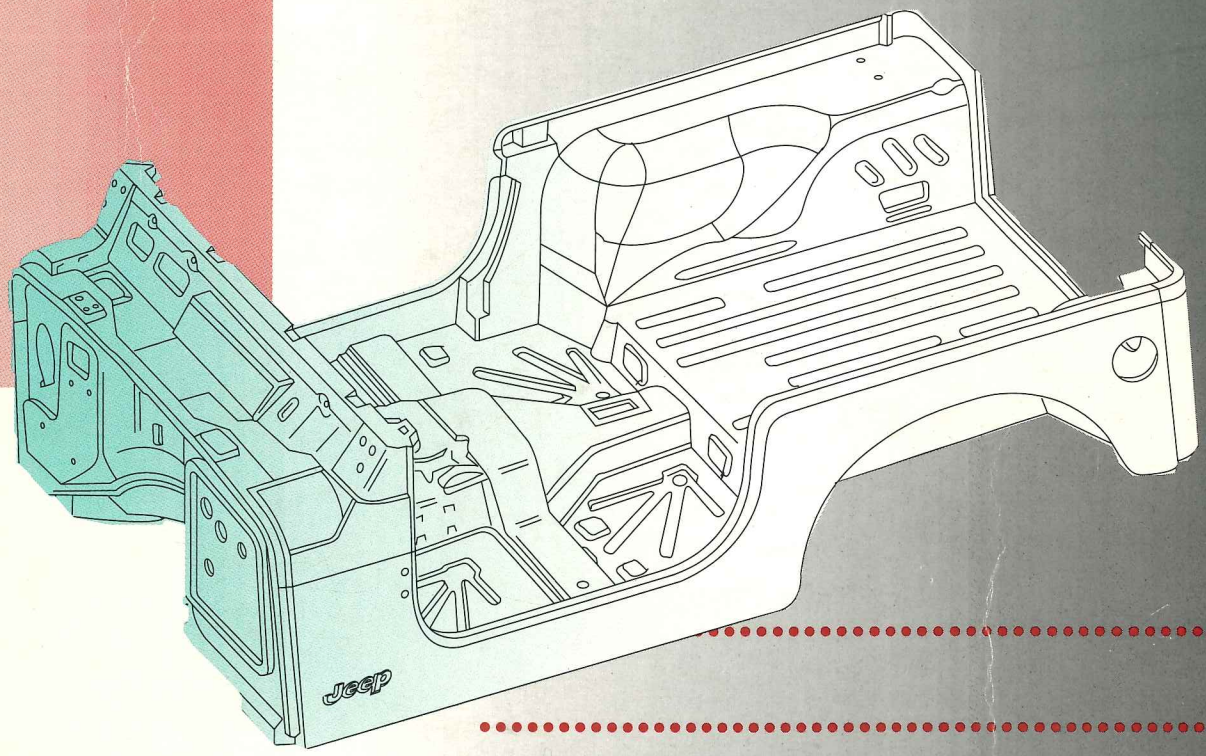
Jeep/Wrangler TJ

BODY REPAIR GUIDE



DIMENSIONS

JOINTS

SEAMS

TECHNICAL TRAINING

CHRYSLER CORPORATION

CUSTOMER SATISFACTION &
VEHICLE QUALITY

SAFETY NOTICE

This publication's purpose is to provide Technical Training information to individuals in the automotive trade. All test and repair procedures must be performed in accordance with manufacturers' service and diagnostic manuals. All ***Warnings, Cautions,*** and ***Notes*** must be observed for safety reasons. The following is a list of general guidelines:

- Proper service and repair is critical to the safe, reliable operation of all motor vehicles.
- The information in this publication has been developed for service personnel and can help when diagnosing and performing vehicle repairs.
- Some Service procedures require the use of special tools. These special tools must be used as recommended throughout this Technical Training Publication, the Diagnostic Manual, and the Service Manual.
- Special attention should be exercised when working with spring– or tension–loaded fastener and devices such as E–Clips, Cir–Clips, Snap Rings, etc., because careless removal may cause personal injury.
- Always wear safety goggles when working on vehicles or vehicle components.
- Improper service methods may damage the vehicle of render it unsafe.
- Observe all ***Warning*** to avoid the risk or personal injury.
- Observe all ***Cautions*** to avoid damage to equipment and vehicles.
- Notes are intended to add clarity and should help make your job easier.

Cautions and ***Warnings*** cover only the situations and procedures Chrysler Corporation has encountered and recommended. Chrysler Corporation cannot know, evaluate, and advise the service trade of all conceivable ways in which service may be performed, or the possible hazards of each. Consequently, Chrysler Corporation has not undertaken any such broad service review. Accordingly, anyone who used a service procedure or tool that is not recommended in this publication must be certain that neither personal safety, nor vehicle safety, is jeopardized by the methods they select.

TECHNICAL TRAINING

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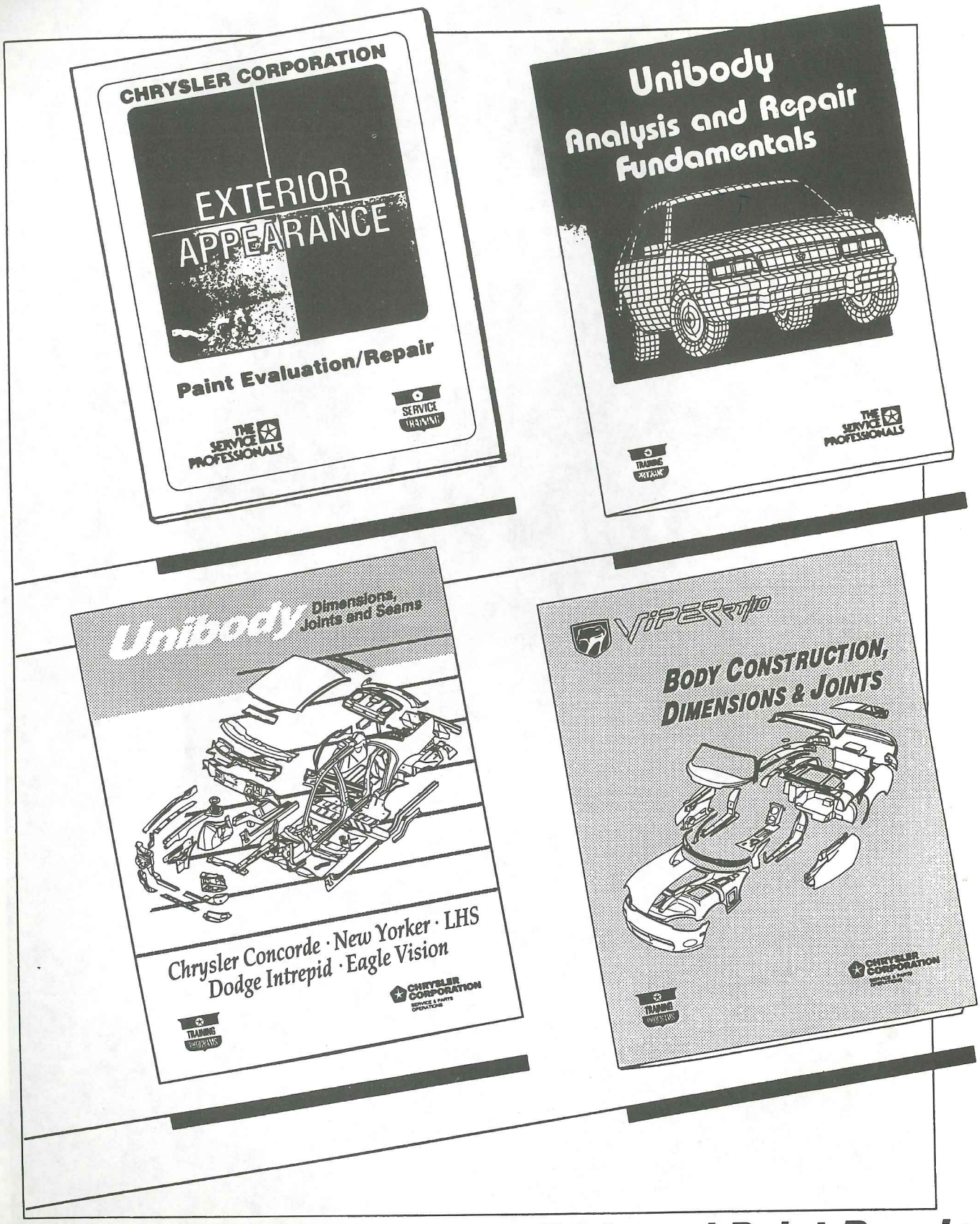
Jeep Wrangler–TJ

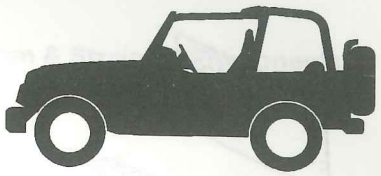
TECHNICAL PUBLICATIONS



For more Information about Body and Paint Repair, Look for Ordering Information on Page 71.

INTRODUCTION

Jeep/Wrangler TJ



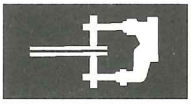
This manual has been prepared for use by all body technicians involved in the repair of the Jeep/Wrangler TJ

This manual shows:

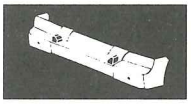
- **Typical unibody panels contained in the TJ**
- **The weld locations for these panels**
- **The Types of welds for the panel**
- **Proper sealer types and correct locations**

Body Construction Characteristics 2

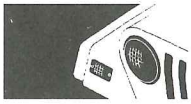
Weld Panel, Sealer & Adhesive Replacement 11



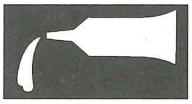
Bumper Systems 49



Exterior Lighting 51



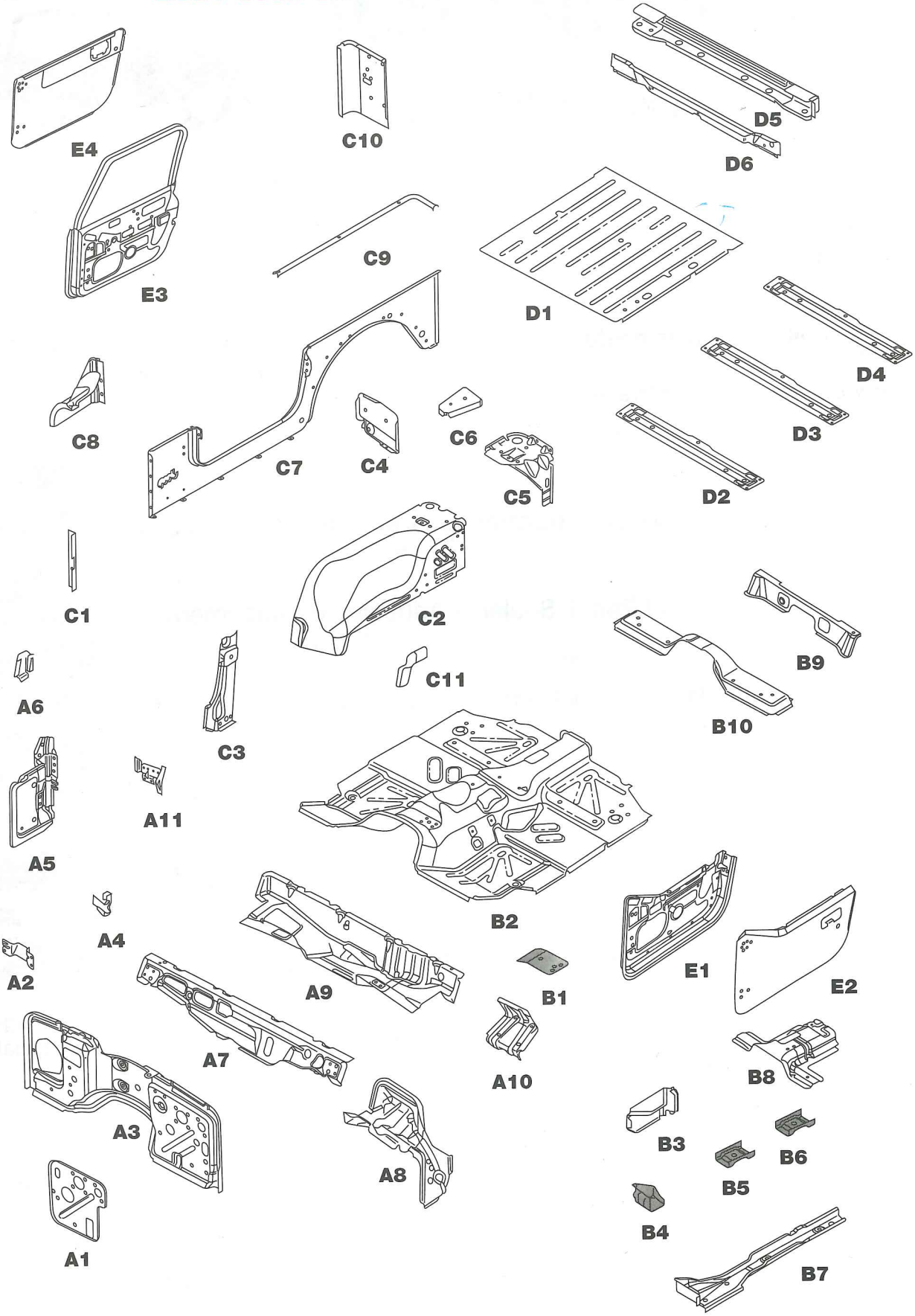
Body Sealing Locations 53



Body Dimensions & Specifications.....61

Chrysler Corporation reserves the right to make improvements in design or to change specifications to these vehicles without incurring any obligation upon itself.

BODY COMPONENTS — JEEP/WRANGLER TJ



Dash, Cowl & Plenum Components

1. Dash Panel Reinforcements
2. Dash Bracket J-Tec
3. Dash Panel
4. Bracket Check Strap Hook
5. Cowl Side Upper Panel
6. Cowl Side Reinforcements
7. Cowl Center Panel
8. Steering Column Support and Bracket
9. Plenum Panel
10. Steering Column Bracket
11. Wiper Motor Bracket

Front Floor Pan & Strainer Components

1. Diagnostic Module Bracket
2. Front Floor Plan
3. Cowl Side Lower Panel
4. Tapping Plate Body Mount Reinforcement #1
5. Tapping Plate Body Mount Reinforcement #2
6. Tapping Plate Body Mount Reinforcement #3
7. Strainer Longit Hold Down & Seat Support
8. Parking Brake Reinforcements
9. Riser Front To Rear Floor
10. Crossmember Front Floor

Side Aperture & Quarter Panel Components

1. Side Panel Reinforcement
2. Wheelhouse Panel
3. Bodyside Panel Support
4. Wheelhouse Closure
5. Wheelhouse Reinforcement
6. Tailgate Hinge Reinforcement
7. Body Side Panel
8. Cowl Top End Panel
9. Belt Rail Retainer
10. Body Corner Panel
11. Lower Front Wheelhouse Reinforcement

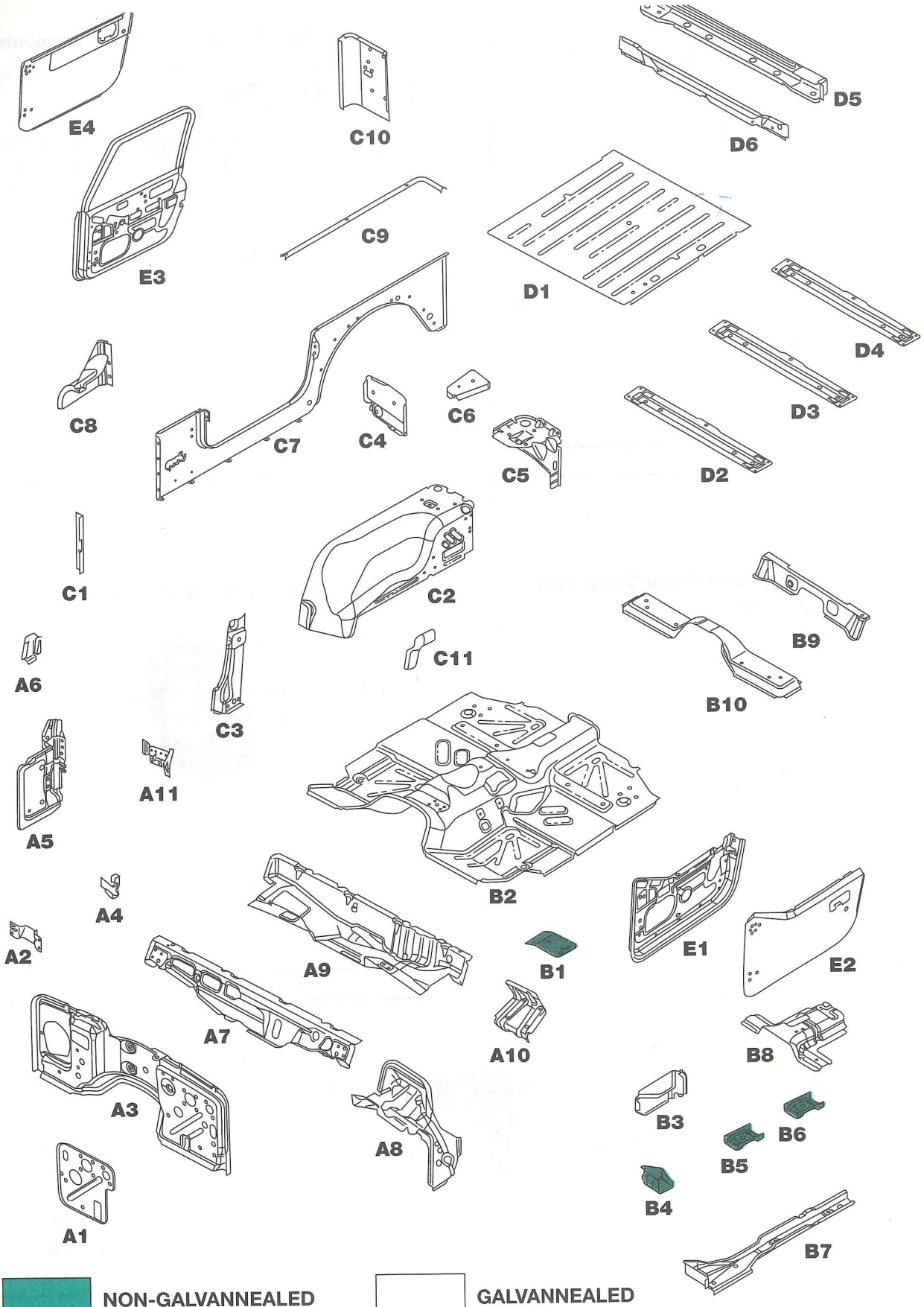
Rear Floor Pan Components

1. Rear Floor Pan
2. Rear Seat Mounting Cross Member
3. Body Mount #4 Cross Member
4. Rear Floor Cross Member
5. Body Rear Center Panel
6. Body Rear Center Cover Panel

Door Components (Full & Half)

1. Inner Door Assembly (Half)
2. Outer Door Panel Assembly (Half)
3. Inner Door Assembly (Full)
4. Outer Door Panel Assembly (Full)

CORROSION PROTECTION — JEEP/WRANGLER TJ



The following measures have been implemented in order to provide maximum corrosion prevention and protection.

1. The use of galvannealed coatings throughout the body structure.
2. Electrodeposition primer is used on the complete body in all instances.
3. Body sealing.
4. Stone-chipping resistant primer application.
5. Underbody corrosion prevention.

Definitions of Steel used in Jeep/Wrangler TJ:

MS 66 — Represents an uncoated hot and cold-rolled low carbon structural steel used mainly for interior braces and reinforcements.

MS 67 — Represents an uncoated low carbon hot and cold rolled structural steel used in areas where structural integrity is critical. Eg., the type of steel used for th A-pillar.

MS 264-050-XK — Represents an uncoated high strength steel used in applications where structural integrity is critical.

Two-Sided Galvannealed MS 6000-44A — Represents a two-sided zinc-iron coated steel in which the coating is fully alloyed with the sheet or strip surface.

Two-Sided Galvannealed MS 6000-44AE — Represents a two-sided zinc-iron coated steel for use on class 1 surfaces in which the coating is fully alloyed with the sheet or strip surface.

PARTIAL LIST OF STEEL APPLICATIONS

Galvannealed Steel

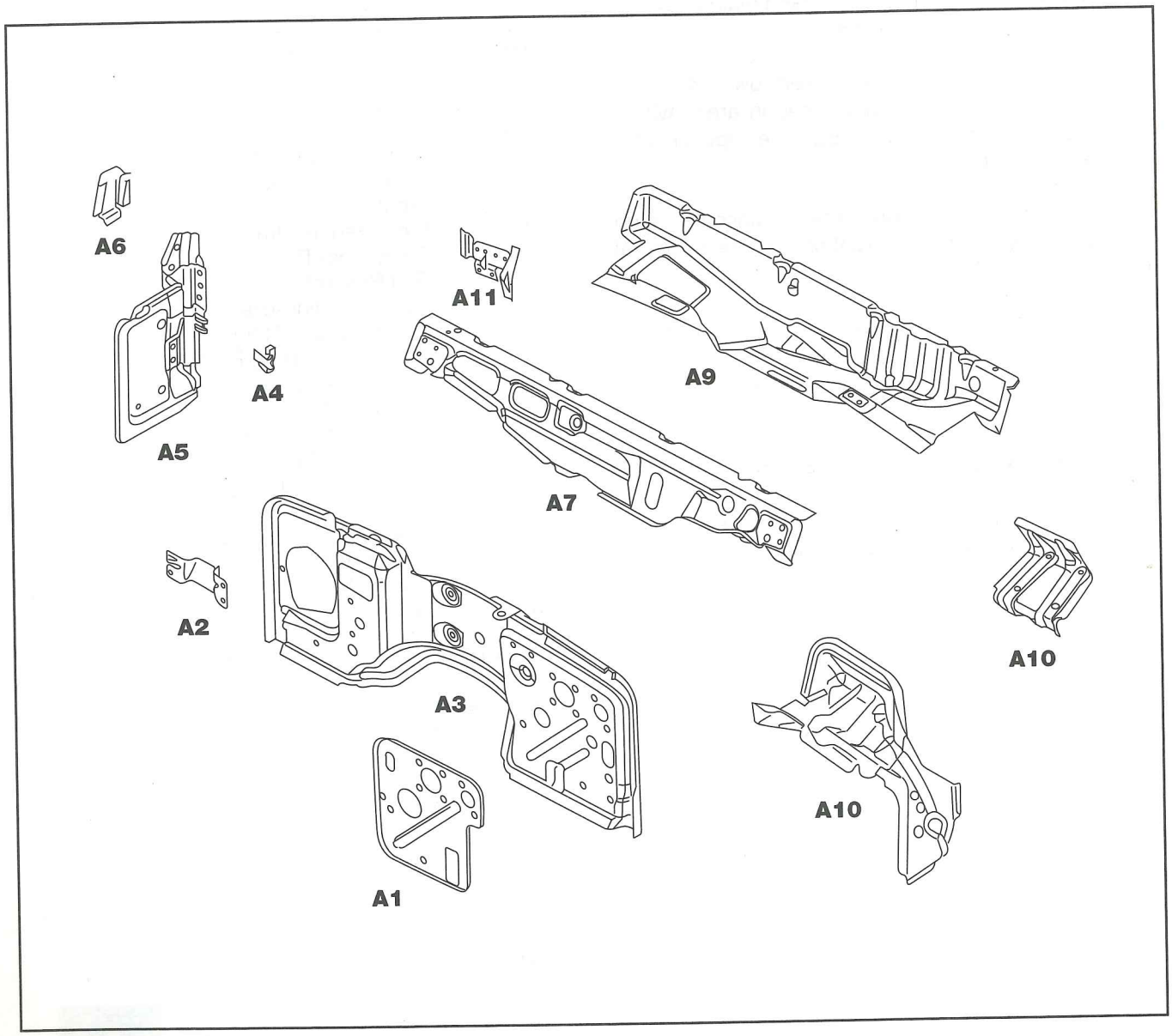
*	ABS Mounting Bracket
*	Air Intake Grill
*	Battery Tray Support Reinforcement
*	Battery Tray
C9	Belt Rail Retainer
D3	Body Mount #4 Cross Member
D6	Body Rear Center Cover Panel
D5	Body Rear Center Panel
C7	Body Side Panel
C3	Body Side Panel Support
A4	Bracket Check Strap Hook
*	Bracket Support-Radiator Guard H'Down
A7 RHD	Cowl Center Panel
B3	Cowl Side Lower Panel
A6	Cowl Side Reinforcement
A5	Cowl Side Upper Panel
C8	Cowl Top Panel
B10	Cross Member Front Floor
A2 RHD	Dash Bracket J-Tee
A3 RHD	Dash Panel
A1	Dash Panel Reinforcement
*	Dash To Radiator Guard Tie Rod
*	Deflect Assembly–Radiator Guard H'Down
*	Front Fender
*	Front Fender Brace
B2	Front Floor Pan
*	Grill Bracket
*	Jack Mounting-Bracket
B8	Parking Brake Reinforcement
*	Passenger Airbag Bracket
A9 RHD	Plenum Panel
*	Radiator Guard
D4	Rear Floor Crossmember
D1	Rear Floor Pan
D2	Rear Seat Mounting Crossmember
B9	Riser Front To Rear Floor
C1	Side Panel Reinforcements
*	Splash Apron
*	Splash Apron Reinforcement
B7	Strainer Longit Hold & Slat Support
A10	Steering Column Bracket
A8 RHD	Steering Column Support & Bracket
*	Stud Plate Assembly
C6	Tailgate Hinge Reinforcement
C4	Wheelhouse Closure
C2	Wheelhouse Panel
C5	Wheelhouse Reinforcement
*	Windshield Assembly
A11	Wiper Motor Bracket

* Not shown in illustration
RHD-Right hand drive

DASH, COWL & PLENUM COMPONENTS

The parts listed below may be serviced individually or as an assembly.

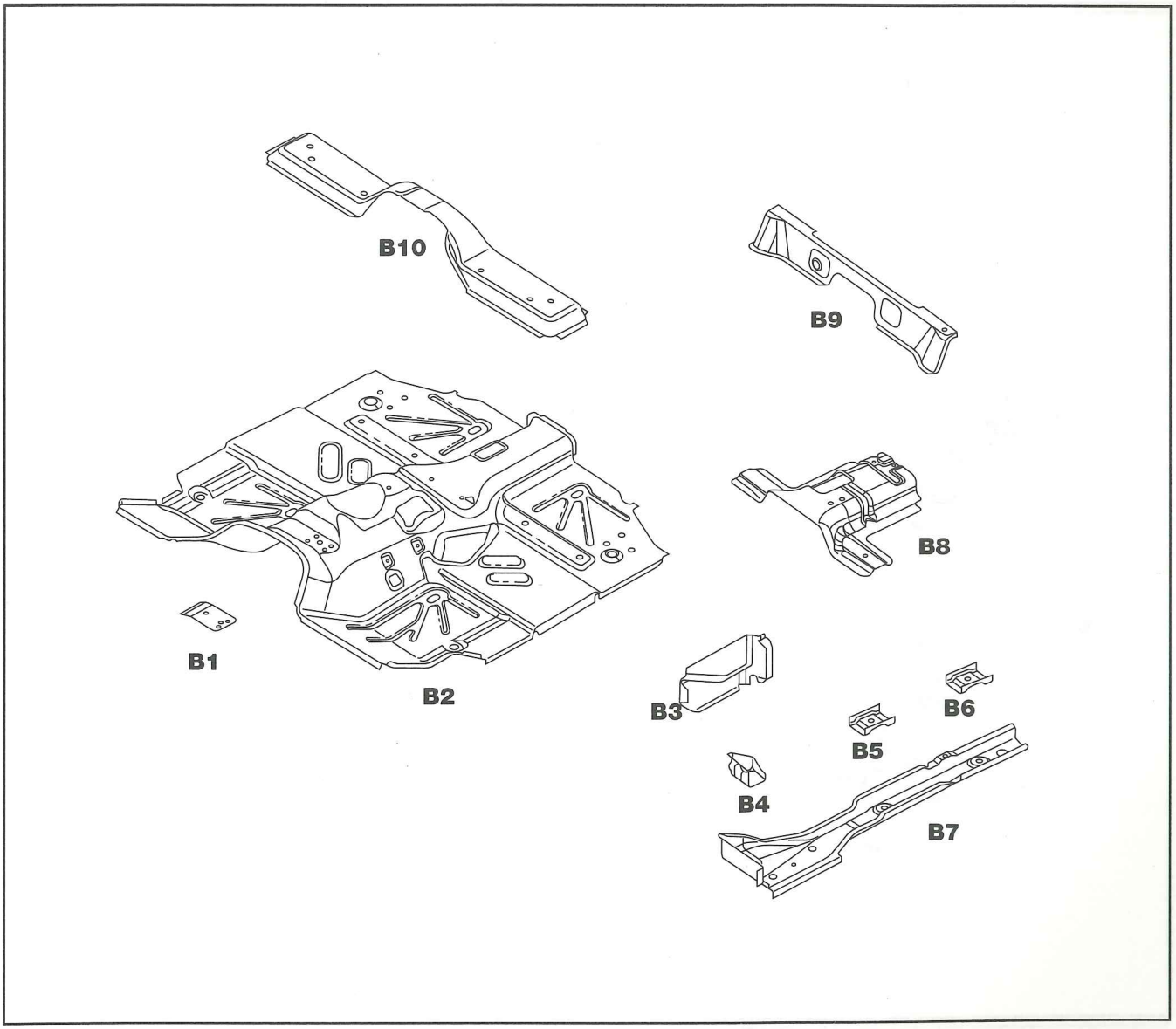
1. Dash Panel Reinforcements
2. Dash Bracket J-Tec
3. Dash Panel
4. Bracket Check Strap Hook
5. Cowl Side Upper Panel
6. Cowl Side Reinforcements
7. Cowl Center Panel
8. Steering Column Support and Bracket
9. Plenum Panel
10. Steering Column Bracket
11. Wiper Motor Bracket



FRONT FLOOR PAN & STRAINER COMPONENTS

The parts listed below may be serviced individually or as an assembly

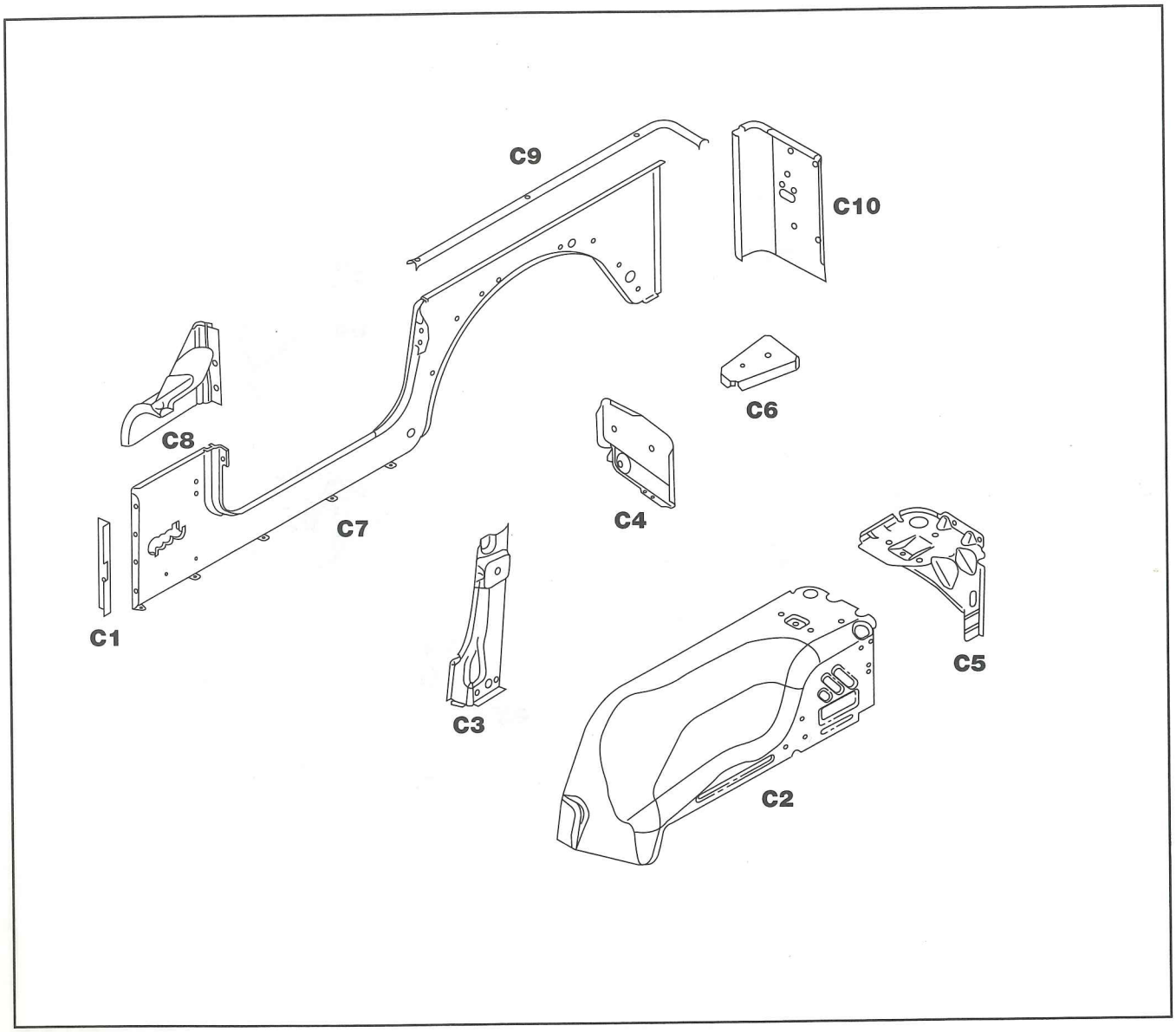
1. Diagnostic Module Bracket
2. Front Floor Plan
3. Cowl Side Lower Panel
4. Tapping Plate Body Mount Reinforcement #1
5. Tapping Plate Body Mount Reinforcement #2
6. Tapping Plate Body Mount Reinforcement #3
7. Strainer Longit Hold Down & Seat Support
8. Parking Brake Reinforcements
9. Riser Front To Rear Floor
10. Crossmember Front Floor



QUARTER PANEL & SIDE APERTURE COMPONENTS

The parts listed below may be serviced individually or as an assembly.

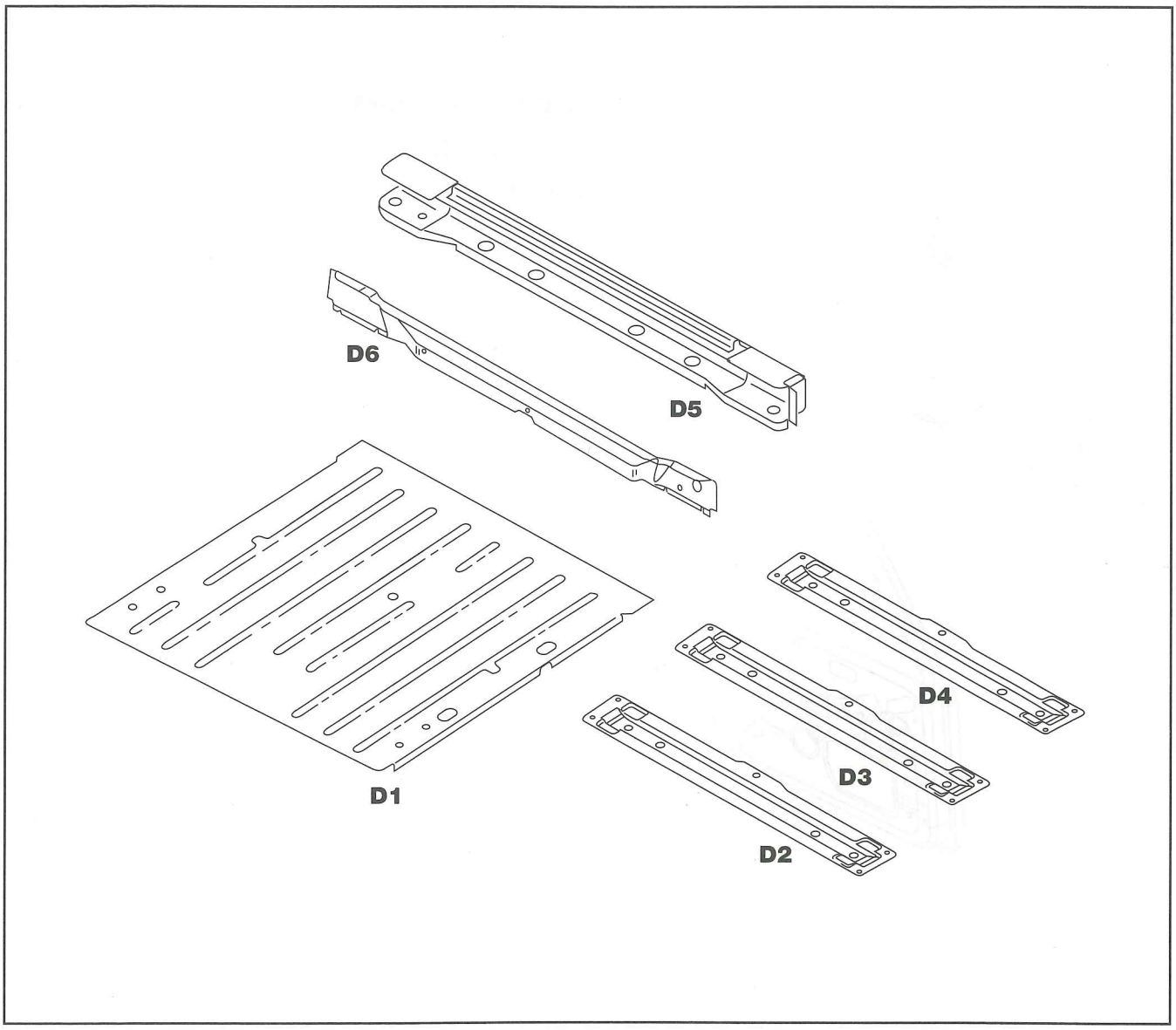
1. Side Panel Reinforcement
2. Wheelhouse Panel
3. Bodyside Panel Support
4. Wheelhouse Closure
5. Wheelhouse Reinforcement
6. Tailgate Hinge Reinforcement
7. Body Side Panel
8. Cowl Top End Panel
9. Belt Rail Retainer
10. Body Corner Panel



REAR FLOOR PAN COMPONENTS

The parts listed below may be serviced individually or as an assembly.

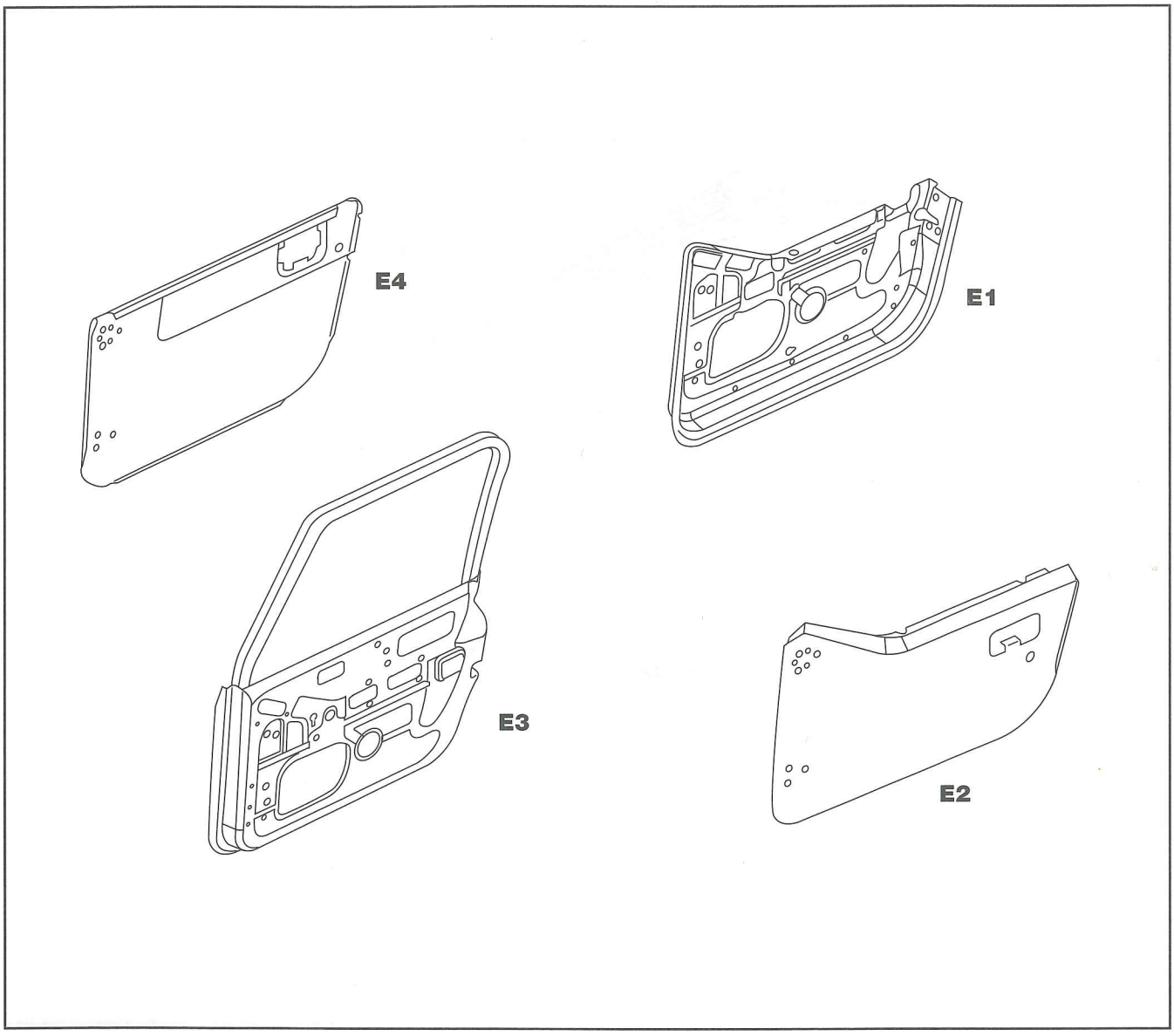
1. Rear Floor Pan
2. Rear Seat Mounting Cross Member
3. Body Mount #4 Cross Member
4. Rear Floor Cross Member
5. Body Rear Center Panel
6. Body Rear Center Cover Panel



DOOR COMPONENTS (FULL & HALF)

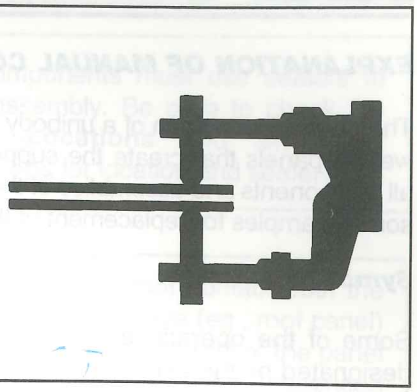
The parts listed below may be serviced individually or as an assembly.

1. Inner Door Assembly (Half)
2. Outer Door Panel Assemble (Half)
3. Inner Door Assembly (Full)
4. Outer Door Panel Assembly (Full)



WELDED PANEL REPLACEMENT

Jeep/Wrangler TJ



The basic parts of the body structure are the welded panels. This section contains a brief description of the placement of some of these panels and their weld locations.

NOTE: To ensure the cleanest, strongest and most durable welds possible, perform testing before and during all weld procedures. Always follow American Weld Society specifications and procedures.

Explanation of Manual Contents 12

Dash, Cowl, & Plenum 14

Dash, Cowl, & Plenum Supports & Reinforcements 20

Front Floor, Strainer, Reinforcement & Lower Cowl Side 24

Side Aperture 28

Wheelhousing 34

Rear Floor Pan & Reinforcements 40

Door Outer Panels 44

EXPLANATION OF MANUAL CONTENTS

The major construction of a unibody vehicle consists of welded panels that create the supporting structure for all components and assemblies of the vehicle. Here are some examples for replacement of these parts.

Symbols

Some of the operations for panel replacement are designated by the following symbols.

Sealer Applied During Assembly	Structural Adhesive
Rough cutting of panel to be replaced	+ + + + MIG Plug Weld
WWWWW MIG Arc Welding	

1 3 2 4

Continuous Stitch MIG Weld

Alternate stitch welds until you have a continuous MIG weld.

NOTE: Although resistant spot welds are the nuts and bolts of the unibody vehicle, they will not be used as a repair symbol because of the lack of proper resistant spot weld equipment in most shops.

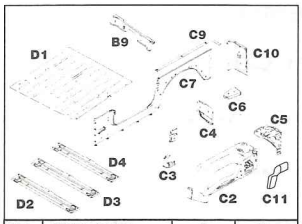
NOTE: The Sealer and Adhesive shown in the welding section are applied during welding.

"**F**" indicates the number of factory welds to be separated.
"**R**" indicates the number of welds to be made and the method to be used when making repairs.

If only a number is listed under "F," it indicates that the method used at the factory was a spot weld; for all other methods, both the welding method and the number of welds are indicated. For example, "F2, RP2" indicates that the 2 spot welds made at the factory should be replaced by 2 plug welds if repairs are made.

The welded components are indicated by using the designations given in the illustration below. For example, "C2 + C5" indicates that components "C2" and component "C5," which are shown in the top left corner illustration on the page, are welded together.

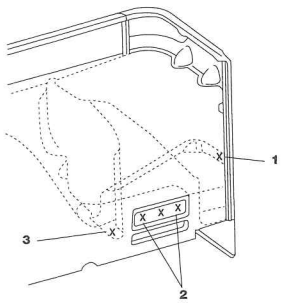
Wheelhousing

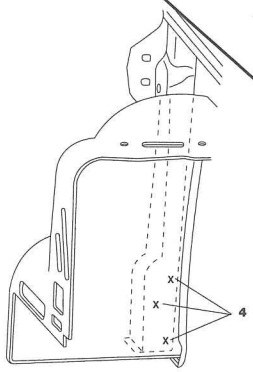


No.	Welded parts	F	R
1	C6 + C10	1	P1
2	C2 + C6	3	P3
3	C4 + C6	1	P1
4	C2 + C3	3	P3
5	C2 + B9 + C11	2	P2
6	C2 + B9 + C11	3	P3
7	B2 + C2	6	P6
8	C2 + D1 + D4	4	P4
9	C2 + D1 +D3	4	P4
10	C2 + D1 + D2	4	P4
11	C2 + D1	7	P7
12	C7 + C2	3	P3
13	C10 + D5	9	P9
14	C2 + D1	5	P5
15	C2 + C5	11	P11
16	C2 + C7	9	P9

No.	Welded parts	F	R
17	C2 + C4	2	P2
18	C2 + C7	9	P9
19	C2 + C5	12	P12
20	C2 + C4	2	P2
21	C4 + C5	1	P1
22	C5 + C10 ASAB	8	P8
23	C4 + C7	4	P4
24	C5 + C7	3	P3
25	C4 + C5	1	P1
26	C4 + C7	4	P4
27	C5 + C10	6	P6
28	C2 + C5 + C4	3	P3
29	C2 + C4	2	P2
30	C2 + C5	1	P1
31	C2 + C5	3	P3
32	B2 + B7 + C2	2	P2
33	D1 + C2 + C11	2	P2
34	C2 + C11	2	P2

ASAB = Add Sealer Adhesive Bead





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NOTE: Before beginning repair procedures, perform test welds to verify your equipment and to ensure your welds are the best quality. All welds should conform to the American Welding Society standards.

For weld specifications contact:

American Welding Society

550 Northwest Le Jeune Road

P.O. Box 351040

Miami, Florida 33135

Phone: (305) 443-9353

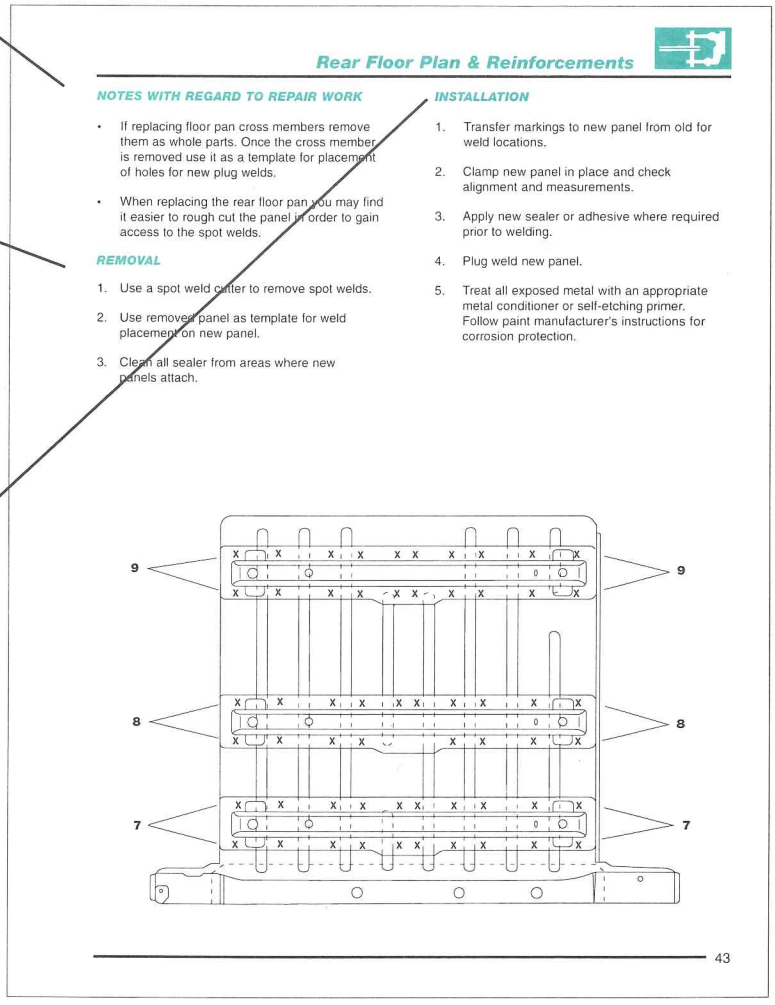
Certain body components must use sealers to ensure proper assembly. Be sure to check the **Body Sealing Locations** and **Structural Adhesives Sections** for location and sealer type.

When dealing with panels that contact both the right and left sides of the vehicle (eg., roof panel) the artwork may depict only one-half of the panel being welded. In these cases, the referenced panel will be split on the vehicle centerline, and the number or welds shown will be half of the true amount. The corresponding chart will show the true number of welds. Remember, even though the artwork may show 12 welds, the chart may call for 24 welds totals.

Points that require particular attention during welded panel replacement work.

Removal instructions and accompanying illustration are given in the order in which the work is to performed.

Installation instructions and accompanying illustrations are given in the order in which the work is to be performed. In order to keep the instructions brief and simple, obvious work procedures (such as removal of a panel after it has been cut) have been omitted, where possible.



Rear Floor Plan & Reinforcements

NOTES WITH REGARD TO REPAIR WORK

- If replacing floor pan cross members remove them as whole parts. Once the cross member is removed use it as a template for placement of holes for new plug welds.
- When replacing the rear floor pan you may find it easier to rough cut the panel in order to gain access to the spot welds.

REMOVAL

1. Use a spot weld cutter to remove spot welds.
2. Use removed panel as template for weld placement on new panel.
3. Clean all sealer from areas where new panels attach.

INSTALLATION

1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements.
3. Apply new sealer or adhesive where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.

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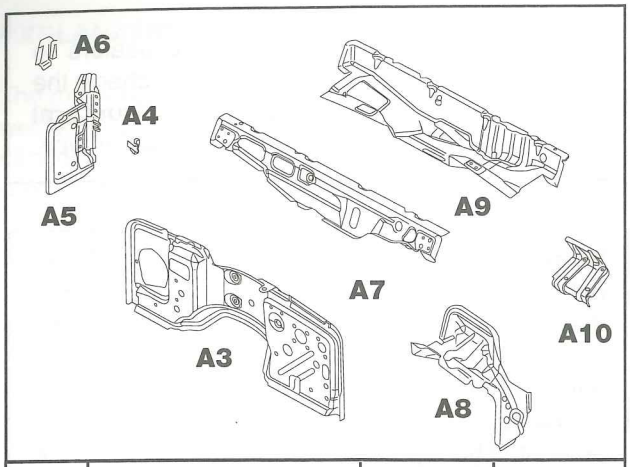
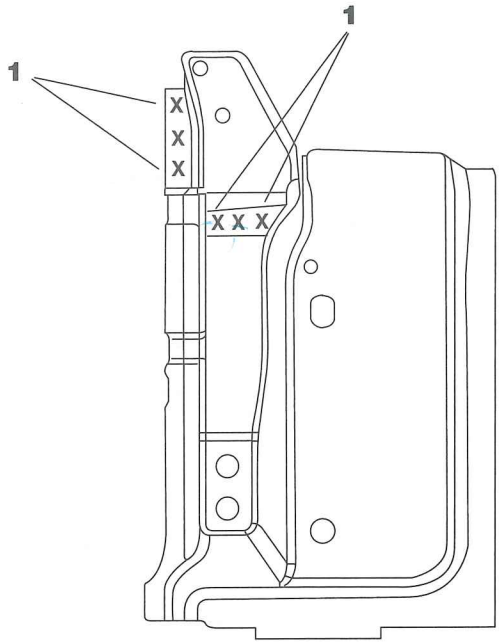
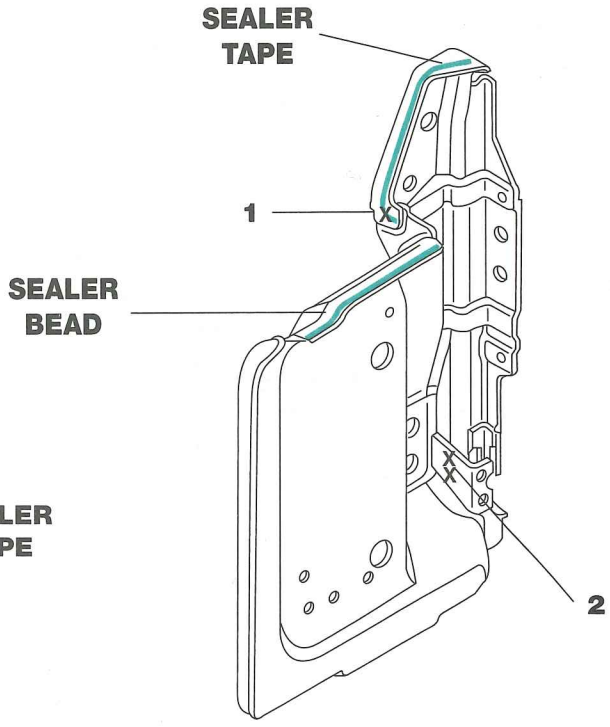
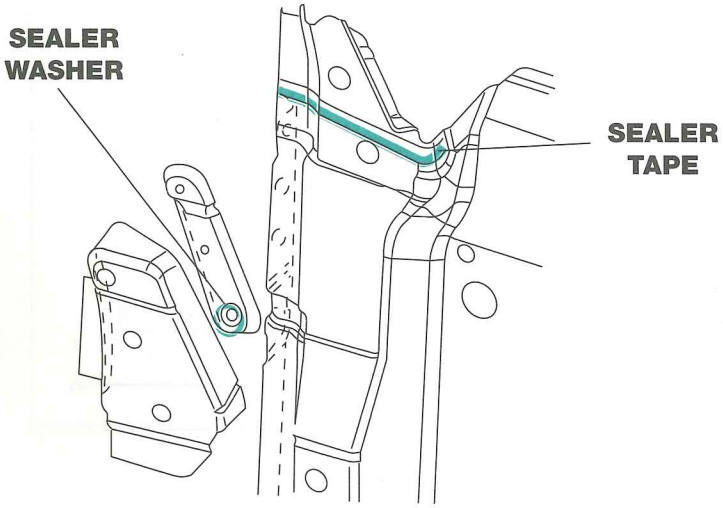


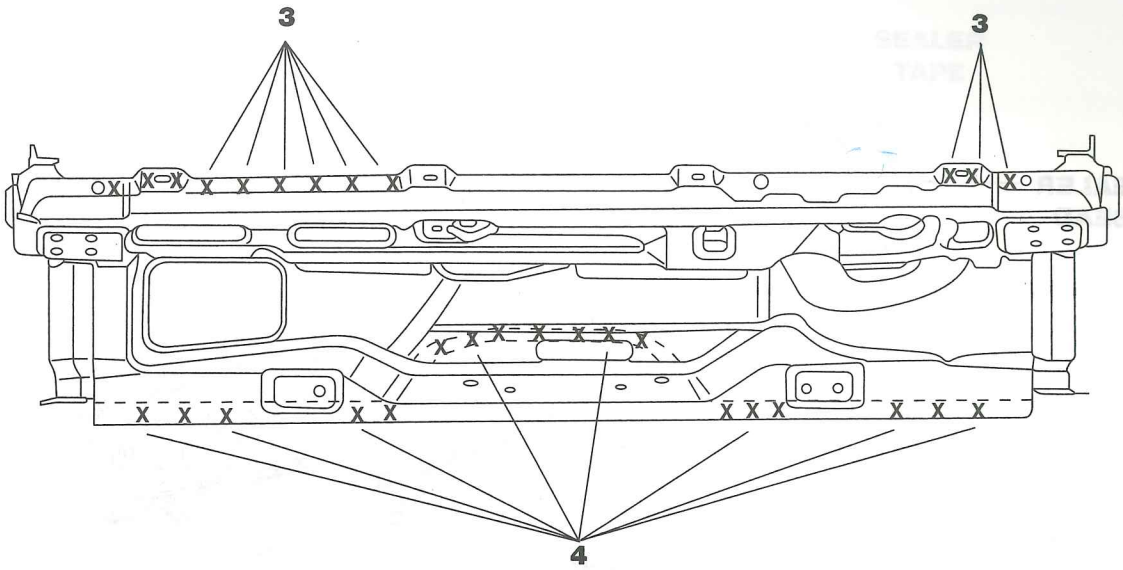
No.	Welded parts	F	R
1	A6 + A5	7	P7
2	A4 + A5	2	P2
3	A7 + A9	12	P12
4	A3 + A9	18	P18
5	A7 + A9	12	P12
6	A3 + A9	13	P13
7	A7 + A9 ASB LHD	32	P 32
8	A7 + A9 ASB RHD	32	P 32
9	A7 + A9 + A5	2	P2
10	A9 + A5 LHS RHS	7	P7
11	A3 + A9	6	P6
12	A3 + A8 LHS RHS	5	P5
13	A3 + A9	6	P6
14	A3 + A8 RHS LHS	4	P4

ASB = Add Sealer Bead
RHD = Right Hand Drive
LHD = Left Hand Drive
RHS = Right Hand Side
LHS = Left Hand Side

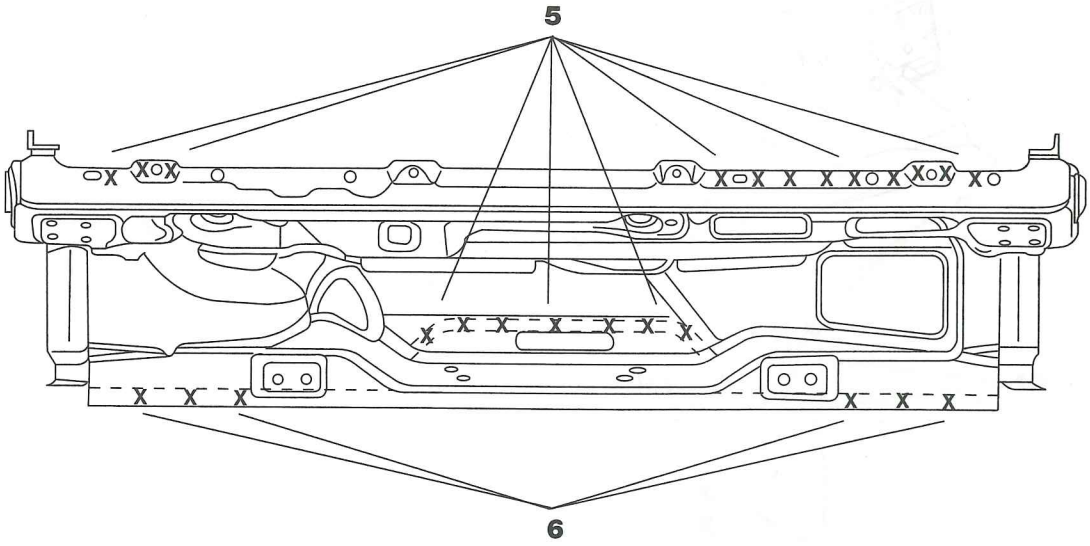




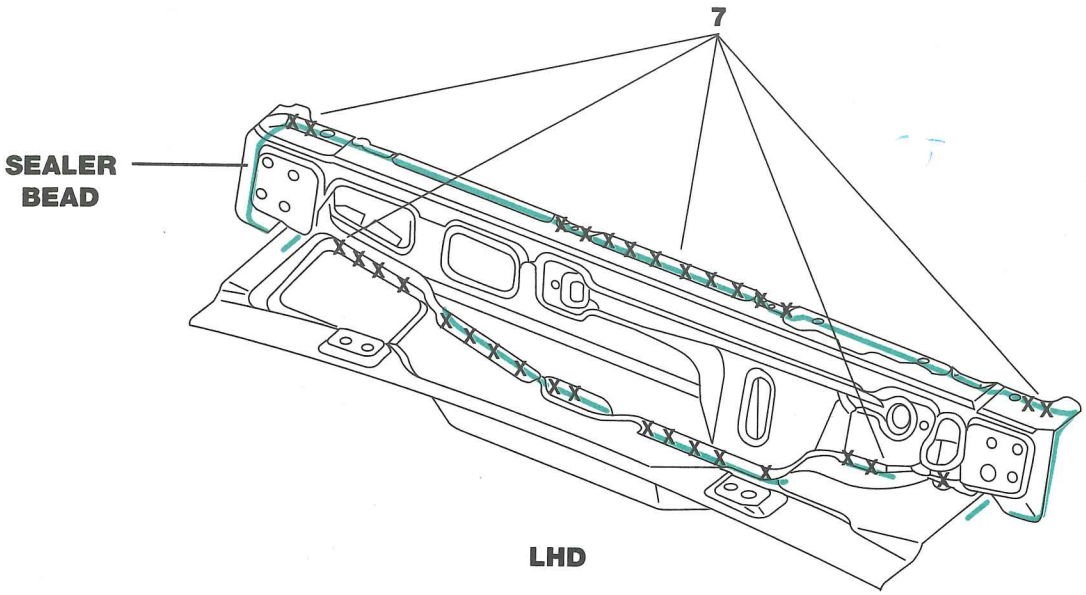




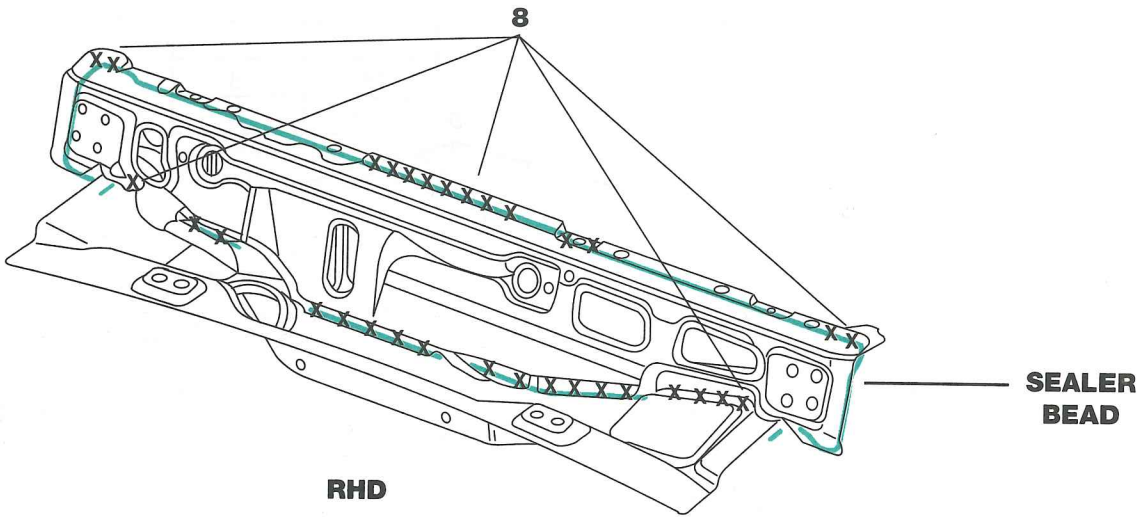
LHD



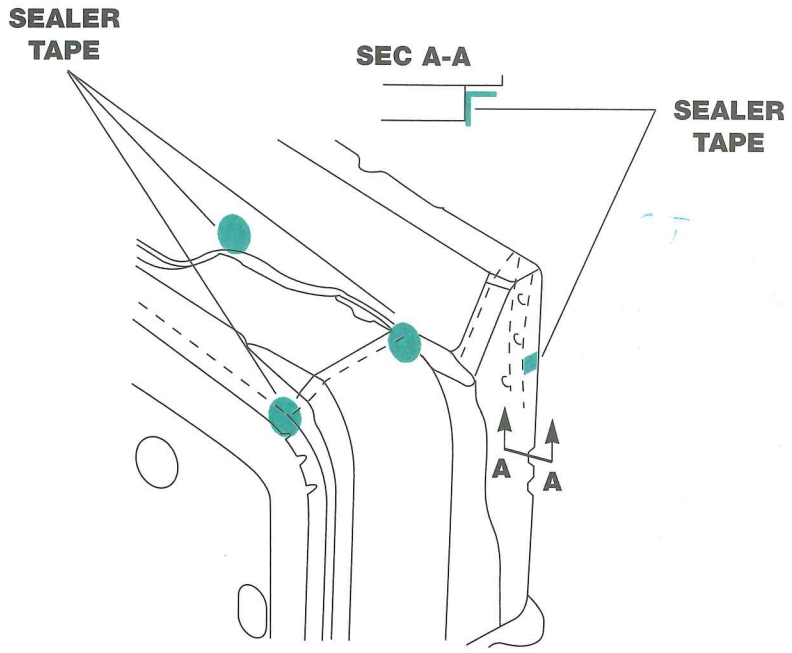
RHD

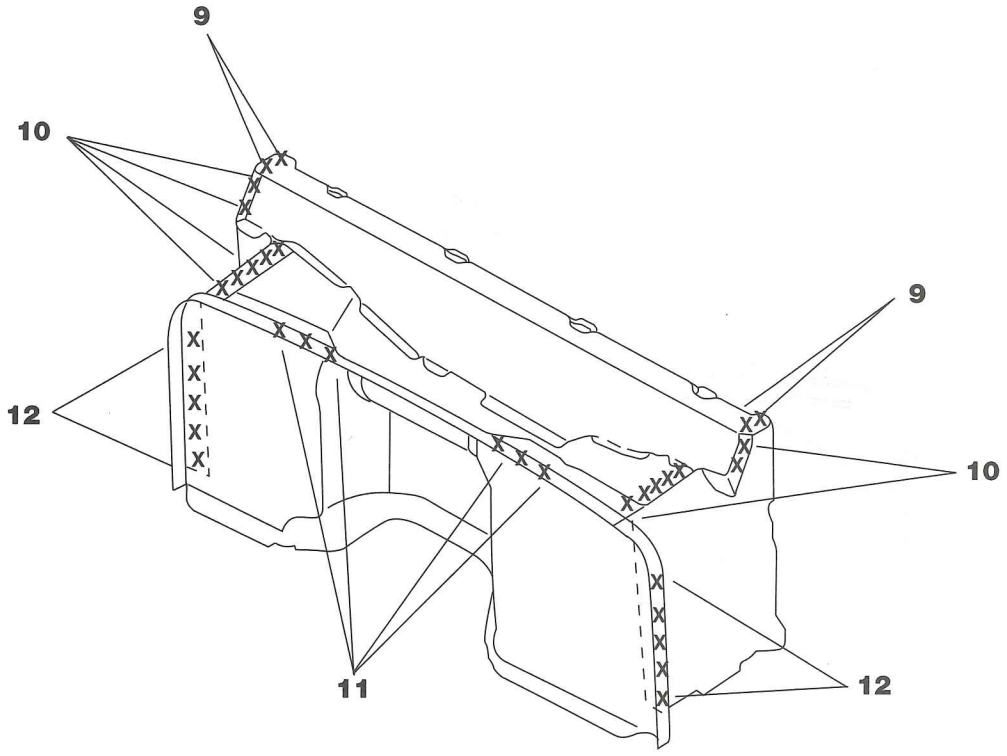


LHD



RHD


SEALER
TAPE
SEC A-A
SEALER
TAPE
A
A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10
9
12
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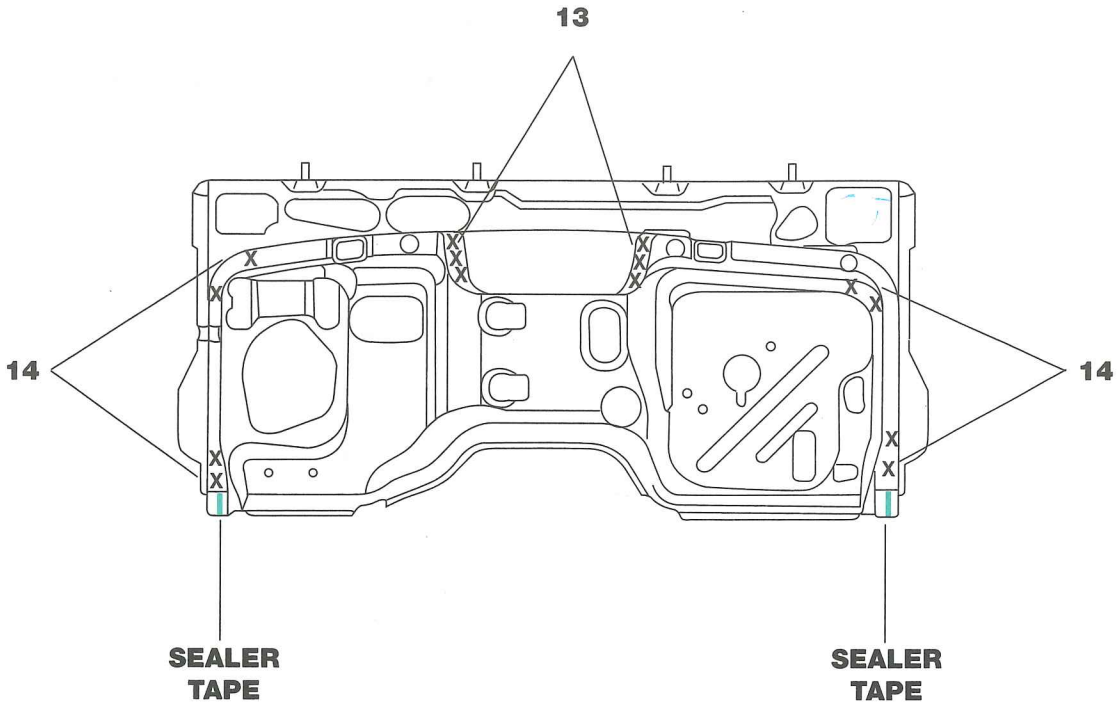
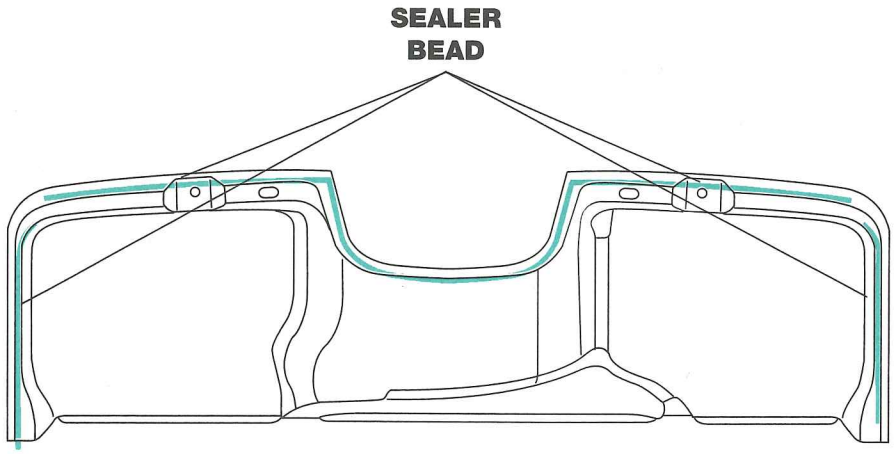
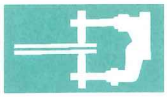

13
14
14
SEALER
TAPE
SEALER
TAPE


SEALER
BEAD



NOTES WITH REGARD TO REPAIR WORK

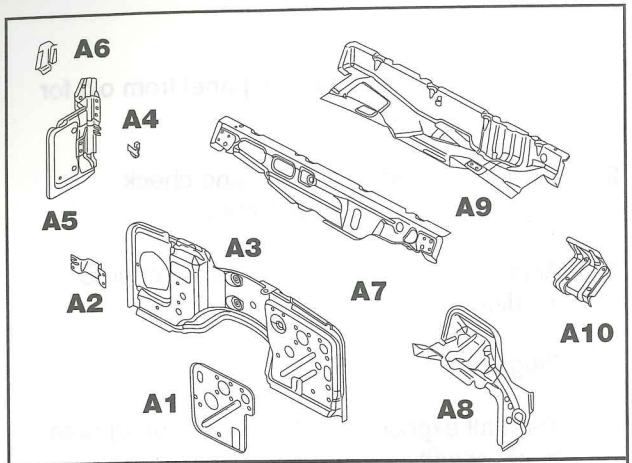
- The side aperture, cowl side upper panel and top end panel must be removed to replace the dash, cowl and plenum components.
- The dash, cowl and plenum are key components of the body structure.
- Correct mounting location and weld integrity are critical to replacement of these components.

REMOVAL

1. After removing all spot welds, you may have to use an air chisel to seperate the panels.
2. Clean all attaching areas on remaining panels.
3. Use removed panel as template for weld placement on new panel.

INSTALLATION

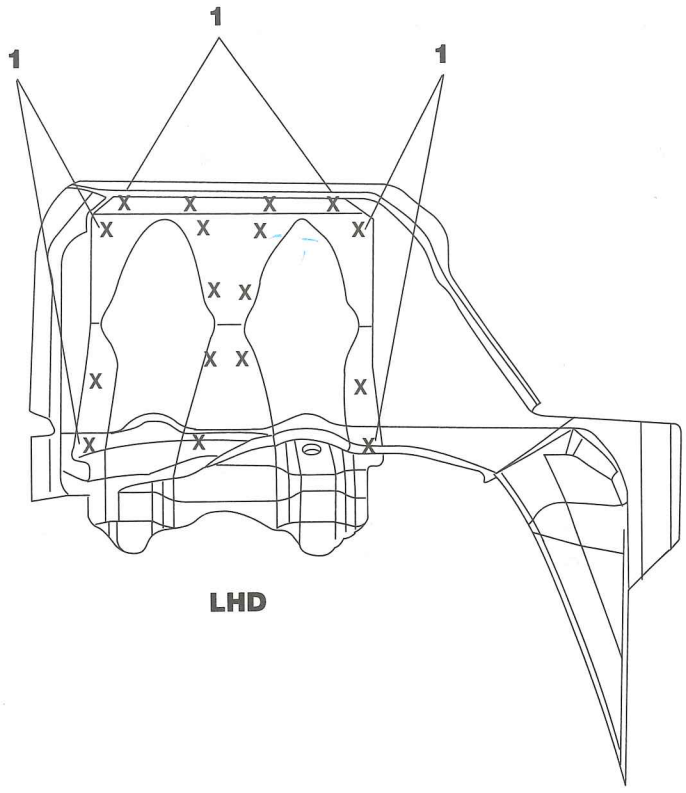
1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements
3. Apply new sealer where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.



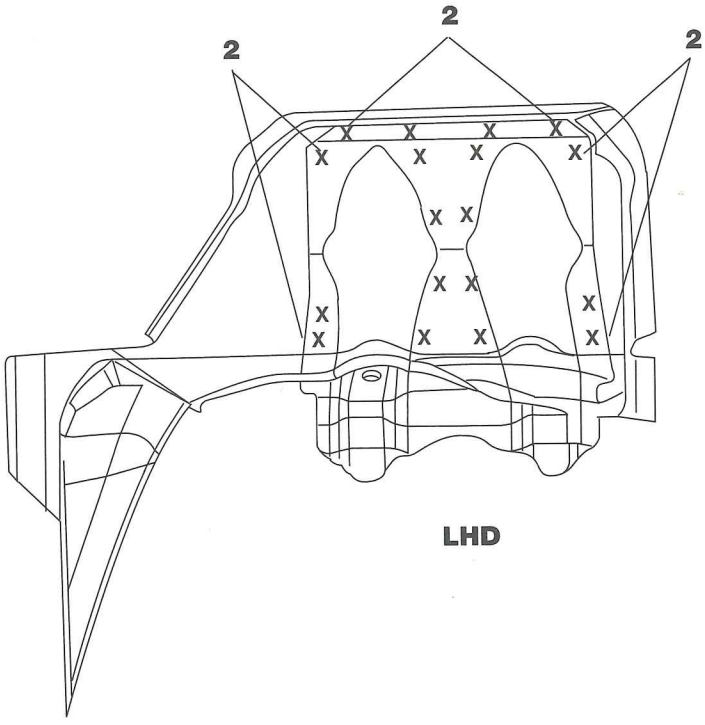
No.	Welded parts	F	R
1	A8 + A10 LHD	18	P18
2	A8 + A10 RHD	18	P18
3	A8 + A7 + A9 ASB LHD	7	P7
4	A8 + A9 ASB LHD	11	P11
5	A8 + A7 + A9 ASB RHD	7	P7
6	A8 + A9 RHD	11	P11
7	A8 + A5 LHD	7	P7
8	A8 + A5 RHD	7	P7
9	A2 + A7 LHD	4	P4
10	A1 + A3 ASB LHD	17	P17
11	A1 + A3 ASB RHD	15	P15
12	A2 + A3 RHD	4	P4

ASB = Add Sealer Bead
RHD = Right Hand Drive
LHD = Left Hand Drive

RHS = Right Hand Side
LHS = Left Hand Side



LHD



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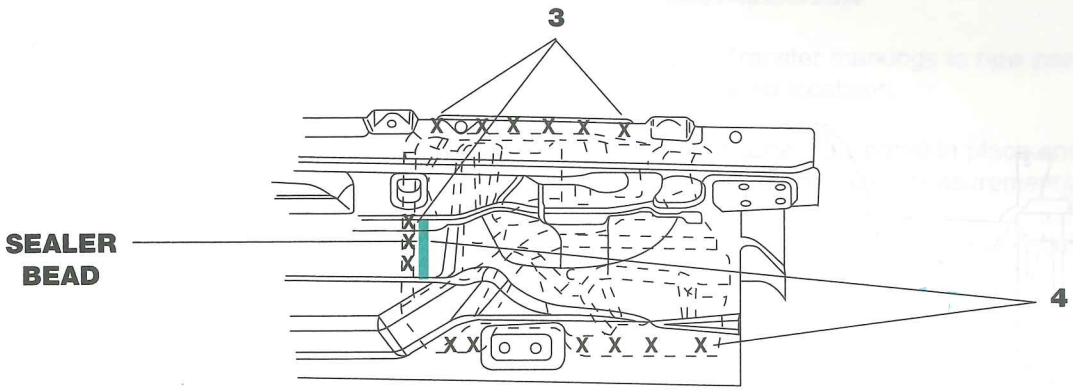
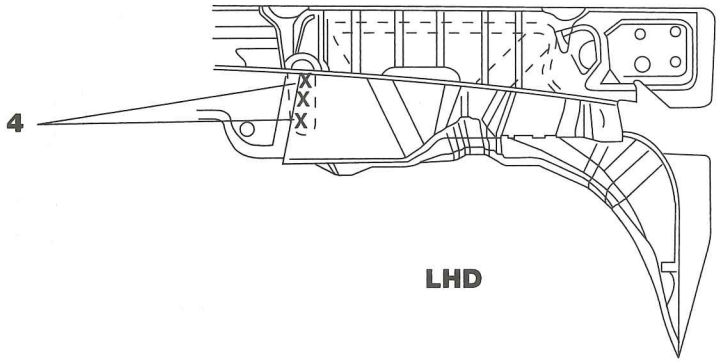
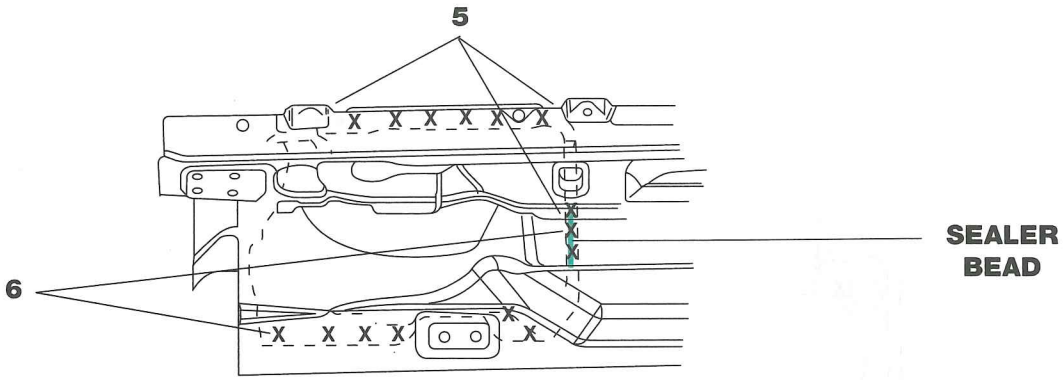
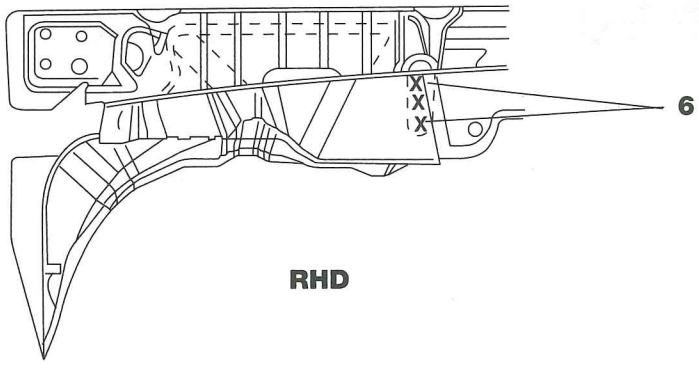


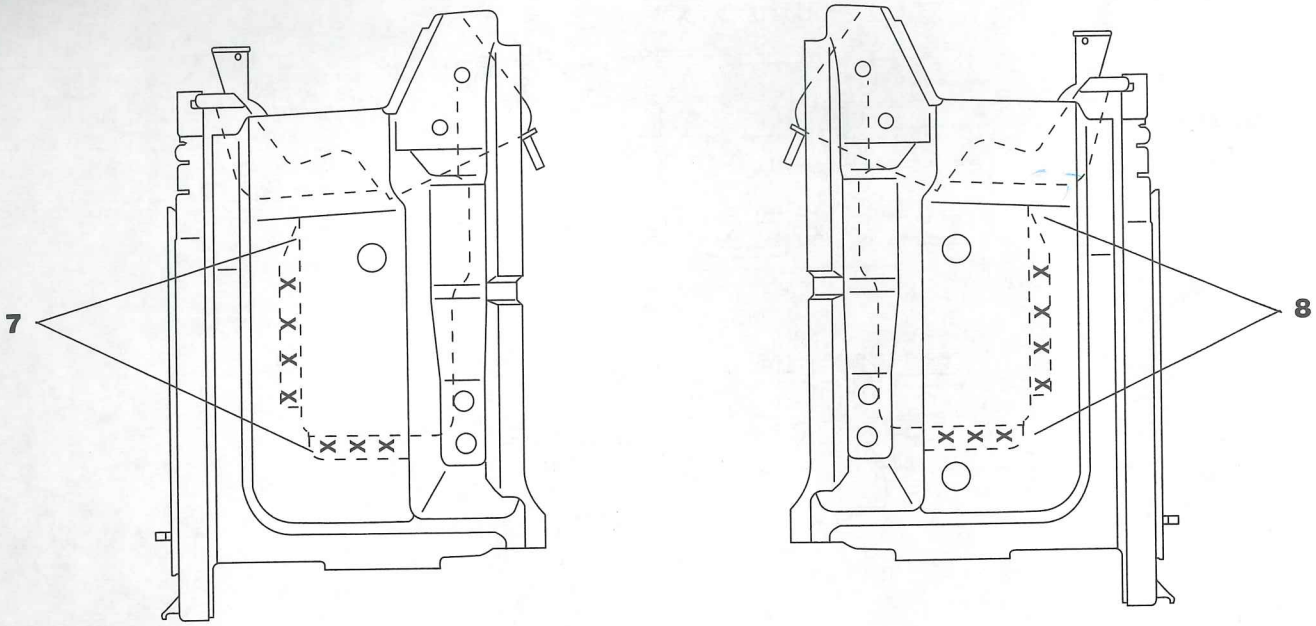


LHD



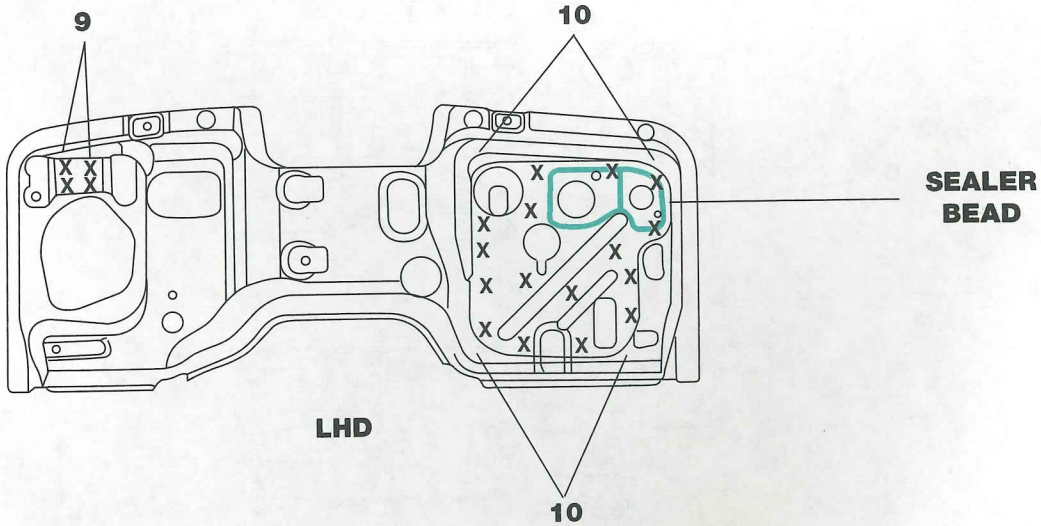


RHD



LHD

RHD



LHD

NOTES WITH REGARD TO REPAIR WORK

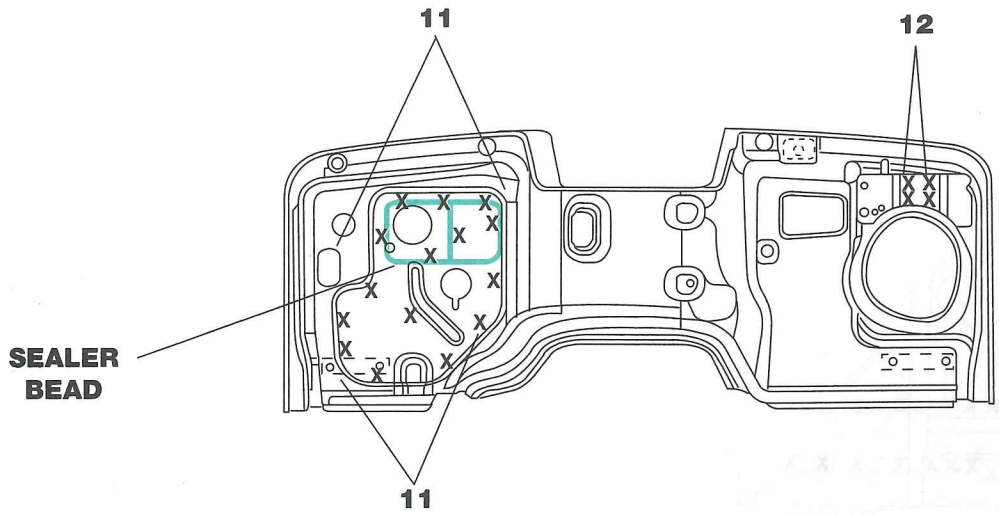
- The side aperture, cowl side upper panel and top end panel must be removed to replace the dash, cowl and plenum components.
- The dash, cowl and plenum are key components of the body structure.
- Correct mounting location and weld integrity are critical to replacement of these components.

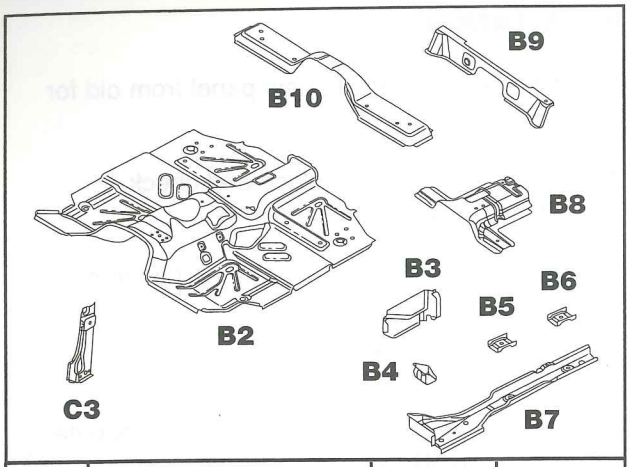
REMOVAL

1. Use a spot weld cutter to remove spot welds. Use an air chisel to separate components where sealer was used.
2. Use removed panel as template for weld placement on new panel.
3. Clean all sealer from areas where new panels attach.

INSTALLATION

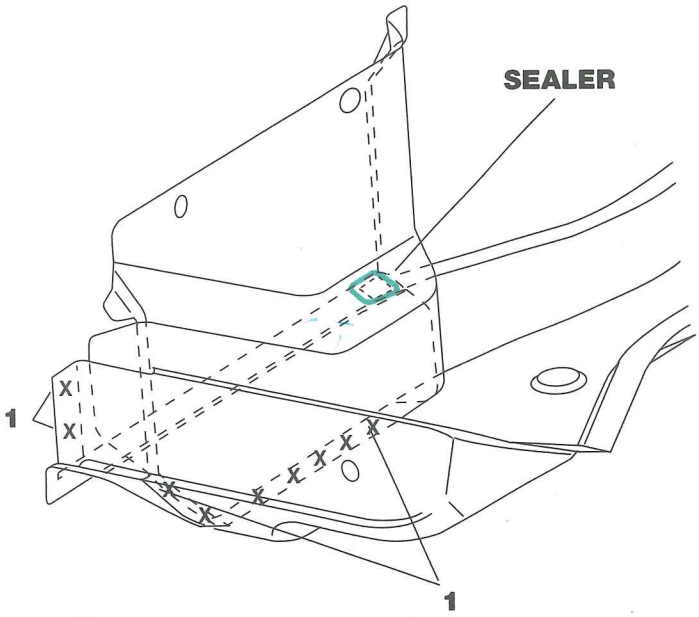
1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements.
3. Apply new sealer where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.

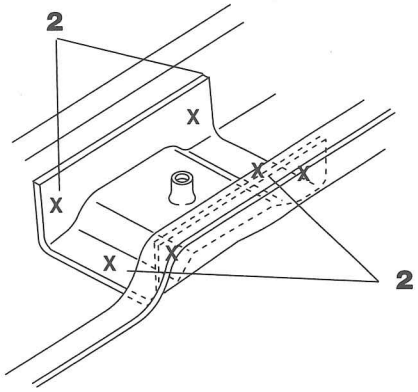


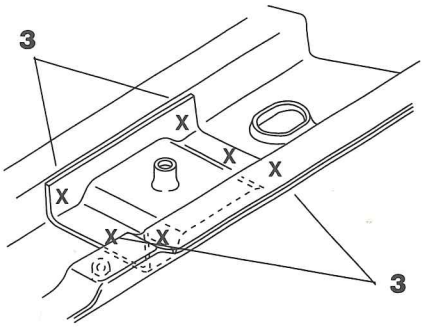


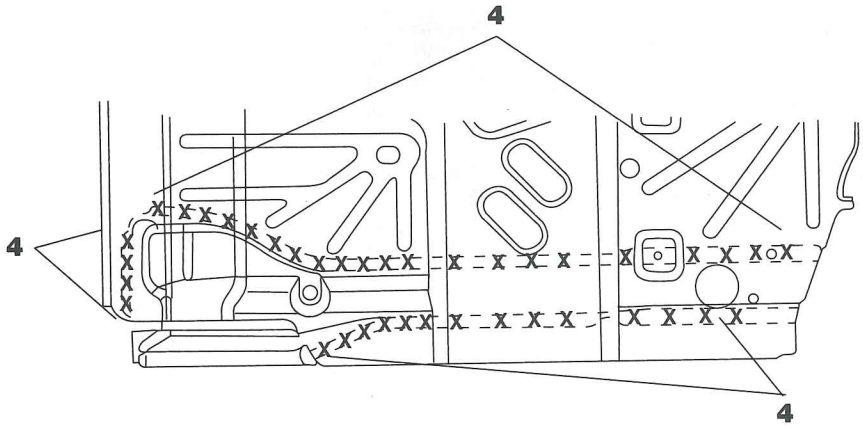
No.	Welded parts	F	R
1	B3 + B7	9	P9
2	B5 + B7	6	P6
3	B6 + B7	6	P6
4	B2 + B7 RHS LHS	41	P41
5	B4 + B7	8	P8
6	B2 + B3	10	P10
7	C3 + B2 + B7	4	4
8	B2 + B10	33	33
9	B2 + B10 + B7 RHS LHS	4	P4
10	B2 + B9 ASB	24	P24
11	B2 + B1	3	P3
12	B2 + B8	39	P39

ASB = Add Sealer Bead
RHS = Right Hand Side
LHS = Left Hand Side

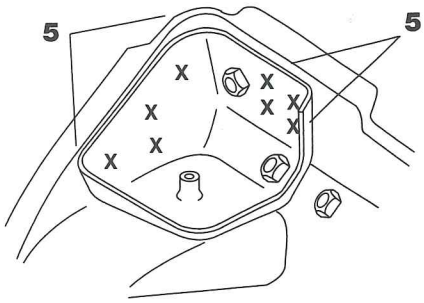


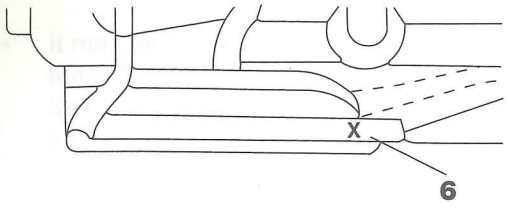




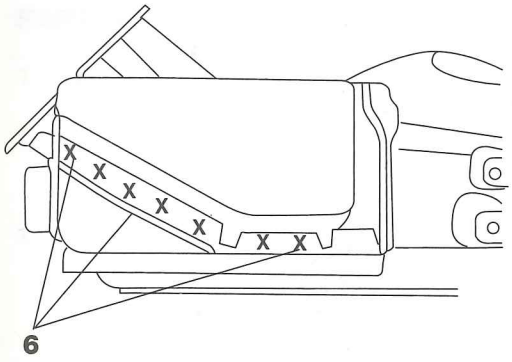


NOTE: These welds are in the same position for both left & right sides

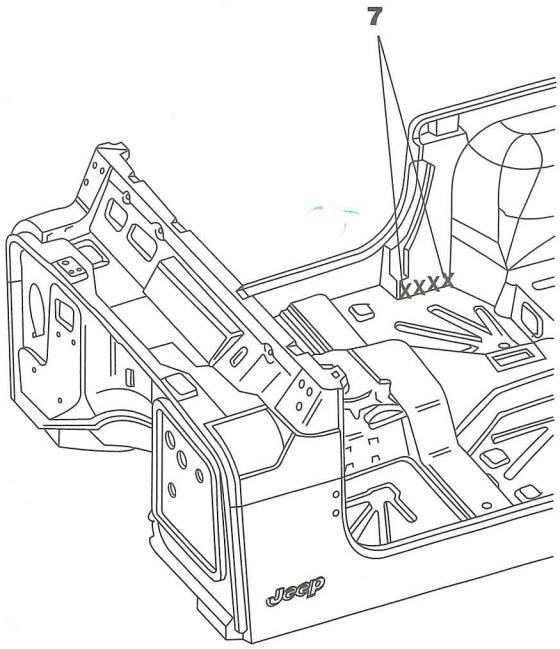




TOP VIEW



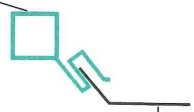
LEFT SIDE VIEW



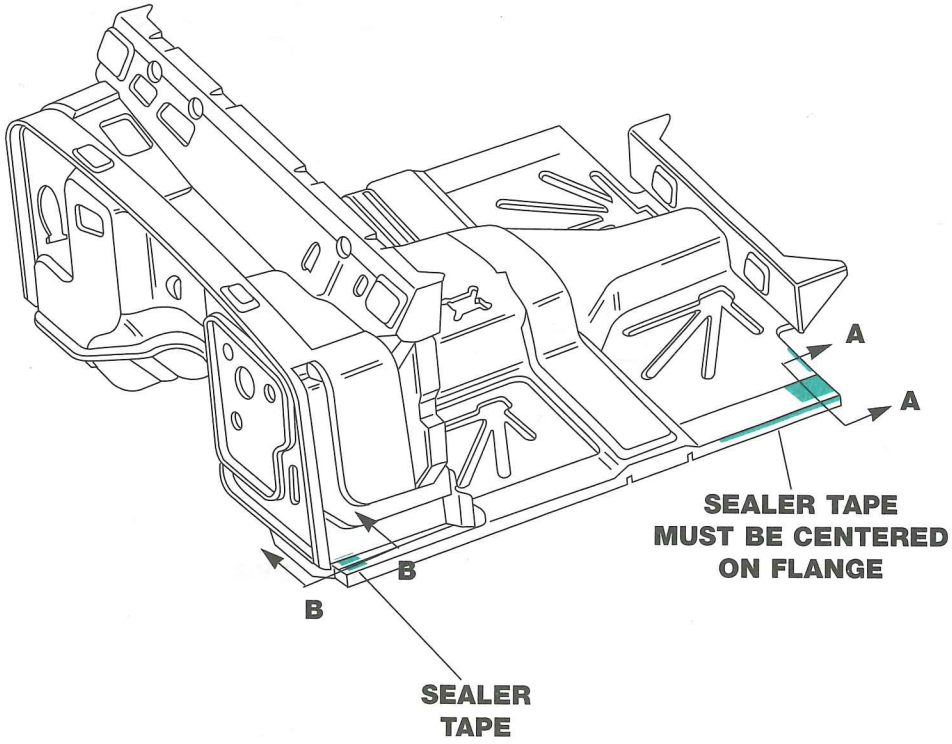
REAR OF FRONT FLOOR

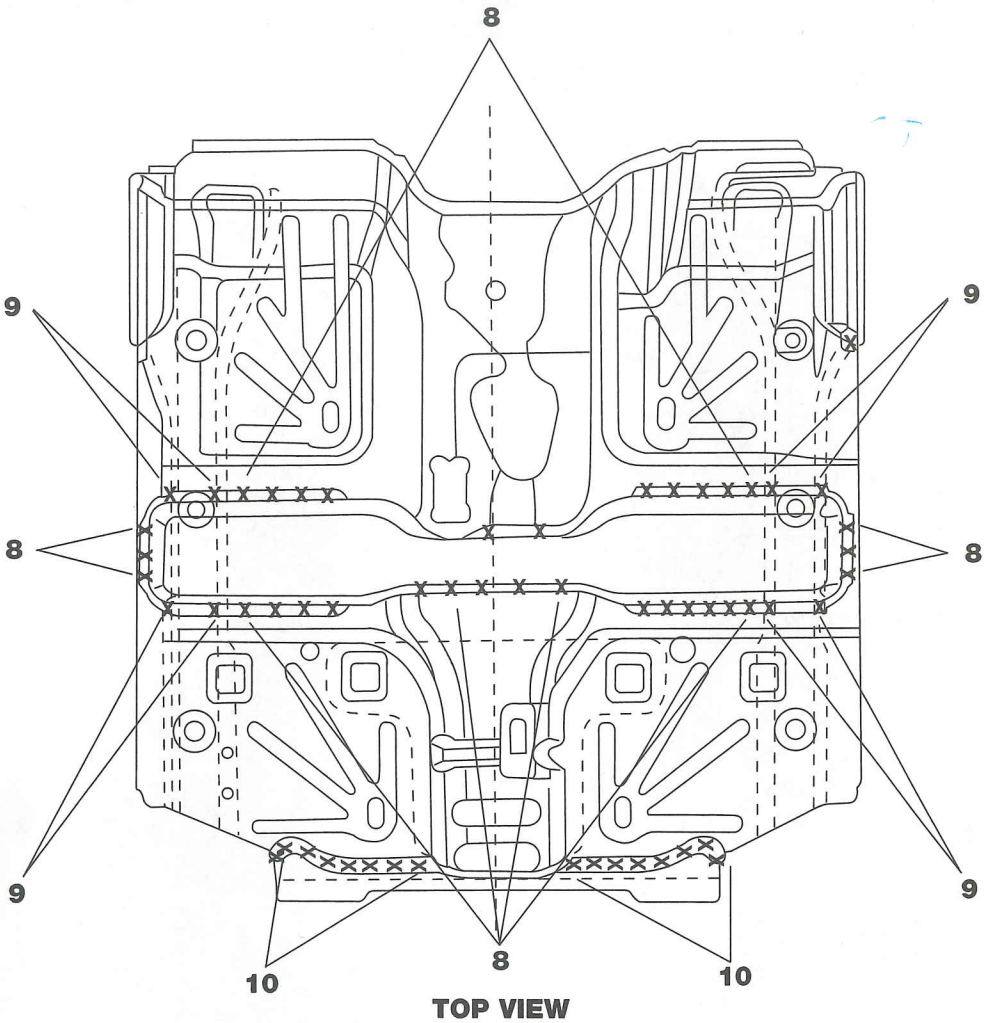
SEC A-A

SEALER TAPE

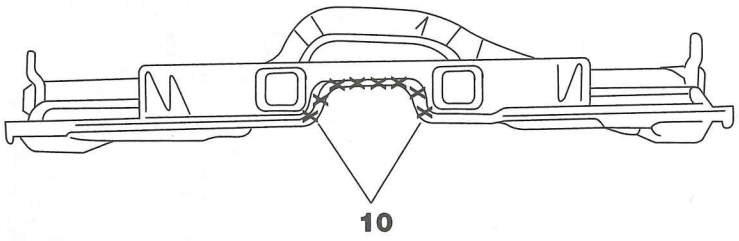


SEC B-B





TOP VIEW



REAR VIEW

NOTES WITH REGARD TO REPAIR WORK

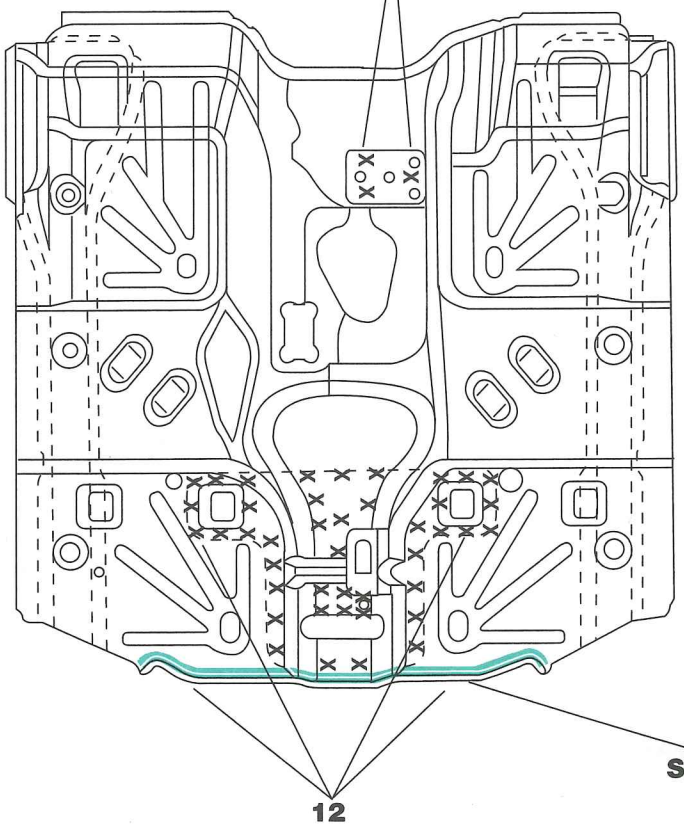
- Many different components must be removed in order to replace these components.
- It may be more convenient to remove some of these body components in pieces. Try to maintain the original shape so the part can be used as a template to locate plug weld holes in new parts.
- These parts are all critical for alignment of other components, so be sure of alignment.

REMOVAL

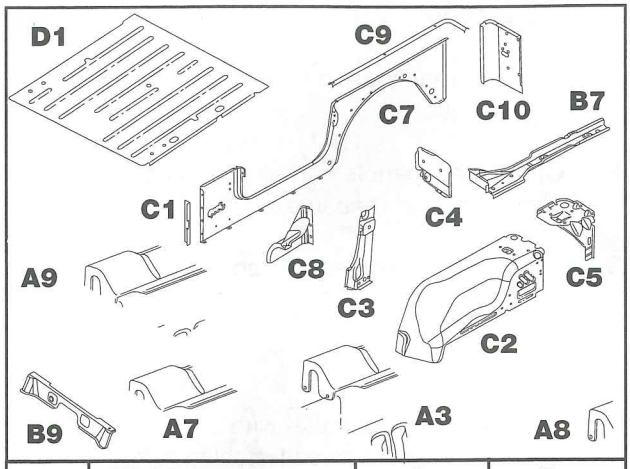
1. Use a spot weld cutter to remove spot welds.
2. Use removed panel as template for weld placement on new panel.
3. Clean all sealer from areas where new panels attach.

INSTALLATION

1. Transfer markings to new panel from old for weld locations.
2. Clamp new panels into place and check alignment and measurements.
3. Apply new sealer where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.



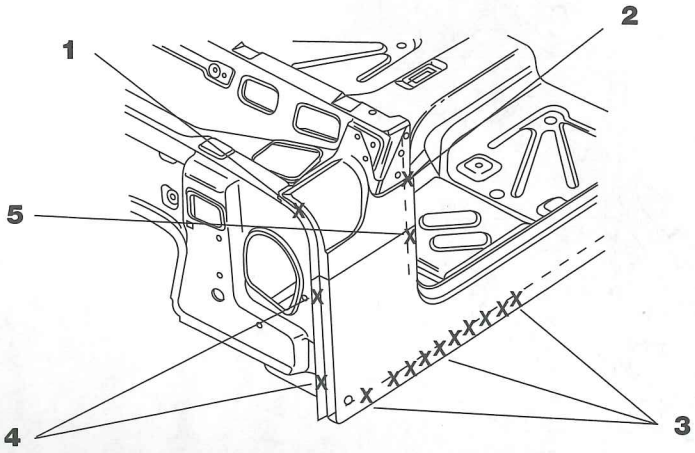
TOP VIEW



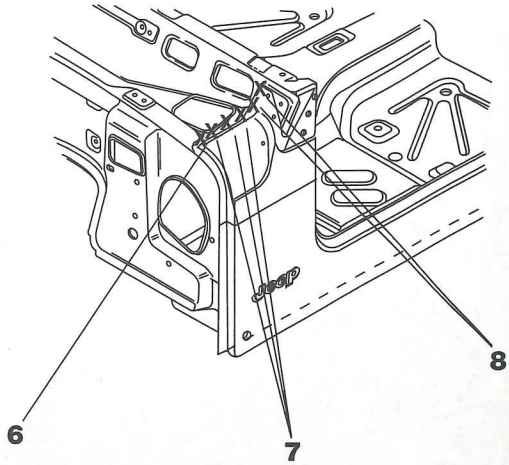
No.	Welded parts	F	R
1	C1 + A3 LHD	1	P1
2	C8 + A3 LHD	1	P1
3	C7 + B7 LHD	10	P10
4	C1 + A3 LHD	2	P2
5	C7 + A3 LHD	1	P1
6	A9 + C8 + A8	1	P1
7	A9 + C8	3	P 3
8	A7 + C8	2	P 2
9	C8 + A3 RHD	1	P1
10	C8 + A3 RHD	1	P1
11	C1 + A3 RHD	2	P2

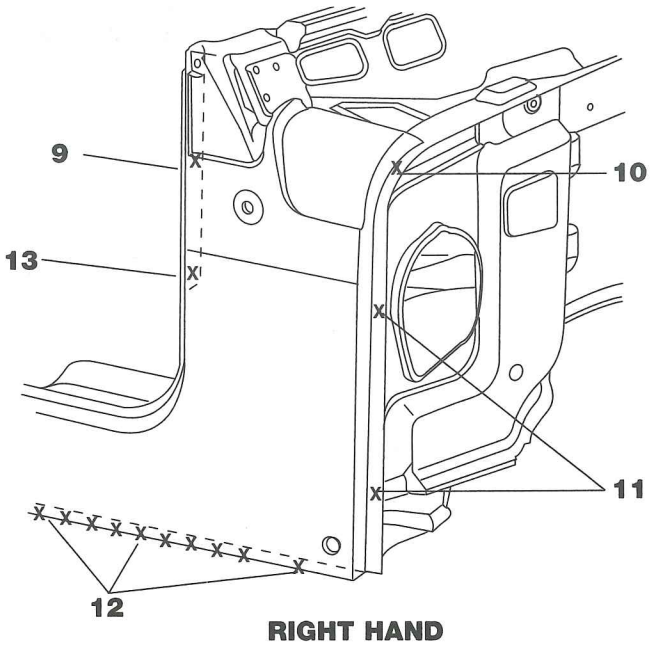
No.	Welded parts	F	R
12	C7 + B7 RHD	10	P10
13	C7 + A3 RHD	1	P1
14	C8 + A3 RHD	4	P4
15	C7 + B3 RHD	3	P3
16	C7 + B7 RHD	4	P4
17	C3 + C7 LH RH ASAB	3	P3
18	C10 + C5 LHD RHD	3	P3
19	C7+ B7 LHD	1	P1
20	C7 + B7 LHD	10	P10
21	C2 + C7 RHD	3	P3
22	C7 + B7 RHD	11	P11
23	C1 + C7	5	P5
24	C7 + C8	6	P6
25	C7 + C10	9	P9
26	D1 + C2 + C5	4	P4
27	D1 + C2	1	P1
28	D1 + C2	1	P1
29	D1 + C2 + C5	4	P4
30	C3 + C7	9	P9
31	C9 + C7	12	P12
32	C9 + C7	3	P3
33	A3 + C8	6	P6
34	A3 + C1	7	P7

RH = Right Hand LH = Left Hand
ASAB = Add Structural Adhesive Bead

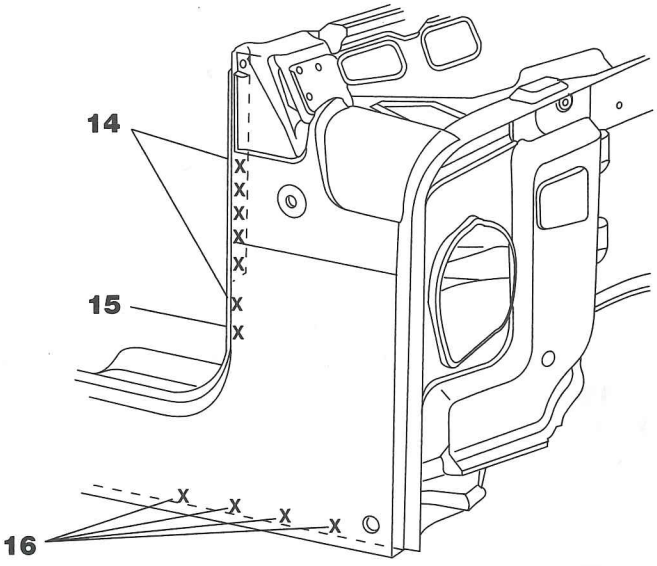


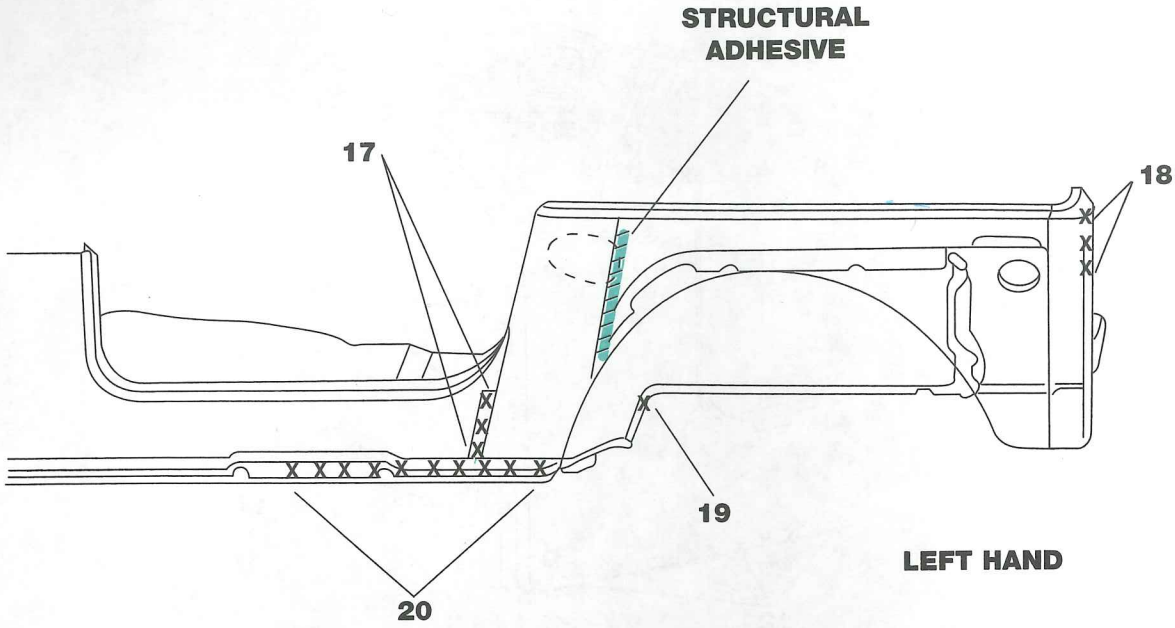
LEFT HAND DRIVE

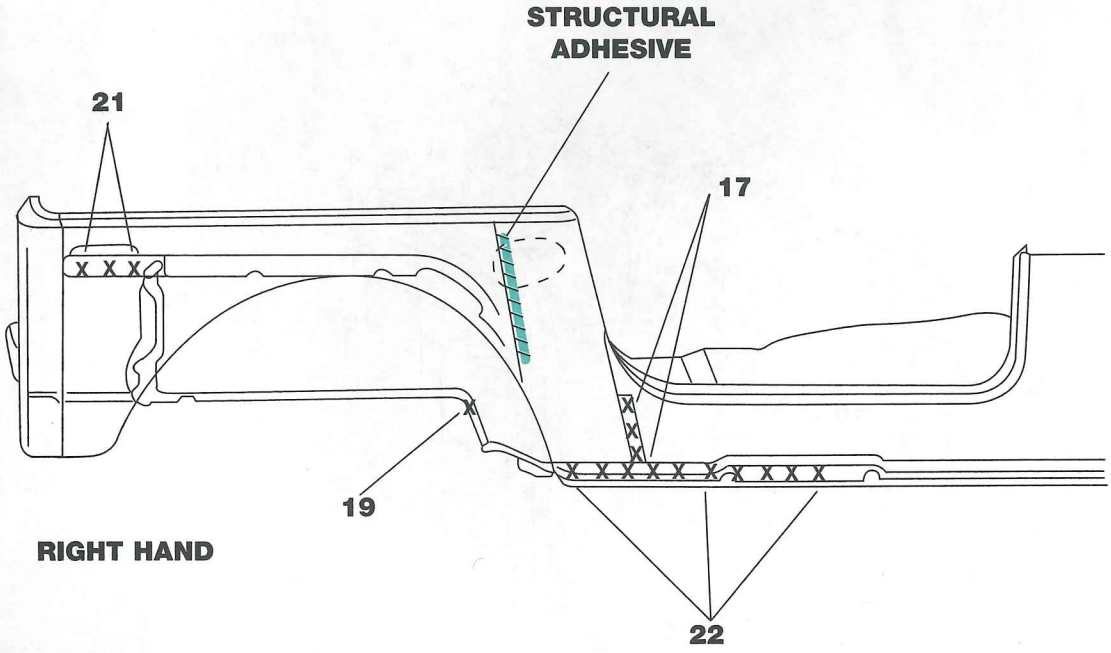


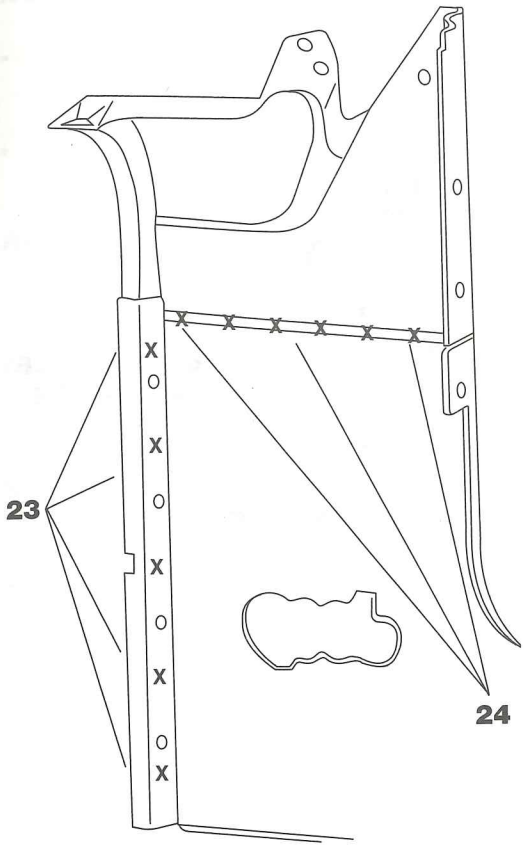


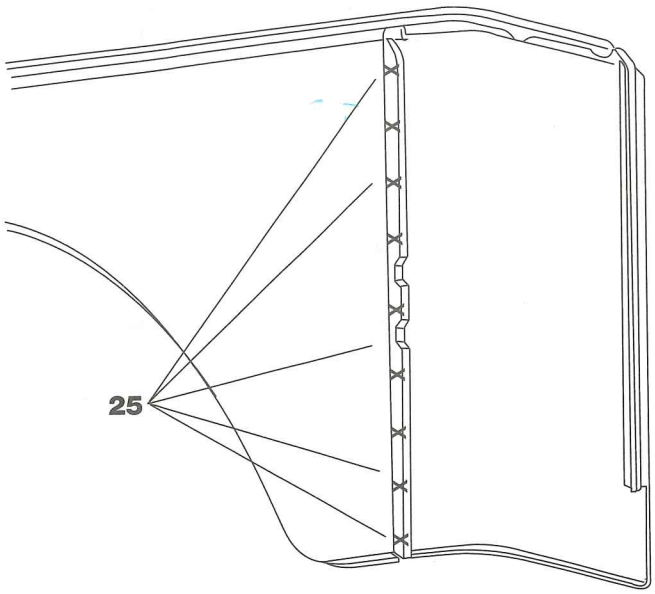
RIGHT HAND DRIVE

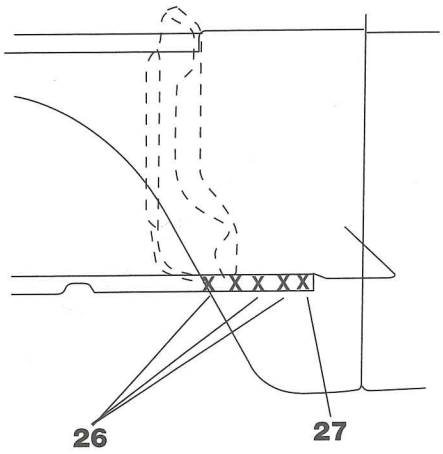



STRUCTURAL
ADHESIVE
17
18
19
20
LEFT HAND

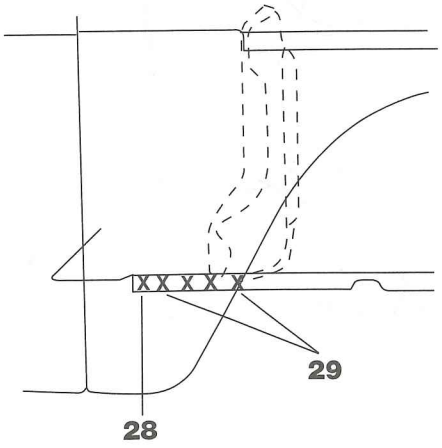

STRUCTURAL
ADHESIVE
21
17
19
22
RIGHT HAND



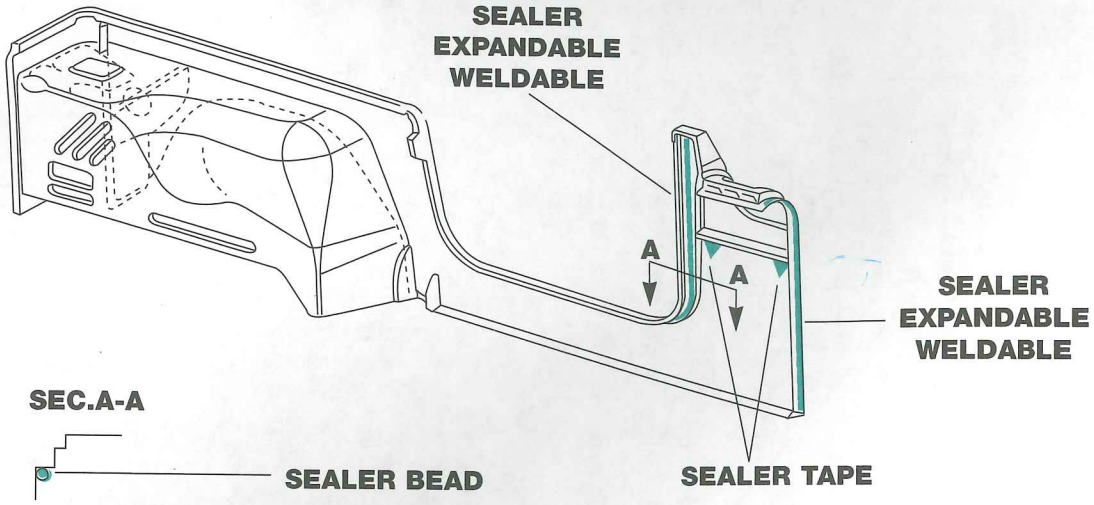




LEFT SIDE

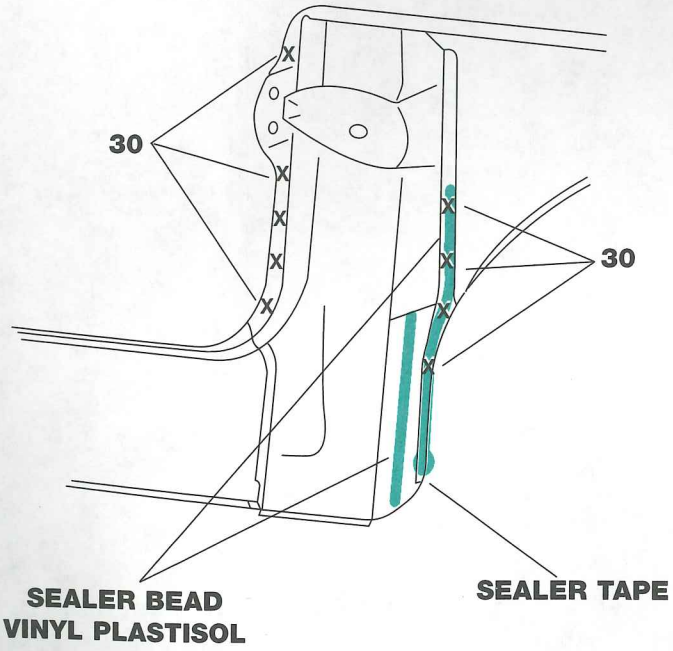


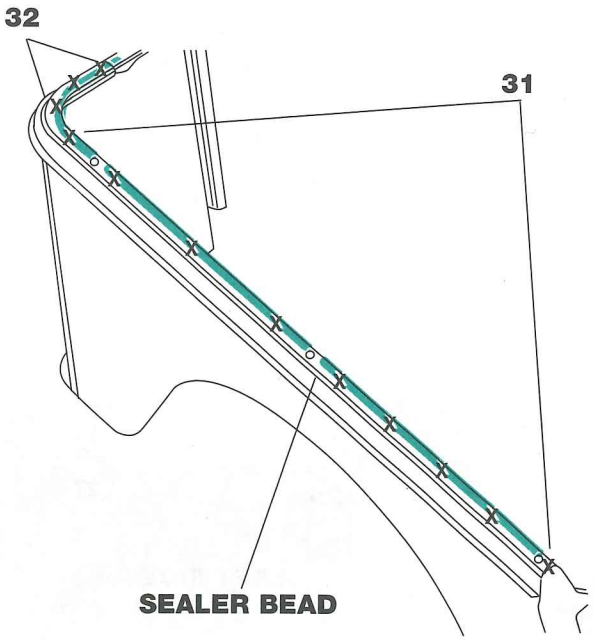
RIGHT SIDE


SEALER
EXPANDABLE
WELDABLE
A
A
SEALER
EXPANDABLE
WELDABLE
SEALER TAPE

SEC.A-A

SEALER BEAD


30
30
SEALER BEAD
VINYL PLASTISOL
SEALER TAPE


32
31
SEALER BEAD

NOTES WITH REGARD TO REPAIR WORK

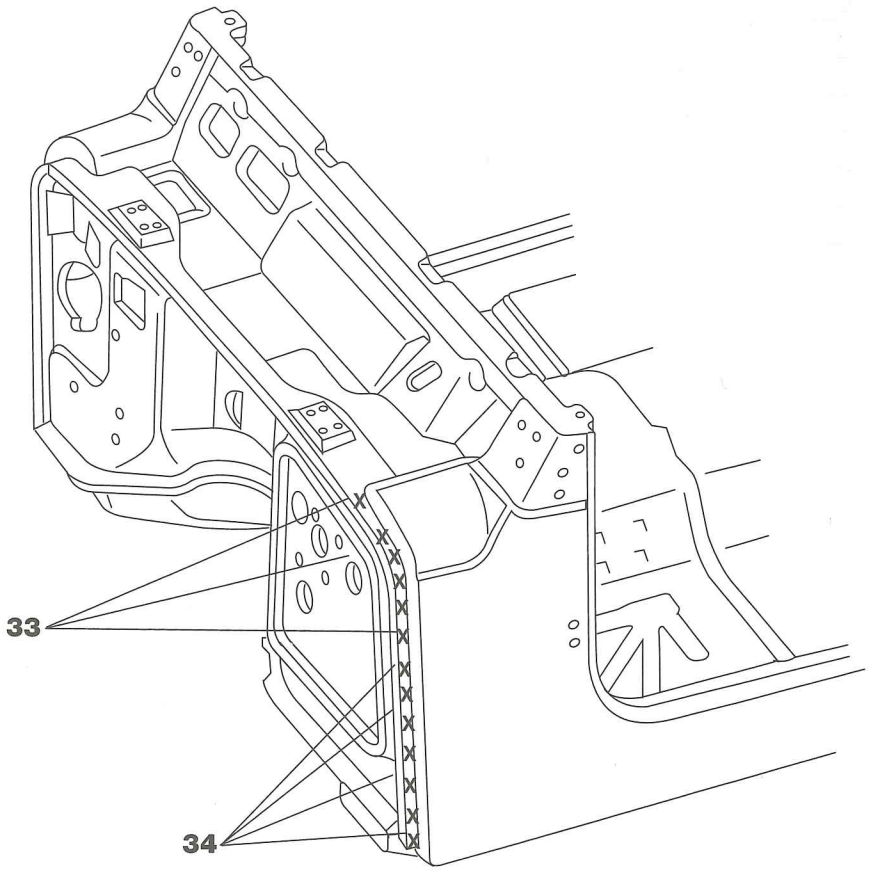
- The side aperture must be removed carefully to minimize damage to attaching panels.
- Always remove flammable materials prior to work.

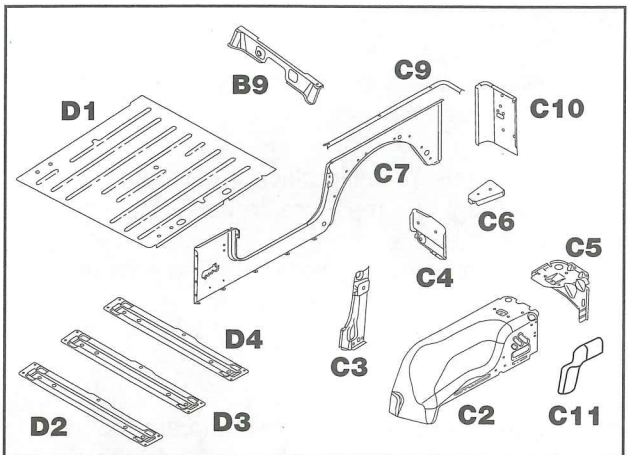
REMOVAL

1. Use a spot weld cutter to remove spot welds.
2. After removal of spot welds you may have to use an air chisel to separate the side aperture from the inner panels.
3. Use the original panel as a templet to place plug weld holes in new panel.
4. Clean and align all mating panels to ensure a perfect fit of the new panel prior to welding.

INSTALLATION

1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements.
3. Apply new sealer where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.

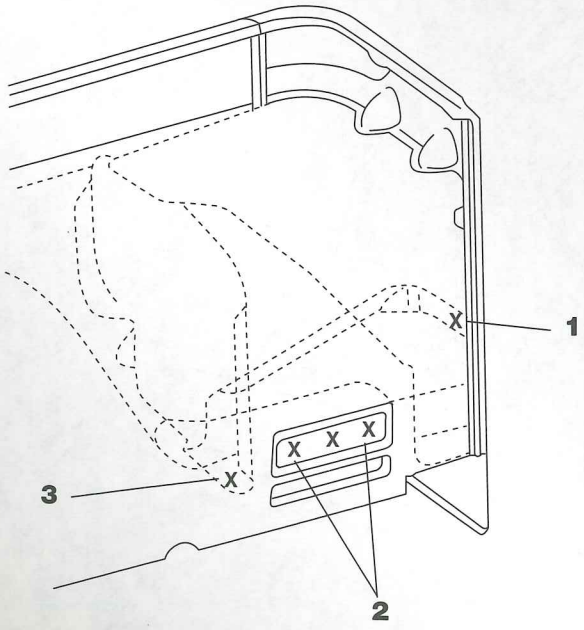


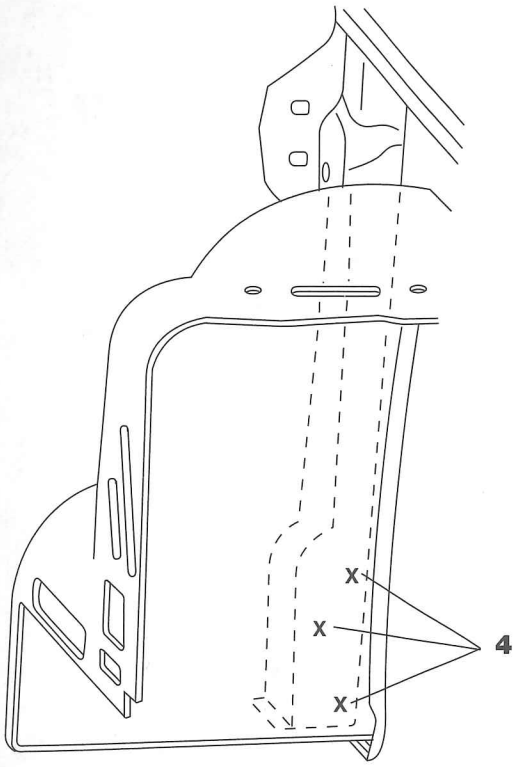


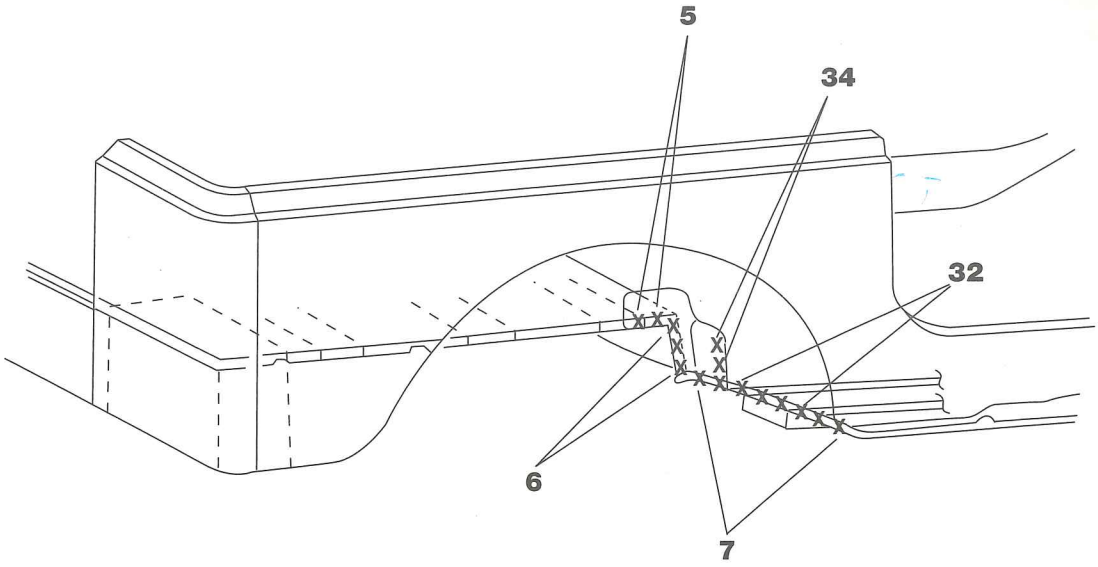
No.	Welded parts	F	R
1	C6 + C10	1	P1
2	C2 + C6	3	P3
3	C4 + C6	1	P1
4	C2 + C3	3	P3
5	C2 + B9 + C11	2	P2
6	C2 + B9 + C11	3	P3
7	B2 + C2	6	P6
8	C2 + D1 + D4	4	P4
9	C2 + D1 +D3	4	P4
10	C2 + D1 + D2	4	P4
11	C2 + D1	7	P7
12	C7 + C2	3	P3
13	C10 + D5	9	P9
14	C2 + D1	5	P5
15	C2 + C5	11	P11
16	C2 + C7	9	P9

No.	Welded parts	F	R
17	C2 + C4	2	P2
18	C2 + C7	9	P9
19	C2 + C5	12	P12
20	C2 + C4	2	P2
21	C4 + C5	1	P1
22	C5 + C10 ASAB	8	P8
23	C4 + C7	4	P4
24	C5 + C7	3	P3
25	C4 + C5	1	P1
26	C4 + C7	4	P4
27	C5 + C10	6	P6
28	C2 + C5 + C4	3	P3
29	C2 + C4	2	P2
30	C2 + C5	1	P1
31	C2 + C5	3	P3
32	B2 + B7 + C2	2	P2
33	D1 + C2 + C11	2	P2
34	C2 + C11	2	P2

ASAB = Add Sealer Adhesive Bead



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34
32
6
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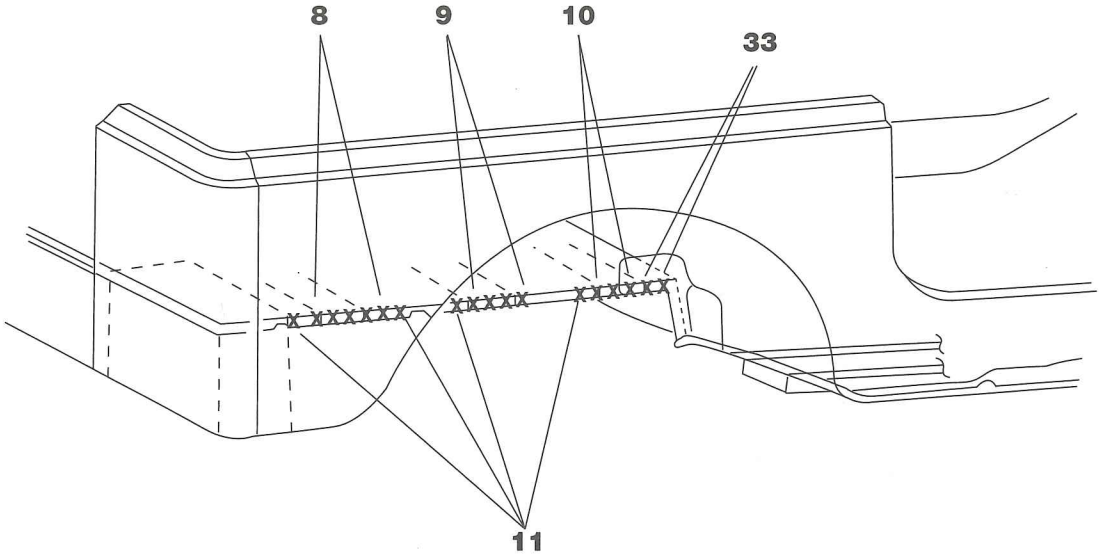
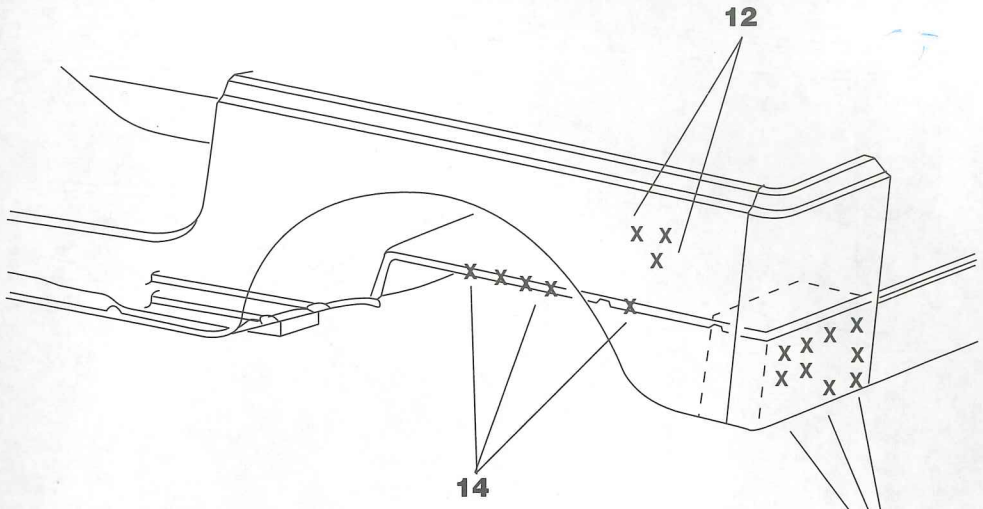
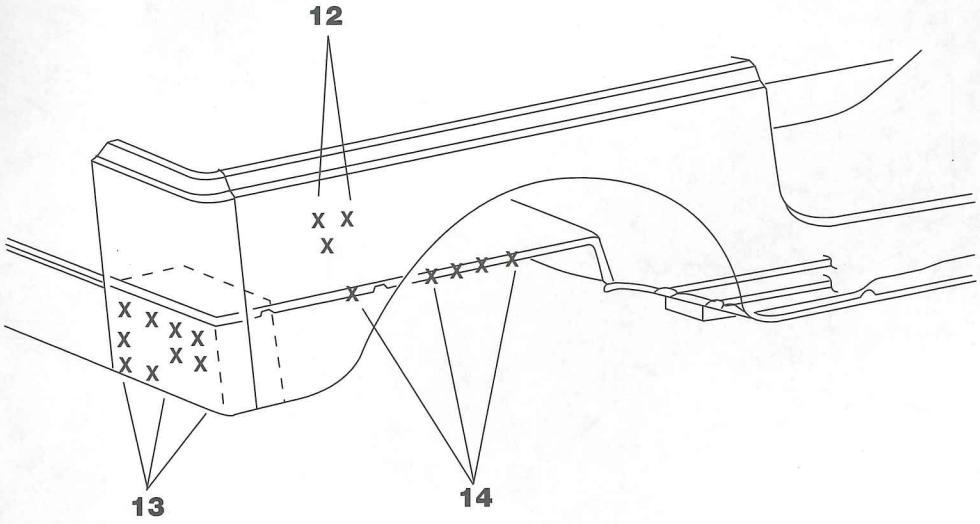
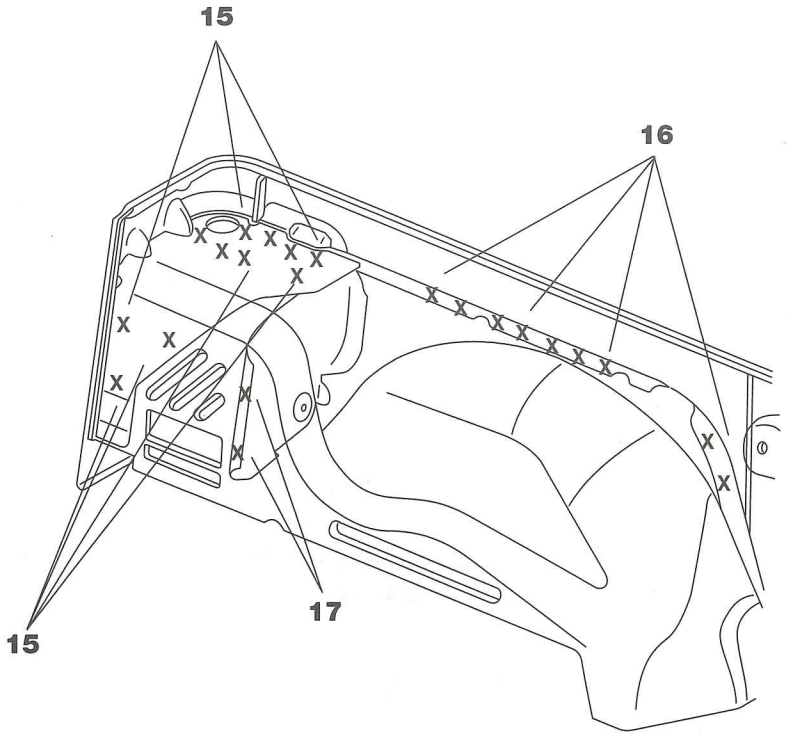

8
9
10
33
11



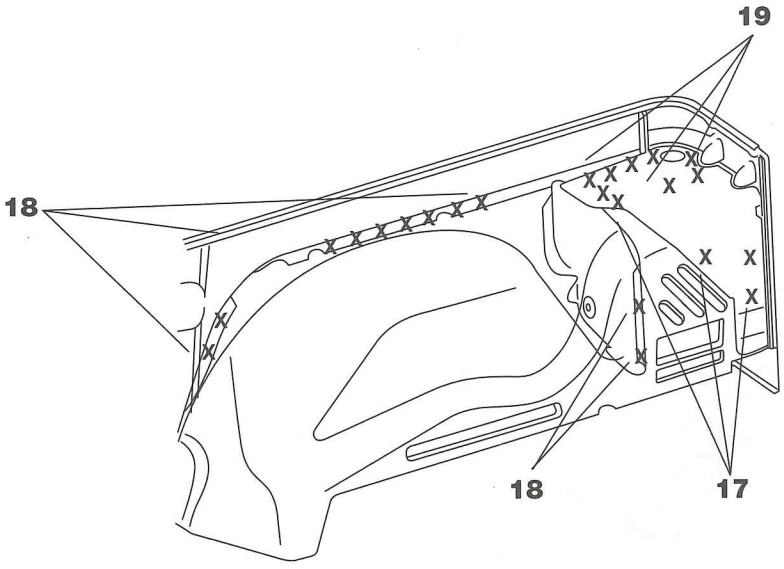
LEFT SIDE



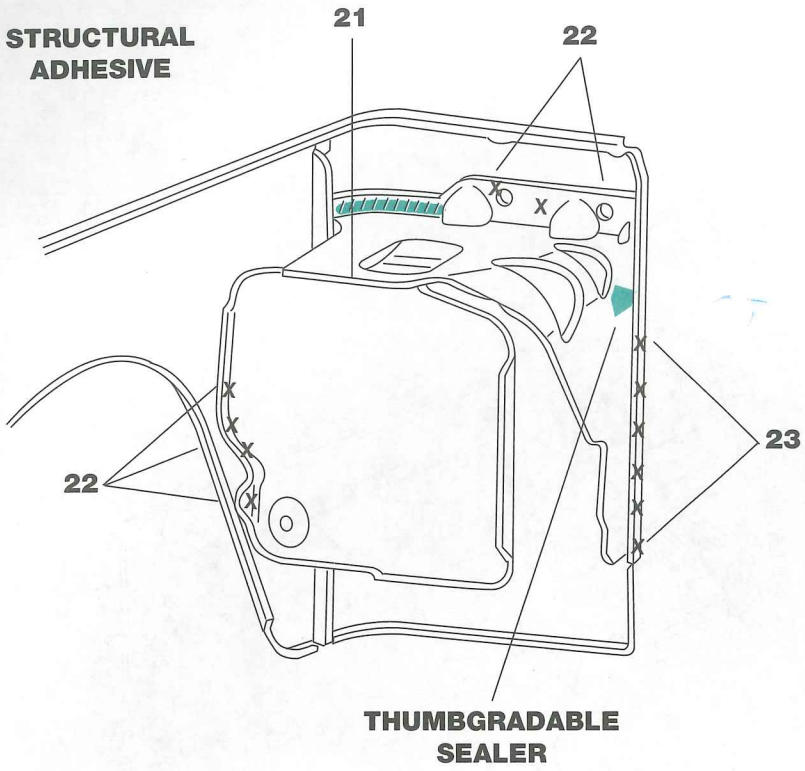
RIGHT SIDE



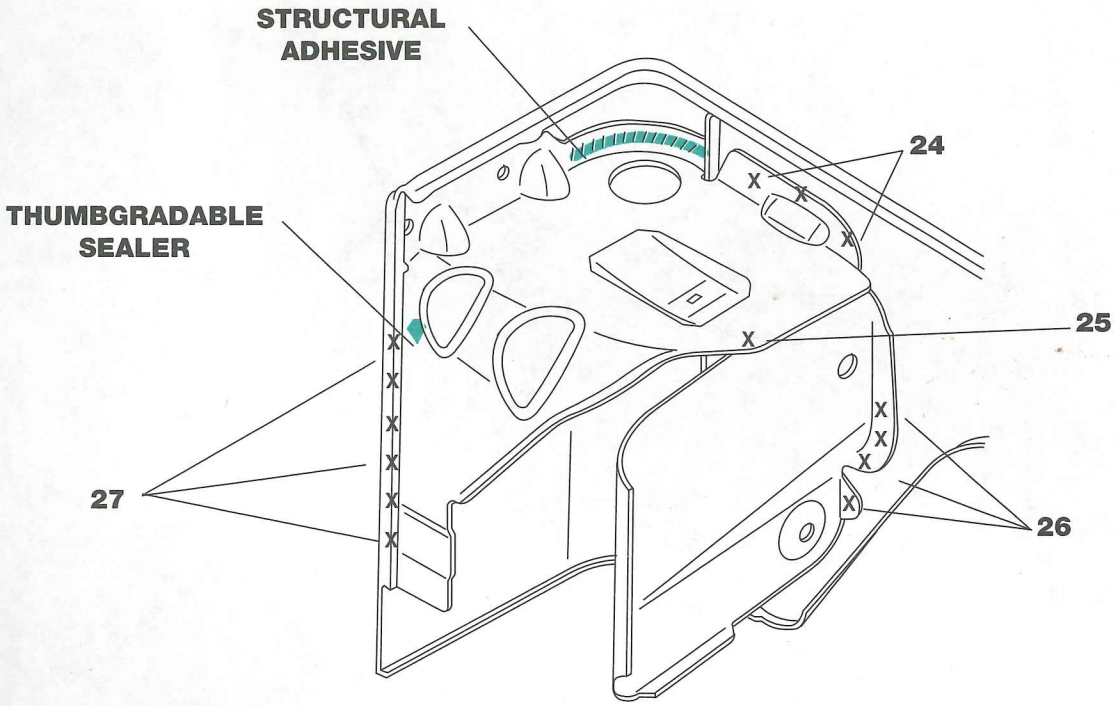
LEFT SIDE



LEFT SIDE



RIGHT SIDE



LEFT SIDE

NOTES WITH REGARD TO REPAIR WORK

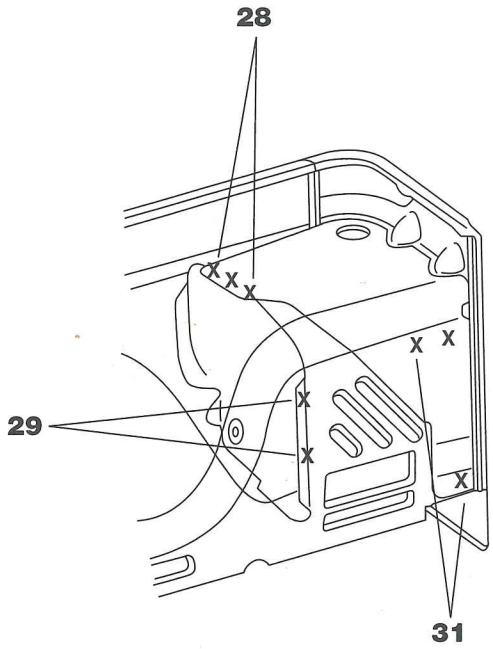
- Remove all flammable materials from areas to be worked on prior to welding.
- The wheelhousing is welded to the floor pans on the inside of the body and to the side aperture at outside of the body.
- Take plenty of time to cut the wheelhouse away from other panels to avoid causing additional damage.

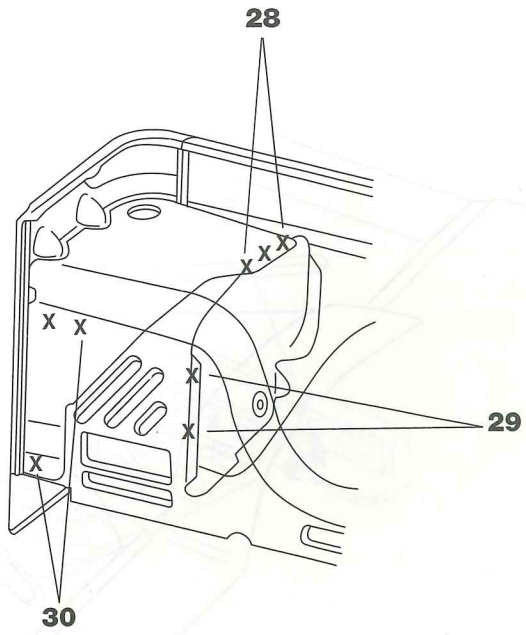
REMOVAL

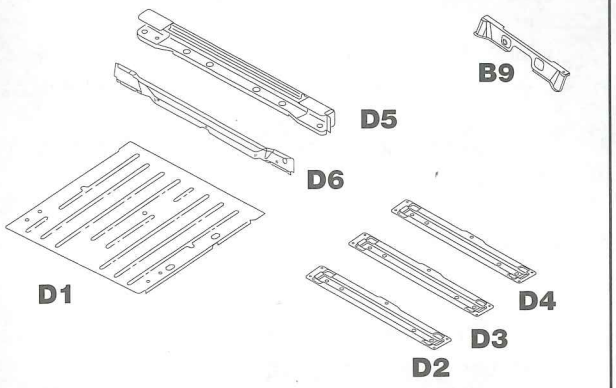
1. Because there is limited access to the Inner Wheelhouse, you may consider first rough cutting the panel for removal.
2. After gaining better access, remove spot welds using a spot weld cutter and remove the remainder of the panel. Use a die grinder, air chisel, hole saw or other appropriate tools to create a clean and straight surface to mount the new panel.
3. Clean and prepare all mating surfaces. Be sure to remove any old sealer or adhesive from the remaining panels.

INSTALLATION

1. Using old panel as a guide, mark and punch plug weld holes in the new Inner Wheelhouse.
2. Temporarily mount the new Inner Wheelhouse in place.
3. Check alignment and measurements and adjust as necessary.
4. Spray anti-corrosion weld-thru primer on weld surfaces prior to welding.
5. Apply structural adhesive where indicated.
6. Plug weld the new panel in place.
7. Apply an appropriate sealer along all seams.
8. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.

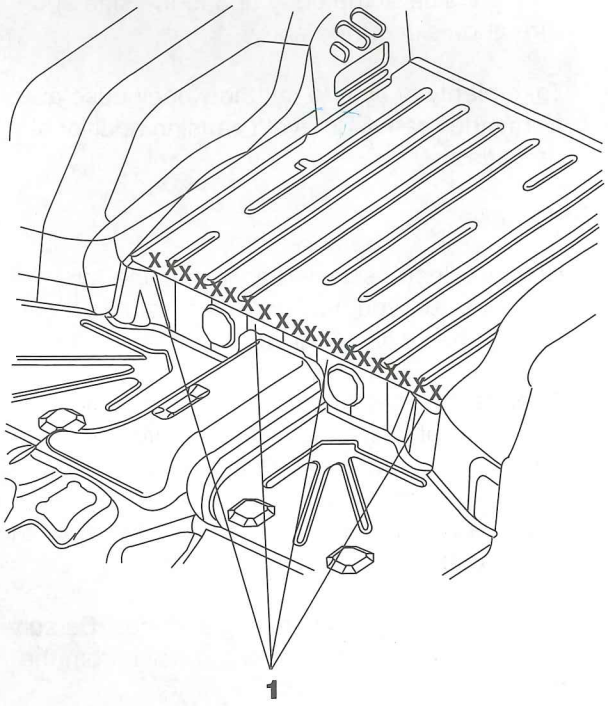


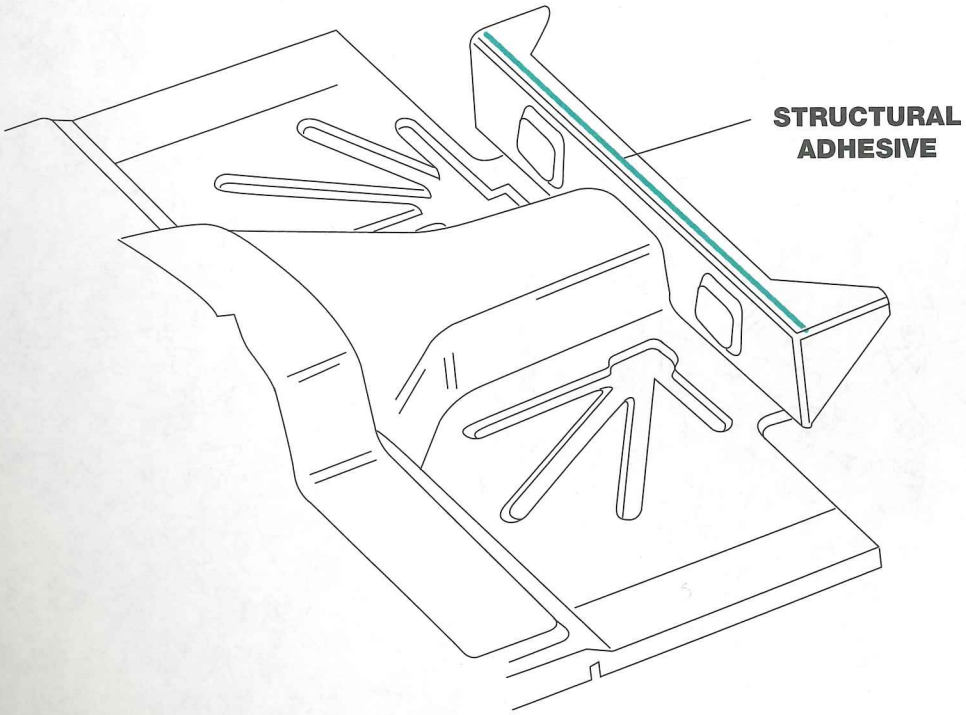


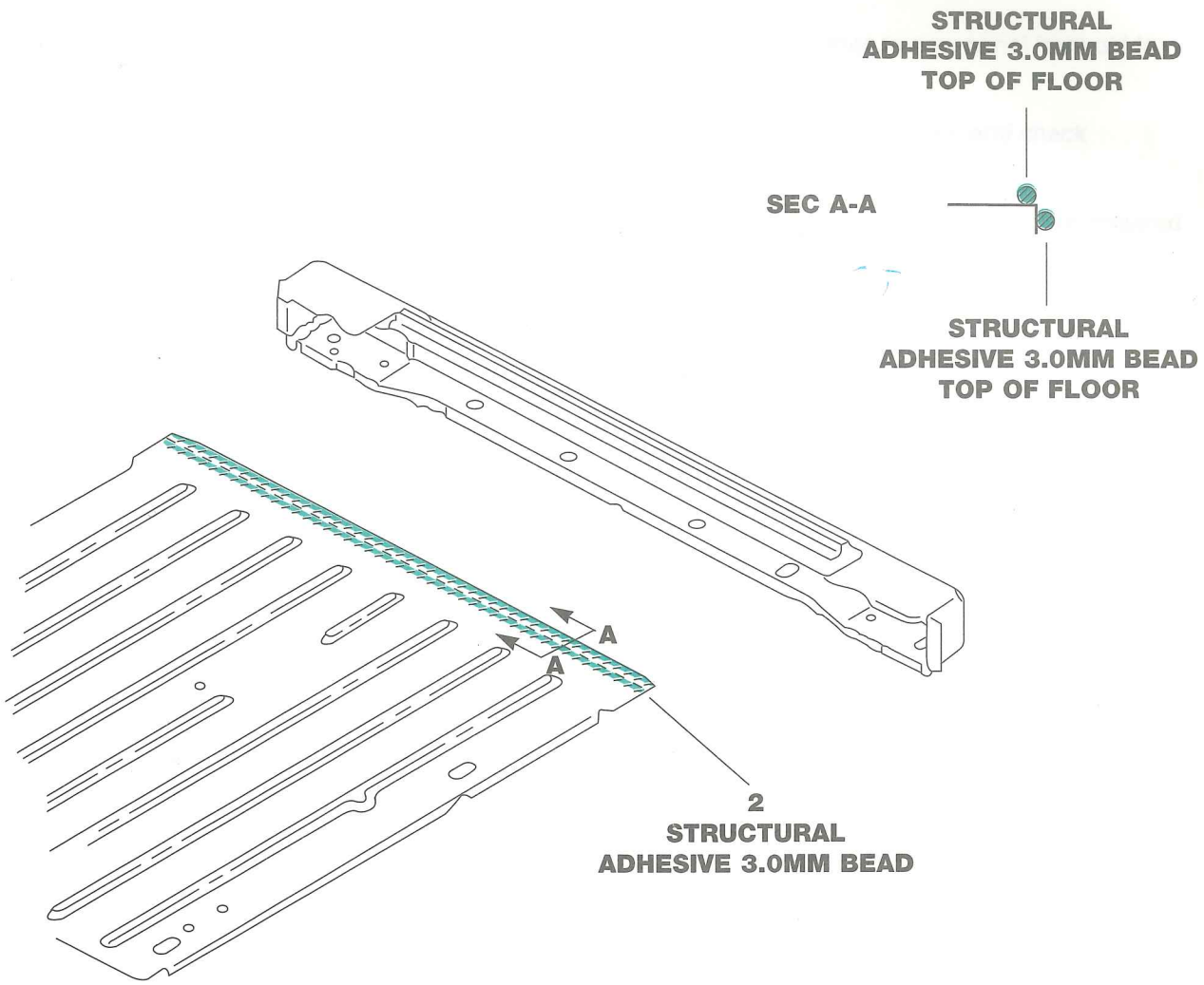


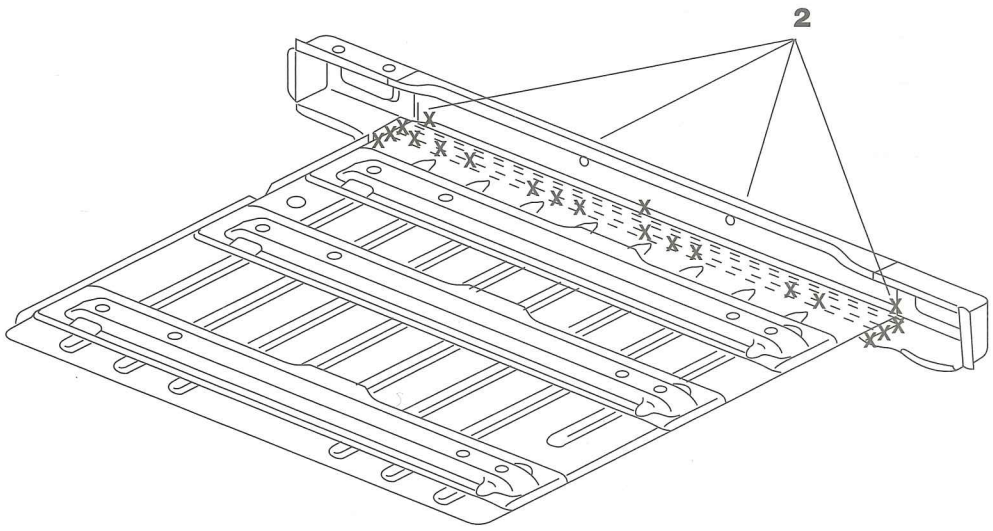
No.	Welded parts	F	R
1	D1 + B9 ASAB	20	P20
2	D1 + D5 ASAB	21	P21
3	D5 + D6	18	P18
4	D5 + D6	30	P30
5	D5 + D6 LHS RHS	2	P2
6	D5 + D6 LHS RHS	6	P6
7	D1 + D4	20	P20
8	D1 + D3	26	P26
9	D1 + D2	20	P20

ASAB = Add Structural Adhesive Bead LHS = Left Hand Side
RHS = Right Hand Side

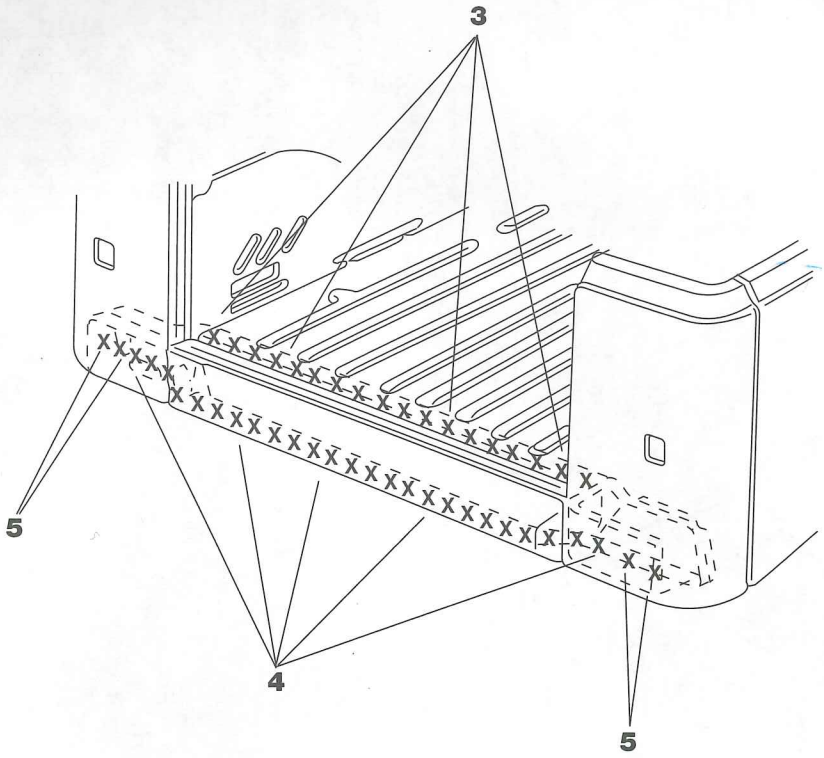


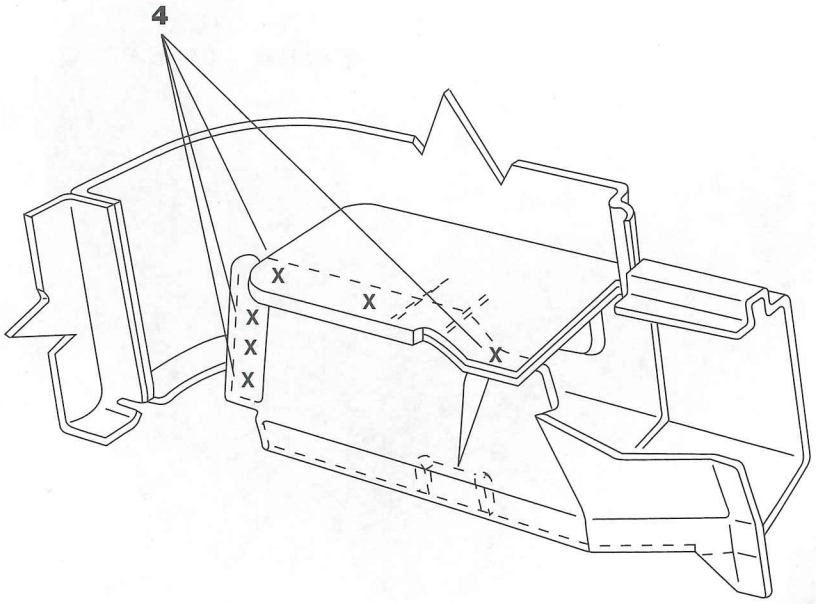






VIEW SHOWING UNDER SIDE OF REAR FLOOR





NOTE: These welds are in the same position for both left & right sides

NOTES WITH REGARD TO REPAIR WORK

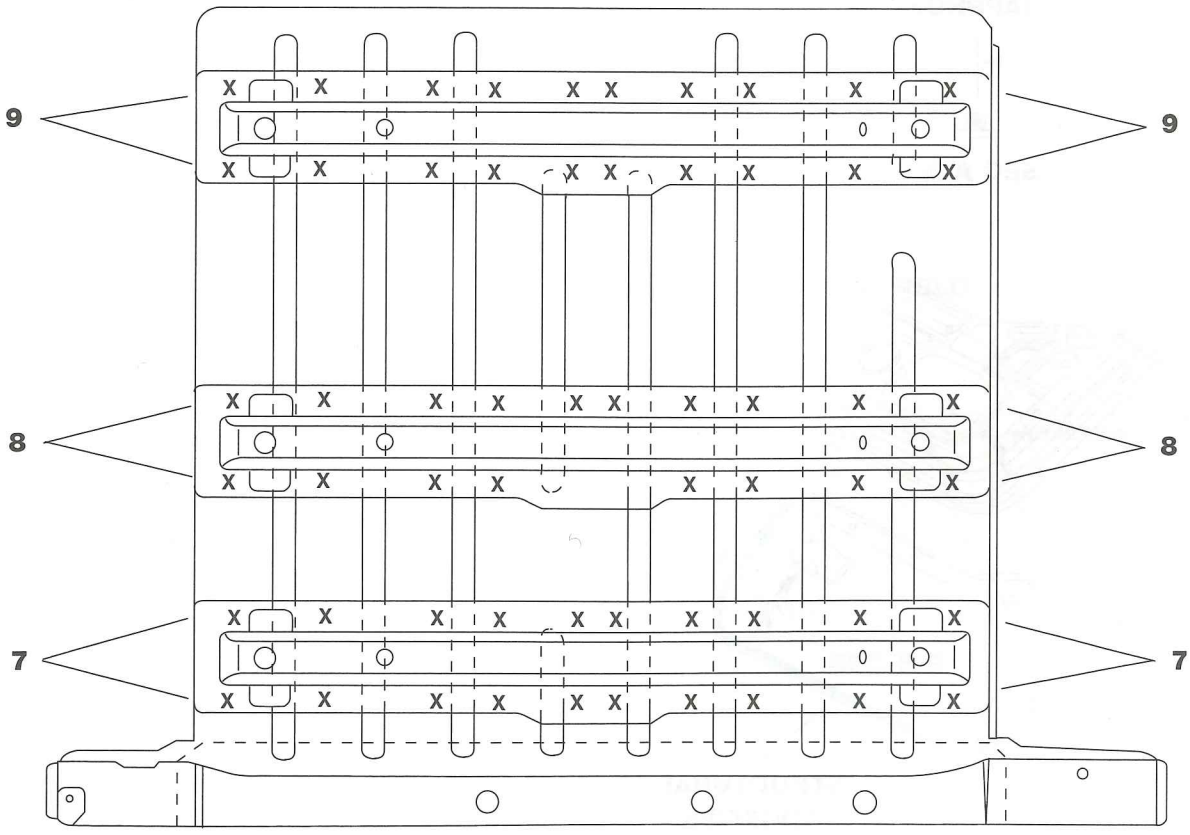
- If replacing floor pan cross members remove them as whole parts. Once the cross member is removed use it as a template for placement of holes for new plug welds.
- When replacing the rear floor pan you may find it easier to rough cut the panel in order to gain access to the spot welds.

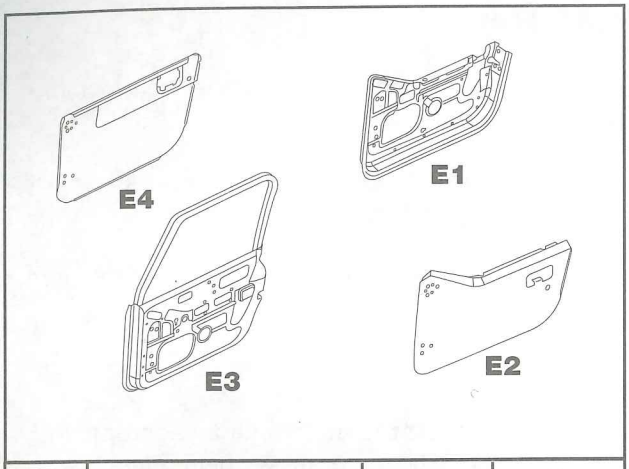
REMOVAL

1. Use a spot weld cutter to remove spot welds.
2. Use removed panel as template for weld placement on new panel.
3. Clean all sealer from areas where new panels attach.

INSTALLATION

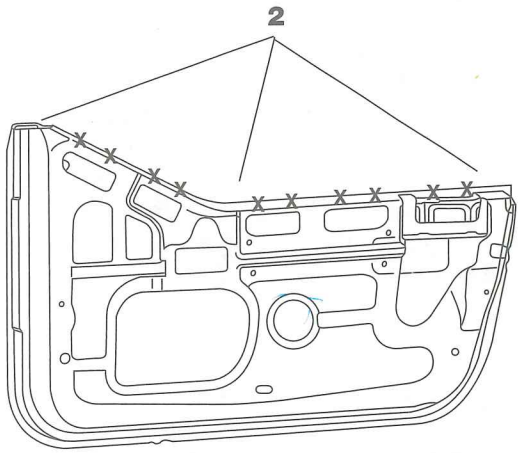
1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements.
3. Apply new sealer or adhesive where required prior to welding.
4. Plug weld new panel.
5. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.

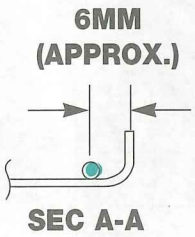


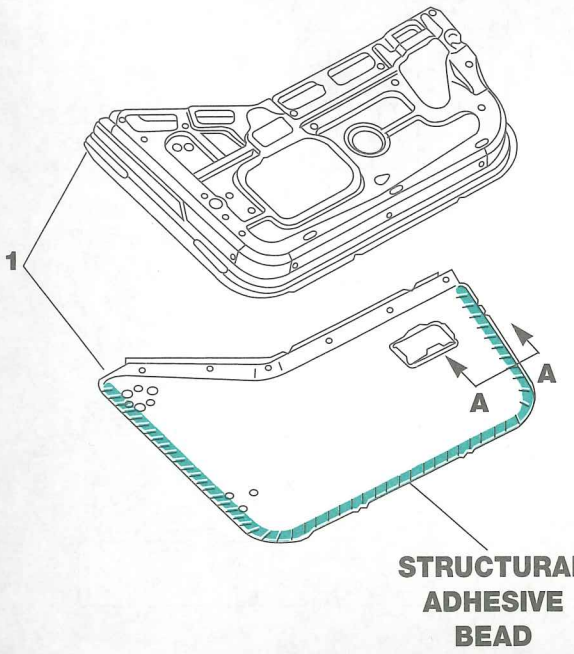


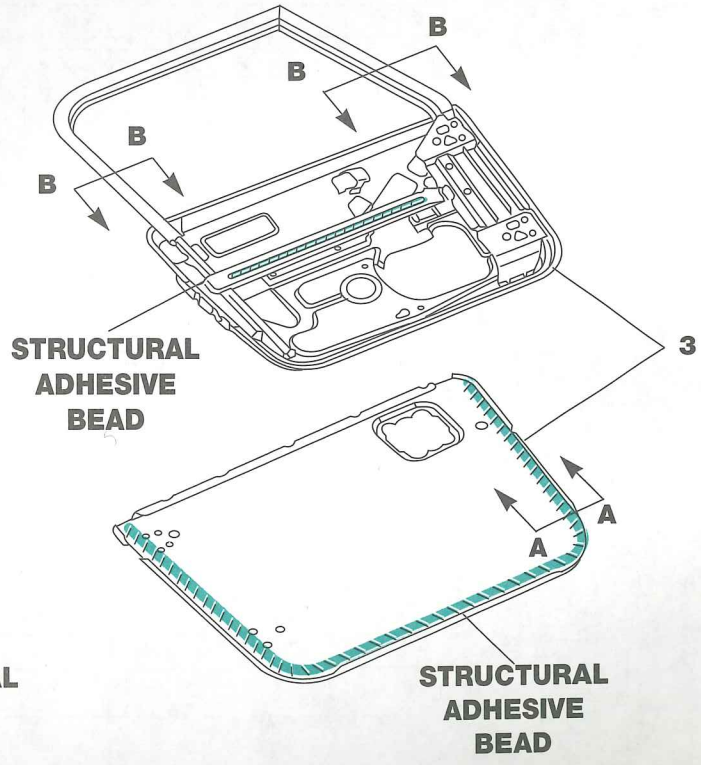
No.	Welded parts	F	R
1	E1 + E2 HEM ASAB	0	P0
2	E1 + E2	10	P10
3	E3 + E4 HEM ASAB	0	P0
4	E3 + E4 MIG		

ASAB = Add Structural Adhesive Bead









NOTES WITH REGARD TO REPAIR WORK

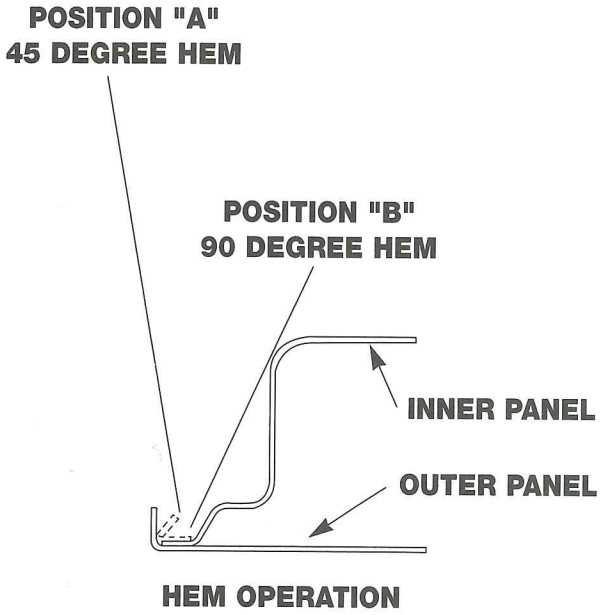
- The door outer panels are secured to the inner structure using mig welds, spot welds, and structural adhesives.
- When removing the outer door panel, take care not to damage any of the inner structure.

REMOVAL

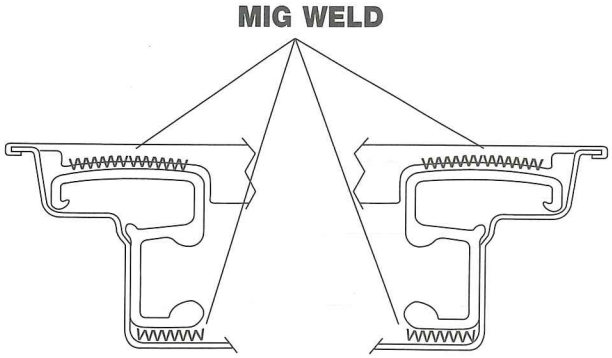
1. Use a die grinder to remove mig welds at top of door skin and window surround.
2. Using a grinder cut the edge of the door skin around the perimeter of the hem flange.
3. Use a hole saw to cut spot weld at top of door skin.
4. An air chisel can be used to separate the outer door skin from the door inner structure.
5. Remove all old adhesive from the door inner structure.
6. Clean all old welding debris from door structure.

INSTALLATION

1. Transfer markings to new panel from old for weld locations.
2. Clamp new panel in place and check alignment and measurements.
3. Apply new adhesive where required.
4. Shape new hem flange around door perimeter.
5. Plug weld new panel.
6. Mig weld new outer door skin to window surround.
7. Treat all exposed metal with an appropriate metal conditioner or self-etching primer. Follow paint manufacturer's instructions for corrosion protection.



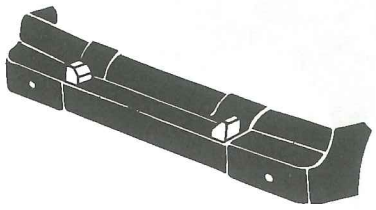
HEM OPERATION

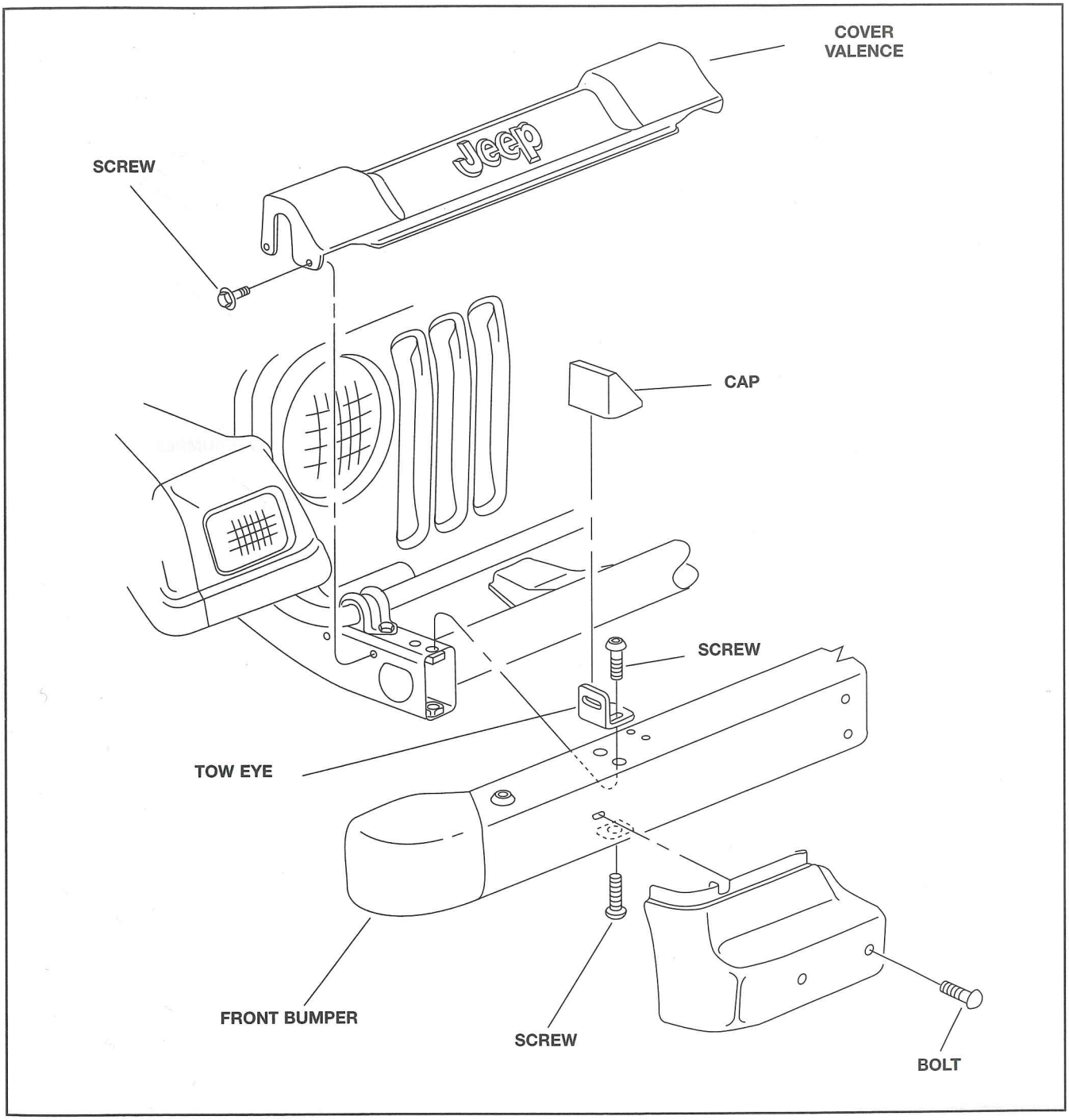


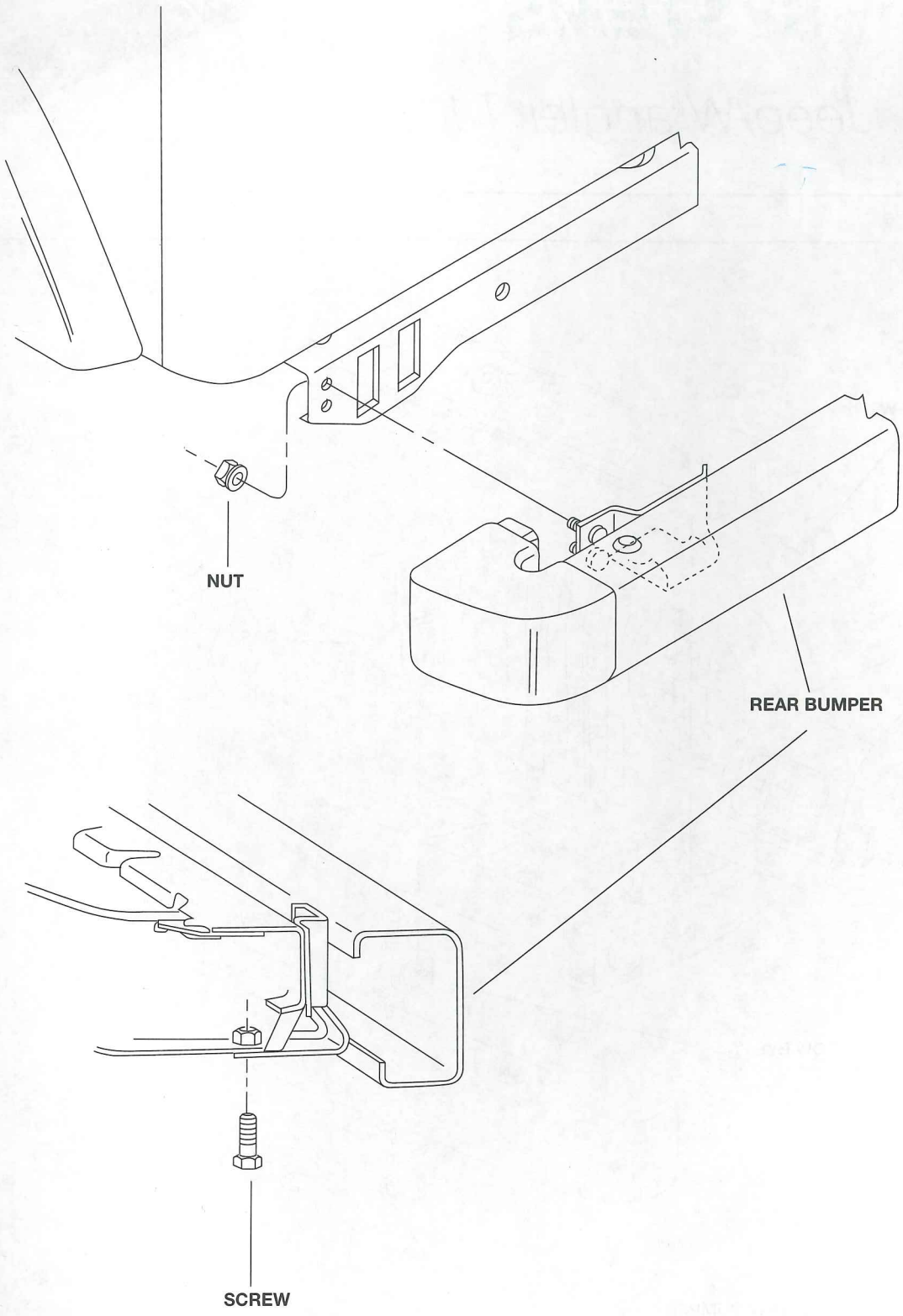
SEC B-B

BUMPER SYSTEMS

Jeep/Wrangler TJ

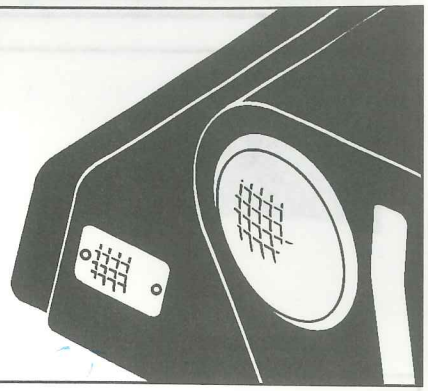


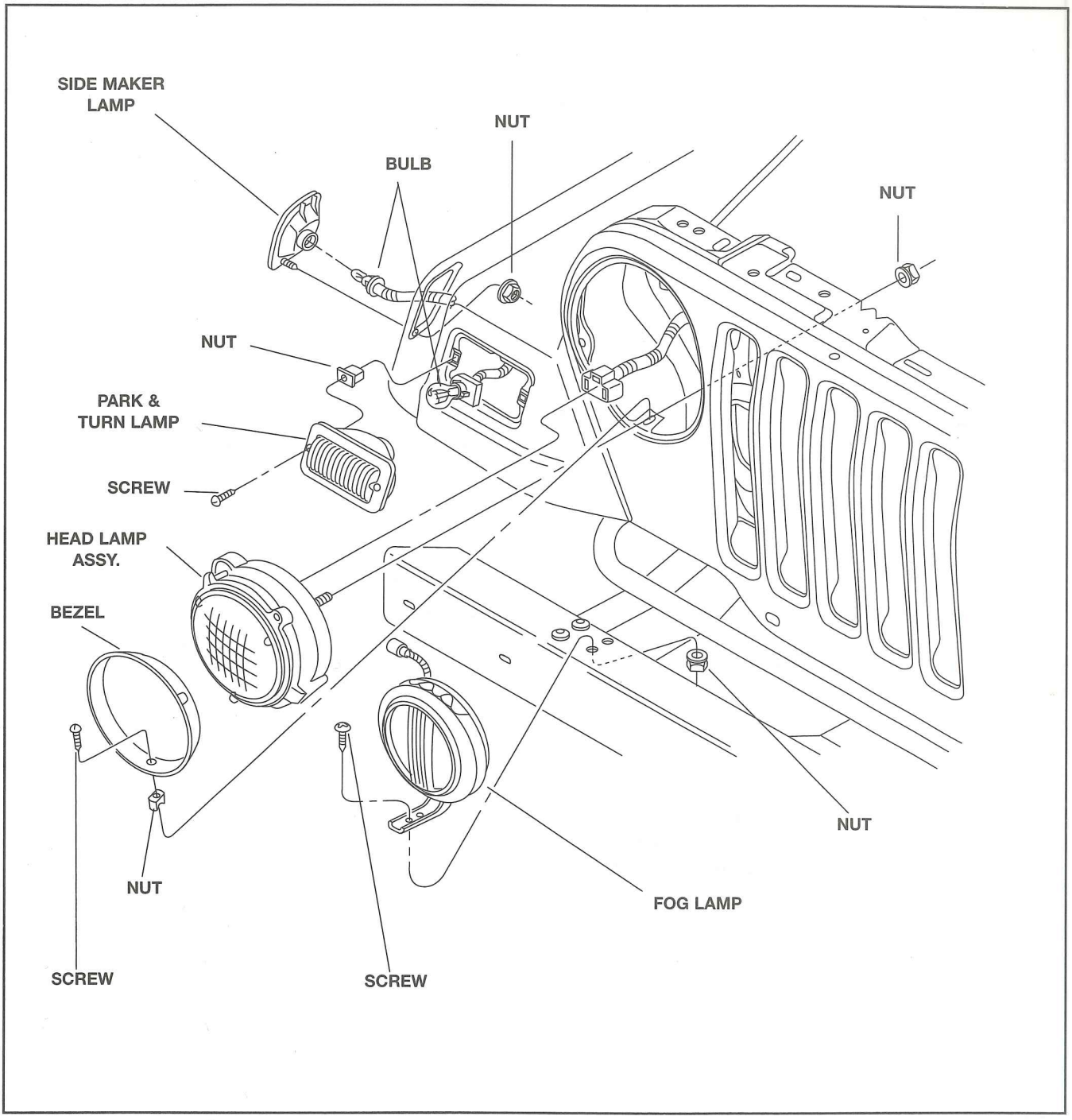


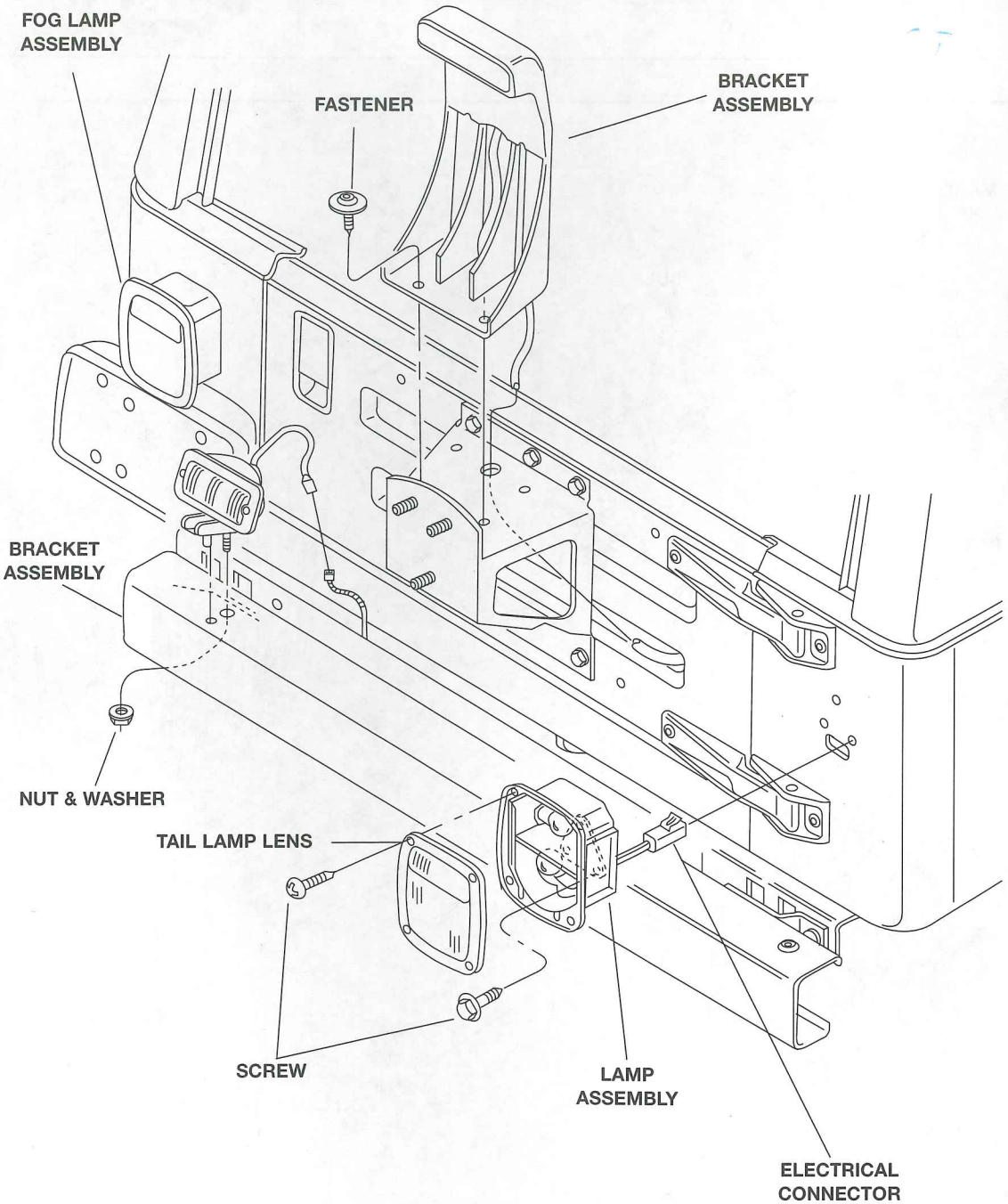

NUT
REAR BUMPER
SCREW

EXTERIOR LIGHTING

Jeep/Wrangler TJ

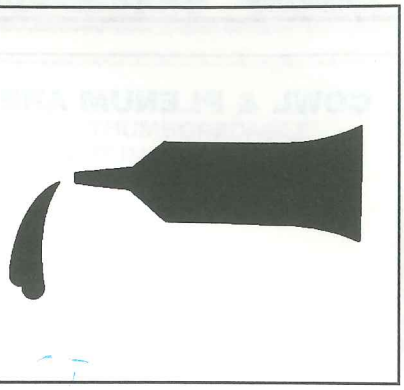




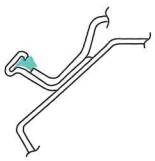

FOG LAMP ASSEMBLY
FASTENER
BRACKET ASSEMBLY
BRACKET ASSEMBLY
NUT & WASHER
TAIL LAMP LENS
SCREW
LAMP ASSEMBLY
ELECTRICAL CONNECTOR

BODY SEALING LOCATIONS

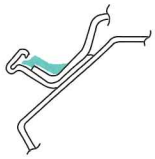
Jeep/Wrangler TJ



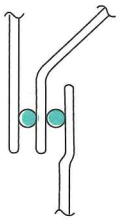
METHODS OF APPLYING AUTO BODY SEALING



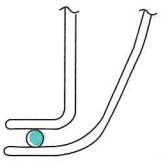
Hold gun nozzle in direction of arrow in order to effectively seal metal joints.



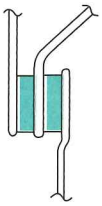
Do not hold gun nozzle in direction of arrow. Sealer applied as shown is ineffective.



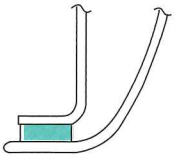
3 metal thickness



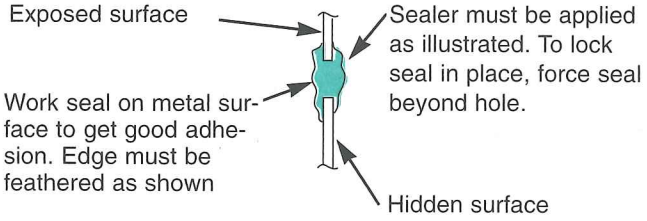
2 metal thickness

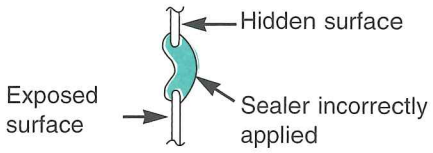


3 metal thickness



2 metal thickness





SYMBOLS

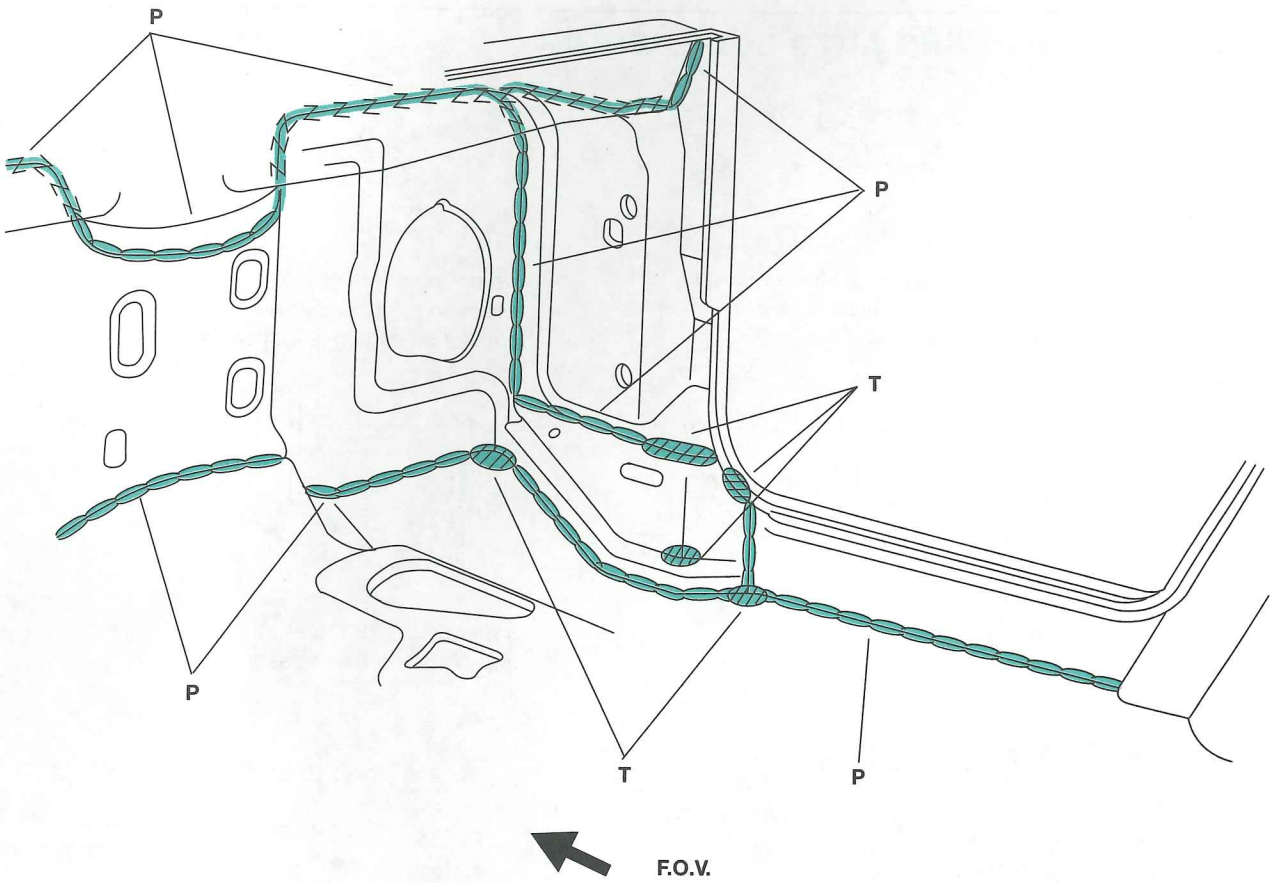
Extrudable thermoplastic

Exposed sealant

Hidden sealant

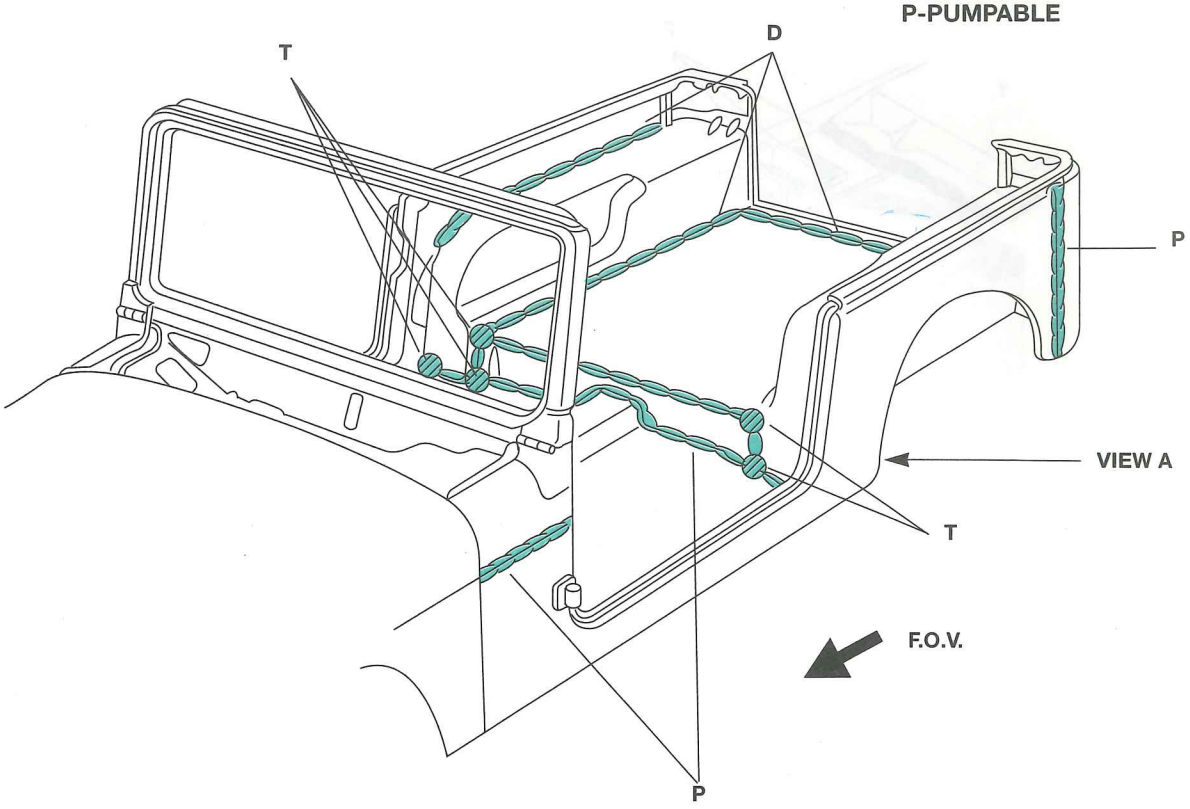
COWL & PLENUM AREA

T-THUMBGRADABLE
P-PUMPABLE

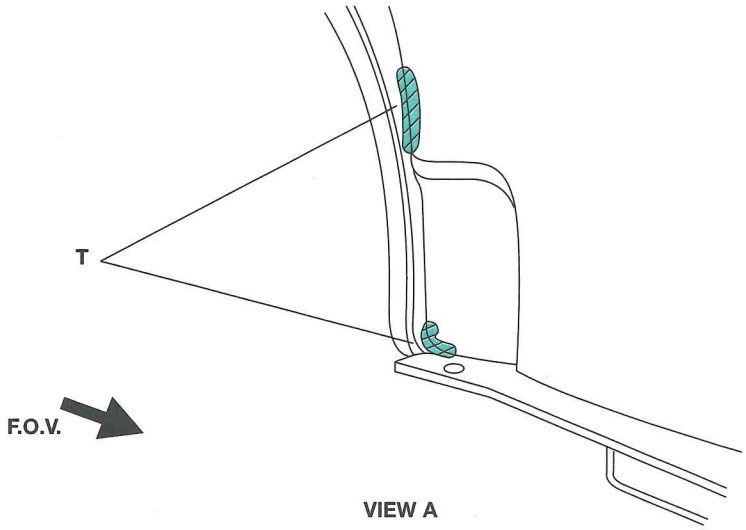


REAR FLOOR, RISER & OUTER BODY SEAMS

T-THUMBGRADABLE
P-PUMPABLE

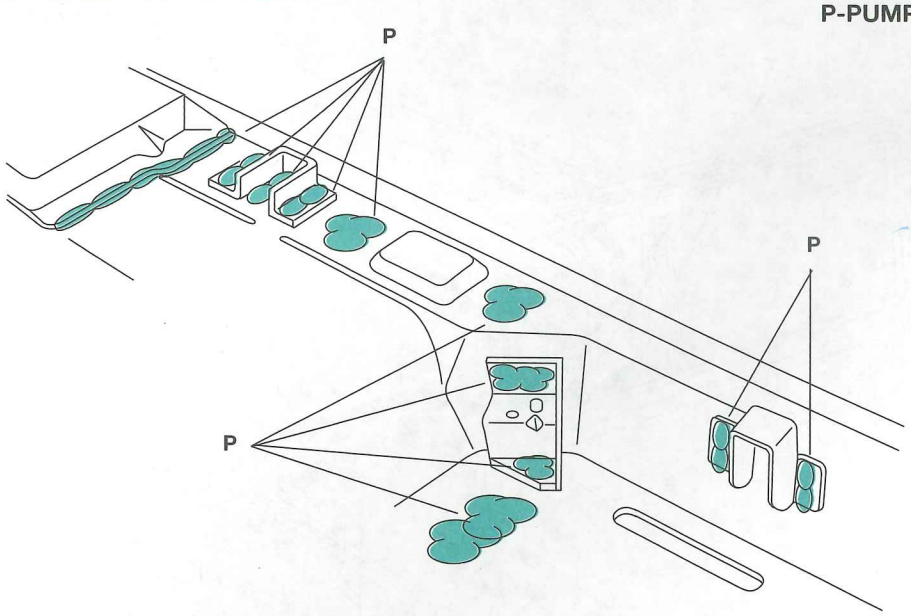


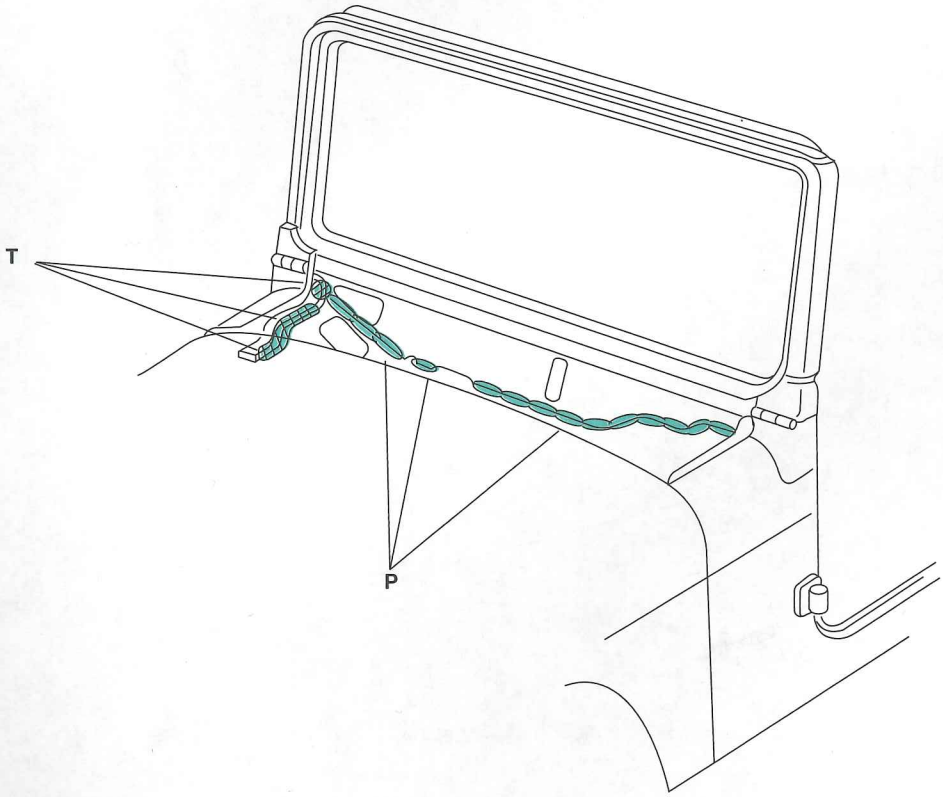
INNER WHEELHOUSE



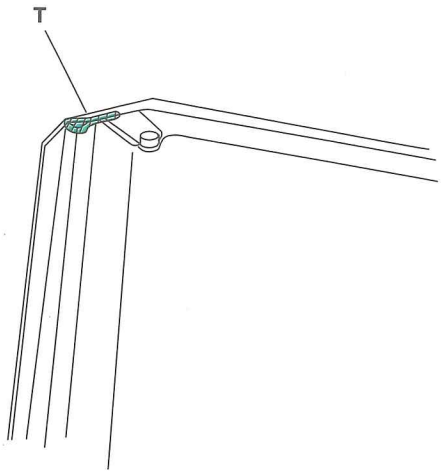
COWL TOP END & PLENUM

T-THUMBGRADABLE
P-PUMPABLE

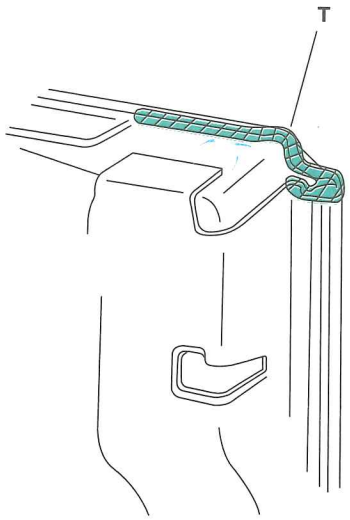




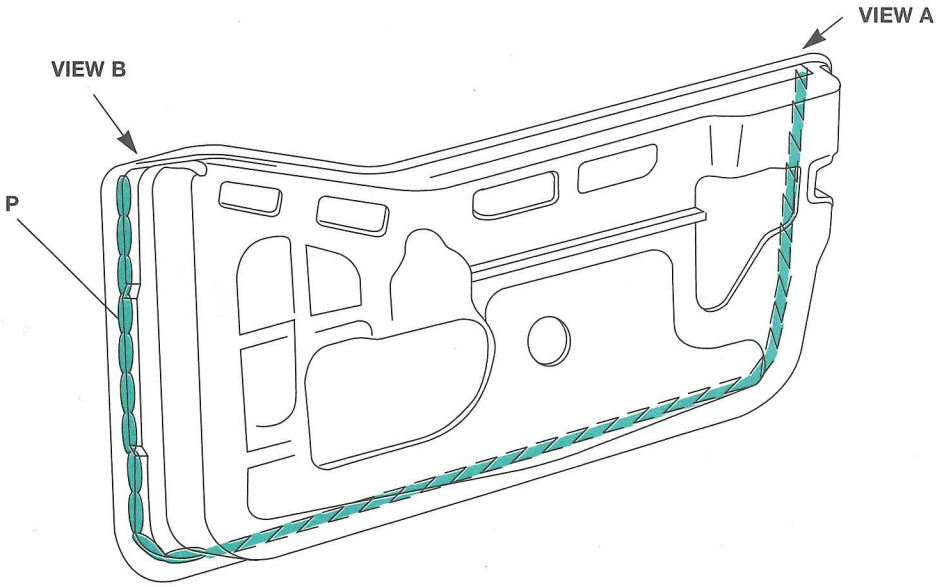
HALF DOOR



VIEW B

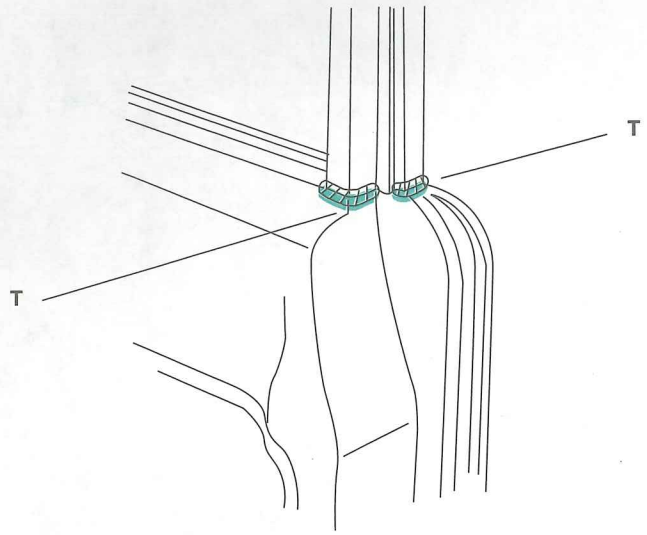


VIEW A

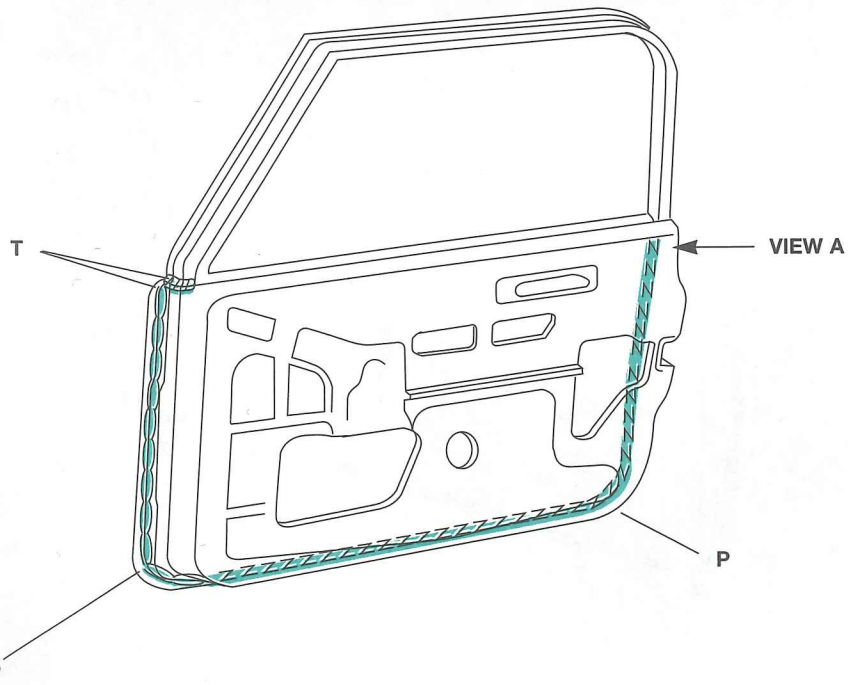


FRONT DOOR

T-THUMBGRADABLE
P-PUMPABLE

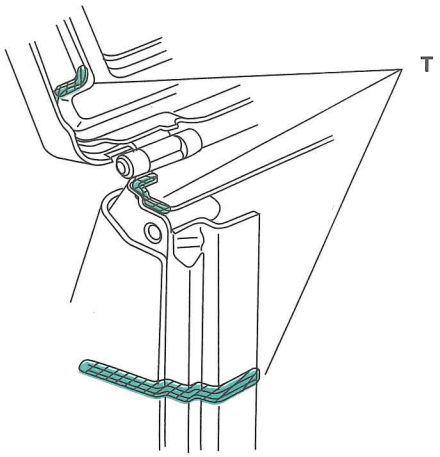


VIEW A

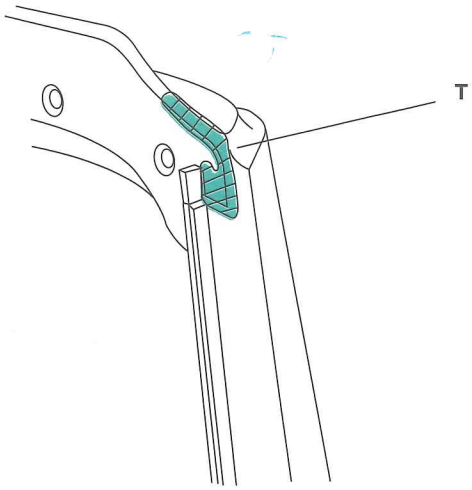


COWL & WINDSHIELD OUTER PANEL

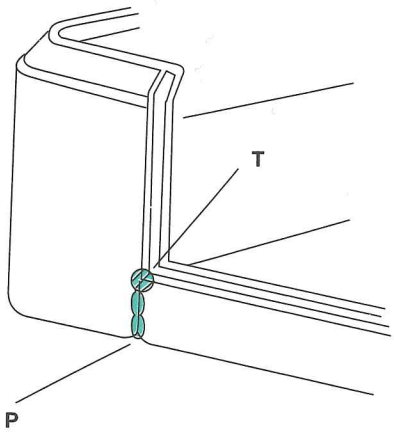
T-THUMBGRADABLE
P-PUMPABLE

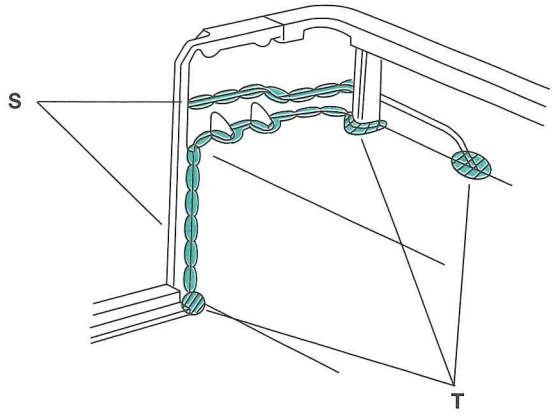


WINDSHIELD TOP



REAR CORNER PANEL

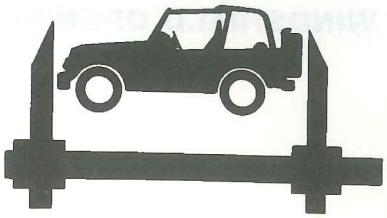




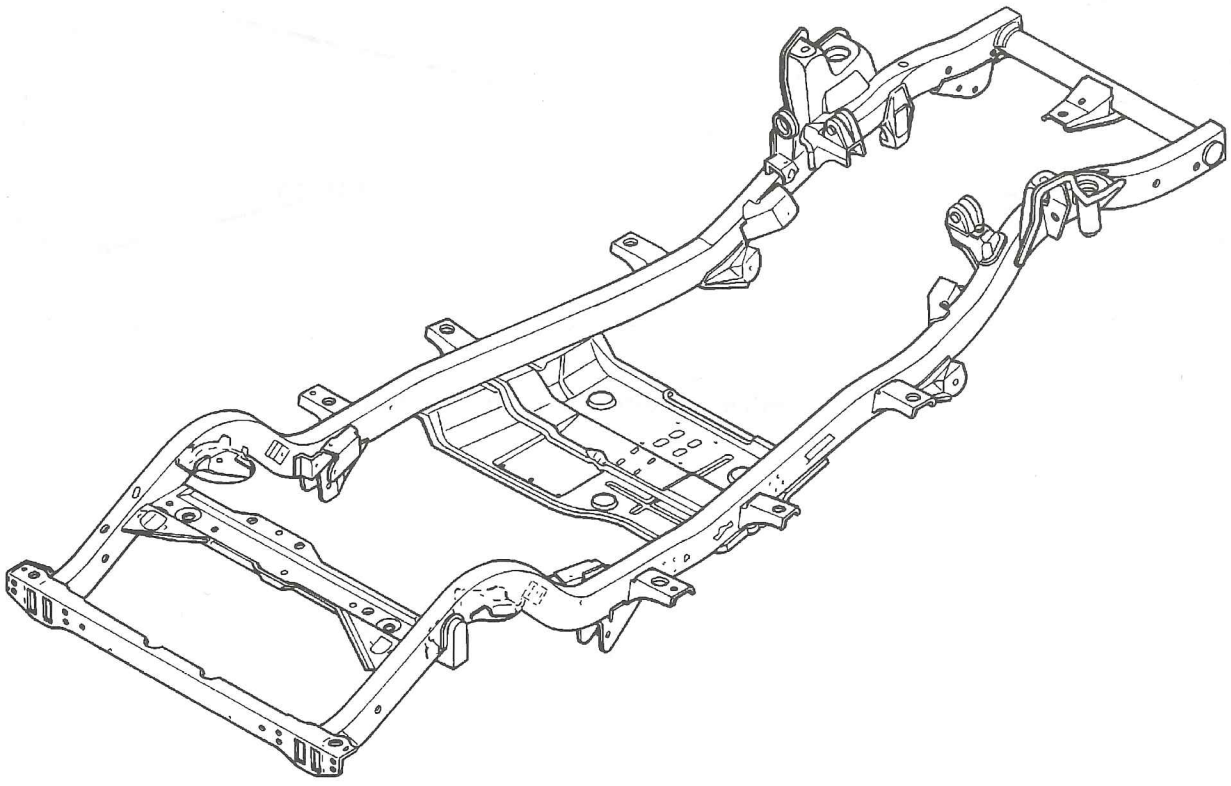
Notes

BODY DIMENSIONS & SPECIFICATIONS

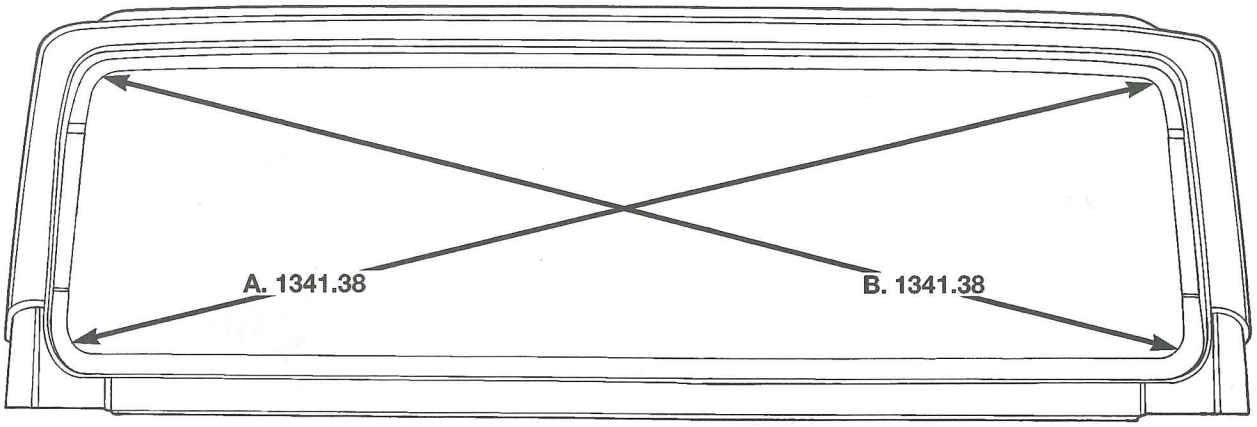
Jeep/Wrangler TJ



FRAME



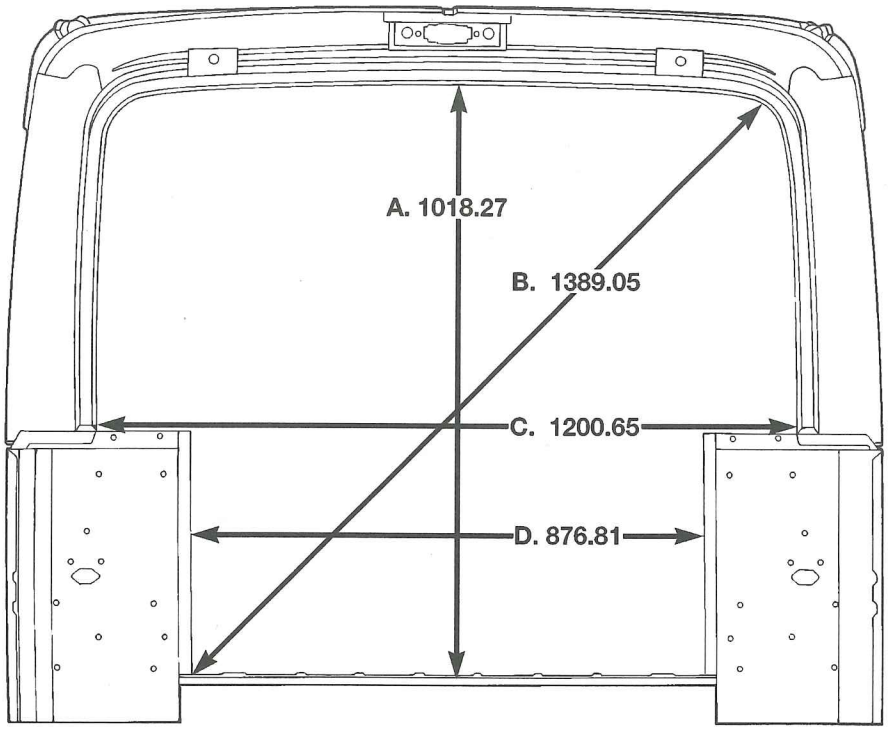
WINDSHIELD OPENING



A & B Center of radius at bottom to center of radius top.

Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

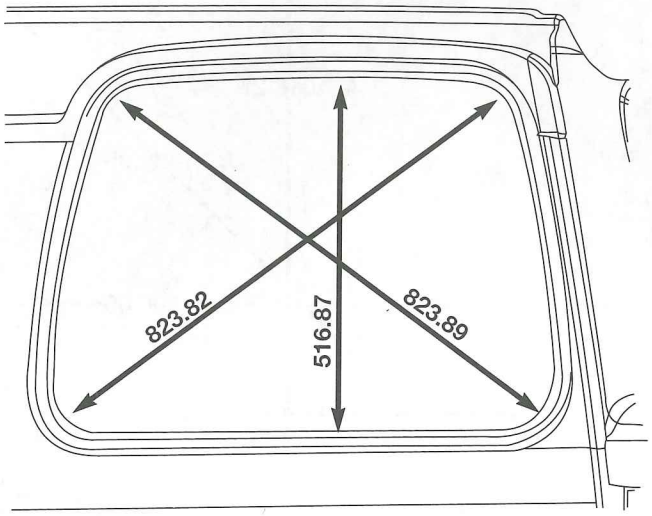
TAILGATE AND LIFTGATE OPENING



A. Center of liftgate opening to floor.
B. Center of radius upper corner center of body and floor corner.
C. Liftgate opening distance.
D. Tailgate opening distance.

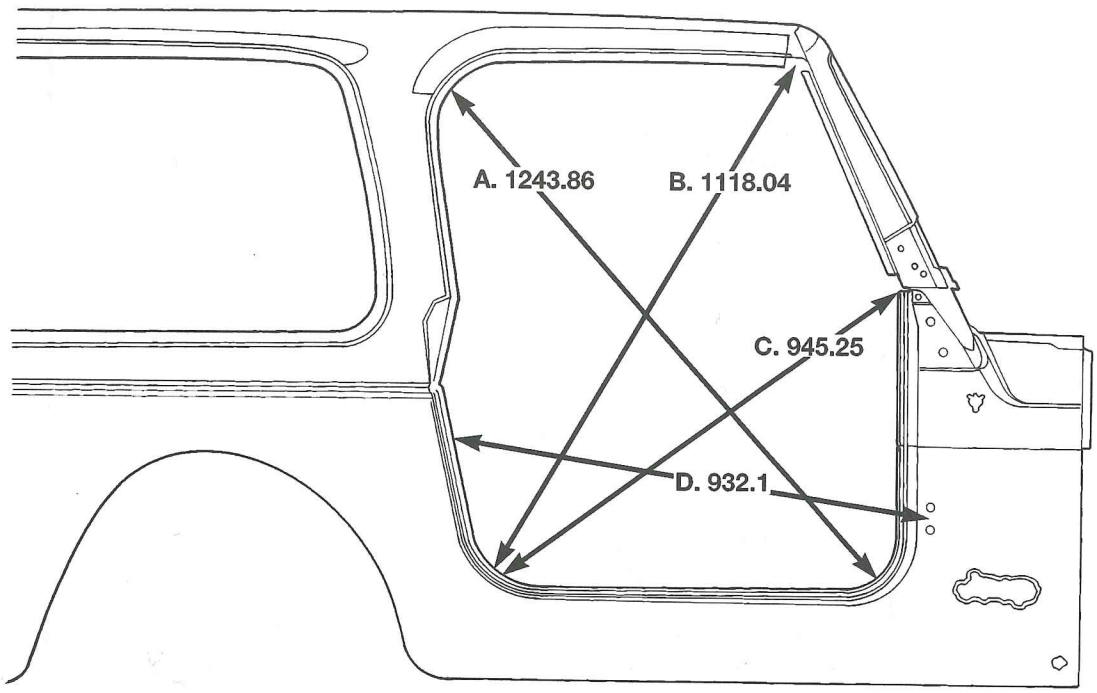
Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

QUARTER WINDOW OPENING



Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

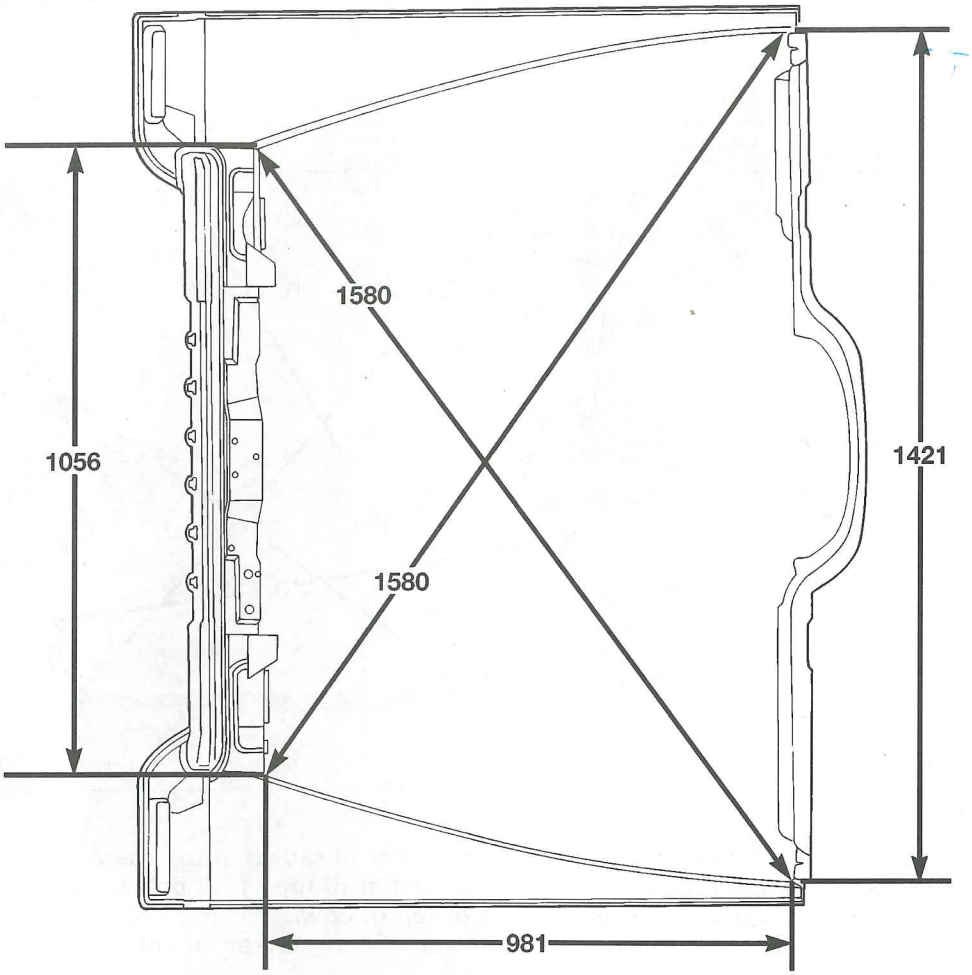
DOOR OPENING



A. Center of radius at bottom front to center of radius at top rear.
B. Center of door lower rear corner to center of top of windshield frame.
C. Center of door lower rear corner to top of cowl.
D. Center of door hinge mount to center of door striker mount.

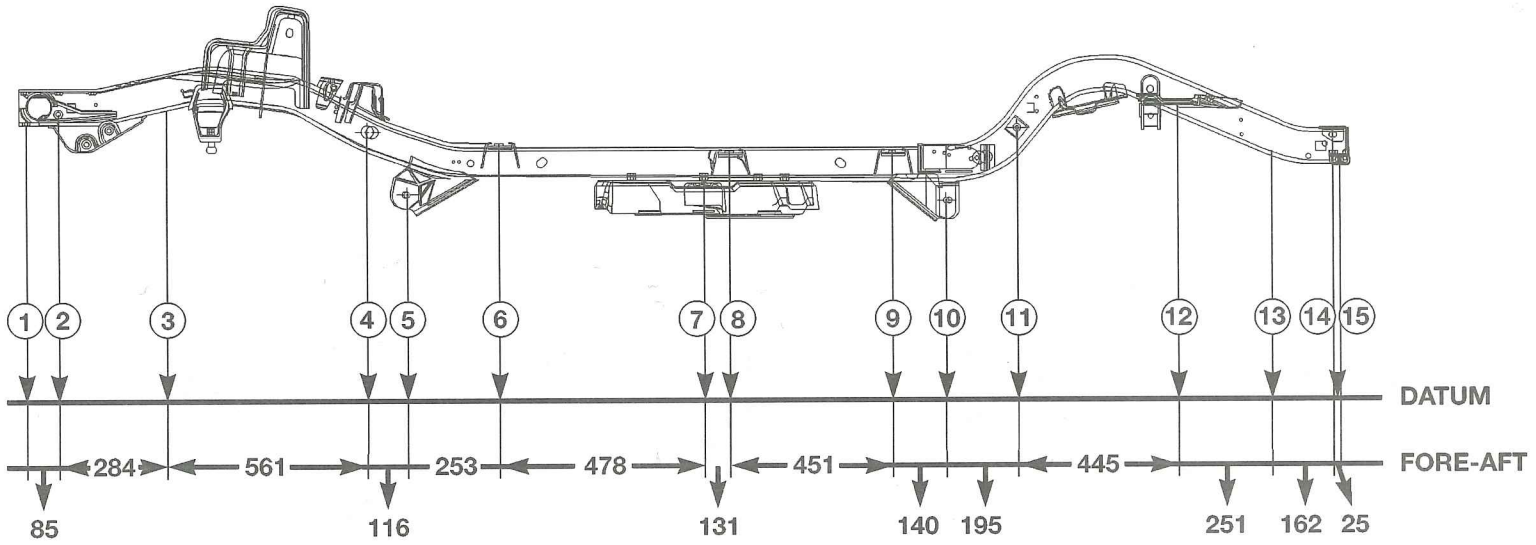
Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

ENGINE COMPARTMENT



Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

SIDE FRAME

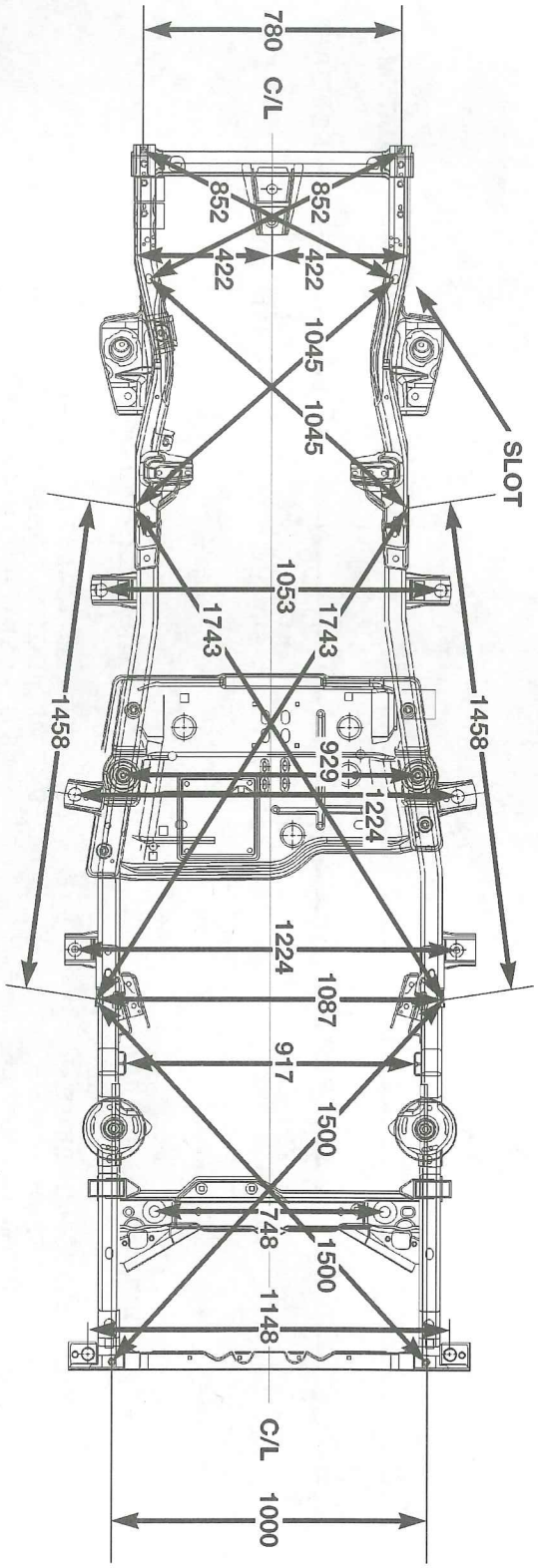


POINT #	DISTANCE TO DATUM (mm)	
1.	500	BOTTOM OF SIDERAIL
2.	534	CENTER OF HOLE
3.	543	BOTTOM OF SIDERAIL, CENTER OF SLOT
4.	494	CENTER OF HOLE, OUTBOARD
5.	317	CENTER OF HOLE, OUTBOARD
6.	460	BOTTOM OF BRACKET
7.	359	BOTTOM OF SIDERAIL

POINT #	DISTANCE TO DATUM (mm)	
8.	445	BOTTOM OF BRACKET
9.	445	BOTTOM OF BRACKET
10.	309	CENTER OF HOLE, OUTBOARD
11.	512	CENTER OF HOLE, INBOARD
12.	577	BOTTOM OF CROSSMEMBER
13.	474	CENTER OF HOLE, OUTBOARD
14.	505	BOTTOM OF BRACKET
15.	406	BOTTOM OF FRAME

Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

TOP FRAME



Note: All measurements are in mm. Dimensions referenced from PLP holes are from centerline of hole.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	
A														
B														
C														
D														
E														
F														
G														
H														
I														
J														
K														
L														
M														
N														
O														
P														
Q														
R														
S														
T														
U														
V														
W														

This is a very easy way to write up your measurement information. You can tell at a glance when a dimension changes, and you can do what is necessary to stay in specification before you proceed.

Here's how to use this sheet or a similar one since each vehicle manufacturer supplies critical measuring point information.

Each time a correction is made to restore the body to its proper dimension, all readings should be taken again, in addition to the dimension you have just corrected.

The A-B-C, etc. are the measuring point dimensions. The 1-2-3, etc. are the readings taken at measurement step 1— measurement step 2, etc.

This sheet tells you at a glance how you stand in restoring the body to its proper state.

When using the tram and centering gage system, *always* compile a list of dimensions each time you measure. This provides the information for measurement comparison, especially during the pulling and straightening phase of body collision repair.

The manufacturer of the equipment supplies information, so be sure you constantly review it and bulletins so you will be up to date on repair techniques.