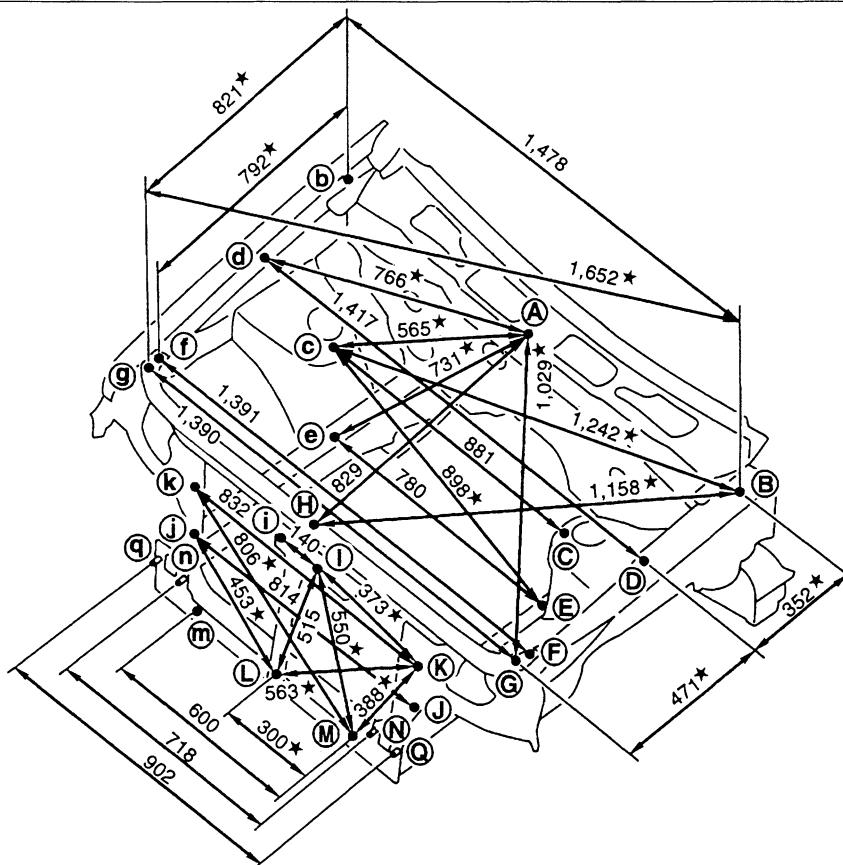


# Description

- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length. Then check the pointers and gauge themselves 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".



## MEASUREMENT



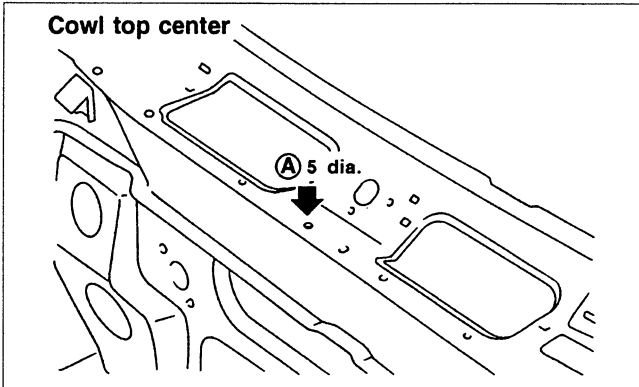
Unit: mm

# Engine Compartment

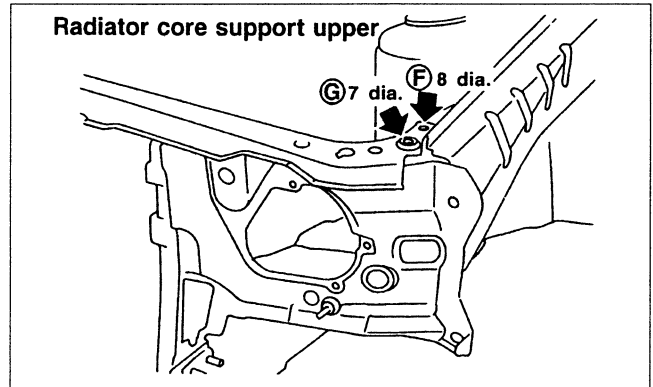
MEASUREMENT POINTS

Unit: mm

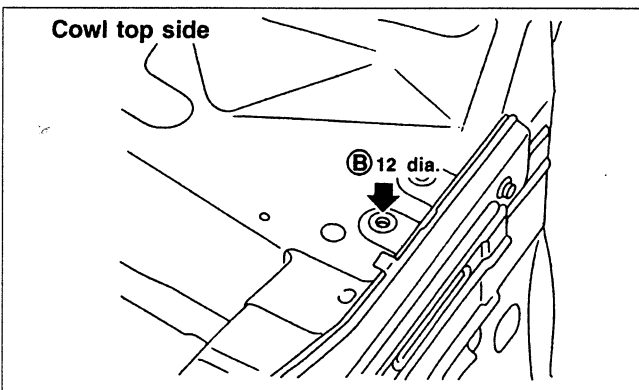
Cowl top center



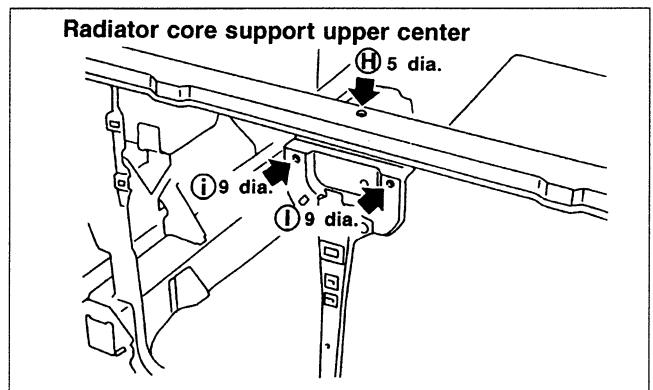
Radiator core support upper



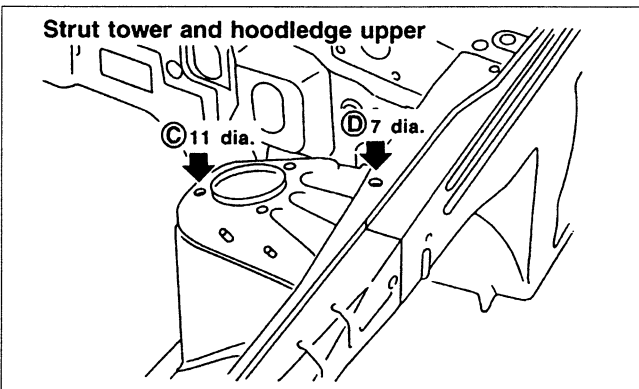
Cowl top side



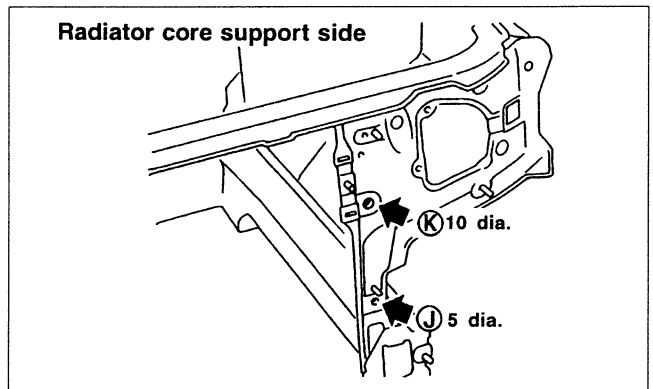
Radiator core support upper center



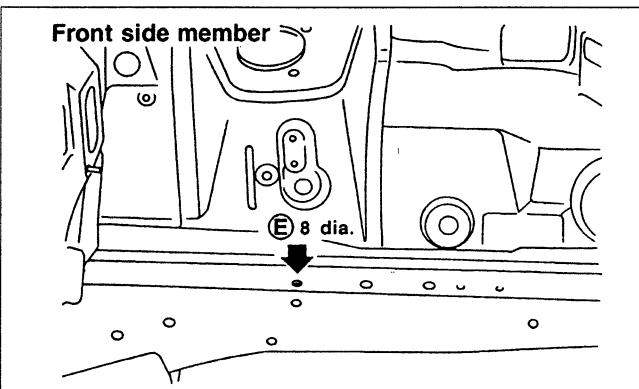
Strut tower and hoodledge upper



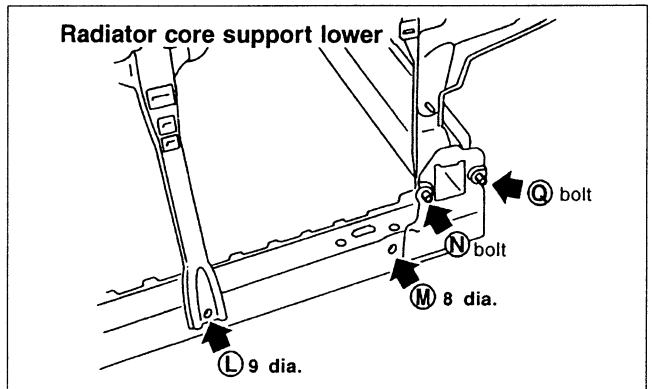
Radiator core support side



Front side member



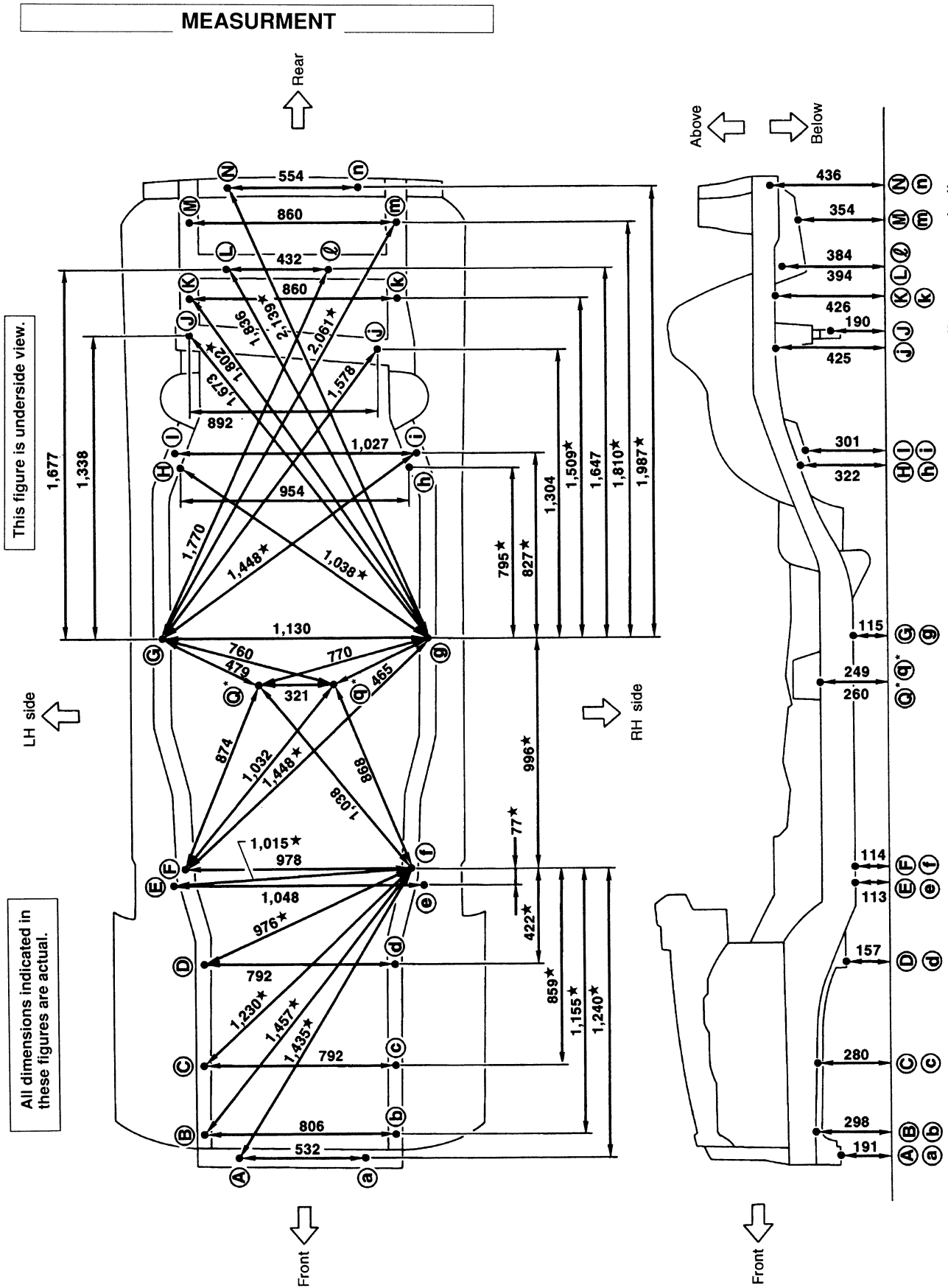
Radiator core support lower





# BODY ALIGNMENT

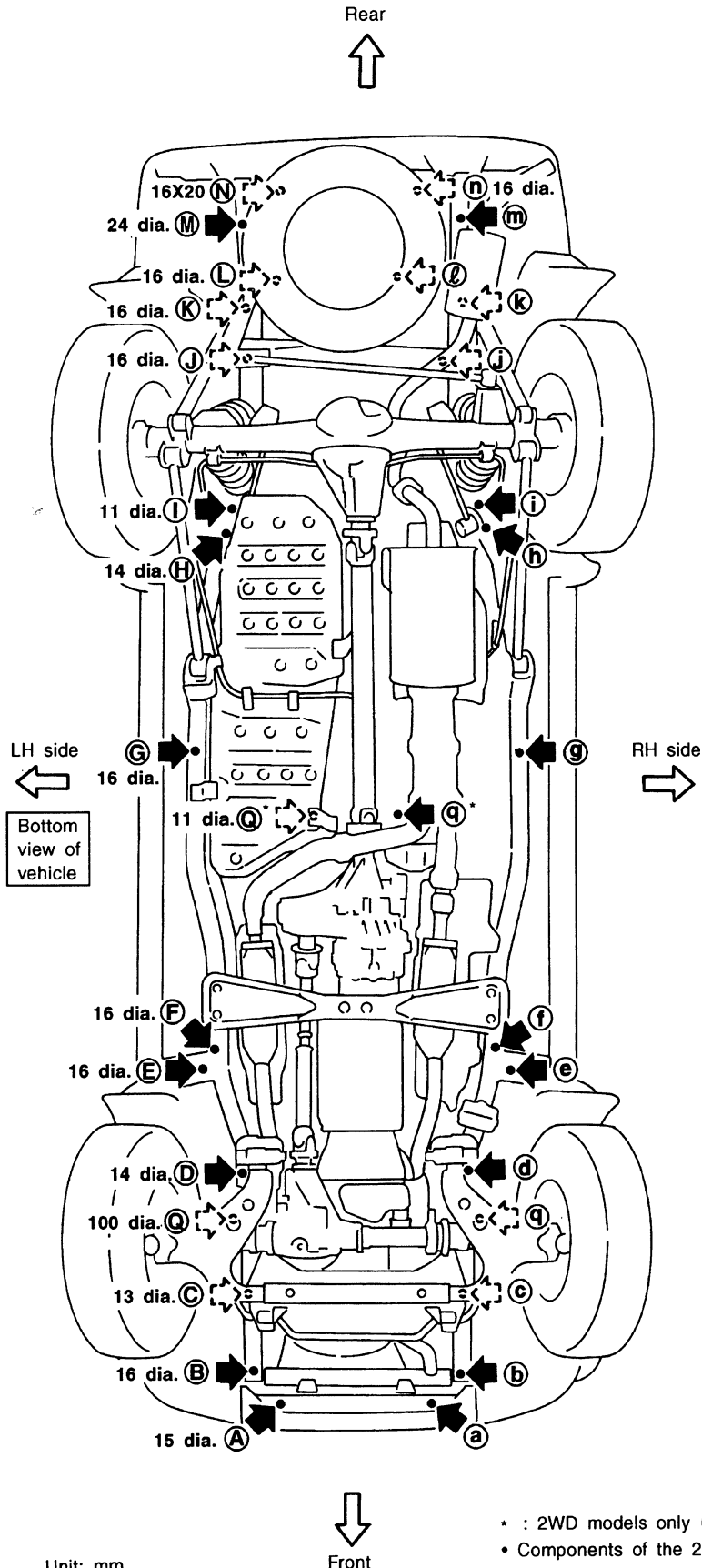
## Underbody



# BODY ALIGNMENT

## Underbody

### MEASUREMENT POINTS



Front coordinates:

**(A, a)**  
X: 266  
Y: -580.4  
Z: 191.4

**(B, b)**  
X: 403  
Y: -500  
Z: 297.7

**(C, c)**  
X: 396  
Y: -201  
Z: 279.7

**(D, d)**  
X: 396  
Y: 228  
Z: 156.7

**(E, e)**  
X: 524  
Y: 568  
Z: 112.7

**(F, f)**  
X: 489  
Y: 637  
Z: 114.1

Rear coordinates:

**(G, g)**      **(L)**  
X: 565      X: 290  
Y: 1,630    Y: 3,230  
Z: 115      Z: 394.1

**(H, h)**      **(M)**  
X: 476.9    X: -142  
Y: 2,392.6   Y: 3,230  
Z: 321.9    Z: 383.6

**(I, i)**      **(N, n)**  
X: 513.3    X: 430  
Y: 2,434.5   Y: 3,419.3  
Z: 301.4    Z: 353.6

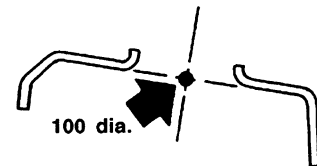
**(J)**      **(O, o)**  
X: 446.1    X: 277  
Y: 2,960.2   Y: 3,570  
Z: 190      Z: 435.6

**(K, k)**      **(P, p)**  
X: -350     X: 154.5  
Y: 2,878    Y: 1,431  
Z: 424.8    Z: 259.6

**(Q, q)**      **(R, r)**  
X: 430      X: -166.5  
Y: 3,100    Y: 1,431  
Z: 426.2    Z: 248.6

Front strut tower center coordinates:

**(R, r)**  
X: 499.9  
Y: 41.2  
Z: 748.9

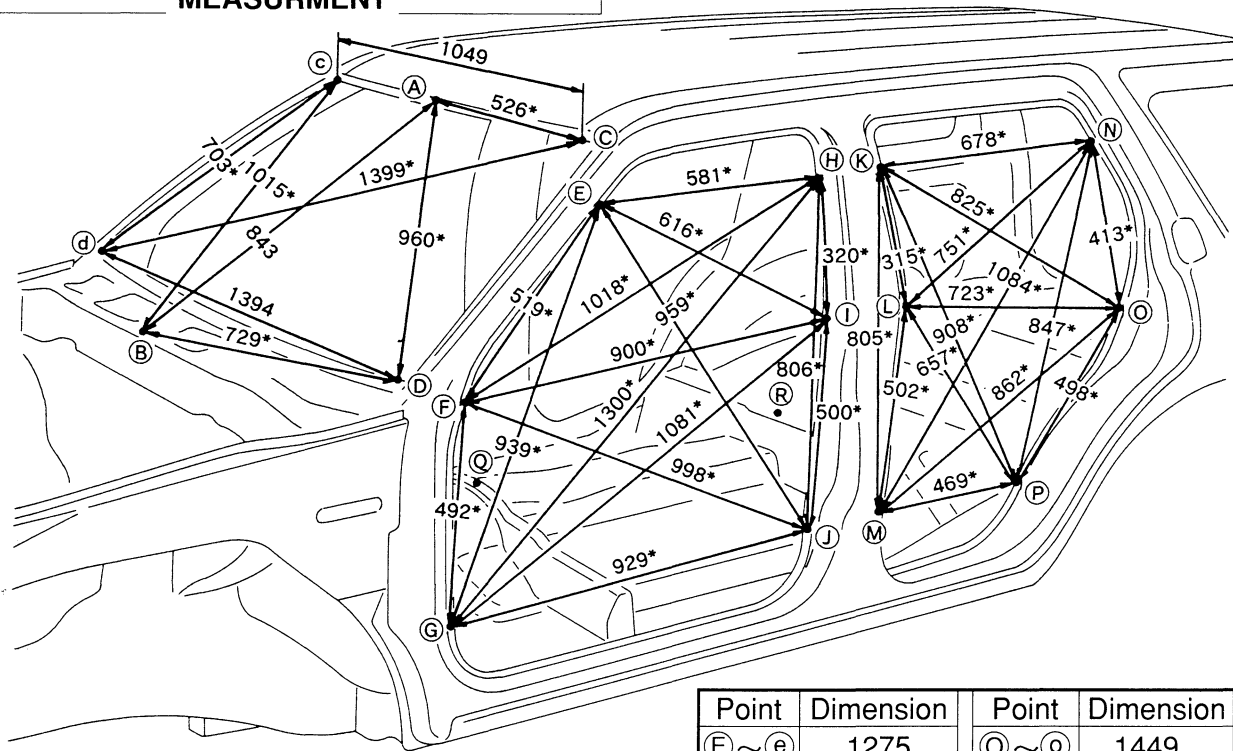


- : 2WD models only ((Q), (q))
- Components of the 2WD system are the same as for the 4WD.

Unit: mm

# Passenger Compartment

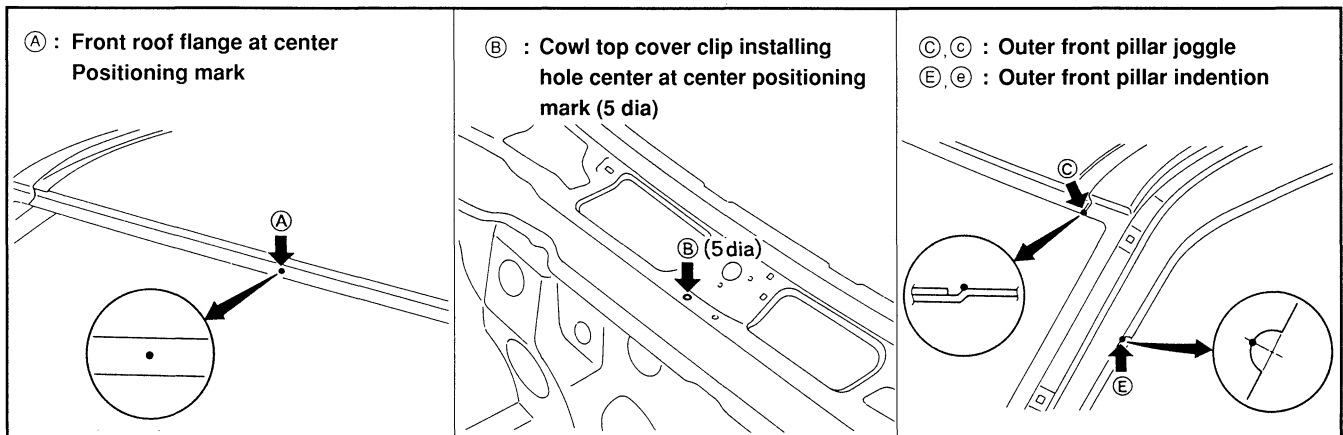
MEASUREMENT



Point	Dimension	Point	Dimension
E~e	1275	Q~q	1449
F~f	1454	P~p	1421
G~g	1420	Q~E	1122*
H~h	1281	Q~F	1034*
I~i	1478	Q~H	1217*
J~j	1424	Q~I	1054*
K~k	1283	R~K	1048*
L~l	1477	R~L	922*
M~m	1424	R~N	1103*
N~n	1279	R~O	945*

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

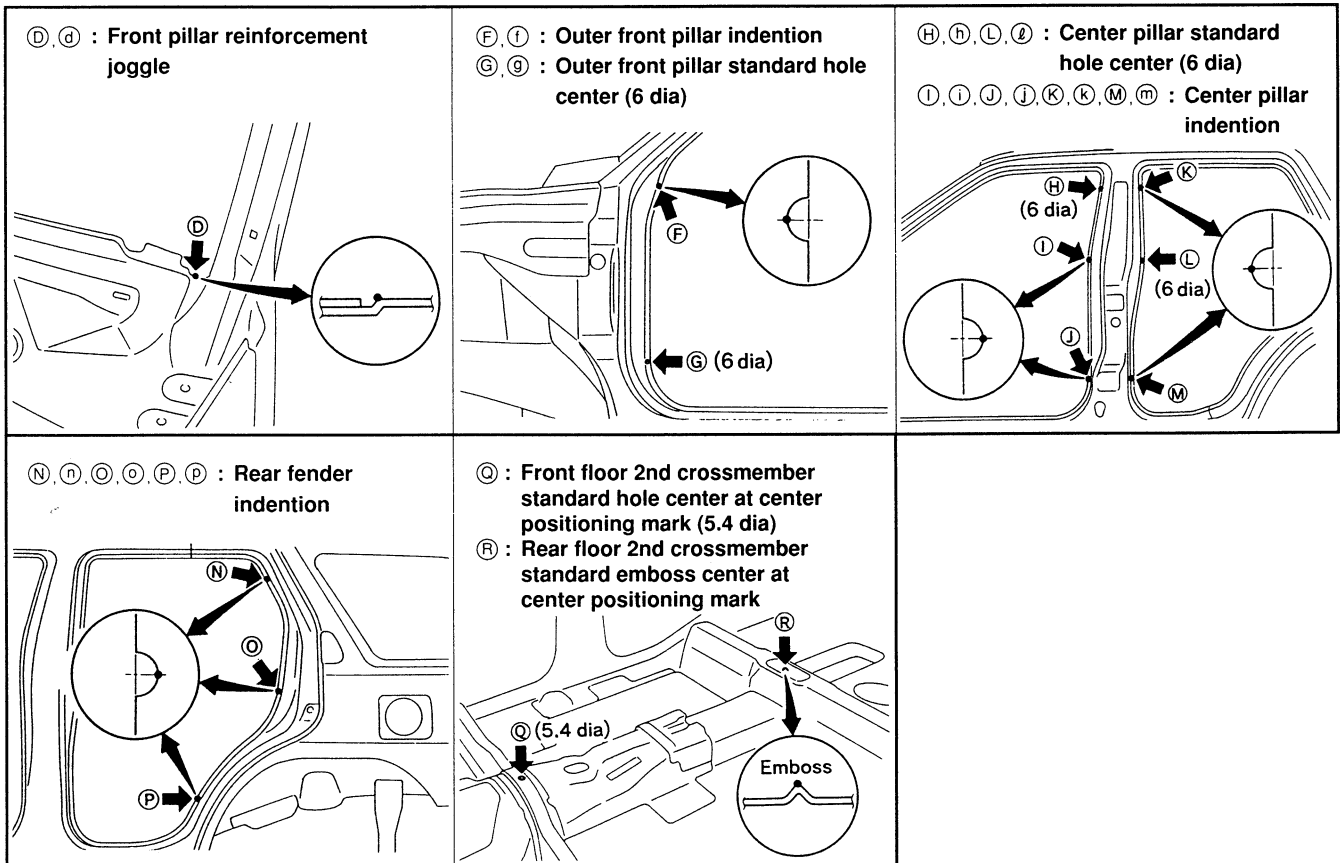
Unit: mm



# Passenger Compartment

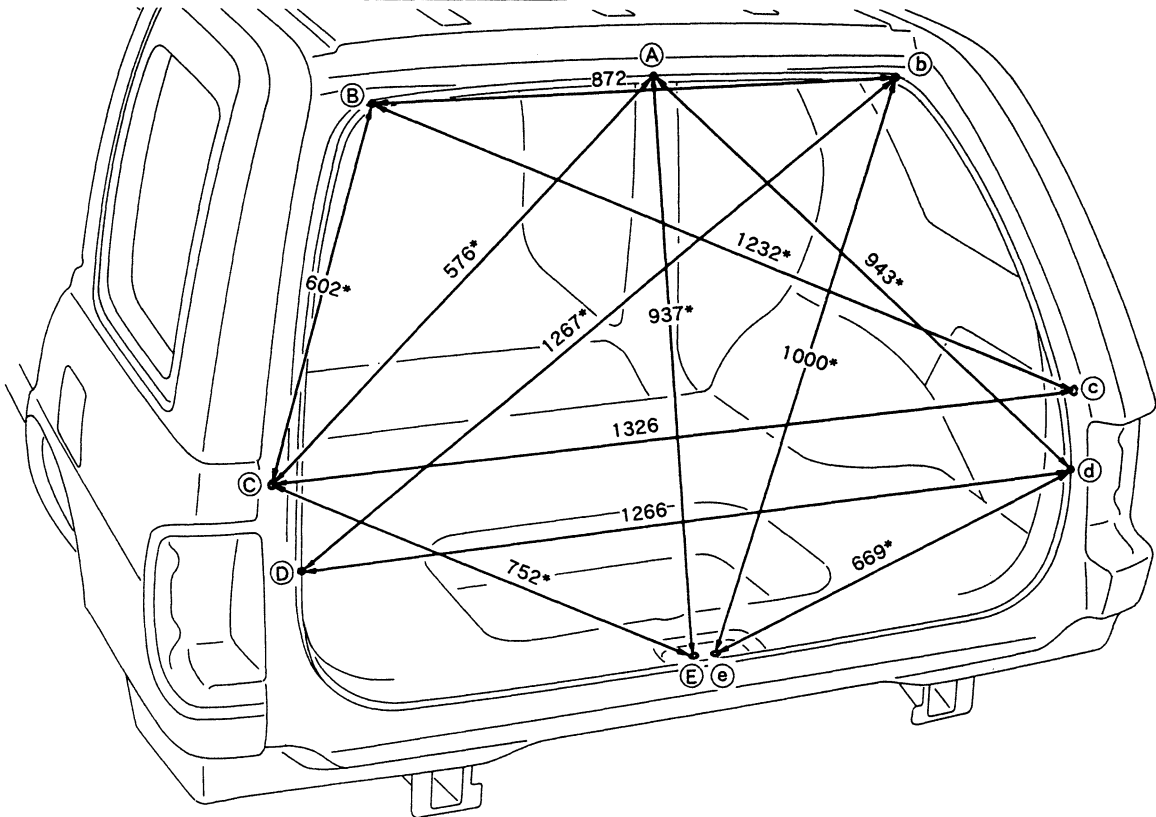
MEASUREMENT

Unit: mm



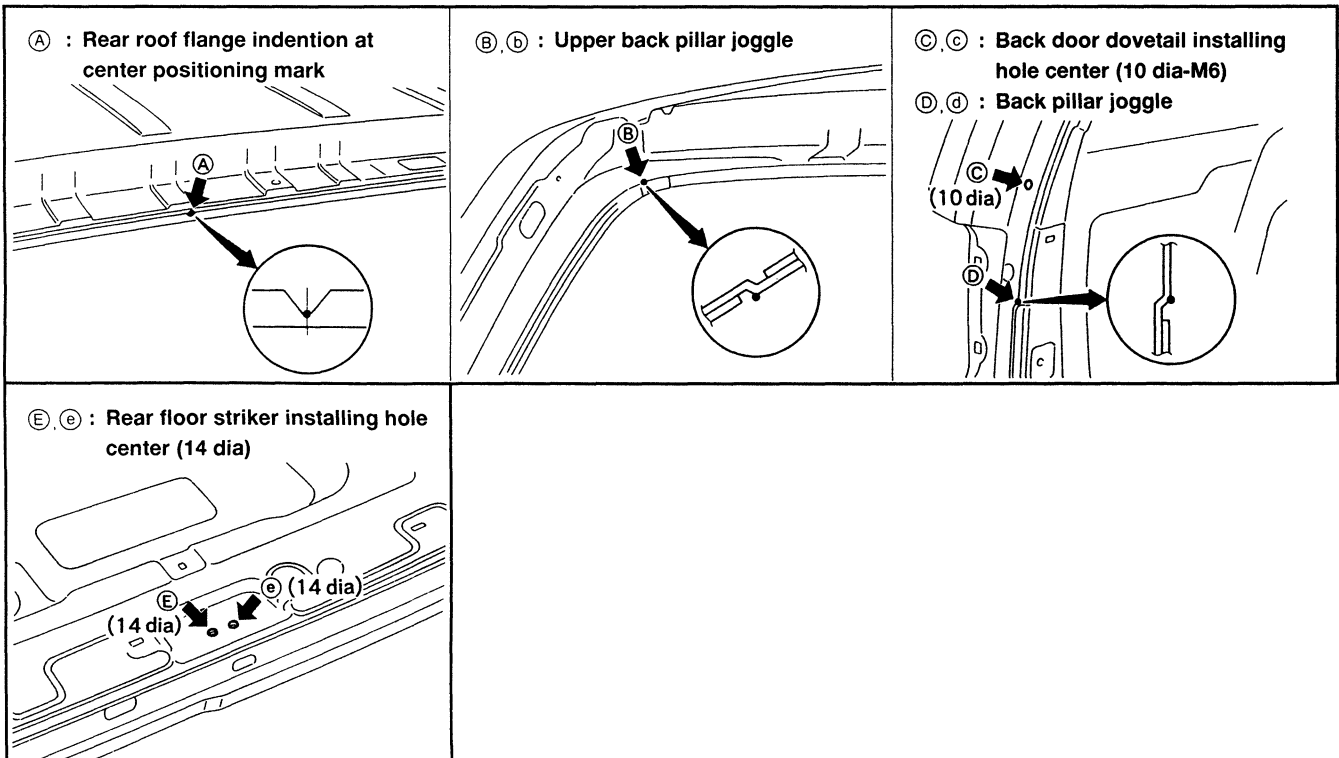
Rear Body

MEASUREMENT



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

Unit: mm

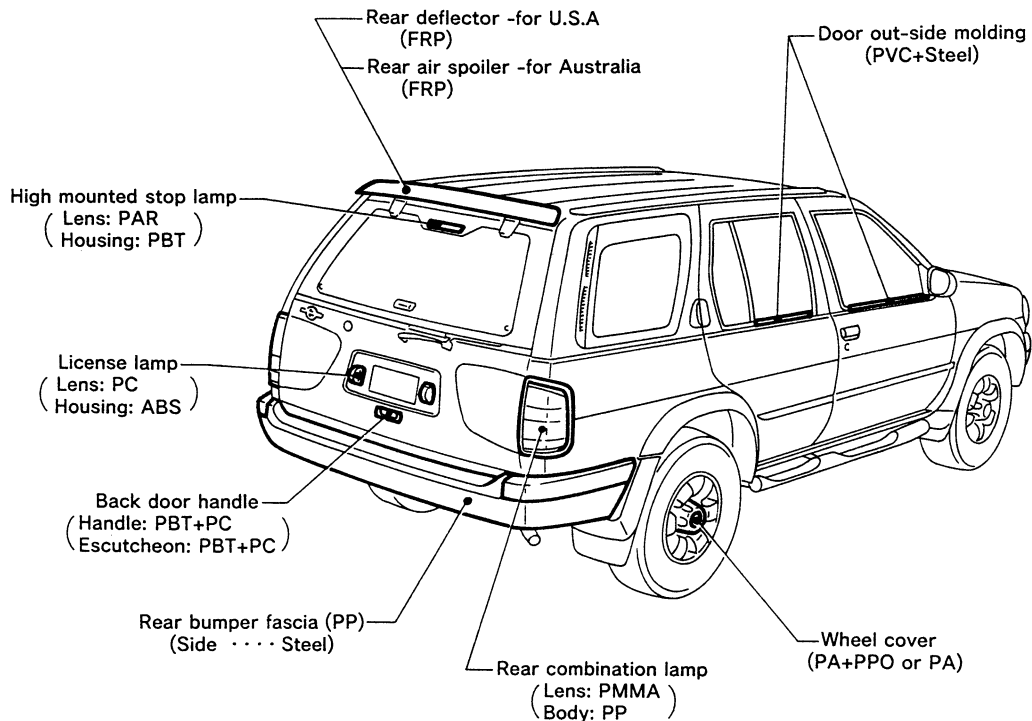
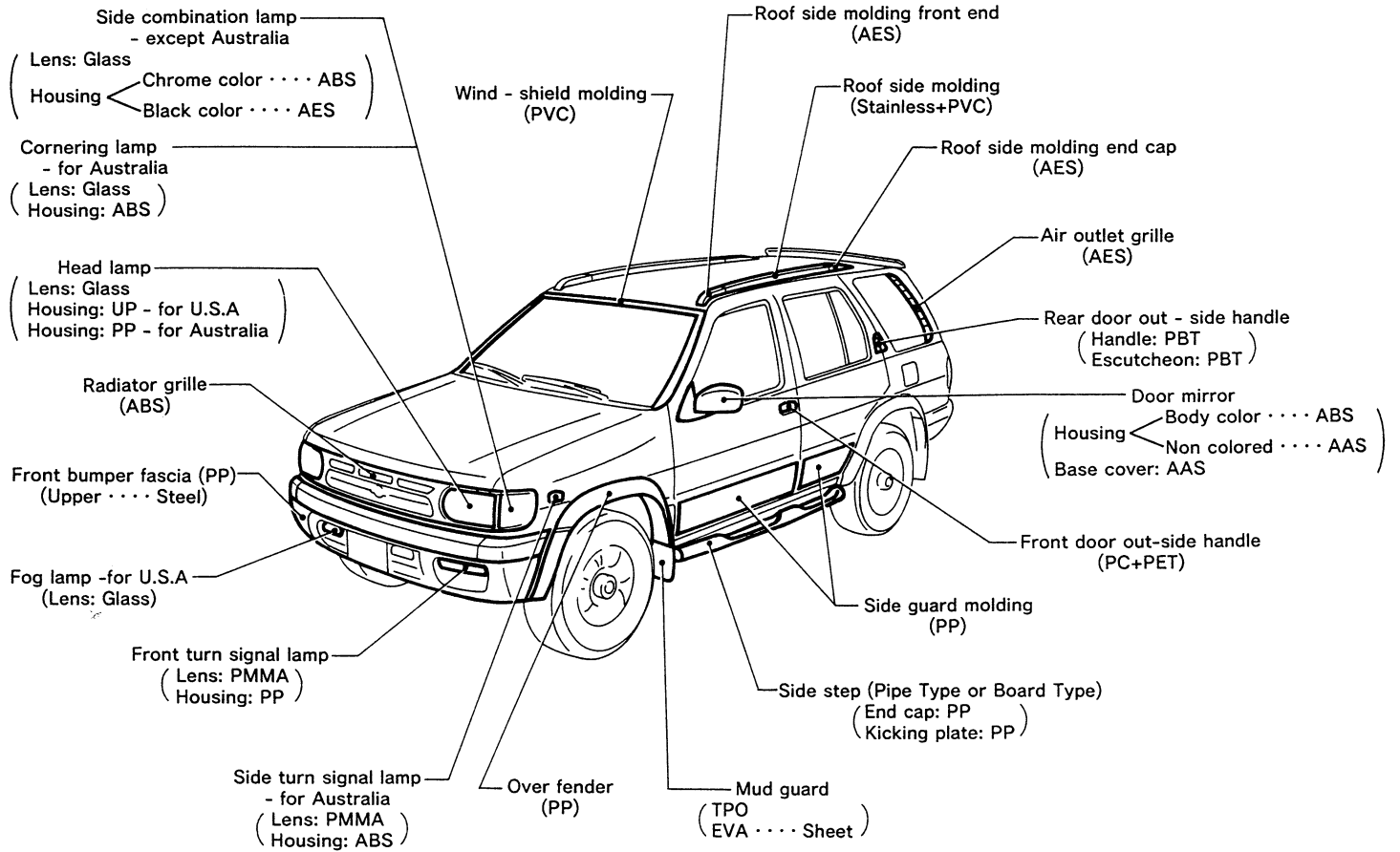


## Handling Precautions for Piastics

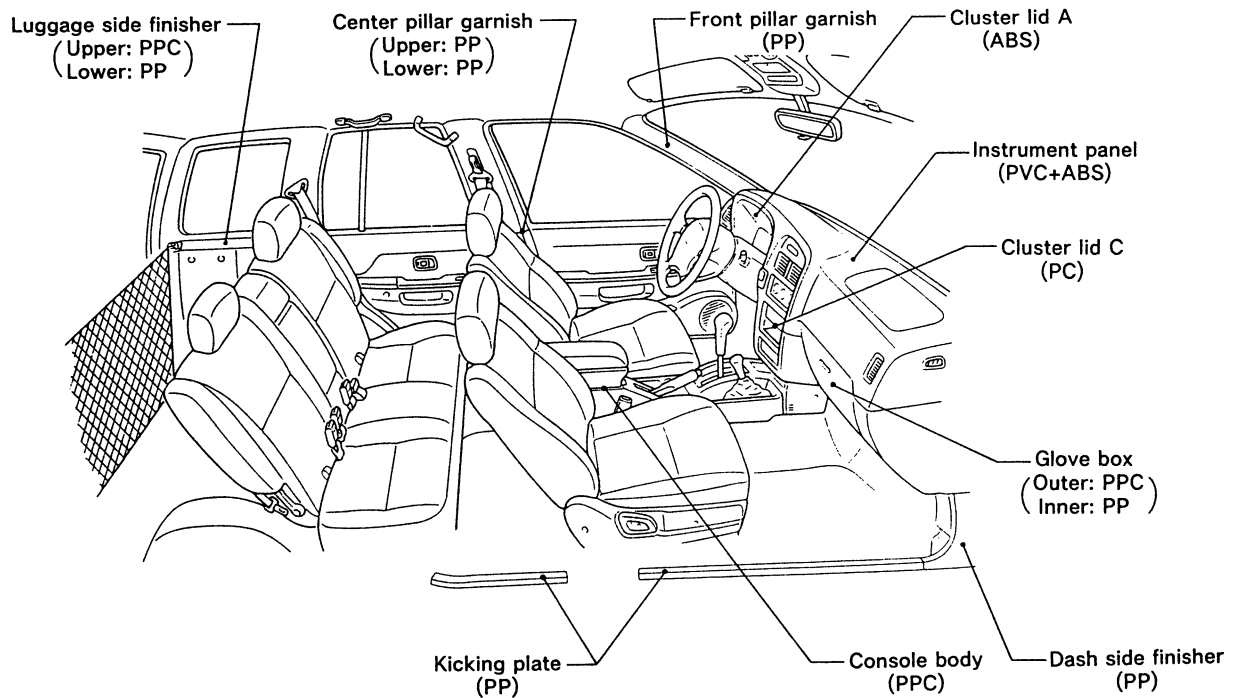
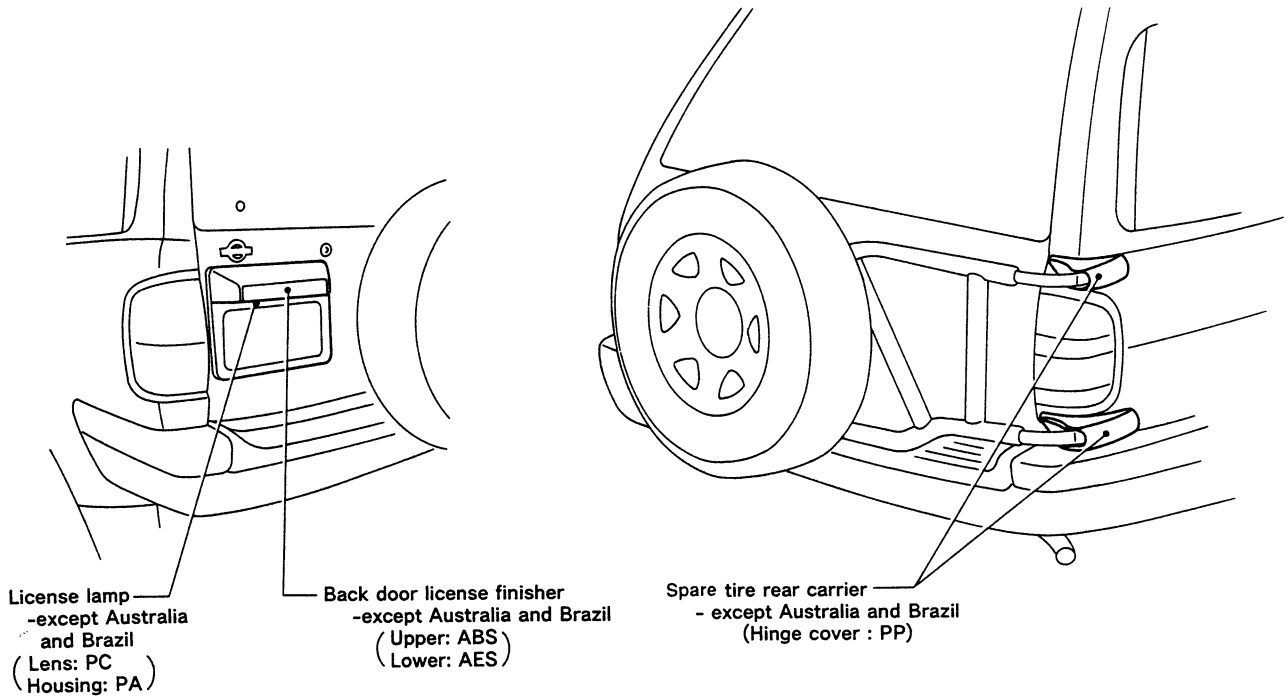
Abbreviation	Material name	Heat resisting temperature °C(°F)	Resistance to gasoline and solvents	Other cautions
PET	Polyethylene terephthalate	180(356)	Gasoline and most solvents are harmless.	
PVC	Polyvinyl chloride	80(176)	Gasoline and most solvents are harmless if applied for a very short time (wide up quickly).	Poison gas is emitted when burned.
PP	Polypropylene	90(194)	Same as above. Also avoid battery acid.	Flammable
UP	Polyester thermoset	90(194)	Same as above.	Flammable
ABS	Acrylonitrile butadiene styrene resin	80(176)	Avoid gasoline and solvents.	
AES	Acrylonitrile ethylene styrene	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.	
AS	Styrene-acrylonitrile	85(185)	Avoid gasoline and solvents.	
PPO	Polyphenylene oxide	110(230)	Avoid gasoline and solvents.	
POM	Polyacetal	120(248)	Gasoline and solvents are harmless.	Avoid battery acid.
PC	Polycarbonate	120(248)	Avoid gasoline and solvents.	
PA	Polyamide(Nylon)	140(284)	Gasoline and most solvents are harmless.	Avoid immersing in water.
FRP	Fiber reinforced plastics	170(338)	Gasoline and most solvents are harmless.	Avoid battery acid.
PPC	Polypropylene composite	115(239)	Gasoline and most solvents are harmless.	Flammable
PBT	Polybutylene terephthalate	140(284)	Gasoline and most solvents are harmless.	
TPR	Thermoplastic rubber	80(176)	Avoid gasoline and solvents.	
PAR	Polyarylate	180(356)	Avoid gasoline and solvents.	
EVA	Polyvinyl ethyl acetate	90(194)	Avoid gasoline and solvents.	
TPO	Polyolefinic	80(176)	Avoid gasoline and solvents.	

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


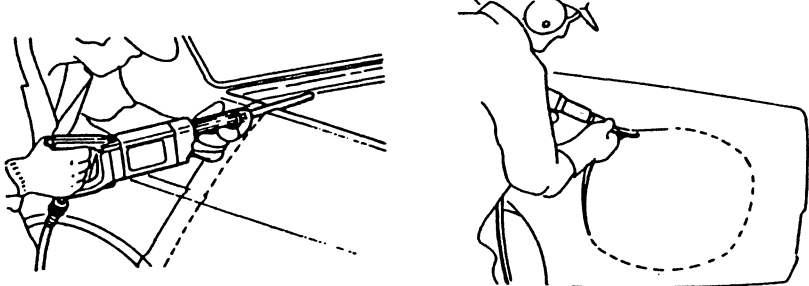
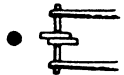
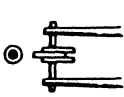

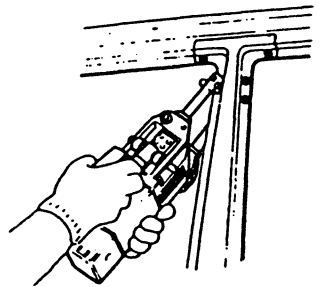

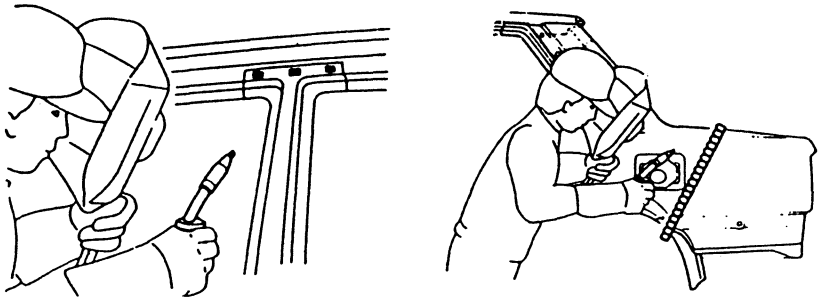

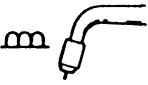


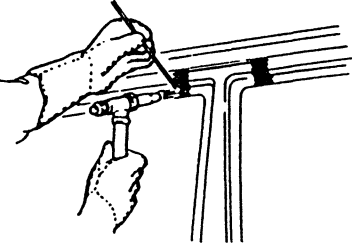


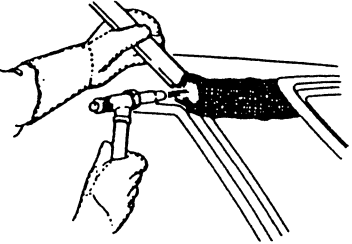

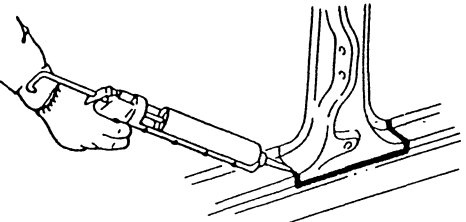




Description

SYMBOLS FOR CUTTING AND WELDING/BRAZING OPERATIONS

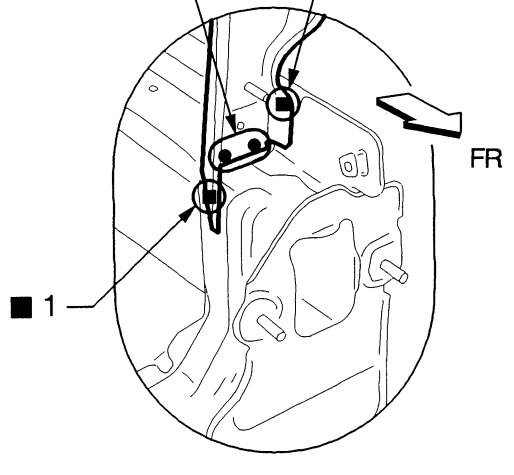
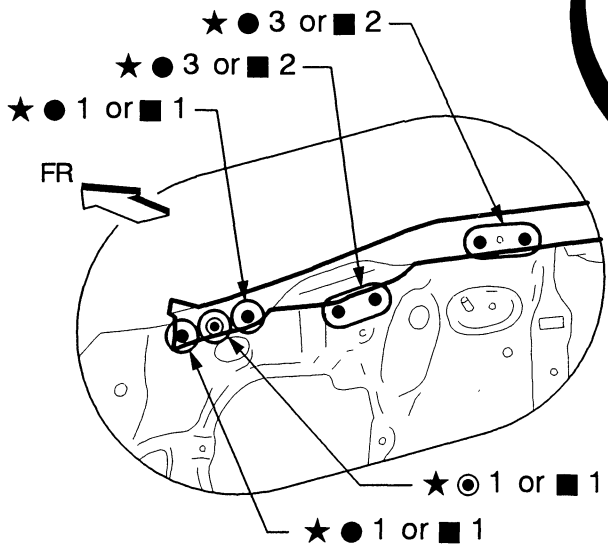
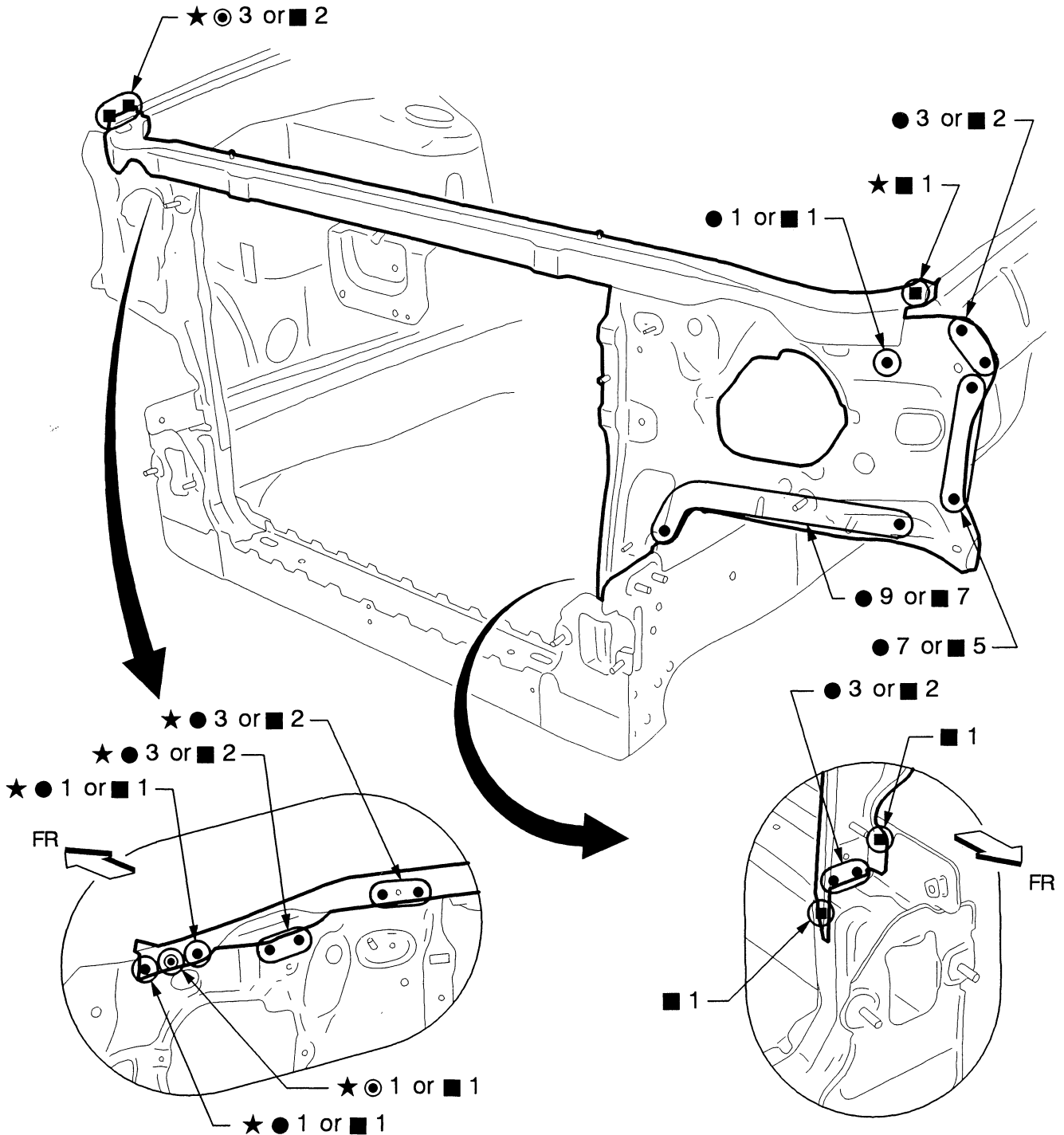
The identification for the cutting and the welding/brazing symbols used throughout this guide are given in the following pages

 <p>Saw cut or air chisel cut</p>	
<p>Spot weld</p> <p>● ● ● ● 2-spot welds</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>■ ■ ■ M.I.G. plug weld</p> 	
<p> M.I.G. seam weld / Point weld</p> 	
<p> Brazing</p> 	
<p> Soldering</p> 	
<p> Sealing</p>	

# Radiator Core Support (Partial Replacement)

**Service Joint**

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



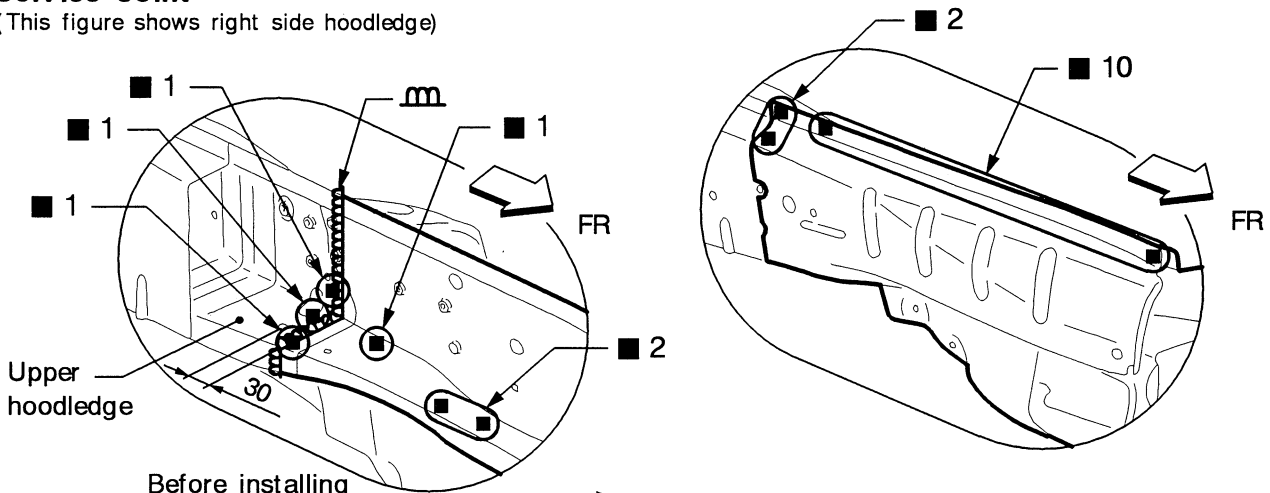
2-spot welds	3-spot welds	M.I.G plug weld	For 3 panels plug weld method		M.I.G seam weld/ Point weld
●	○	■	■ A	■ B	m

# Hoodledge (Partial Replacement)

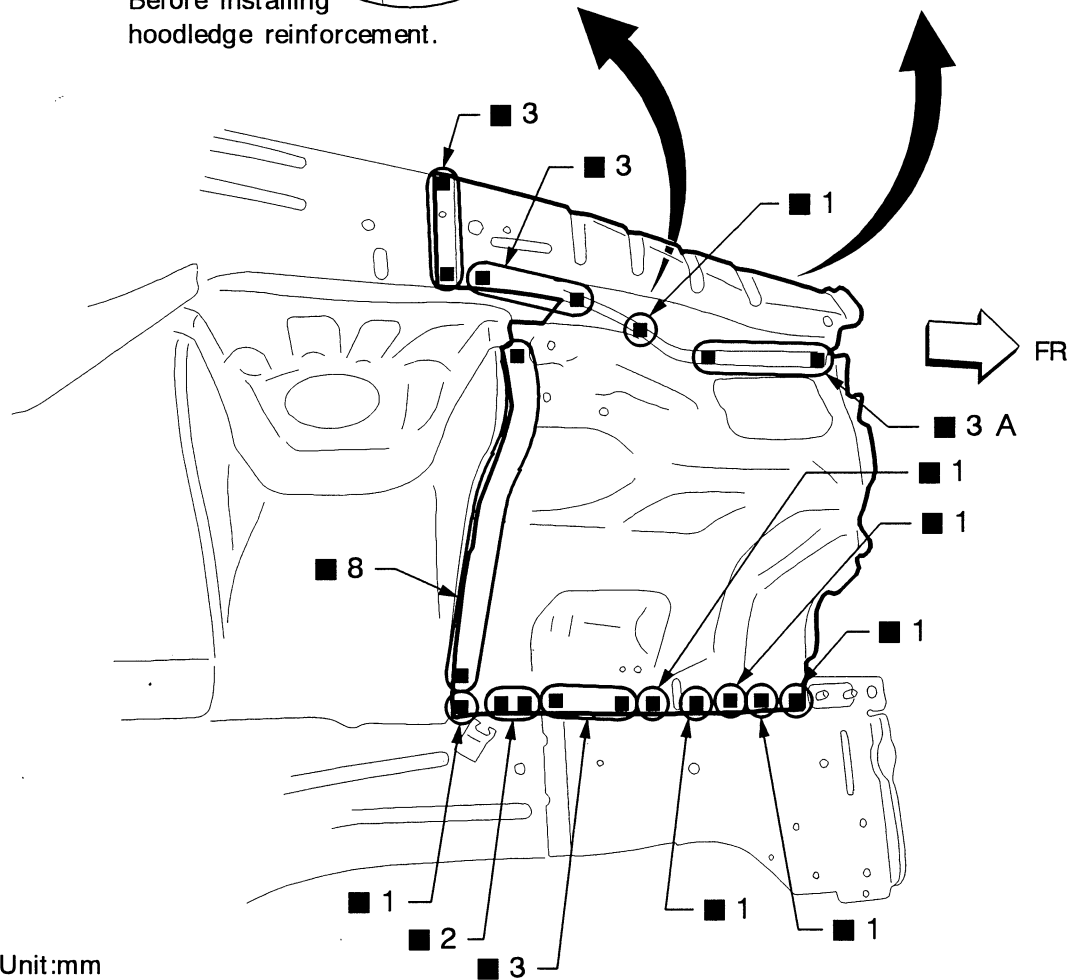
(Work after radiator core support has been removed.)

## Service Joint

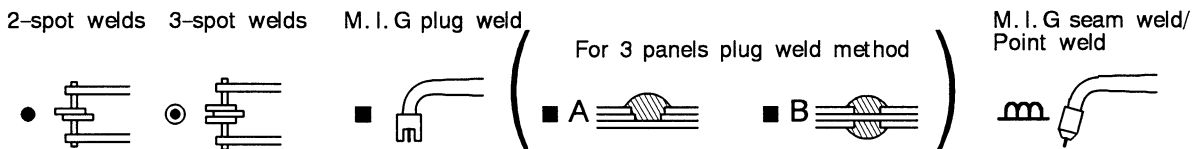
(This figure shows right side hoodledge)



Before installing hoodledge reinforcement.



Unit:mm



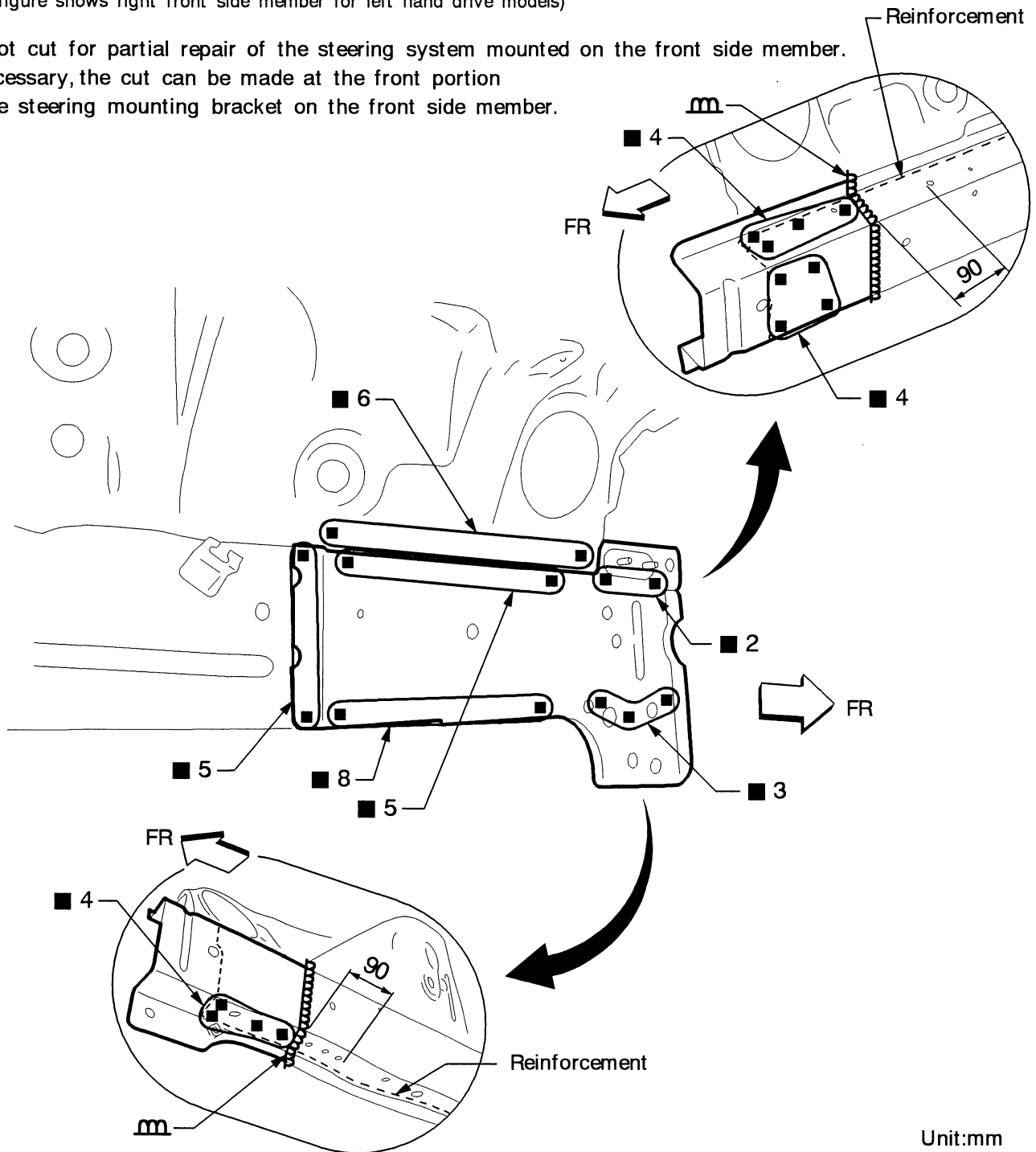
# Front Side Member (Partial Replacement)

(Work after radiator core support has been removed.)

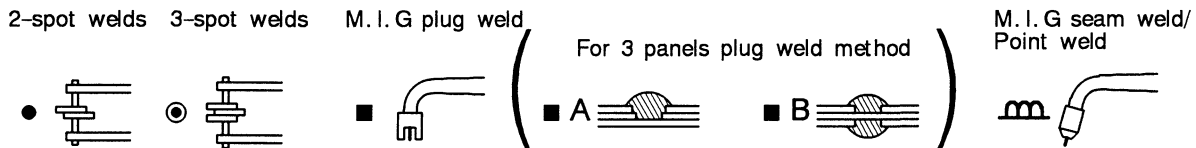
## Service Joint

(This figure shows right front side member for left hand drive models)

Do not cut for partial repair of the steering system mounted on the front side member.  
If necessary, the cut can be made at the front portion of the steering mounting bracket on the front side member.

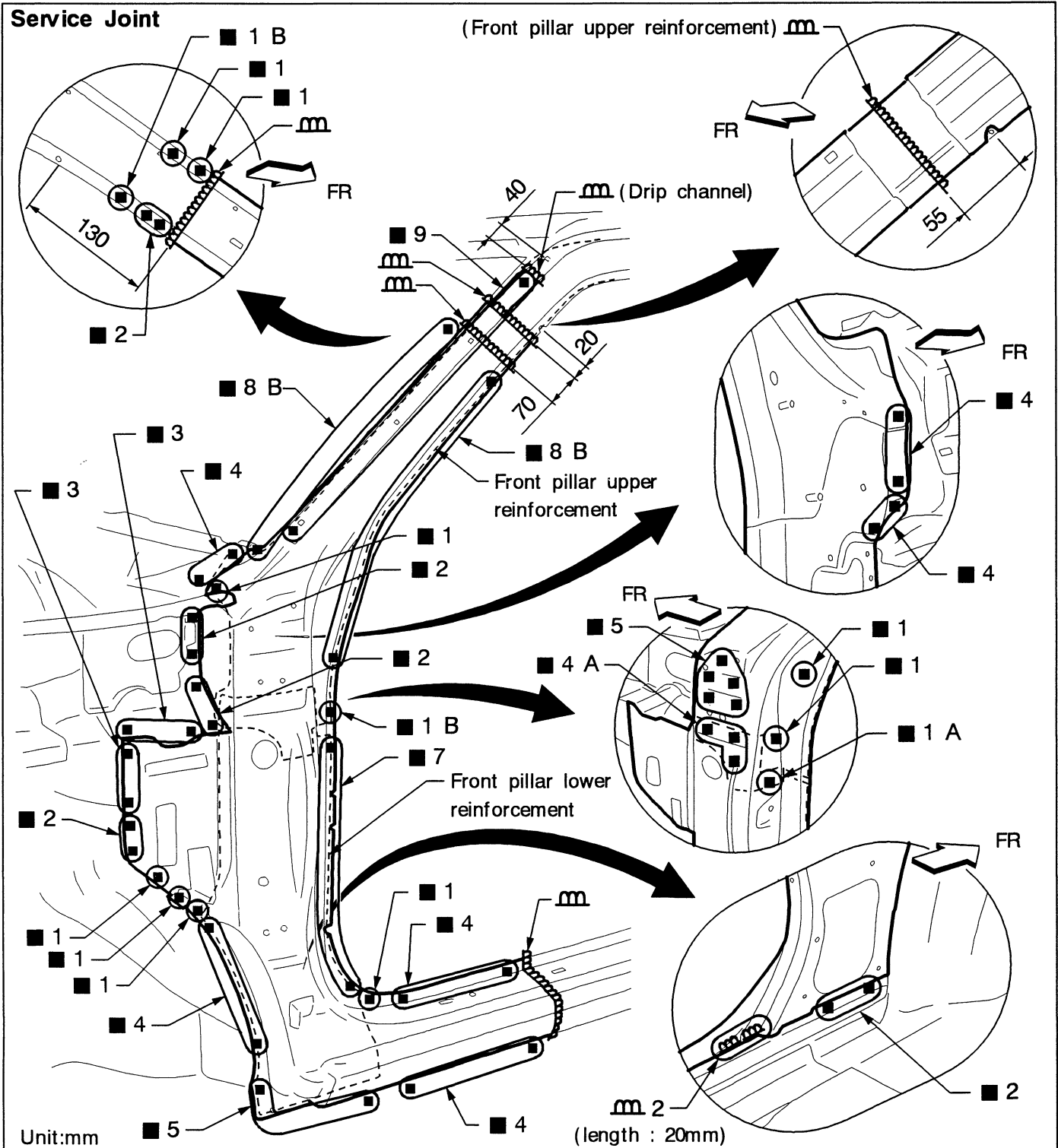


Unit:mm



# Front Pillar

(Work after hoodledge reinforcement has been removed.)



Unit:mm

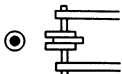
2-spot welds

3-spot welds

M.I.G plug weld

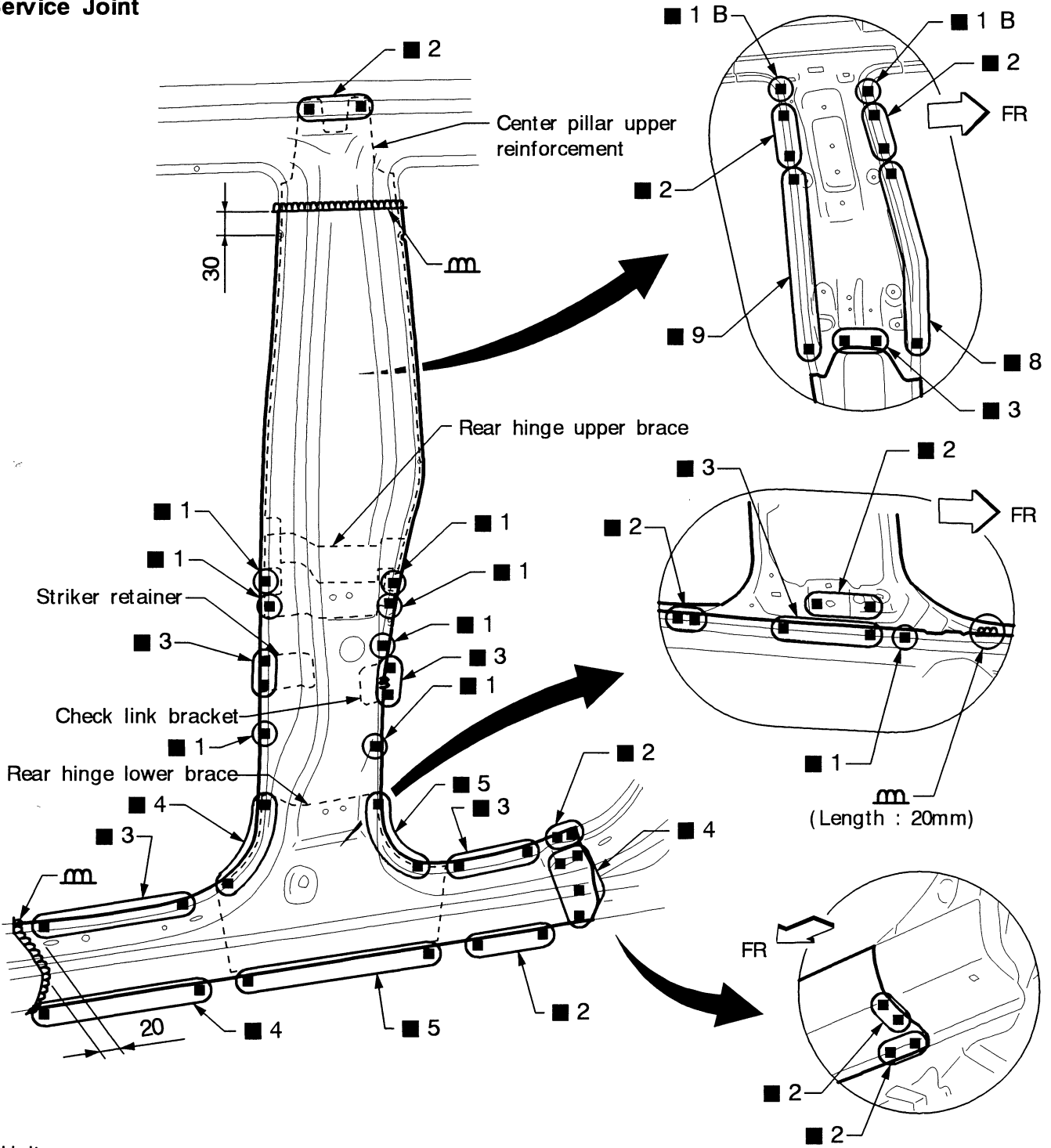
( For 3 panels plug weld method )

M.I.G seam weld/  
Point weld

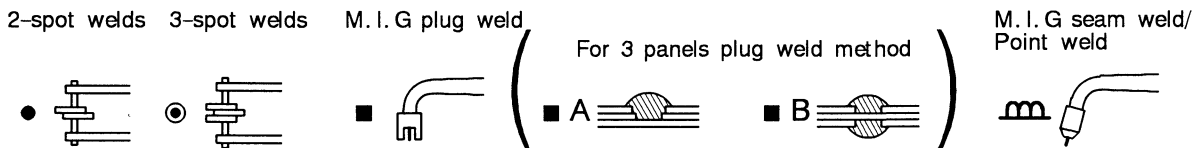


# Center Pillar

## Service Joint



Unit:mm











# Rear Side Member Extension

(Work after rear panel and rear crossmember end have been removed.)

## Service Joint

