

GENERAL INFORMATION

00
SECTION

00-00

GENERAL INFORMATION . . . 00-00

00-00 GENERAL INFORMATION

HOW TO USE THIS MANUAL 00-00-2

- Efficient Replacement of
 - Body Panels 00-00-2
- Symbols of Panel Replacement 00-00-2
- Body Dimensions
 - (Flat-plane Dimensions) 00-00-3
 - Body Dimensions
 - (Straight-line Dimensions) 00-00-4
 - Symbols of Body Dimensions 00-00-4

SERVICE PRECAUTIONS 00-00-5

- Arrangement of Workshop 00-00-5
- Safety Precautions 00-00-5
- Vehicle Protection 00-00-5
- Remove Dangerous Articles 00-00-5
- Use of Pulling Equipment 00-00-5
- Prevent Short Circuits 00-00-6

EFFICIENT REMOVAL OF

- BODY PANELS** 00-00-6
 - Body Measurements 00-00-6
 - Prevention of Body Deformation 00-00-6
 - Selection of Cut-and-join Locations 00-00-7
 - Removal of Associated Parts 00-00-7

- Rough Cutting of Damaged Panel 00-00-7

INSTALLATION PREPARATIONS 00-00-7

- Rough Cutting of New Parts 00-00-7
- Determination of Welding Method 00-00-7
- Making Holes for CO2 Arc Welding 00-00-8
- Application of Weld-through Primer 00-00-8

EFFICIENT INSTALLATION OF

BODY PANELS 00-00-8

- Checking Preweld Measurements
 - And Watching 00-00-8
- Welding Notes 00-00-9
- Spot Welding Notes 00-00-9
- Checking Weld Strength 00-00-10

ANTICORROSION, SOUND

INSULATION, AND VIBRATION

INSULATION 00-00-11

- Body Sealing 00-00-11
- Application of Undercoating 00-00-11
- Application of Rust Inhibitor 00-00-11
- Application of Floor Silencer 00-00-12

ABBREVIATION 00-00-12

cardiagn.com

GENERAL INFORMATION

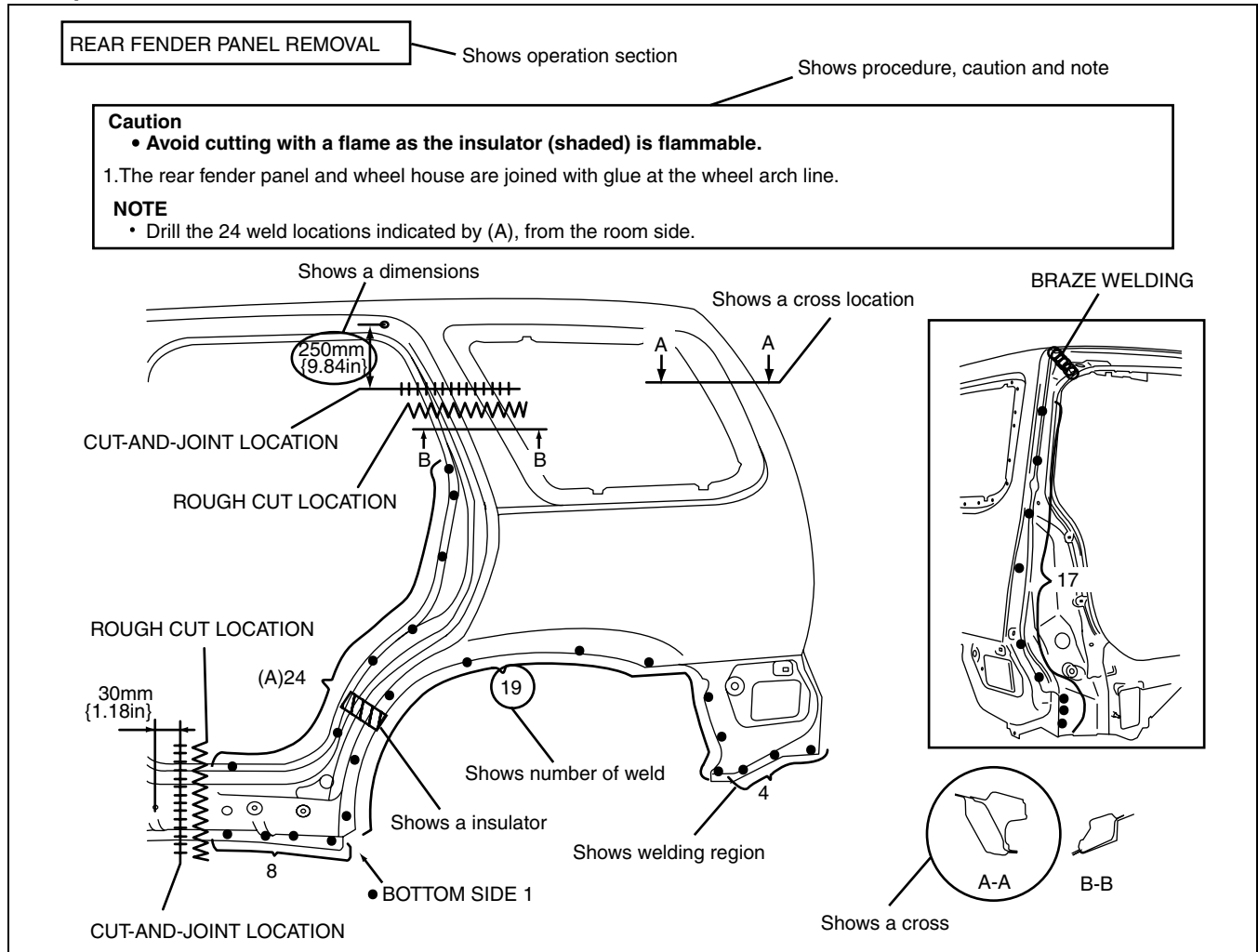
HOW TO USE THIS MANUAL

C3U000000000B01

Efficient Replacement of Body Panels

- This section contains information on the body panels in regard to the welding types, number of spot welds, and cut-and-join locations that are necessary for panel removal and installation.
- The type of weld and position are indicated by symbols.
- Some sections have notes concerning the operation being performed. Thoroughly read and understand the notes before carrying out any procedures.

Example



MZZ2010B001

Symbols of Panel Replacement

- The following 6 symbols are used to indicate the type of weld that is used when replacing body panels.

SYMBOL	MEANING	SYMBOL	MEANING
●	Spot welding		Continuous MIG welding (Cut-and-join location)
■	CO ² arc welding (plug welding)	○○○	Braze welding
+	CO ² spot welding	~~~~~	Rough cut location

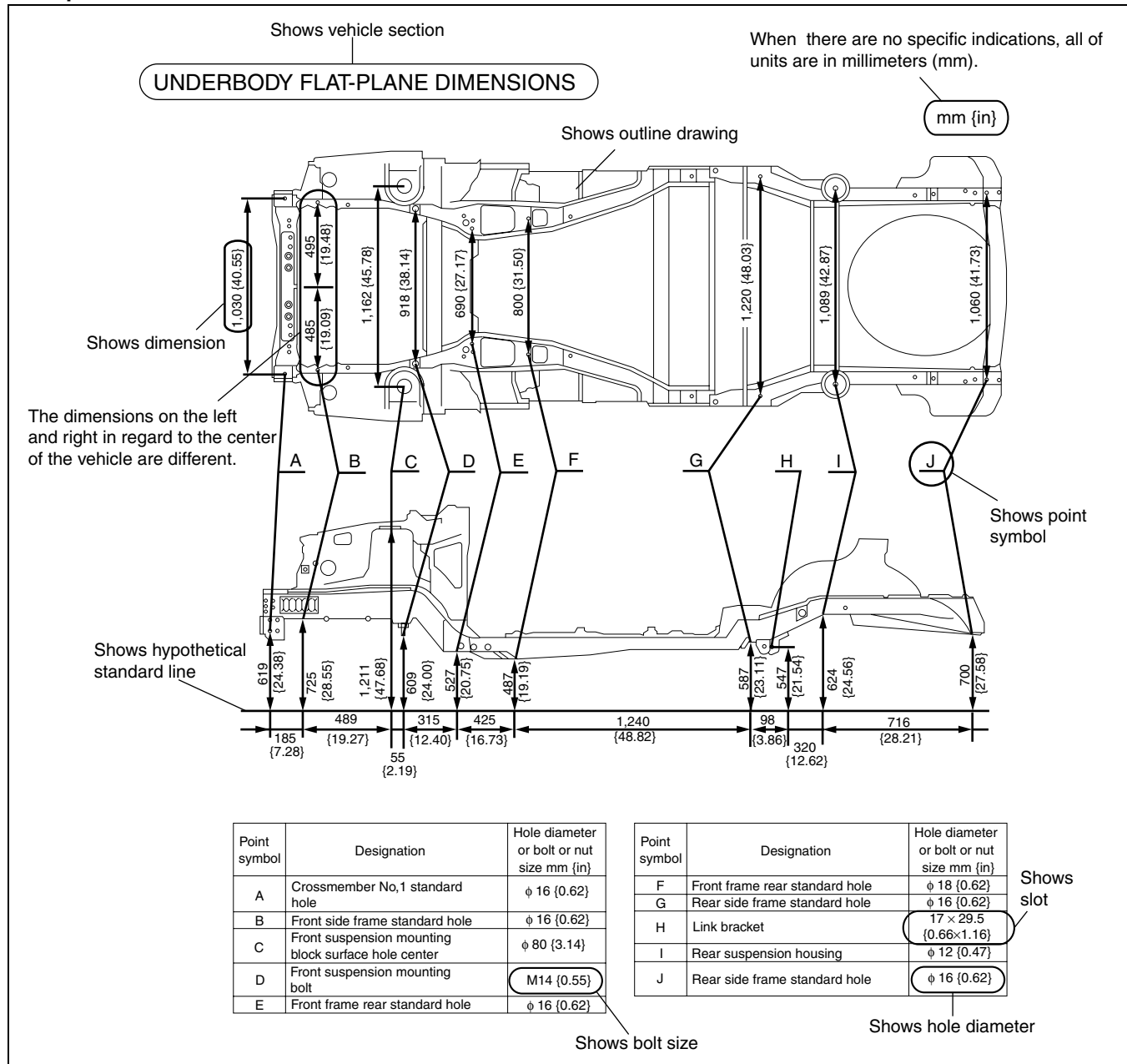
MZZ2010B002

GENERAL INFORMATION

Body Dimensions (Flat-plane Dimensions)

- Flat-plane dimensions are the dimensions measured by projecting certain reference points onto a plane surface.
- When there are no specific indications, the standard points and dimensions are symmetrical in regard to the center of the vehicle.
- The hypothetical lines may differ according to the vehicle model.

Example



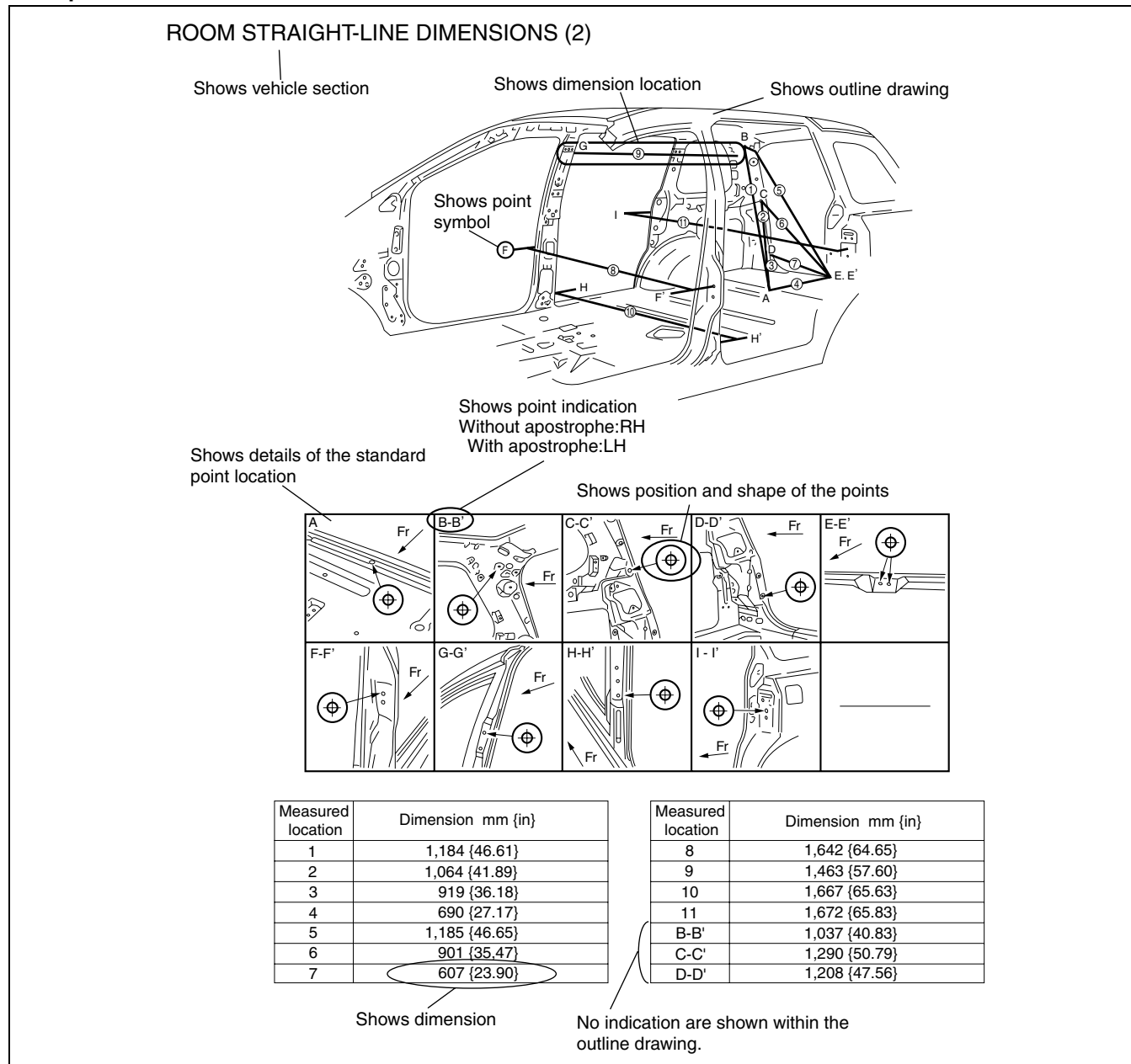
MZZ2010B003

GENERAL INFORMATION

Body Dimensions (Straight-line Dimensions)

- Straight-line dimensions are the actual dimensions between two standard points.
- When there are no specific indications, the standard points and dimensions are symmetrical in regard to the center of the vehicle.

Example



MZZ2010B004

Symbols of Body Dimensions

- The following 8 symbols are used to indicate the standard points.

SYMBOL	MEANING	SYMBOL	MEANING
	Center of circular hole		Bolt tip
	Center elliptical hole		Center of rectangular-shaped hole
	Notch		Edge of rectangular-shaped hole
	Panel seam, bead, etc.		

MZZ2010B016

GENERAL INFORMATION

SERVICE PRECAUTIONS

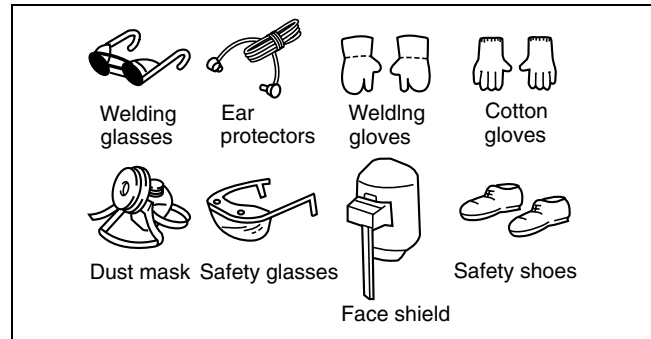
C3U000000000B02

Arrangement of Workshop

- Arrangement of the workshop is important for safe and efficient work.

Safety Precautions

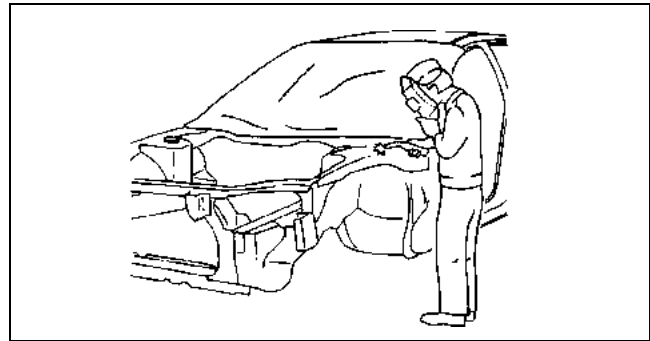
- Protective head covering and safety shoes should always be worn. Depending upon the nature of the work, gloves, safety glasses, ear protectors, face shield, etc., should also be used.



MZZ2036B001

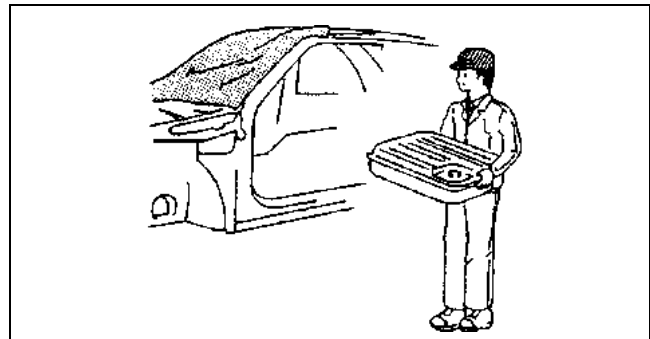
Vehicle Protection

- Use seat covers and floor covers.
- Use heat-resistant protective covers to protect glass areas and seats from heat or sparks during welding.
- Protect items such as moldings, garnishes, and ornaments with tape when welding.



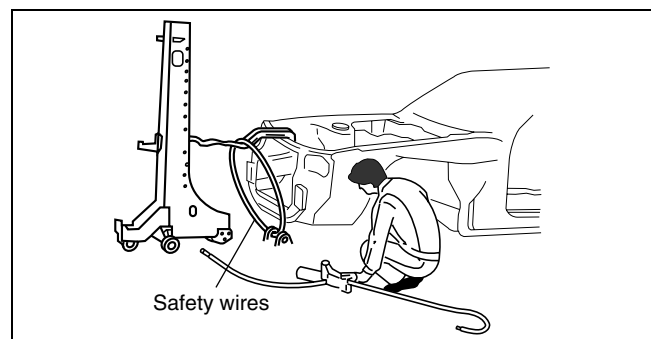
Remove Dangerous Articles

- Remove the fuel tank before using an open flame in that area. Plug connection piping to prevent fuel leakage.



Use of Pulling Equipment

- When using pulling equipment, keep away from the pulling area and use safety wires to prevent accidents.



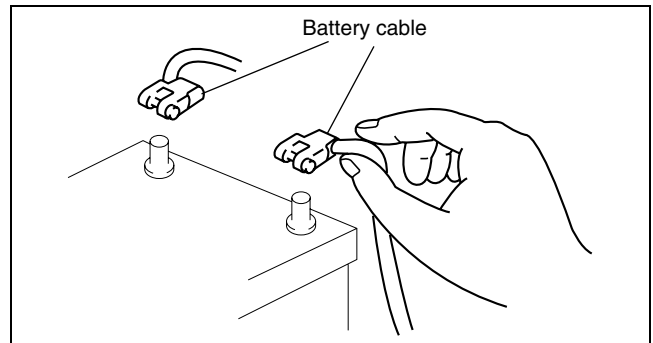
00-00

cardiagn.com

GENERAL INFORMATION

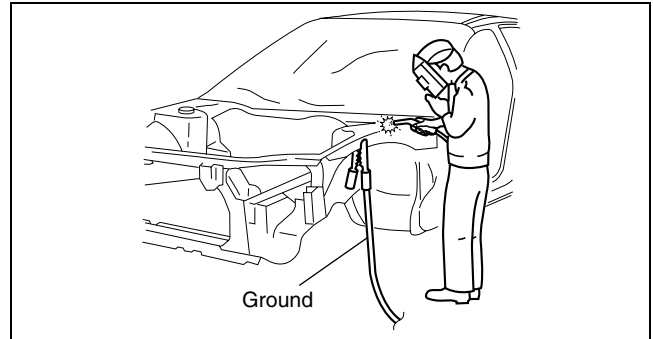
Prevent Short Circuits

- Turn the ignition switch to the LOCK position.
- Disconnect the battery cables.



MZZ2036B005

- Securely connect the welding machine ground near the welding area.

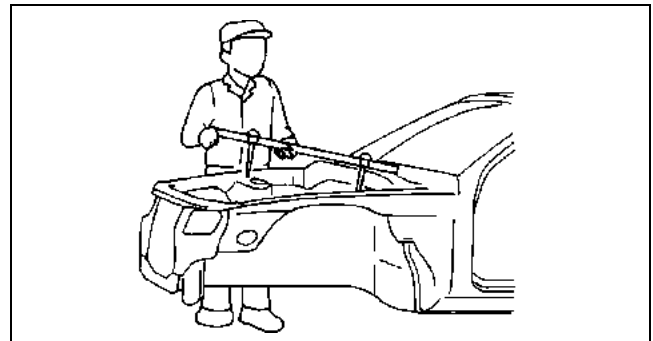


MZZ2036B006

EFFICIENT REMOVAL OF BODY PANELS

Body Measurements

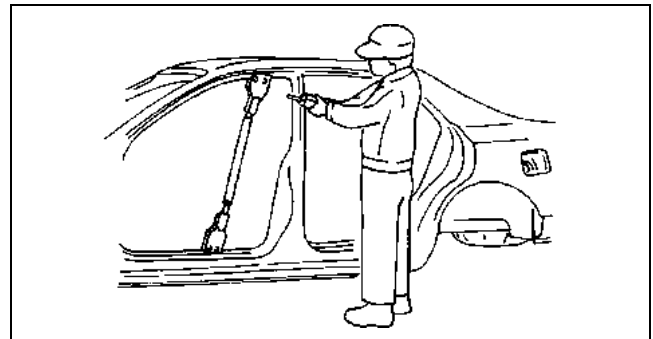
- Before removal or rough-cutting, first measure the body at and around the damaged area against the standard reference dimension specifications. If there is deformation, use frame repair equipment to make a rough correction.



MZJ2038B001

Prevention of Body Deformation

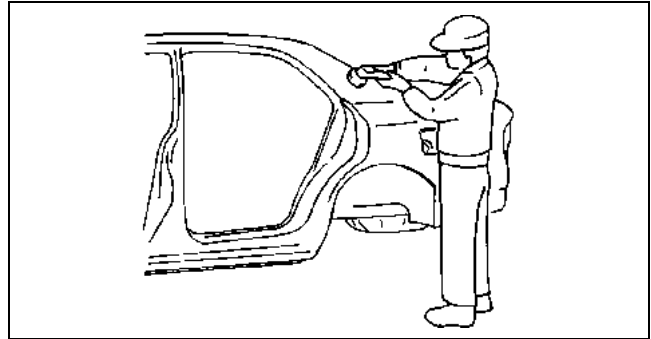
- Use a clamp or a jack for removal and reinforce at and around the rough-cutting location to prevent deforming of the body.



MZJ2038B002

Selection of Cut-and-join Locations

- For parts where complete replacement is not feasible, careful cutting and joining operations should be followed. If the location to be cut is a flat area where there is no reinforcement, the selected cutting location should be where the welding distortion will be minimal.



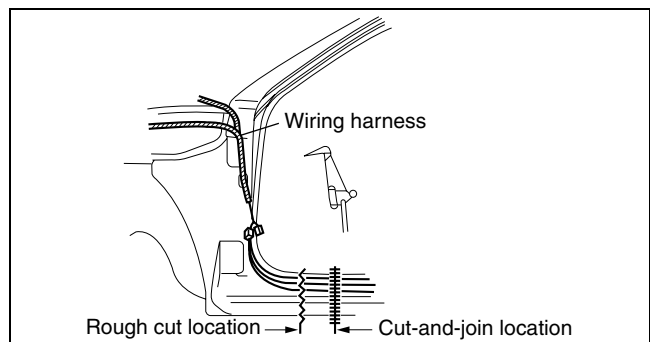
MZJ2038B003

Removal of Associated Parts

- Protect moldings, garnishes, and ornaments with tape when removing associated parts.

Rough Cutting of Damaged Panel

- Verify that there are no parts (such as pipes, hoses, and wiring harness) nearby or on the opposite side of a panel which could be damaged by heat.
- For cut-and-join areas, allow for an overlap of 30—50 mm {1.18—1.97 in} and then rough-cut the damaged panel.



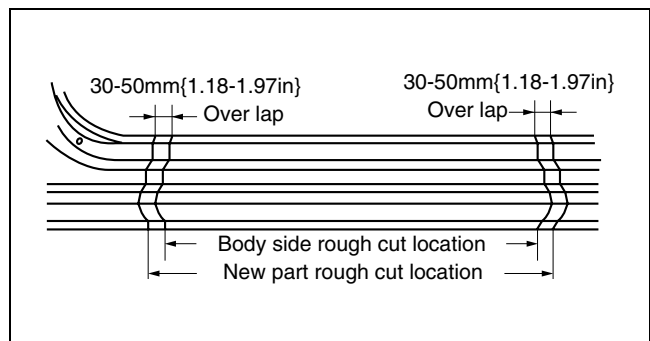
MZZ2038B001

INSTALLATION PREPARATIONS

Rough Cutting of New Parts

- For cut-and-join areas, allow for an overlap of 30—50 mm {1.18—1.97 in} with the remaining area on the body side and then rough-cut the new parts.

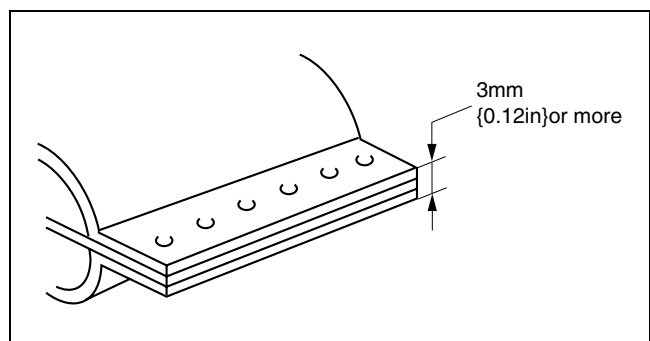
C3U000000000B04



MZZ2038B002

Determination of Welding Method

- If the total thickness at the area to be welded is 3 mm {0.12 in} or more, use a CO₂ gas shielded-arc welder to make the plug welds.



MZZ2038B003

GENERAL INFORMATION

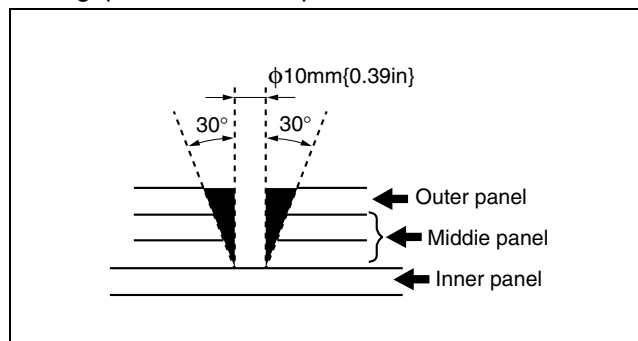
Making Holes for CO₂ Arc Welding

- For places that cannot be spot welded, make a hole for CO₂ arc welding using a punch or drill as follows.

(mm {in})

Panel thickness (ø)	Hole diameter (ø)
0.60—0.90 {0.02—0.03}	5 {0.19}
0.91—1.20 {0.04—0.05}	6 {0.23}
1.21—1.80 {0.051—0.07}	8 {0.31}
1.81—4.50 {0.071—0.17}	10 {0.39}

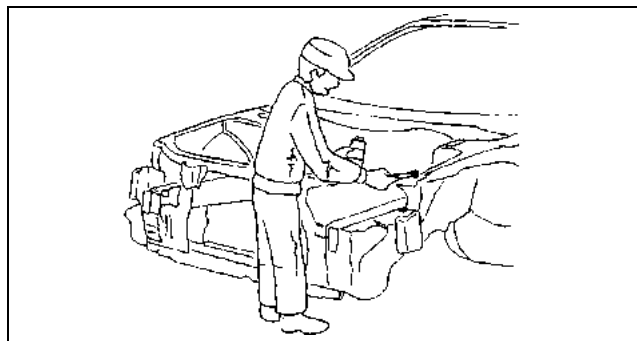
- Grind the shaded section indicated in the diagram below and create a hole in the part where the 3—4 plates are put together. Also, weld the plates together tightly so that gaps do not develop.



MZZ2038B004

Application of Weld-through Primer

- For treatment against corrosion, remove the paint grease, and other material from the portion of new part and body to be welded, and apply weld-through primer.

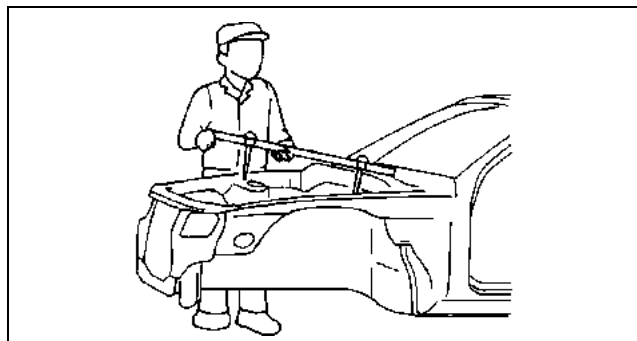


MZJ2038B008

EFFICIENT INSTALLATION OF BODY PANELS

Checking Preweld Measurements And Watching

- Align to the standard reference dimensions, based upon the body dimensions illustration, so that new parts are installed in the correct position.

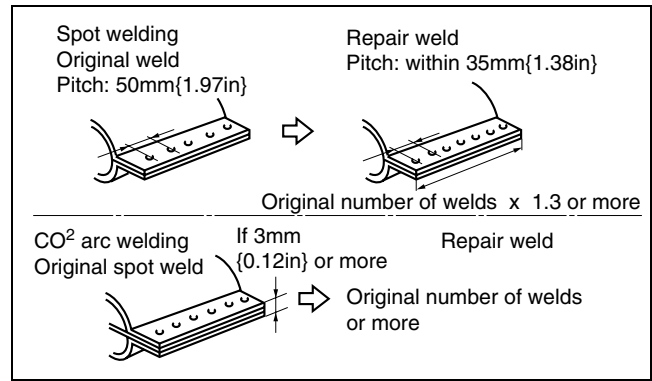


MZJ2038B009

GENERAL INFORMATION

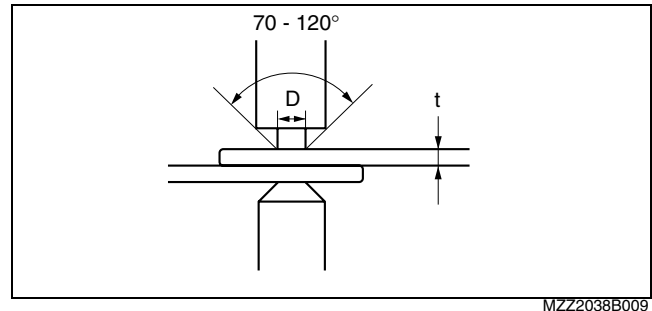
Welding Notes

- For the number of weld points, welding should be performed in accordance with the following reference standards.

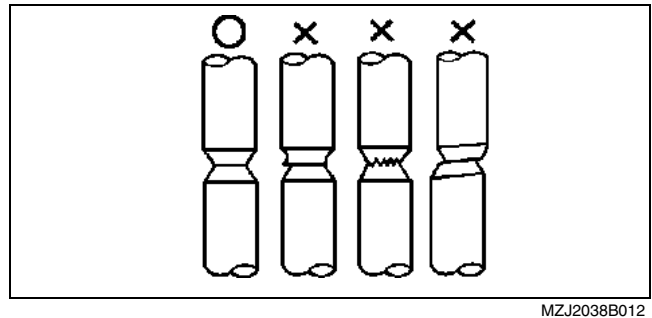


Spot Welding Notes

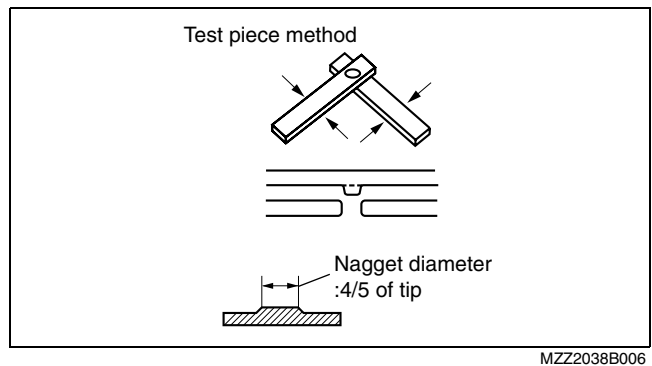
- The shape of the spot welder tip is $D=(2 \times t)+3$. If the upper panel thickness is different from that of the under panel, adjust to the thinner one.



- Because the weld strength is affected by the shape of the spot welder tip, the optimum condition of the tip should always be maintained.
- Spot welds should be made at points other than the originally welded points.



- Before spot welding, make a trial weld using the same material as the body panel to check the weld strength.



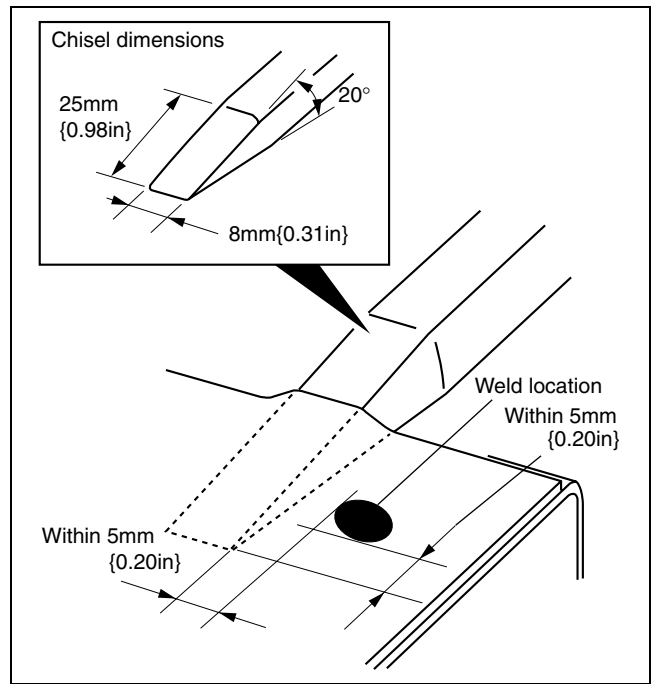
00-00

cardiagn.com

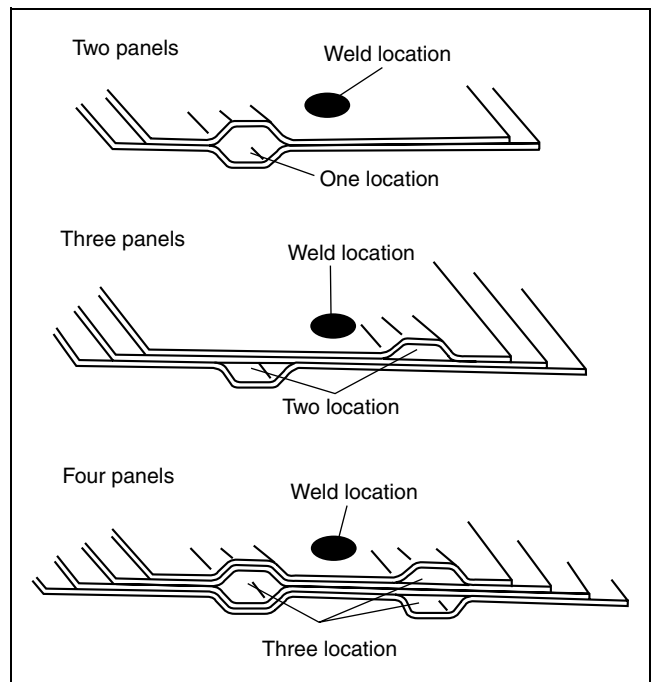
GENERAL INFORMATION

Checking Weld Strength

- Installation locations of the engine, chassis, and seat belts are designated as important safety locations for weld strength. Check weld strength by driving a chisel between the panels at every fourth or fifth weld spot, and every tenth regular weld location.
- Drive the chisel between the panels according to the number of panels as shown below.
- To determine weld strength, drive the chisel between the panel and check whether the panels come apart. If the panels come apart, make another weld near the original weld.
- Restore the shape of the checked area.



MZZ2038B007



MZZ2038B008

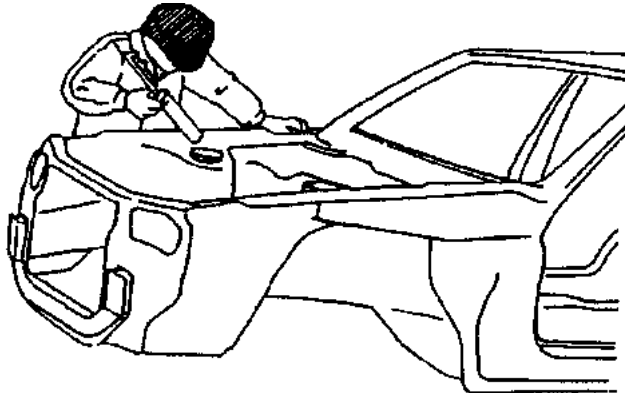
GENERAL INFORMATION

ANTICORROSION, SOUND INSULATION, AND VIBRATION INSULATION

C3U00000000B06

Body Sealing

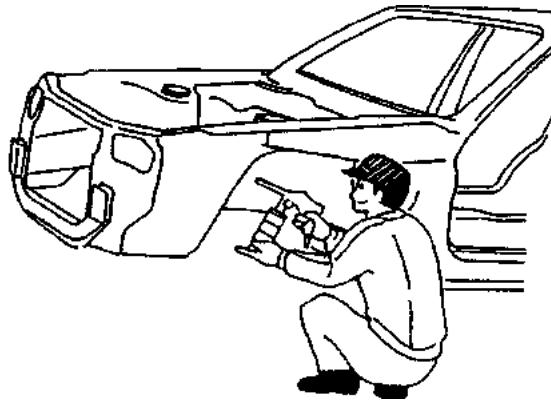
- Apply body sealer where necessary.
- For locations where application of body sealer is difficult after installation, apply it before installation.



YMU980PAR

Application of Undercoating

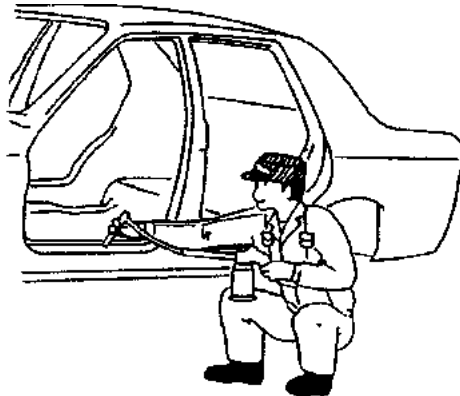
- Apply an undercoat to the required location of the body.



YMU980PAS

Application of Rust Inhibitor

- Apply rust inhibitor (wax, oil, etc.) to the back of the welded areas.



YMU980PAT

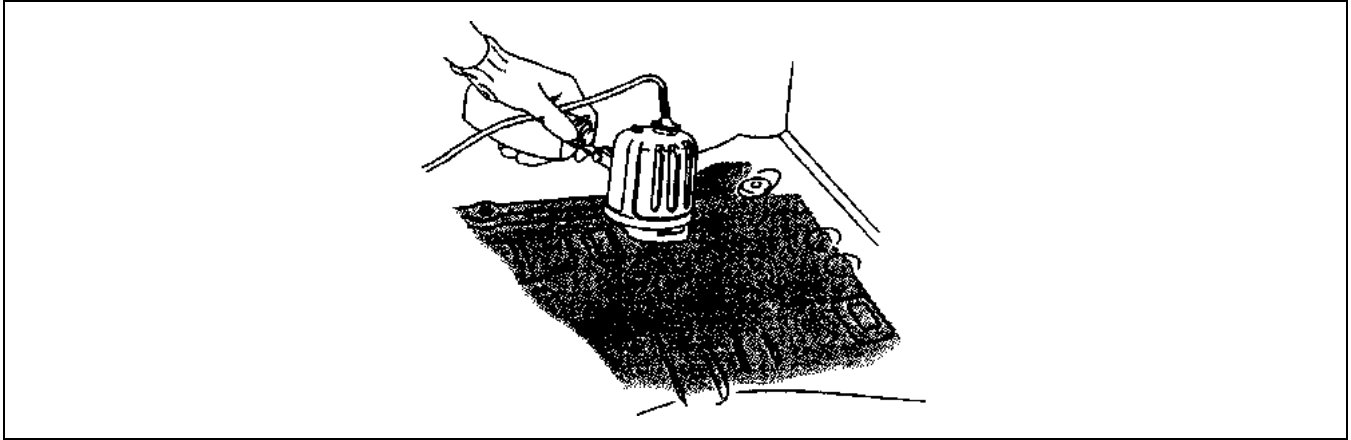
00-00

cardiagn.com

GENERAL INFORMATION

Application of Floor Silencer

- Apply floor silencer by heating with an infrared ray lamp.



YMU980PAU

ABBREVIATION

C3U000000000B07

CM	Control module
Ctr	Center
DSC	Dynamic stability control
Fr	Front
HU	Hydraulic unit
LH	Left
M	Metallic
MC	Mica
RH	Right
Rr	Rear