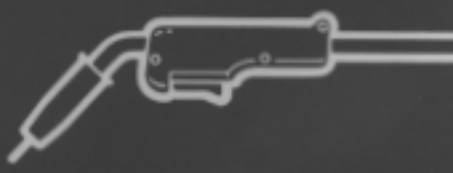
MITSUBISHI
LANCER
Evolution VIII
MR

SERVICE MANUAL

BODY



Supplement

'04-2

GH-CT9A

No.1036K55

LANCER
EVOLUTION VIII
MR

FOREWORD

This manual contains details of the main changes to the 2004 model Lancer Evolution VIII MR. Only differences to the current Lancer Evolution VIII are included, so please use this manual in conjunction with the related information specified on the next page.
This information relates to the current vehicle (February 2004). Since specifications will change, some of the information contained here will inevitably be superseded.
Note that SI units are used in this manual. Old units are not shown alongside them.
(However, old units are used for some figures we have taken from existing documents).

Any opinions, requests, or questions concerning this manual, should be written on the 'Servicing Comments Form' at the end, and sent to us by fax.

February 2004

MITSUBISHI MOTOR CORPORATION

CONTENTS

There are no changes to the shaded chapters, so they are not included at all in this manual.

This manual is printed on recycled paper.

Related information

Title	No.	Issue date	Title	No.	Issue date
New model manuals			Body Service Manuals		
• Mirage, Lancer	1036F30	10/1995	• Mirage, Lancer (supplement)	1036F52	8/1996
• Mirage, Lancer	1036F31	1/1996	• Lancer Sedia	1036K50	5/2000
• Mirage, Lancer	1036F32	8/1996	• Lancer Sedia (supplement)	1036K51	7/2000
• Mirage, Lancer	1036F33	7/1997	• Lancer Evolution VII (supplement)	1036K52	5/2001
• Lancer	1036F34	1/1998	• Lancer Sedia (supplement)	1036K53	10/2001
• Mirage, Lancer	1036F35	10/1998			
• Lancer	1036F36	1/1999			
• Lancer	1036F37	12/1999			
• Lancer Sedia	1036K30	5/2000			
• Lancer Sedia	1036K31	7/2000			
• Lancer Evolution VII	1036K32	1/2001	Wiring layout diagram Service Manuals		
• Lancer Sedia	1036K33	5/2001	• Lancer Evolution VIII	1036K77	1/2003
• Lancer Sedia	1036K34	5/2001	• Lancer Evolution VII MR (Supplement)	1036K80	2/2004
• Lancer Evolution VII	1036K35	1/2001			
• Lancer Sedia	1036K36	5/2002			
• Lancer Evolution VIII	1036K37	1/2003			
• Lancer	1036K38	2/2003			
• Lancer	1036K39	12/2003			
• Lancer Evolution VIII MR	1036K40	2/2004			
Service Manuals			Engine Service Manuals		
• Lancer Sedia	1036K00	5/2000	• 4G6 Engine	1039G46	1/2001
• Lancer Sedia	1036K01	7/2000	• 4G6 Engine	1039G63	1/2003
• Lancer Evolution VII (supplement)	1036K02	1/2001			
• Lancer Sedia (supplement)	1036K03	5/2001			
• Lancer Sedia (supplement)	1036K04	10/2001	Transmission Service Manuals		
• Lancer Evolution VII (supplement)	1036K05	1/2002	• W5M51 Manual Transmission	1039M17	1/2001
• Lancer Sedia (supplement)	1036K06	5/2002	• W5M51Manual transmission (Supplement)	1039M22	1/2003
• Lancer Evolution VII (supplement)	1036K07	1/2003	• W6MAA Manual transmission	1039M23	1/2003
• Lancer (supplement)	1036K08	2/2003			
• Lancer (supplement)	1036K09	12/2003			
• Lancer Evolution VIII MR	1036K10	2/2004			

Precautions to be taken when servicing vehicles with seatbelts fitted with SRS Airbag and Pretensioners
Precautions

1. **Incorrect inspection or servicing of SRS airbag and pretensioner fitted seatbelt parts, as well as any related components, could lead to major damage or non-operation as a result of sudden, unintentional operation of SRS airbag and pretensioner fitted seatbelts (incorrect deployment).**
2. **In cases where heating from painting processes occurs, the SRS-ECU, driver side airbag module, passenger side airbag module, pre-tensioner fitted seatbelts, and cross springs, should be removed.**

- **93°C and above: SRS-ECU, driver side airbag module, passenger side airbag module, cross springs**
- **90°C and above: pretensioner fitted seatbelts**

3. **Inspections and servicing of SRS airbag and pretensioner fitted seatbelt parts and any related components must, without fail, be done by a Mitsubishi Motors authorized dealer.**
4. **Inspections and servicing of SRS airbag and pretensioner fitted seatbelt parts and any related components must be done paying scrupulous attention to the relevant service manual (particularly in the case of Group 52B – SRS airbags).**

SECTION 0

GENERAL

CONTENTS

Model line-up

Model	Version	'04 Model	Grade	Engine Model	Transmission	Fuel System
GH-CT9A	SNDFZ	○	RS	4G63 (2 000 DOHC 16 valve intercooler turbo)	W5M51 (4WD, 5M/T)	MPI
	SJDFZ	○	RS		W6MAA (4WD, 6 M/T)	
	SJGFZ	○	GSR			

Note
○ = Continued model

Applied vehicles

GH-CT9A: CT9A-0300001 ~

MAIN SPECIFICATIONS

ITEM				GH-CT9A		
				SNDFZ	SJDFZ	SJGFZ
Class				Ordinary		
Use				Passenger vehicle		
Body shape				Saloon		
Dimensions	Vehicle length mm			4490		
	Vehicle width mm			1770		
	Vehicle height mm			1450		
	Distance between axles mm			2625		
	Distance between wheels mm		Front	1515*1, 1500*2	1515*1	
			Rear	1515*1, 1500*2	1515*1	
	Minimum ground clearance mm			140		
	Interior dimensions mm		Length	1880		
			Width	1425		
			Height	1185		
	Body overhang mm		Front	825		
			Rear	875		
Driving devices	Front wheels	Toe-in mm		0±2		
		Camber *3		-1 00 ±30 or -2 00 ±30		
		Castor		3 55 ±30		
		King pin angle		13 45		
	Rear wheels	Toe-in mm		3 ±2		
		Camber		-1 00 ±30		
	Tyre size			205/65R15 94H 235/45ZR17	235/45ZR17	

Notes
1. *1 in the case of vehicles fitted with 17 inch tyres *2 in the case of vehicles fitted with 15 inch tyres
2. *3 it is possible to select from 3 types of camber. This is be set to -1˚ 00´ ±30´ when shipped from the factory.

SECTION 1

BODY CONSTRUCTION

CONTENTS

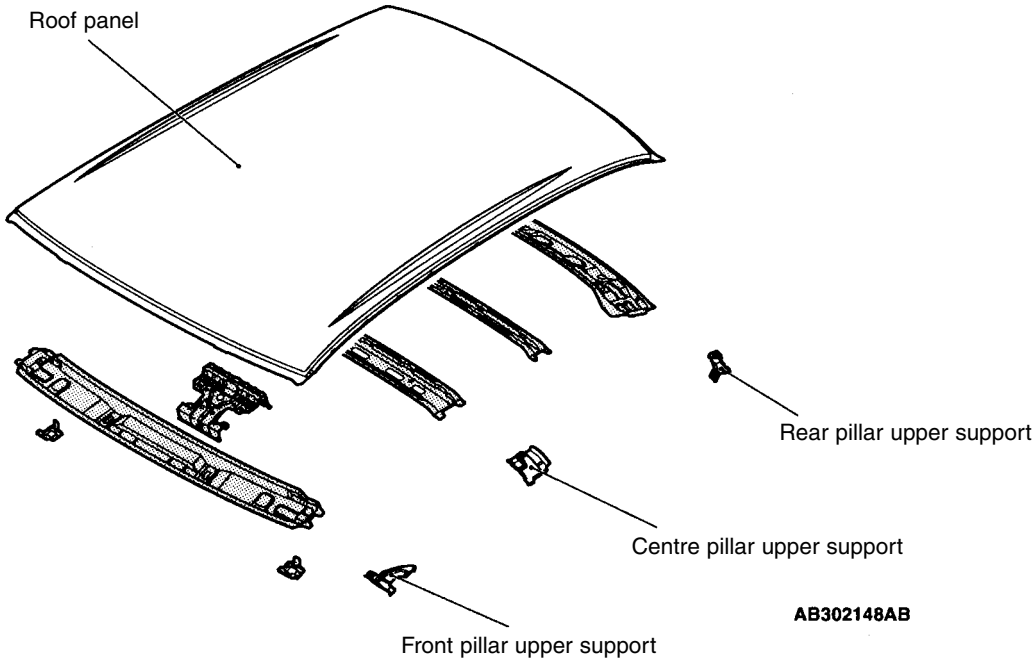
Summary

• The roof and side door beams have been changed from steel to aluminium.

Body Construction Special Features

ROOF

Body is now lighter as a result of changing the roof panels to aluminium.
The body is also more rigid now as a result of additional support in pillar areas.

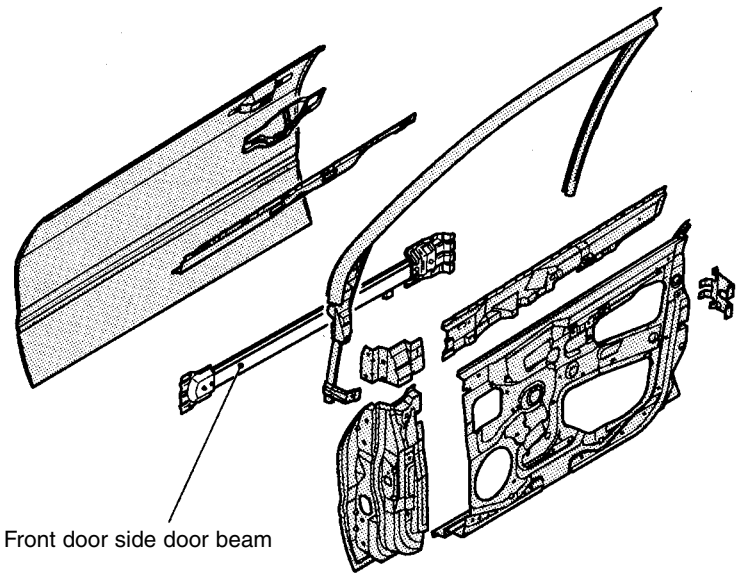


: shaded areas indicate parts that are the same as those used on current vehicle.

DOORS

The body has been lightened as a result of using aluminium for the side door beams.

FRONT DOOR



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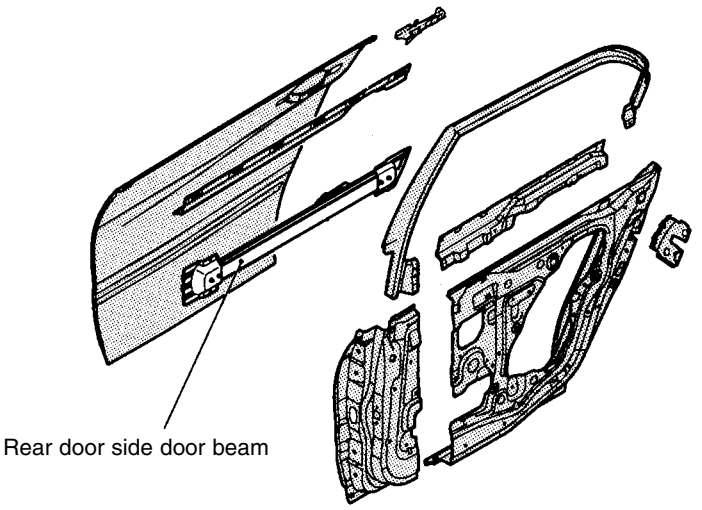
REAR DOOR



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: shaded areas indicate parts that are the same as those used on current vehicle.

SECTION 2

STANDARD DIMENSIONS

CONTENTS

General

Together with the changes relating to roof panel replacement, dimensions without the roof in place are specified.

B Type (straight line measurements)

ROOF

units mm

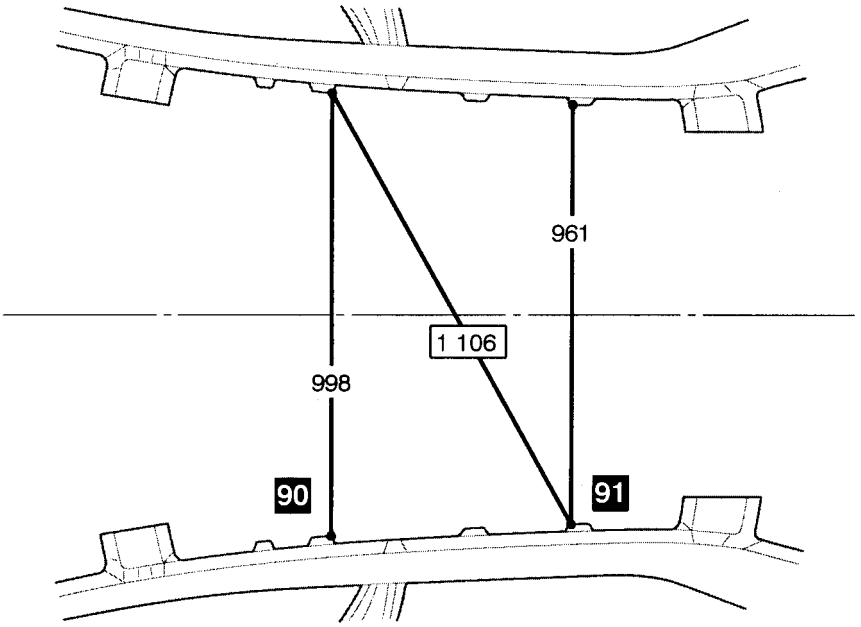

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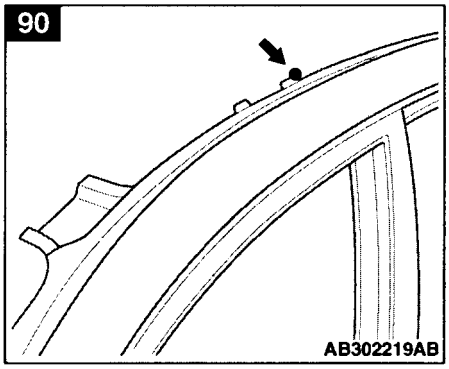
Diagram shows roof assembly removed condition.

Number	Measurement points	Hole shapes – Sizes (mm)	Number	Measurement points	Hole shapes – Sizes (mm)
90	Side roof rail inner corner	-	91	Side roof rail inner corner	-



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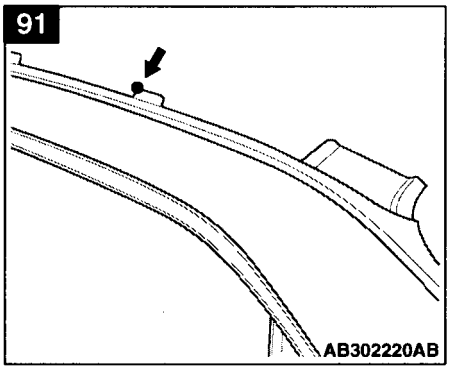

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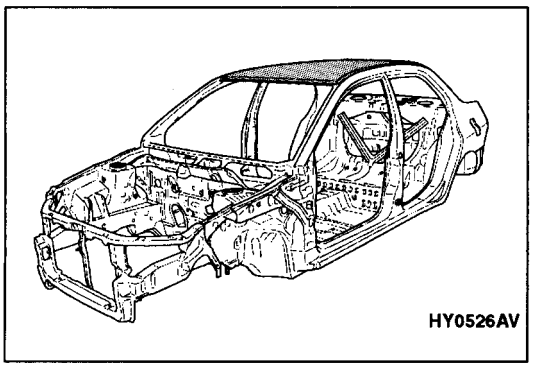
SECTION 3

CHANGING WELDED PANELS

CONTENTS

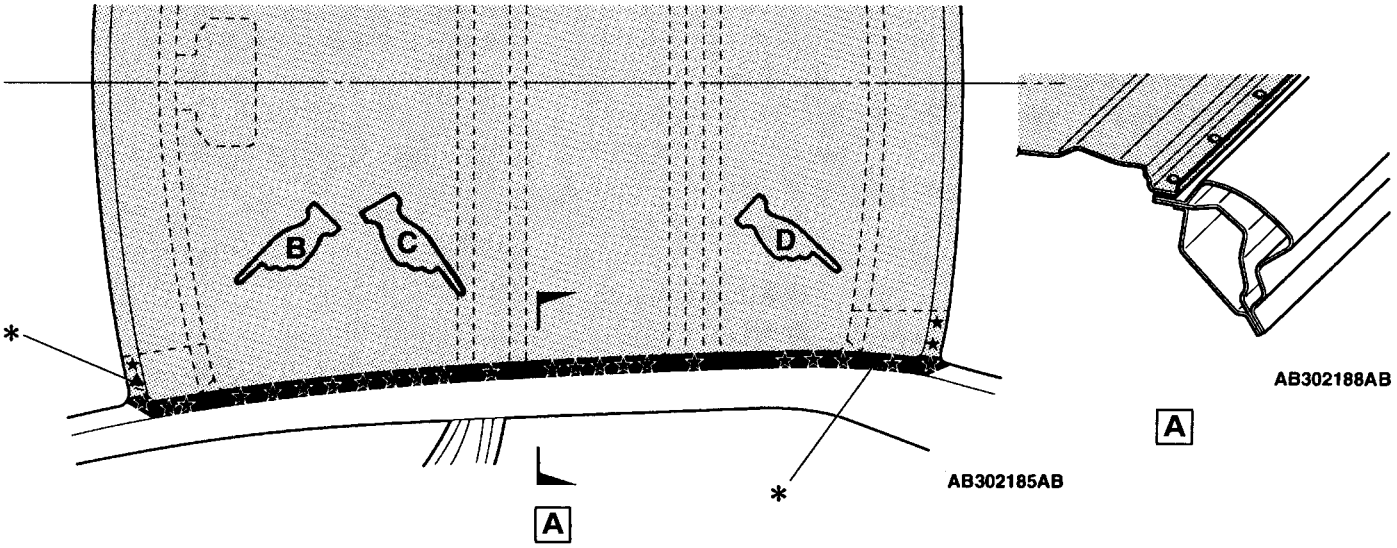
General

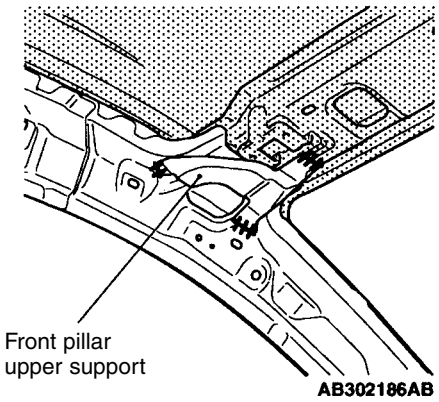
Along with the change to an aluminium roof, important roof replacement details have been specified.



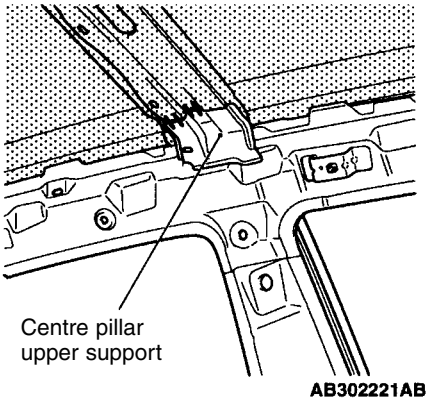
Symbol	Operation details
●●●●	Spot welding
■■▲▲	MIG plug welding (■ : two layers ▲ : three layers)
+ + + +	MIG spot welding
†††††††	MIG arc welding (continuous)
★★★★	Rivet
	Areas where rust inhibitor is applied. (Applied using holes in butt welded locations)

SERVICE JOINTS

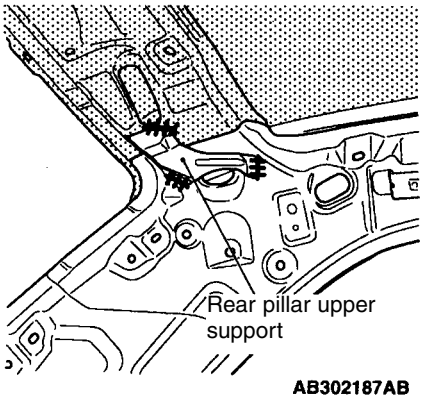




B



C

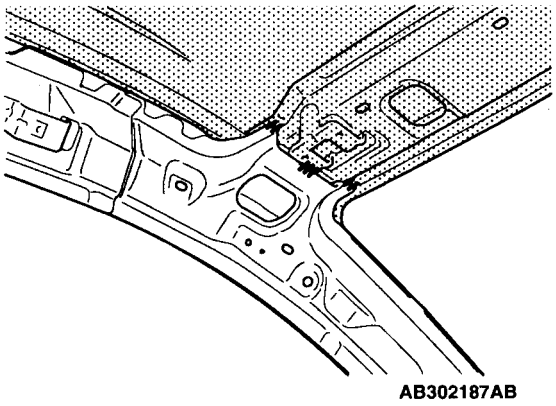


D

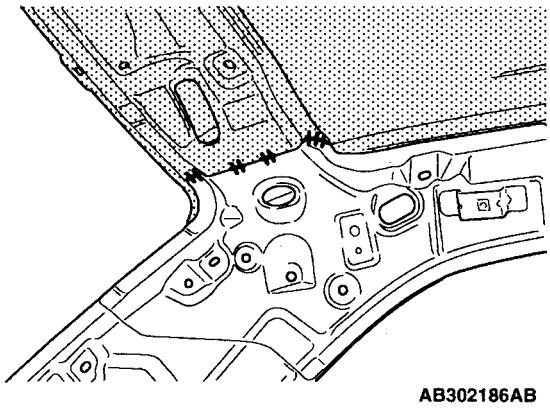
Note
❊: these welding points are done by manufacturer (not necessary during repairs).

: **black shading indicates areas where structural adhesive is applied.**

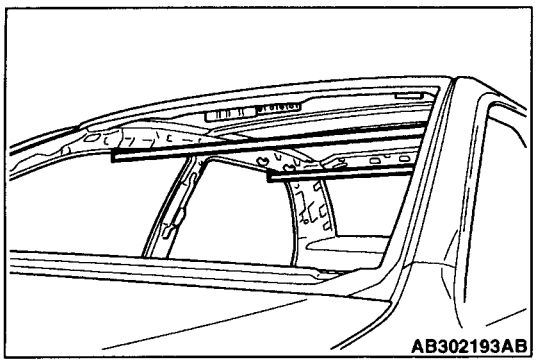
Adhesive	Type	Product name
	Epoxy structural adhesive	**Sumitomo 3M Auto Mix Panel Bond 8115**

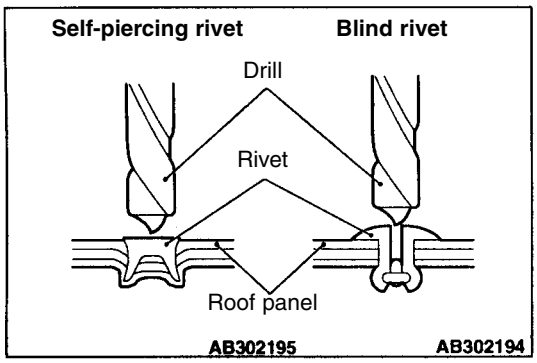


B
(Front pillar upper support removed condition)



D
(Rear pillar upper support removed condition)

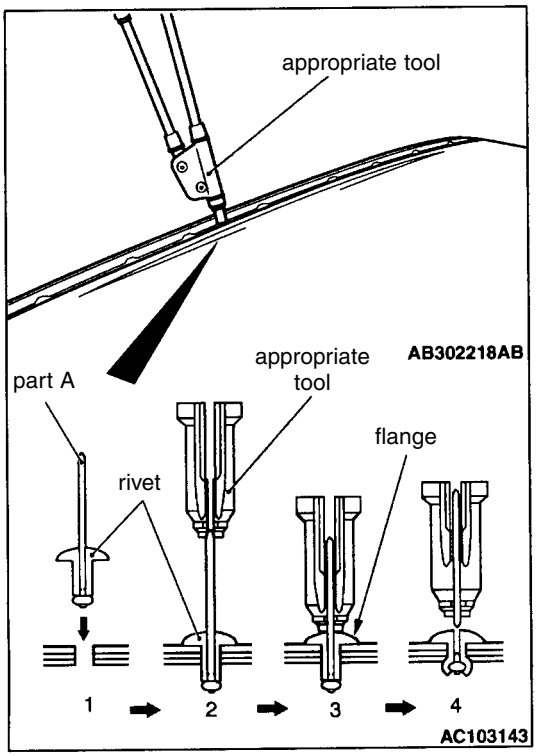


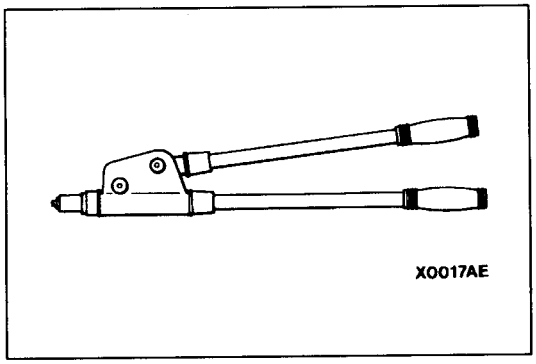


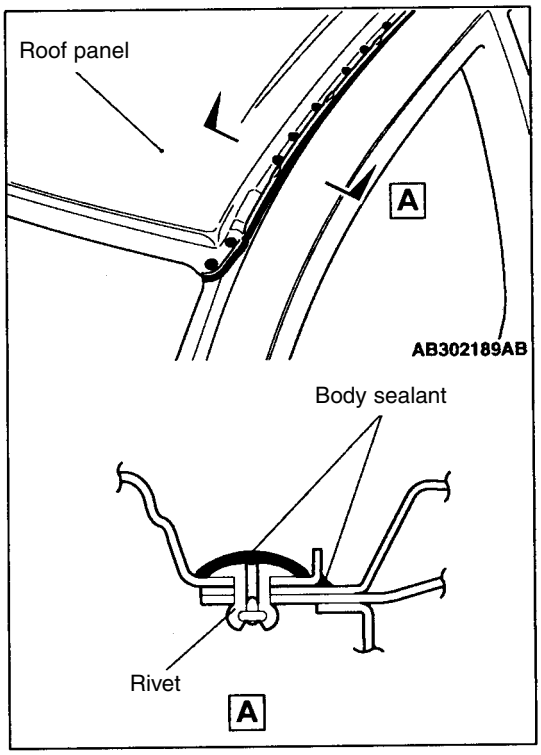
IMPORTANT POINTS TO OBSERVE WHEN DOING THE WORK

REMOVAL

1. When removing the roof, use a support to prevent the side panels opening out or leaning in.
2. To cut weld the front or rear roof rail, remove the front pillar upper support and rear pillar upper support.
3. Using a drill (∅5mm), make a hole in through the centre of the rivet, crack it, and remove. Normally, self-piercing rivets are used, but blind rivets may also be used.
   For areas where there is adhesive, use a cold chisel or similar tool to free and remove the roof.







Fitting

1. Temporarily set the new roof to the body, and drill holes for rivets with drill (∅5mm).
2. Remove the roof, smooth off any burring around the holes, then clean the body.
3. Apply structural adhesive to the body side, then fit the roof.

Adhesive	Type	Product name
	Epoxy structural adhesive	**Sumitomo 3M Auto Mix Panel Bond 8115**

4. Using the appropriate tool, set the rivets as follows:
   Rivets: POP rivet SD-62-HR
   (1) Insert the rivet into the hole in the base material (roof).
   (2) Insert the appropriate tool into Part A of the rivet.
   (3) Using the appropriate tool, use the tool handle to press the rivet flange surface down.
   (4) Secure the rivet, snapping at the thin part of A.

Note
In places where setting rivets so that flange makes good contact is difficult, it is OK to set from inside the vehicle.

Reference:
Appropriate tool (use rivet ∅4.8mm)
Lobster Tools Ltd
Hand riveter: HR-003B

5. When adhesive is dry, remove any excess adhesive then, to prevent water ingress, apply body sealant to cover entire rivet area and roof edge.

: black shading indicates body sealant

Product name: Sun Star Penguin Seal 353 (white)

ALUMINIUM ALLOY PANELS

Repairing Aluminium Alloy Panels

Precautions when working on sheet metal

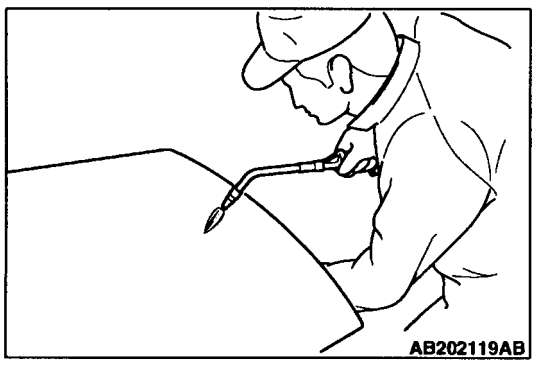
1. The main differences to working with sheet steel. (Assuming an ordinary body shop)

Operation	Aluminium alloy panel	Sheet steel
Hammering	Wood or plastic hammer	Sheet steel hammer
Washer welding	Not possible	Possible
Gas welding	Workability is poor but possible	Possible
Spot welding	Not possible	Possible
MIG welding	Possible with welder using argon gas and equipment for aluminium welding	Possible with CO_2 gas and normal welding equipment

2. At low temperatures, if subjected to a major impact, strength will deteriorate and it will crack.
3. Coefficient of elasticity is high, so spring-back (force acting to make material regain original form) is high.
4. Rate of heat transmission is high, and this can cause local thermal expansion.
5. If overheated, it becomes brittle, and strength deteriorates. If heated further, it will melt without discolouration.
   (Heat treatment temperature: approx. 250˚C)

Material	Welding temperature
Aluminium	475˚C~660˚C (varies depending on alloy composition)
Sheet steel	1500˚C~2500˚C

6. Material is soft, so be careful when selecting polish to use.
   Also, since polishing powder is light and easily airborne, wear dust mask and goggles.
7. If strong pressure is used when using a disk sander on the alloy, the friction could cause the aluminium alloy to peel off, and cause clogging.
8. Disk sanders that become clogged will cause deep scratching on aluminium alloy panels, so replace promptly.
9. Do not use general tools or sanders for sanding sheet steel.
   (steel fragments or dust will remain on the sander, causing electro-corrosion with other metal)
10. With MIG welding, shield the local area. Sparks, often difficult to see, can be generated and dispersed over a wide area.

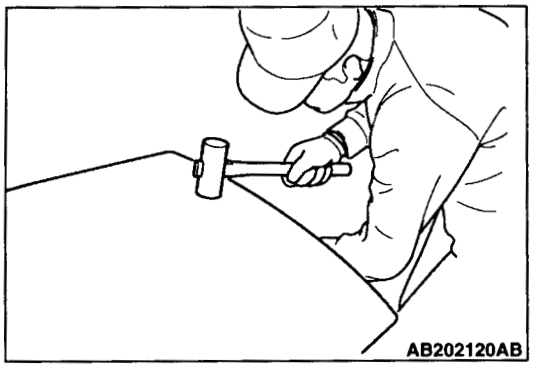


Repairing unevenness

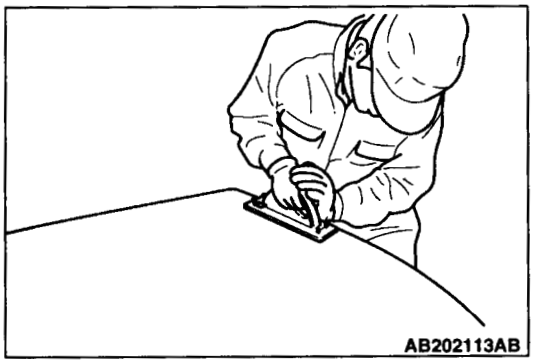
This is basically the same as for sheet steel. However, bear in mind aluminium alloy characteristics when carrying out this work.

1. Repairing sheet metal
   (1) Heat with a torch

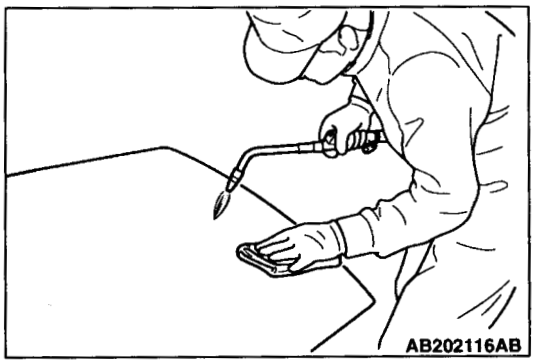
Note
a. Heat to the point where heat can be felt on the rear side of panel with hand wearing a glove.
b. Keep torch moving so as not to overheat one area.



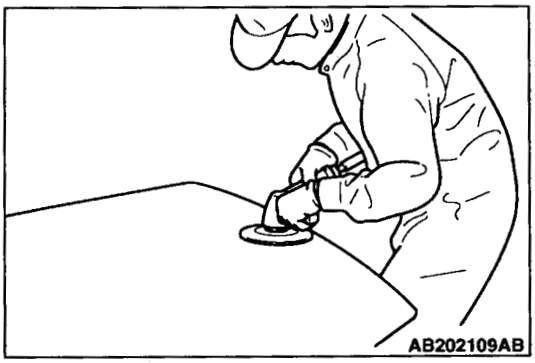
(2) When hammering, note that the panels stretch easily, so use a wooden or plastic hammer.
Note
Reduce stretching and process hardening, and do not leave hammer marks.



2. Check for distortion
Polish with #80 ~ #120 grade sandpaper, checking for any distortion.

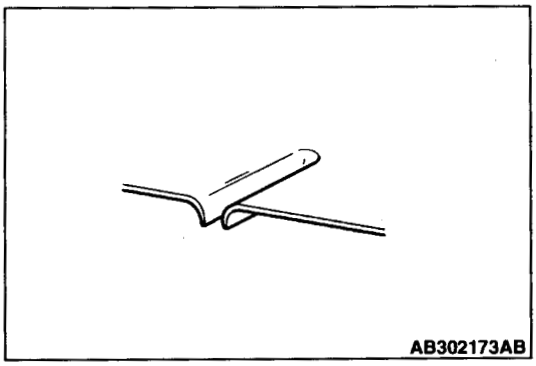


3. Removing distortions
Remove any distortions Using a levelling hammer and a torch, correct any distortions.
Note
(1) Heat to about 250˚C to do this work.
(2) Be careful when heating so as not to cause discolouration when welding.
(3) Use a damp cloth to prevent heat increases which could result in heat affecting heated area (distortion etc.)
(4) Do not use drawing hammers which are used for sheet steel, as this could result in cracking.



4. Polishing
Polish with a disk or a double action sander.
- Disk sander: #100 ~ #120
- Double action sander: #150 ~ #180

Note
Since the material is softer than sheet steel, choose a polishing material that does not scour the surface deeply.

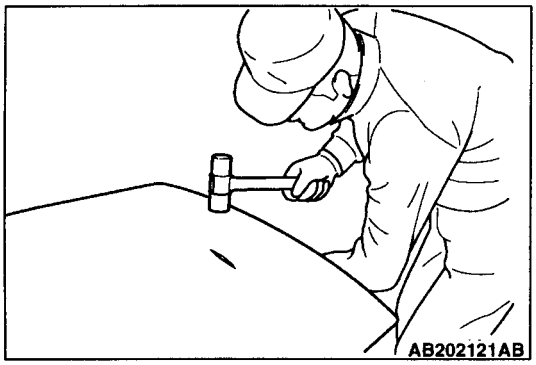


Repairing cuts and tears

When sheet steel panels are cut, torn, or have holes, repair using CO_2 MIG welding. However, with aluminium alloy panels, use MIG or TIG welder and use argon gas (inert gas) as shield gas.

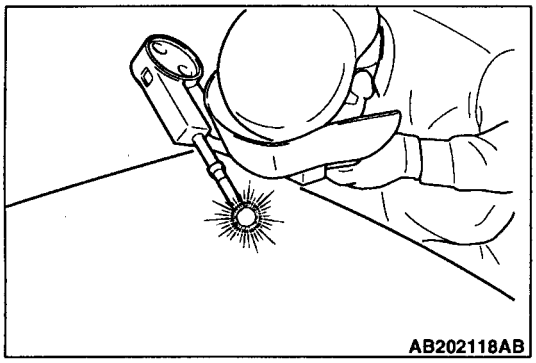
Extent of distortion from welding

Gas welding (large distortion) > TIG welding > MIG welding (little distortion).
Here we explain the MIG welding process, where distortion resulting from welding is small.

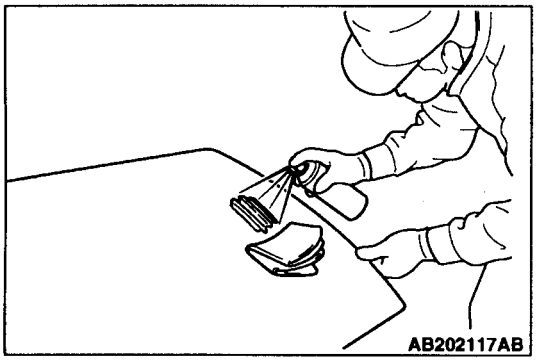


MIG welding procedure

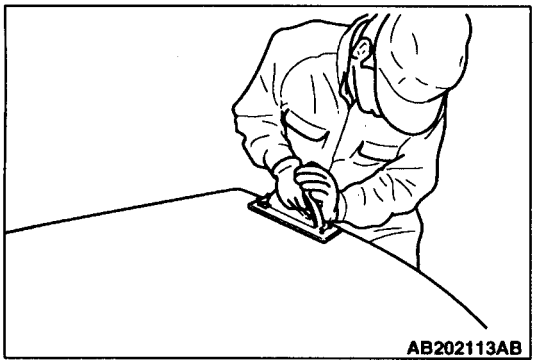
1. Repairing sheet metal
   These should be repaired by heating the damaged part gently, and lightly hammering. The areas stretched by hammering out should be cut away using an air saw.
   Note
   (1) Take care not to overstretch or damage the panel.
   (2) The gaps at the joint areas should be as narrow as possible.



2. Welding
   This work should be done using equipment designed for aluminium welding or equipment that can be used for both aluminium and steel plate welding.
   • Welding wire: 5356, 5556, 5183 (JIS classifications)
   • Wire dia.: 0.8 or 1.0mm
   (1) Remove any grease from welding areas using white spirit or similar.
   (2) Immediately prior to welding, remove any oxidation film with a stainless steel wire brush (including the rear side), and carry out the work immediately after cleaning.
   Note
   To minimize distortion and material melting and coming away, weld a little at a time, rather than welding long stretches.

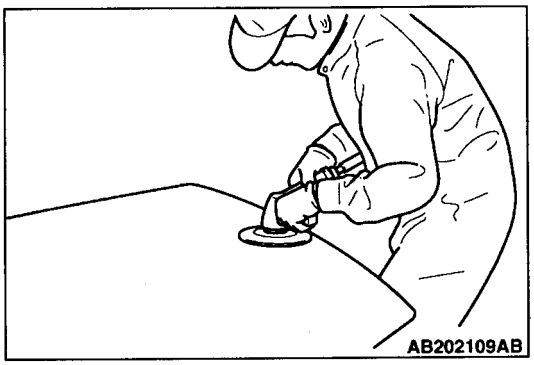


3. Inspecting welded areas
   After finishing off areas sanded with #100 disk sander, check that there are no inadequately welded parts (red check).
   Note
   The panel surface should not be excessively sanded away.

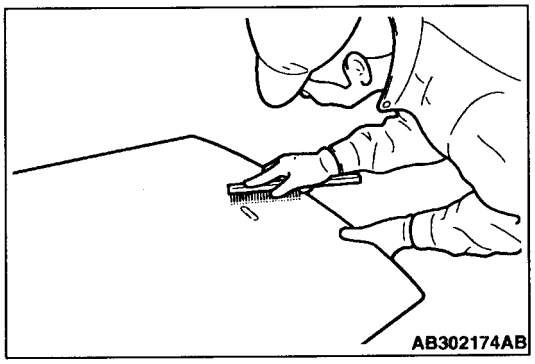


4. Checking for distortions
   Polish with #80 ~ #120 sandpaper, and check for distortion.
5. Removing distortions
   Remove any distortions by pressing out using a levelling hammer and a torch.
   Note
   (1) Heat to approx. 250˚C to do this work
   (2) Take care when heating so that welding can be done without heating causing any discolouration

(3) Use a damp cloth to prevent temperature rising and causing distortion or other effects in the area being heated.
(4) Do not use levelling hammers which are used for sheet steel as they can cause cracking.

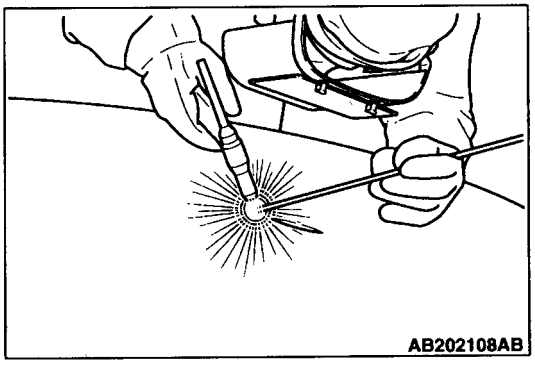


6. Finishing
   Finish off with #100~#120 grade disk sander.

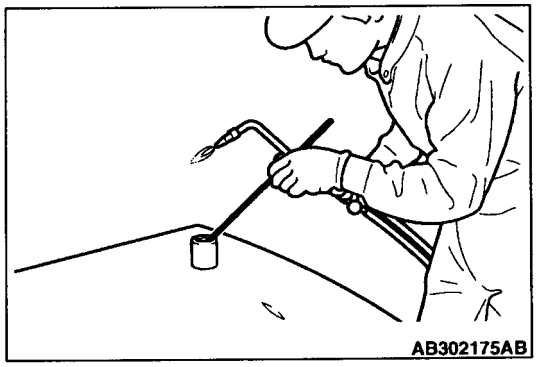


Note
As spark marks and carbon adhesion can have an adverse effect during painting, remove completely using a stainless steel wire brush.

Other welding



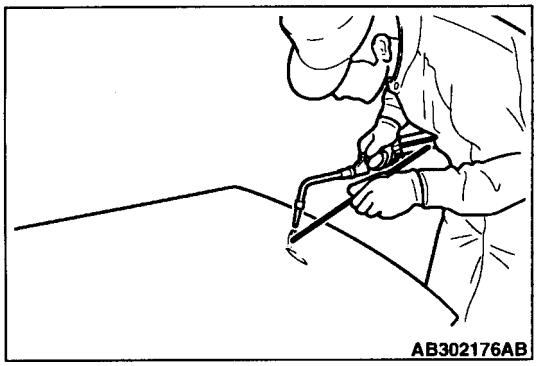
1. TIG welding
   The process is basically the same as MIG welding, using the same arc welder, but instead of using an electrode wire, a rod coated with flux is used.
   To help prevent distortion from the heat generated in welding, and poor quality welding, this job should be done by someone with suitable training and practice.
   - Welding rod: 5356, 5556, 5183 (JIS classification)
   - Diameter: 1.6mm



2. Gas welding (oxyacetylene)
   In essence, if gas welding can be done, then a welding rod and flux (for cleaning and reducing oxide inclusions) can be used.
   To help prevent distortion from the heat generated in welding, and poor quality welding, this job should be done by someone with suitable training and practice.

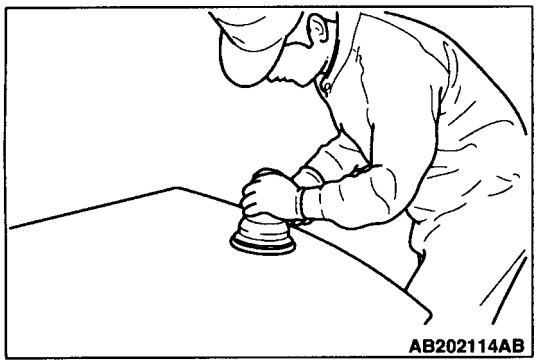
   - Welding rod: 5356, 5556, 5183 (JIS classification)
   - Diameter: 1.6mm

   (1) Flux is made to adhere by heating the welding rod.



(2) Melt the flux with the torch, and weld, removing oxide film.

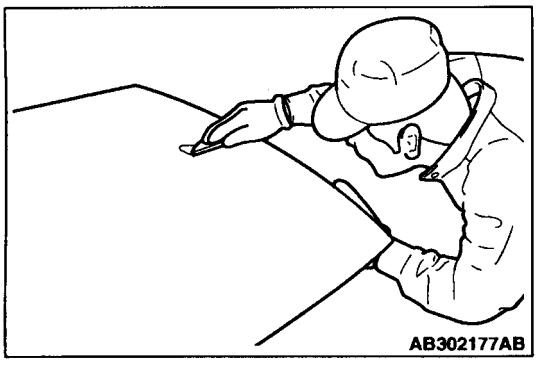
Note
The molten welding rod flows easily, so as far as possible keep the surface being welded flat.
(3) Flux left on the panel should be removed using a stainless steel wire brush or similar.



Finishing filler

1. Polish areas filled with filler using #150 ~ #180 (double action sander).
2. Clean away any grease on the surfaces where there is filler.
3. Apply 2 part epoxy primer or, for a primer pre-treatment designed for use with aluminium.
4. Flatten down with # 180 (double action sander)
5. Remove grease and clean surface areas where there is filler.
6. Paint filler in sheet metal, and allow to dry naturally.

Note
Do not speed up by drying at 60˚C or over.



7. Polish with #180.

Painting aluminium panels

Painting on the production line

Same as for painting ordinary steel plate.

Painting for repairs

The main points for repairs in general are as follows.
Paint adhesion to aluminium alloy panels is not quite as good as ordinary steel plate, so pay careful attention to precautionary notes.

1. Peeling of paint film
   Caution: avoid harsh polishing, and try not to generate heat during polishing.

2. Clean and remove any grease

3. Apply wash primer

4. Dry

5. Apply primer surfacer

6. Dry
   Note: do not speed up by drying at over 60˚C.

7. Polish

8. Clean, remove any grease

9. Overcoat

10. Dry
    Note: do not speed up by drying at over 60˚C.

Remarks:
1. Please refer to paint manufacturer's instructions for details.
2. Same as for paint repair jobs done on stainless steel plate.

SECTION 6

BODY COLOUR

CONTENTS

General

This specifies body colour and different body colour paint sections.

Body Colour List

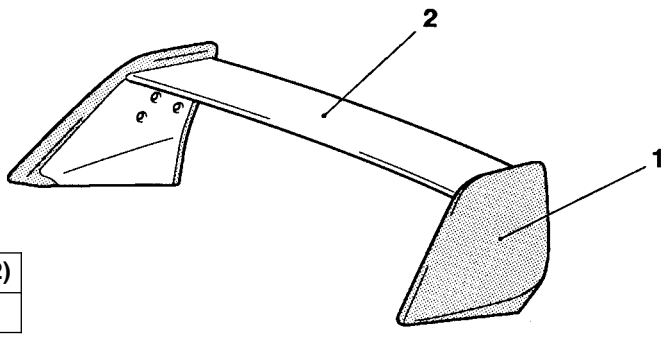
Name of colour (old colour name)	Colour symbol	Colour code	Colour (paint) number	Content of paint	Repair symbol	Paint manufacturer
Cool silver metallic	CL	A31	CMA10031	Aluminium	M	Kansai Paint
Medium Gun-Metal grey mica	ES	A39	CMA 10039	Aluminium + mica	2P	Nippon Paint
Solid White (Scotia White)	2E	W83	AC10983	-	S	Kansai Paint
Solid Red (Parma Red)	JW	P85	AC11185	-	S	Kansai Paint

Remarks
1. Repair symbols show only overcoat S: solid M: Metallic 2P: 2 coat pearl.
2. The paint manufacturer's names are the names used at time of manufacturing.

Different Body Colour Paint Sections

The different rear spoiler paint sections are specified below.

Rear Spoiler



1	**Gun metal grey (CMA1002)**
2	**Part material colour**

AB302214AB