

# SAFETY NOTICE

#### CAUTION

All SERVICE AND REBUILDING INSTRUCTIONS CONTAINED HEREIN ARE APPLICABLE TO, AND FOR THE CONVENIENCE OF, THE AUTOMOTIVE TRADE ONLY. All test and repair procedures on components or assemblies in non-automotive applications should be repaired in accordance with instructions supplied by the manufacturer of the total product.

Proper service and repair is important to the safe, reliable operation of all motor vehicles. The service produces recommended and described in this publication were developed for professional service personnel, and are effective methods for performing vehicle repair. Following these procedures will help ensure efficient economical vehicle performance and service reliability. Some service procedures require the use of special tools designed for specific procedures. These special tools should be used as recommended throughout this publication.

Special attention should be exercised when working with spring-or tension-loaded fasteners and devices such as E-Clips, Circlips, Snap rings, etc., since careless removal may cause personal injury. Always wear safety goggles when working on vehicles or vehicle components.

It is important to note that this publication contains various Cautions and Warnings. These should be read carefully in order to minimize risk of personal injury or the possibility that improper service methods may damage the vehicle or render it unsafe. It is important to note that these Cautions and Warnings cover only the situations and procedures DaimlerChrysler Corporation has encountered and recommended. DaimlerChrysler Corporation cannot possibly know, evaluate, and advise the service trade of all conceivable ways in which service may be performed, or of the possible hazards of each. Consequently, DaimlerChrysler has not undertaken any such broad service review. Accordingly, anyone uses a service procedure or tool that is not recommended in this publication must be certain that neither personal safety, nor vehicle safety, will be jeopardized by the service methods they select.



# **INTRODUCTION** Jeep Grand Cherokee



This manual has been prepared for use by all body technicians involved in the repair of the Jeep Grand Cherokee.

This manual shows:

- Typical unibody panels contained in these vehicles
- The weld locations for these panels

- The types of welds for the panel
- Proper sealer types and correct locations

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

# **BODY CONSTRUCTION CHARACTERISTICS**

Definitions of Steels used in the Jeep Grand Cherokee:

- MS 66 Represents an uncoated Hot Rolled Steel Sheet used mainly for interior braces and reinforcements.
- MS 67 Represents an uncoated Cold Rolled Sheet structural steel used in areas where structural integrity is critical. EG., the type of steel used for the "A" pillar.
- MS 264 Represents an uncoated high strength low alloy (HSLA) steel used in applications where structural integrity is critical.
- MS 6000-44A Low carbon, hot dipped galvanneal (or EGA) with 45 g/m<sup>2</sup> minimum coating weight on both sides. - Most common Sheet Steel product used by Chrysler.
- MS 6000-44VA 50 ksi min. yield strength, HSLA, killed steel, with 44 g/m<sup>2</sup> minimum coating weight on both sides. - Most common high strength coated steel product used by Chrysler.

#### PARTIAL LIST OF STEEL APPLICATIONS Galvannealed Steel

Body Side Aperture Cowl Plenum Panel Cowl Side Panel Dash Panel Front Door - Inner Panel Front Door - Outer Panel Front Fender Front Floor Pan Front Floor Pan Front Hinge Pillar Front Rail Front Strut Mounting Tower Front Wheelhouse (Front and Rear) Lower Radiator Crossmember Rear Door - Inner Panel Rear Door - Outer Panel Rear Floor Pan Rear Floor Pan Front Crossmember Rear Floor Pan Side Rail Rear Suspension Crossmember Rear Quarter Panel - Inner Rear Quarter Panel - Outer Rear Wheelhouse - Inner Roof Panel UpperLoad Path Beam Upper Radiator Crossmember

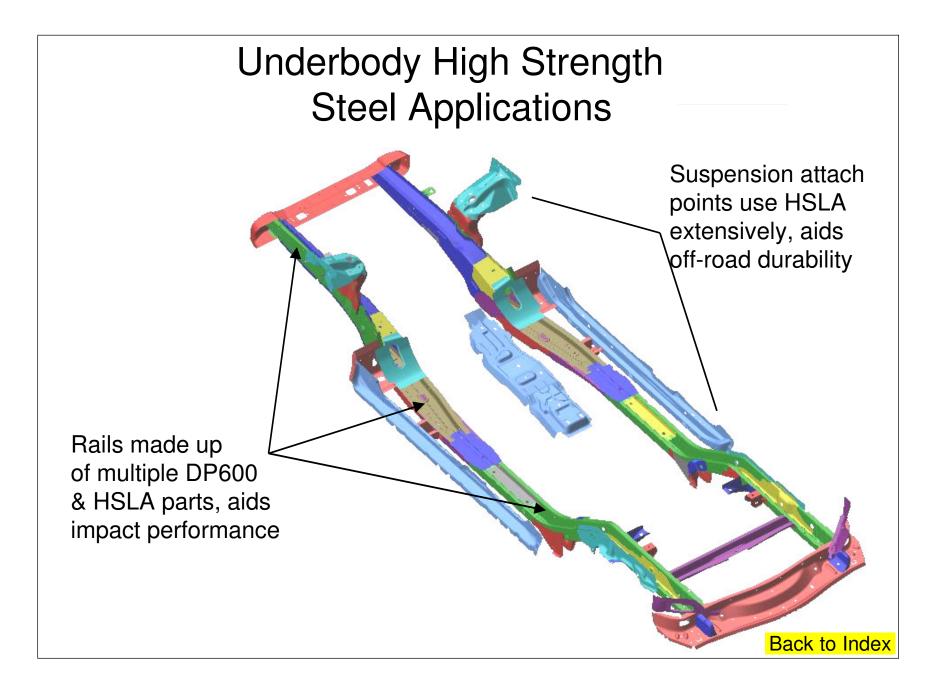
# **BODY CONSTRUCTION CHARACTERISTICS**

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. Ecoat is used on the complete body in all instances.
- 3. Body sealing.
- 4. Stone-chipping resistant primer application.
- 5. Underbody corrosion prevention.

# **BODY CONSTRUCTION CHARACTERISTICS** Grand Cherokee Body Structure Overview

- Greater use of HSLA steel
- Extensive use of Dual Phase (DP600) steel (primarily for improved impact performance)
- Continued application of structural adhesive
- Stiffer vehicle structure for improved NVH performance & better suspension response
- Use of laminate steel for dash & wheelhouses
- Aluminum hood and hood reinforcements
- Multiple laser welded panels
- Bake Hardenable steel used in door outer skins



# Upperbody High Strength Steel Applications

A Pillar reinforcements

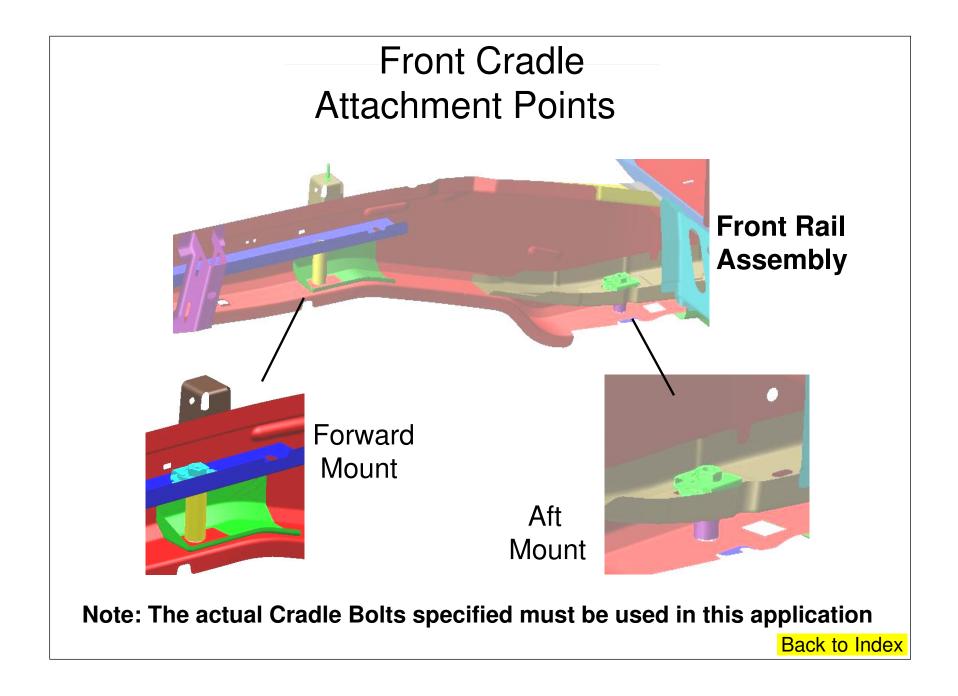
are DP600 for impact

### **DP600 Notes:**

Typical yield strength as high as 90 – 100 ksi
Material work hardens during forming
Material bake hardens
Weldability similar to HSLA steel

HSLA used in sill reinforcement & shotgun

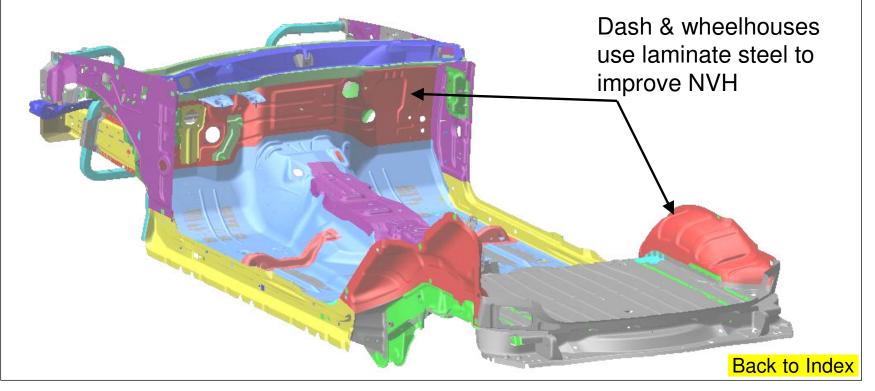
Seat Back reinforcement uses HSLA



# Laminate Steel Applications

•Laminate steel consists of a pair of steel outer skins sandwiching a viscoelastic polymer. It substantially benefits NVH performance.

•Repair procedures should not be significantly different from regular steel.

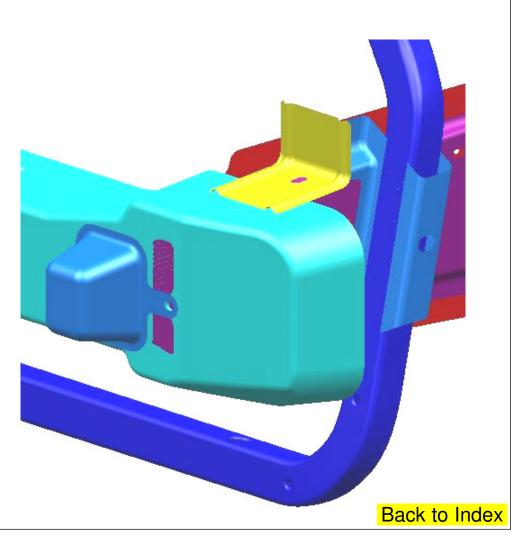


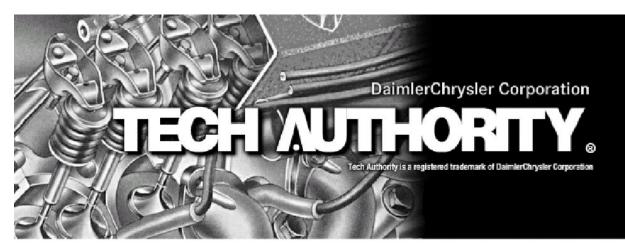
# Energy Absorption Parts Crush Cans

Crush cans are common with Jeep Liberty
Cans are non-handed
Replace if damaged
Installation is accomplished with a single fastener & a location tab in the front crossmember

# Other notable EA parts;

- •Stroking steering column
- •Stroking prop shaft





Tech Authority website includes the most complete listings, descriptions, and ordering information for DaimlerChryster Corporation service information materials. The materials included in Tech Authority cover every aspect of repairing and maintaining Chryster, Plymouth, Dodge, Dodge Truck and Jeep® vehicles.

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# HISTORY OF COLLISION REPAIR

Time was, if you had an accident, the call went out to the insurance company - to the collision shop - or several shops - get the lowest bid and in no time at all, the vehicle was repaired.

The facilities, training, and equipment were simple. Use a torch to cut, shape, and bend. Use something substantial as an anchoring point - maybe a tree and then just pull.

Use plenty of solder or body putty to make it look good. With the frame and body vehicle, the job was easy; first straighten the frame - then fix the mechanical components and the body work was cosmetic. This was all well and good until the mid - '70s.

Then, the designers, engineers, and manufacturers had to find ways to make the vehicles energy efficient - and that meant unibody cars. The unibody concept wasn't new - back in the '30s the Chrysler Air Flow had it - race cars have it - and now the driving public worldwide has it.

The change came quickly. Manufacturers devoted time, money, and talent to develop the unibody car. The public was ready to buy and did!

But then came the problem! The collision repair industry wasn't given the luxury of taking their time to train people in the new technology - or take time to plan for new equipment.

The collision happened and the vehicle had to be fixed. Cars that were repairable were being totalled.

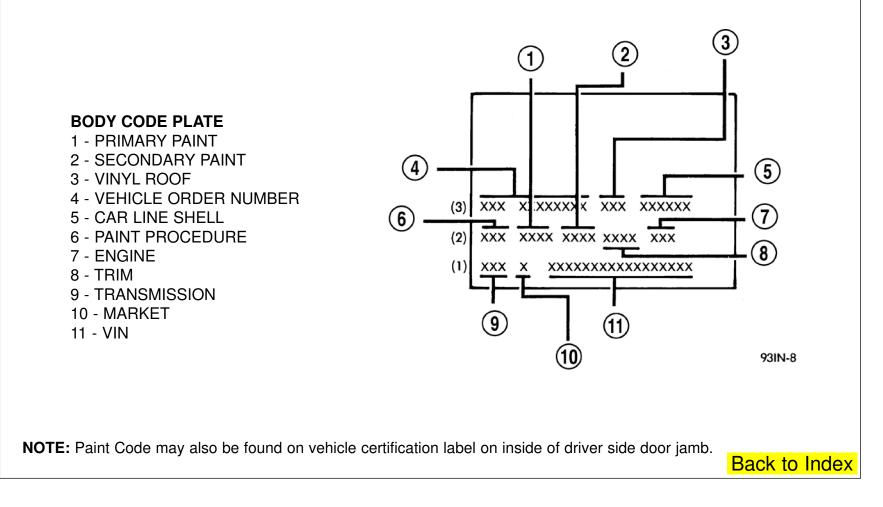
Cars that were repaired were not repaired correctly. Everybody was in a **quandary** - auto manufacturer - insurance company - repair equipment people - body shops - and repair technicians.

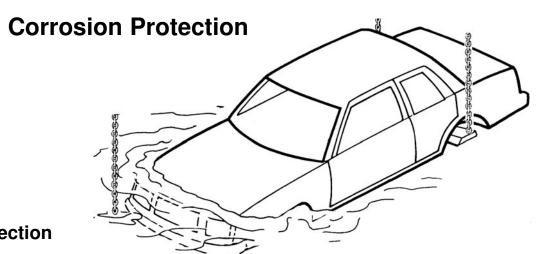
The problem started in the early '70s and body shops are still catching up today. Yesterday's "ding" is today's "crash". It takes trained technicians and sophisticated equipment to do the repair today.

That's why DaimlerChrysler is taking the time and effort to get the right information into the hands of the people that handle the repair job.

# **BODY CODE PLATE DESCRIPTION**

The Body Code Plate is located in the engine compartment on the right headlamp mounting bracket/ radiator support. There are seven lines of information on the body code plate. Lines 4, 5, 6, and 7 are not used to define service information. Information reads from left to right, starting with line 3 in the center of the plate to line 1 at the bottom of the plate.



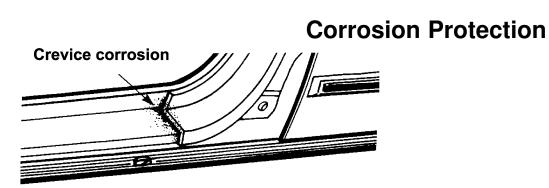


#### **Factory Applied Corrosion Protection**

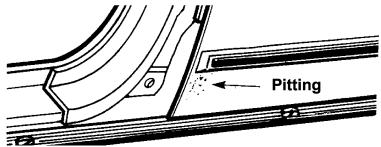
During the manufacturing of the unibody car, the manufacturer applies "corrosion protection" using specialized manufacturing processes. This system is not duplicated in the collision repair body shop. However, the body shop still has a responsibility to apply corrosion protection to the unibody vehicle. So, the collision repair shop must use alternative materials to do the corrosion protection job after the repair.

This corrosion protection is required regardless of the environment and weather conditions the vehicle will be operated in. Corrosion protection is as important in the desert as it is at the seaside. Corrosion damage can literally destroy the structural integrity of a unibody vehicle from within. Many corrosion protection systems are destroyed during collision repair operations. Metal finishing, metal working and fatigue can cause the breakdown of many of the corrosion barriers installed at the factory. The use of heat for stress relief and welding also destroys factory installed corrosion barriers. These corrosion barriers and corrosion protection systems must be replaced after collision repair to ensure that the structural integrity of the unibody will remain intact throughout its life. In the past, only vehicles with aftermarket or after delivery corrosion protection systems installed were serviced after collision repair to restore the corrosion protection system.

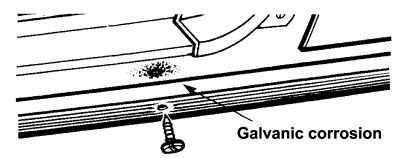
An understanding of the types of corrosion which affect the unibody vehicles will assist in understanding why the factory protection systems are important, how the factory protection systems consist of and how the systems' protection is replaced after collision and electrolytic corrosion. Some of the more common types of corrosion are **crevice corrosion**, **pitting, galvanic corrosion**, **stress corrosion, cracking, fretting, and erosion corrosion**. Back to Index



**Crevice corrosion** is a form of localized attack that occurs in areas on metal surfaces exposed to the elements. Examples include spot weld lap joints, threaded or riveted connections, gasket fittings, porous welds, valve seats.



Pitting is the corrosion of a metal surface at points or small areas which look like a small hole in the metal.



Galvanic corrosion is the type that occurs when dissimilar metals are in electrical contact while immersed in an electrolyte.

The penetration of corrosive solutions into these small areas, with widths that are typically a few thousandths of an inch, can result in various types of failures: the metal surface may become rusty in appearance, operating components may seize when protective coatings may have been removed from the metal surface. The coating of zinc on steel, known as galvanized, is an example of sacrificial cathodic protection.

An example of galvanic corrosion on the automobile is a stainless steel trim molding on a painted mild steel. When the paint becomes damaged, a galvanic corrosion cell is formed between the passive stainless steel (cathode) and the steel (anode). The corrosion leads to what would look like a rust stain. Methods of reducing galvanic corrosion include the use of compatible materials, minimizing of cathode-to-anode areas, the insulation of dissimilar metal contacts and the use of thick, replaceable sections.

#### Stress corrosion, cracking, fretting, and erosion corrosion.

Corrosion cracking is the early cracking of metals produced by the combined action of tensile stress and a corrosive atmosphere.

Corrosion fatigue is cracking due to the action of stresses and corrosion. Methods of reducing corrosion fatigue include the reduction in stress and the use of coatings.

Fretting is the deterioration of a metal at contact surfaces due to the presence of a corrosive and relative motion between the surfaces. The two metal surfaces initially are covered with an oxide film that becomes abraded during vibration. The results are oxide particles that become corroded. During the collision repair process, the factory protection materials become damaged from working the metals, or from the use of heat in the repair operations. If these factory protection materials are not replaced with some similar protection material after repair, a corrosion hot spot is formed. A corrosion hot spot is a small unprotected area surrounded by a protected area throughout the rest of the vehicle. the hot spot effect causes rapid deterioration of the unprotected area. This deterioration takes place at a much faster rate, sometimes 10-12 times faster than if the entire car were unprotected. The hot spot effect is created because all the corrosive factors are channeled to the unprotected area much the same way all material flowing through a funnel is concentrated in a small area. This hot spot effect means that corrosion failures to the unibody structure could occur in a short period of time even in an atmosphere normally not subject to corrosion. The hot spot effect can cause rapid deterioration of unibody structures from corrosion damage in a desert as well as seaside.

The types of materials used in rustproofing application include oil based materials, wax base materials, primers and color coats. The most important properties of rustproofing materials are adhesion, toughness, and the resistance to the environment. The best coating in the world is not effective unless it is present in the right place at the right time.

#### **Corrosion Protection Information**

When making the collision repair, refer to the manufacturer's information on where corrosion protection and sealants are applied. Be sure to follow the recommendations. The application process is usually included with the material manufacturer's information so be sure to read and understand it before proceeding with the repair.

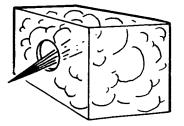
#### **Collision Repair Corrosion Protection Materials**

The materials must provide good **electrolyte barriers.** The material must also be able to penetrate **tiny crevices** and prevent **abrasive corrosion.** The material must be **compatible** with **paint systems** as many areas of the car must be treated before paint is applied.

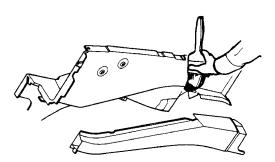
Materials containing silicones will cause paint conditions such as fish eyes if they are applied before the repaired vehicle is painted. So no silicone containing material is to be used. As many of the repair areas are more accessible before final assembly and painting, the non-silicone type materials are a must for this type of application.

When protecting an enclosed area, fog type properties for the corrosion protection material are a plus. The fog properties make the material much less susceptible to operator error or misapplication. With a fog type material, once the material is introduced inside of an enclosure, the fog spreads rapidly and evenly into all areas including tiny crevices. The fog type materials do not require direct spray application to be effective. Fog type materials are also very effective in coating over any existing rusted or corrosion damaged areas and preventing further corrosion of these areas. This is especially important on repairs of older vehicles.

Spray Accessibility to the Repair



Being able to achieve fog spray penetration into enclosed cavities as well as open areas requires application equipment, which includes an assortment of wands of various lengths and design.



Some areas are more effectively treated by brush application of corrosion protection material before they are assembled. A good example of this is an inner and outer engine compartment side rail area. Brush application to the inside of these areas as individual pieces is easy before assembly and can be followed by a light fog application to the weld areas and the crevices formed during assembly after the rails are assembled. Brush application keeps the foreign material from getting between welded joints during assembly yet gives good coverage to general areas with easy application. The material selected in addition to paint compatibility features and fog application features is also an excellent brush application material. Repaired areas, boxed in or closed in are more easily treated during assembly using fog and brush on techniques. Care must be taken to keep the corrosion materials away from the welding areas as welding contamination might take place. Brush-on applications are used before welding and fog in applications are used after welding assemblies together.

#### **Desired Characteristics of Corrosion Protection Material**

**1. Corrosion prevention material-** The material must displace water to prevent corrosion. This can be tested by spraying water on an open panel on the floor, then spraying the corrosion preventative material over the watered panel and observing if the material displaces the water.

**2. Creepage of material-** To insure thorough and complete protection coverage, the material should have a "creep" capability, approximately 1/4 inch per minute while drying. This assures protective penetration of pinch welds, cracks, etc.

3. Safe material- Material should be non-combustible when dried and when wet unable to support a fire after ignition.

**4. Clean-up-** The material should be of a viscosity which inhibits runs or drips. Overspray on a vehicle's painted surface should wipe off easily without solvent when wet, with solvent when dry. The material should also dry clean off clothing.

**5. Guarantee/Warranty-** The corrosion protection has to be done to maintain factory corrosion warranty. Manufacturer's recommendations must be followed.

#### **Glossary:**

Abrasion Corrosion - Rubbing or hitting of one material by another Corrosion Protection - Material applied to deter corrosion (oxidation) Crevice Corrosion - Oxidation when two metals are joined Electrolytic Corrosion - Electrical action taking place between two materials in the presence of an electrolyte (liquid) Fogging - Applying material in a mist form Fretting - Deterioration of metal at contact surfaces due to motion and corrosive elements Galvanic Corrosion - Electrical action (electrolysis) between two dissimilar metals in the presence of electrolyte (liquid) Hot Spot - An unprotected area subject to corrosion Pitting Corrosion - Corrosion on a surface the results in a small "specks" or "pinholes" Stress of Fatigue, Cracking Corrosion - Cracking due to stress and atmospheric elements

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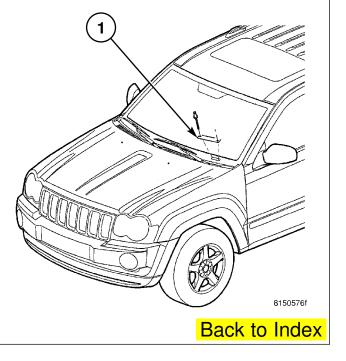
The Chemical Company

# **GRAND CHEROKEE VEHICLE IDENTIFICATION NUMBER DESCRIPTION**

The Vehicle Identification Number (VIN) can be viewed through the windshield at the upper left corner of the instrument panel, near the left windshield pillar. The VIN consists of 17 characters in a combination of letters and numbers that provide specific information about the vehicle. Refer to VIN Code Breakdown Chart for decoding information. To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the vehicle identification number. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehicle and official documentation. The formula to use the check digit is not released to the general public.

#### VEHICLE IDENTIFICATION NUMBER (VIN)

1 - VEHICLE IDENTIFICATION NUMBER (VIN)



POSITION	INTERPRETATION	CODE = DESCRIPTION	
1	Country of Origin	1 = Manufactured by Daimler Chrysler Corporation	
2	Make	J = Jeep	
3	Vehicle Type	4 = MPV Less Side Air Bags	
		8 = MPV With Side Air Bags	
4	Gross Vehicle Weight Rating	G = 5001 - 6000 lbs.	
5	Vehicle Line (WK)	S = Grand Cherokee 4X2	
		R = Grand Cherokee 4X4	
5	Vehicle Line (WH)	C = Grand Cherokee 4X4 (LHD)	
		D = Grand Cherokee 4X4 (RHD)	
6	Series	4 = Grand Cherokee LAREDO	
		5 = Grand Cherokee LIMITED	
		E = 5 Speed Auto	
7	Body Style	8 = Sport Utility 4 Door	
8	Engine	K = 3.7K 6 cyl. MPI Gasoline	
		N = 4.7K 8 cyl. MPI Gasoline	
		2 = 5.7L 8 cyl. HEMI Multiple Displacement Gasoline	
9	Check Digit	0 through 9 or X	
10	Model Year	5 = 2005	
11	Assembly Plant	C = Jefferson North Assembly Y = Chrysler Steyer Assembly	
12 through 17		Vehicle Build Sequence	

# **VEHICLE CERTIFICATION LABEL**

#### DESCRIPTION

A vehicle certification label is attached to every DaimlerChrysler Corporation vehicle. The label certifies that the vehicle conforms to all applicable Federal Motor Vehicle Standards. The label also lists:

- Month and year of vehicle manufacture.
- Gross Vehicle Weight Rating (GVWR). The gross front and rear axle weight ratings (GAWR's) are based on a minimum rim size and maximum cold tire inflation pressure.
- Vehicle Identification Number (VIN).
- Type of vehicle.
- Type of rear wheels.
- Bar code.
- Month, Day and Hour (MDH) of final assembly.
- Paint and Trim codes.
- Country of origin.

The label is located on the driver-side door shut-face.



## JEEP GRAND CHEROKEE PAINT CODES

#### **EXTERIOR**

CODE	COLOR	
PGV	Deep Beryl Green	
PJC	Light Khaki Metallic Clear Coat	
PJT	Dark Khaki Pearl Coat	
PSB	Bright Silver Metallic Clear Coat	
PXR	Brilliant Black Crystal Pearl Coat	
PB8	Midnight Bluse Pearl Coat	
PEL	Inferno Red Tinted Pearl Coat	
PW1	Stone White Clear Coat	

#### INTERIOR

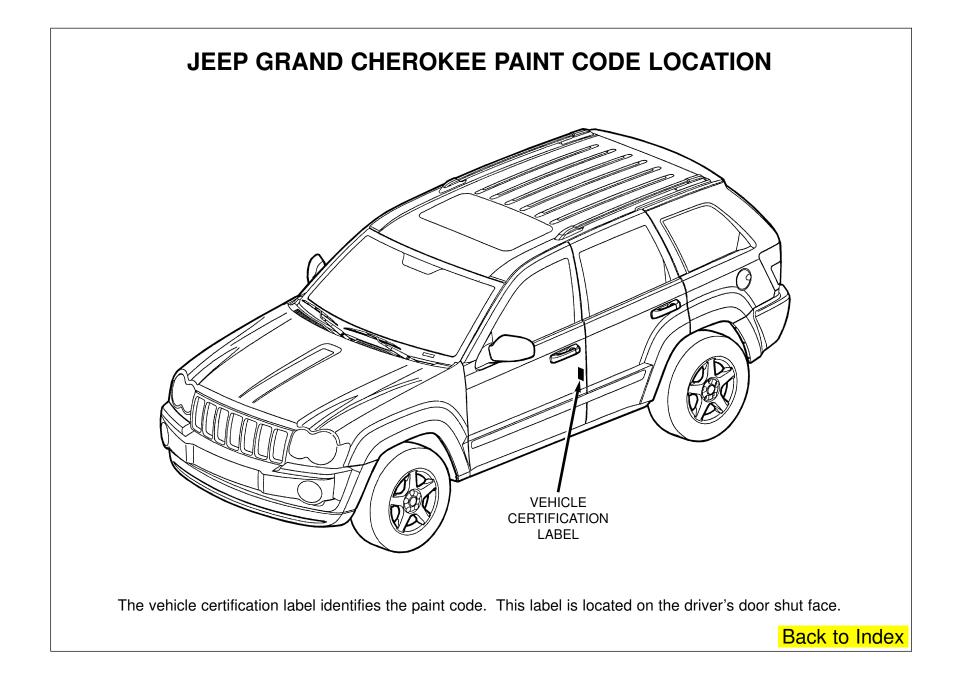
CODE	COLOR	
BD1	Light Graystone	
BD5	Medium Slate Gray	
ZJ3	Medium Khaki	
ZJ8	Dark Khaki	

#### BUMPER/CLADDING/FASCIA/TRIM

CODE	COLOR	
VF7	Driftwood	
WLP	Taupe	
YBM	Dark Blue	
YR8	Dark Red Garnet	
ZJQ	Onyx Green	
ZSP	Deep Gray	
PEL	Inferno Red	
PSB	Bright Silver	

#### WHEEL

CODE	COLOR	
YZB	Super Silver	





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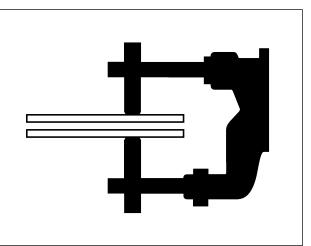
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# **BASF**

The Chemical Company

# WELD PANEL REPLACEMENT Jeep Grand Cherokee



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

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

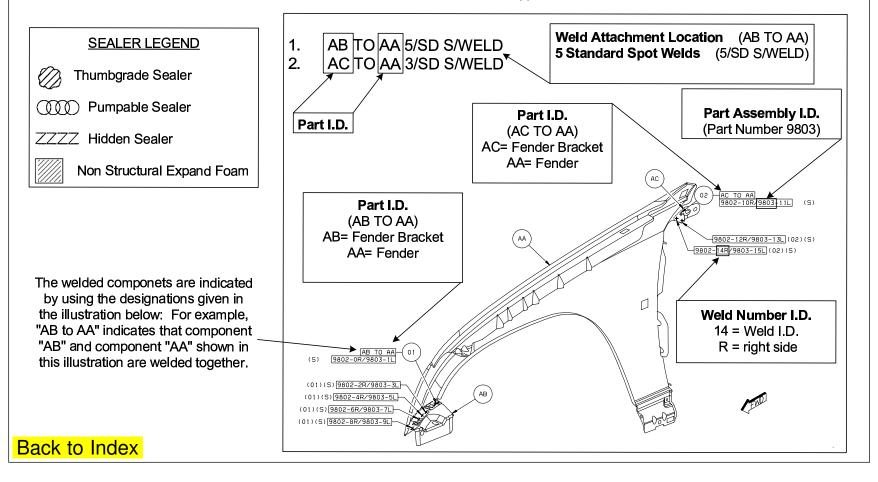
Note: Diagrams do not show all of the parts.

Explanation of Manual Contents	Front Door
Front Rails	Rear Door
Engine Box	Liftgate
Rear Floor	Front Floor/Dash/Plenum
Rear Rails	Engine Box Complete
Rear Floor and Ladder	Underbody Complete
Body in White	Outer Body Side Aperture
Dash/Plenum	Inner Body Side Aperture
Front Floor	Body Side Aperture Complete
Underbody	Body in White without Roof
Body in White	Body in White Complete
Hood	Back to Index

# **Explanation of Welding/Sealer Information**

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.

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



# **Explanation of Welding Abbreviations**

## Definitions

### Weld Type

(ORD)=Ordinary Weld or Standard (CRT)=Critical Weld or Diamond (SAF)=Safety Weld PROJ=Projection Weld FCAW=Flex Core Arc Weld MFG=Manufacturing Weld S/WELD=Spot Welds /SD=Per Side

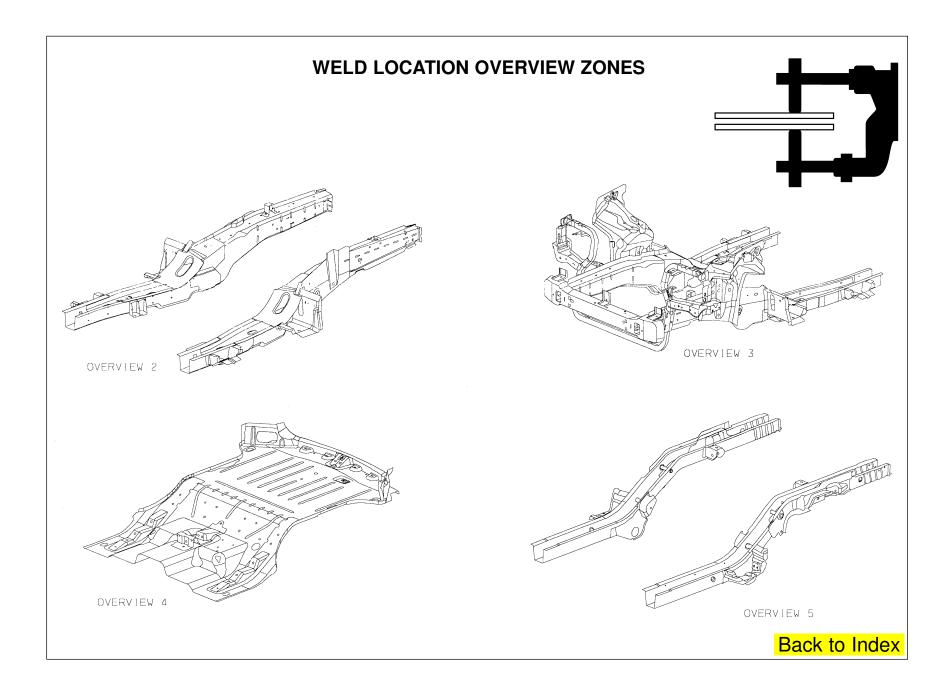
# Examples

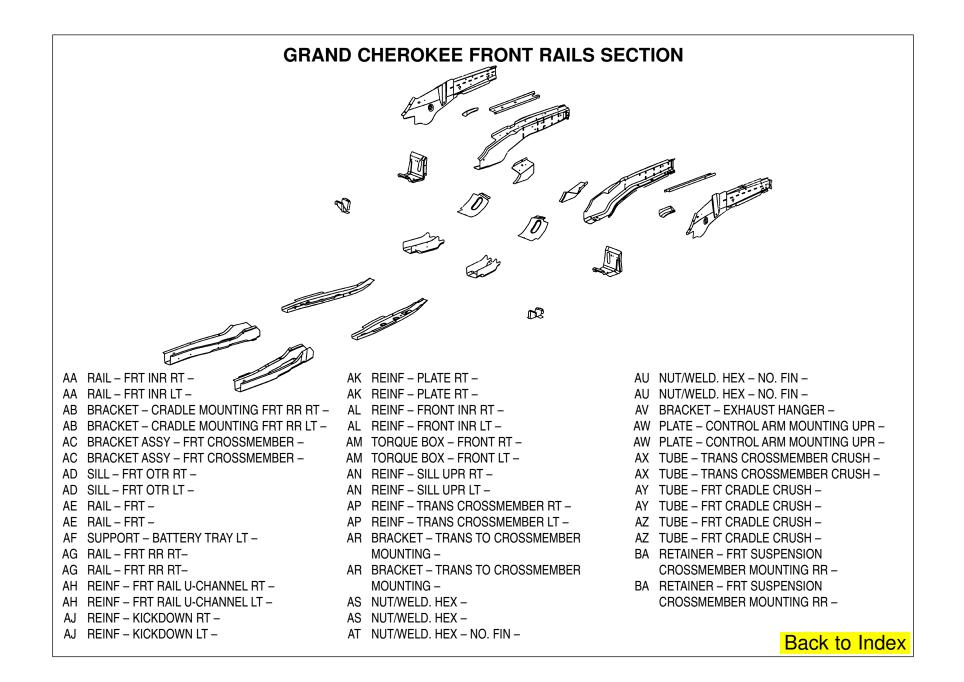
AA TO AB 5/SD S/WELDS (ORD)= PART AA WELDED TO PART AB 5 PER SIDE (5 RIGHT/5 LEFT) SPOT WELDS STANDARD

AA TO AB 12 PROJ WELDS (CRT)= PART AA WELDED TO PART AB 12 PROJECTION WELDS CRITICAL OR DIAMOND

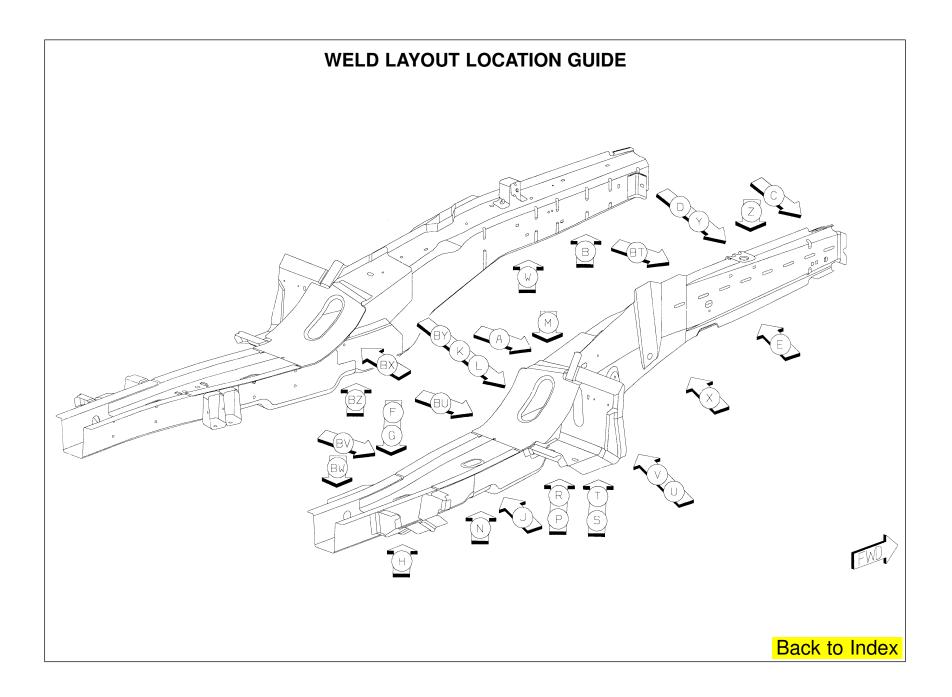
## **Adhesives**

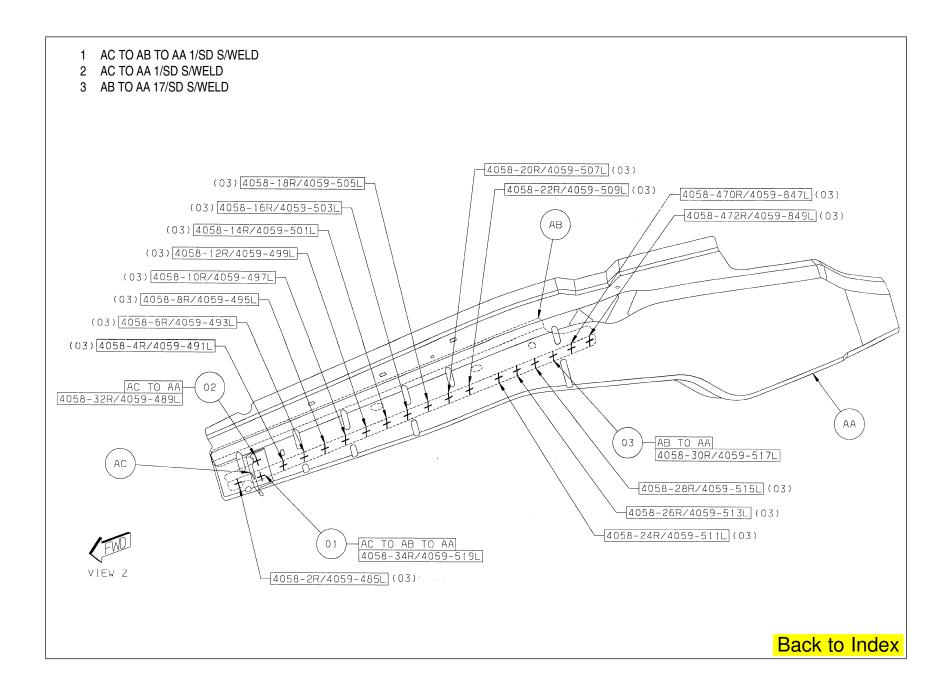
STRUCT ADH (ORD) = Ordinary Structural Adhesive ADH (ORD) = Ordinary Adhesive

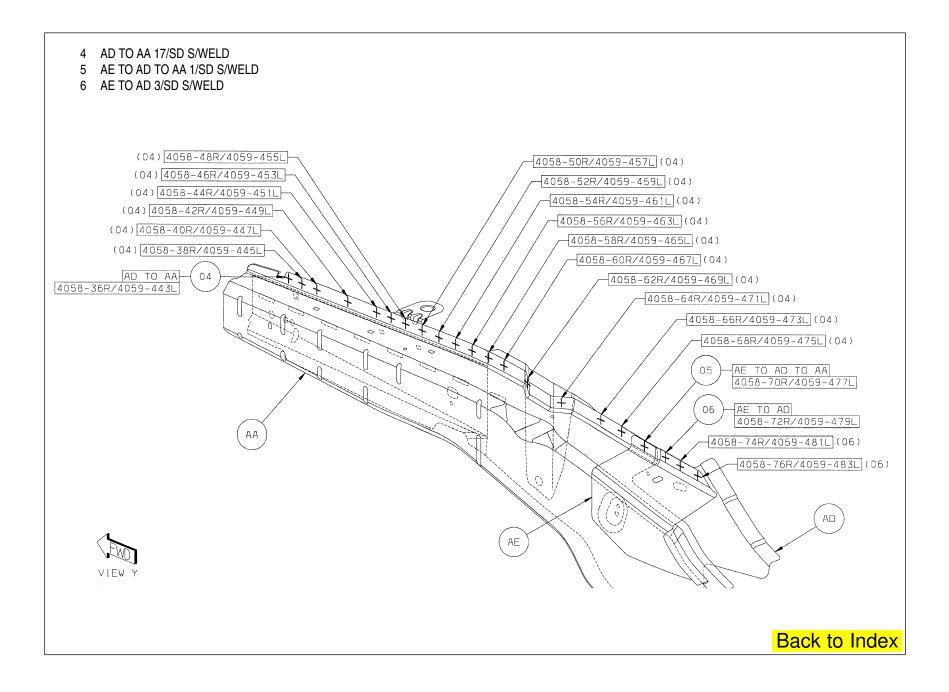


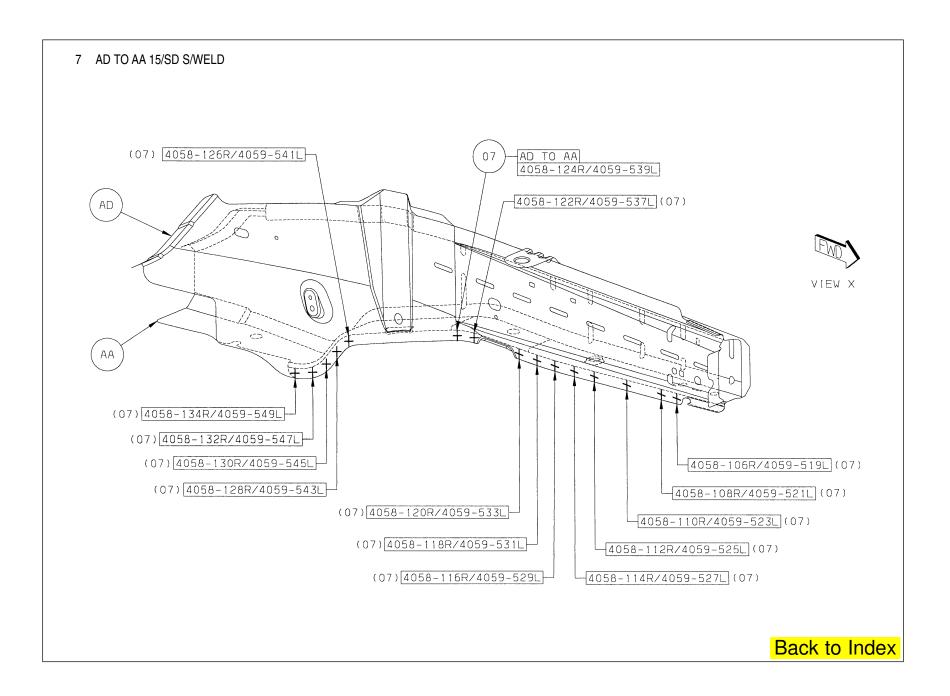


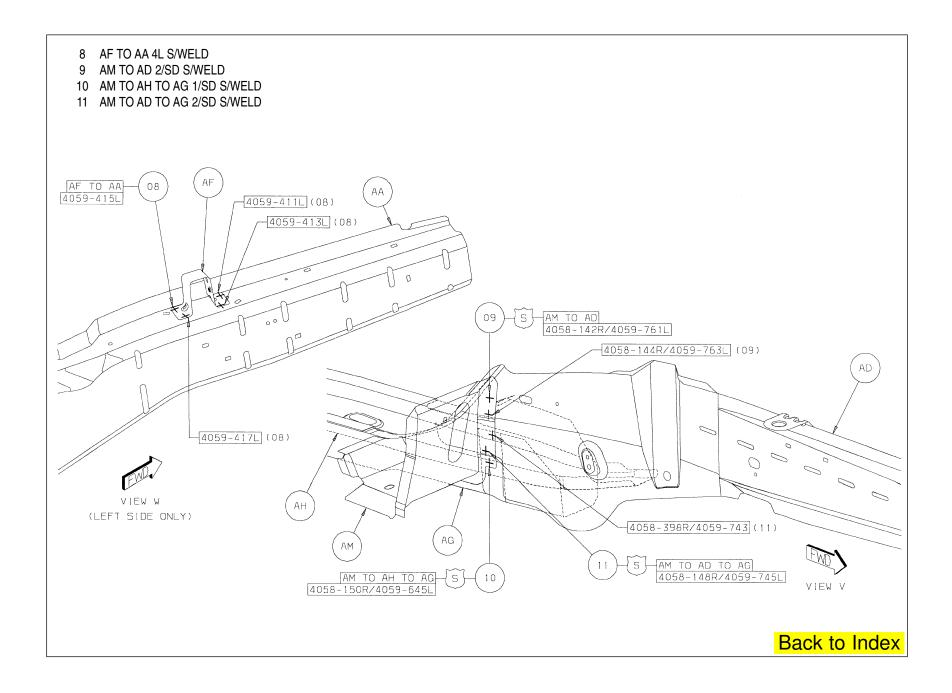
#### **PARTS IDENTIFICATION LEGEND, OVERVIEW 2** AA RAIL - FRT INR RT -AK REINF - PLATE RT -AU NUT/WELD. HEX - NO. FIN -AA RAIL – FRT INR LT – AK REINF - PLATE RT -AU NUT/WELD. HEX - NO. FIN -AB BRACKET - CRADLE MOUNTING FRT RR RT - AL REINF - FRONT INR RT -AV BRACKET – EXHAUST HANGER – AB BRACKET – CRADLE MOUNTING FRT RR LT – AL REINF – FRONT INR LT – AW PLATE - CONTROL ARM MOUNTING UPR -AC BRACKET ASSY - FRT CROSSMEMBER -AM TORQUE BOX - FRONT RT -AW PLATE - CONTROL ARM MOUNTING UPR -AC BRACKET ASSY - FRT CROSSMEMBER -AM TORQUE BOX – FRONT LT – AX TUBE - TRANS CROSSMEMBER CRUSH -AD SILL - FRT OTR RT -AN REINF - SILL UPR RT -AX TUBE - TRANS CROSSMEMBER CRUSH -AD SILL - FRT OTR LT -AN REINF - SILL UPR LT -AY TUBE - FRT CRADLE CRUSH -AE RAIL - FRT -AP REINF – TRANS CROSSMEMBER RT – AY TUBE - FRT CRADLE CRUSH -AE RAIL - FRT -AP REINF – TRANS CROSSMEMBER LT – AZ TUBE - FRT CRADLE CRUSH -AF SUPPORT – BATTERY TRAY LT – AR BRACKET – TRANS TO CROSSMEMBER AZ TUBE - FRT CRADLE CRUSH -AG RAIL - FRT RR RT-MOUNTING -**BA RETAINER – FRT SUSPENSION** AG RAIL - FRT RR RT-AR BRACKET – TRANS TO CROSSMEMBER **CROSSMEMBER MOUNTING RR -**AH REINF - FRT RAIL U-CHANNEL RT -MOUNTING -**BA RETAINER – FRT SUSPENSION** AS NUT/WELD. HEX -AH REINF – FRT RAIL U-CHANNEL LT – **CROSSMEMBER MOUNTING RR –** AJ REINF - KICKDOWN RT -AS NUT/WELD. HEX -AJ REINF - KICKDOWN LT -AT NUT/WELD. HEX - NO. FIN -Back to Index

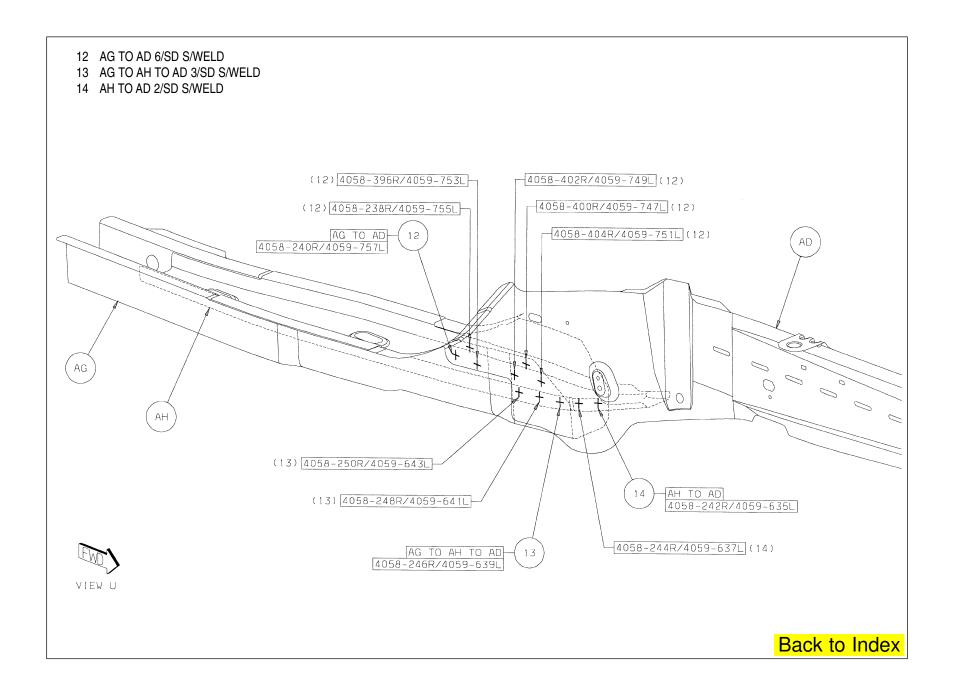


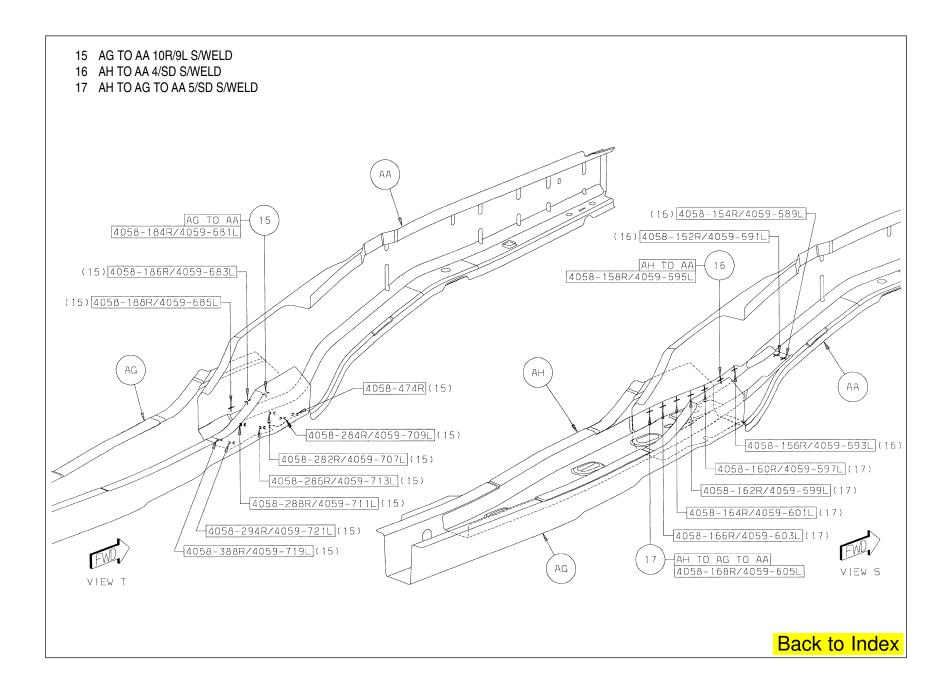


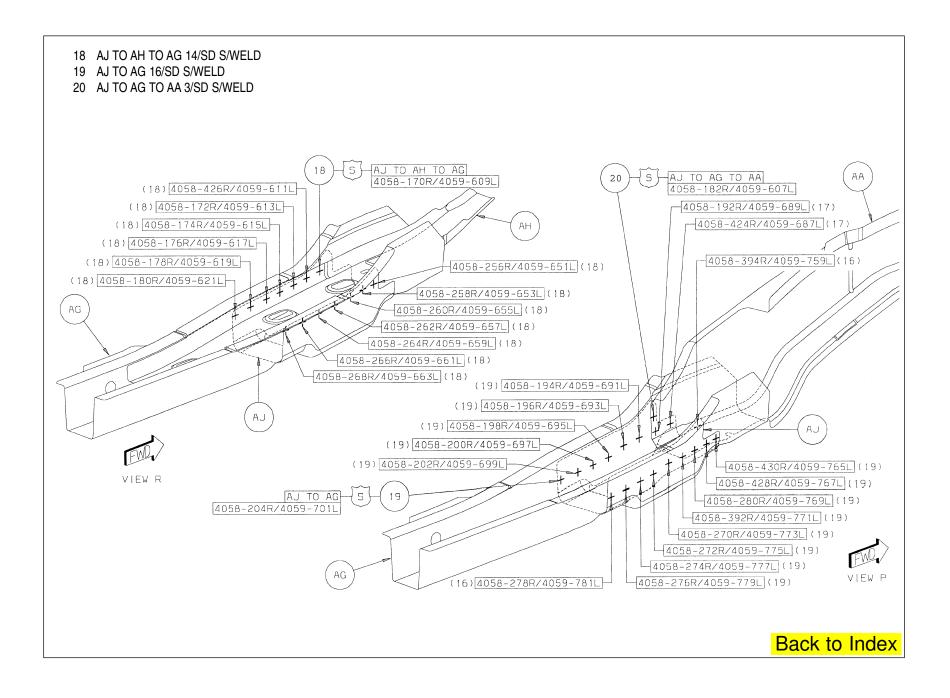


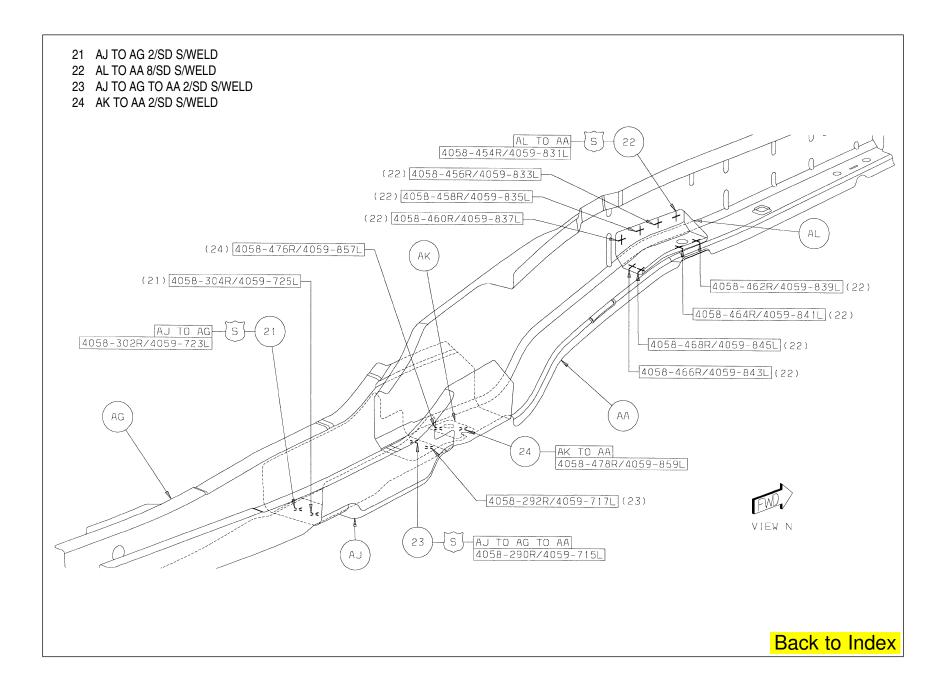


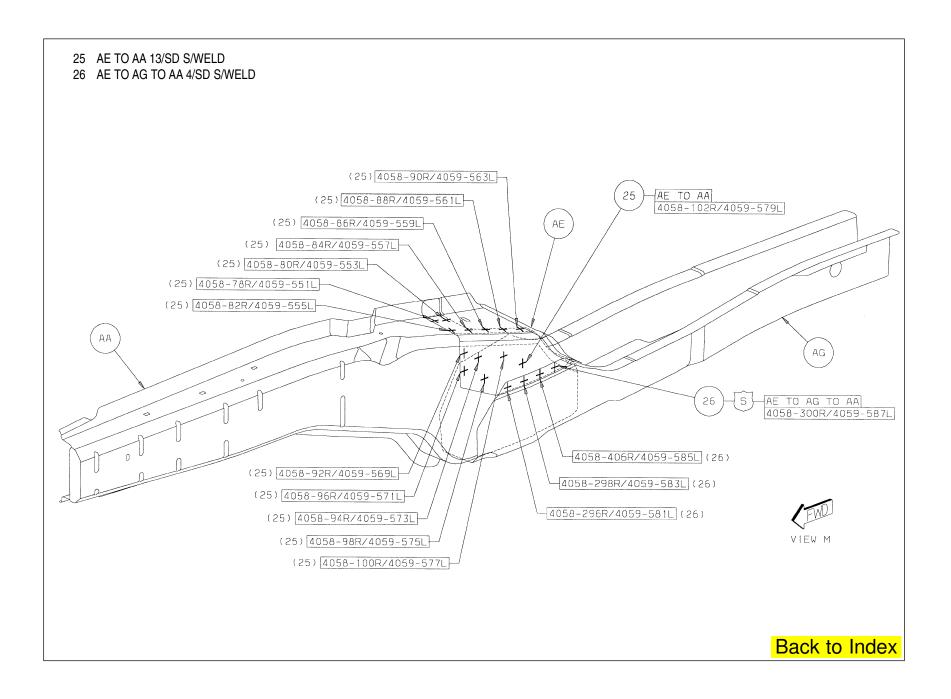


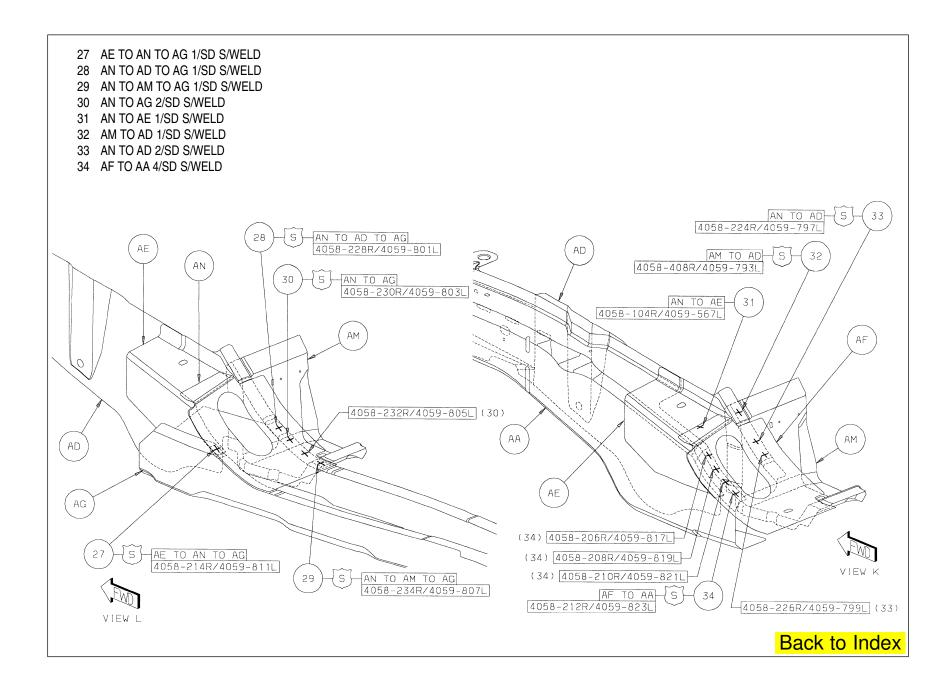


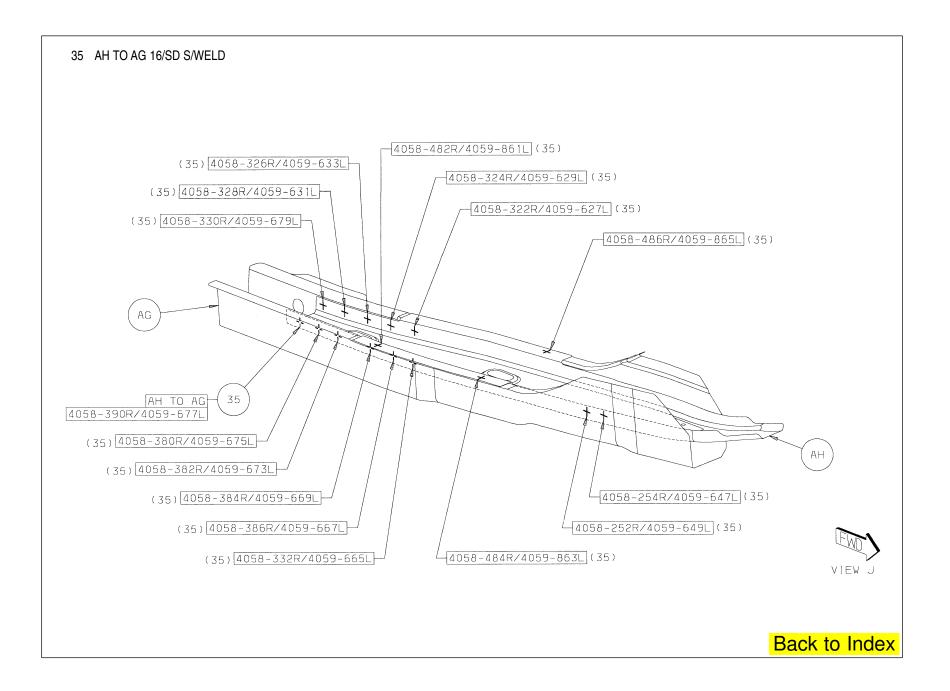


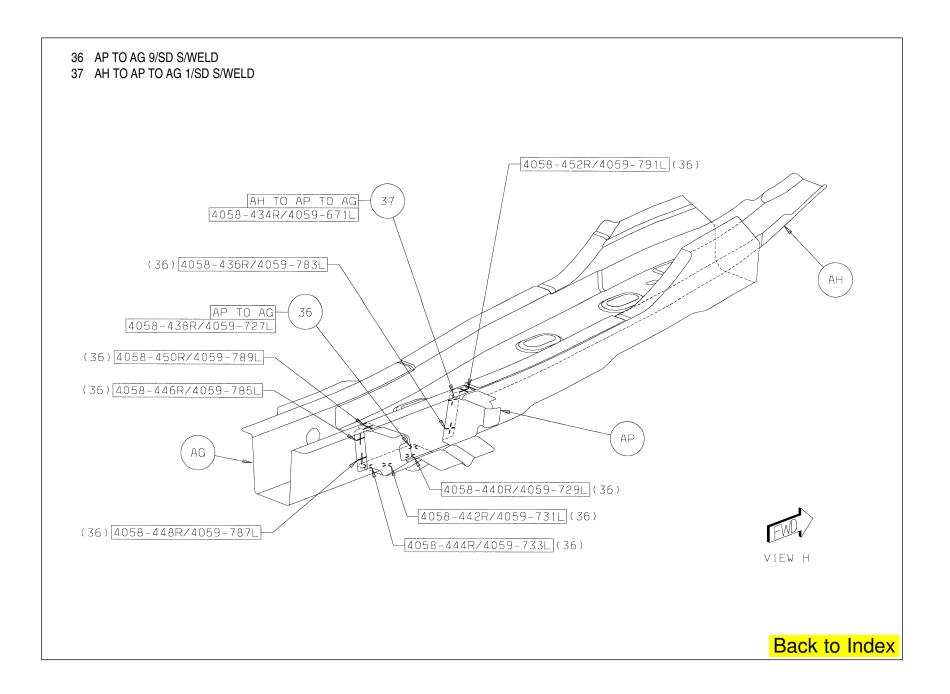


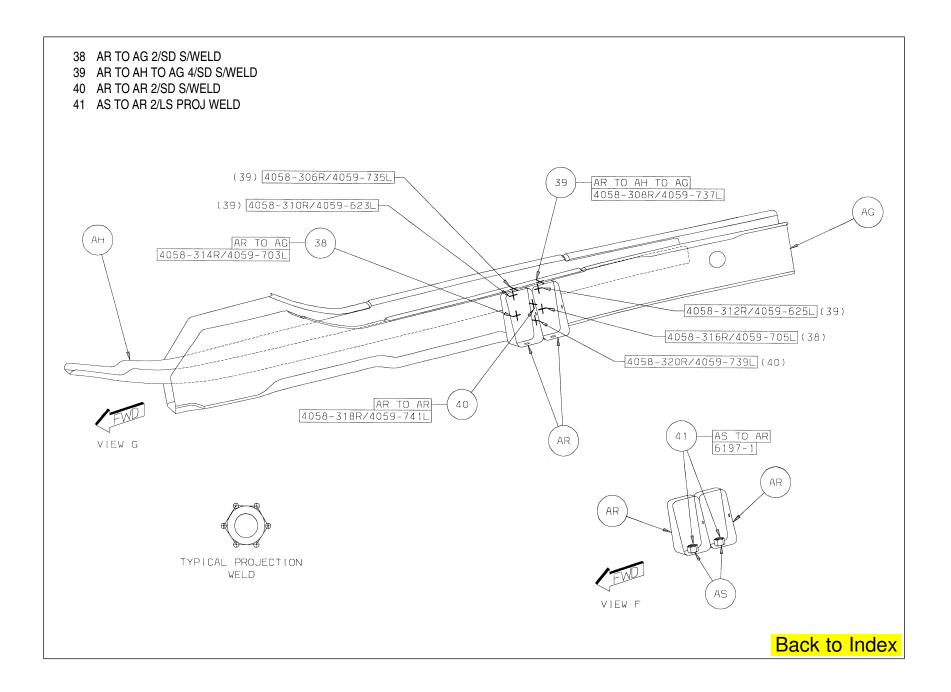


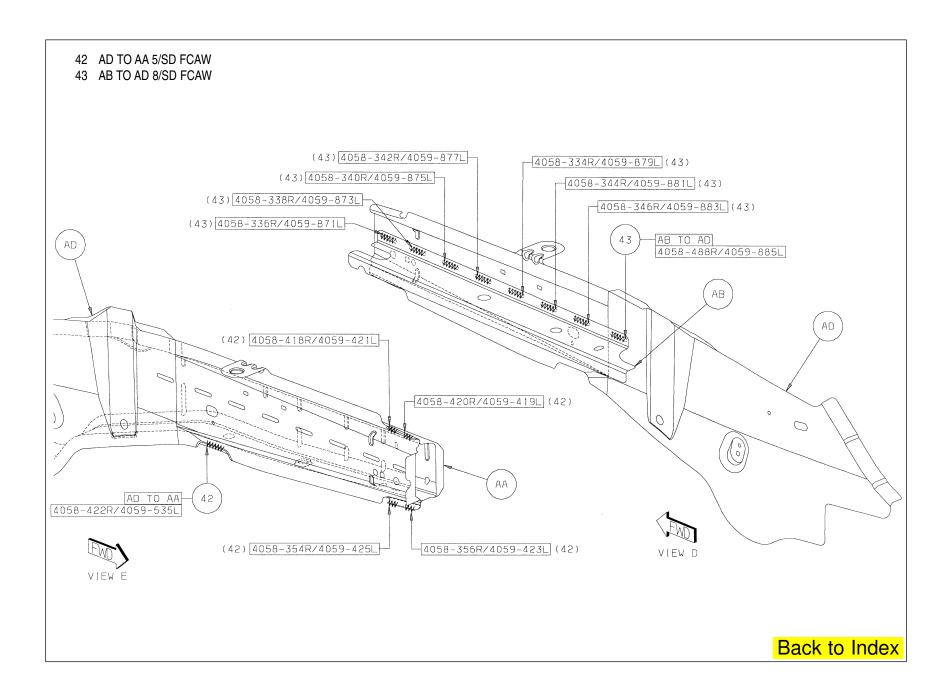


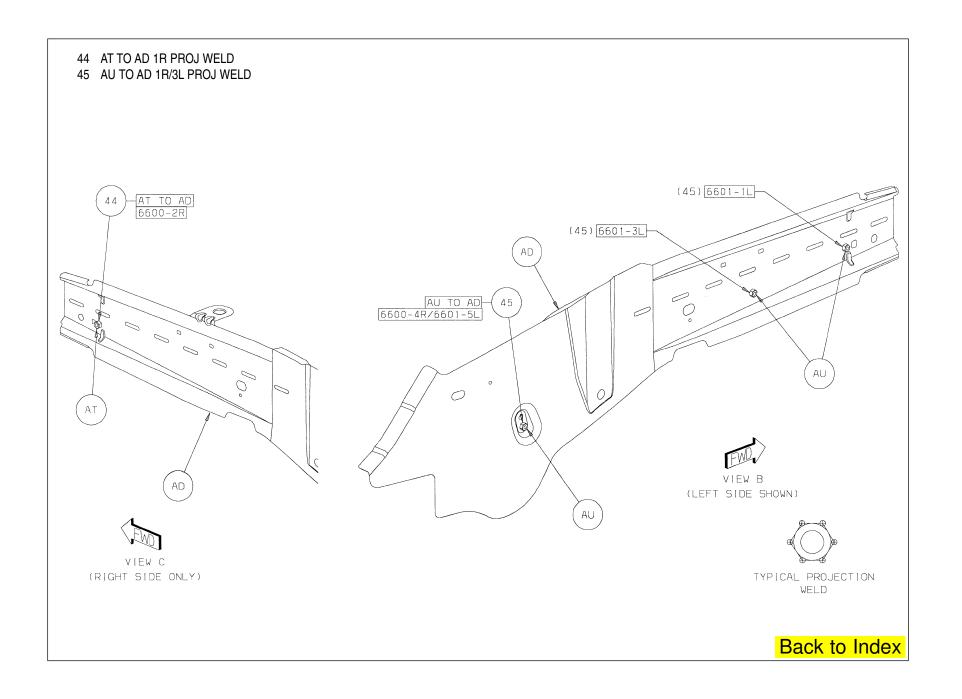


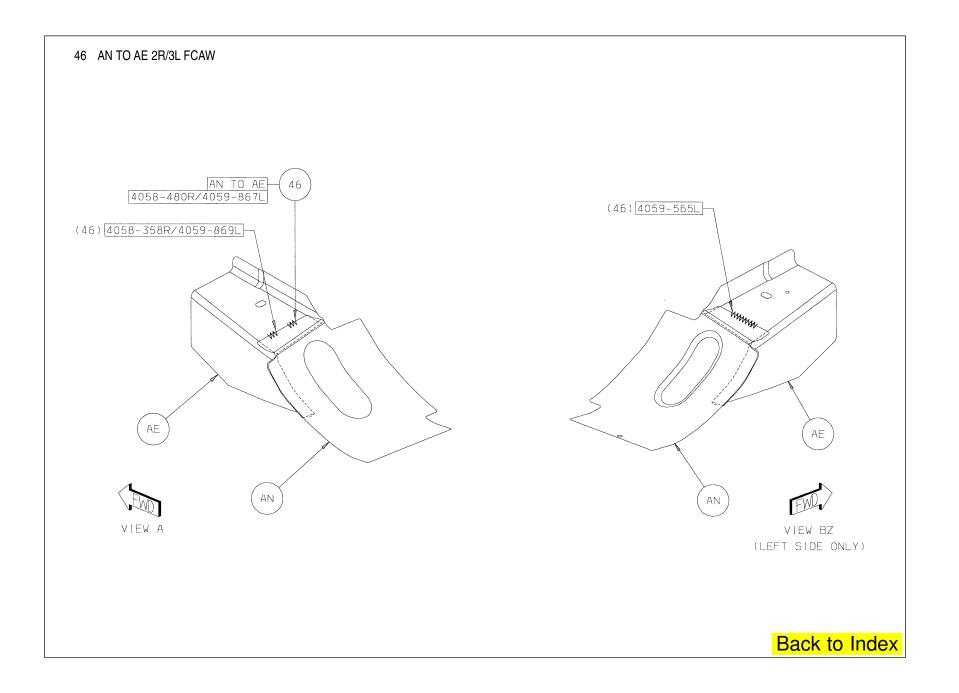


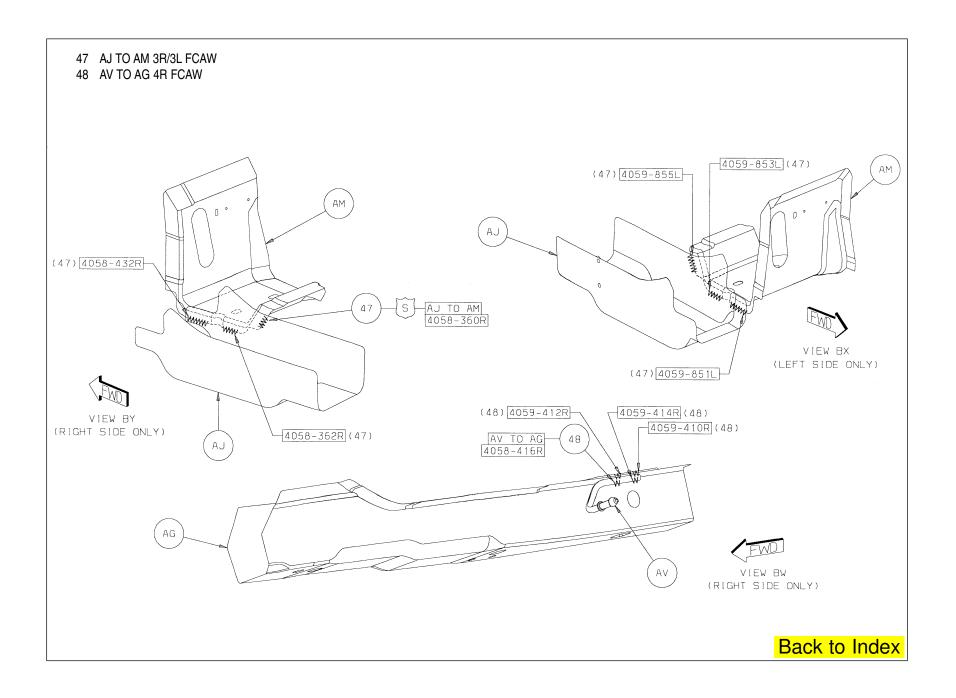


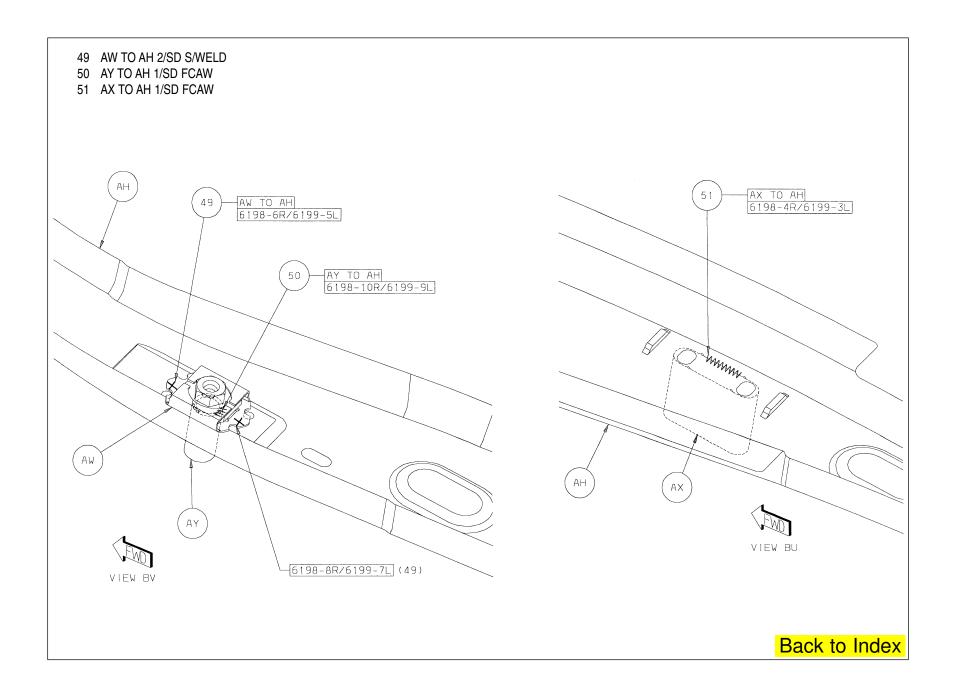


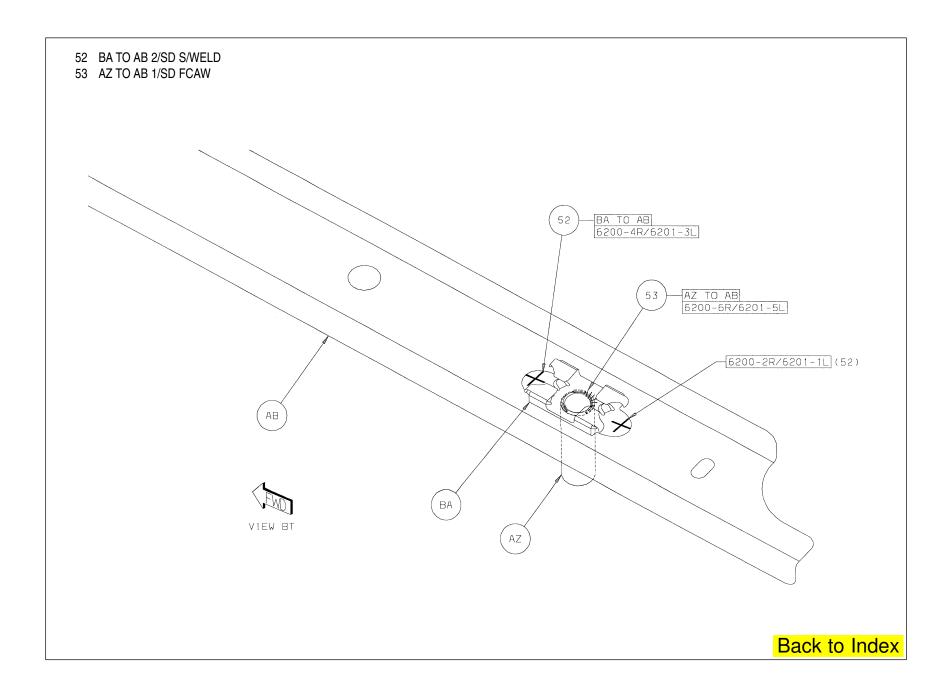


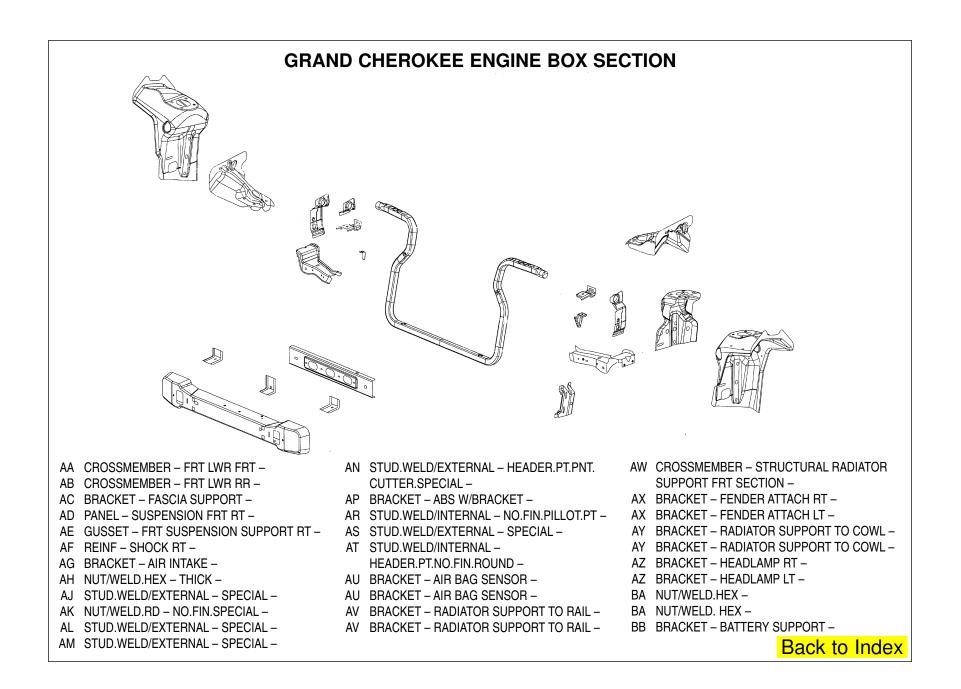












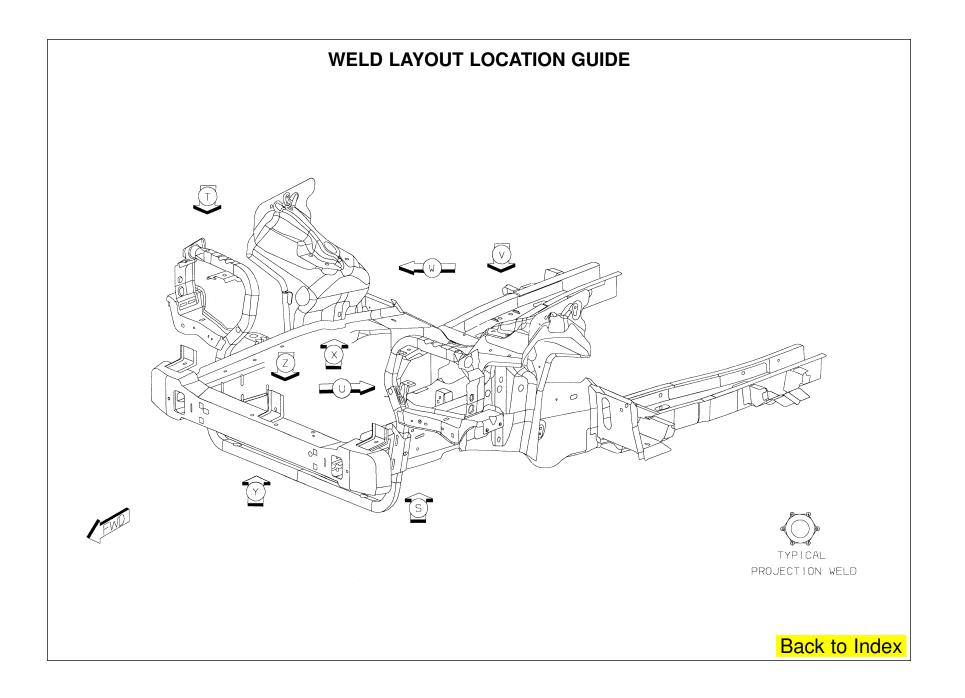
## PARTS IDENTIFICATION LEGEND, OVERVIEW 3

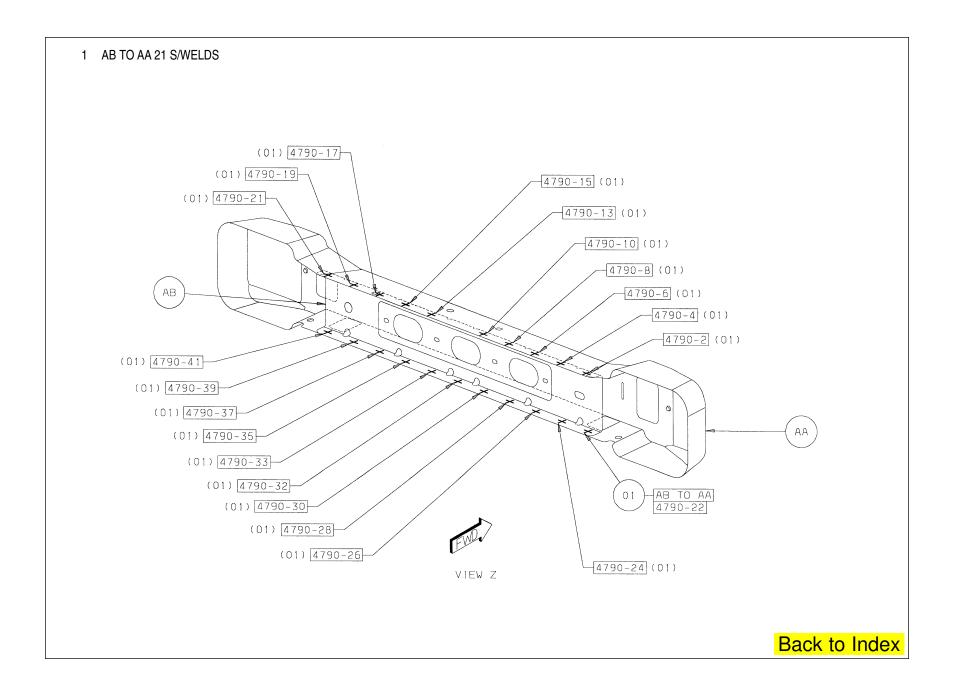
- AA CROSSMEMBER FRT LWR FRT -
- AB CROSSMEMBER FRT LWR RR -
- AC BRACKET FASCIA SUPPORT –
- AD PANEL SUSPENSION FRT RT –
- AE GUSSET FRT SUSPENSION SUPPORT RT -
- AF REINF SHOCK RT -
- AG BRACKET AIR INTAKE -
- AH NUT/WELD.HEX THICK -
- AJ STUD.WELD/EXTERNAL SPECIAL -
- AK NUT/WELD.RD NO.FIN.SPECIAL –
- AL STUD.WELD/EXTERNAL SPECIAL -
- AM STUD.WELD/EXTERNAL SPECIAL -

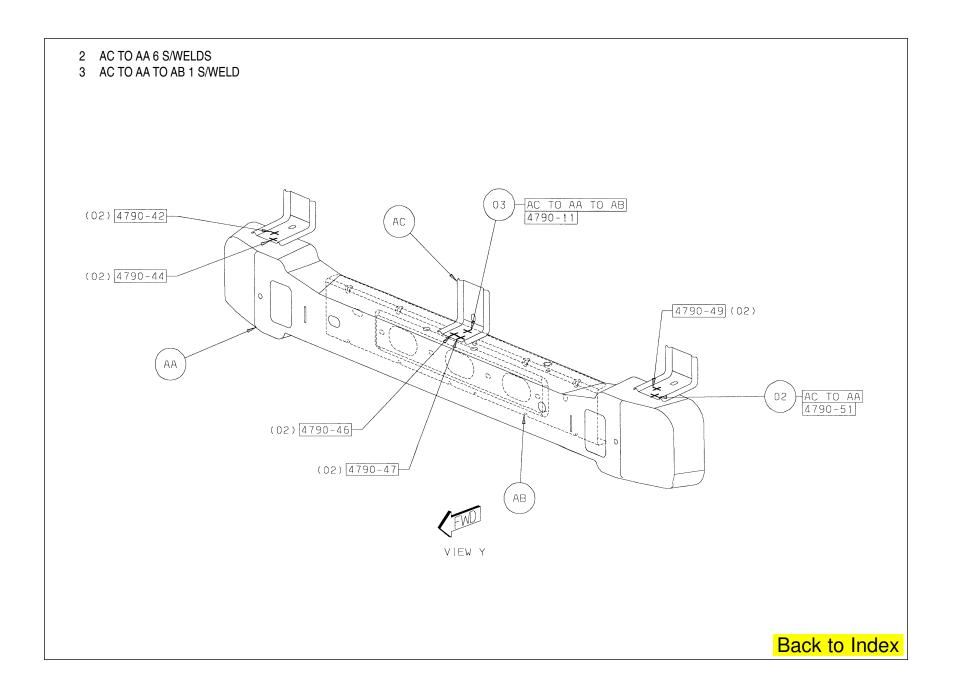
- AN STUD.WELD/EXTERNAL HEADER.PT.PNT. CUTTER.SPECIAL –
- AP BRACKET ABS W/BRACKET –
- AR STUD.WELD/INTERNAL NO.FIN.PILLOT.PT -
- AS STUD.WELD/EXTERNAL SPECIAL –
- AT STUD.WELD/INTERNAL -
- HEADER.PT.NO.FIN.ROUND -
- AU BRACKET AIR BAG SENSOR –
- AU BRACKET AIR BAG SENSOR –
- AV BRACKET RADIATOR SUPPORT TO RAIL –
- AV BRACKET RADIATOR SUPPORT TO RAIL –

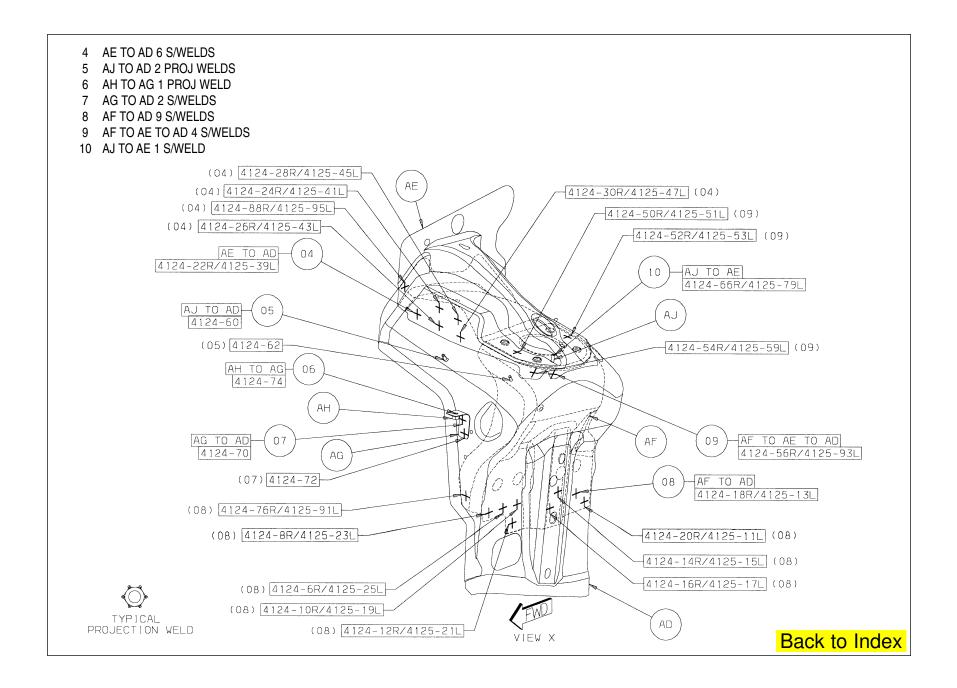
- AW CROSSMEMBER STRUCTURAL RADIATOR SUPPORT FRT SECTION –
- AX BRACKET FENDER ATTACH RT –
- AX BRACKET FENDER ATTACH LT –
- AY BRACKET RADIATOR SUPPORT TO COWL -
- AY BRACKET RADIATOR SUPPORT TO COWL -
- AZ BRACKET HEADLAMP RT -
- AZ BRACKET HEADLAMP LT –
- BA NUT/WELD.HEX -
- BA NUT/WELD. HEX –
- BB BRACKET BATTERY SUPPORT -

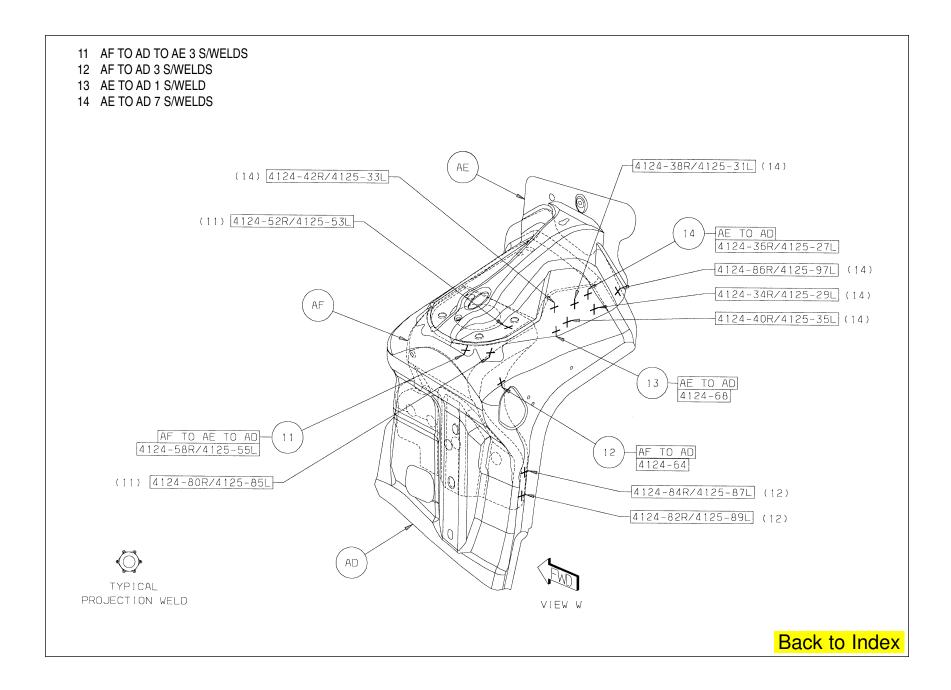
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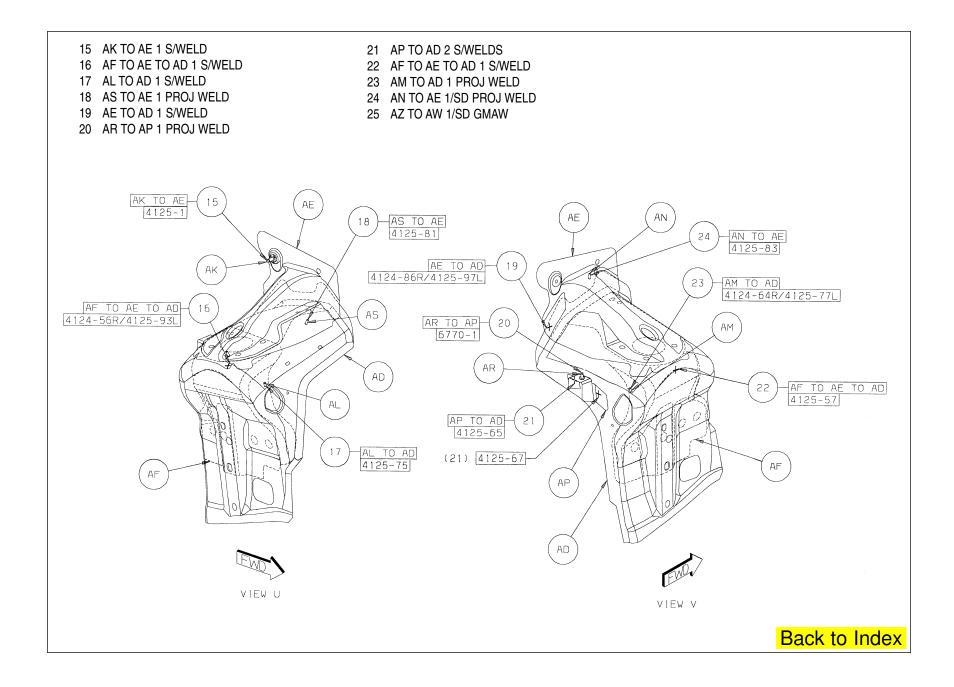


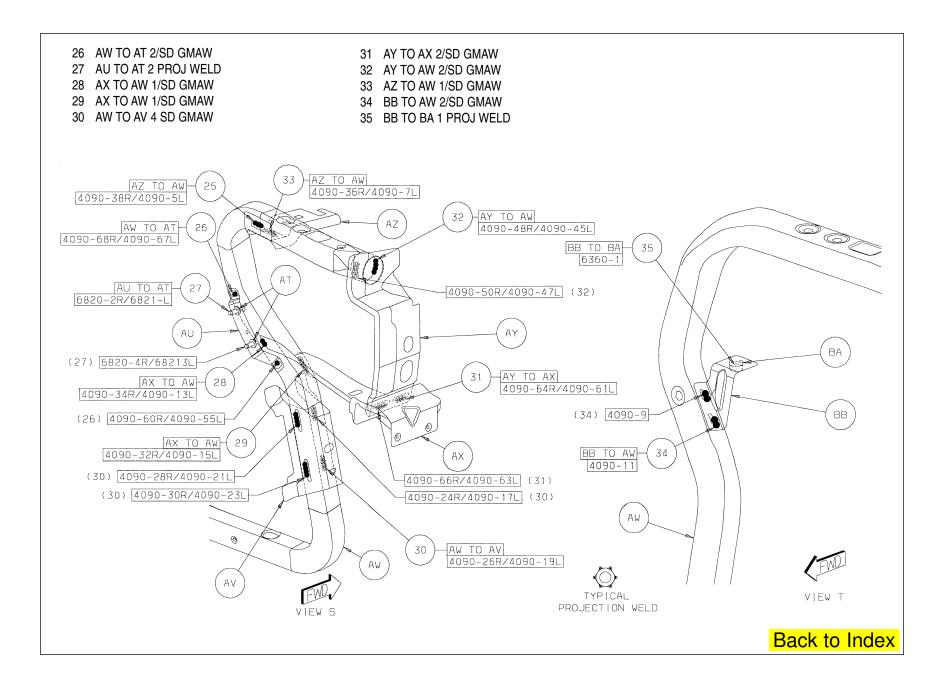


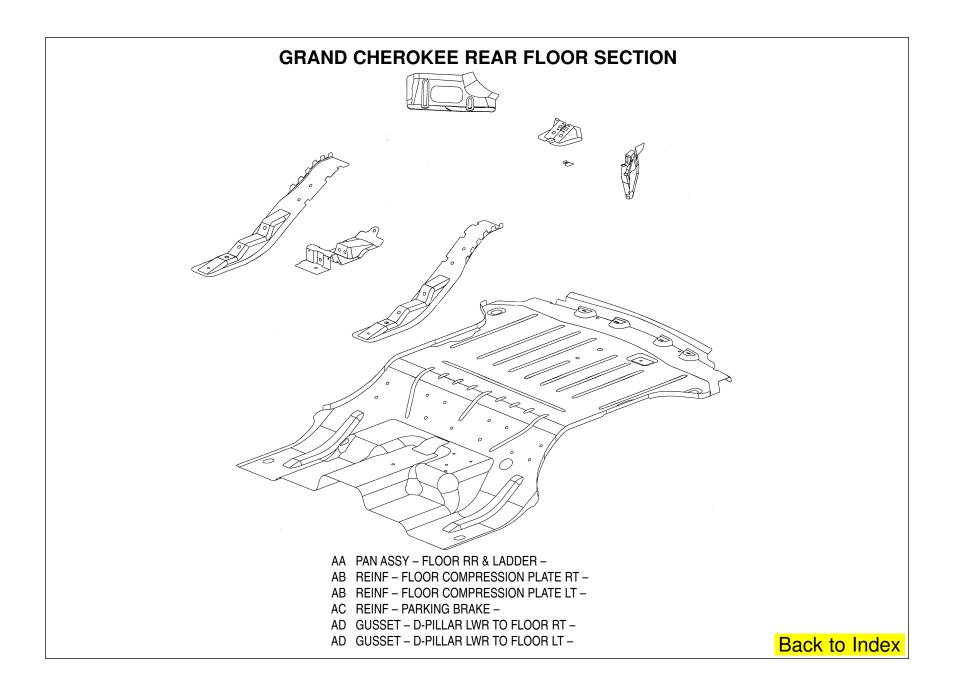


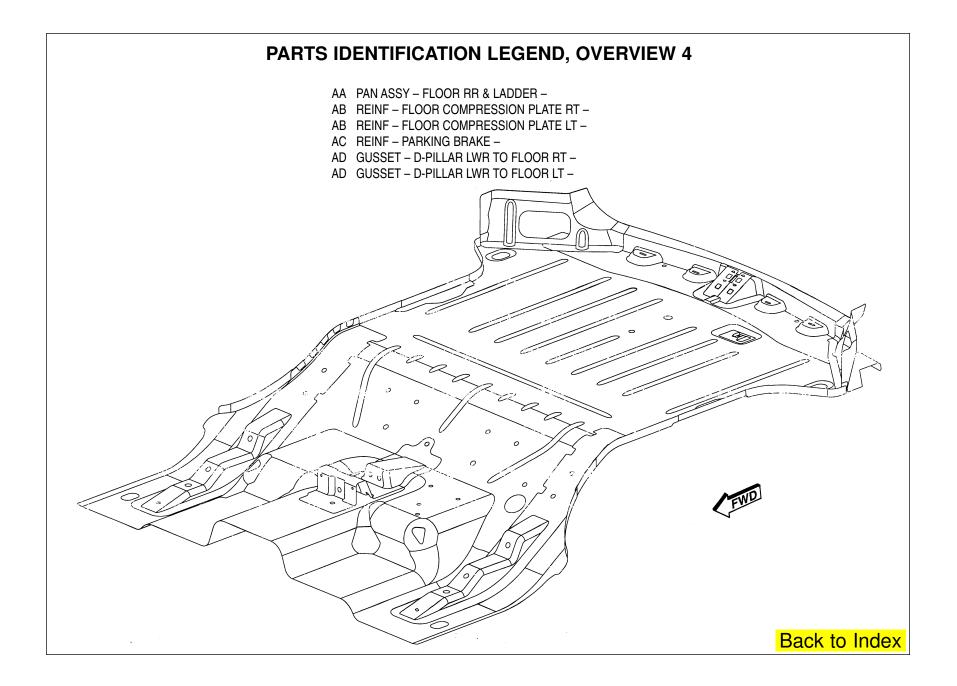


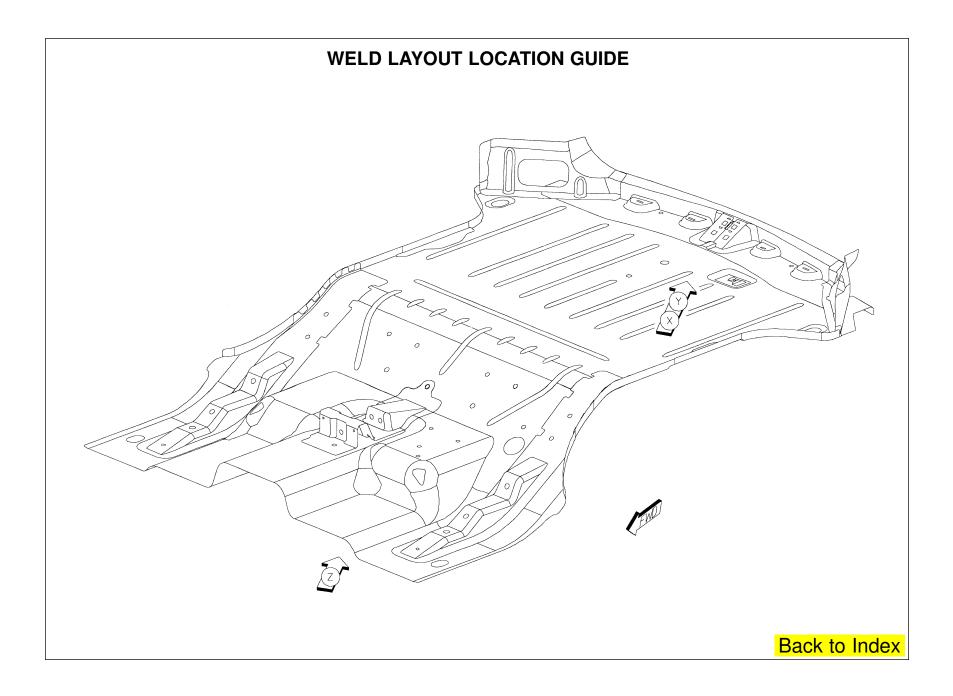


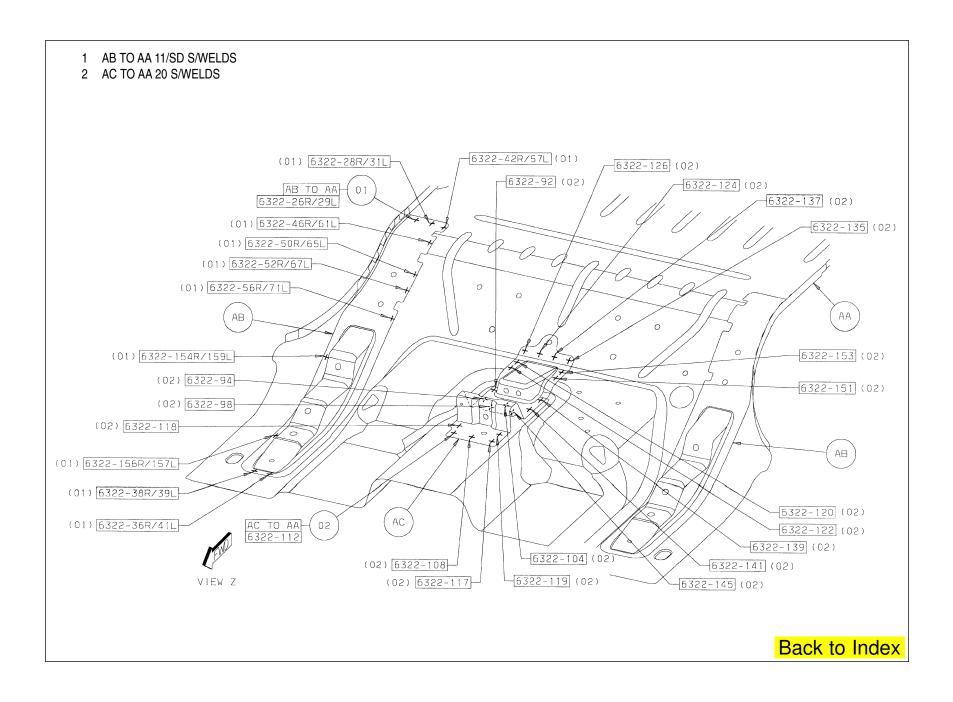


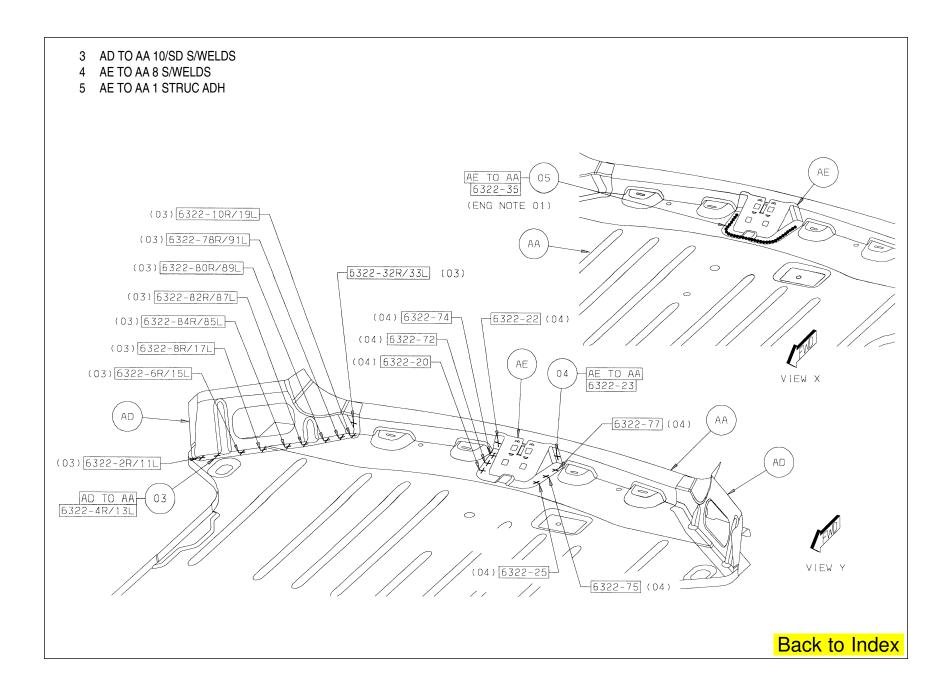


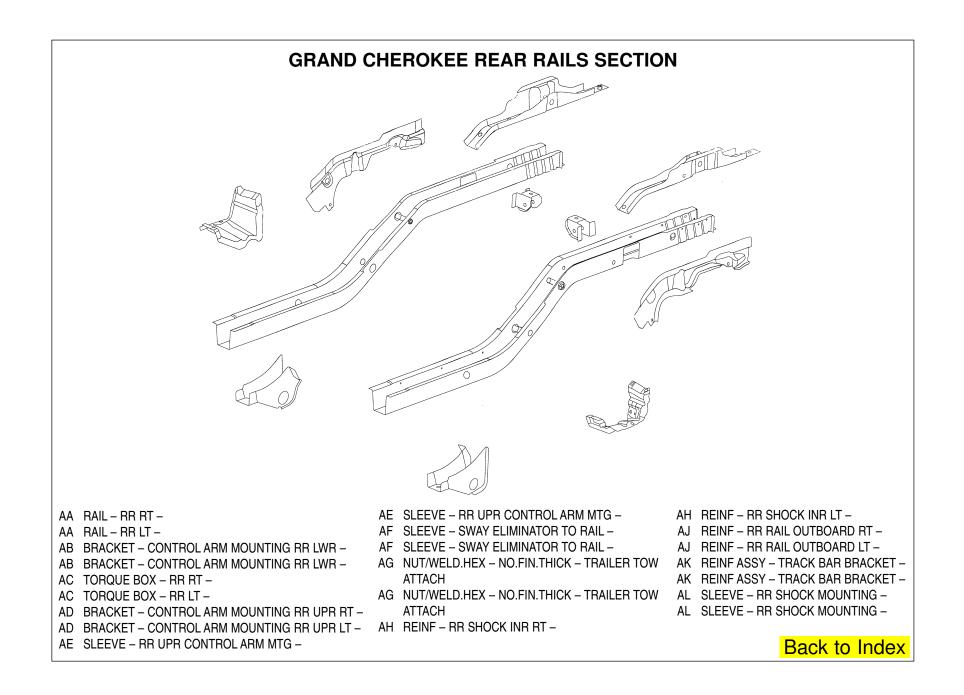


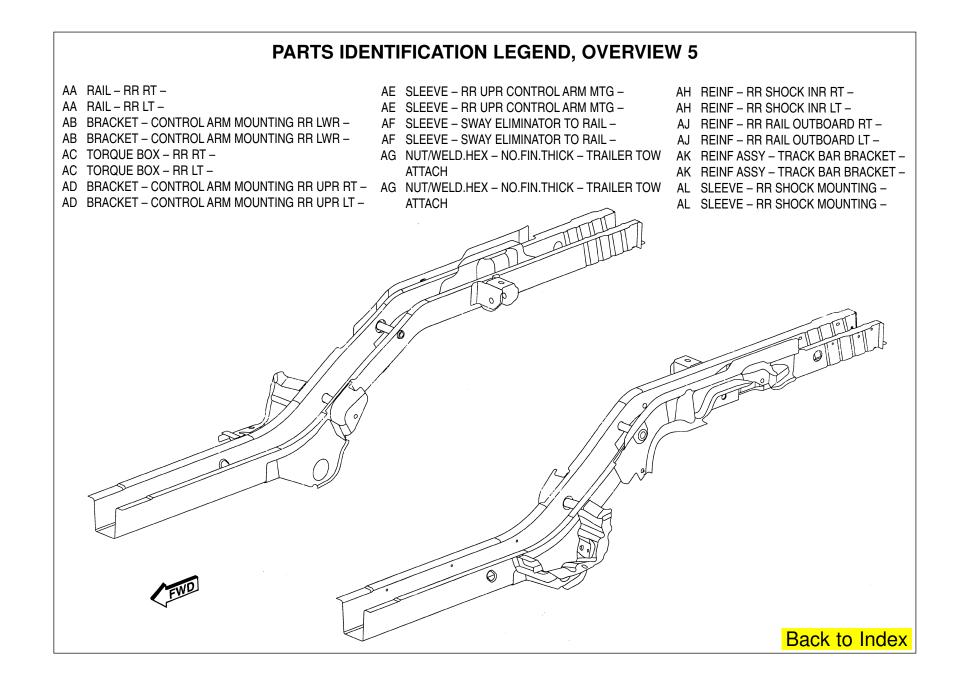


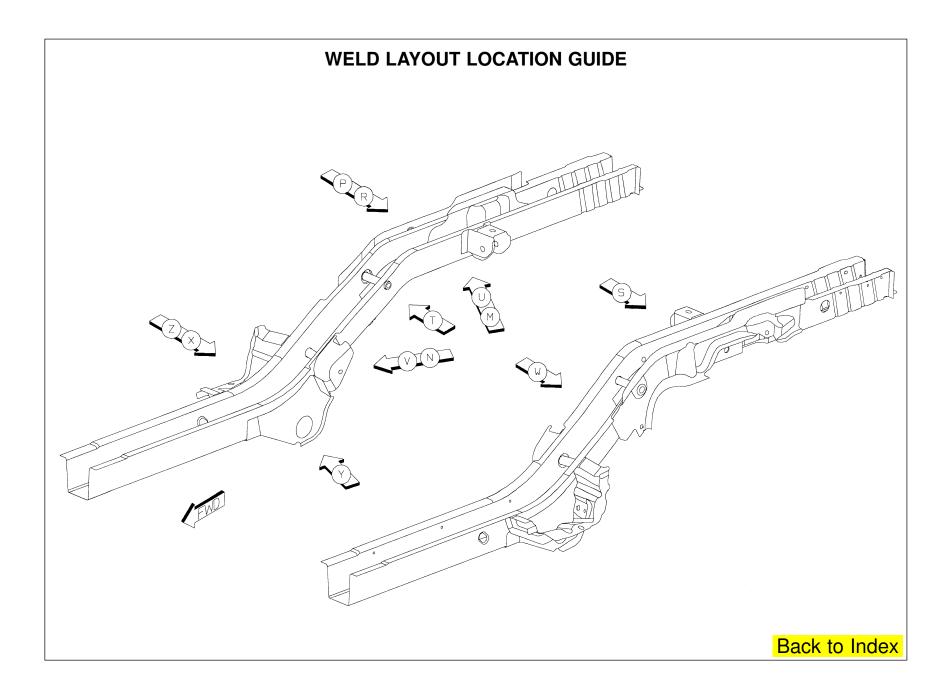


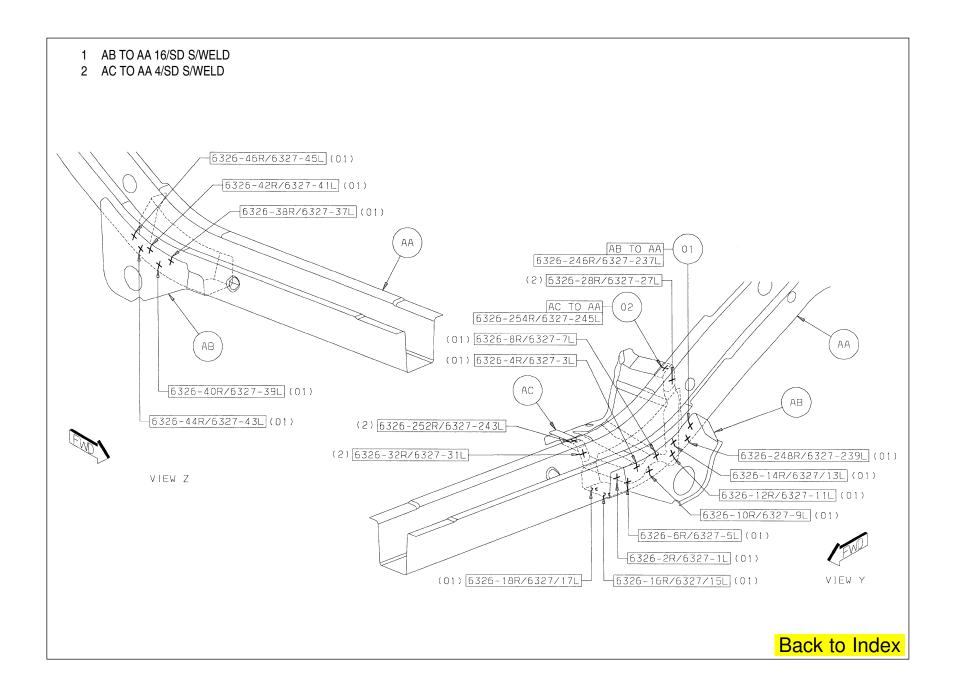


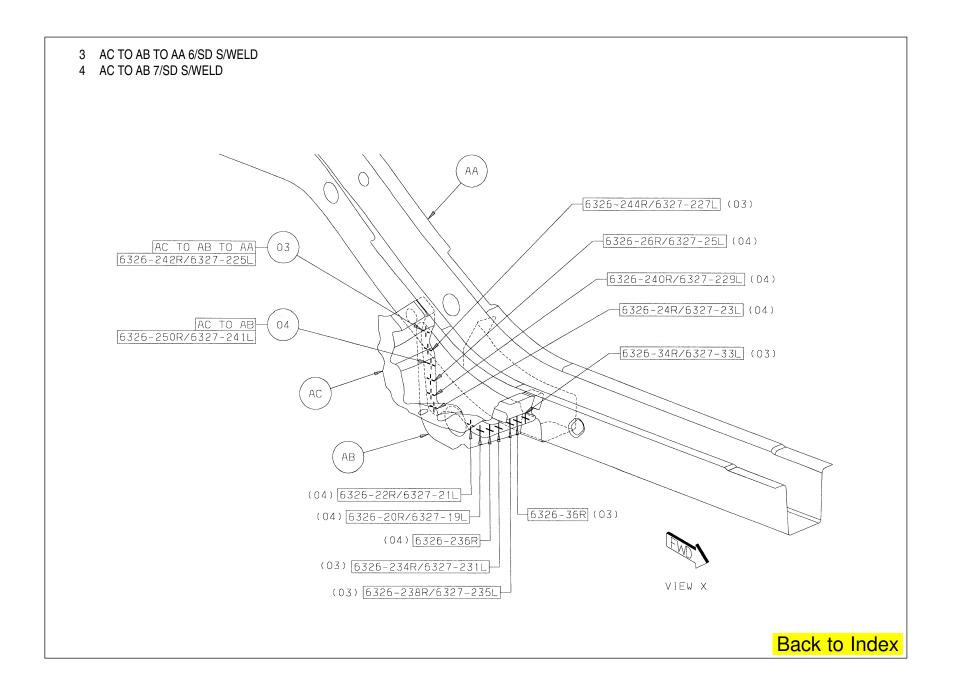


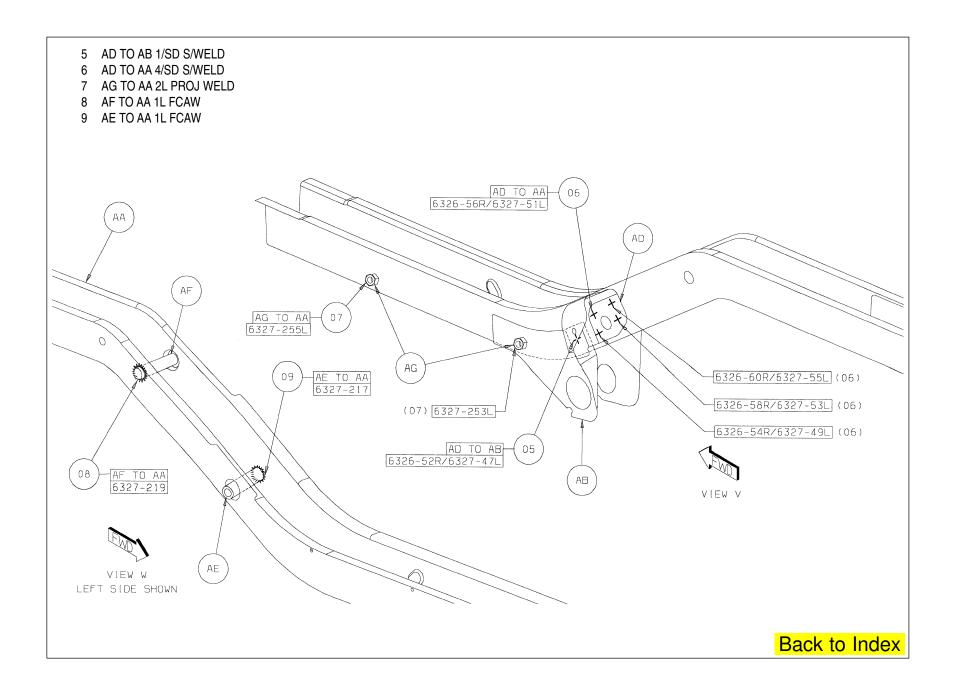


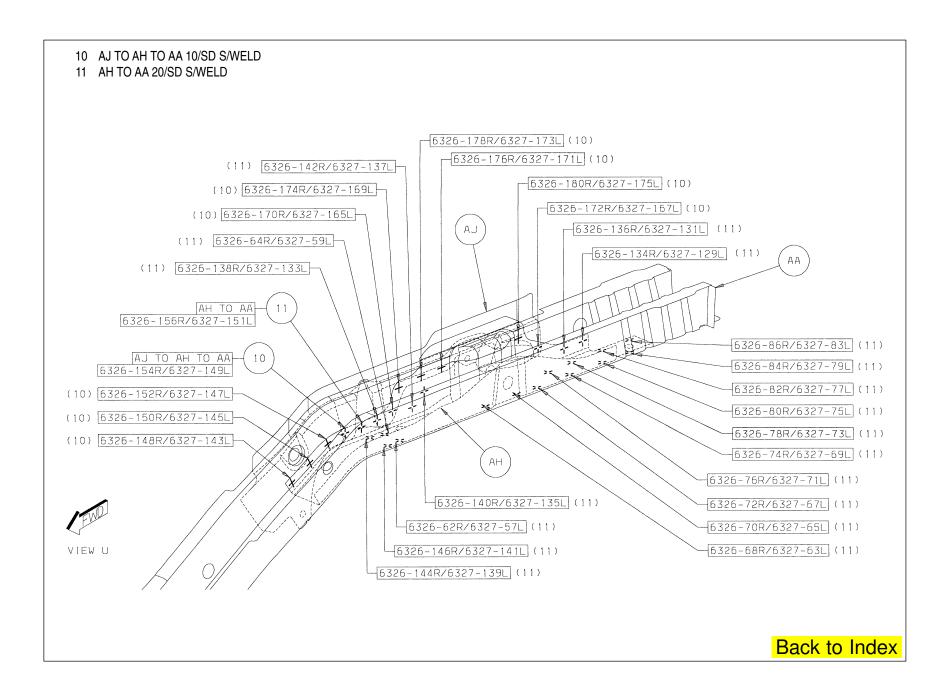


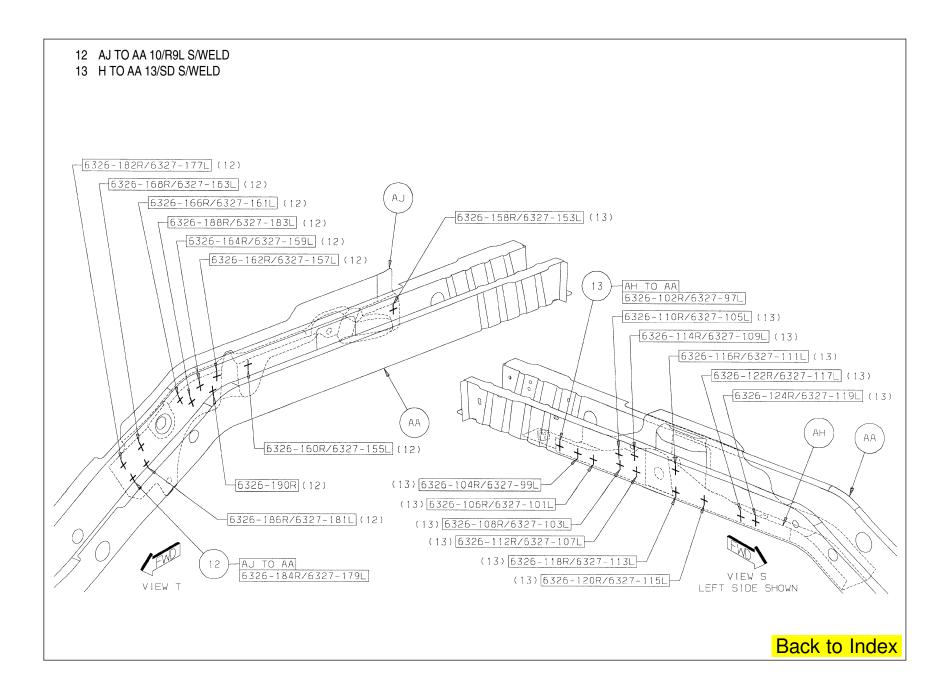


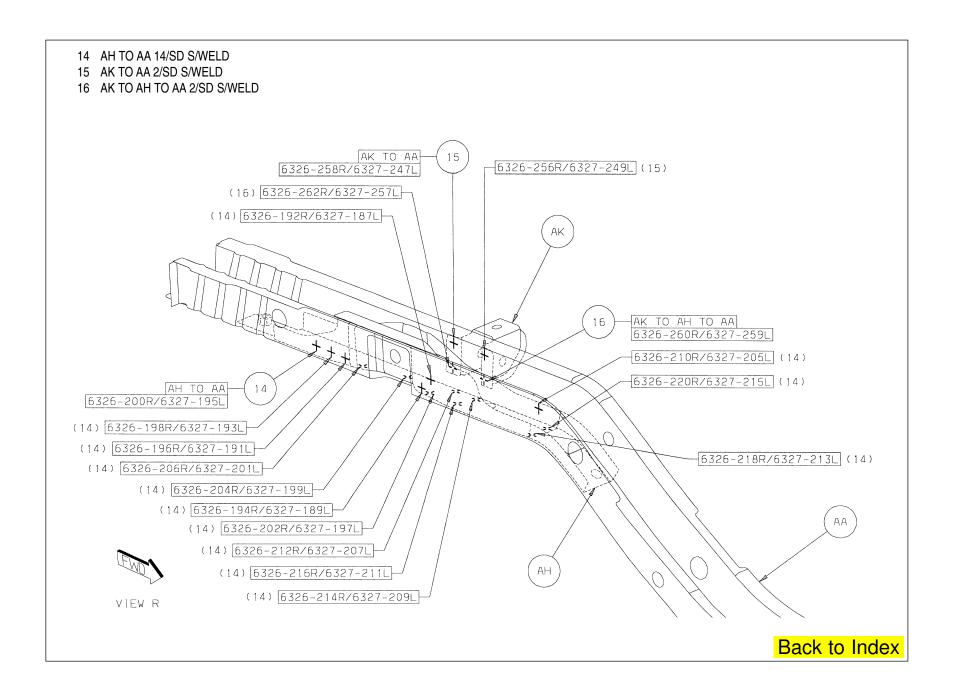


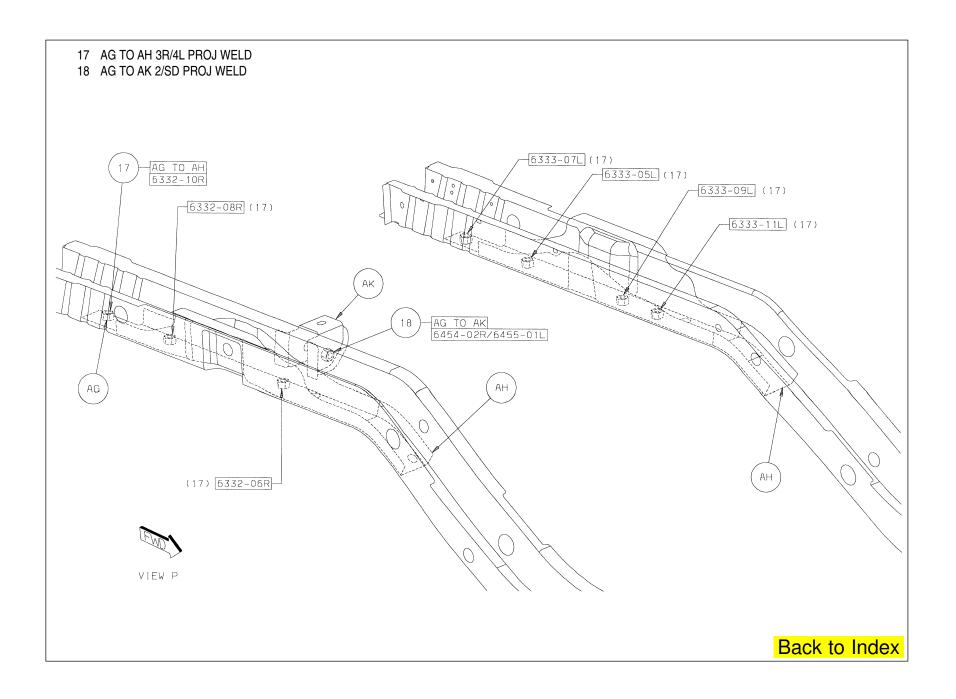


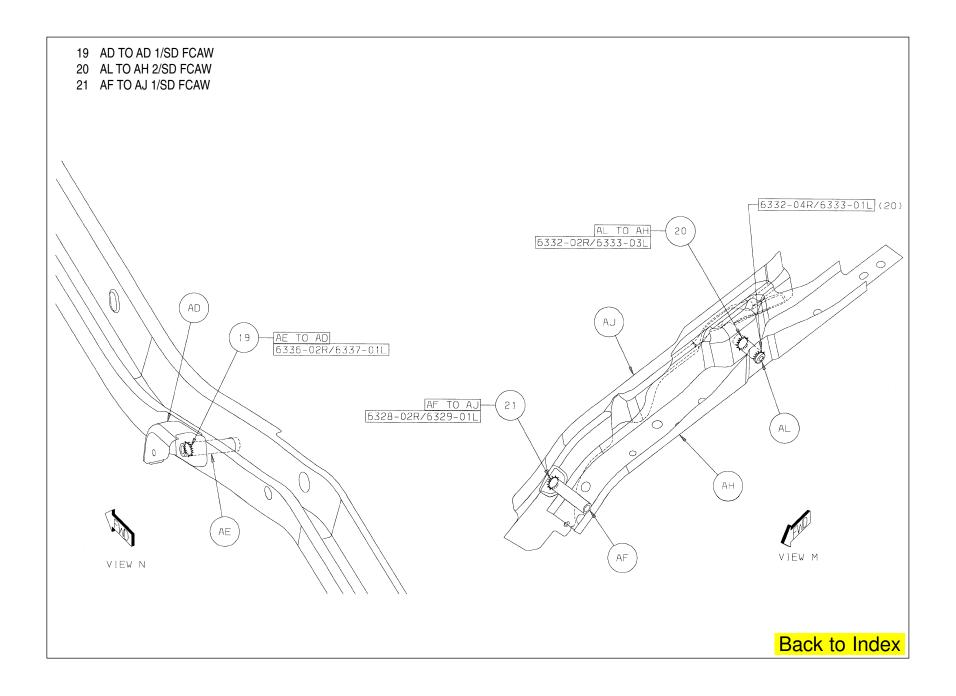












## Value and Versatility



R-N

DIAMONT BC170



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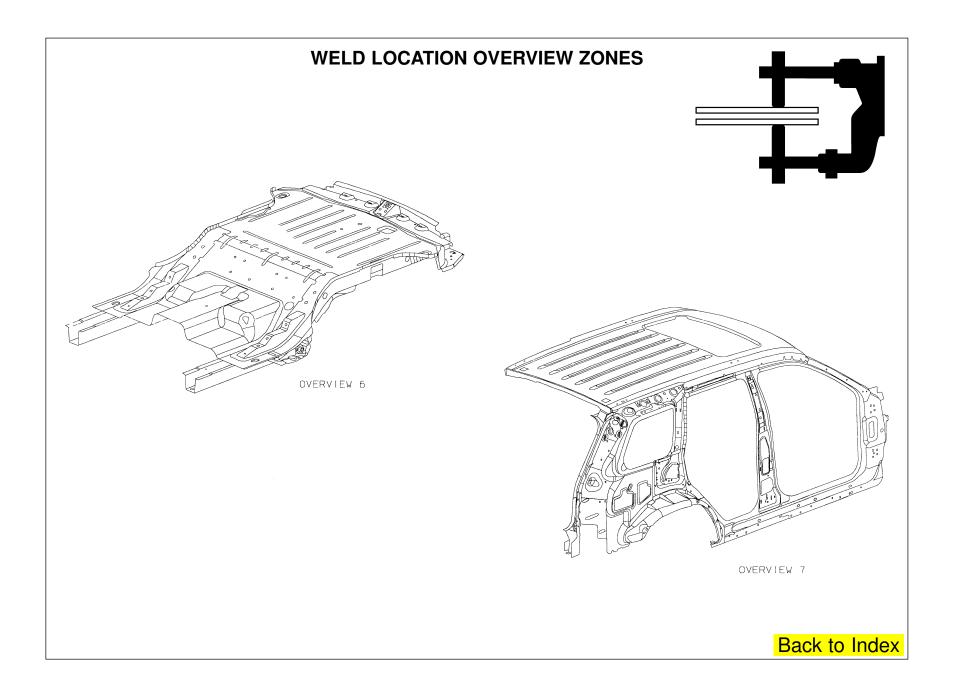
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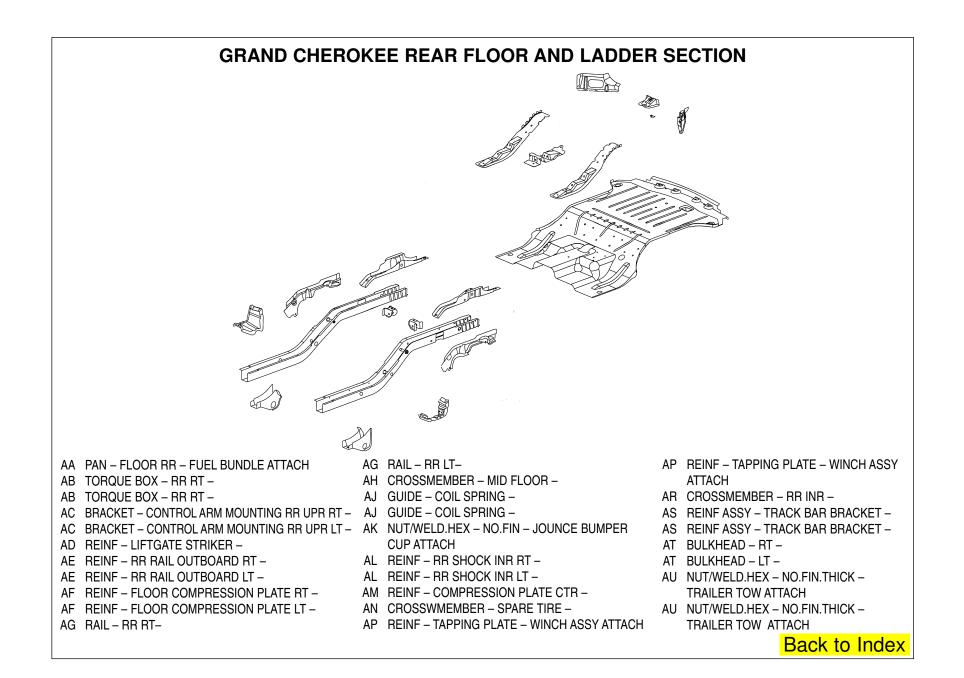
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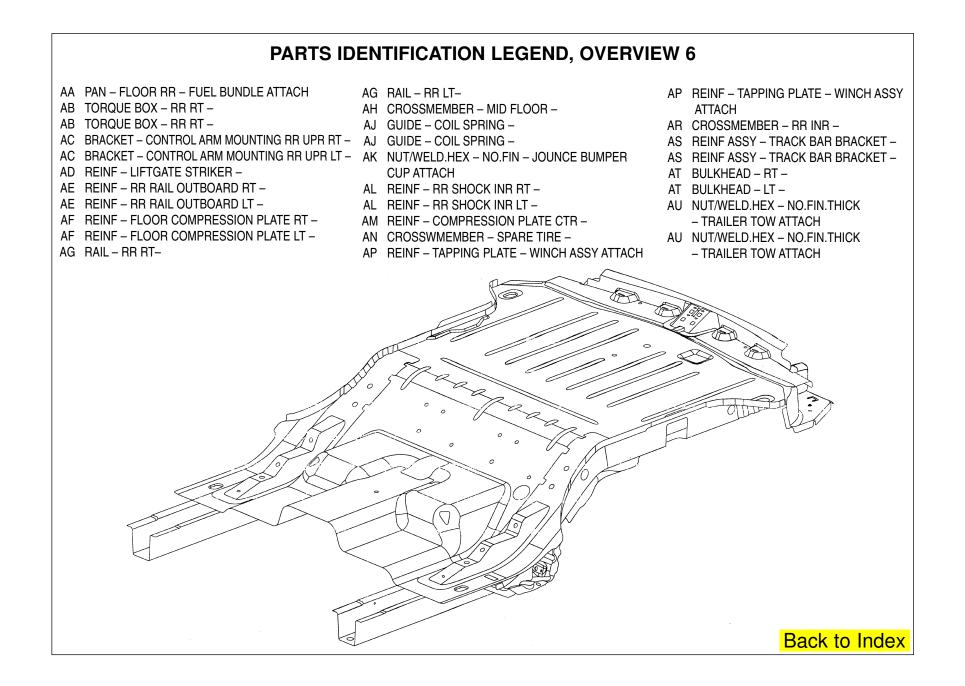


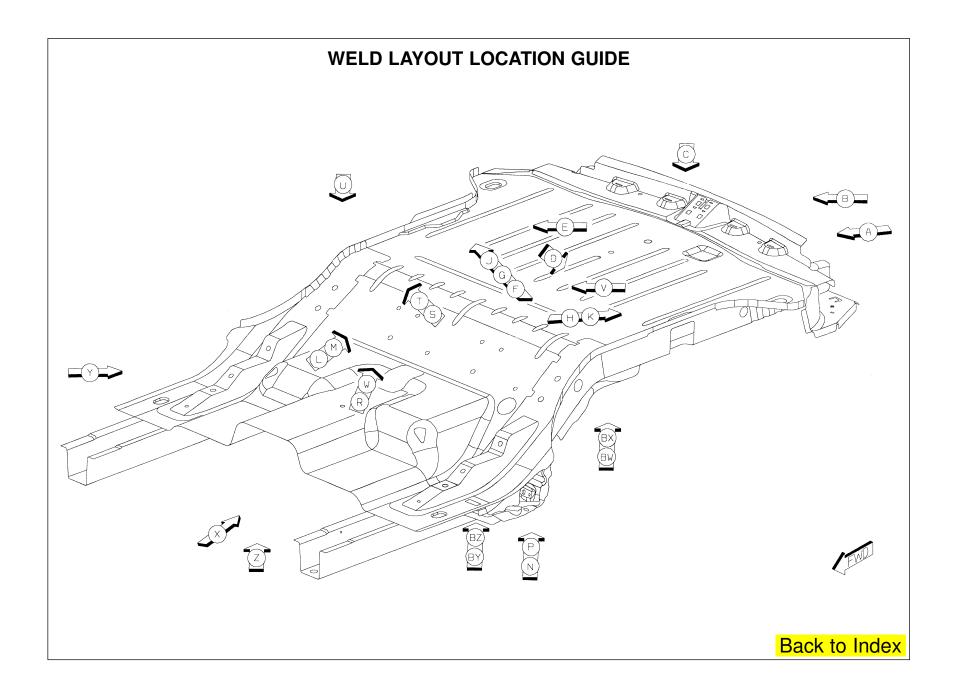
The Chemical Company

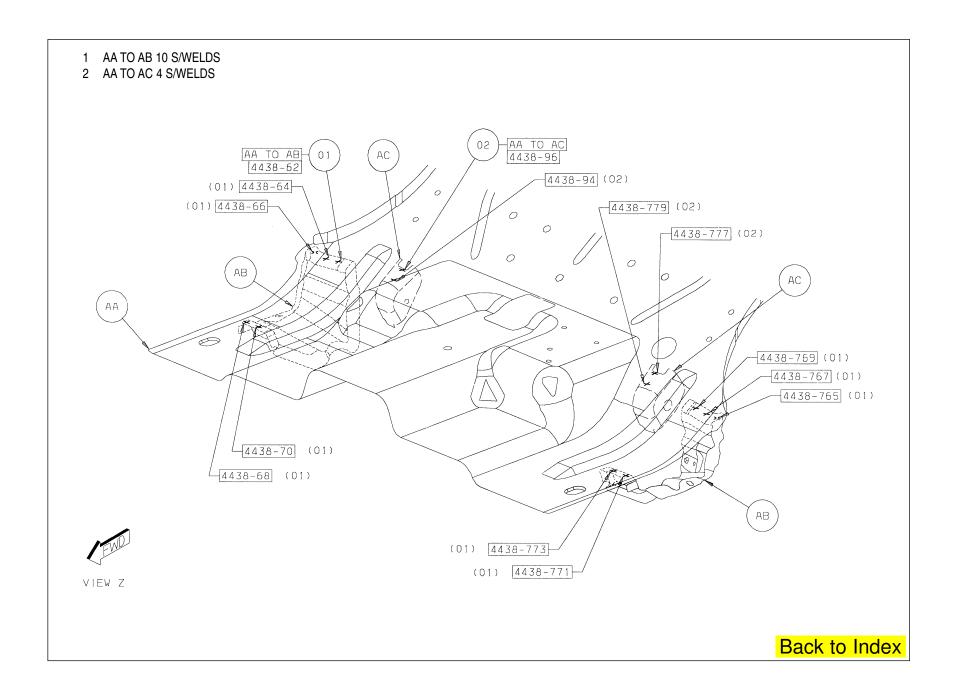
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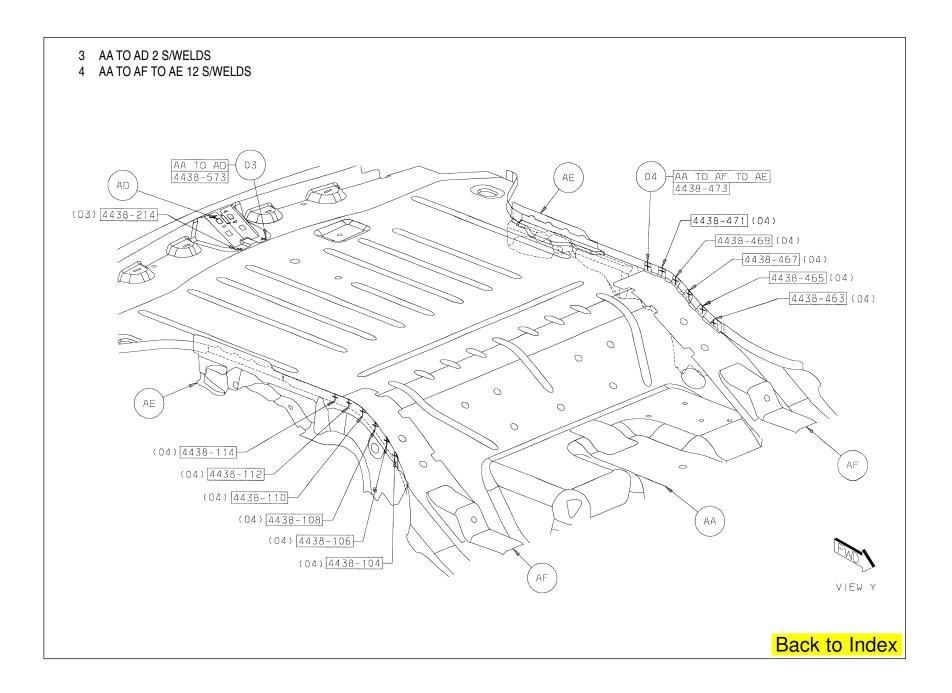


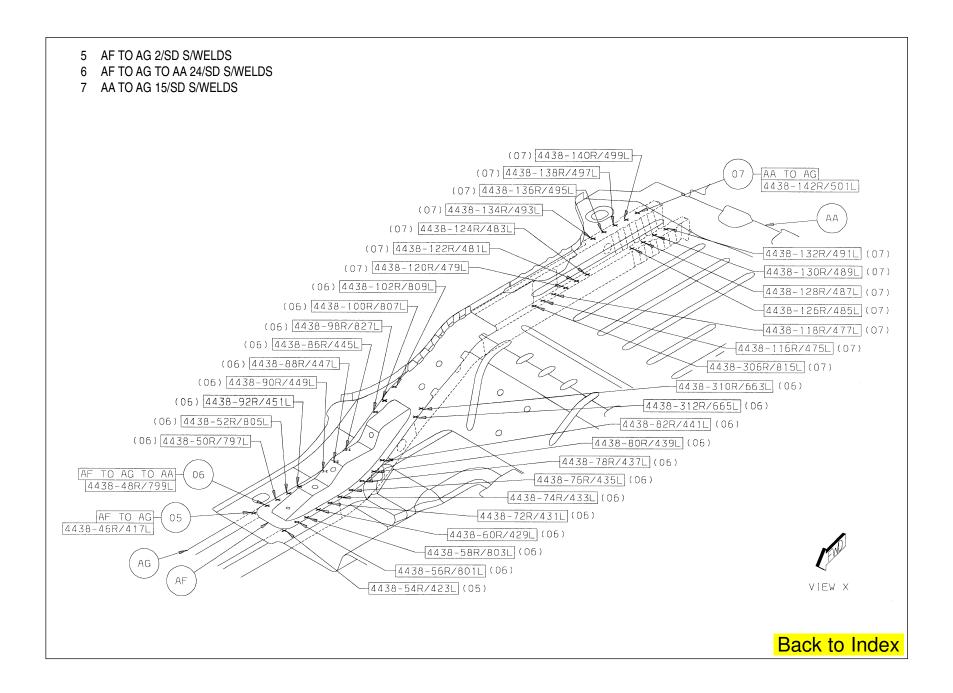


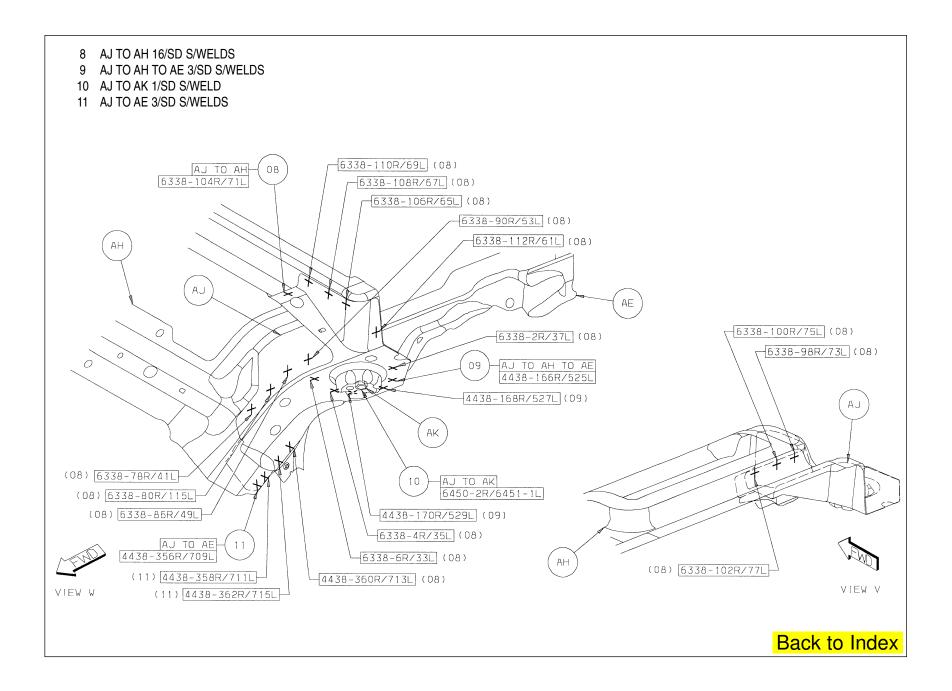


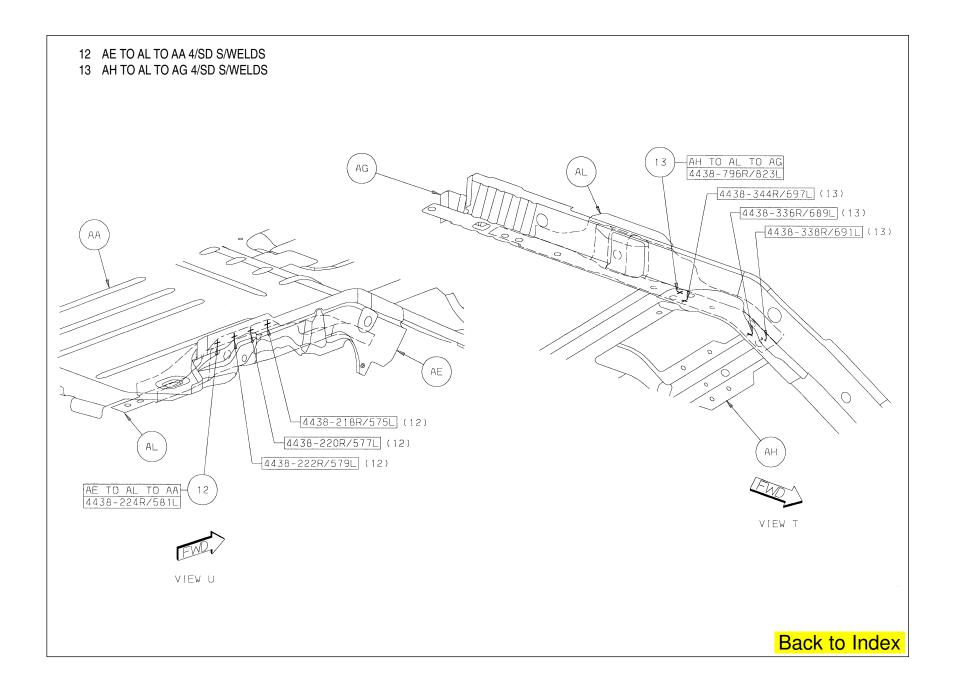


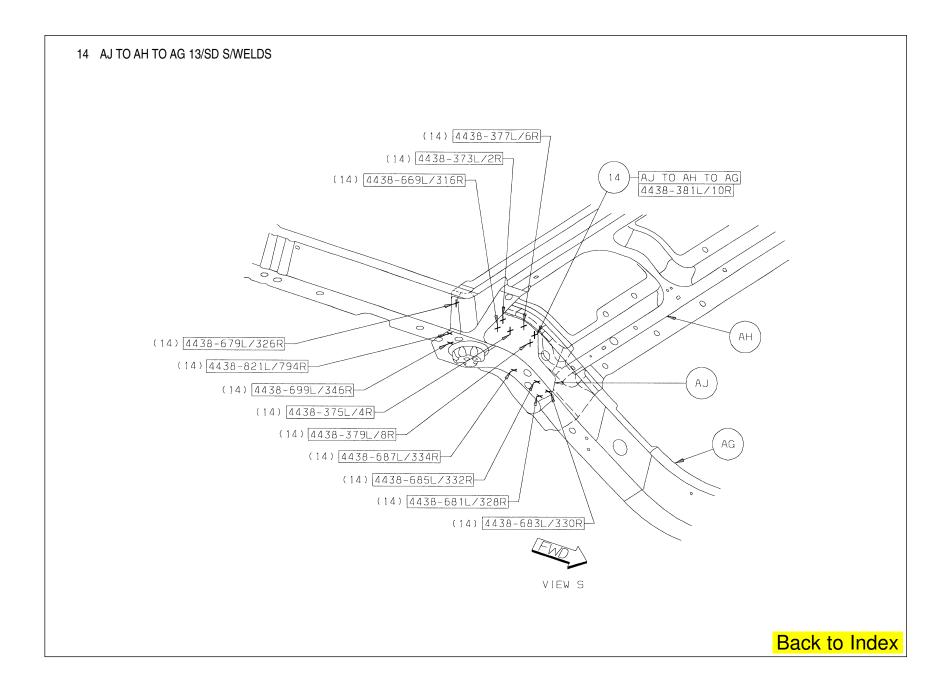


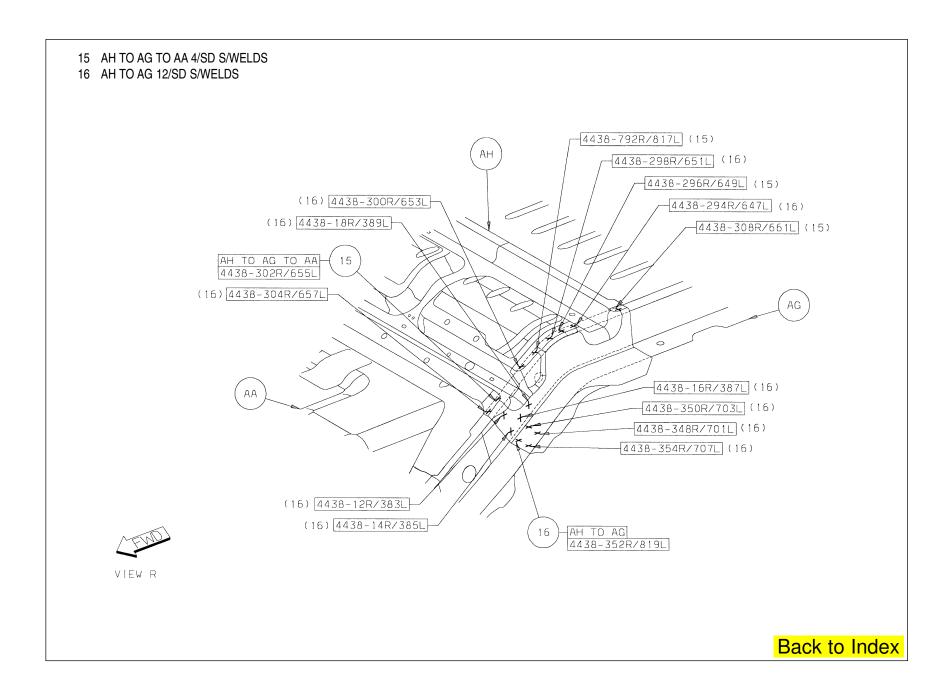


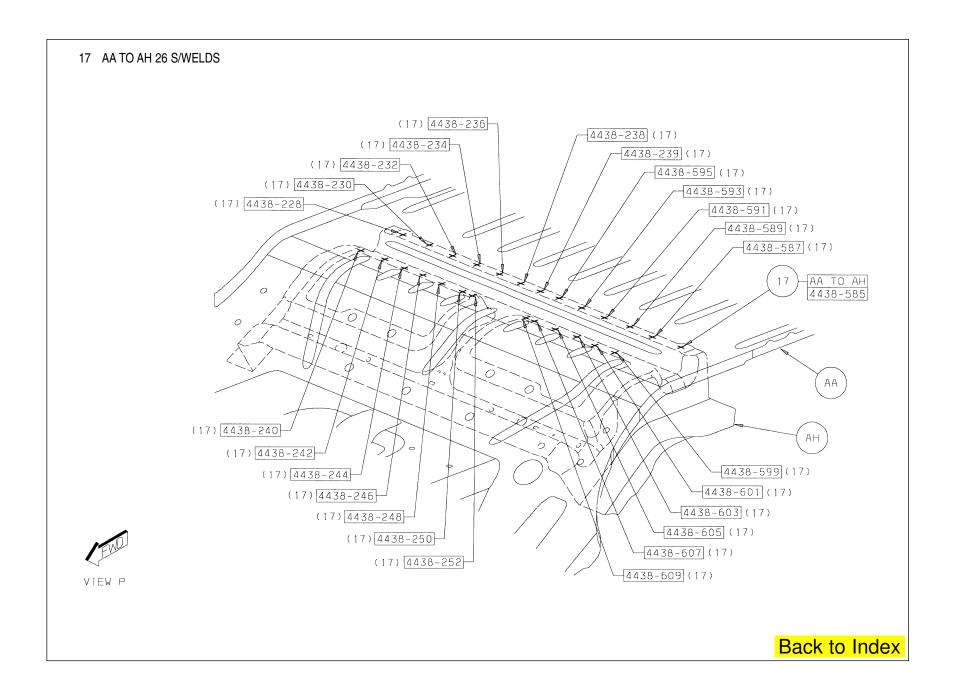


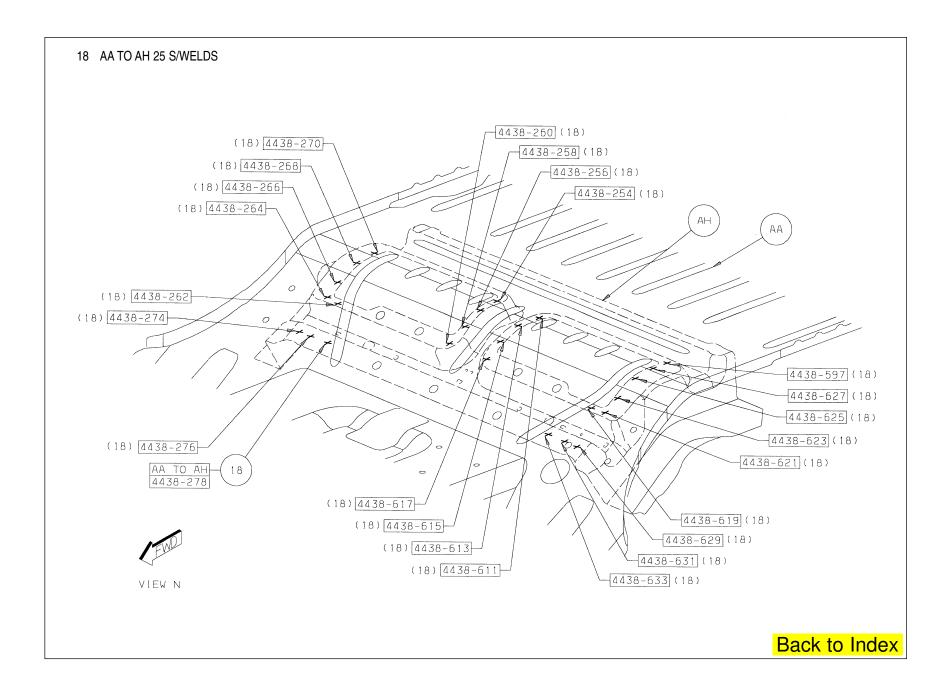


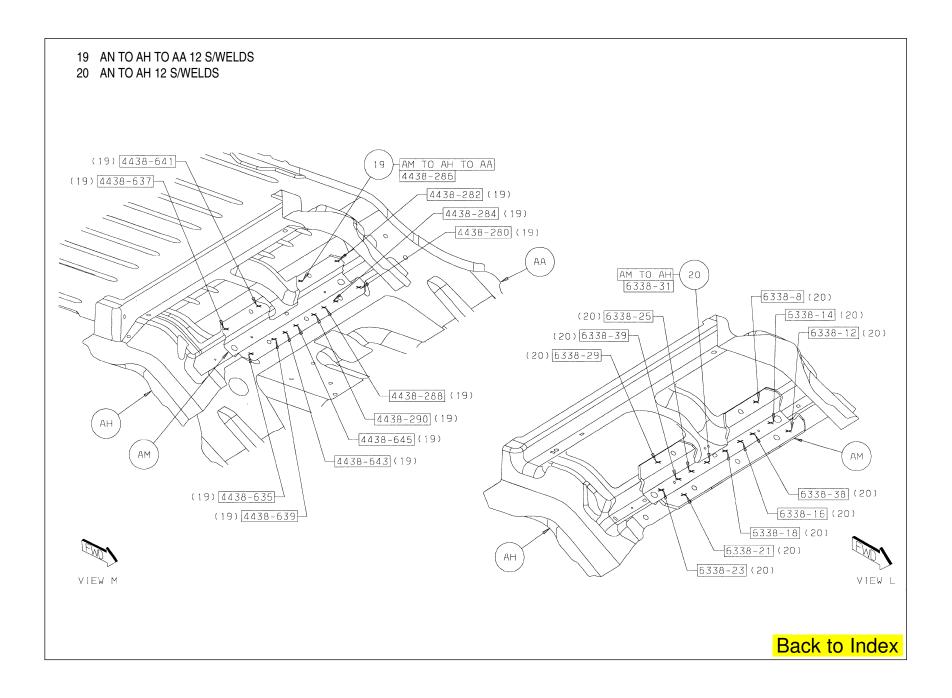


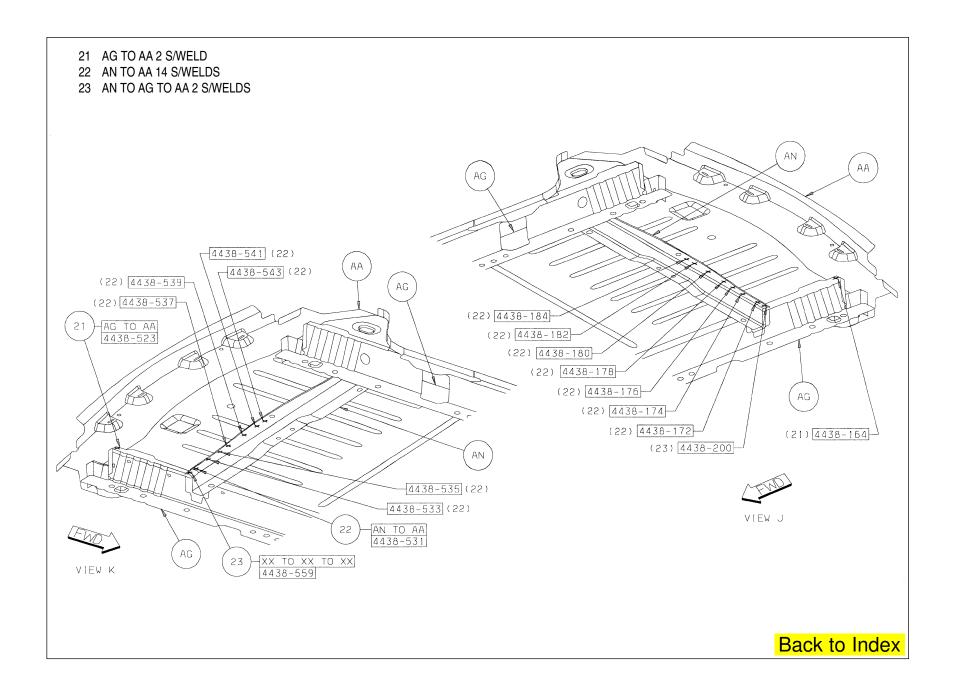


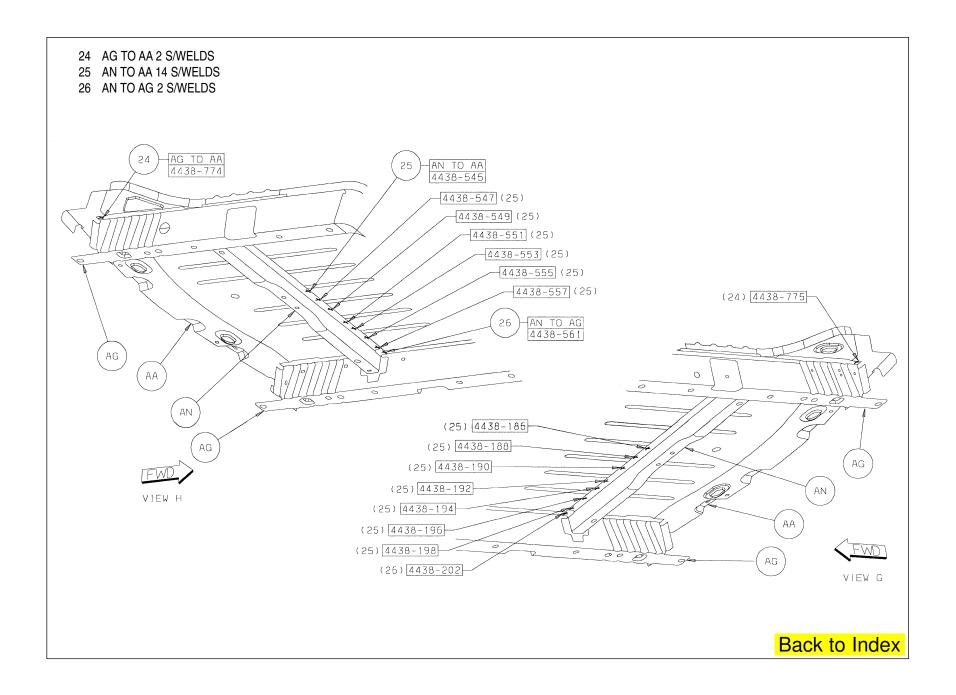


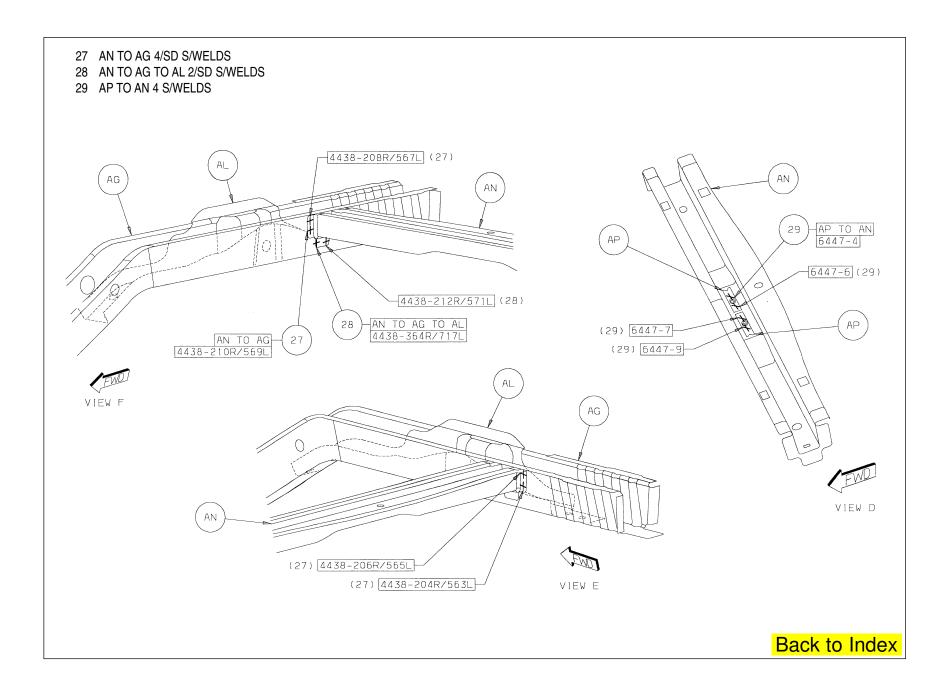


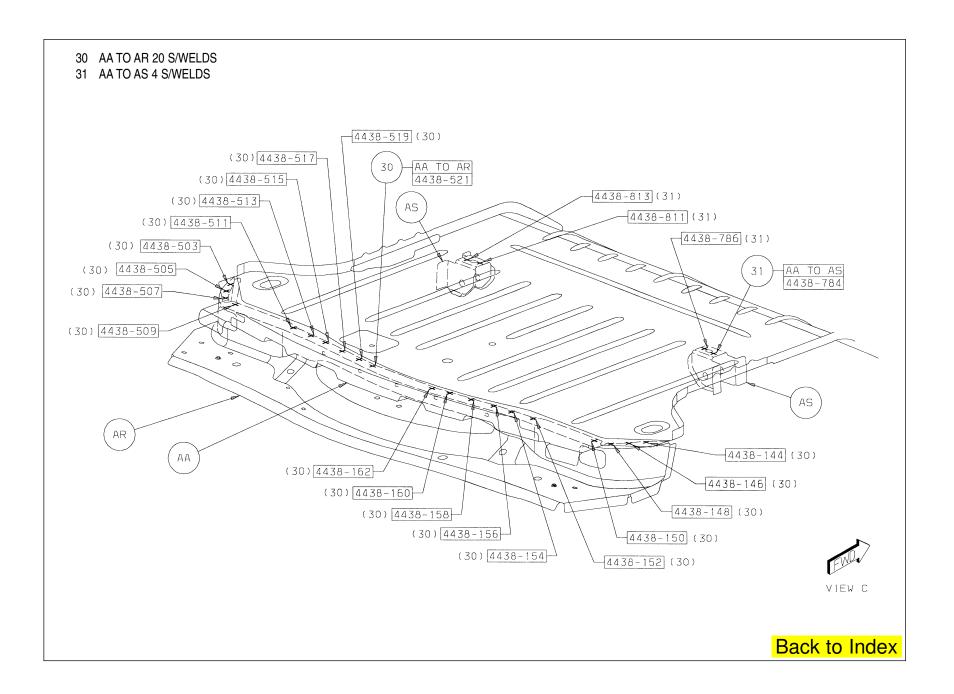


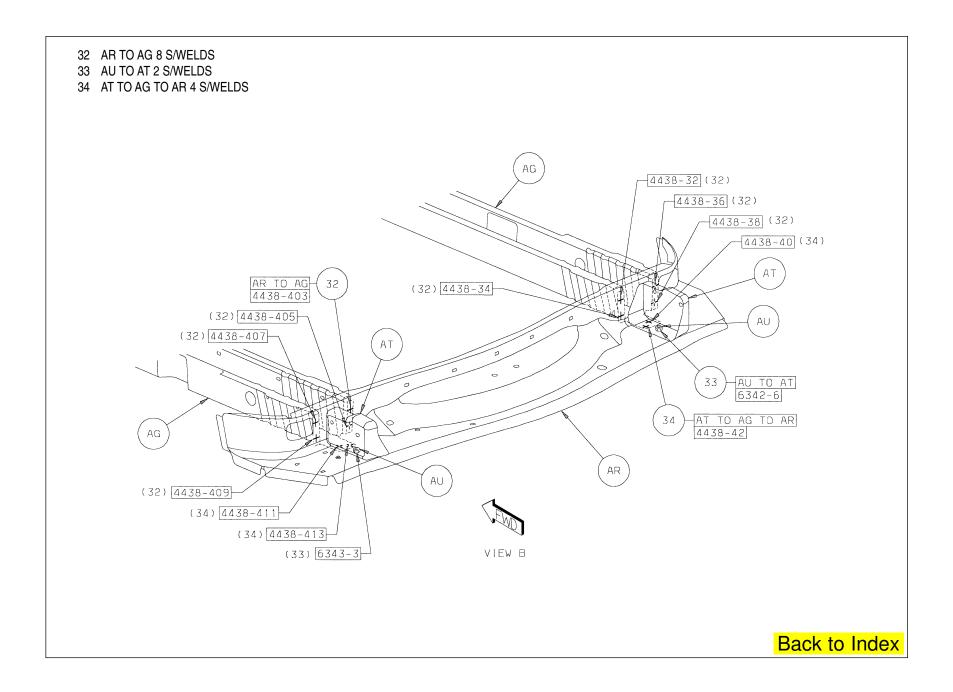


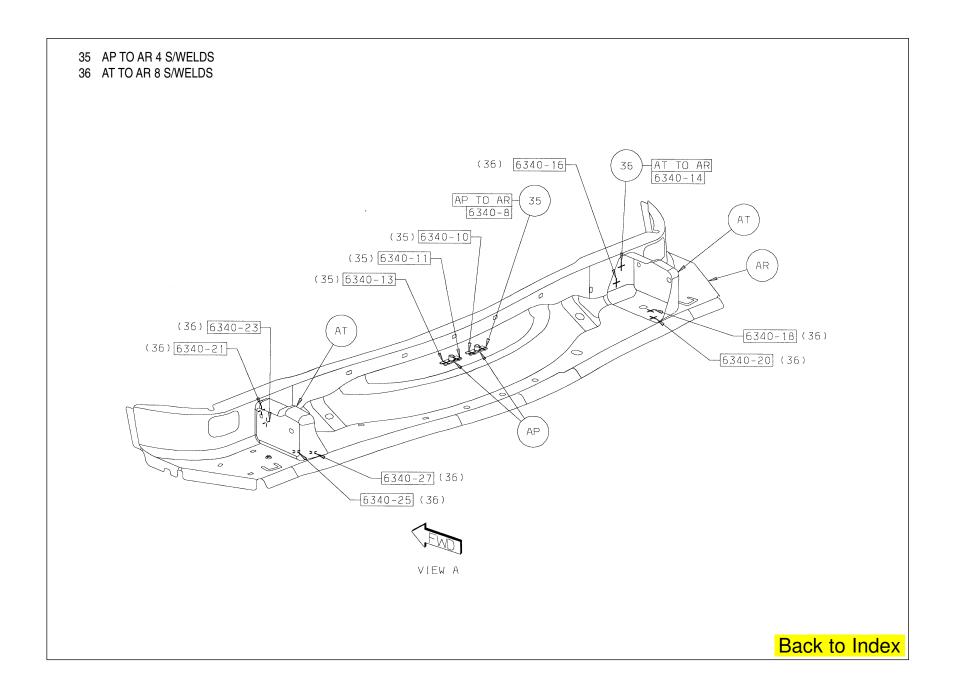


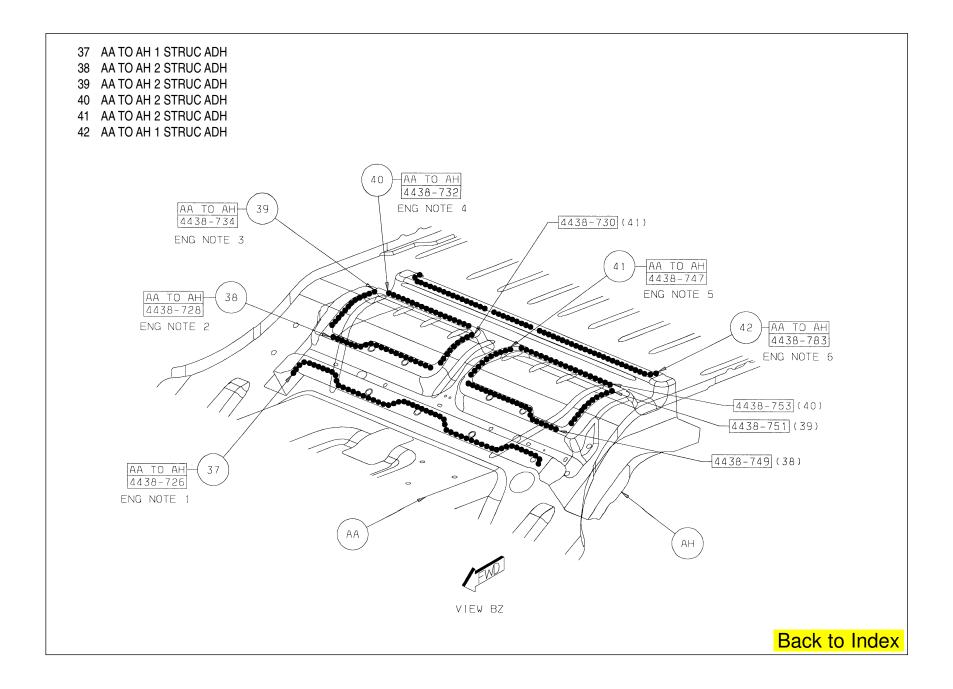


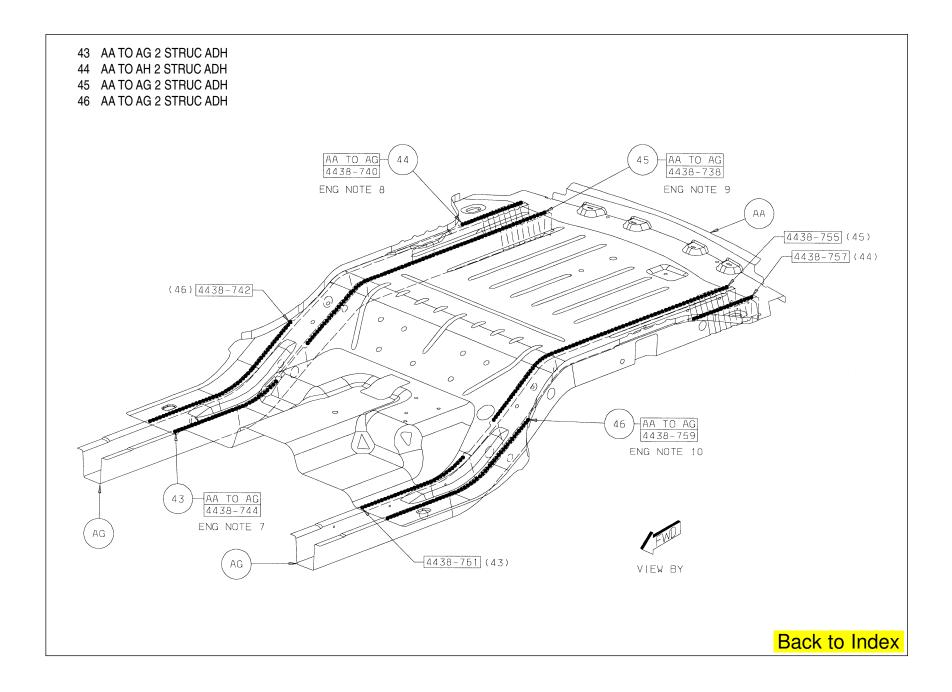


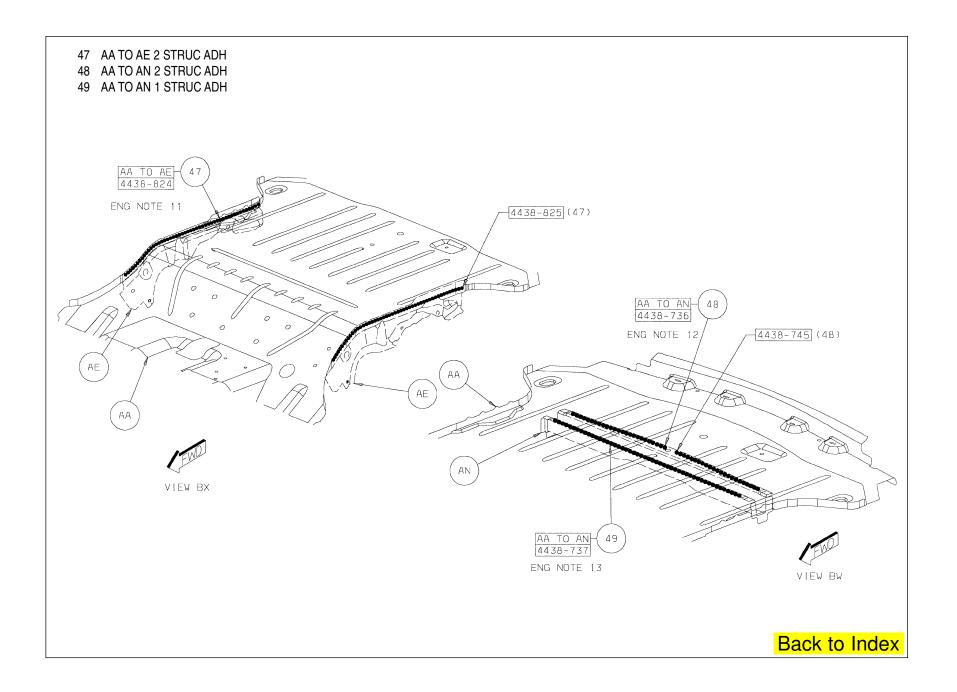


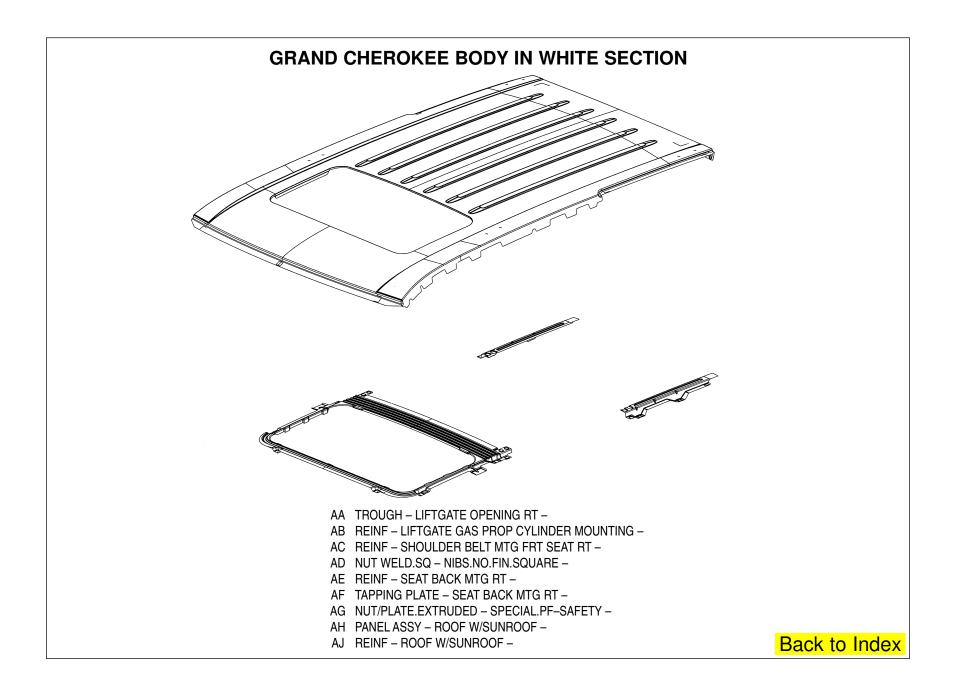


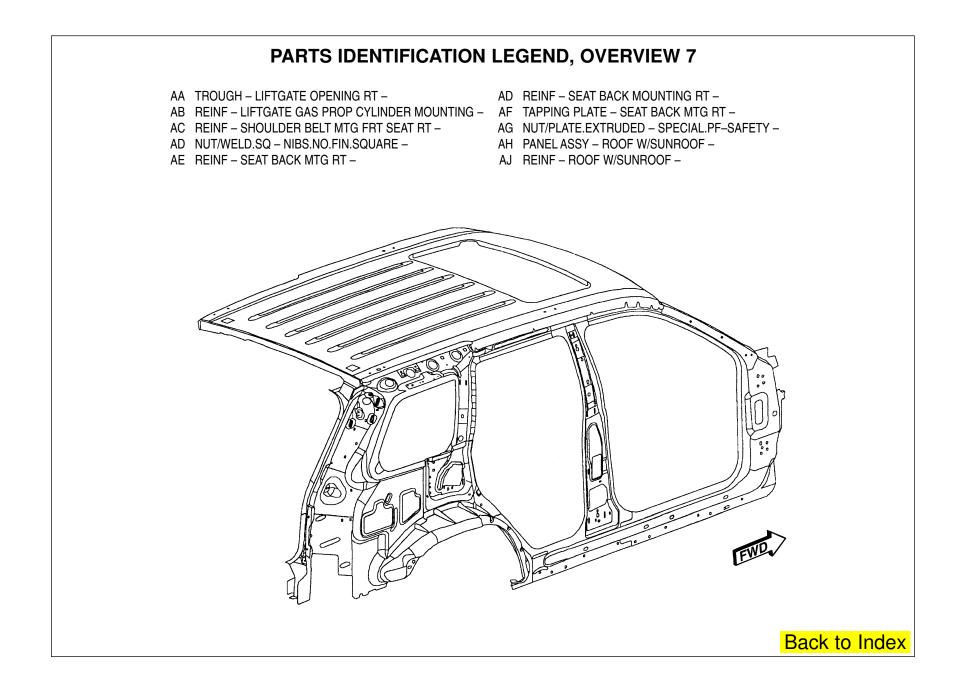


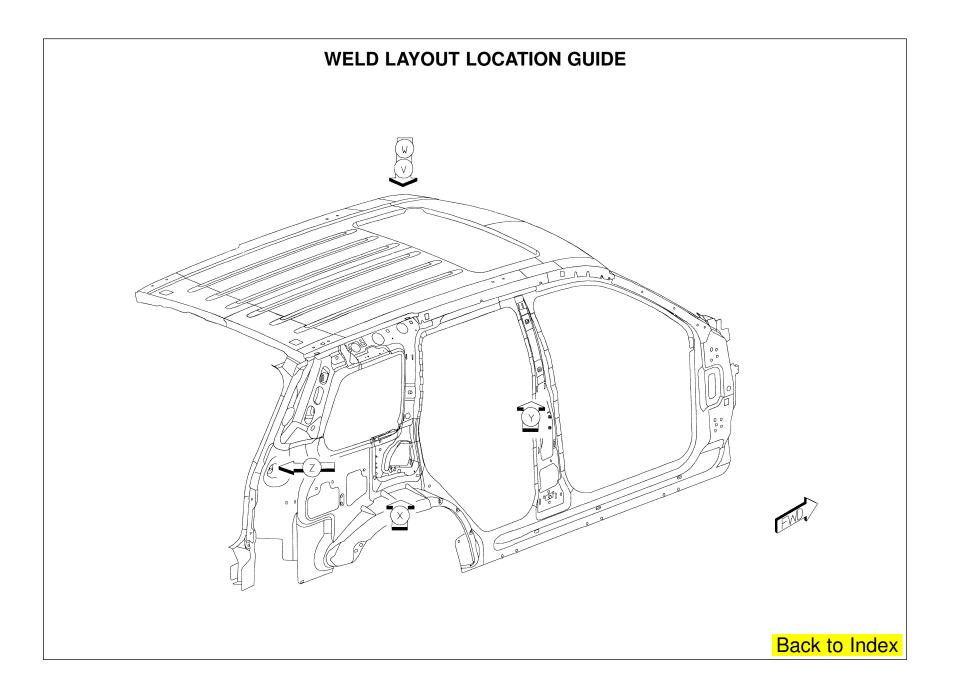


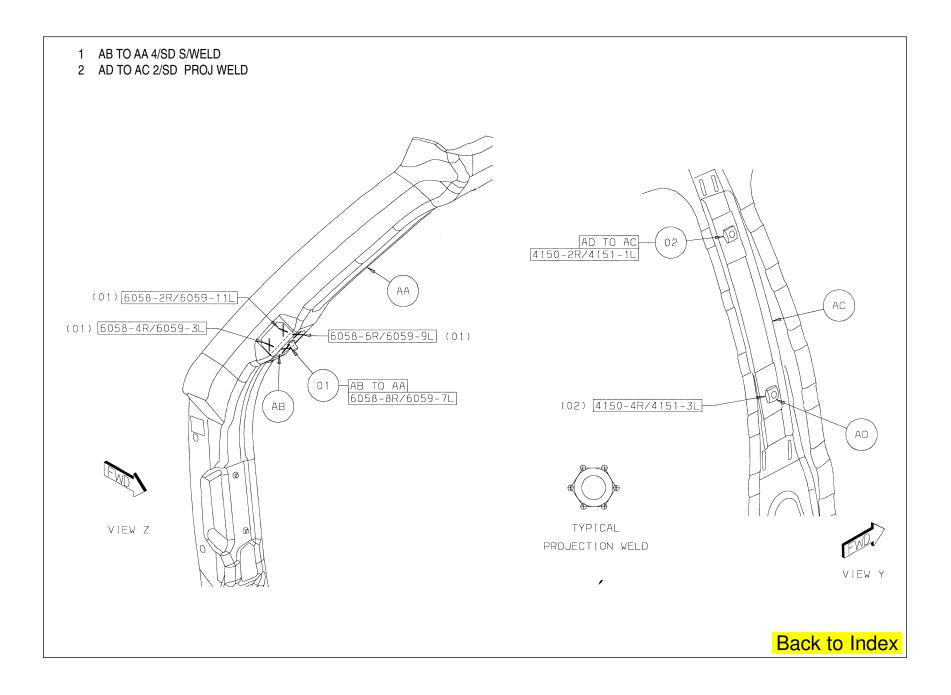


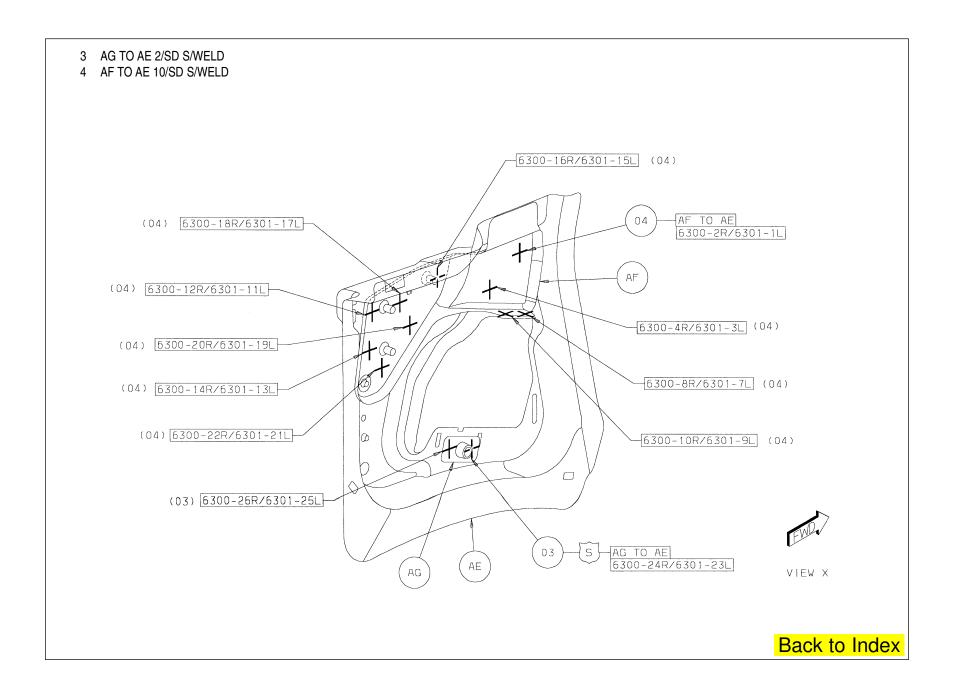


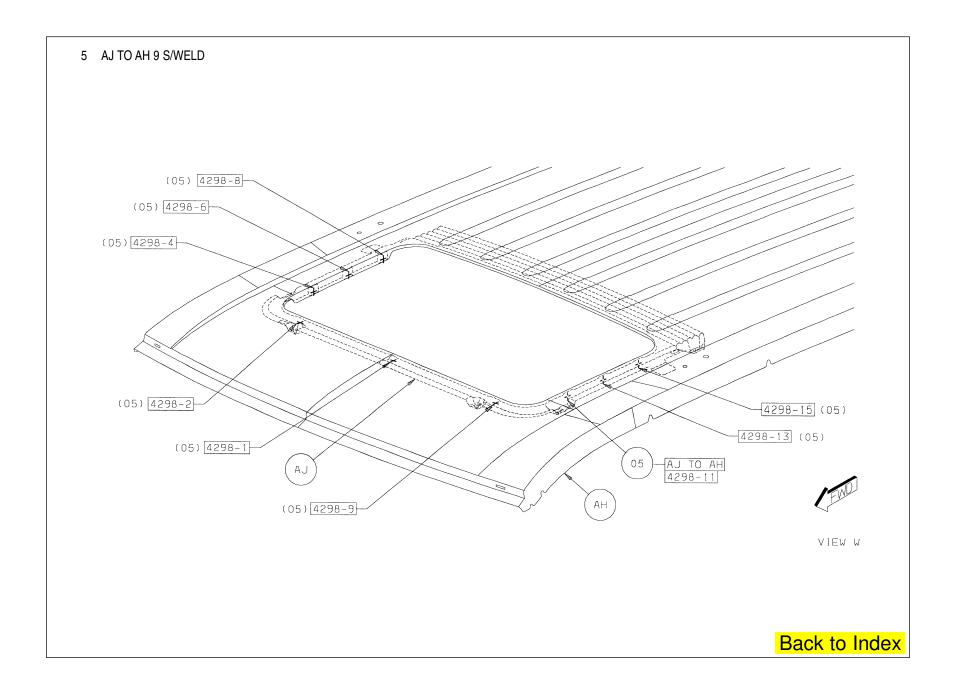


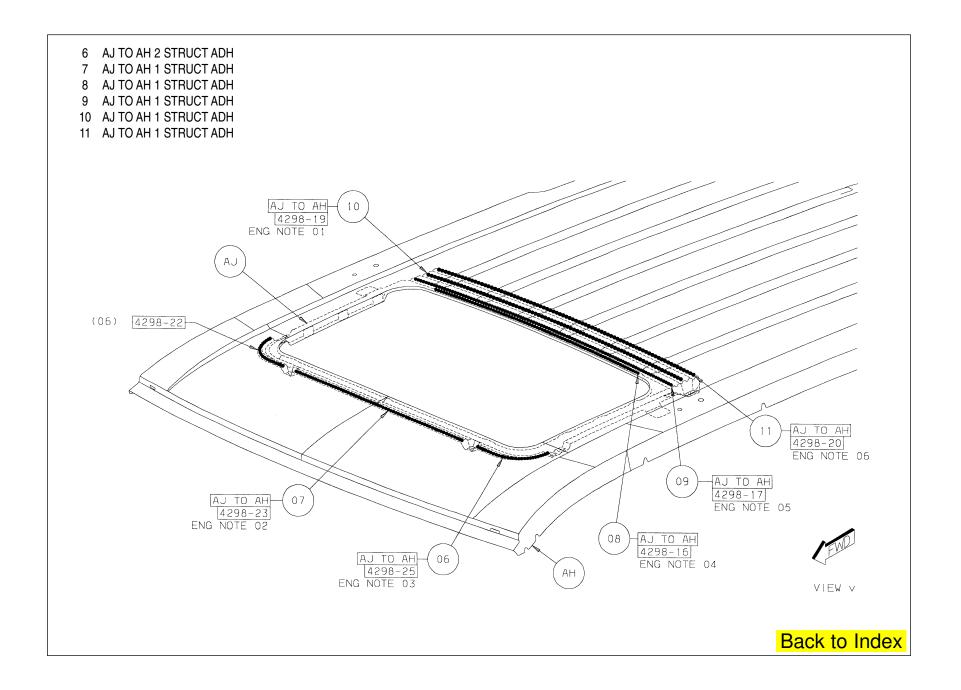


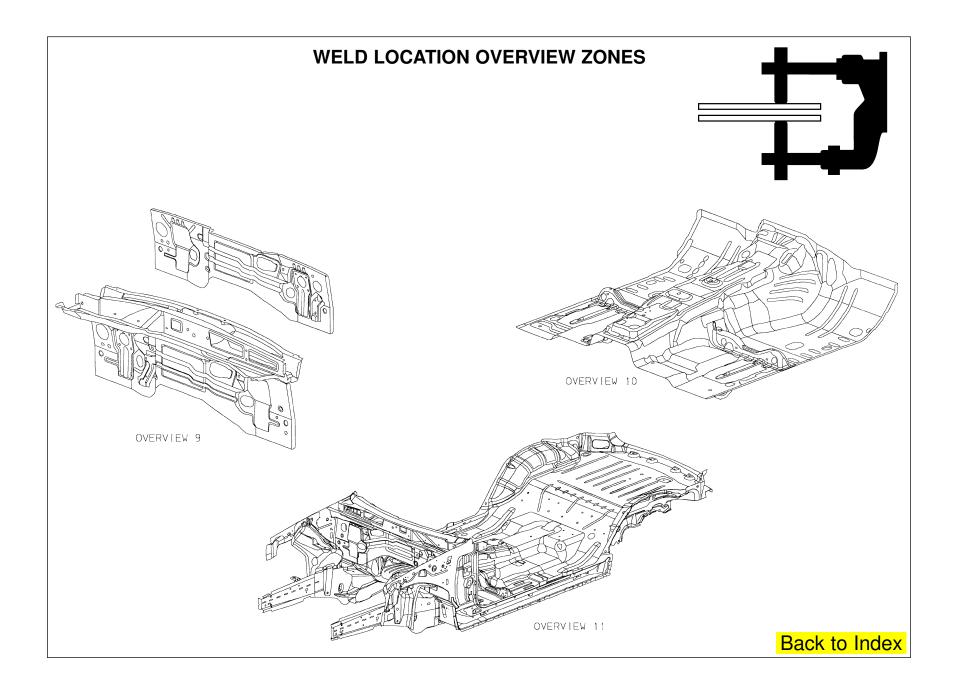


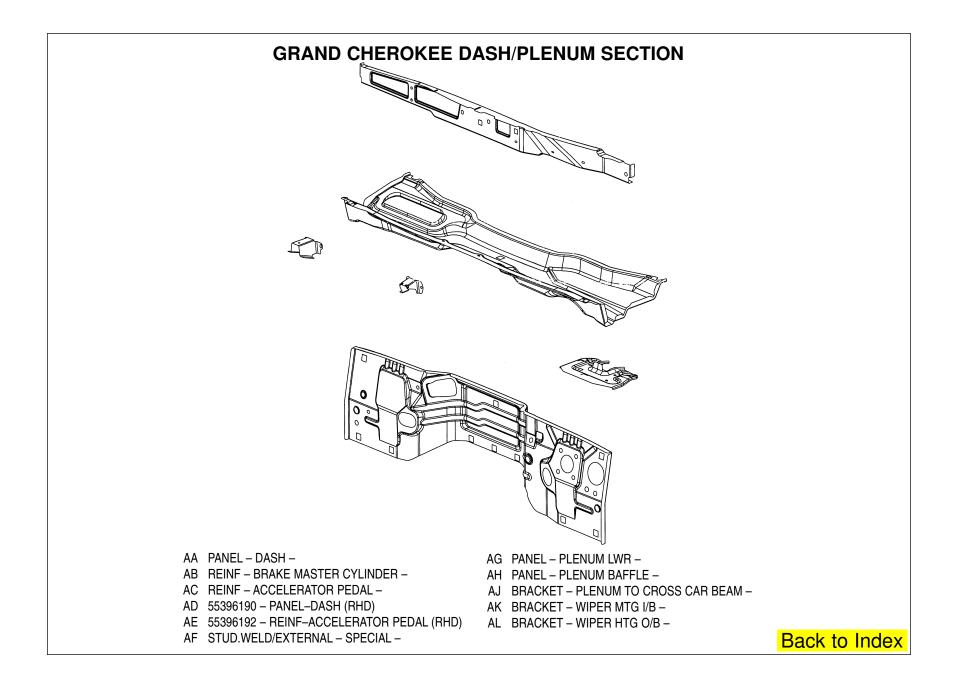


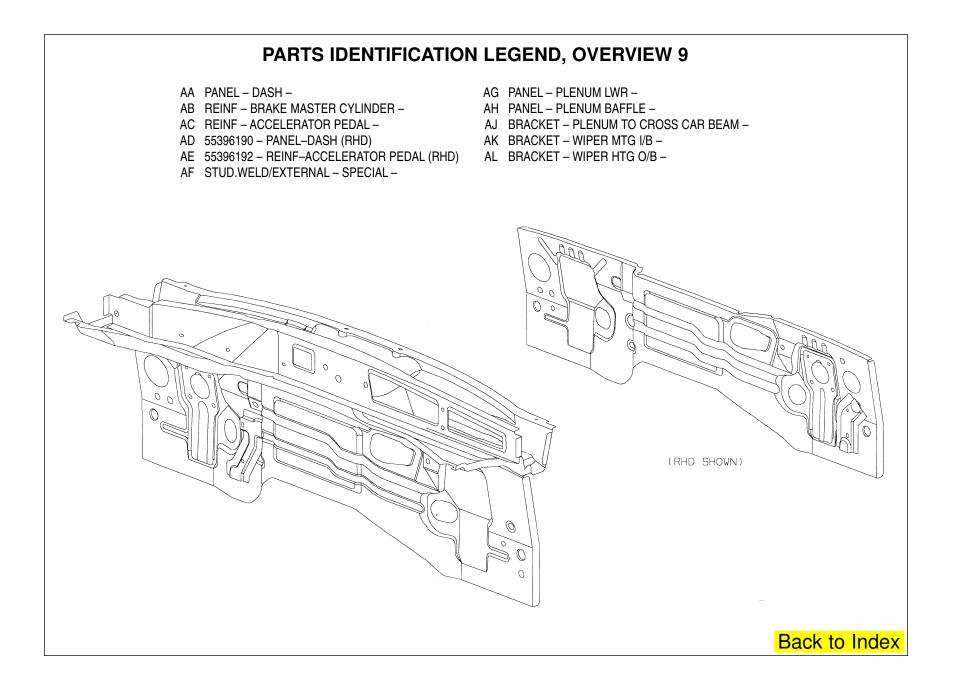


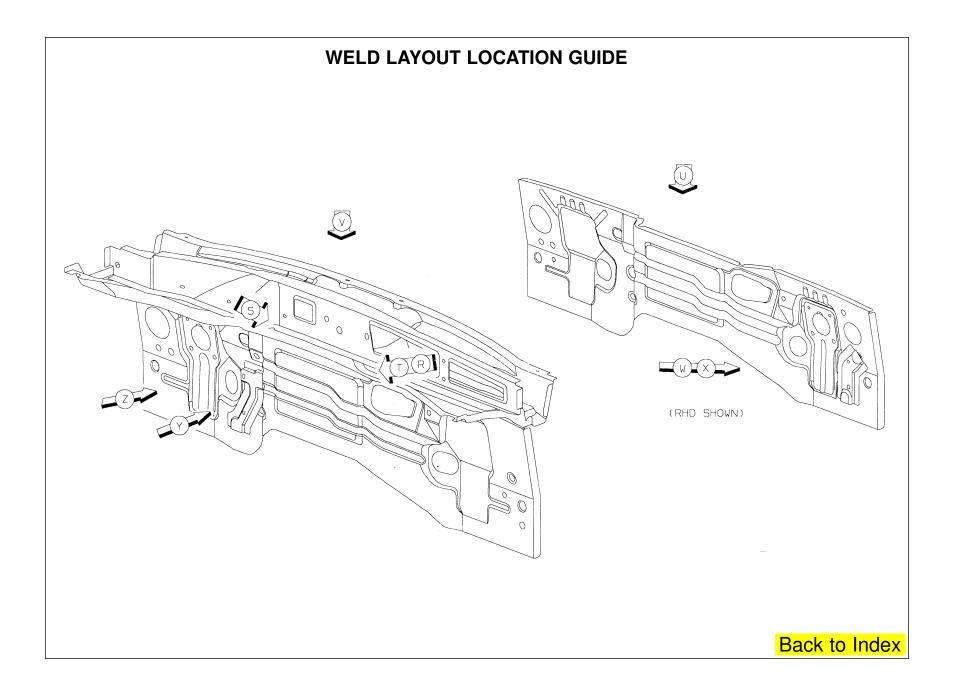


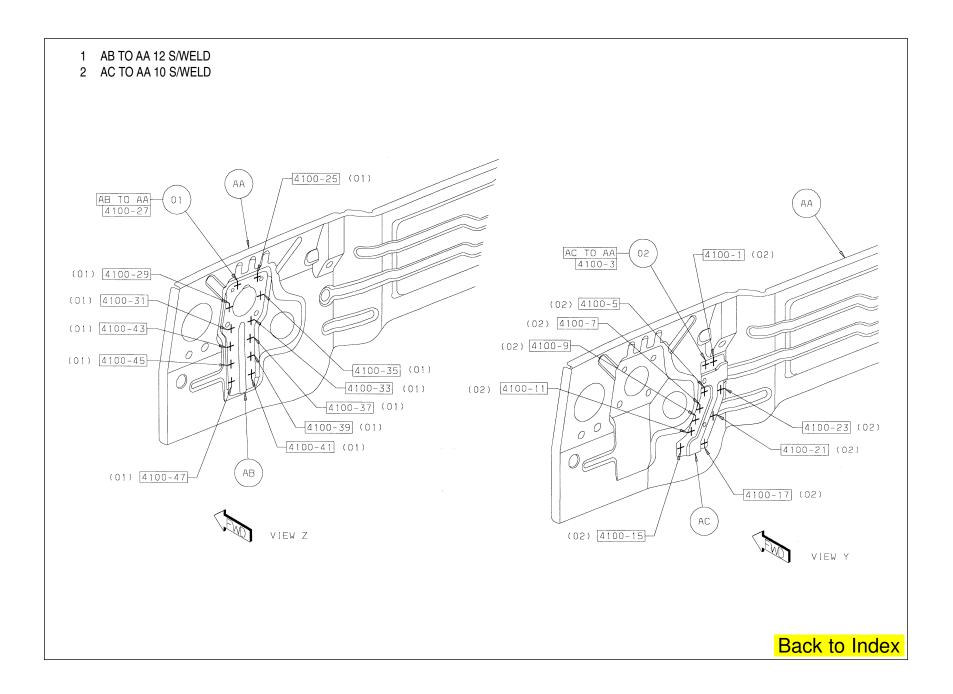


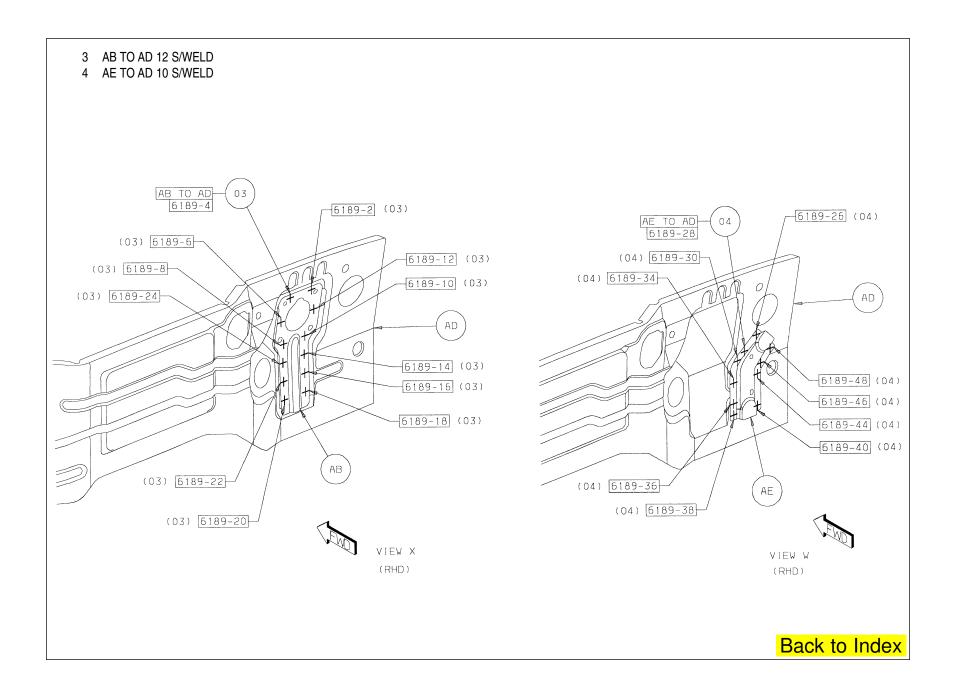


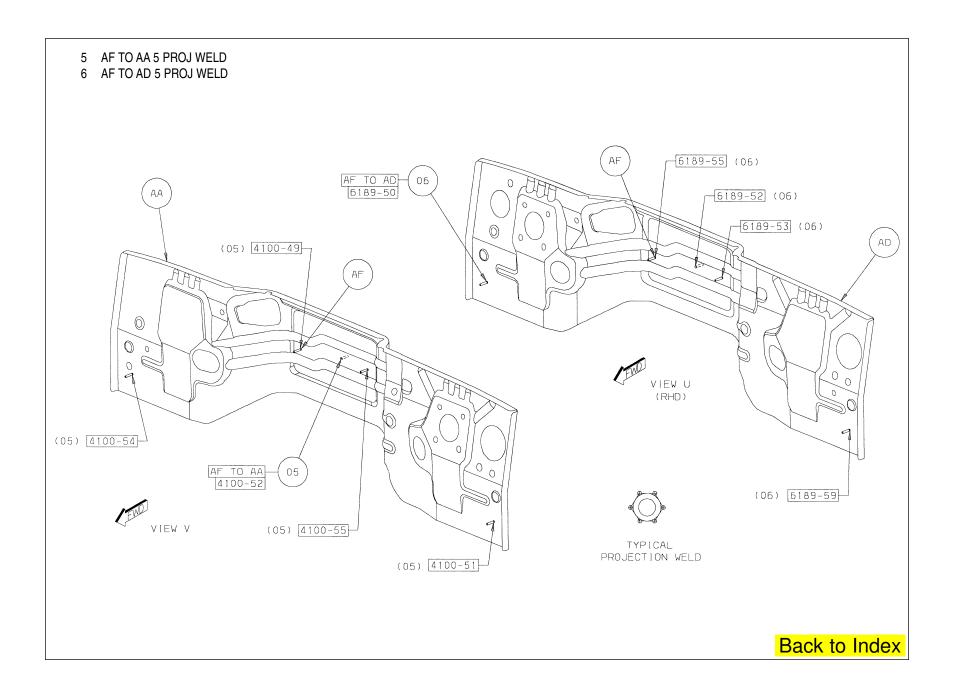


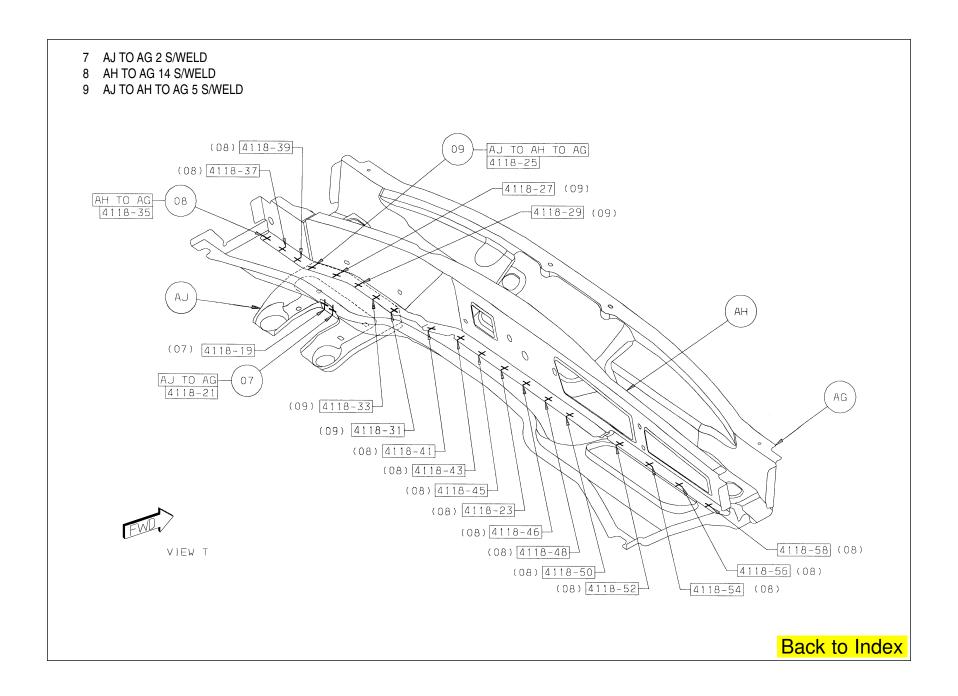


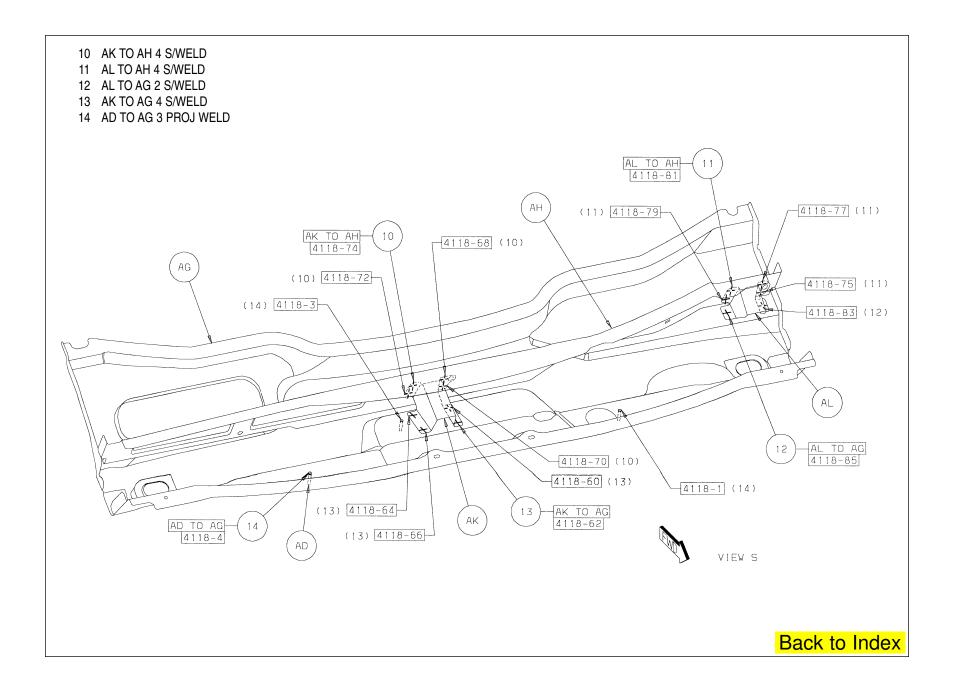


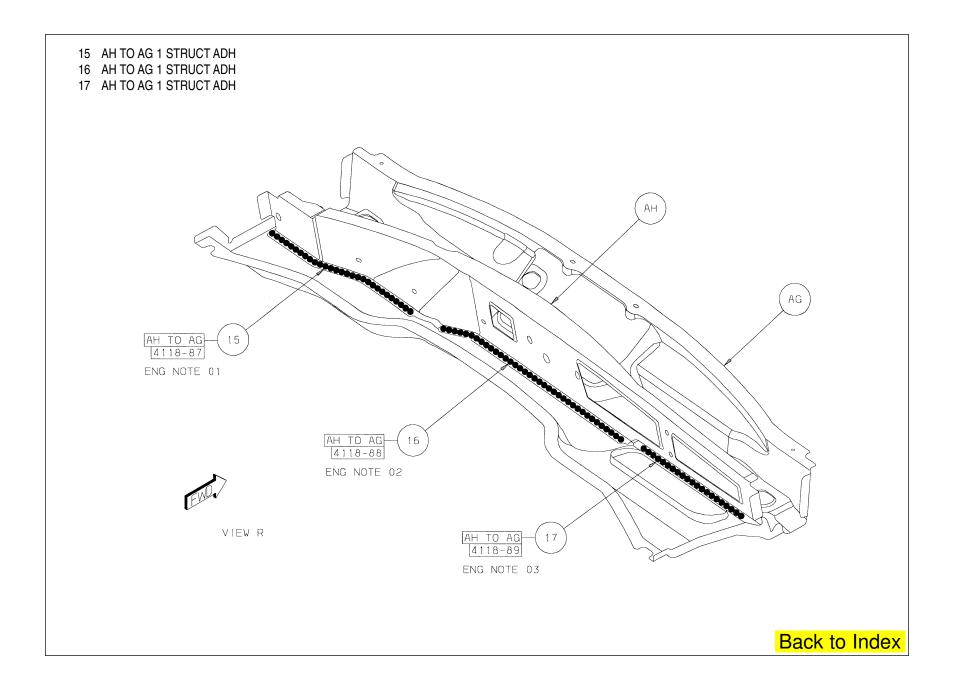




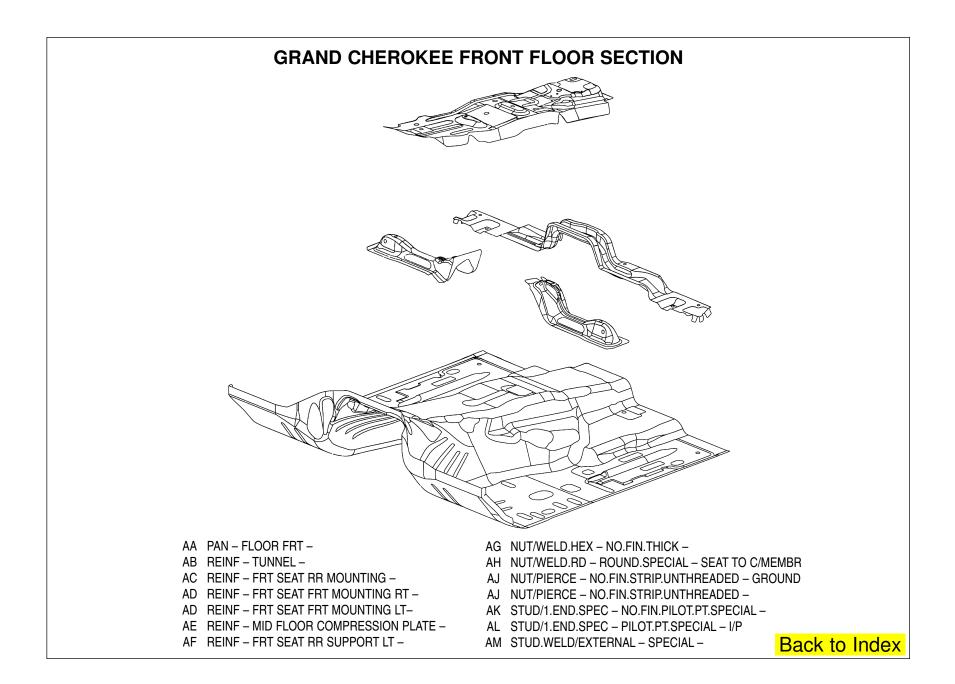








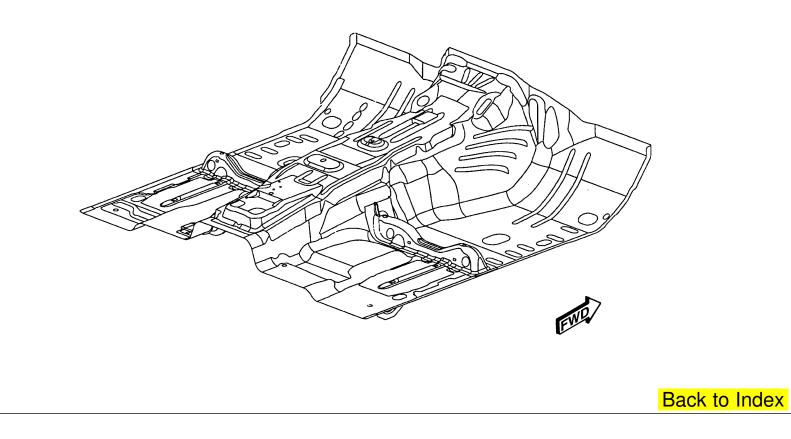


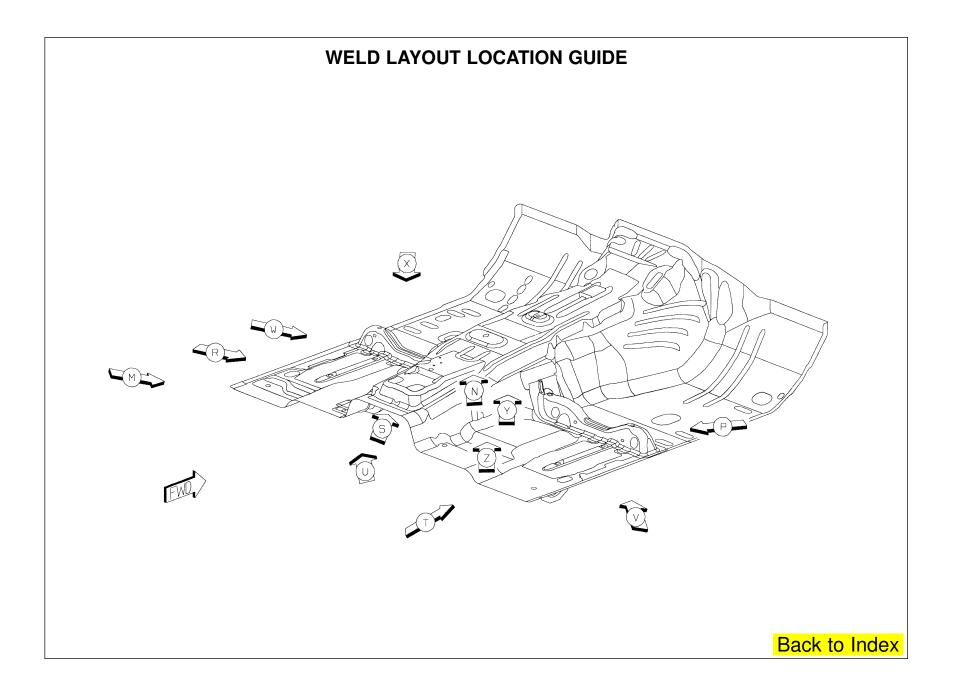


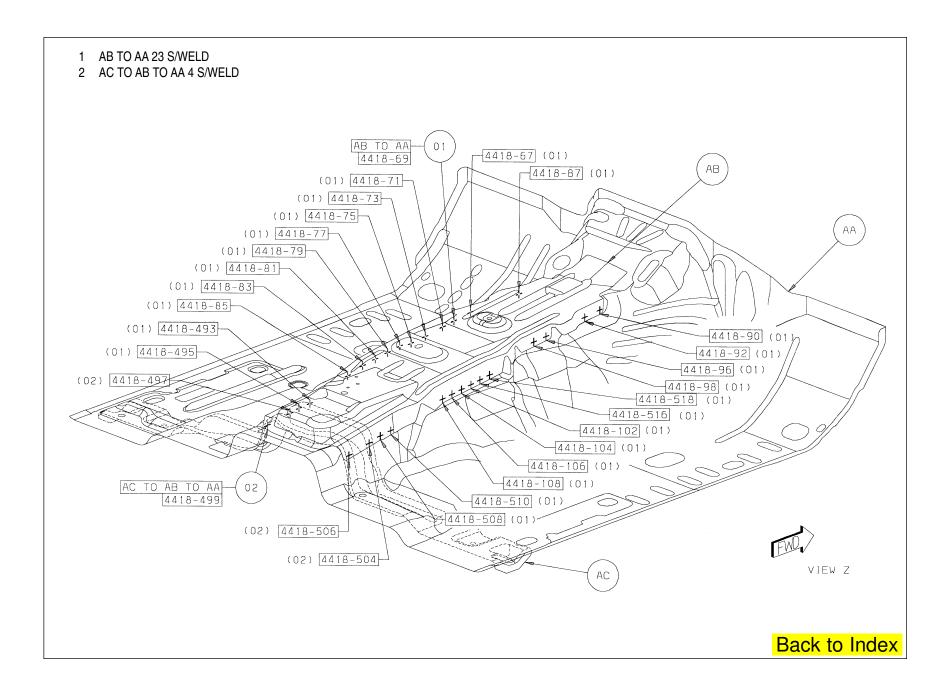
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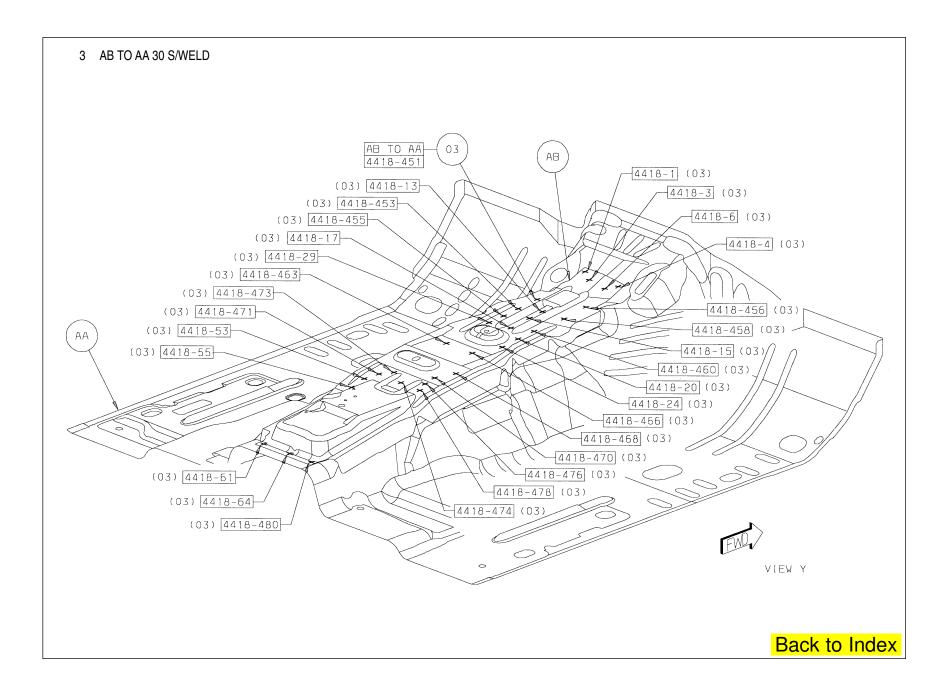
- AA PAN FLOOR FRT -
- AB REINF TUNNEL –
- AC REINF FRT SEAT RR MOUNTING –
- AD REINF FRT SEAT FRT MOUNTING RT –
- AD REINF FRT SEAT FRT MOUNTING LT–
- AE REINF MID FLOOR COMPRESSION PLATE –
- AF REINF FRT SEAT RR SUPPORT LT –

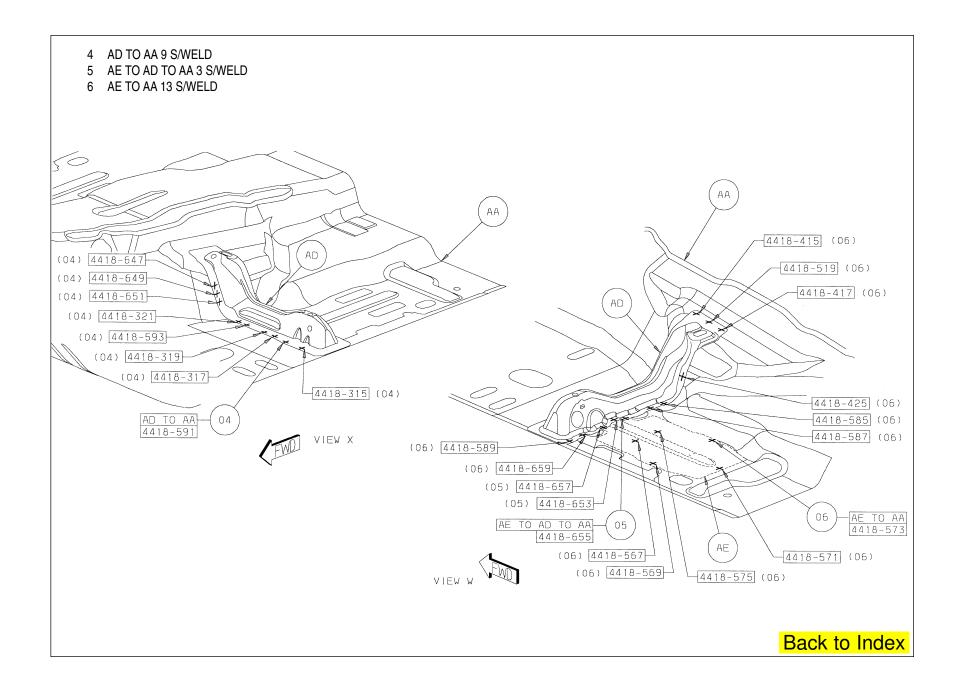
- AG NUT/WELD.HEX NO.FIN.THICK –
- AH NUT/WELD.RD ROUND.SPECIAL SEAT TO C/MEMBR
- AJ NUT/PIERCE NO.FIN.STRIP.UNTHREADED GROUND
- AJ NUT/PIERCE NO.FIN.STRIP.UNTHREADED -
- AK STUD/1.END.SPEC NO.FIN.PILOT.PT.SPECIAL -
- AL STUD/1.END.SPEC PILOT.PT.SPECIAL I/P
- AM STUD.WELD/EXTERNAL SPECIAL -

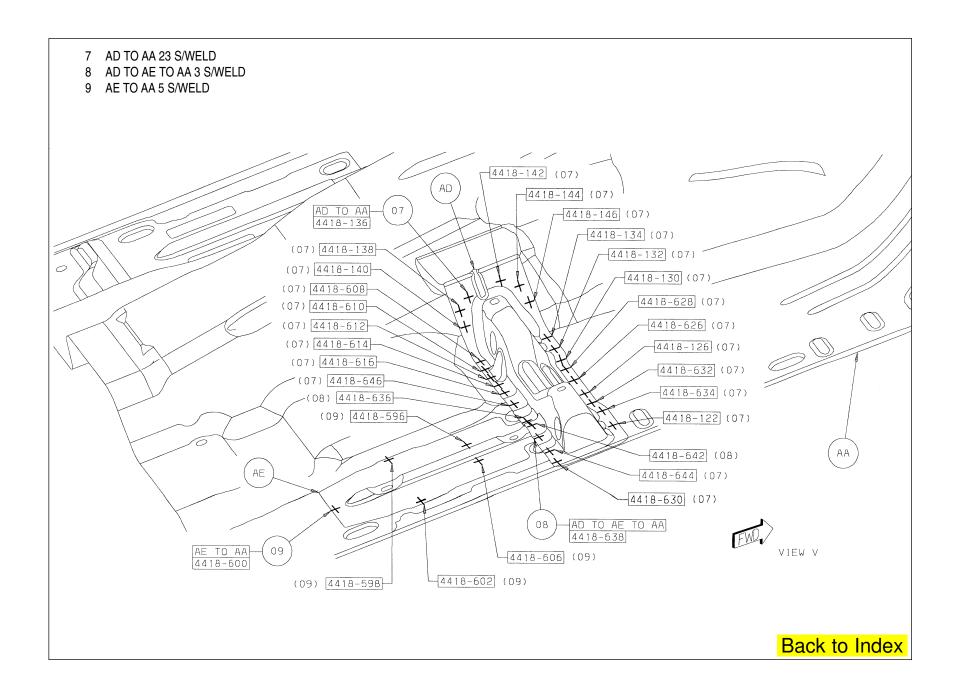


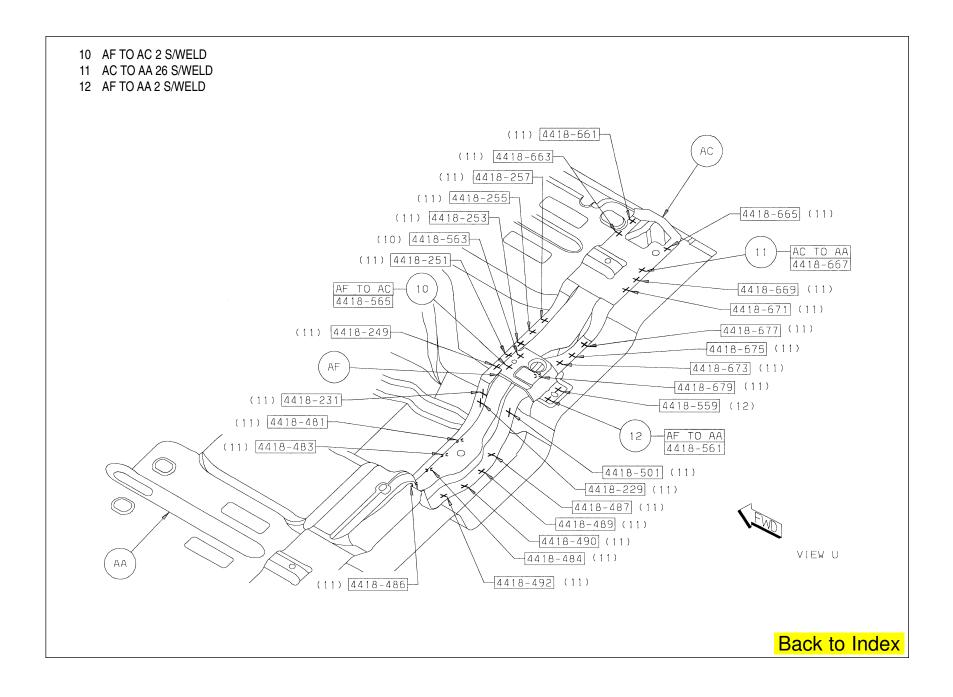


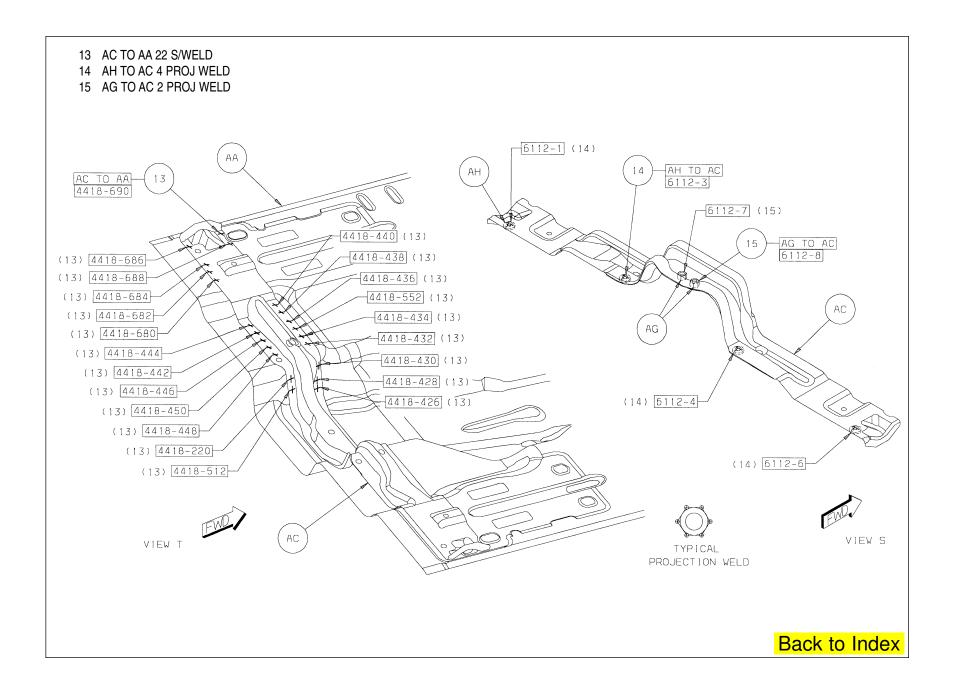


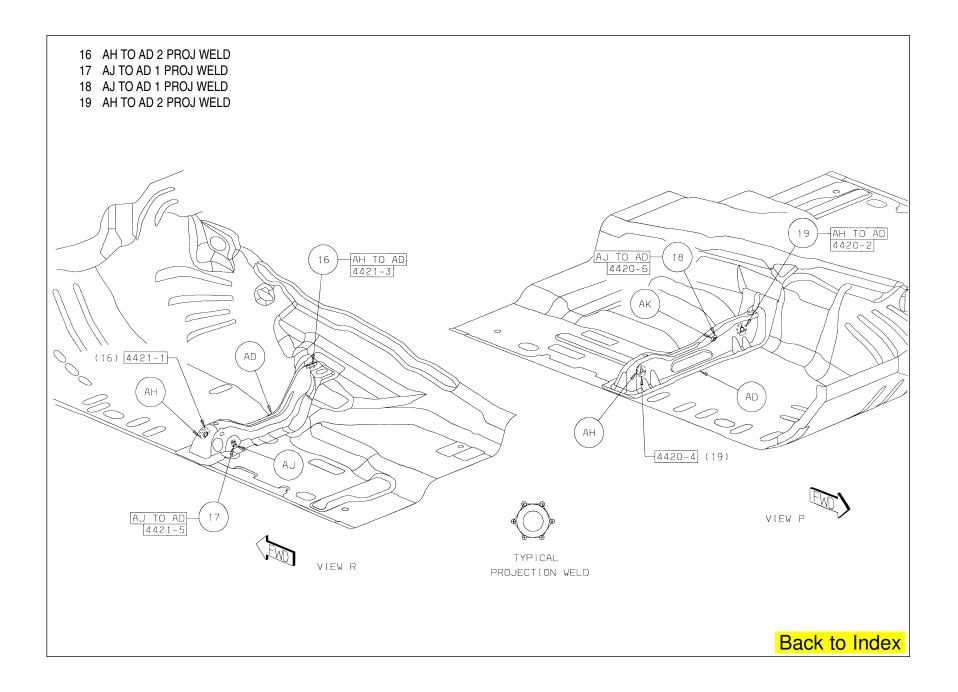


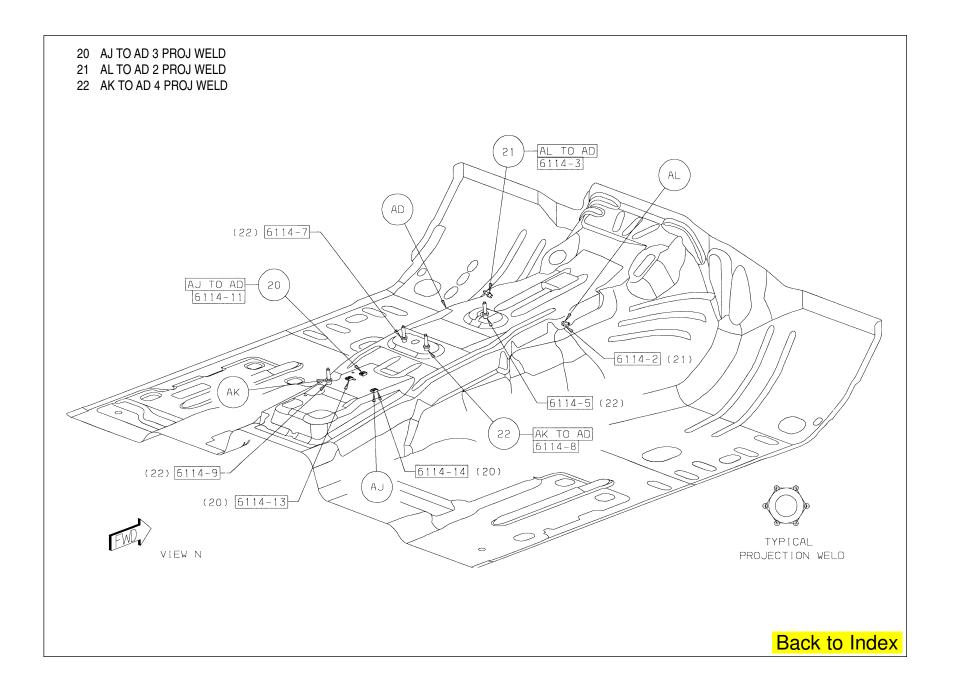


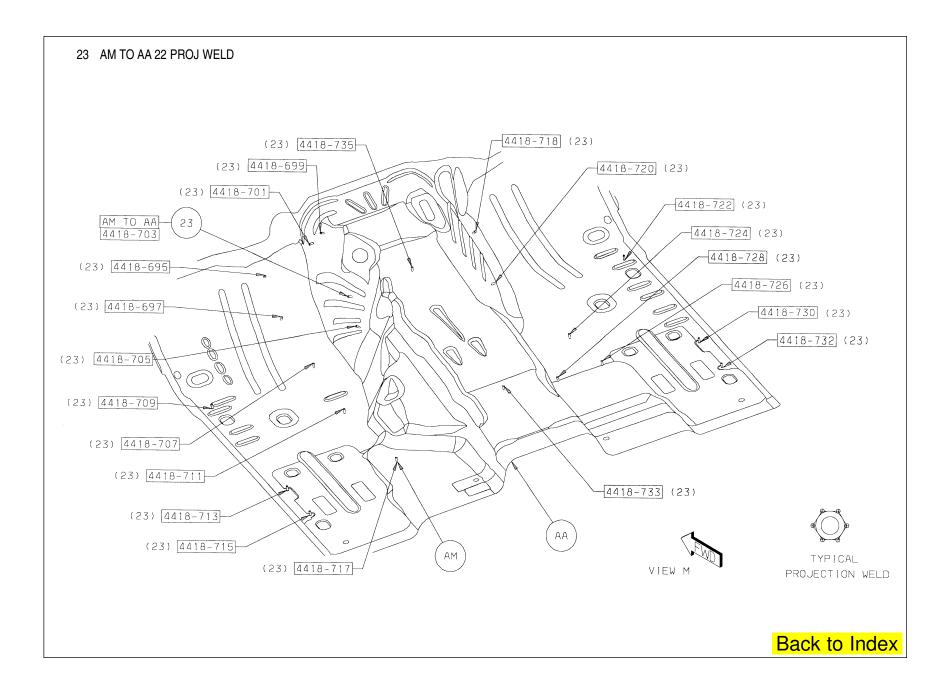


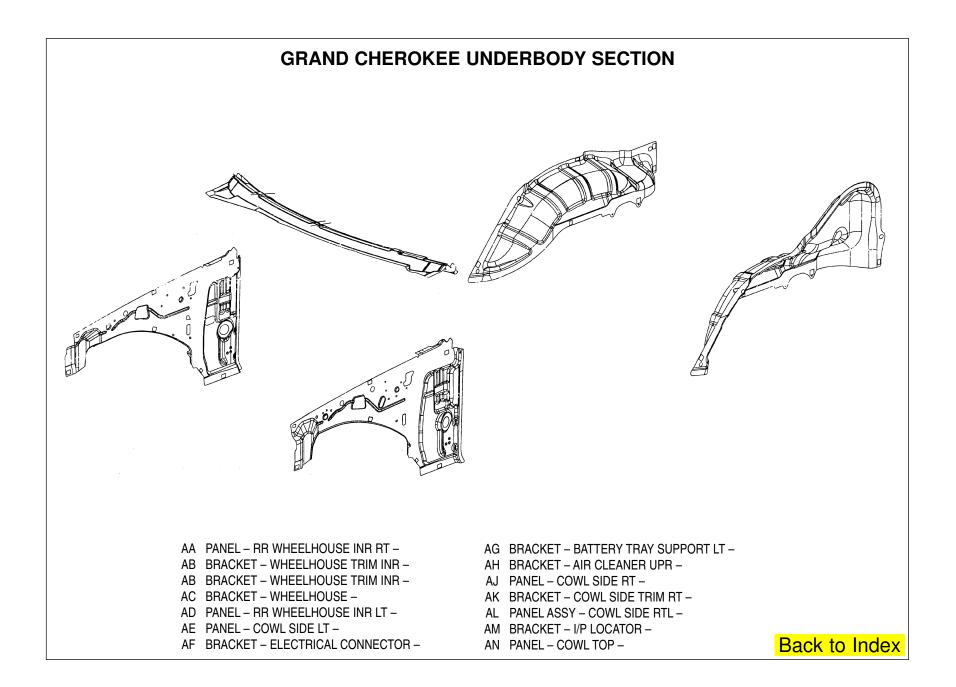


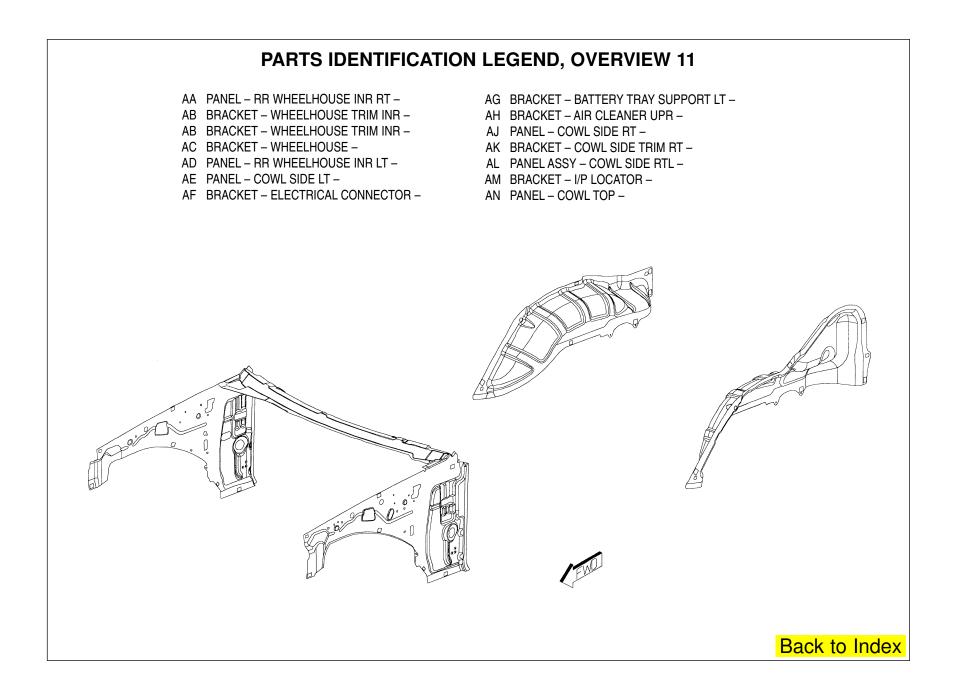


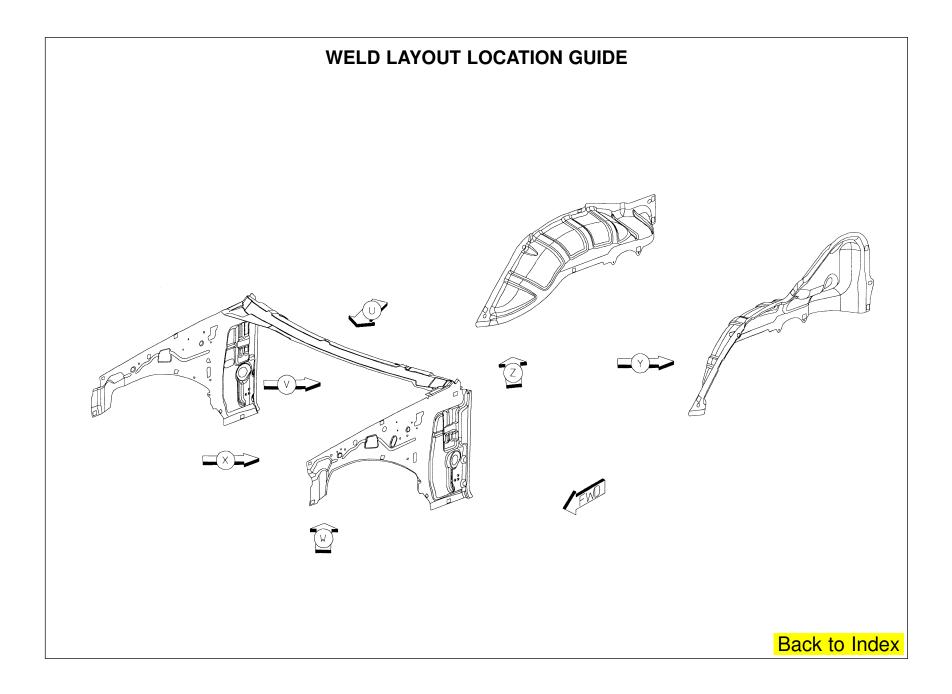


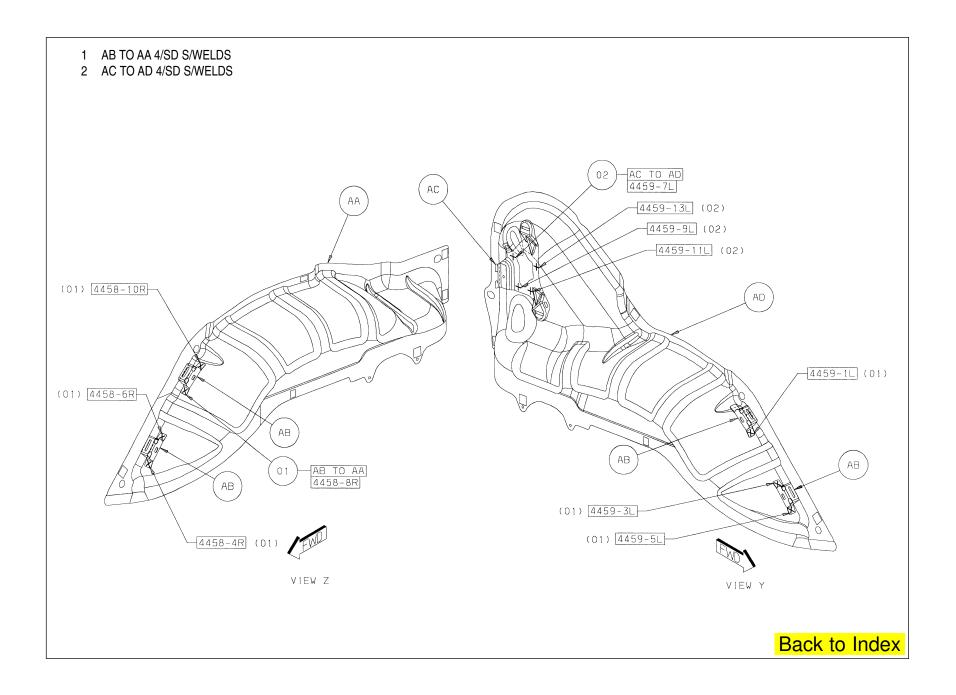


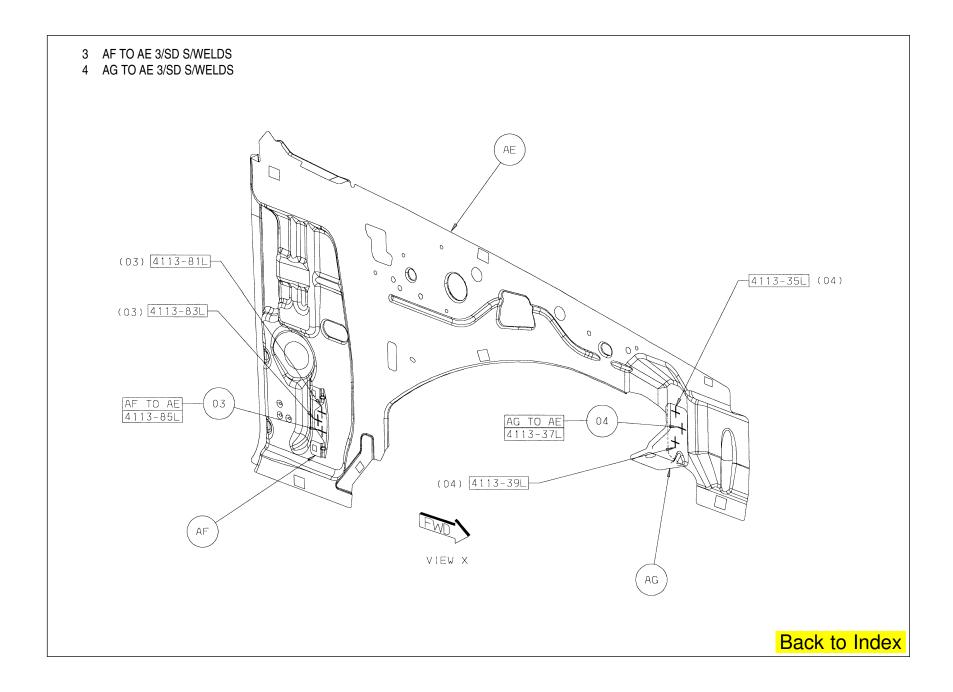


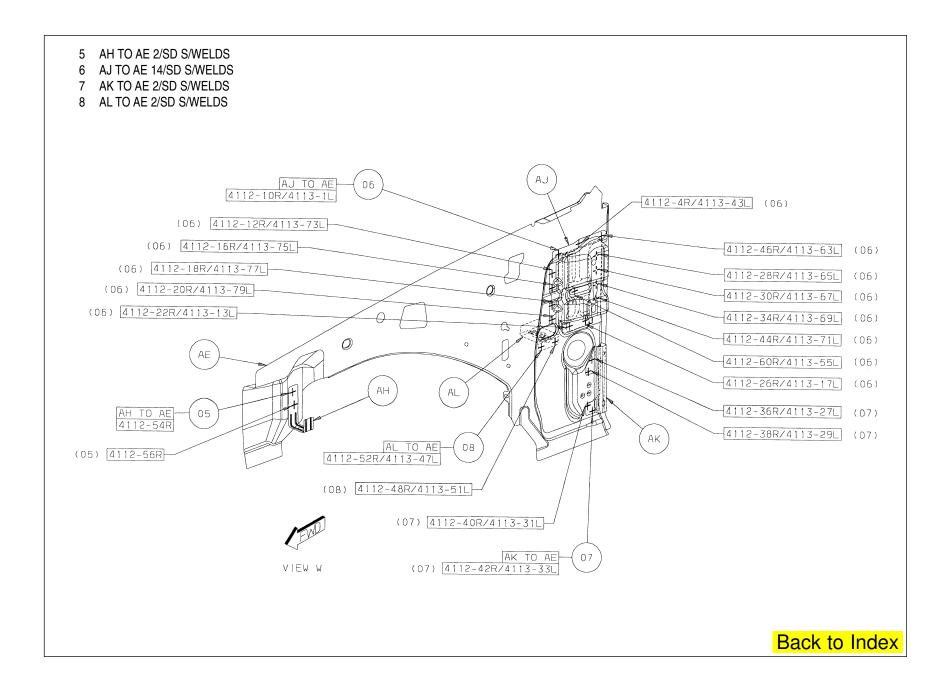


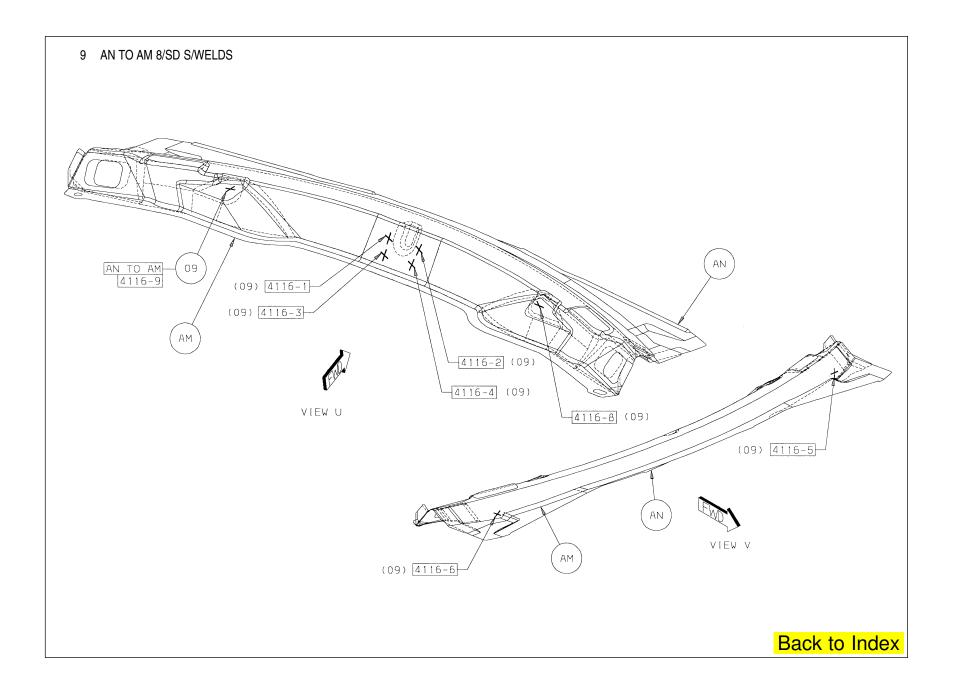


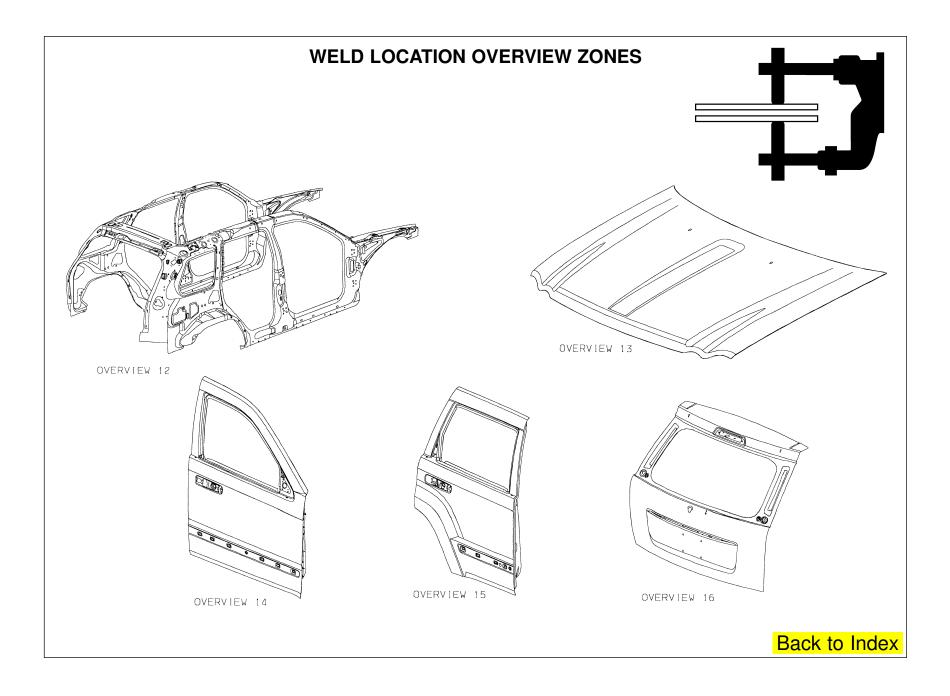


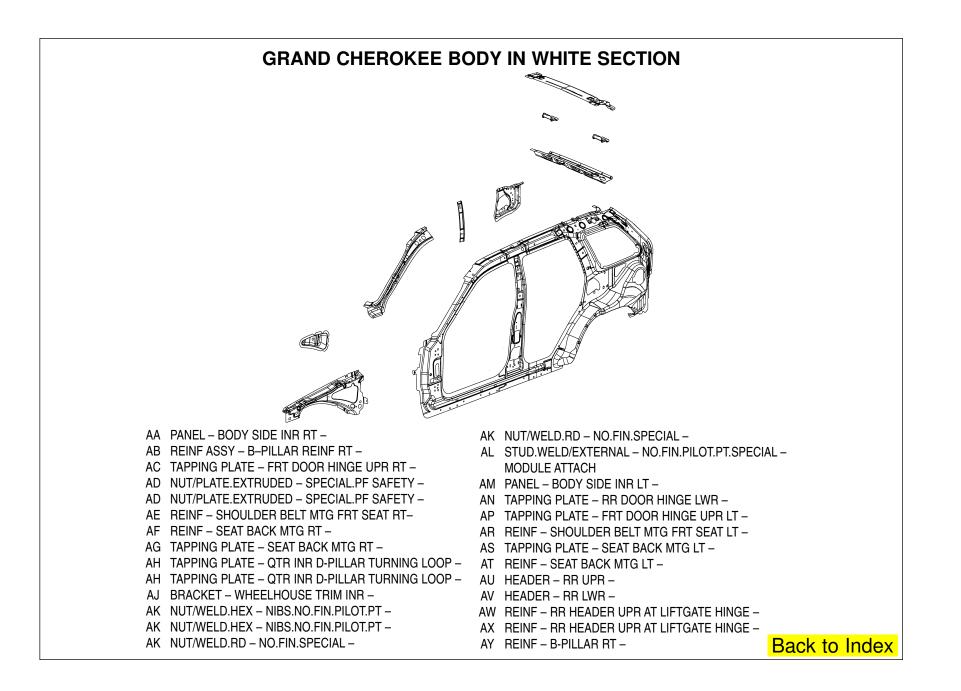












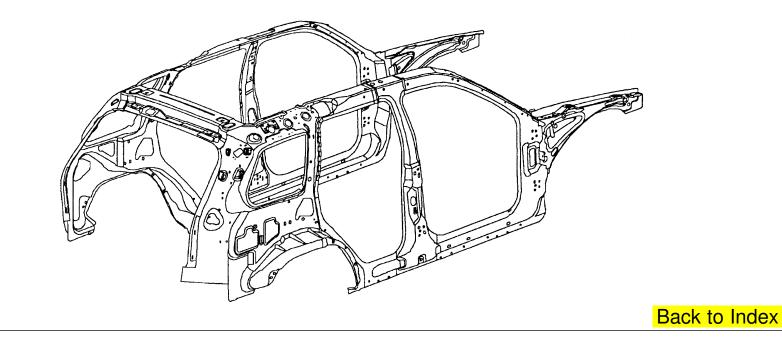
## **PARTS IDENTIFICATION LEGEND, OVERVIEW 12** AK NUT/WELD.RD - NO.FIN.SPECIAL -AA PANEL - BODY SIDE INR RT -AL STUD.WELD/EXTERNAL - NO.FIN.PILOT.PT.SPECIAL -AB REINF ASSY – B–PILLAR REINF RT – AC TAPPING PLATE – FRT DOOR HINGE UPR RT – MODULE ATTACH AM PANEL - BODY SIDE INR LT -AD NUT/PLATE.EXTRUDED – SPECIAL.PF SAFETY – AD NUT/PLATE.EXTRUDED - SPECIAL.PF SAFETY -AN TAPPING PLATE - RR DOOR HINGE LWR -AP TAPPING PLATE - FRT DOOR HINGE UPR LT -AE REINF - SHOULDER BELT MTG FRT SEAT RT-AF REINF - SEAT BACK MTG RT -AR REINF - SHOULDER BELT MTG FRT SEAT LT -AS TAPPING PLATE – SEAT BACK MTG LT – AG TAPPING PLATE - SEAT BACK MTG RT -AT REINF – SEAT BACK MTG LT – AH TAPPING PLATE – QTR INR D-PILLAR TURNING LOOP – AH TAPPING PLATE – QTR INR D-PILLAR TURNING LOOP – AU HEADER – RR UPR –

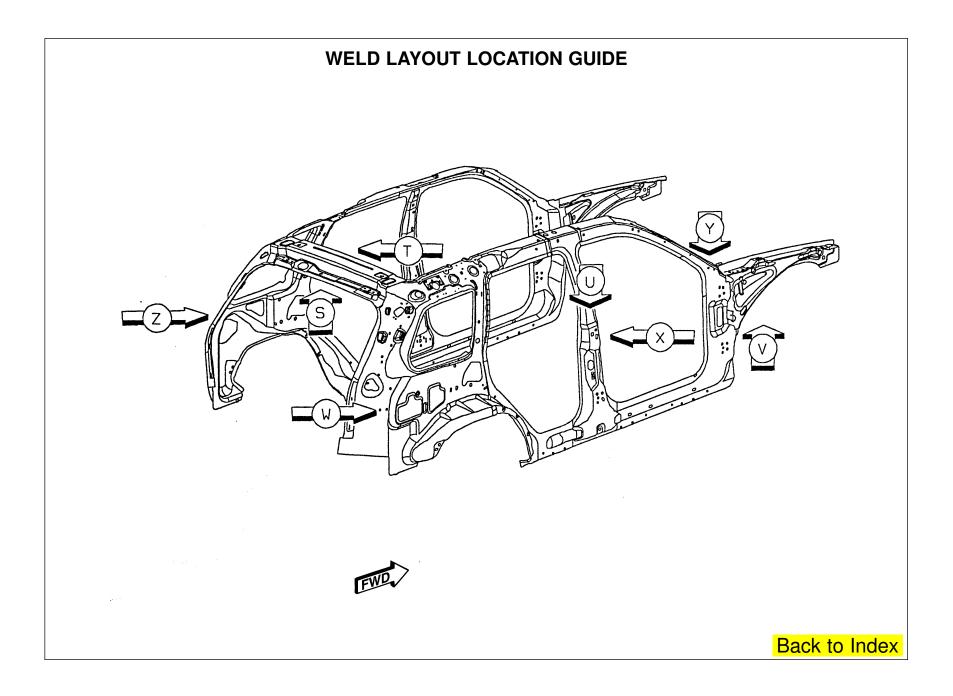
AJ BRACKET – WHEELHOUSE TRIM INR – AK NUT/WELD.HEX – NIBS.NO.FIN.PILOT.PT –

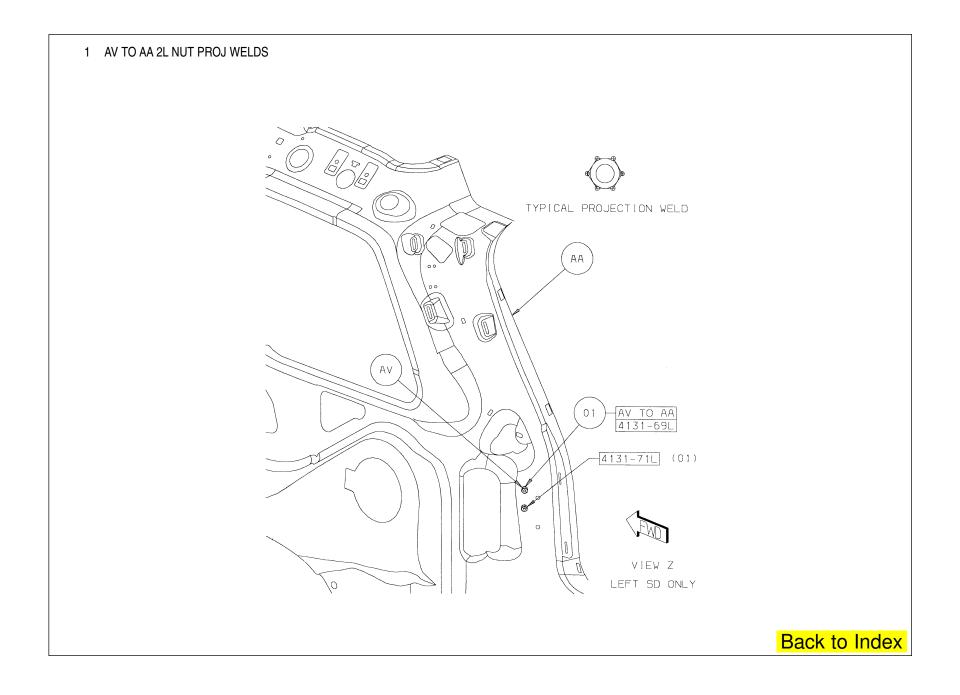
AK NUT/WELD.RD - NO.FIN.SPECIAL -

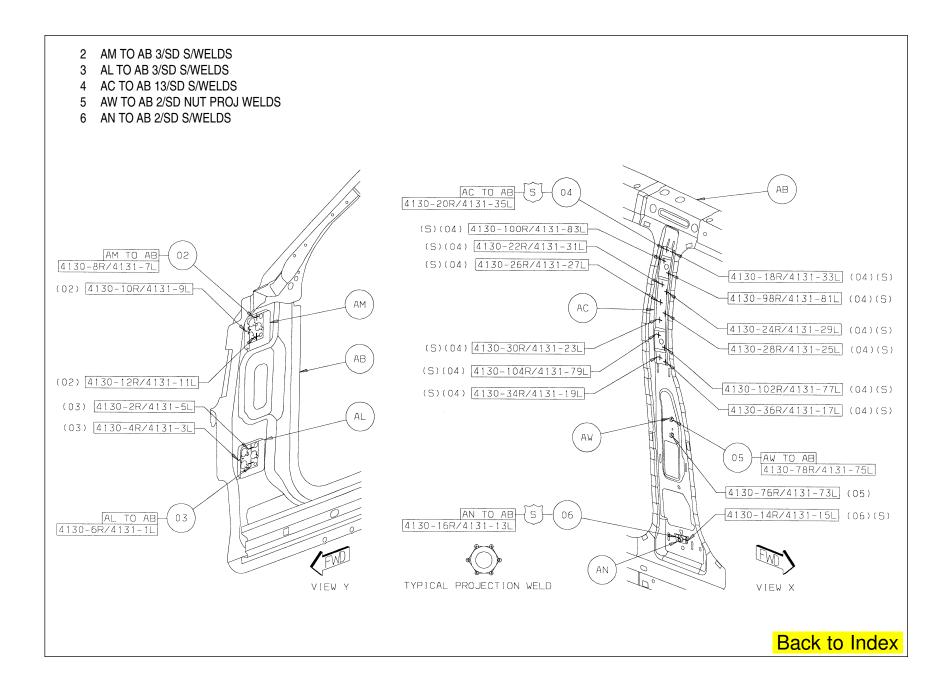
AK NUT/WELD.HEX – NIBS.NO.FIN.PILOT.PT –

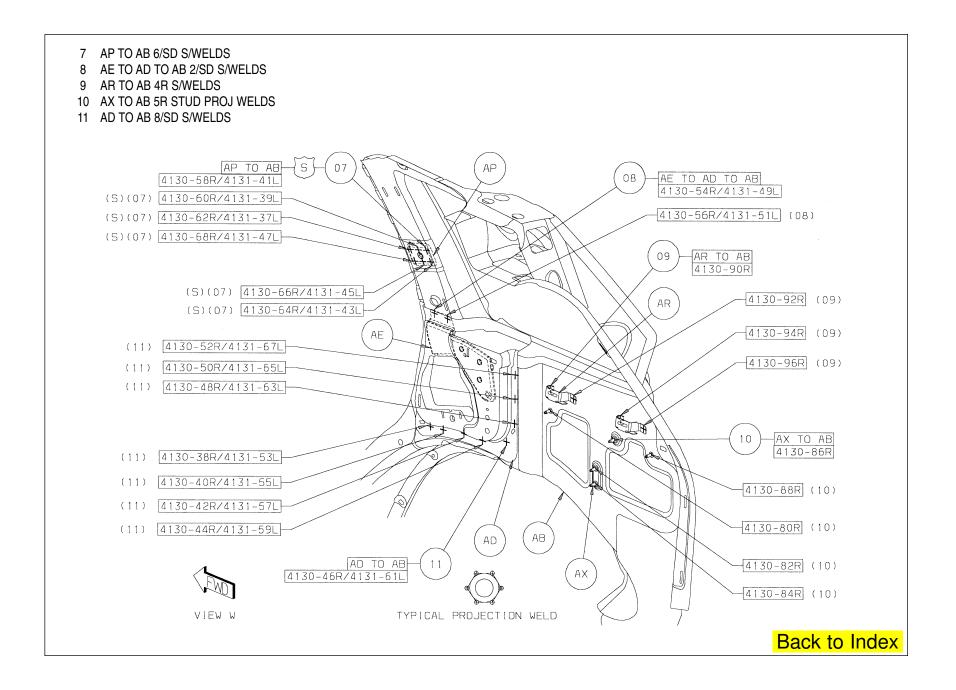
- AV HEADER RR LWR -
- AW REINF RR HEADER UPR AT LIFTGATE HINGE -
- AX REINF RR HEADER UPR AT LIFTGATE HINGE
  - AY REINF B-PILLAR RT –

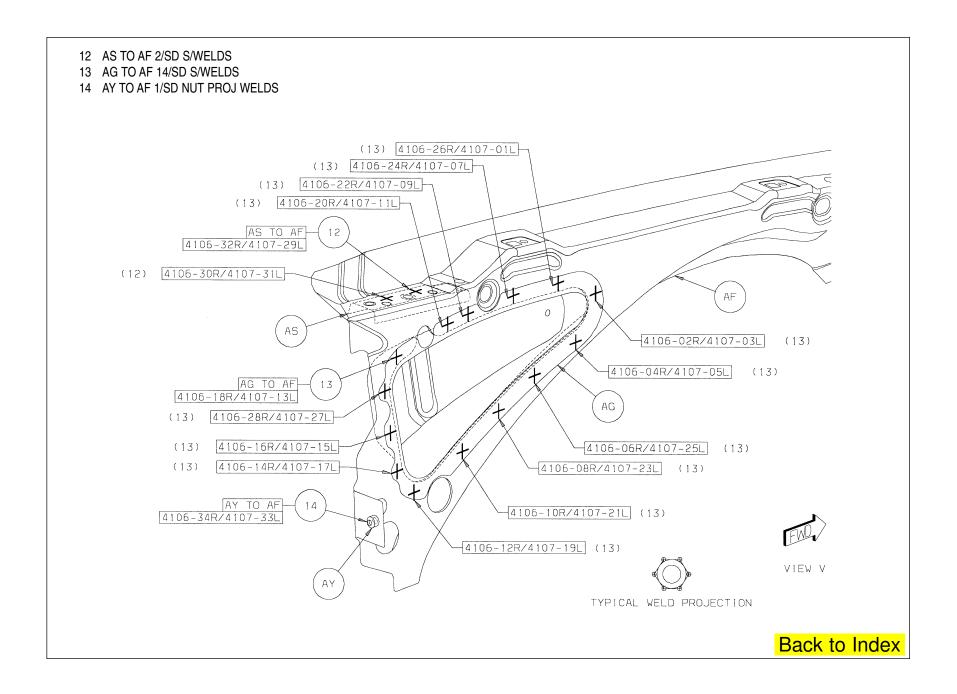


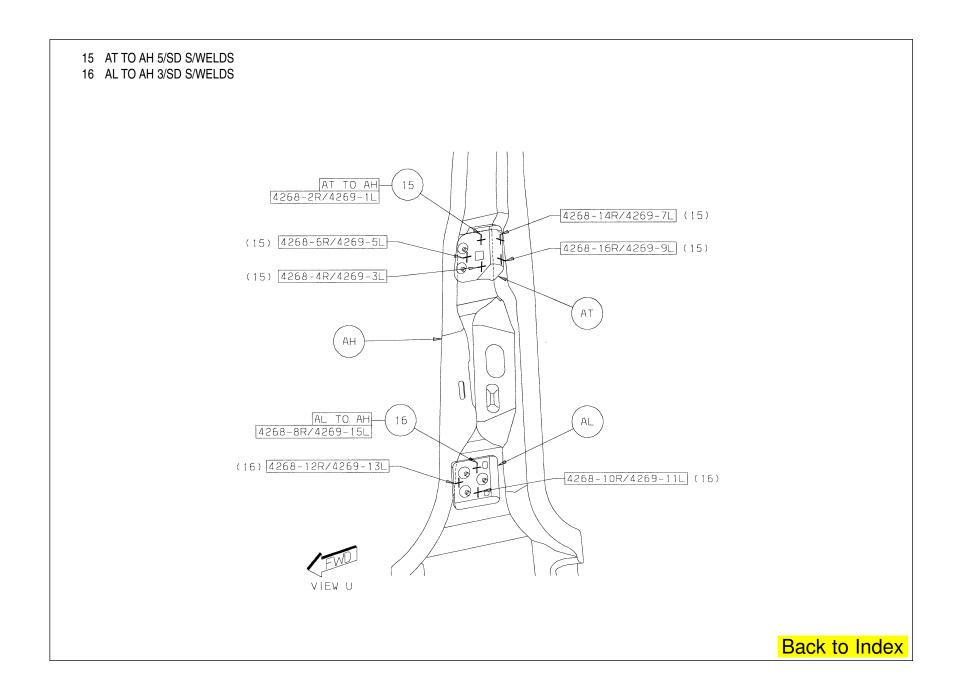


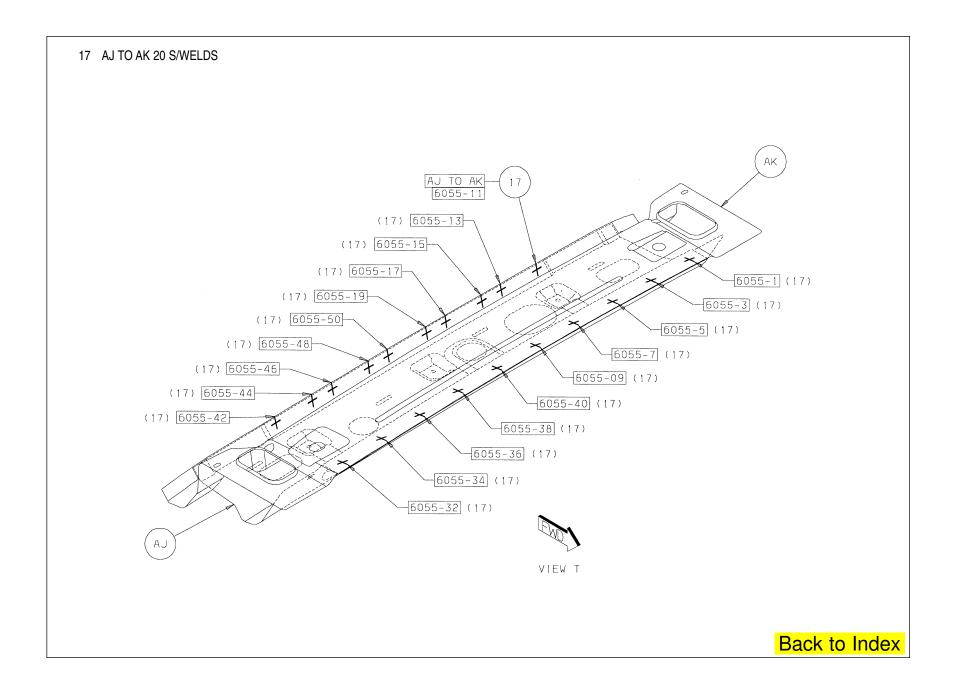


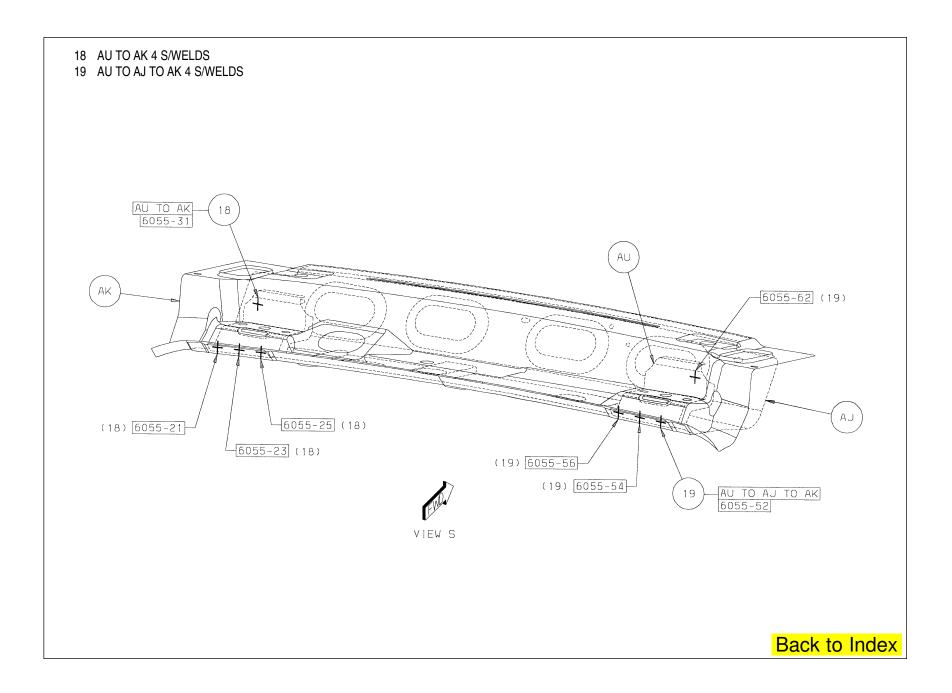


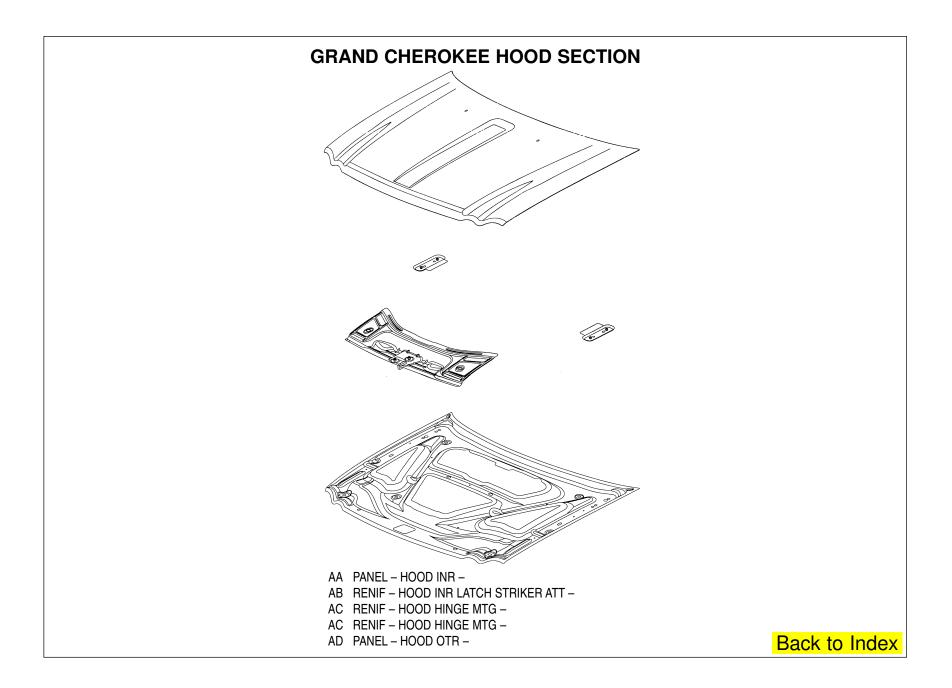


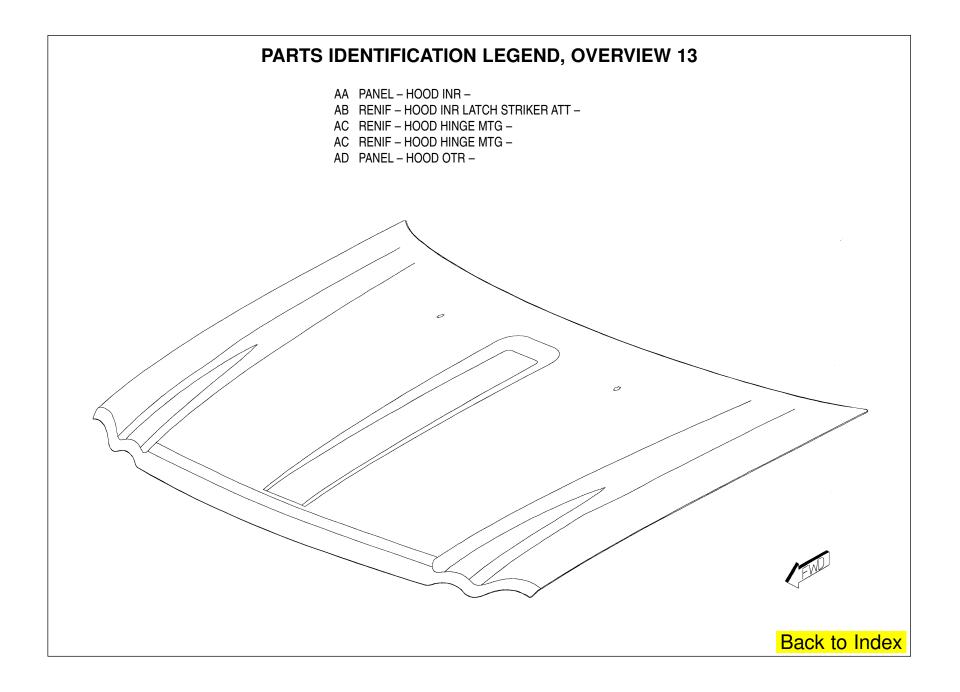


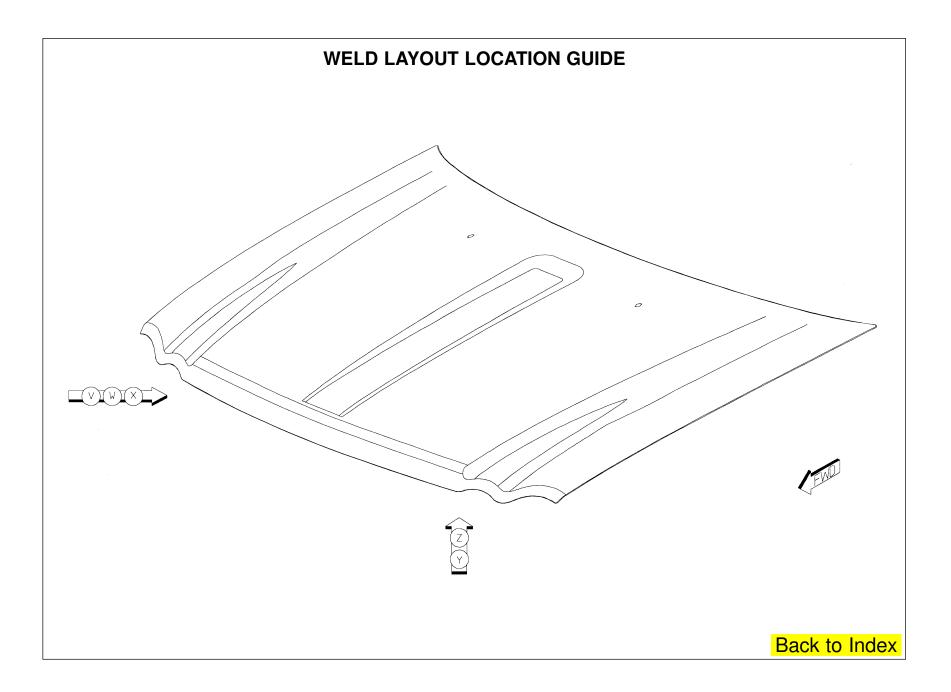


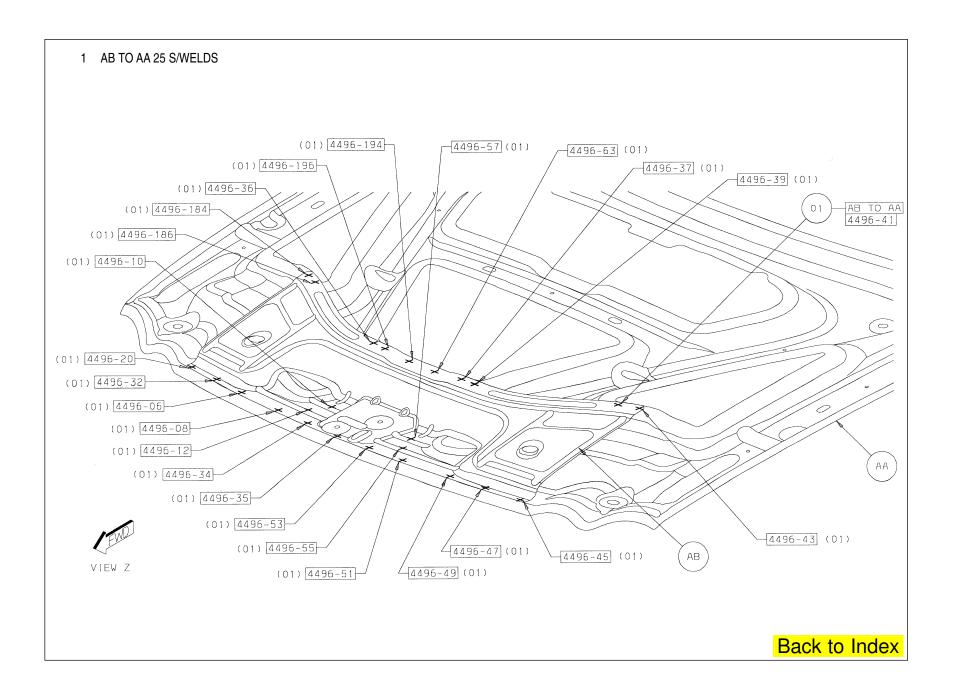


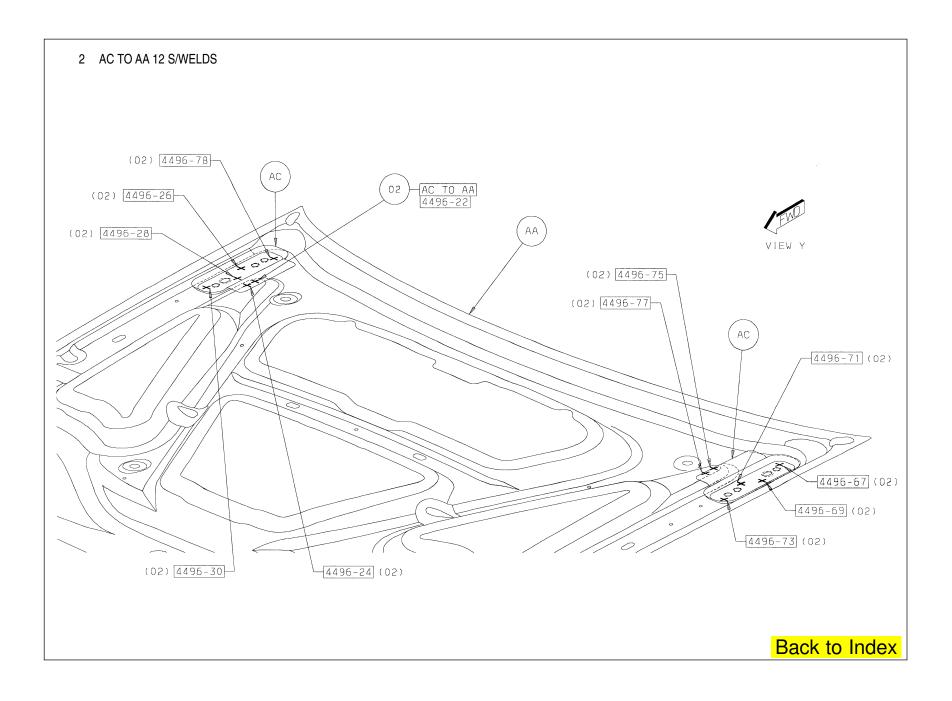


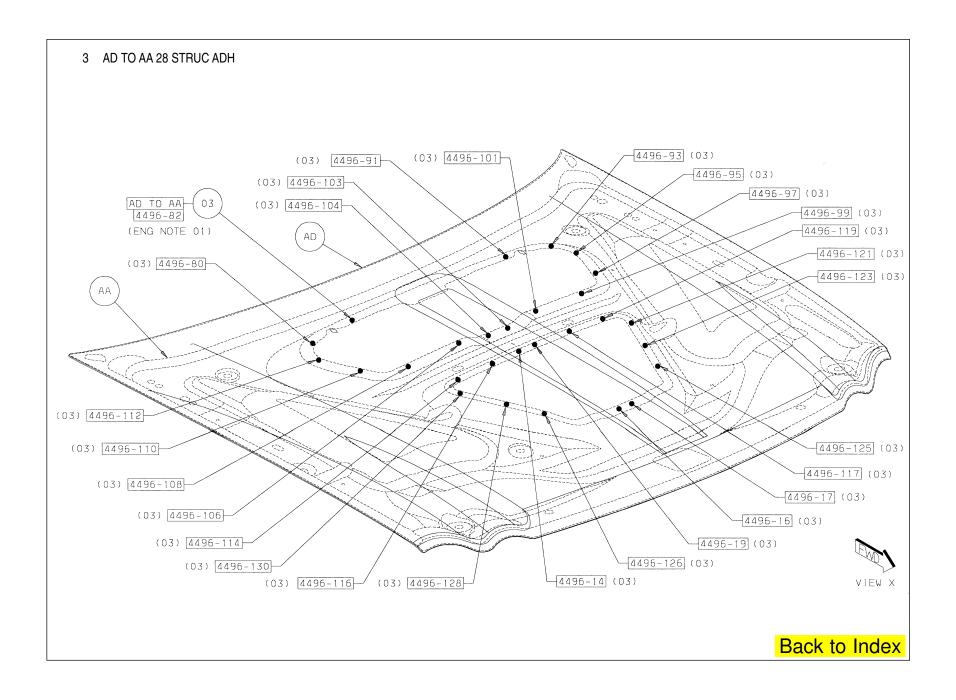


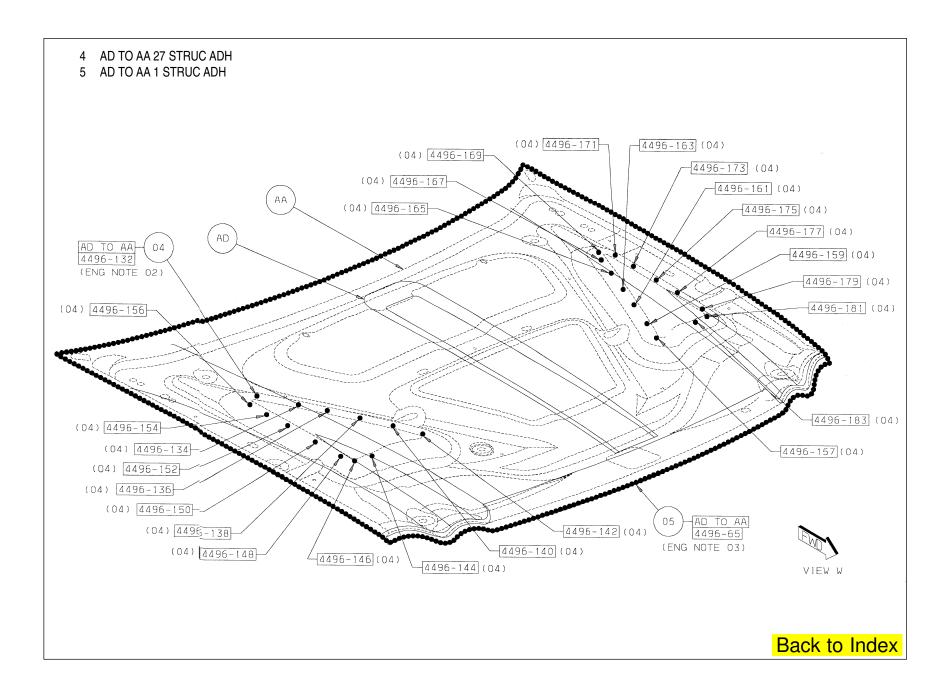


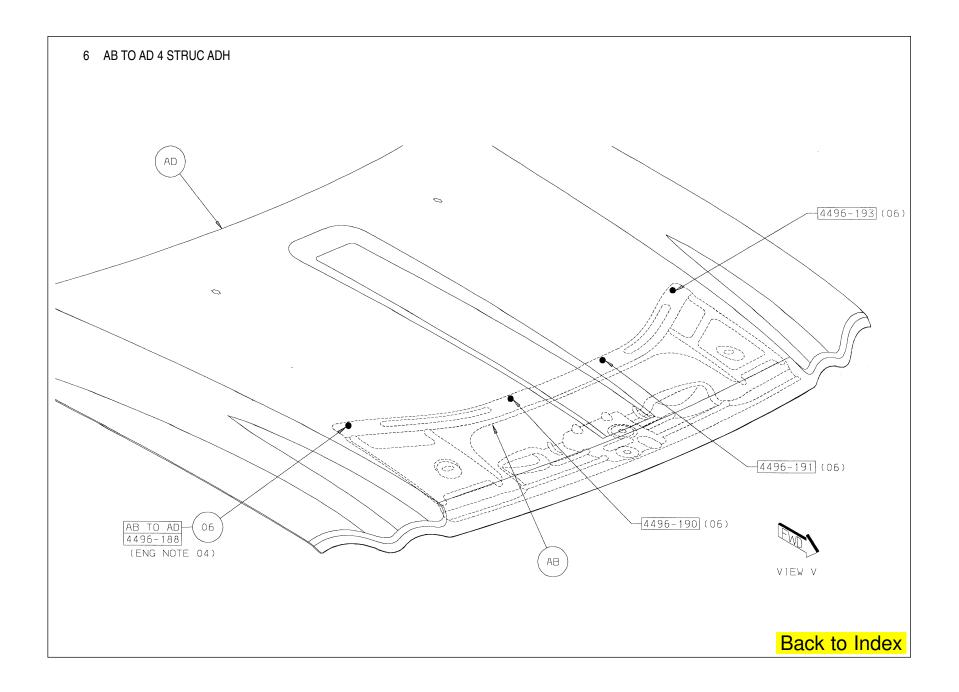












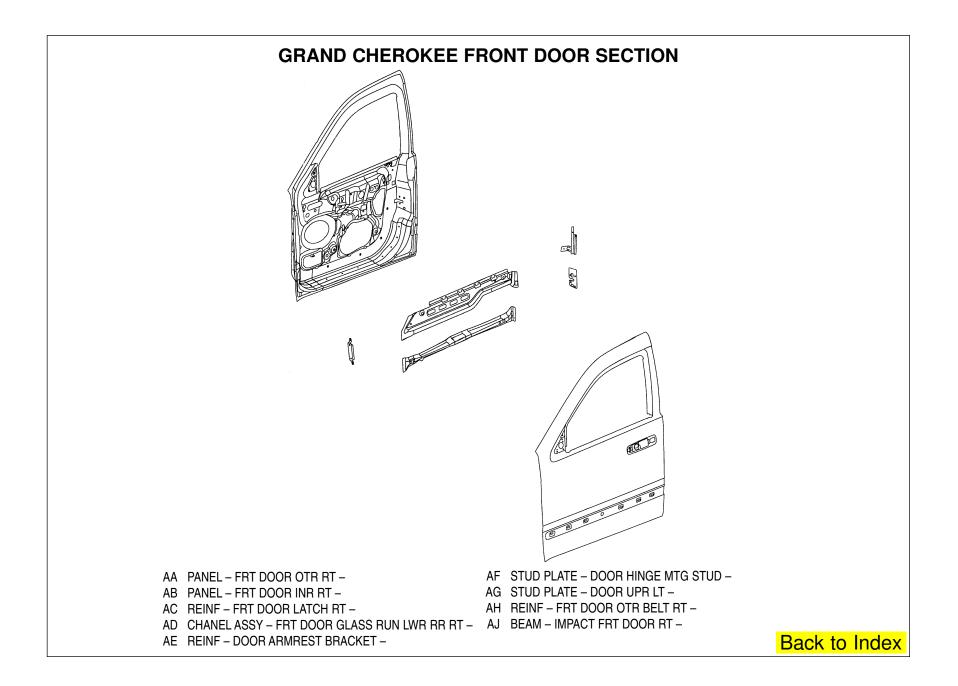


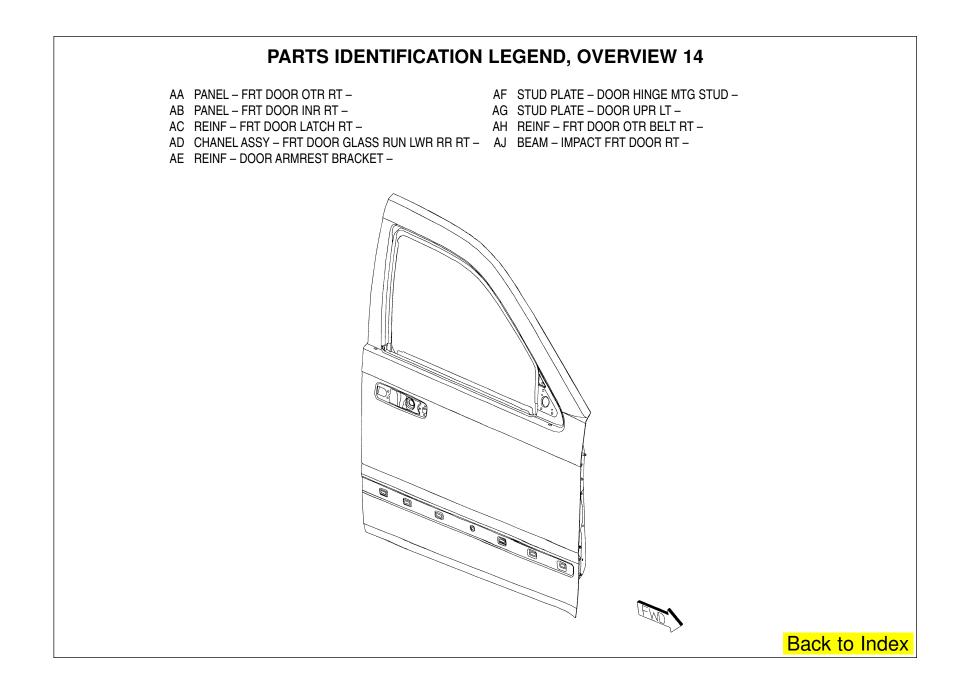


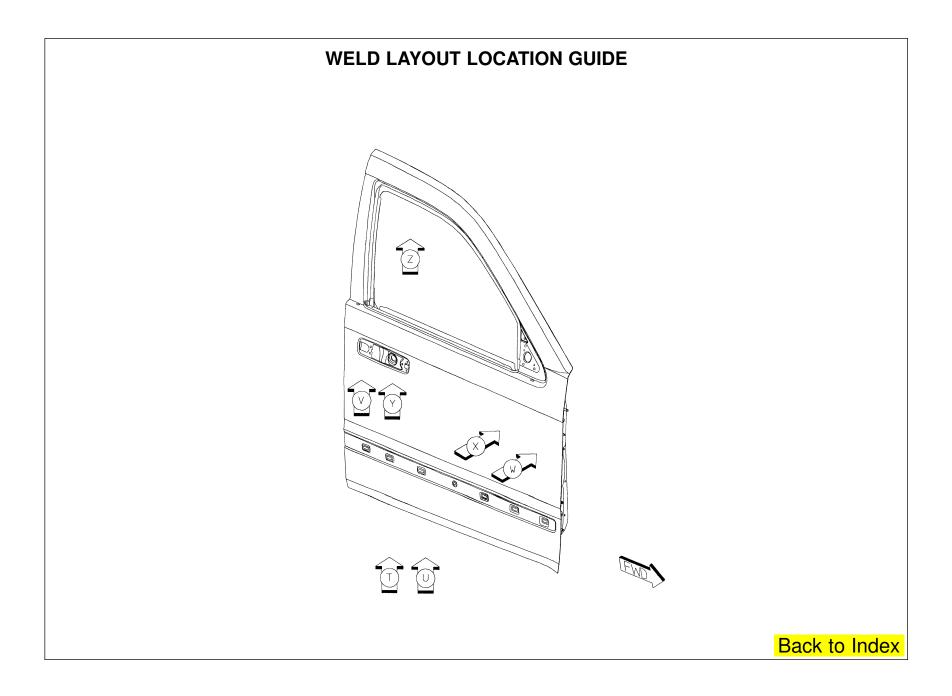
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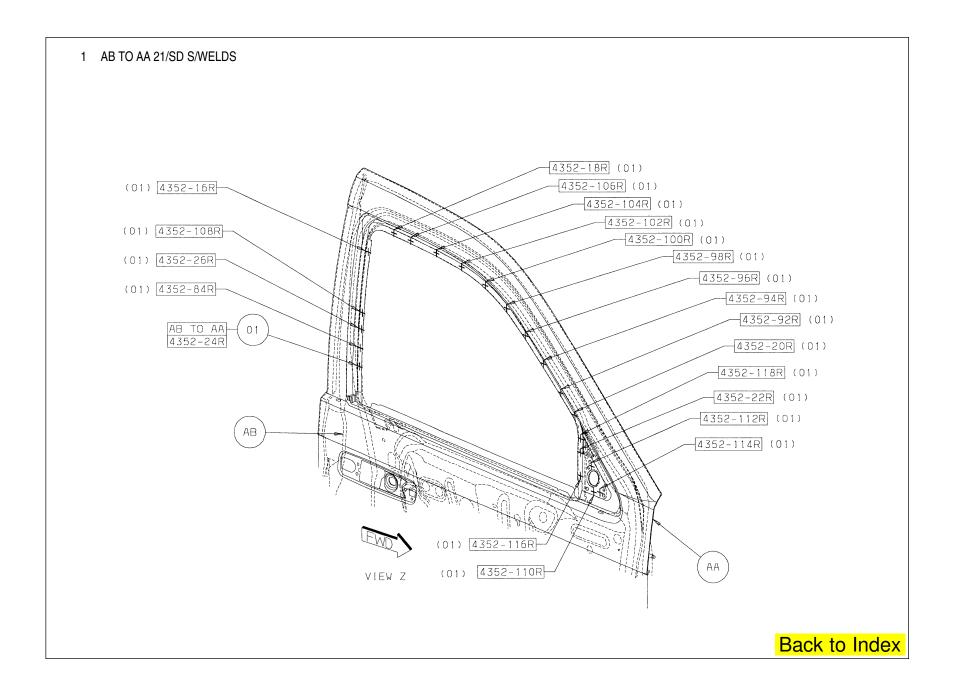
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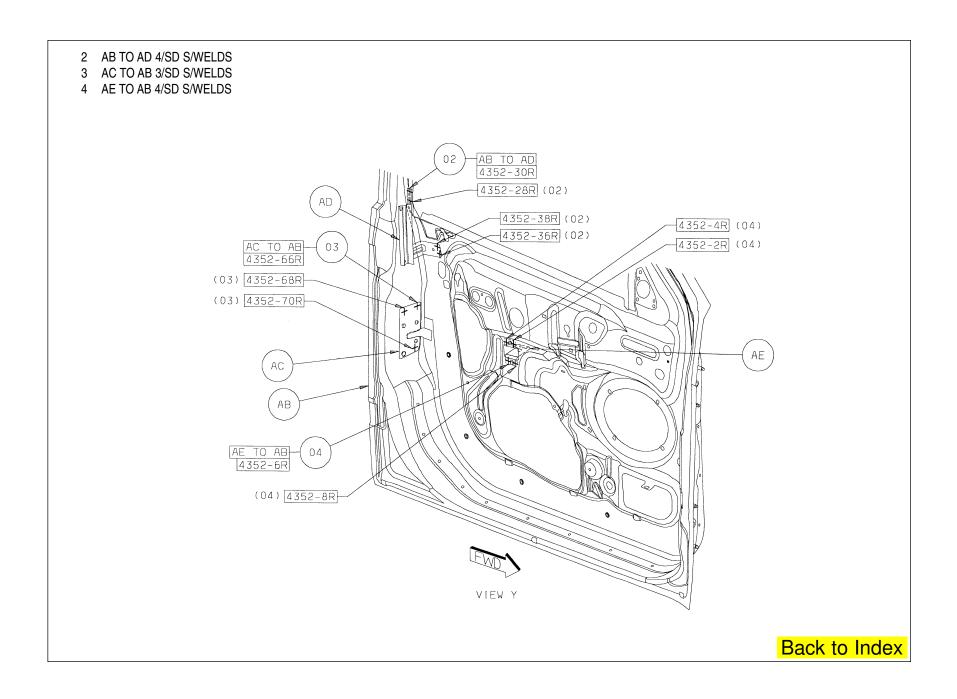
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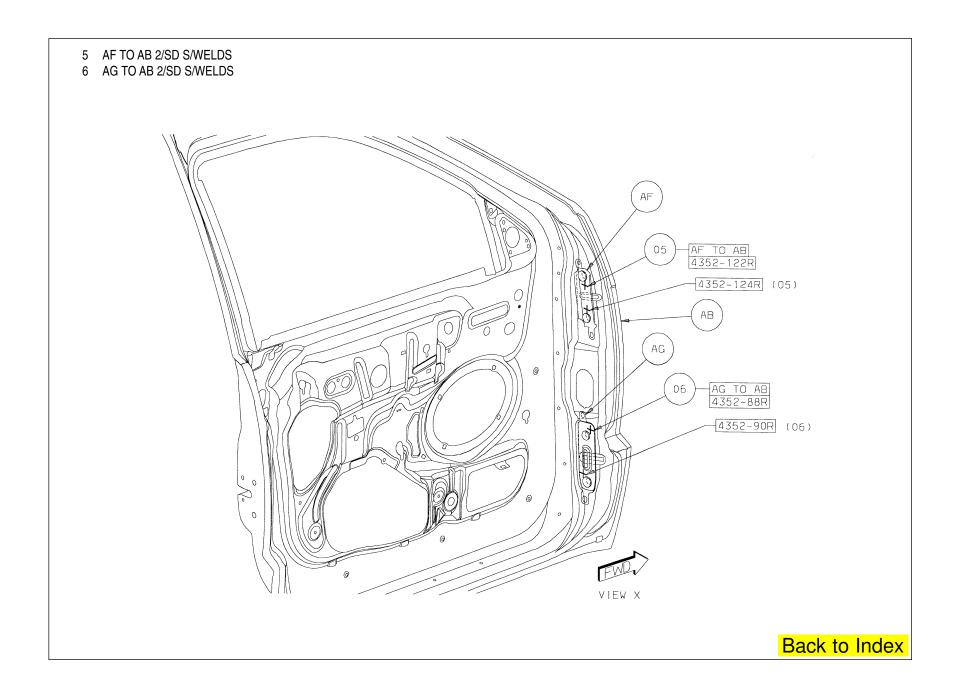


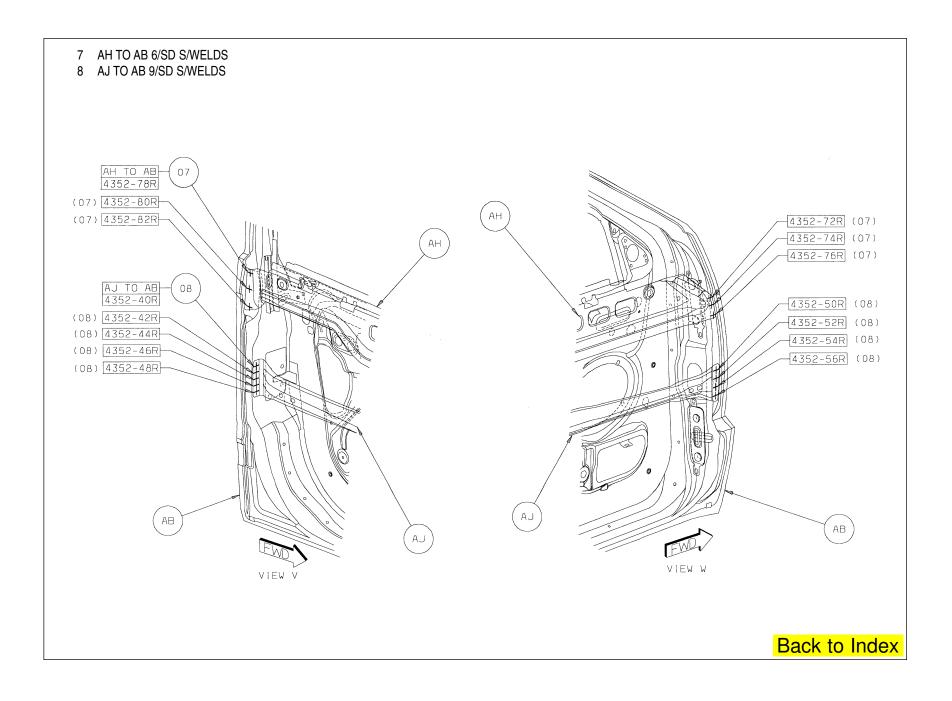


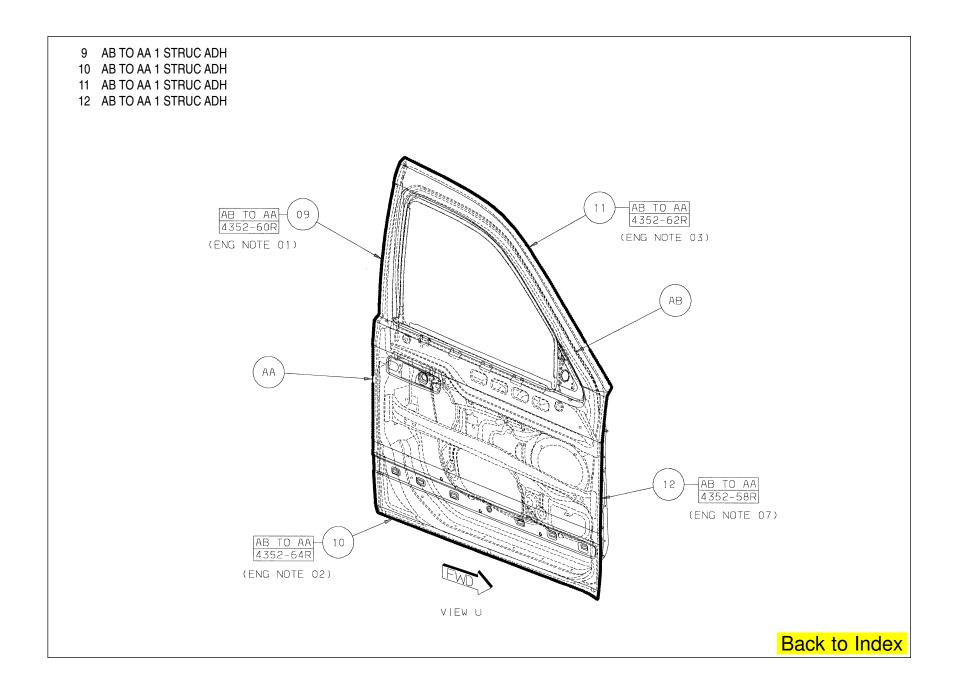


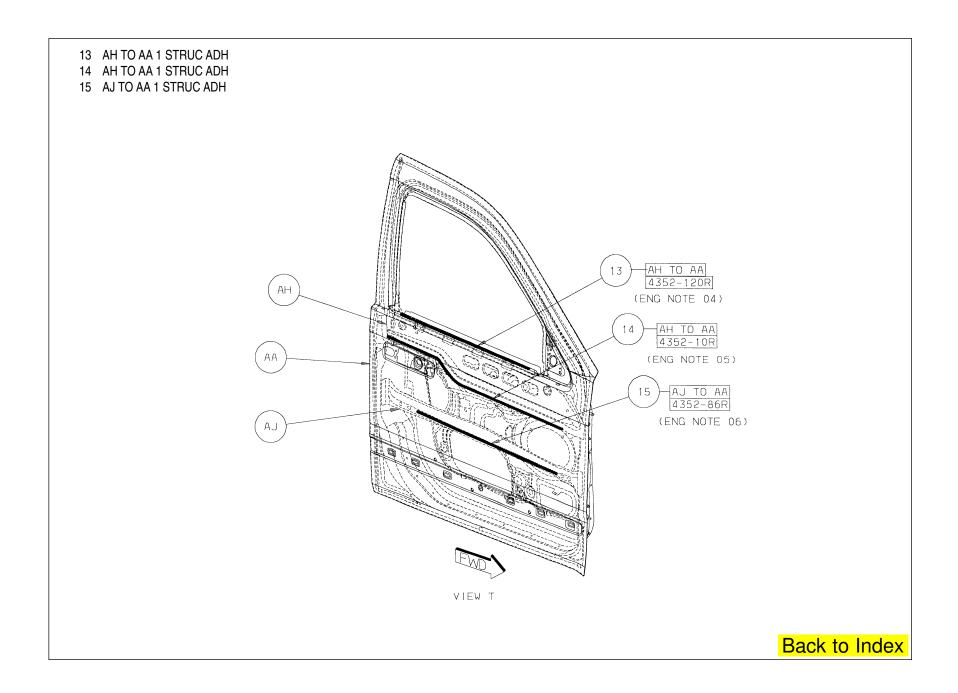


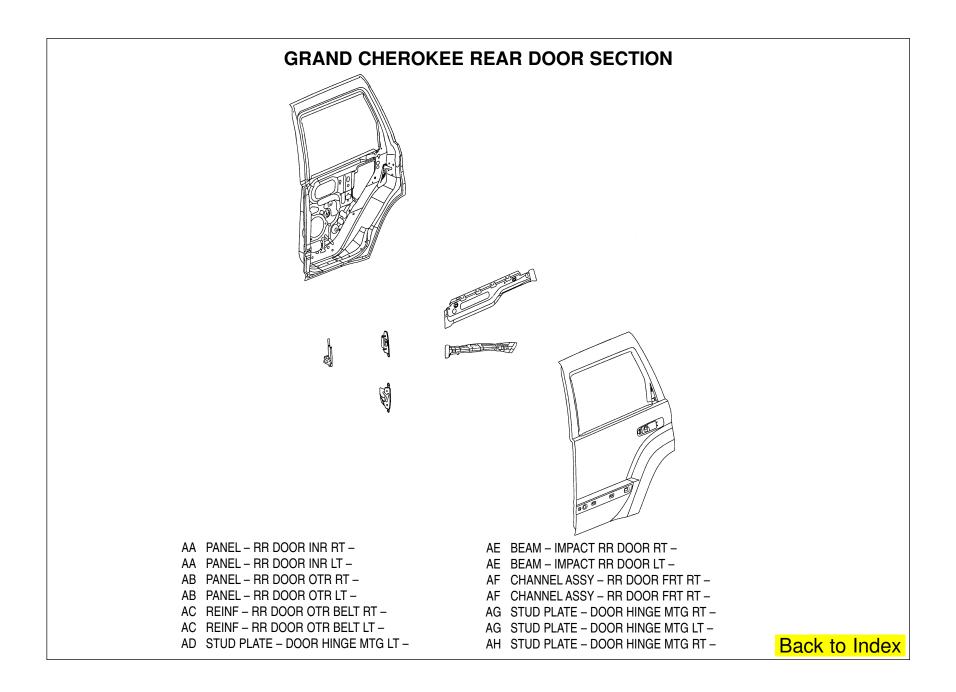


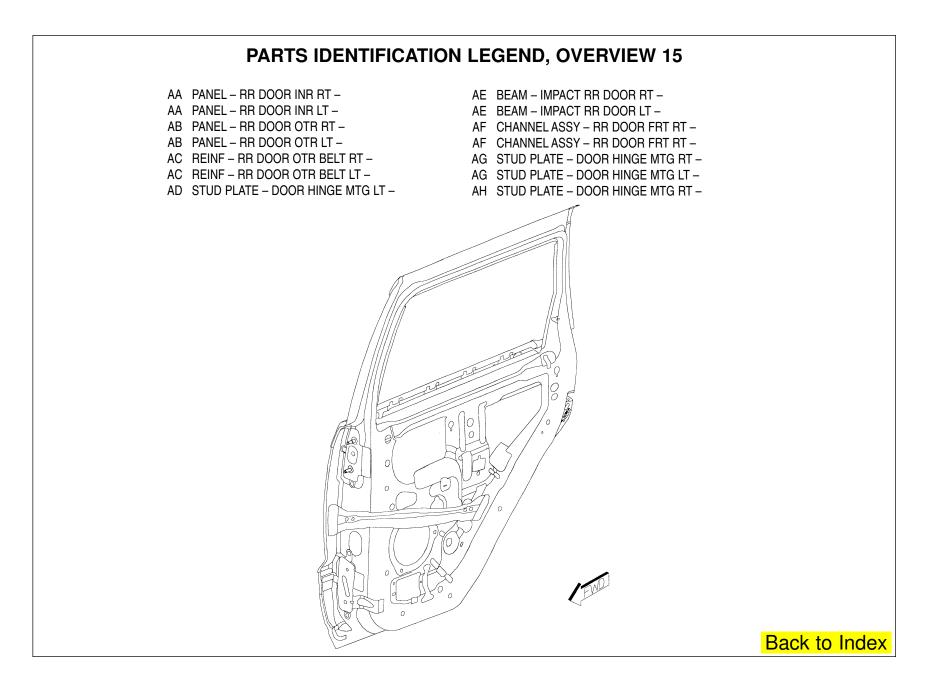


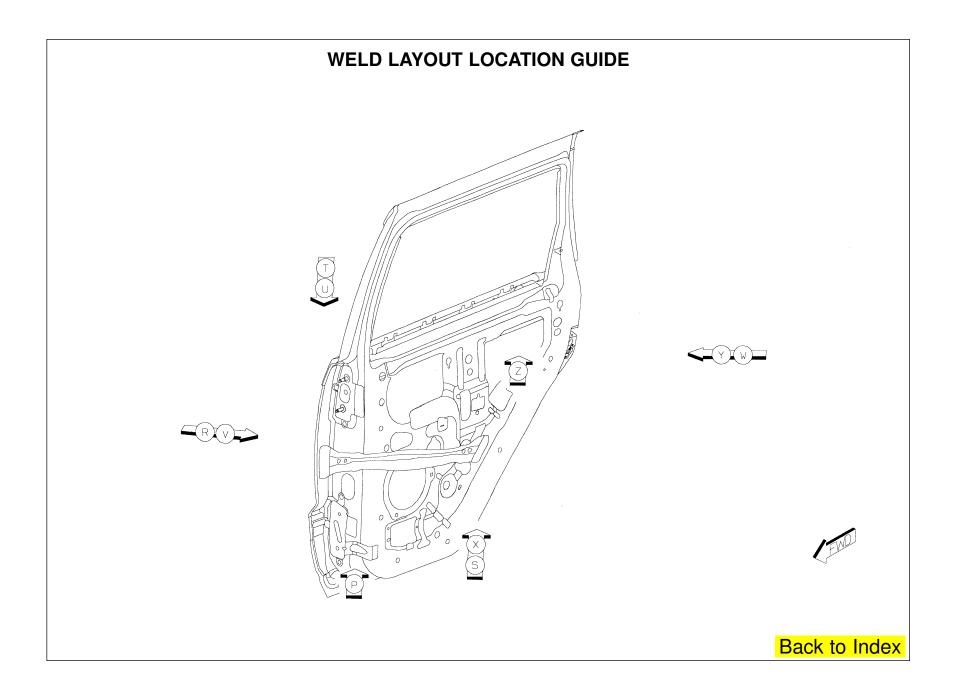


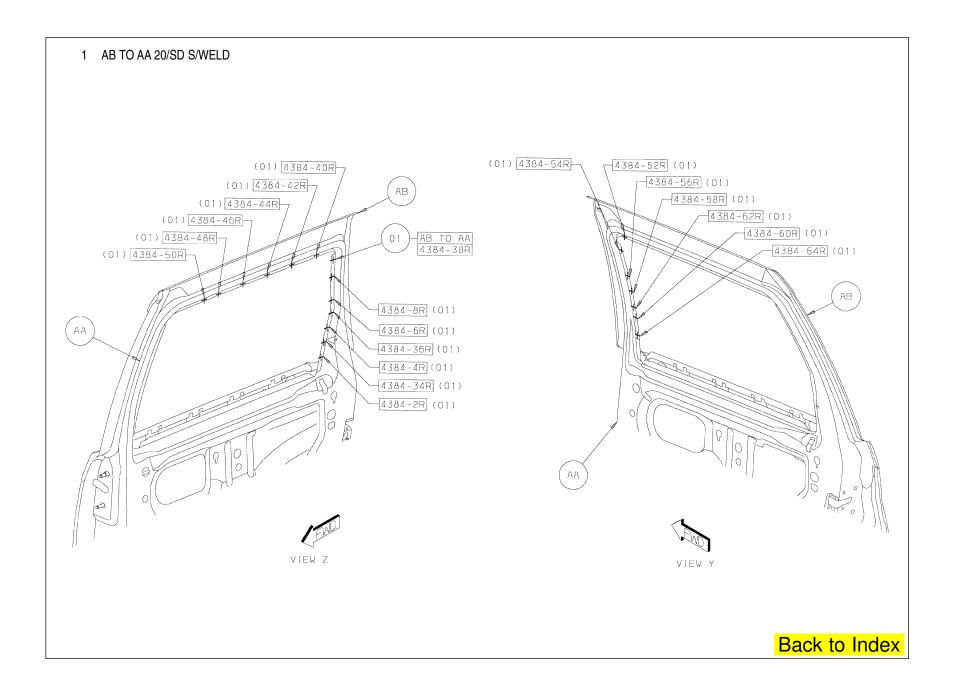


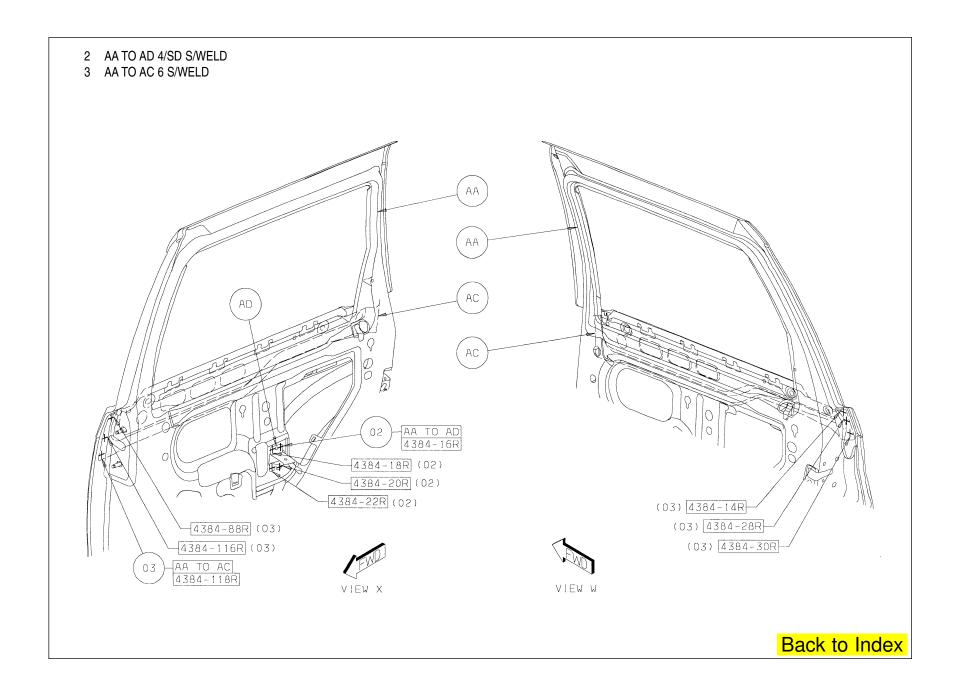


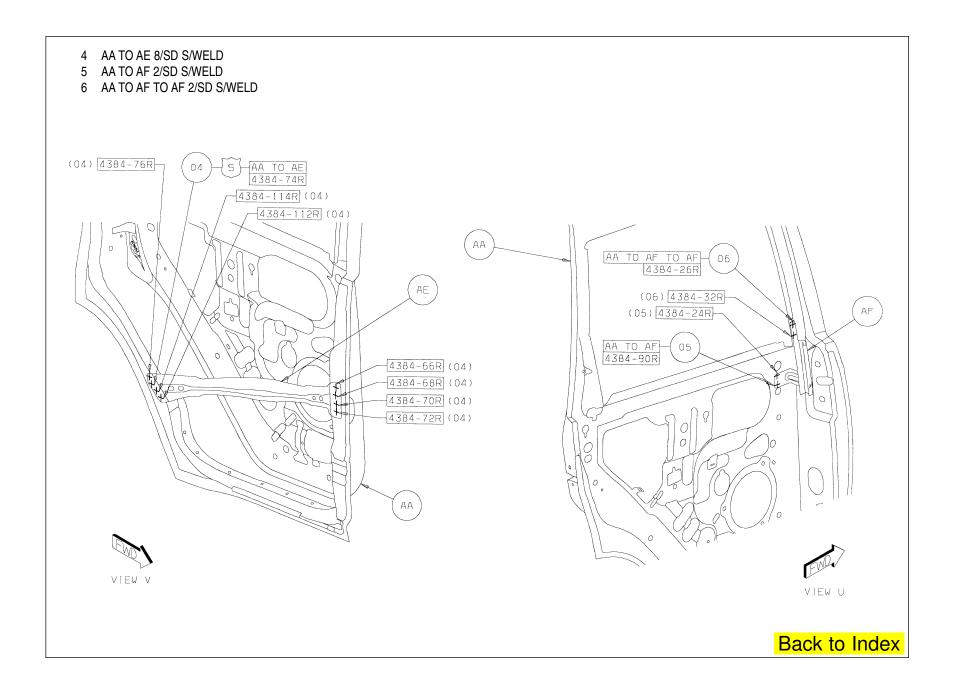


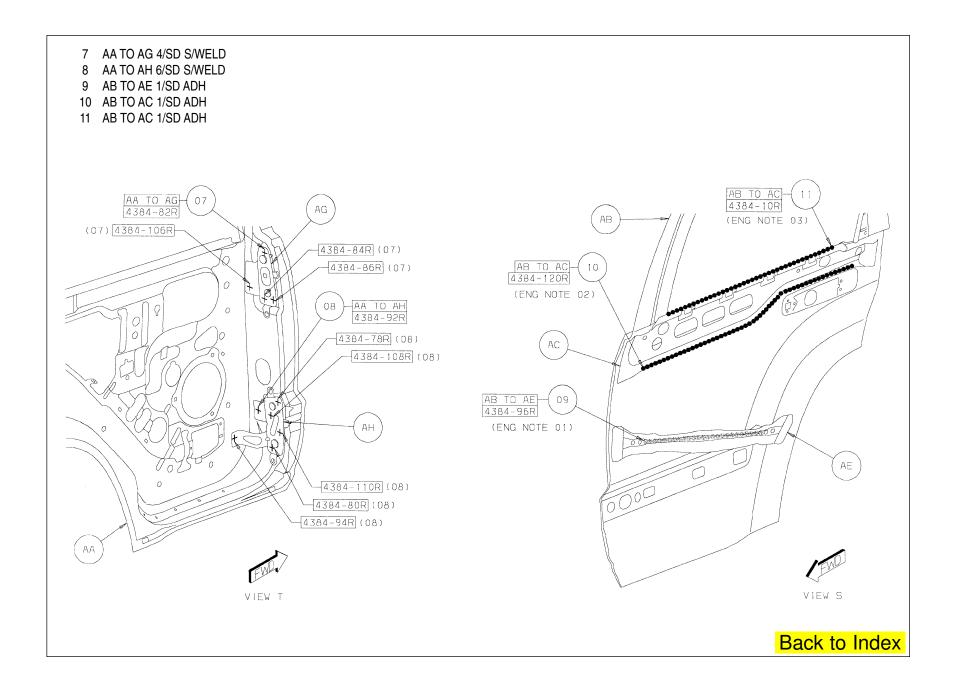


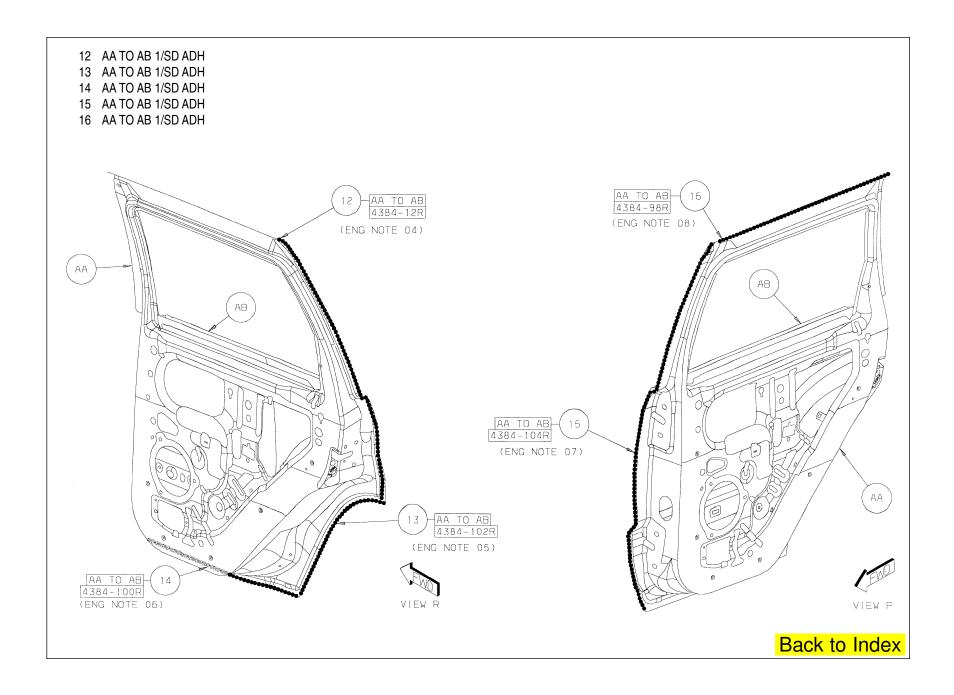


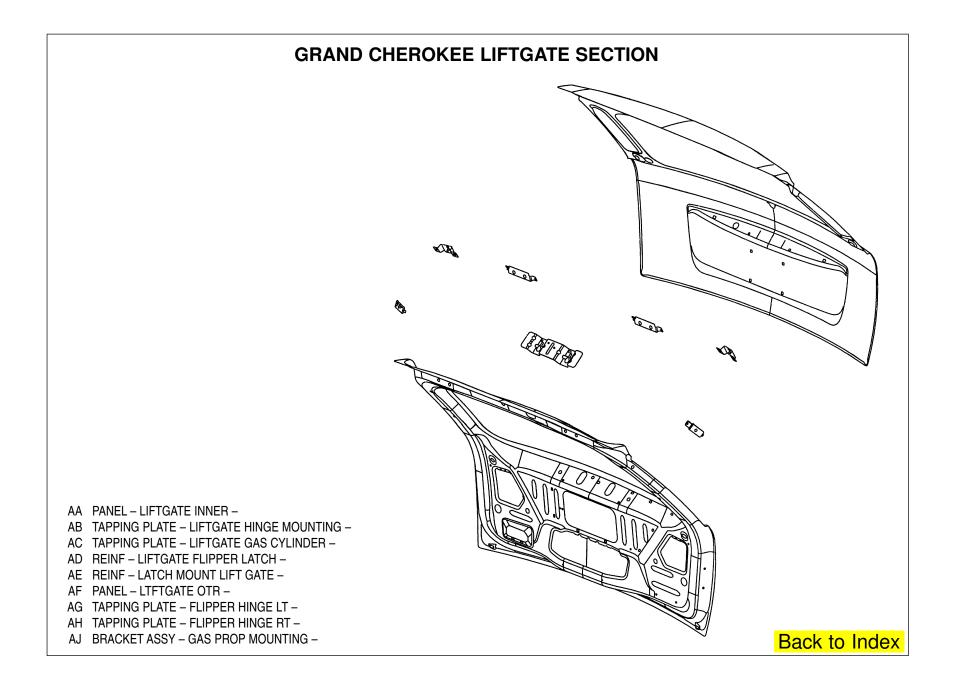


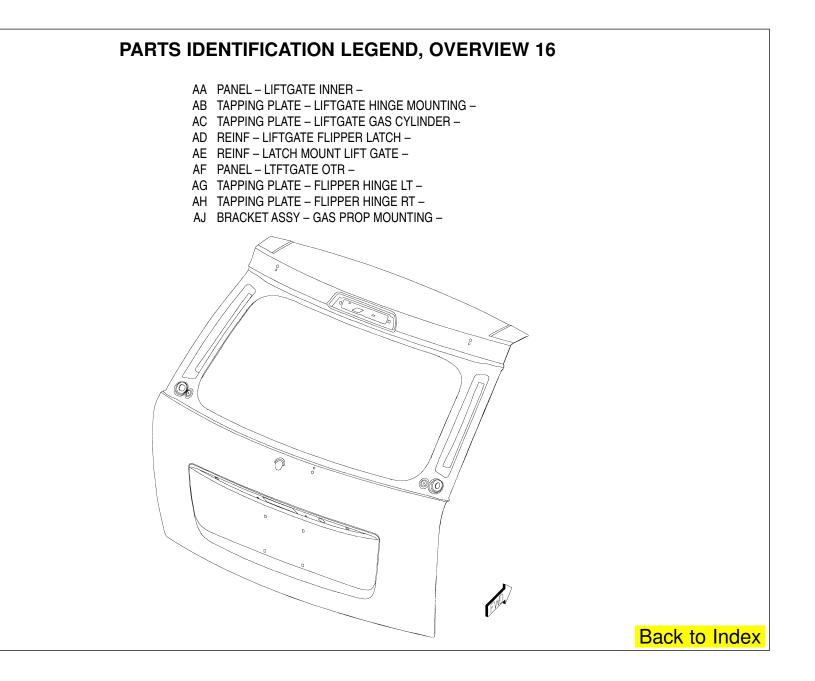


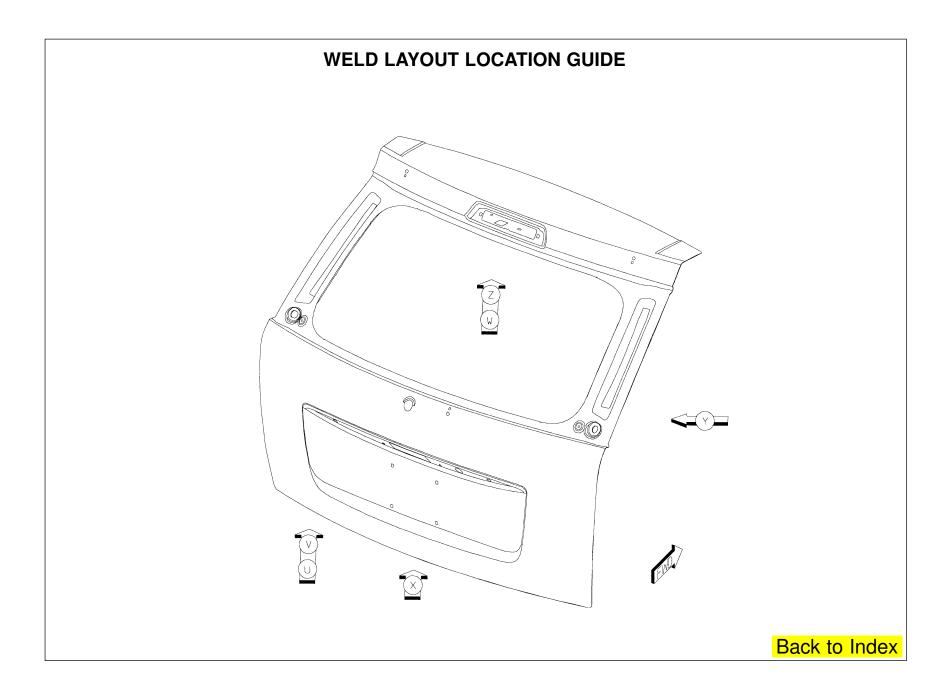


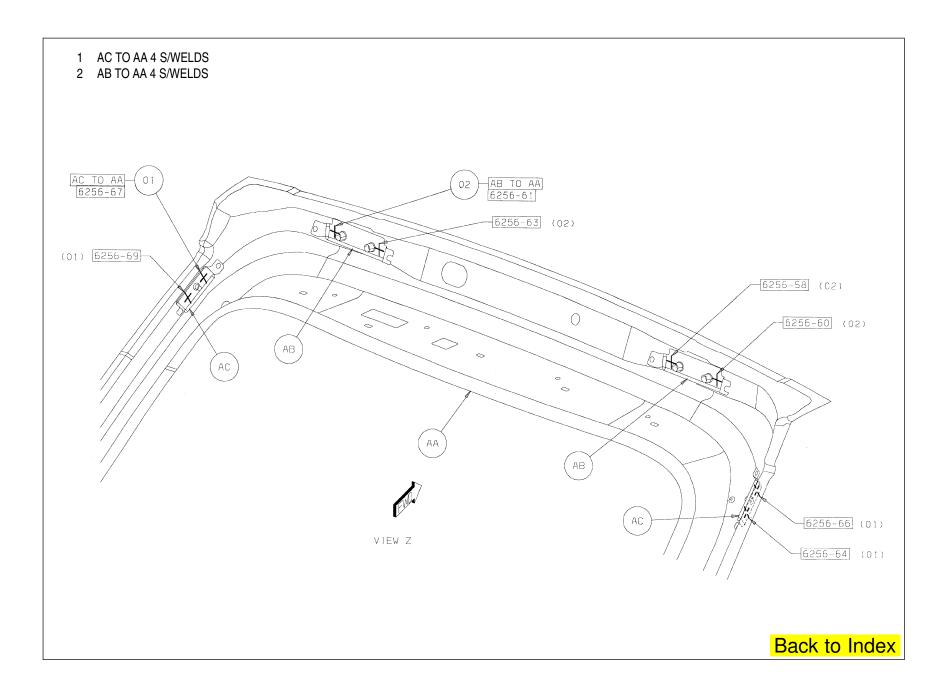


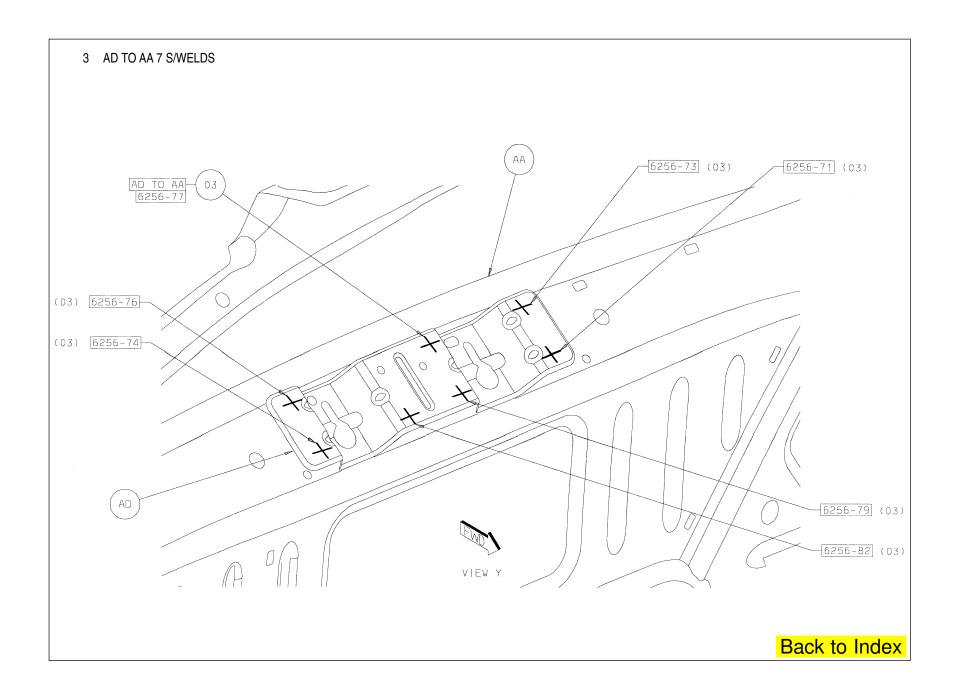


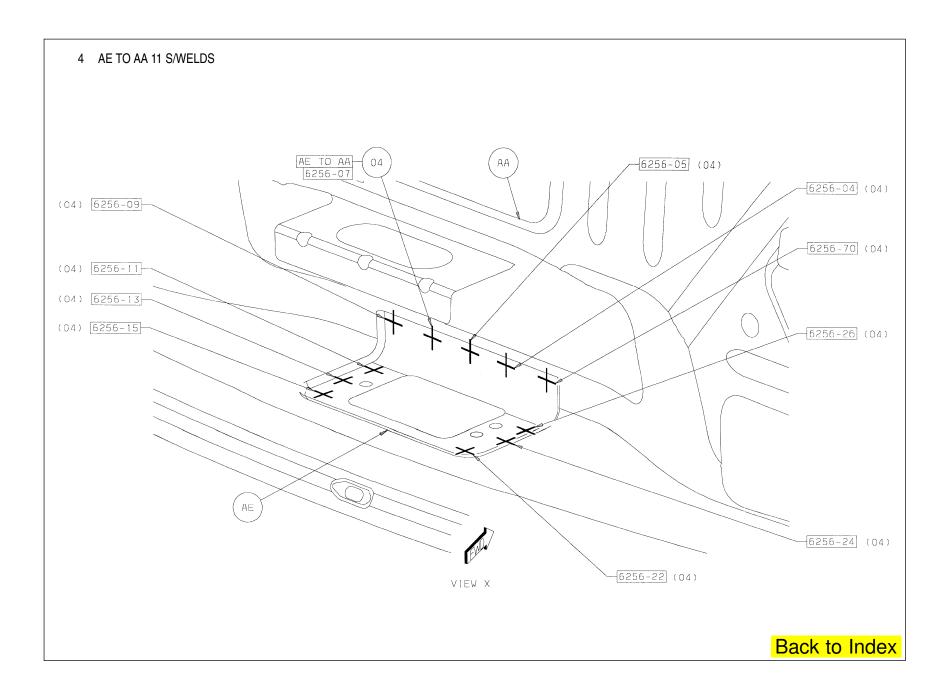


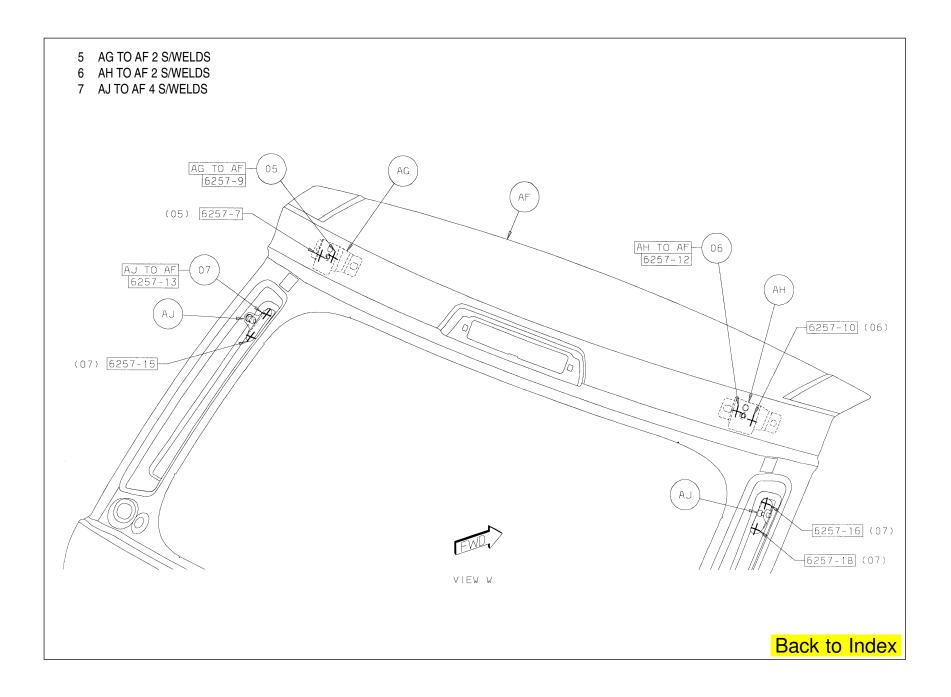


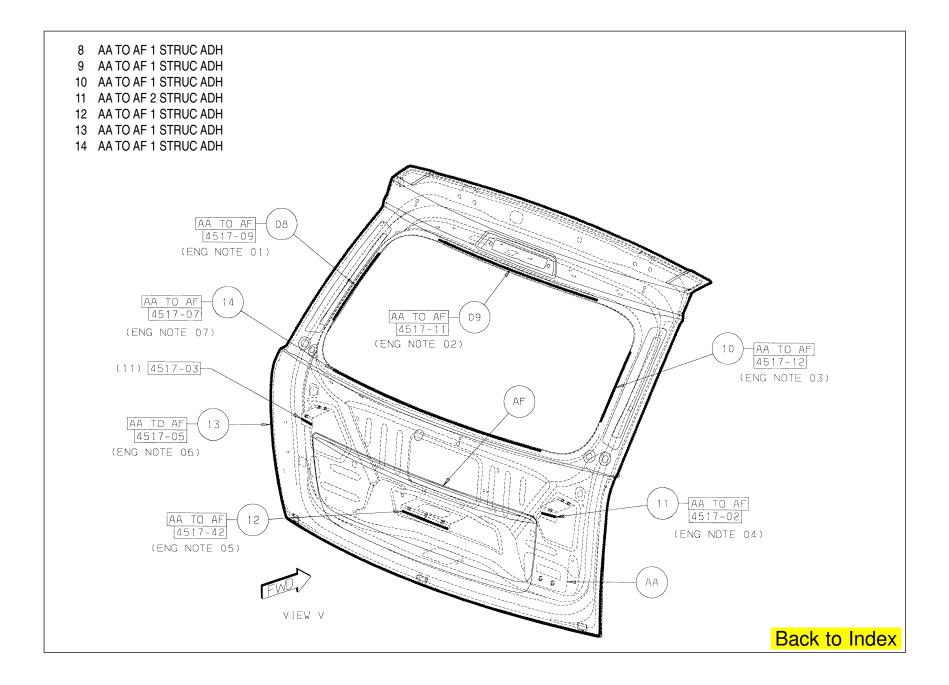


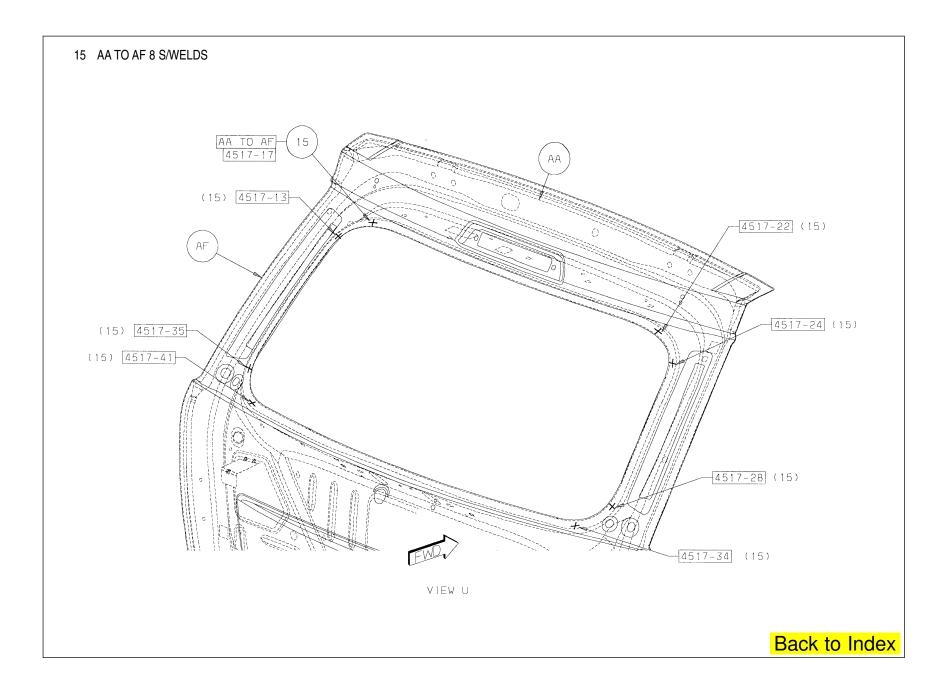












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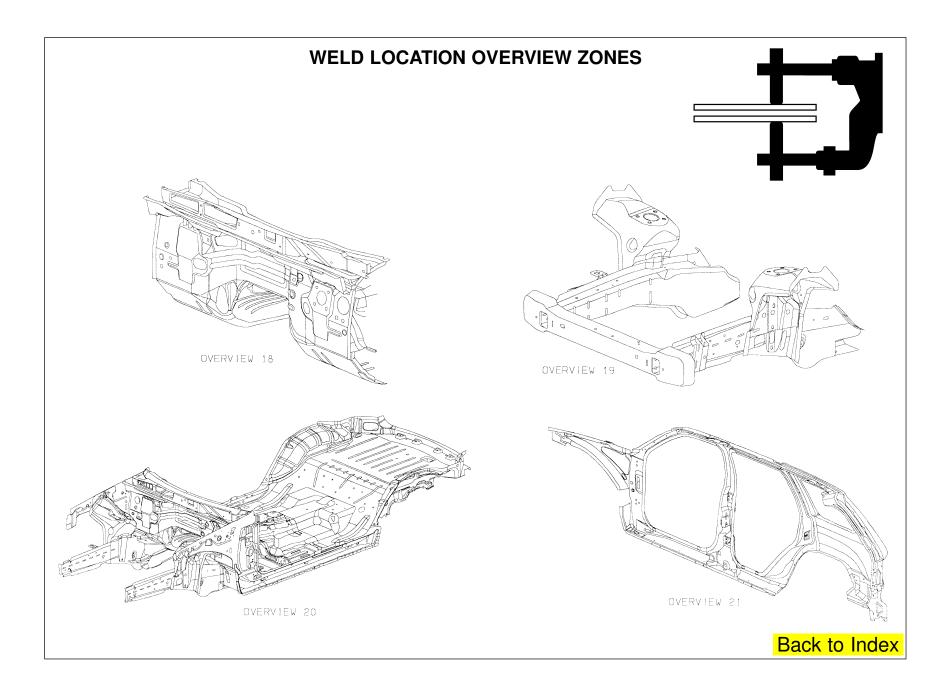
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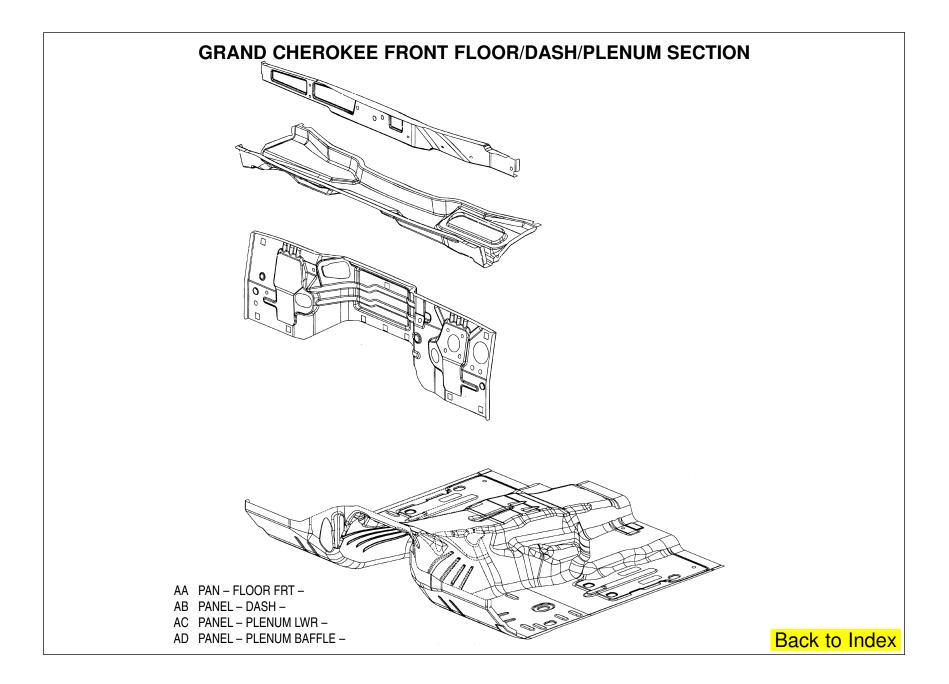


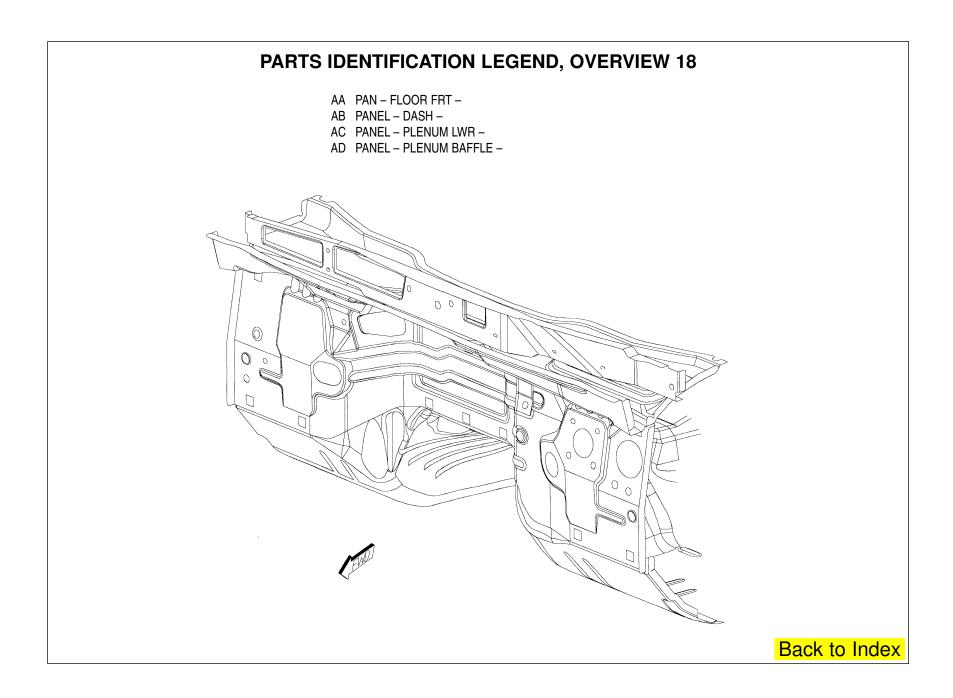


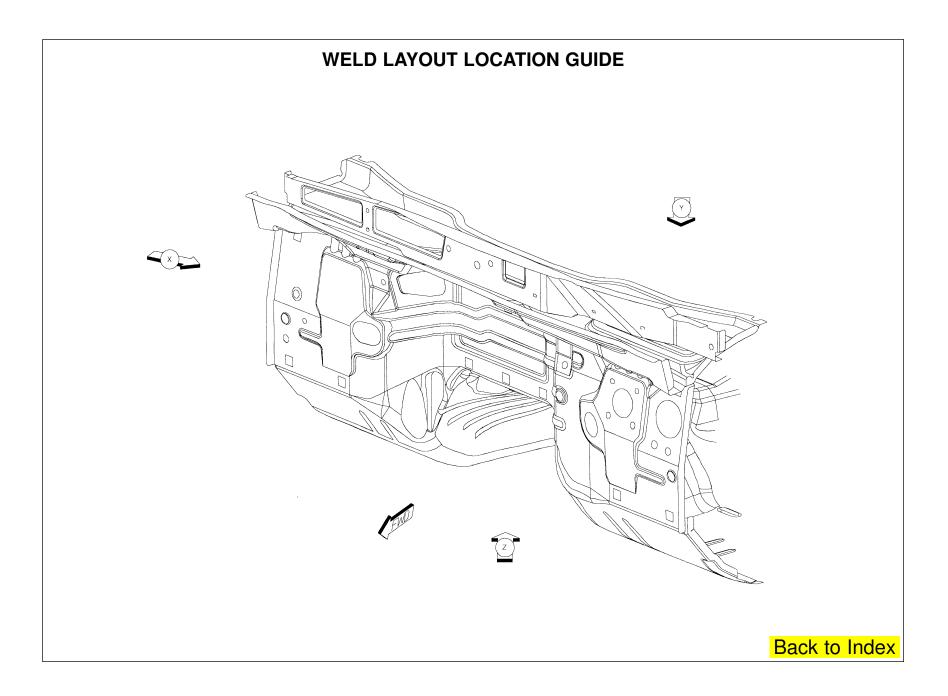
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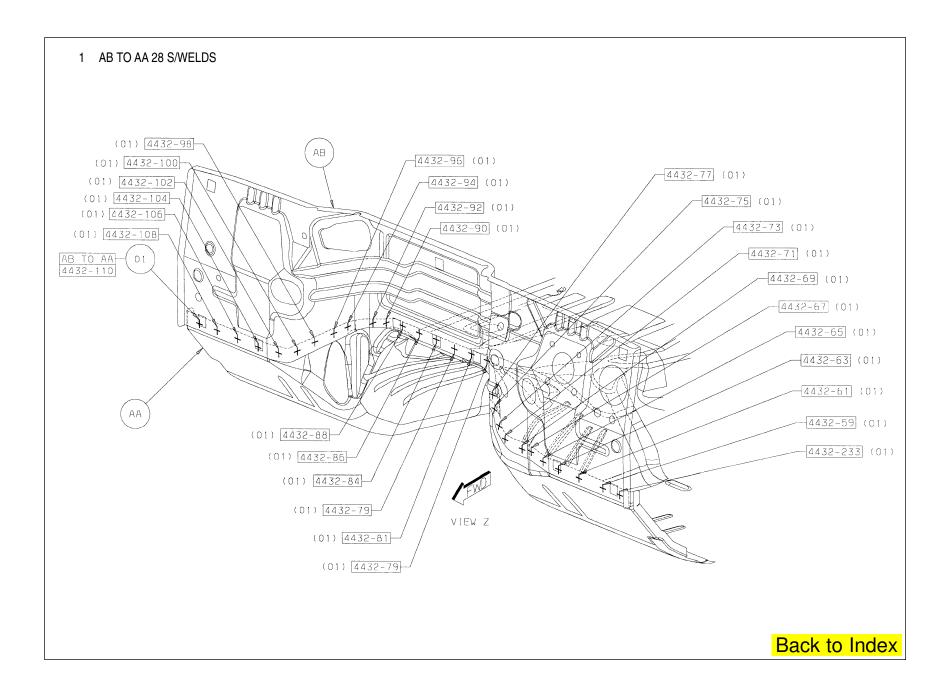
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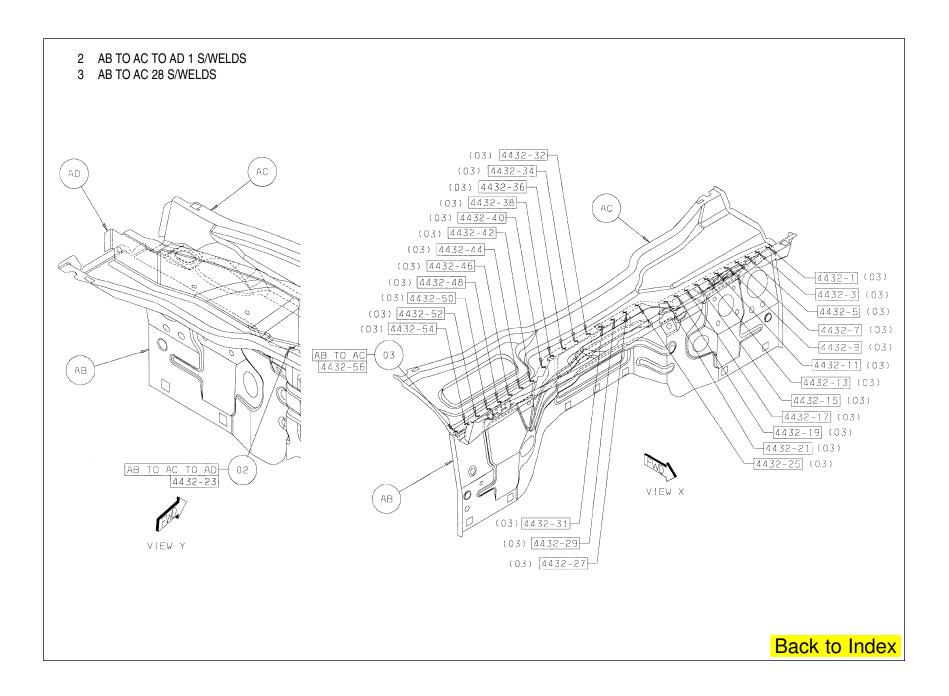


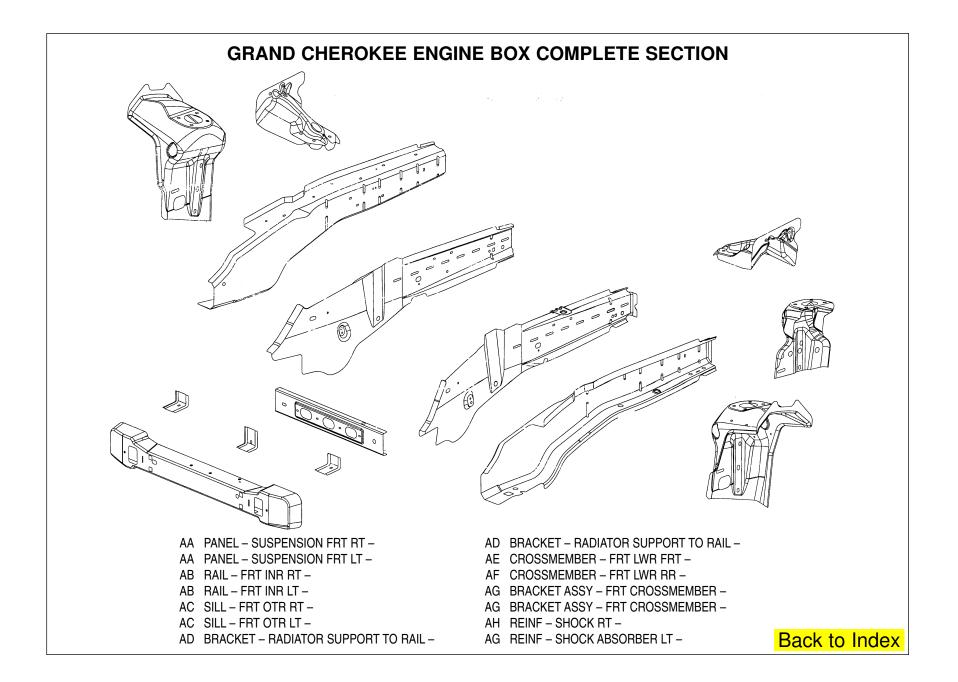


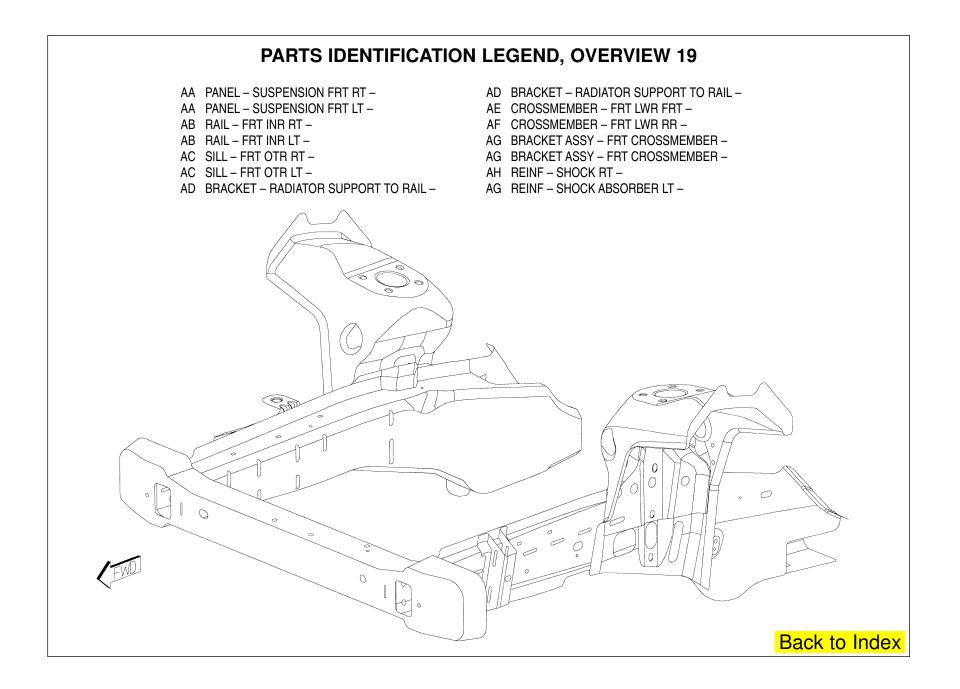


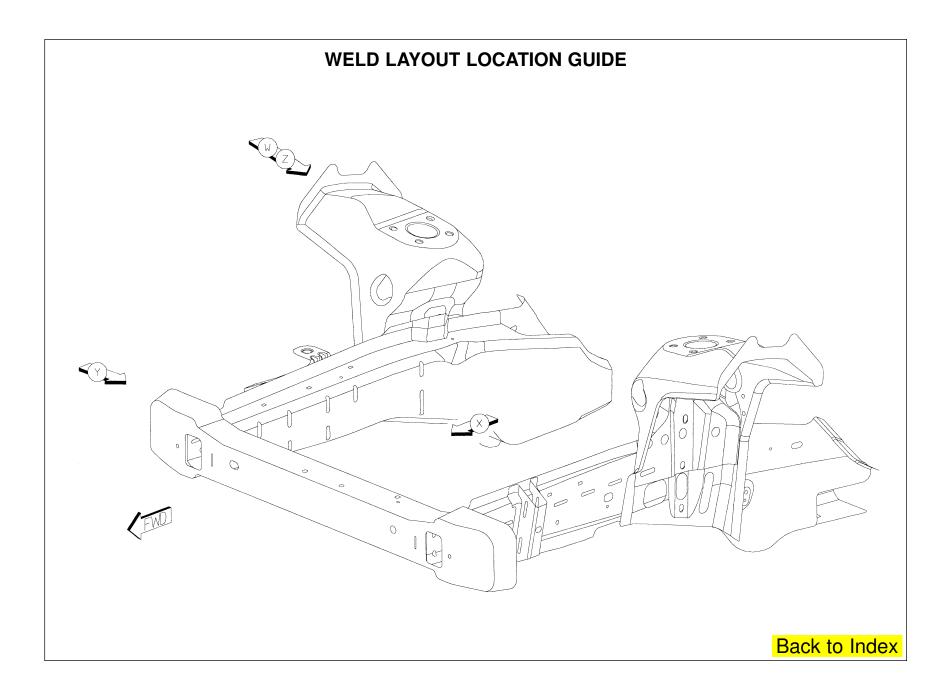


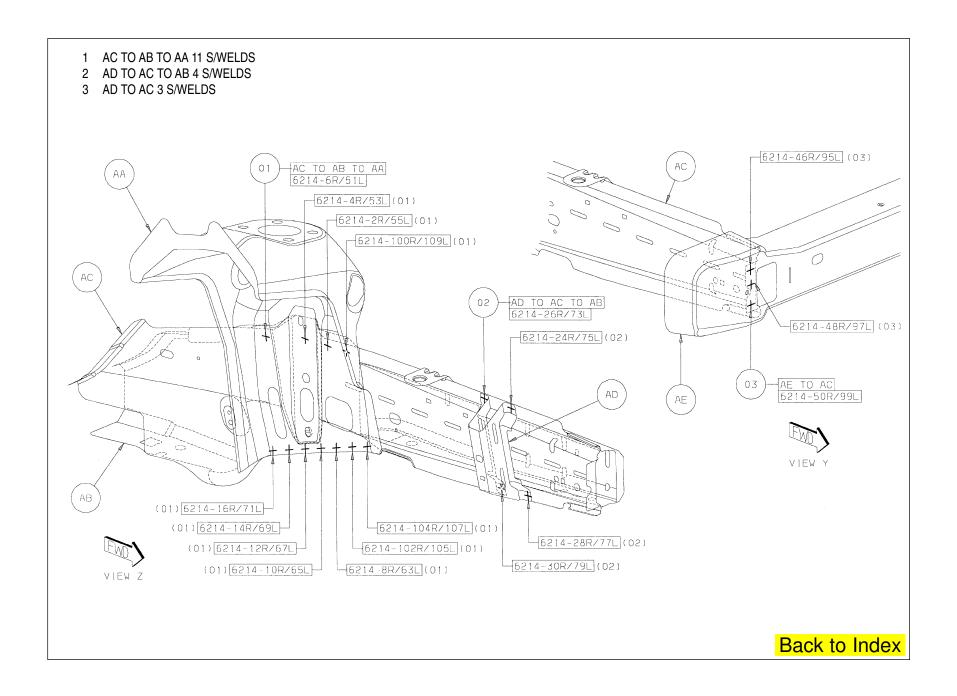


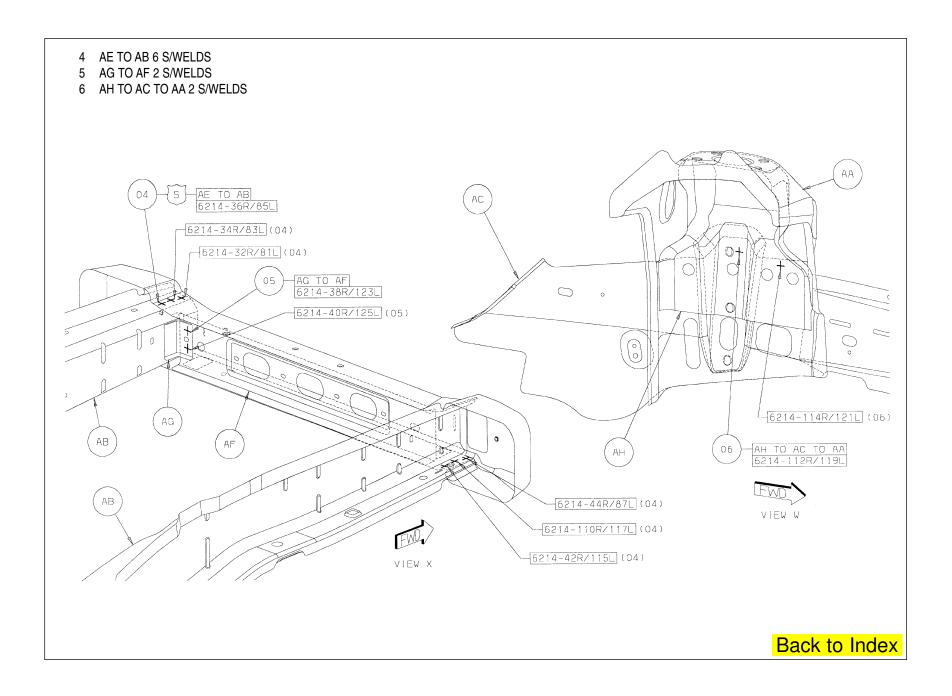


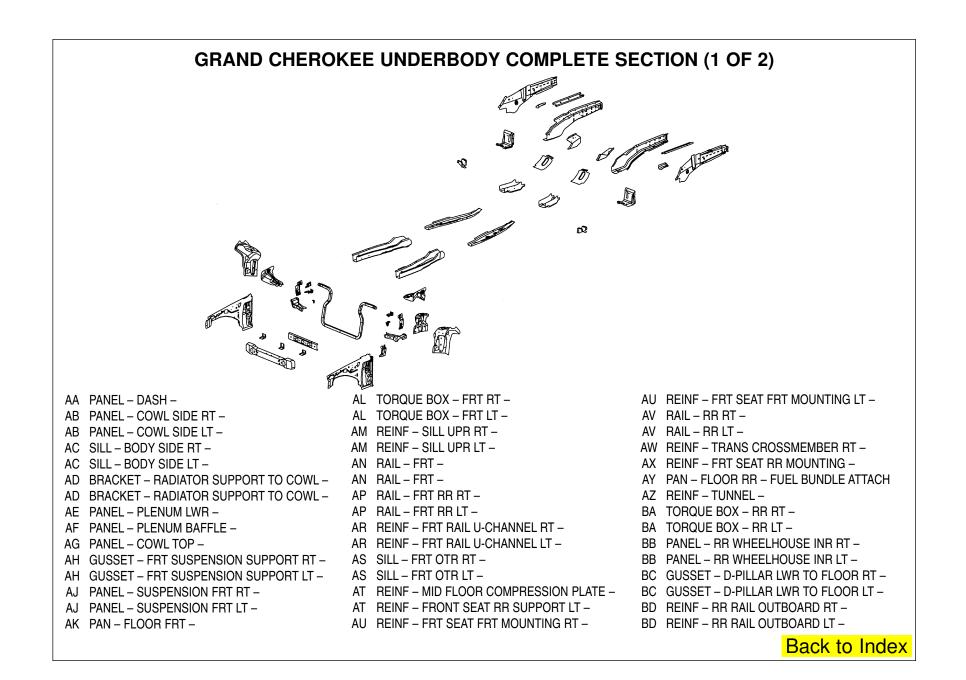


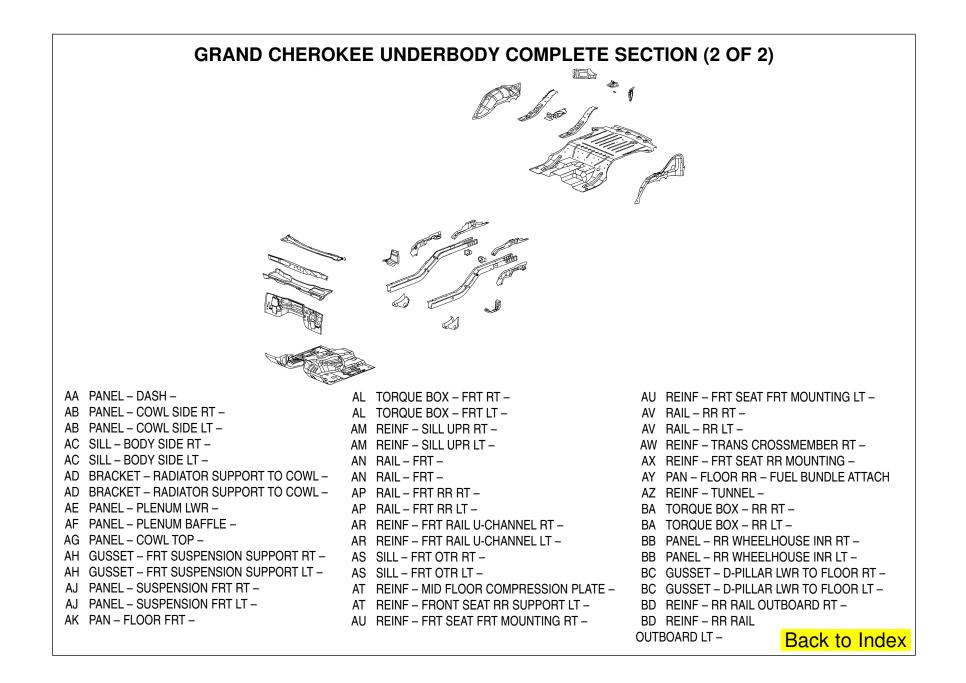








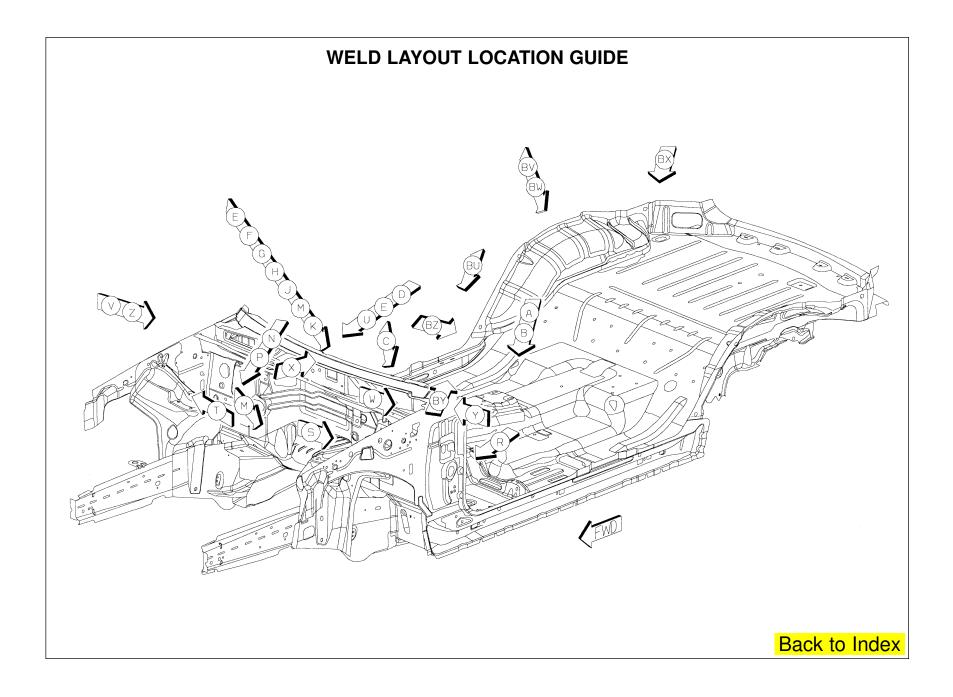


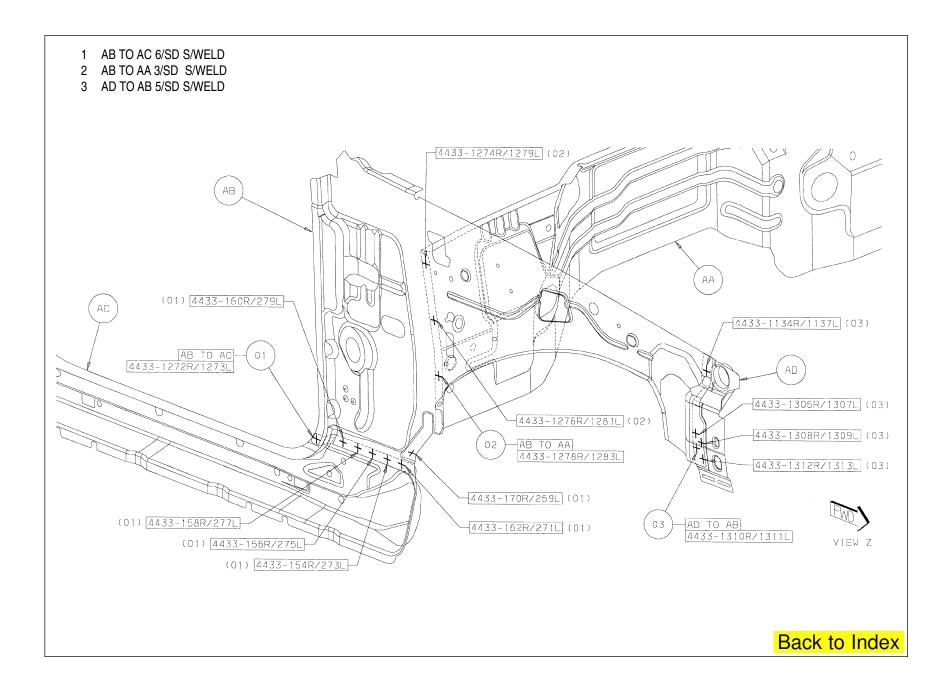


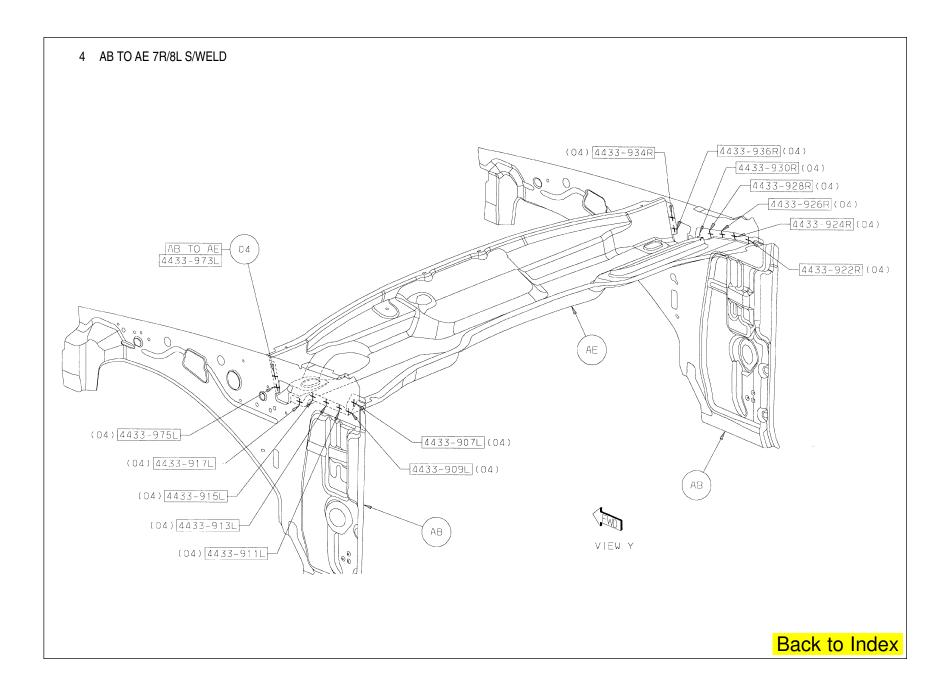
## **PARTS IDENTIFICATION LEGEND, OVERVIEW 20**

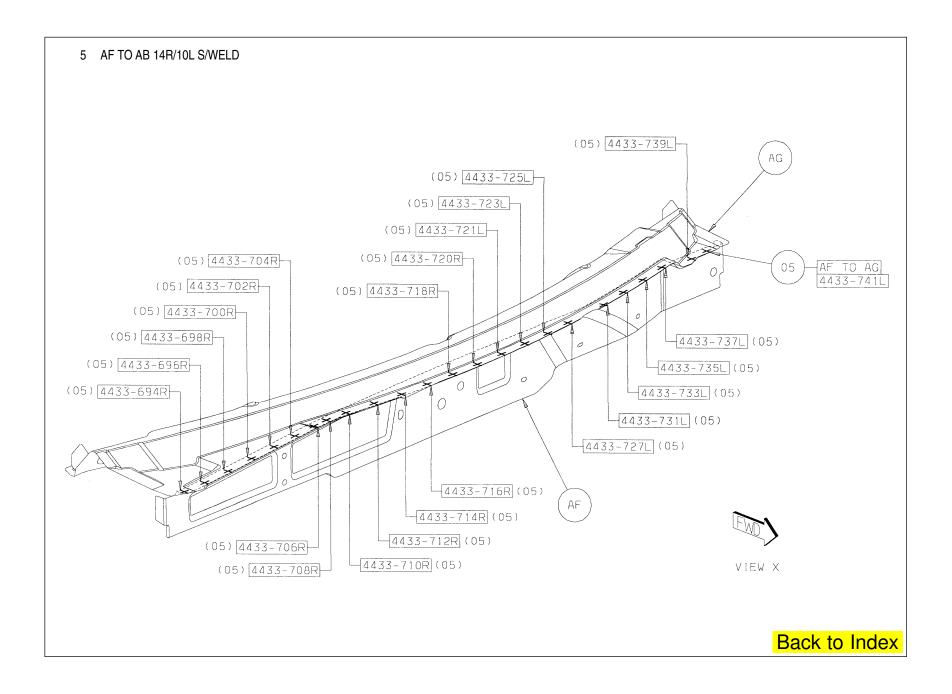
- AA PANEL DASH AB PANEL – COWL SIDE RT – AB PANEL – COWL SIDE LT – AC SILL – BODY SIDE RT – AC SILL – BODY SIDE LT – AD BRACKET – RADIATOR SUPPORT TO COWL – AD BRACKET – RADIATOR SUPPORT TO COWL – AE PANEL – PLENUM LWR – AF PANEL – PLENUM BAFFLE – AG PANEL – COWL TOP – AH GUSSET – FRT SUSPENSION SUPPORT RT – AH GUSSET – FRT SUSPENSION SUPPORT LT – AJ PANEL – SUSPENSION FRT RT – AJ PANEL – SUSPENSION FRT LT – AK PAN – FLOOR FRT –
- AL TORQUE BOX FRT RT AL TORQUE BOX – FRT LT – AM REINF – SILL UPR RT – AM REINF – SILL UPR LT – AN RAIL – FRT – AN RAIL – FRT RT – AP RAIL – FRT RR RT – AP RAIL – FRT RR RT – AR REINF – FRT RAIL U-CHANNEL RT – AR REINF – FRT RAIL U-CHANNEL LT – AS SILL – FRT OTR RT – AS SILL – FRT OTR LT – AT REINF – MID FLOOR COMPRESSION PLATE – AT REINF – FRONT SEAT RR SUPPORT LT – AU REINF – FRT SEAT FRT MOUNTING RT –
- AU REINF FRT SEAT FRT MOUNTING LT -AV RAIL - RR RT -AV RAIL - RR LT -AW REINF - TRANS CROSSMEMBER RT -AX REINF - FRT SEAT RR MOUNTING -AY PAN - FLOOR RR - FUEL BUNDLE ATTACH AZ REINF - TUNNEL -BA TORQUE BOX - RR RT -BA TORQUE BOX - RR RT -BB PANEL - RR WHEELHOUSE INR RT -BB PANEL - RR WHEELHOUSE INR LT -BC GUSSET - D-PILLAR LWR TO FLOOR RT -BC GUSSET - D-PILLAR LWR TO FLOOR LT -BD REINF - RR RAIL OUTBOARD RT -BD REINF - RR RAIL OUTBOARD LT -

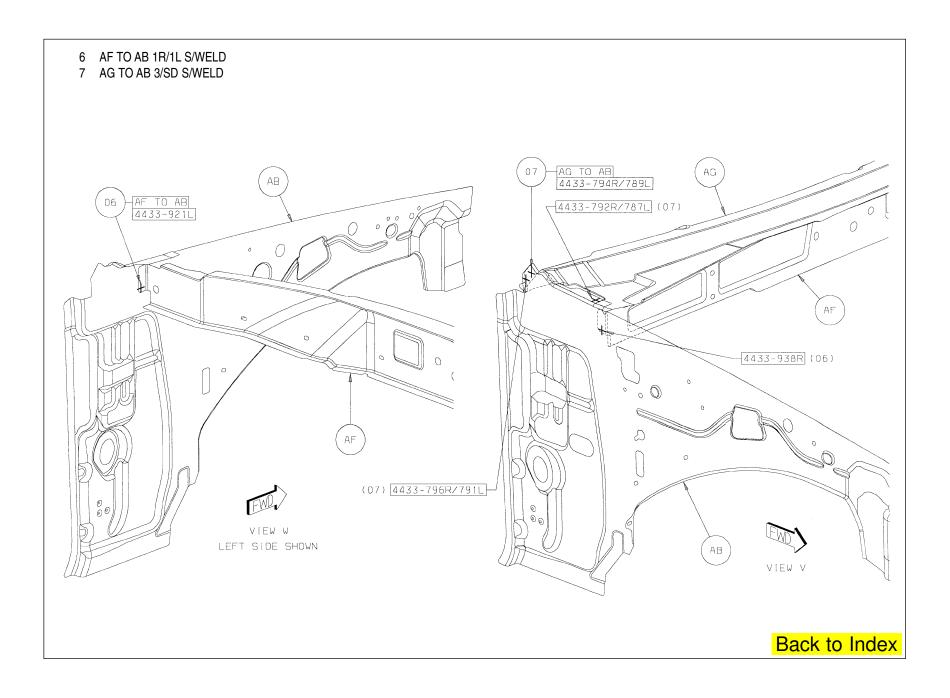
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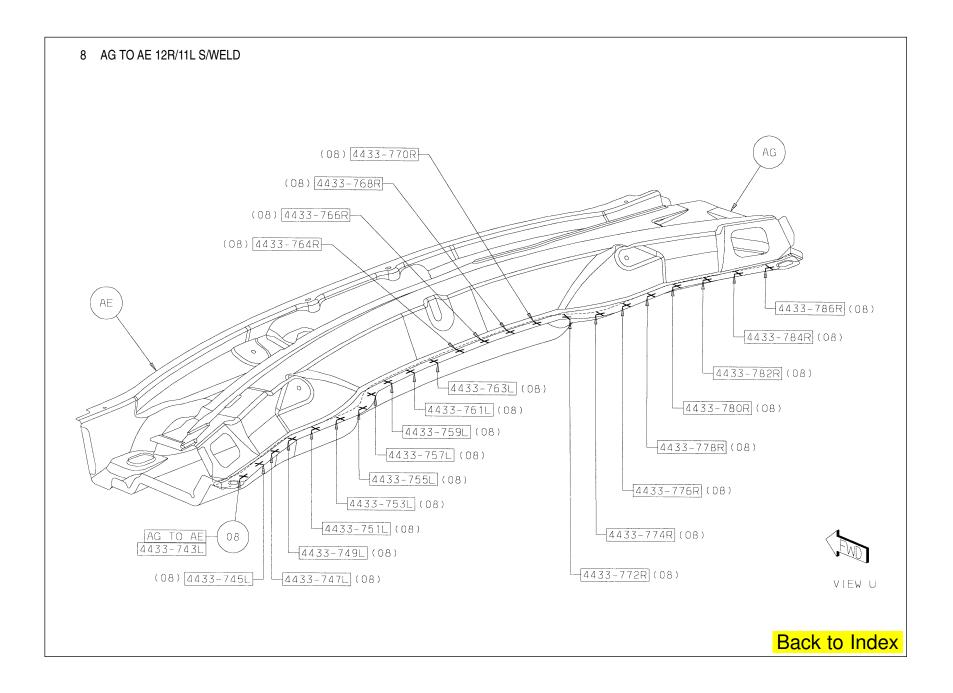


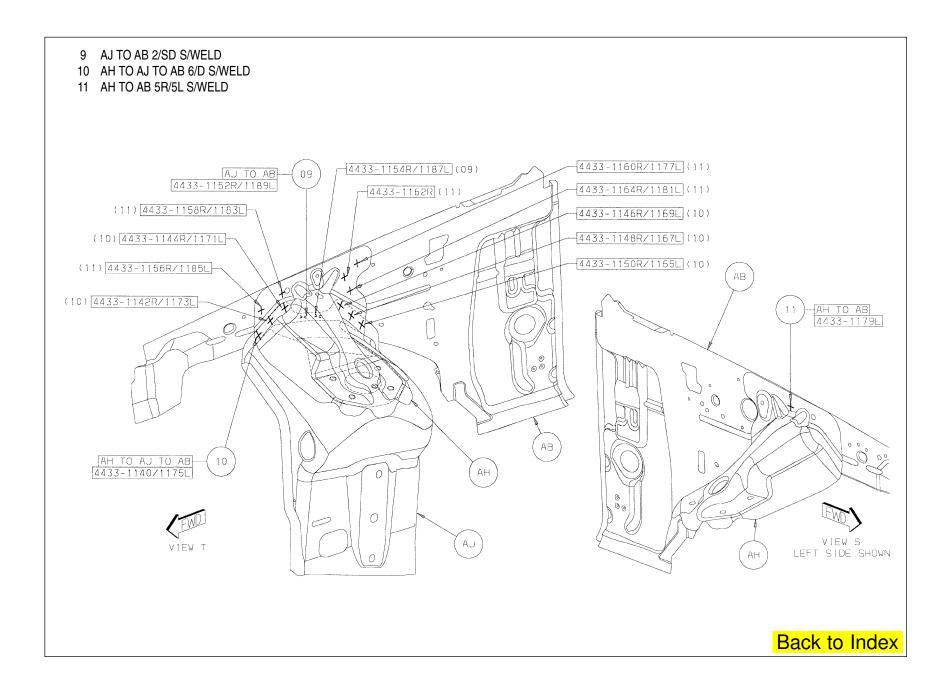


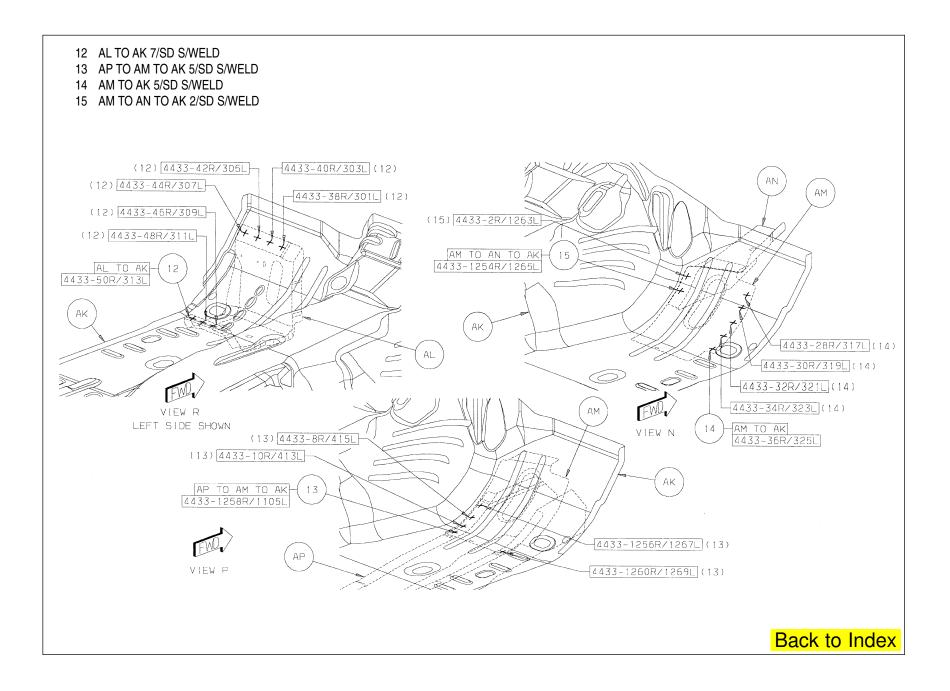


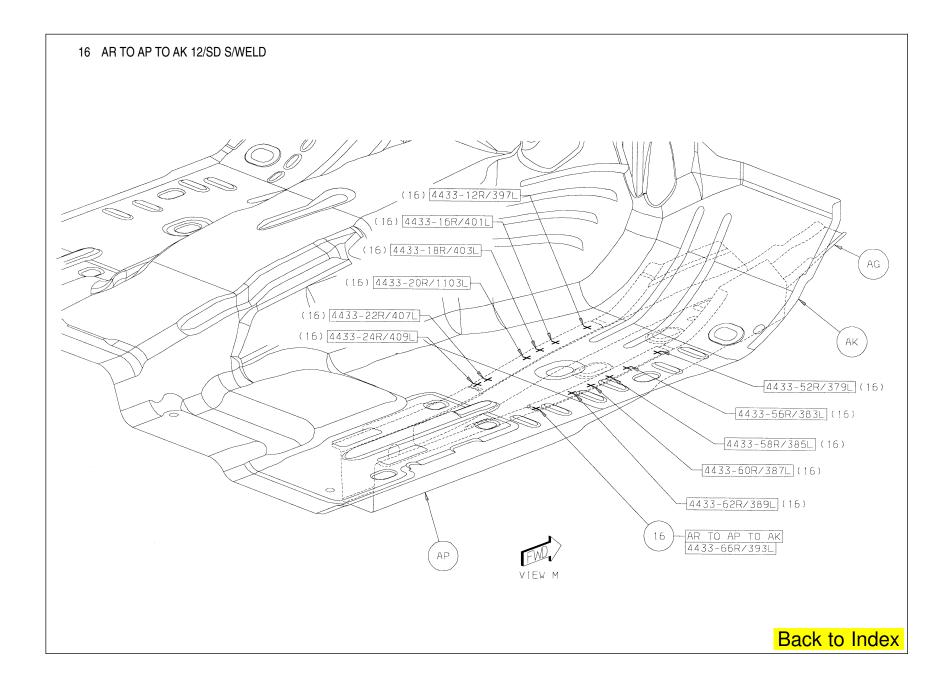


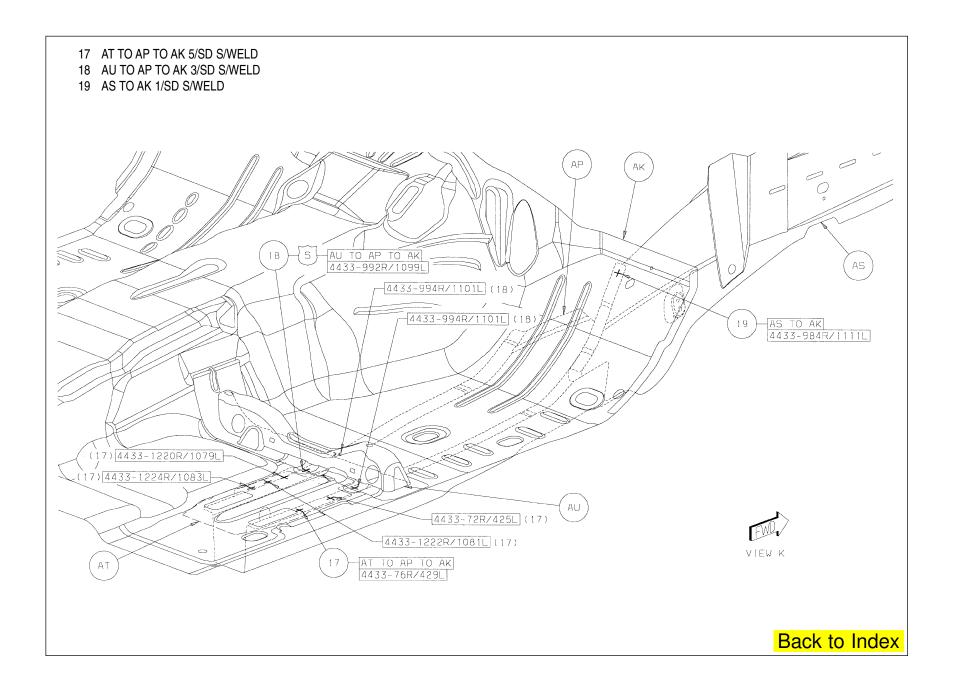


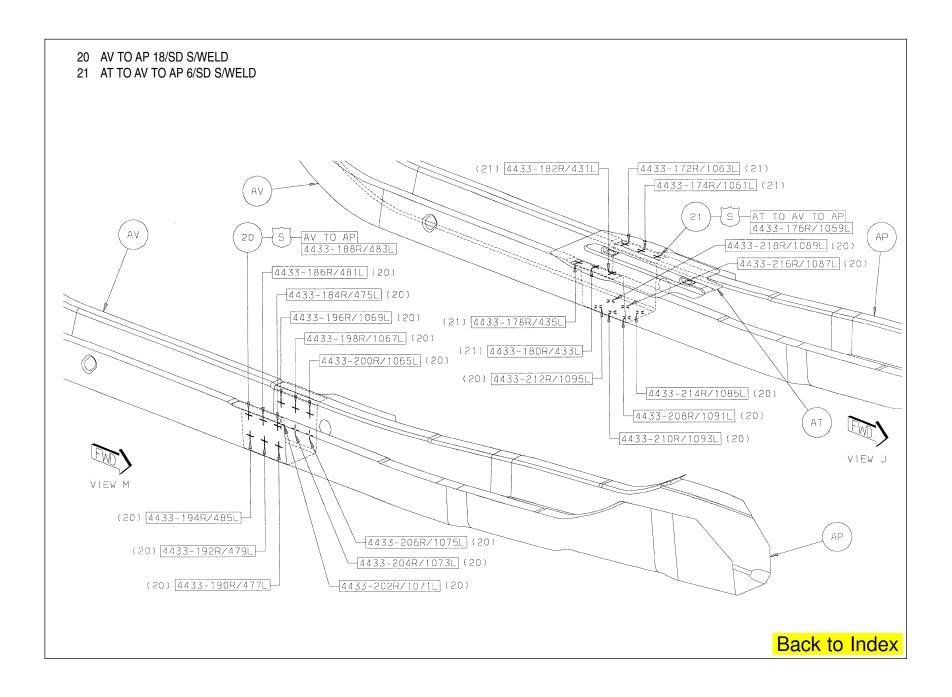


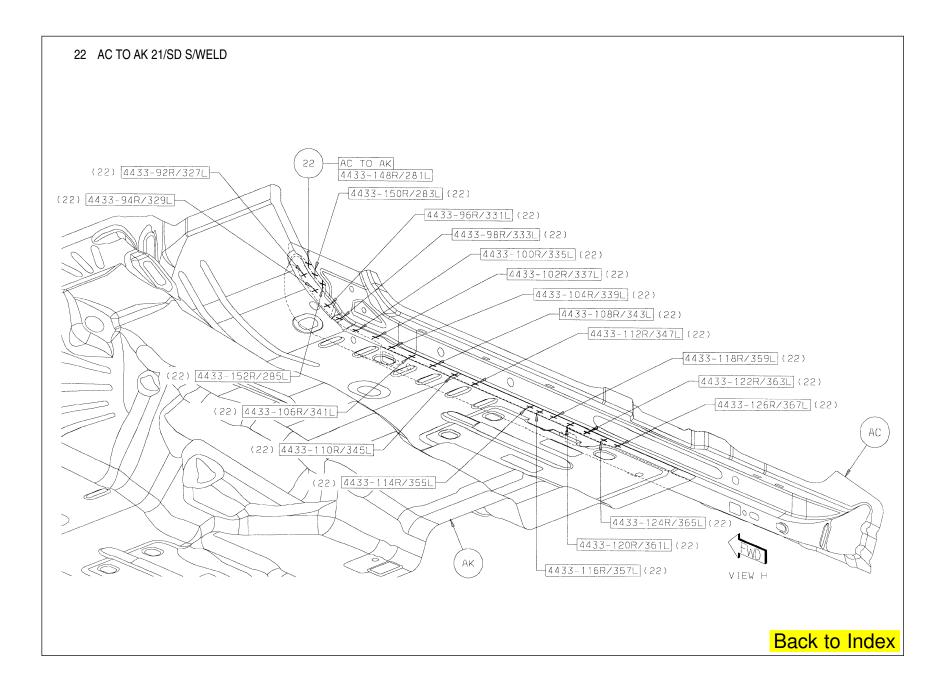


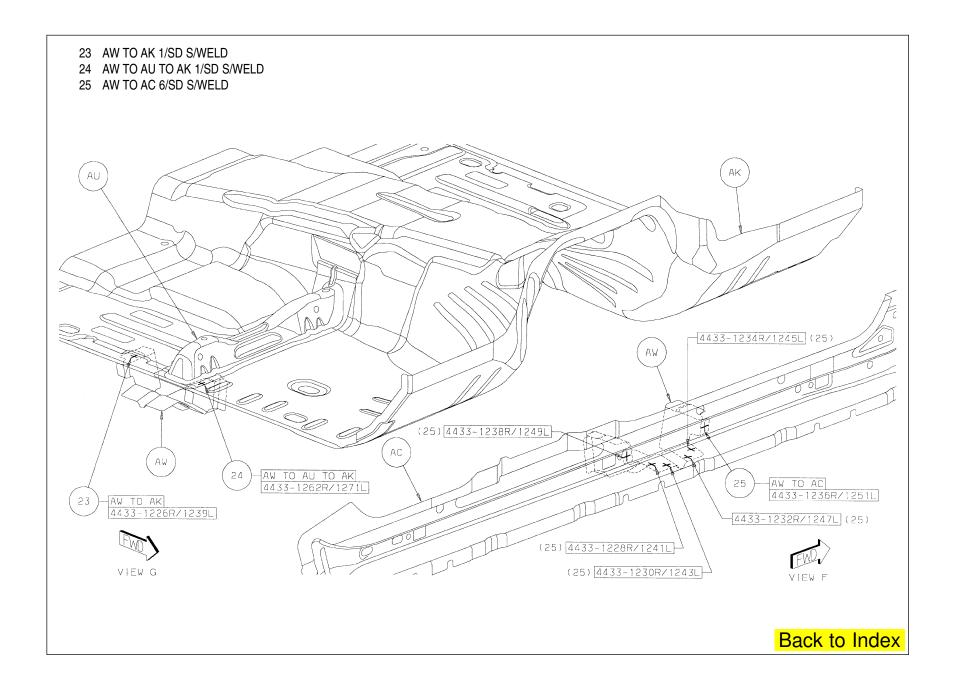


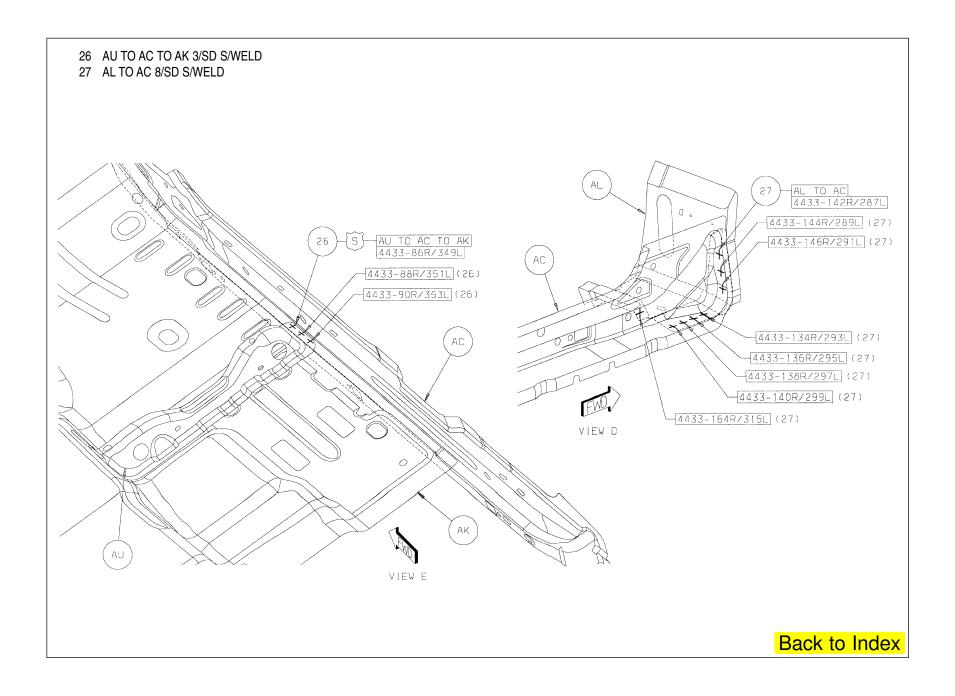


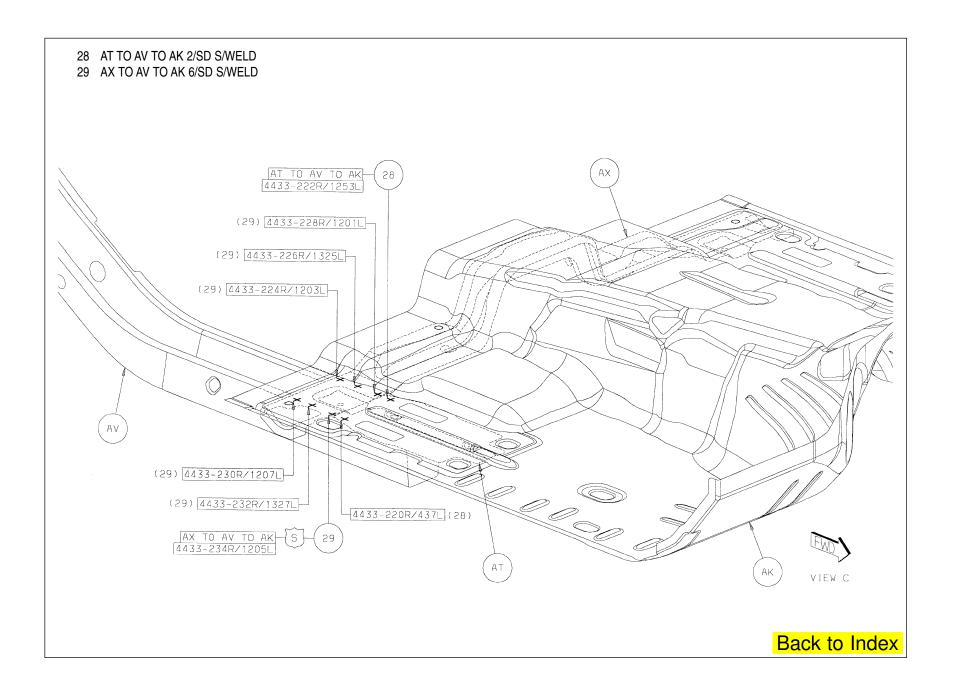


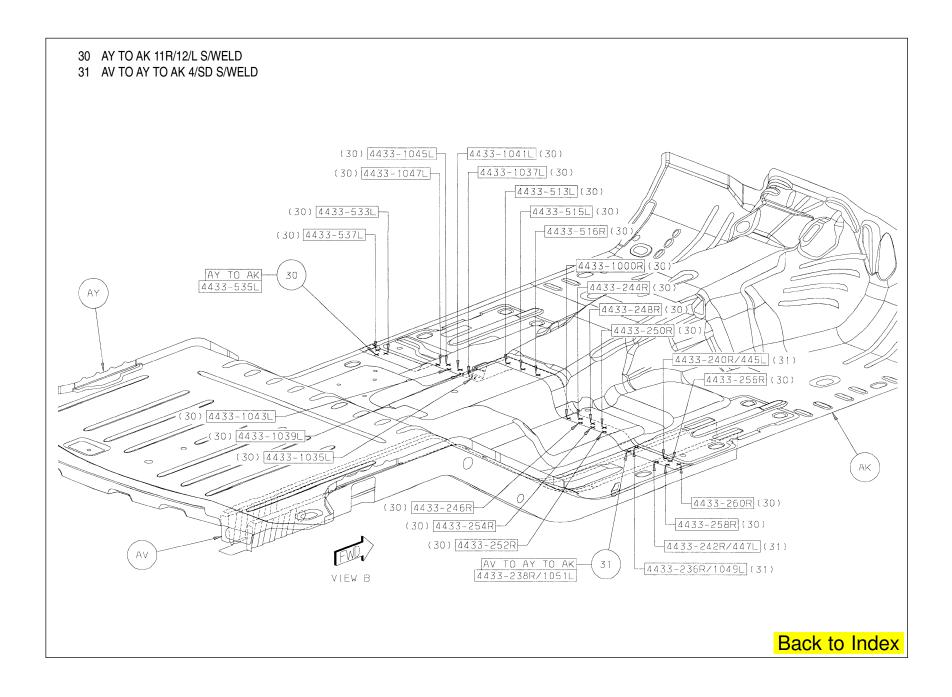


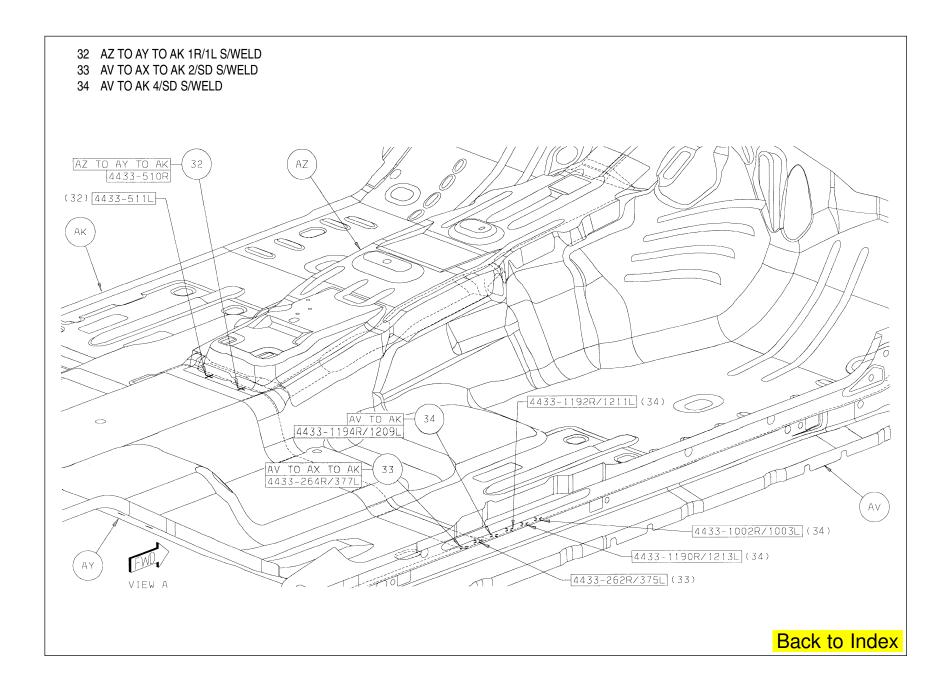


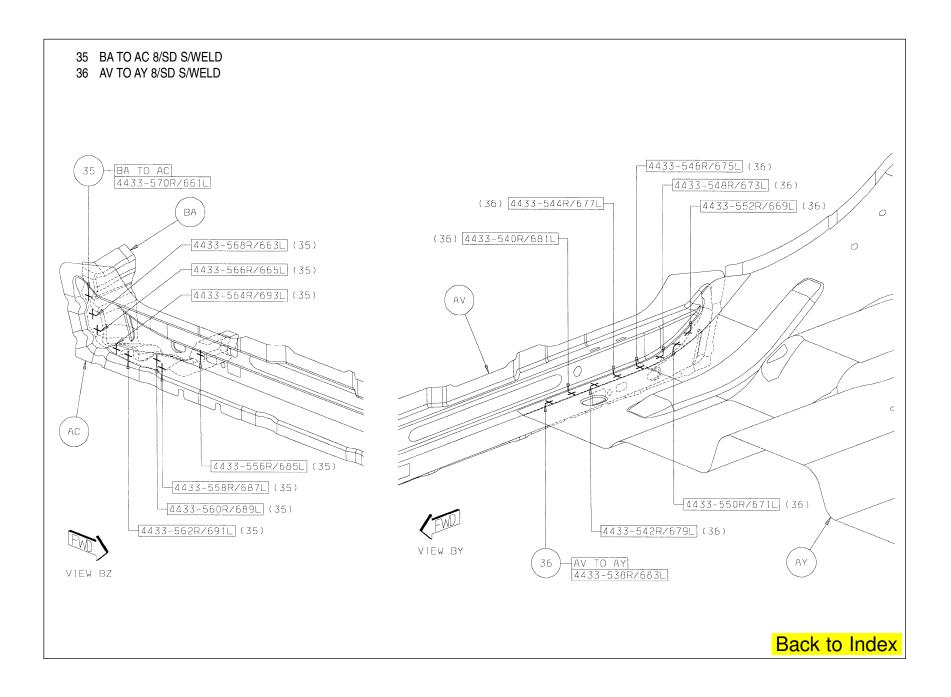


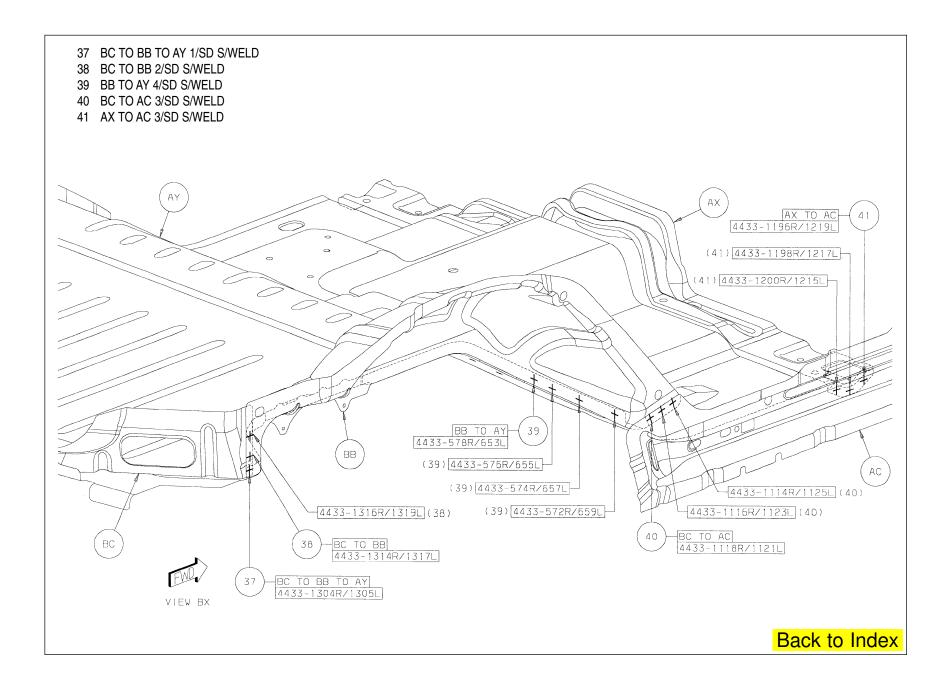


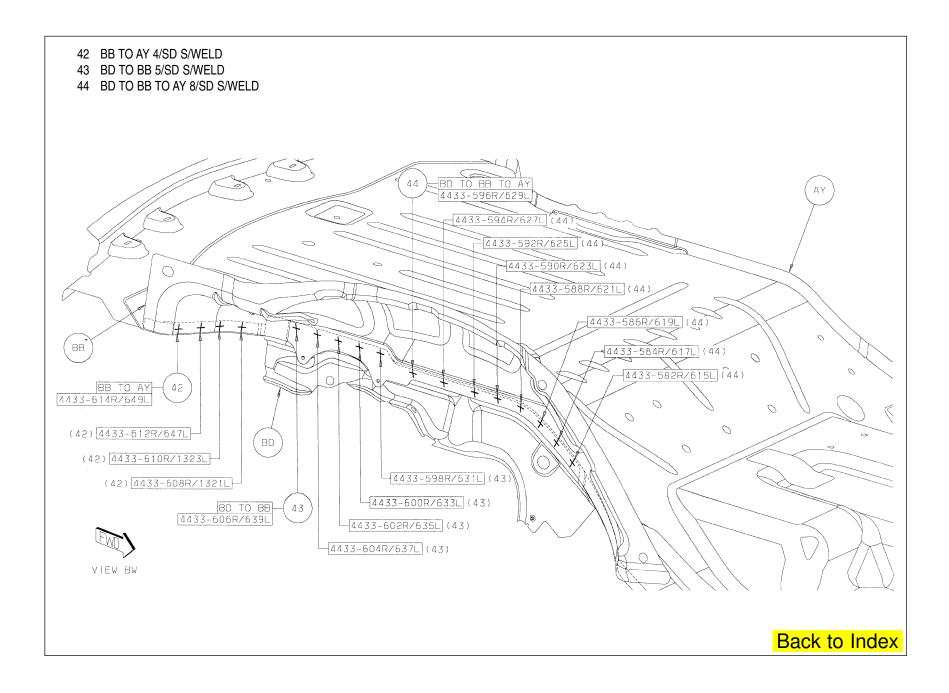


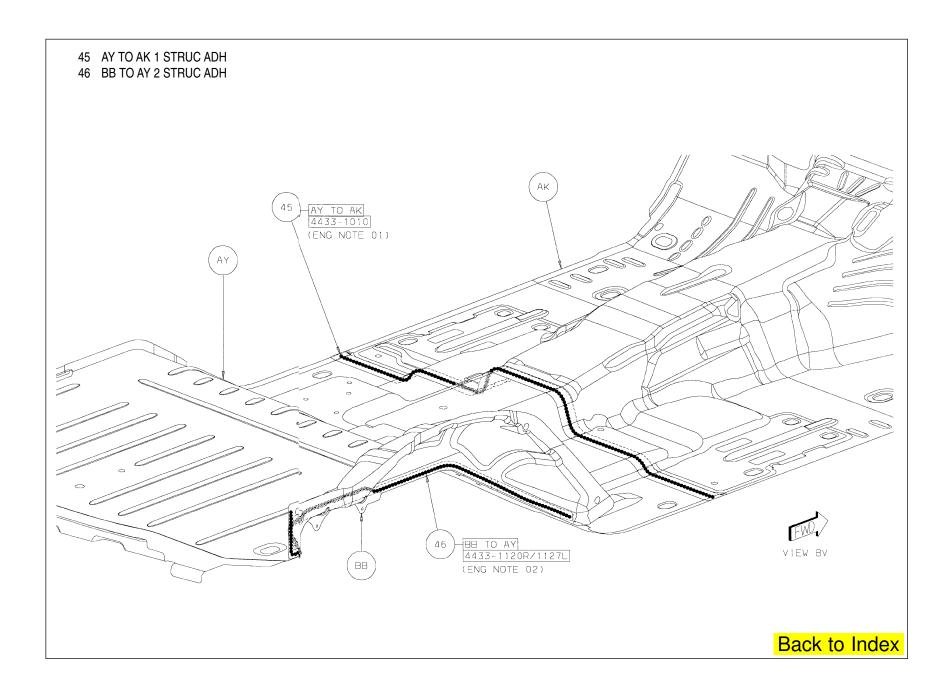


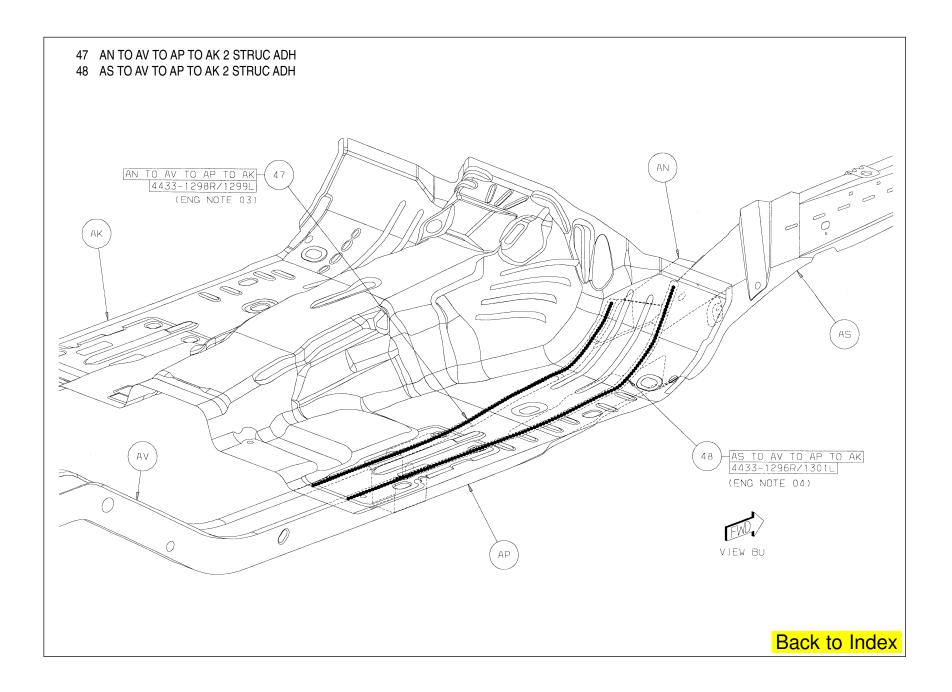


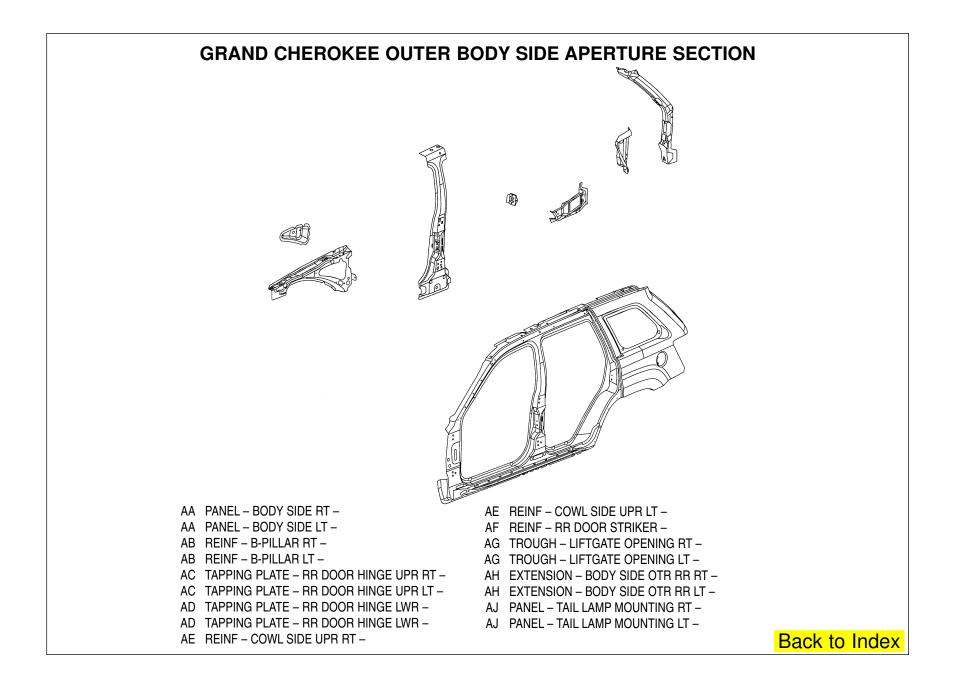


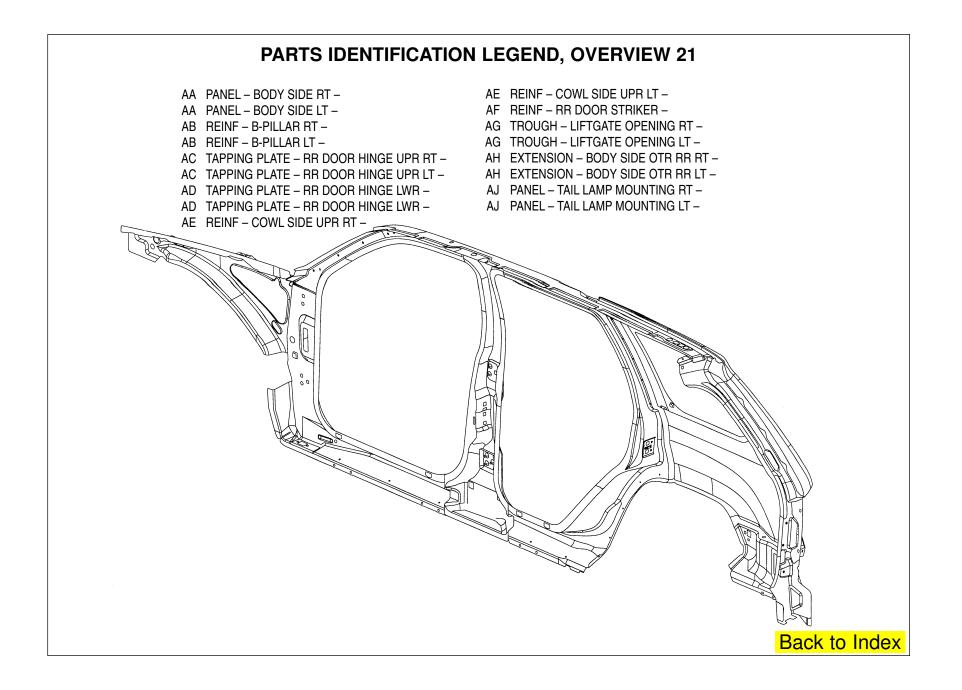


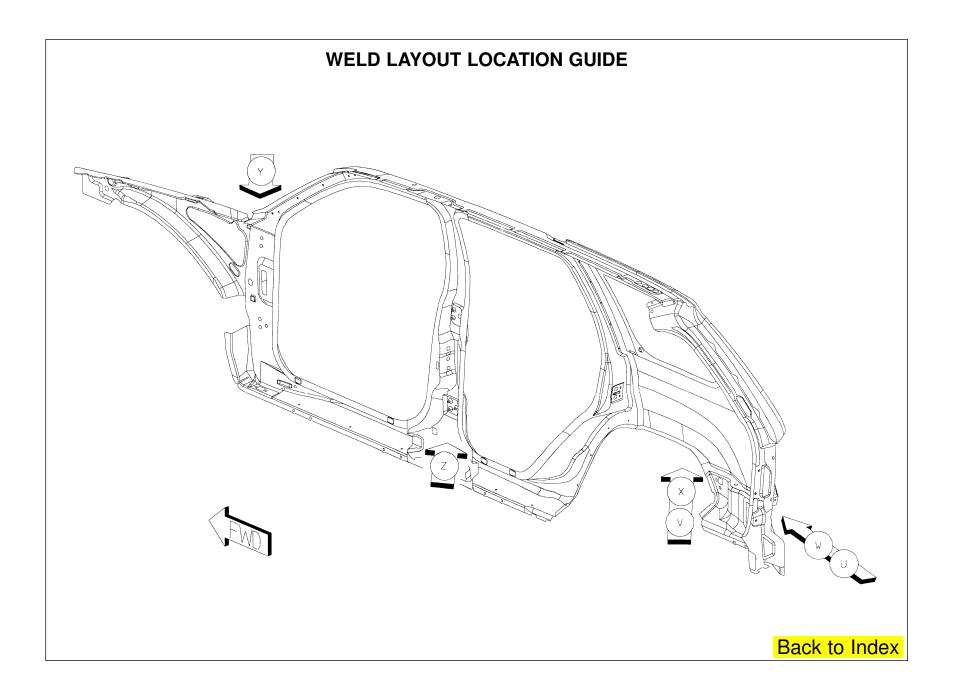


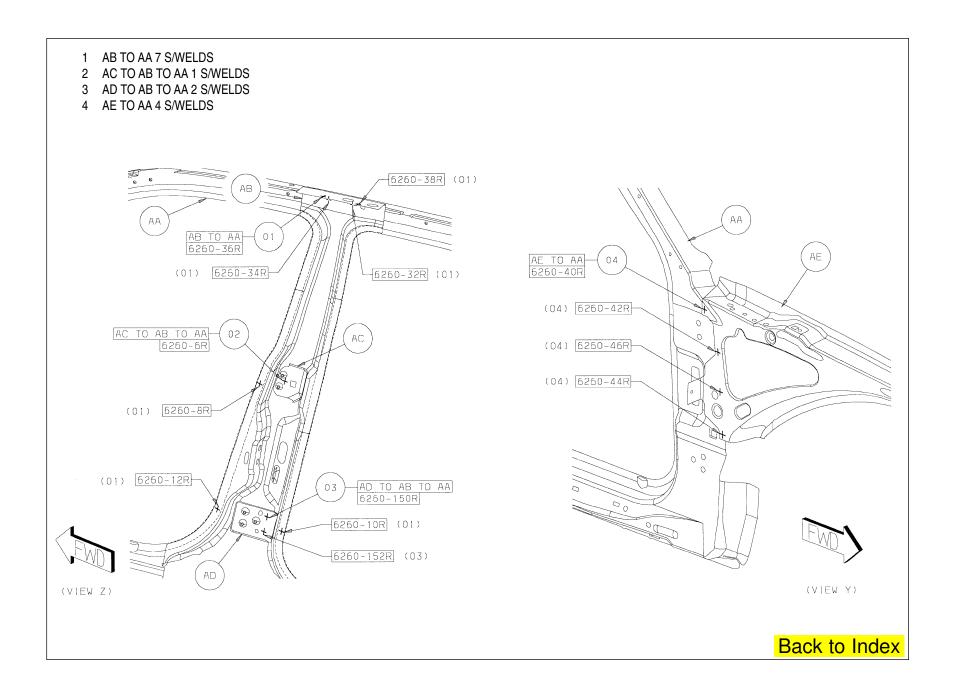


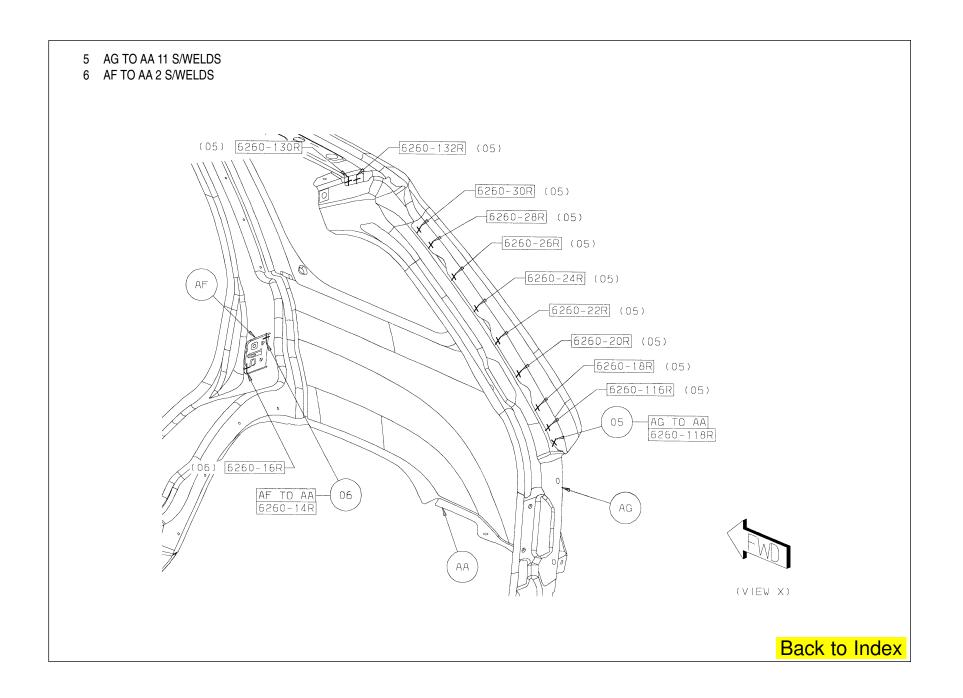


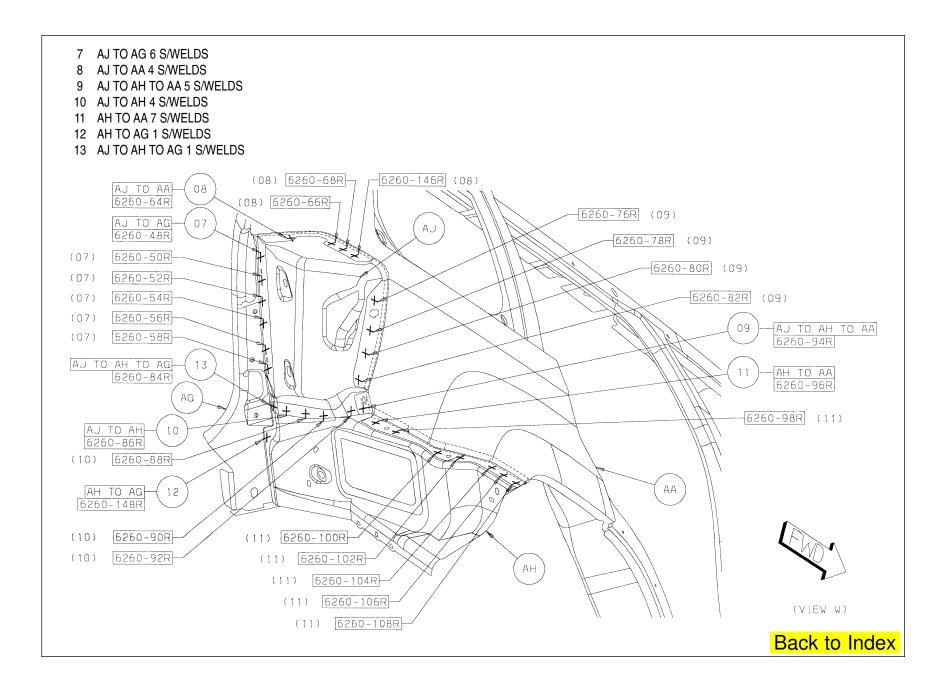


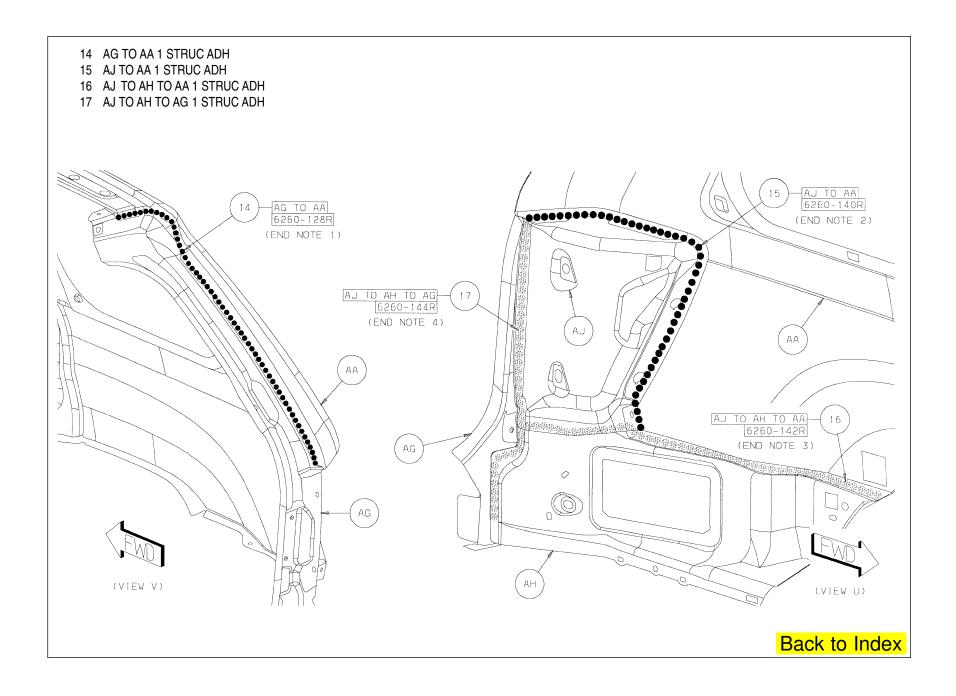


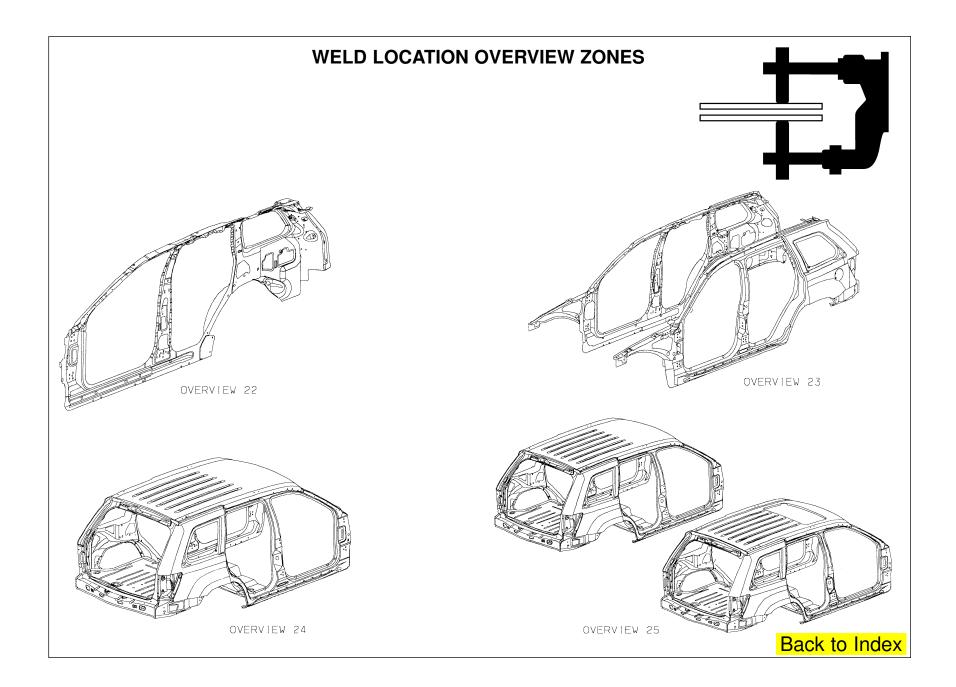


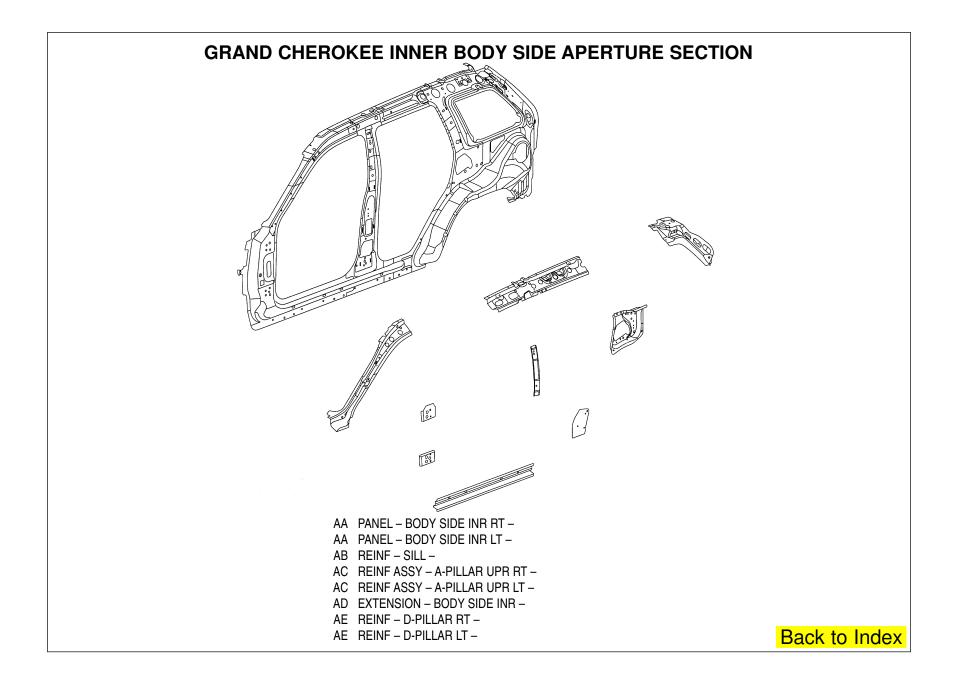


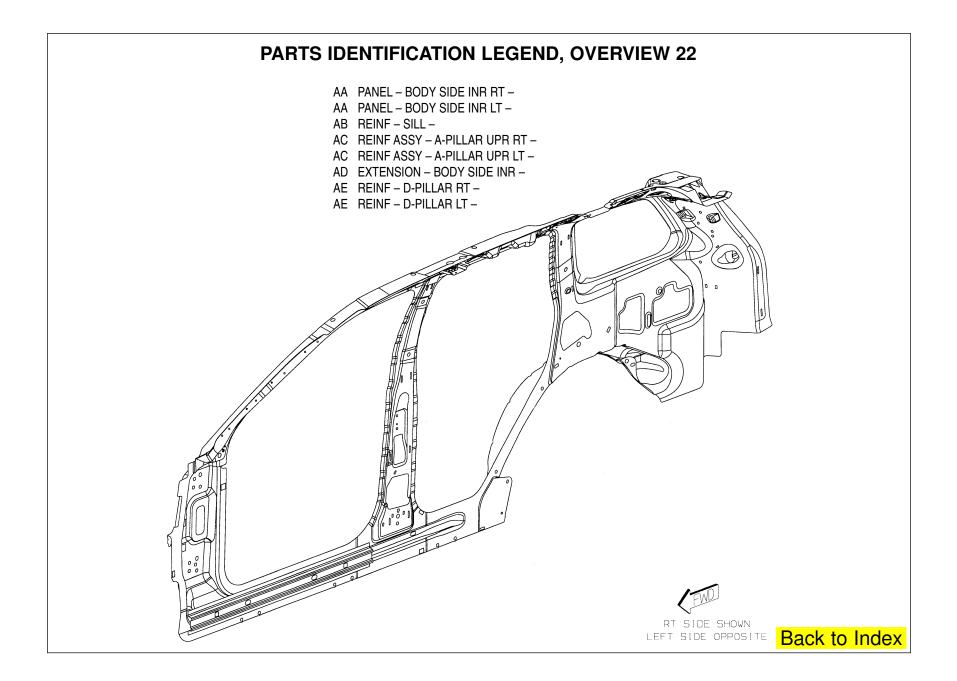


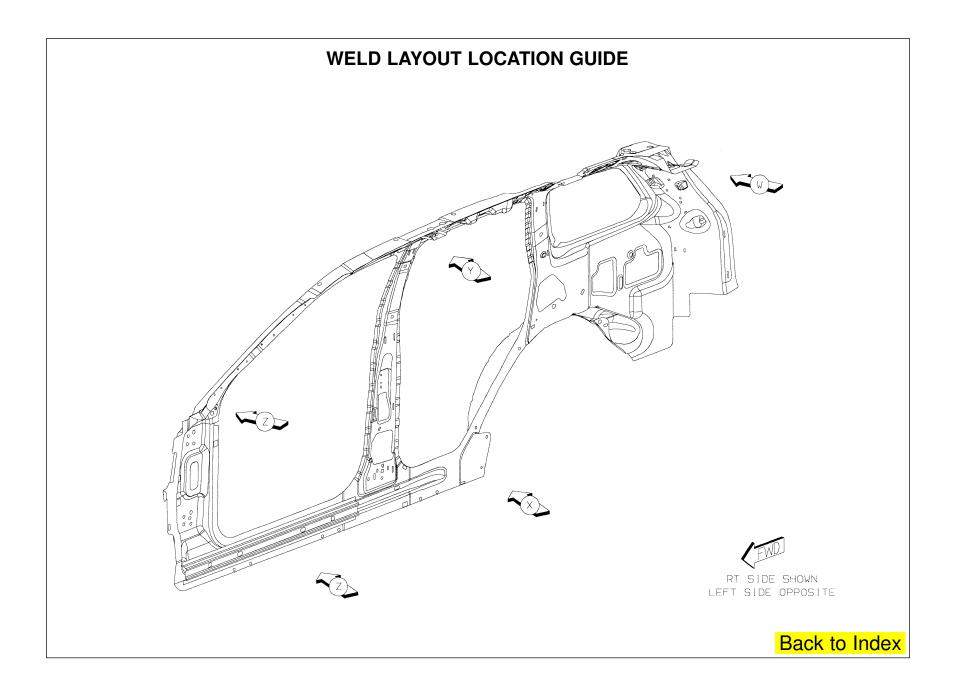


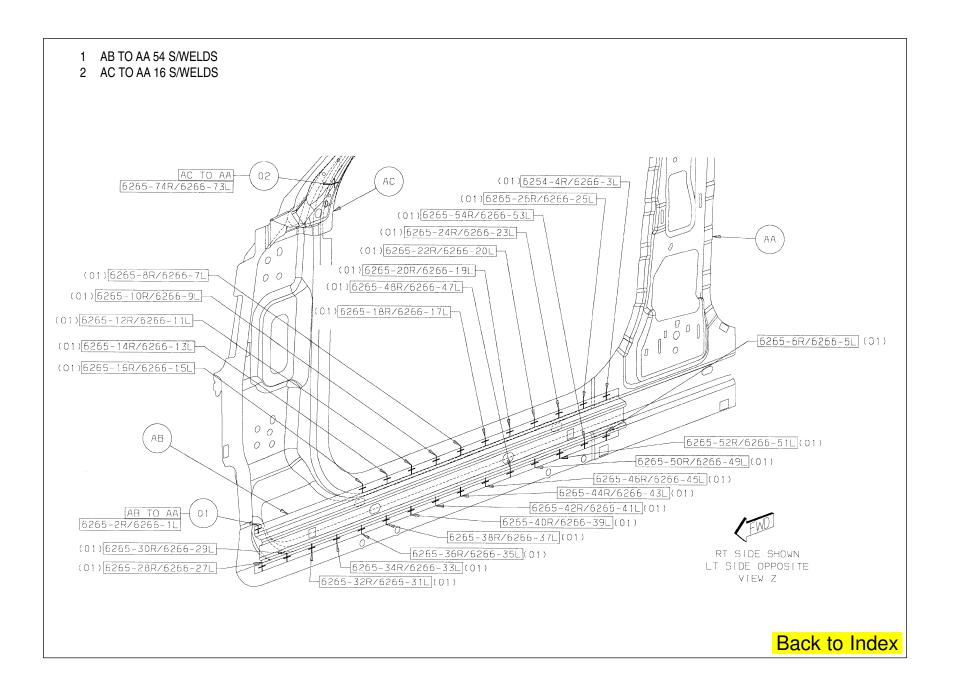


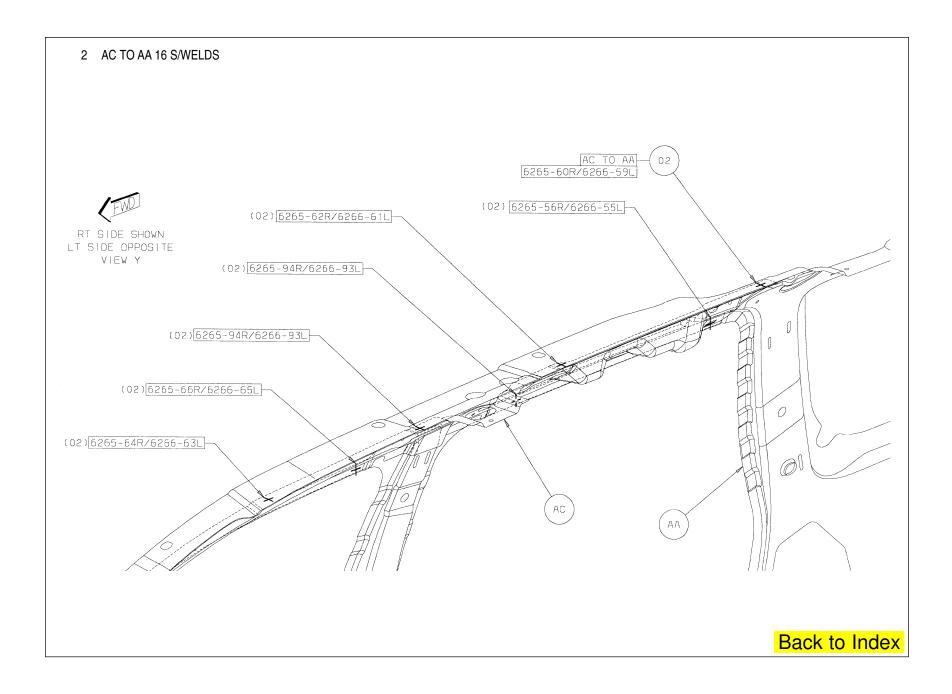


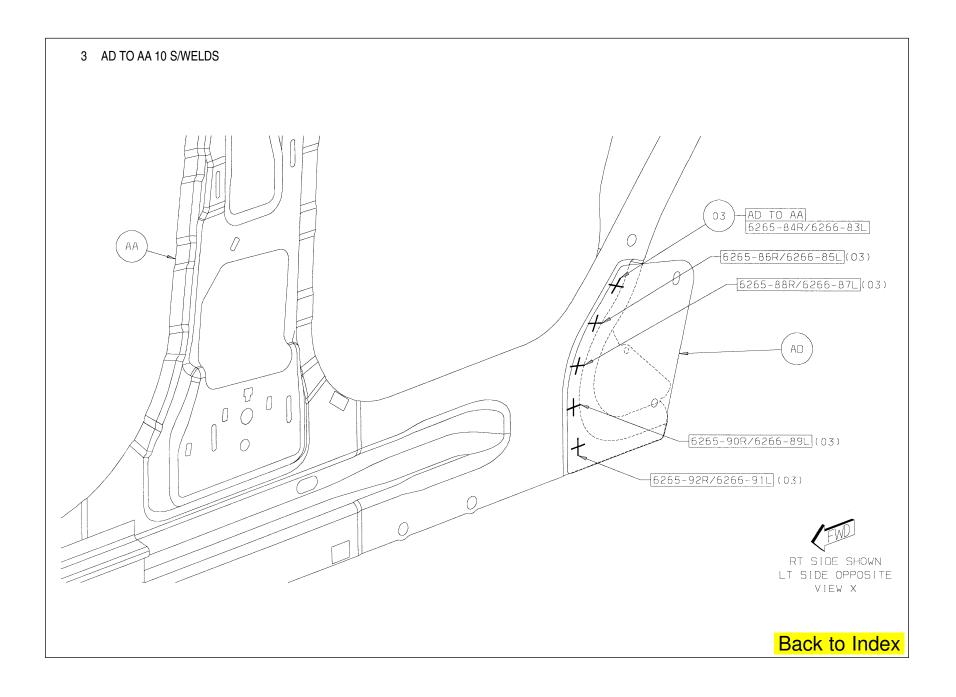


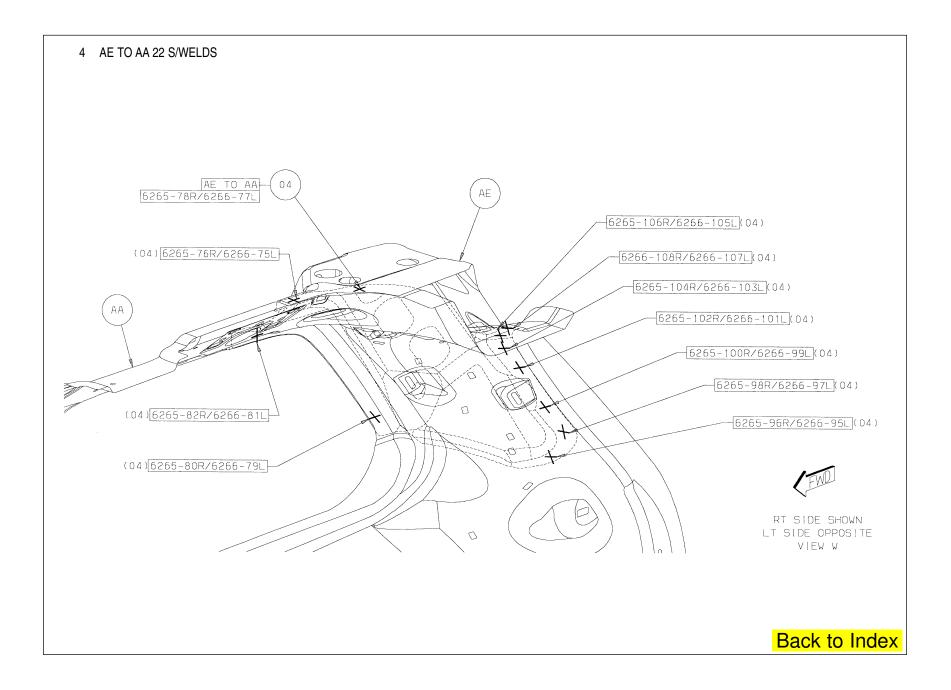








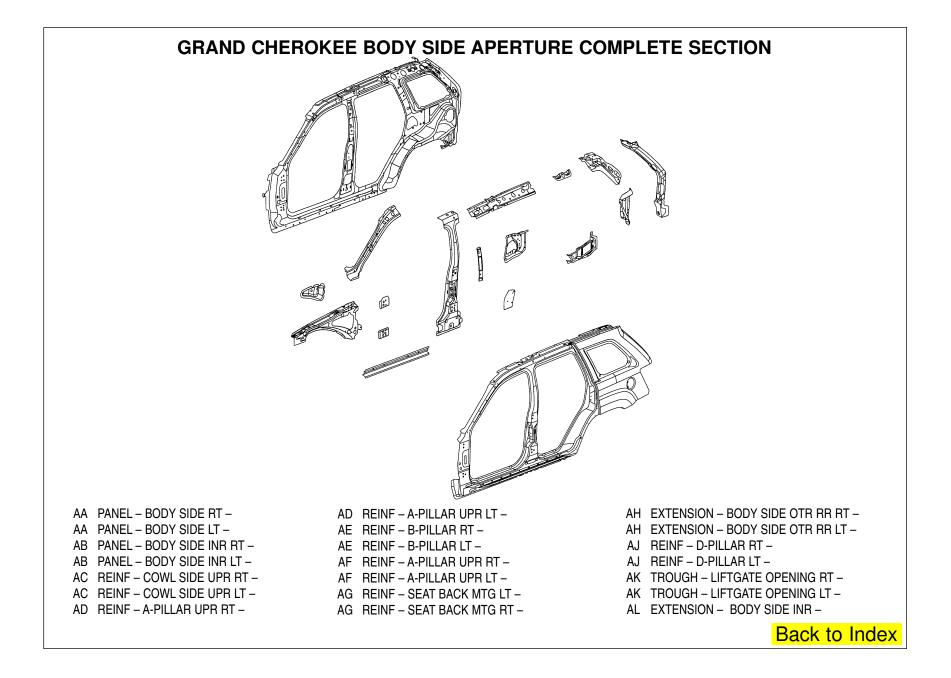


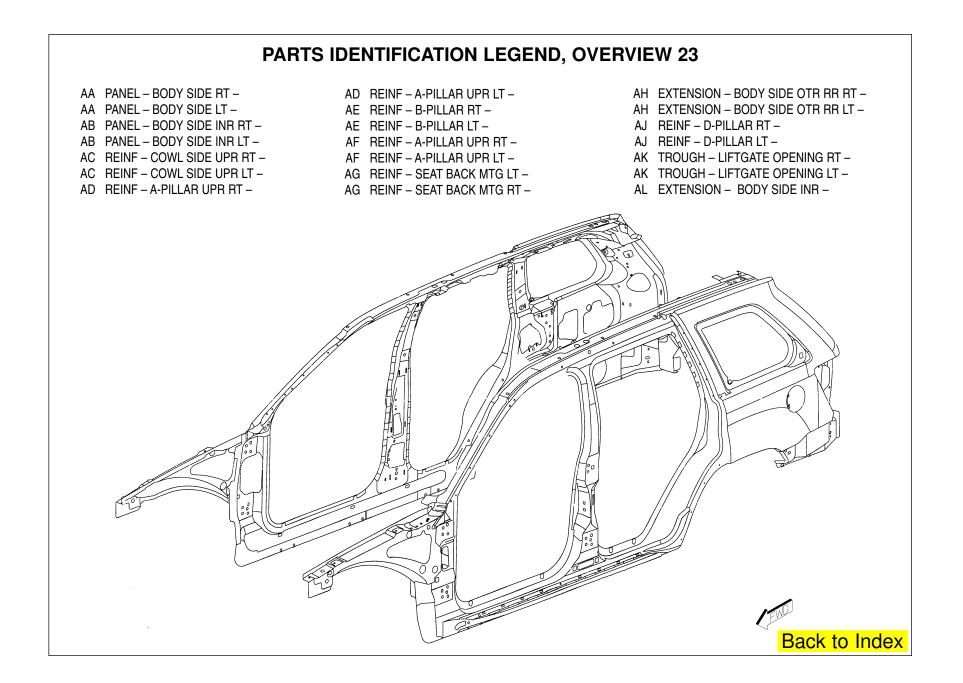


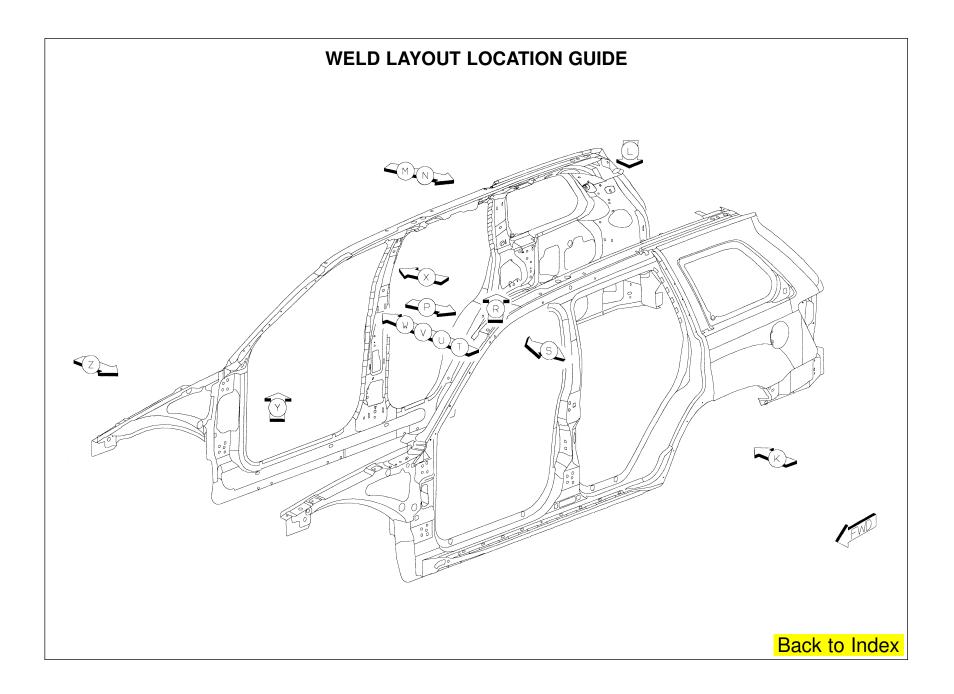


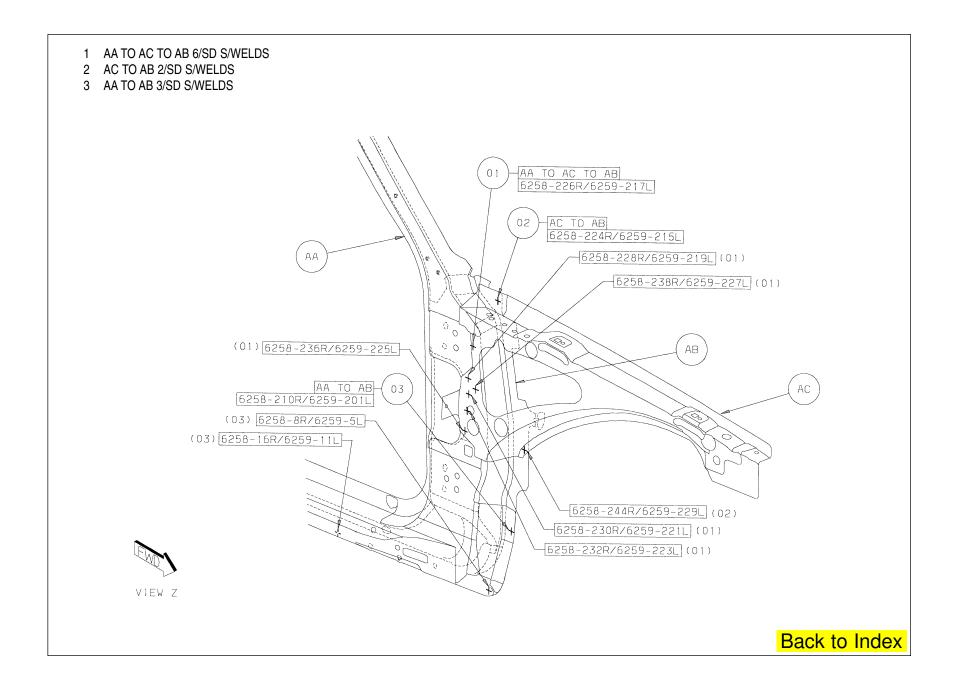
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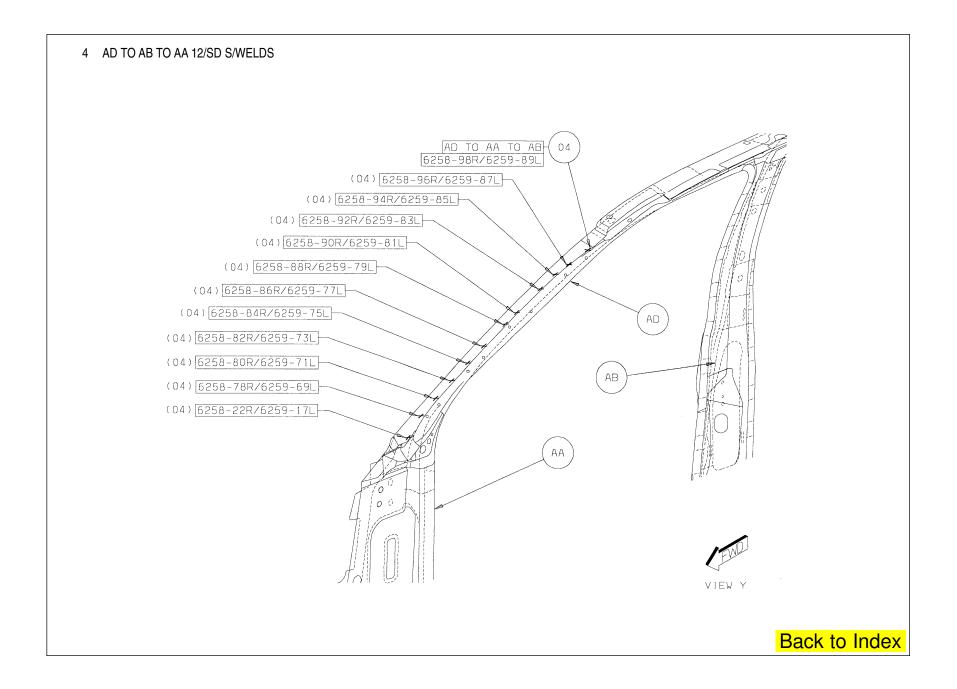
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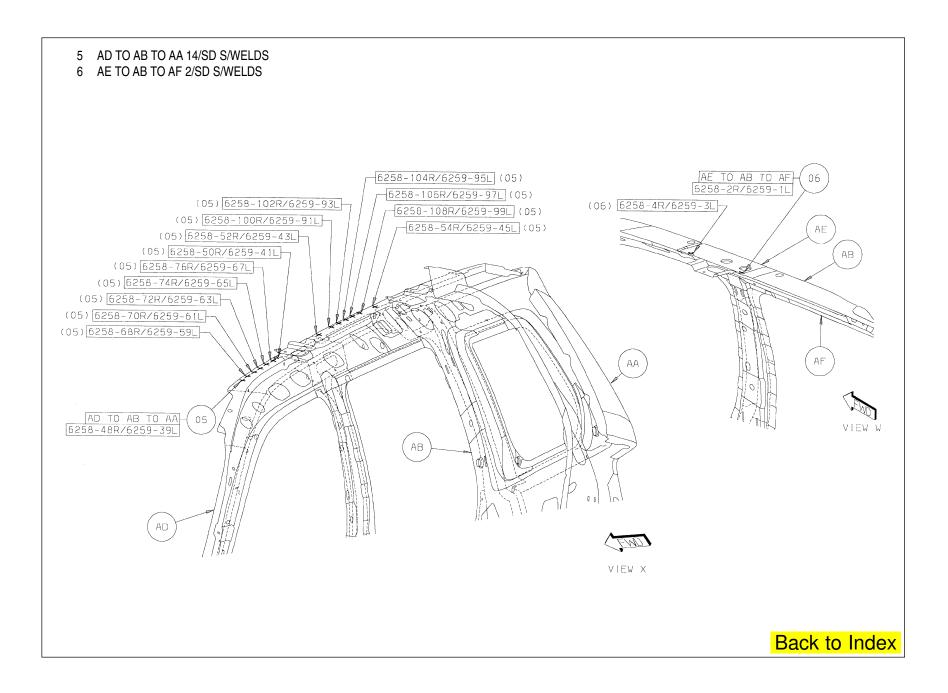


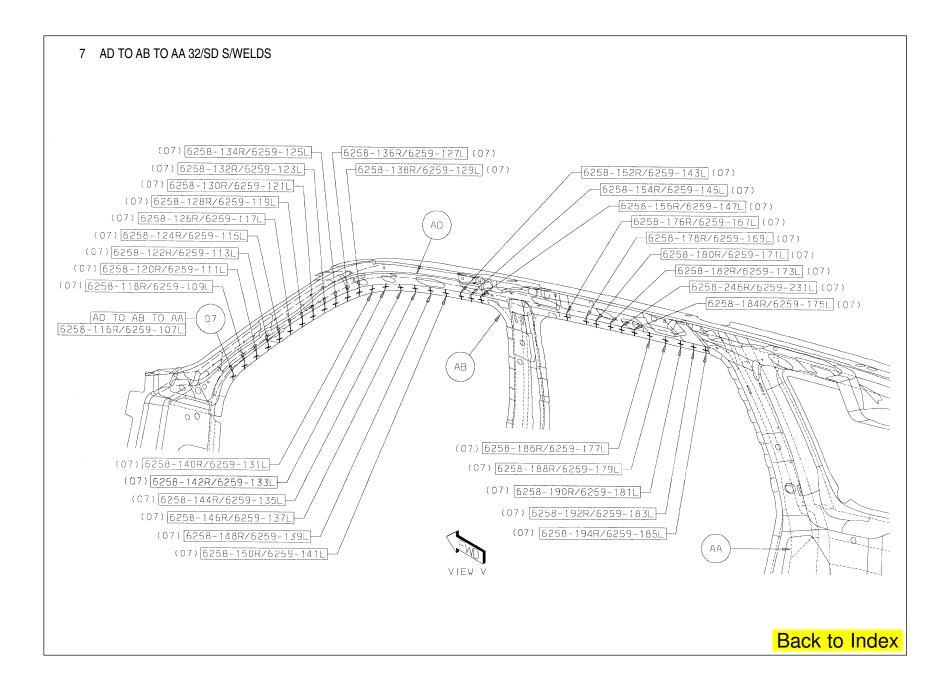


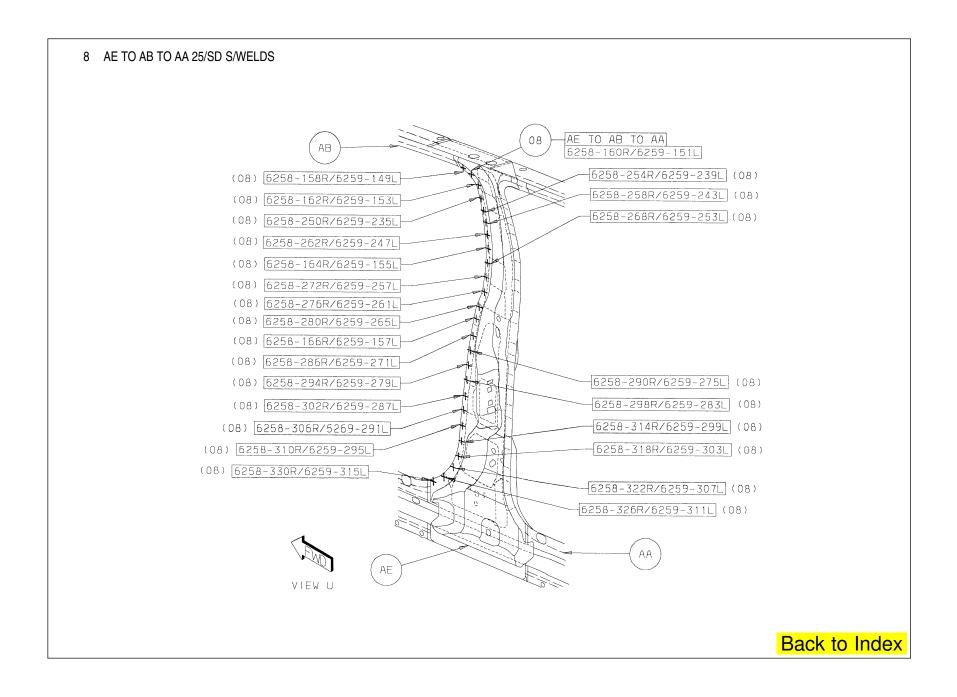


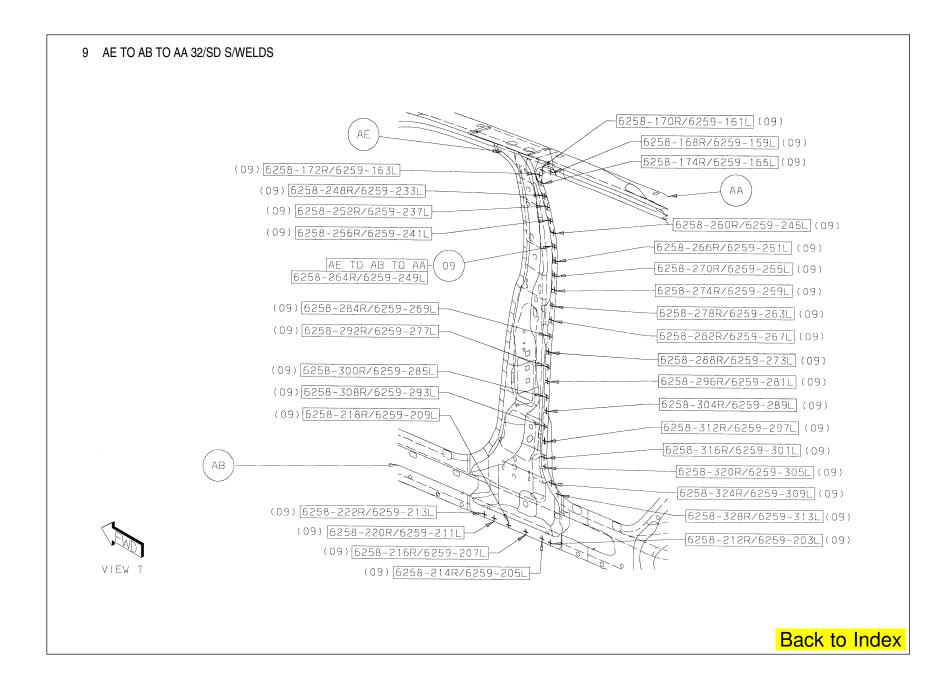


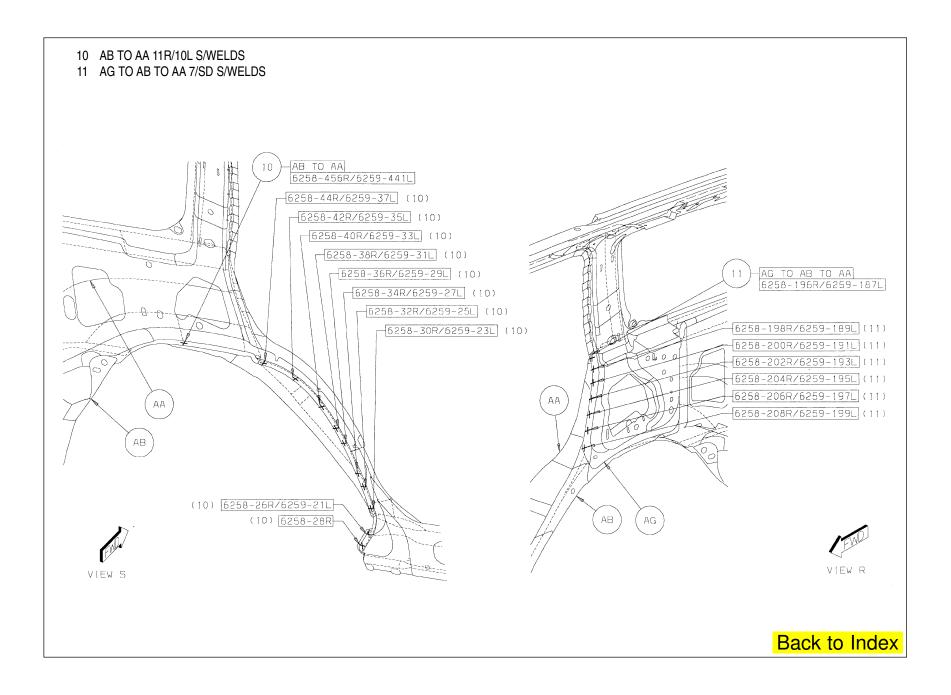


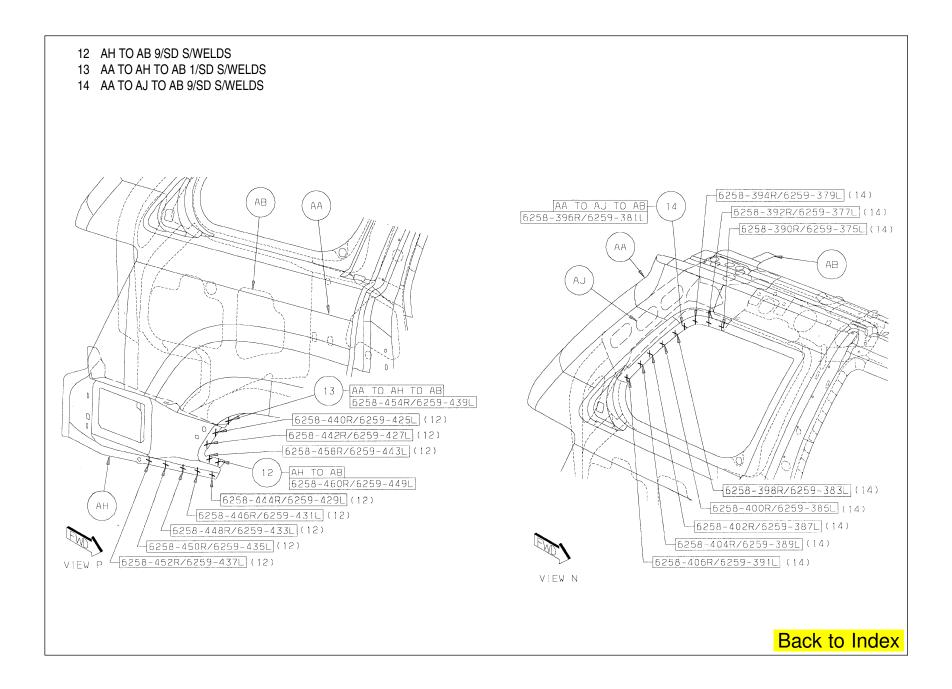


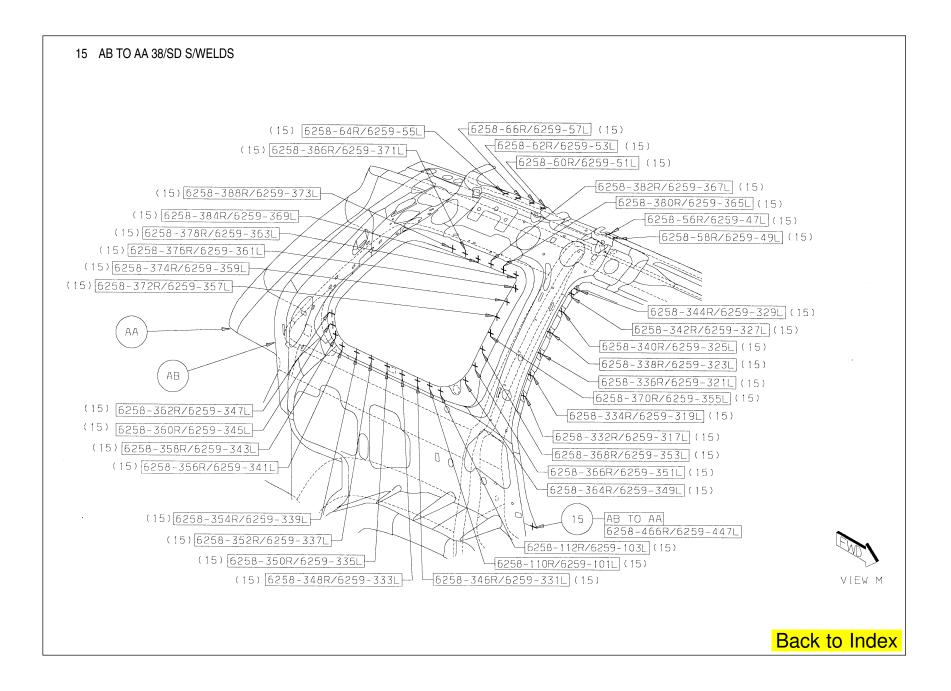


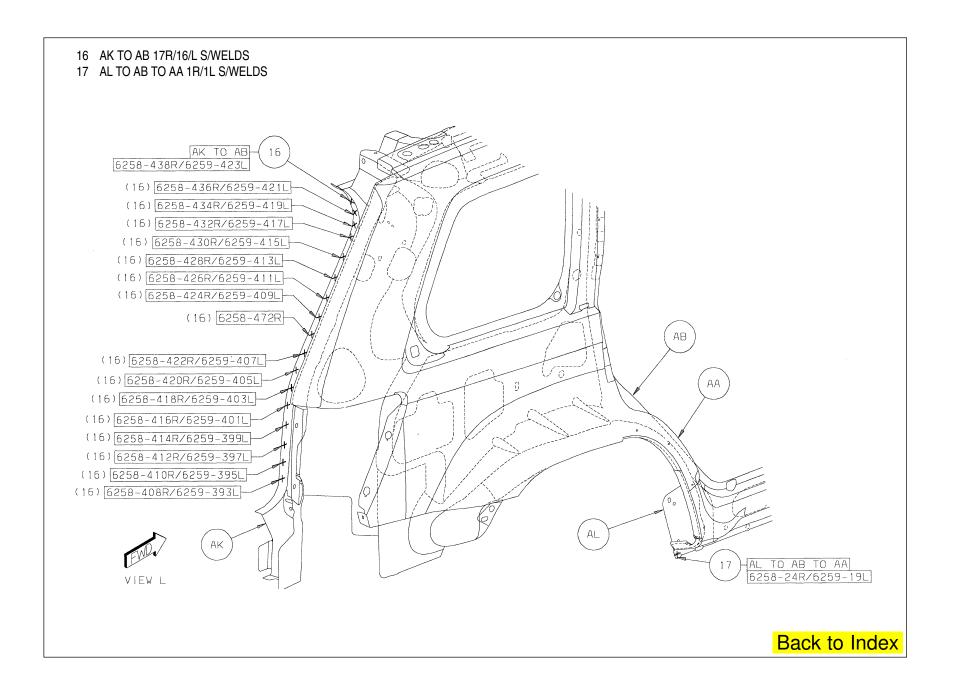


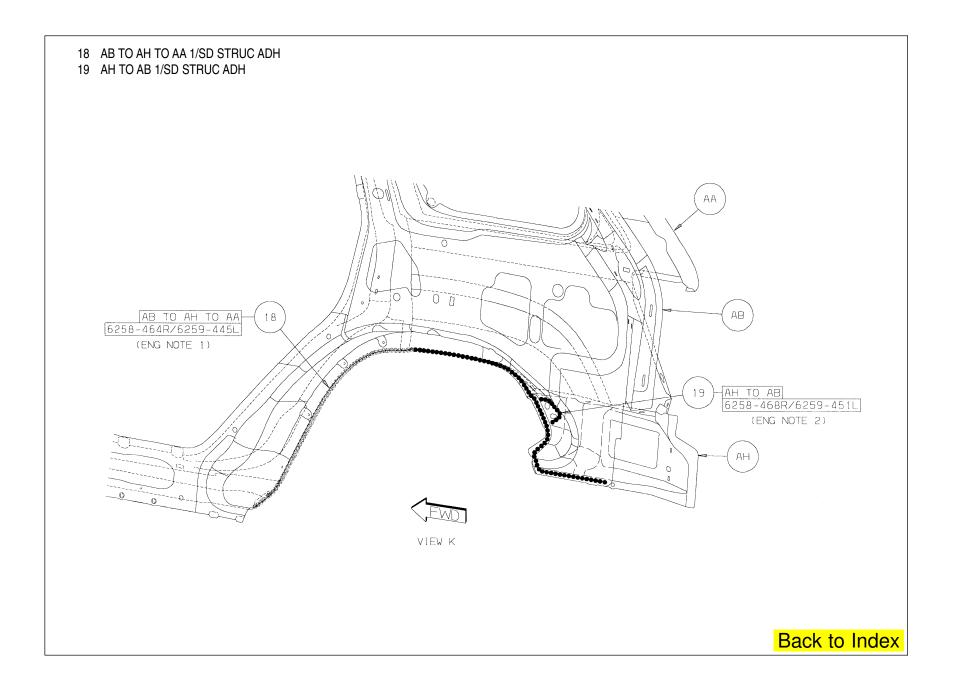


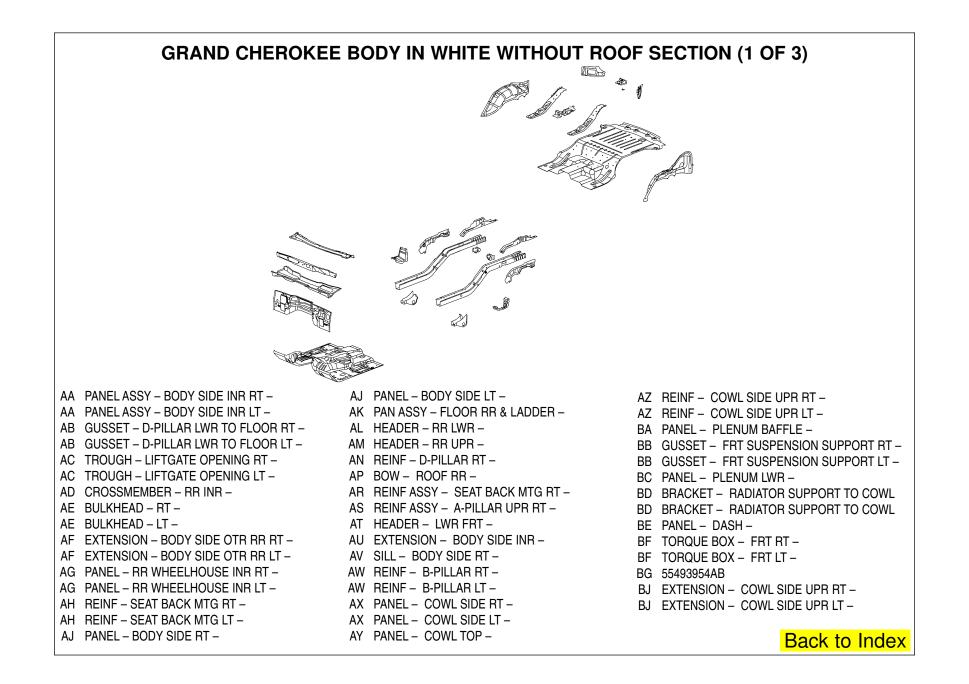


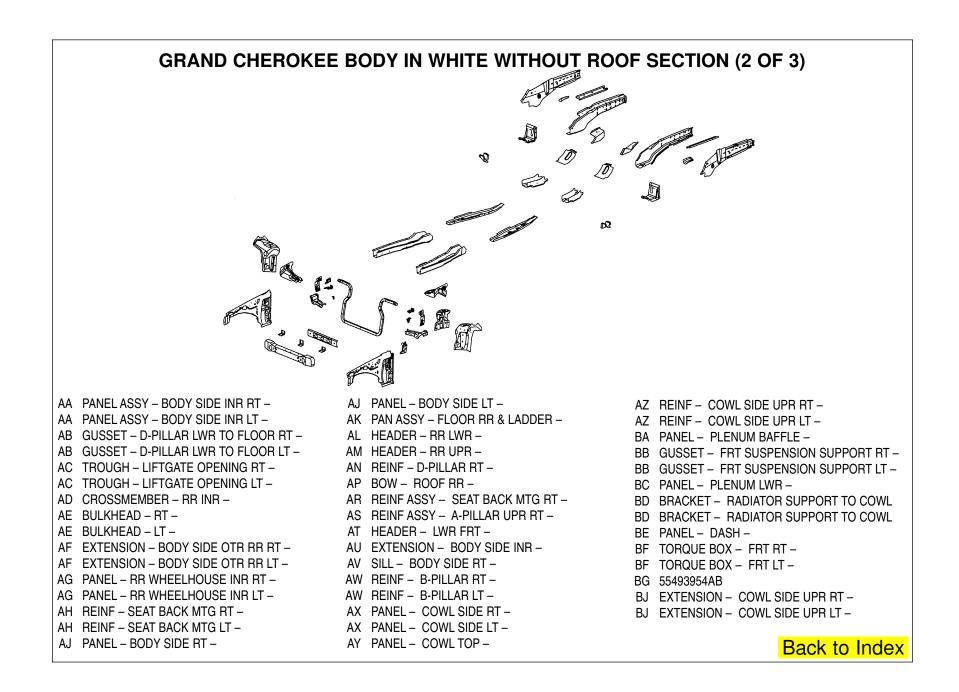


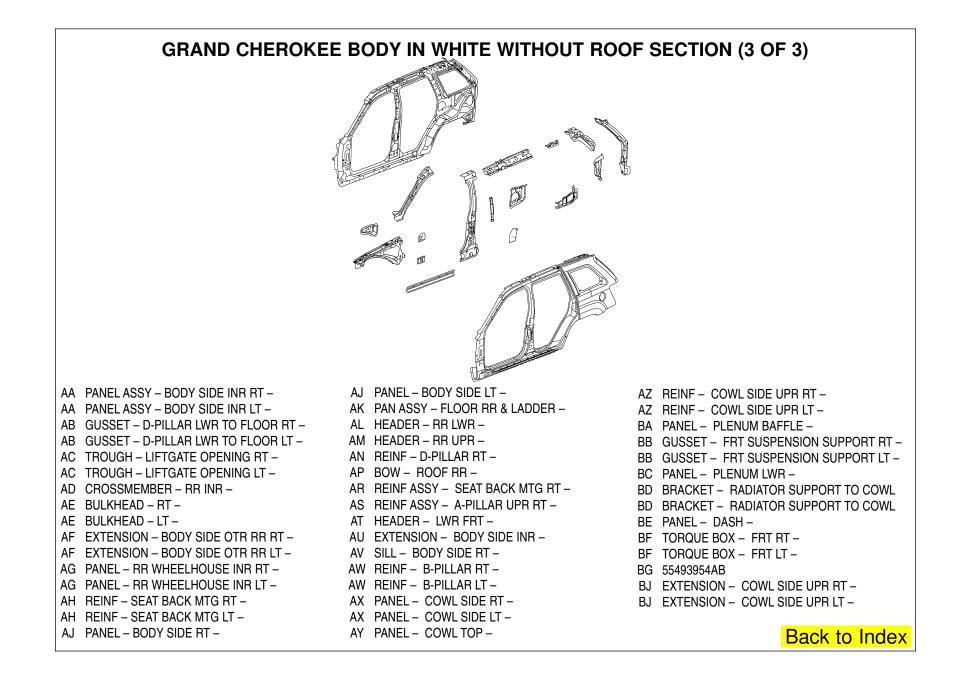












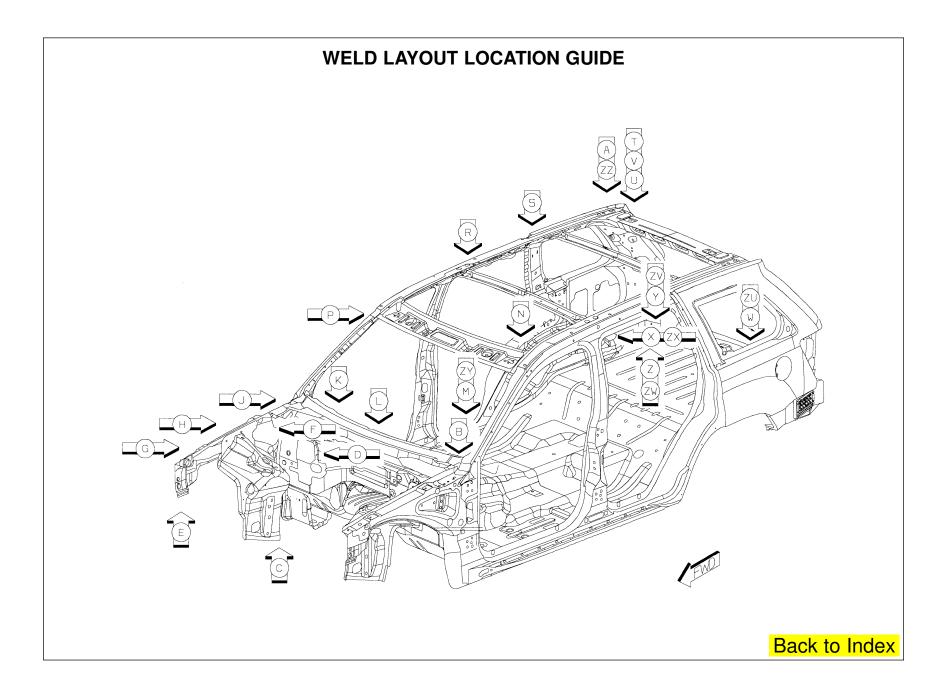
## **PARTS IDENTIFICATION LEGEND, OVERVIEW 24**

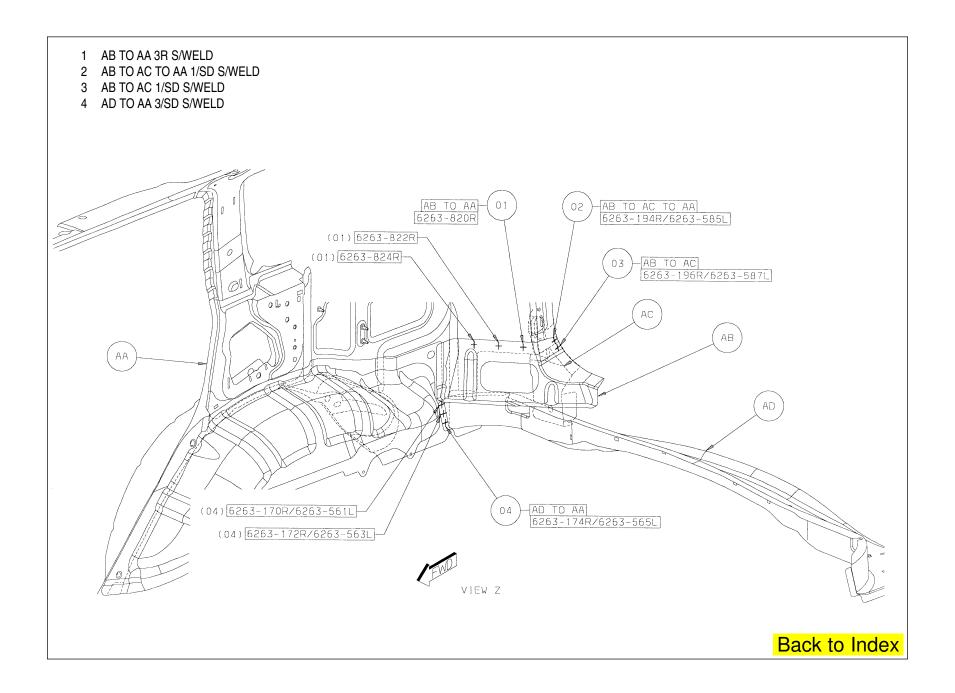
AA PANEL ASSY – BODY SIDE INR RT – AA PANEL ASSY – BODY SIDE INR LT – ABGUSSET - D-PILLAR LWR TO FLOOR RT -ALHEADER - RR LWR -ABGUSSET - D-PILLAR LWR TO FLOOR LT -AMHEADER - RR UPR -AC TROUGH - LIFTGATE OPENING RT -AC TROUGH – LIFTGATE OPENING LT – AD CROSSMEMBER - RR INR -AE BULKHEAD - RT -AEBULKHEAD - LT -ATHEADER - LWR FRT -AFEXTENSION - BODY SIDE OTR RR RT -AUEXTENSION - BODY SIDE INR -AF EXTENSION – BODY SIDE OTR RR LT – AG PANEL – RR WHEELHOUSE INR RT – AG PANEL – RR WHEELHOUSE INR LT – AH REINF – SEAT BACK MTG RT – AH REINF – SEAT BACK MTG LT – AJ PANEL - BODY SIDE RT -

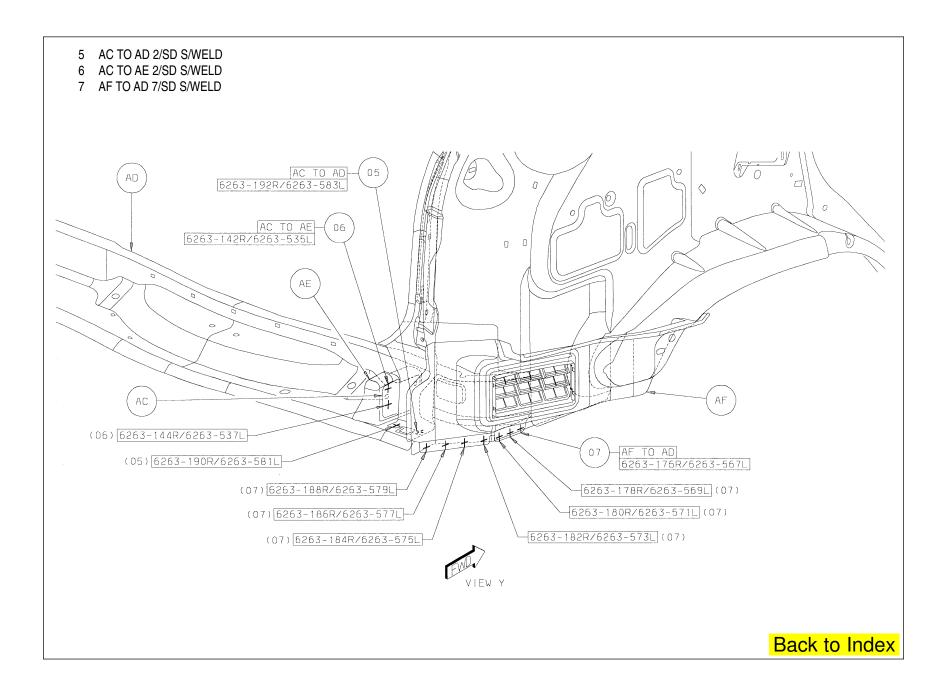
AJ PANEL – BODY SIDE LT – AK PAN ASSY – FLOOR RR & LADDER – AN REINF – D-PILLAR RT – AP BOW - ROOF RR -AR REINF ASSY – SEAT BACK MTG RT – AS REINF ASSY – A-PILLAR UPR RT – AV SILL – BODY SIDE RT – AW REINF – B-PILLAR RT – AW REINF – B-PILLAR LT – AX PANEL – COWL SIDE RT – AX PANEL – COWL SIDE LT – AY PANEL – COWL TOP –

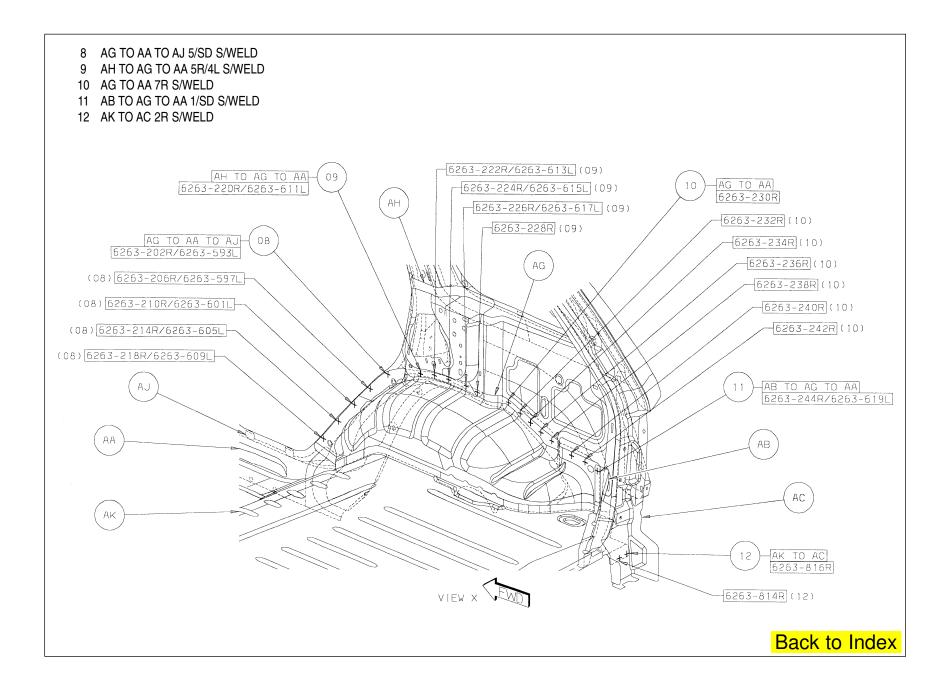
AZ REINF - COWL SIDE UPR RT -AZ REINF - COWL SIDE UPR LT -BA PANEL – PLENUM BAFFLE – BB GUSSET - FRT SUSPENSION SUPPORT RT -BB GUSSET - FRT SUSPENSION SUPPORT LT -BC PANEL - PLENUM LWR -**BD BRACKET - RADIATOR SUPPORT TO COWL** BD BRACKET - RADIATOR SUPPORT TO COWL BE PANEL - DASH -BF TORQUE BOX - FRT RT -BF TORQUE BOX - FRT LT -BG 55493954AB BJ EXTENSION - COWL SIDE UPR RT -BJ EXTENSION - COWL SIDE UPR LT -

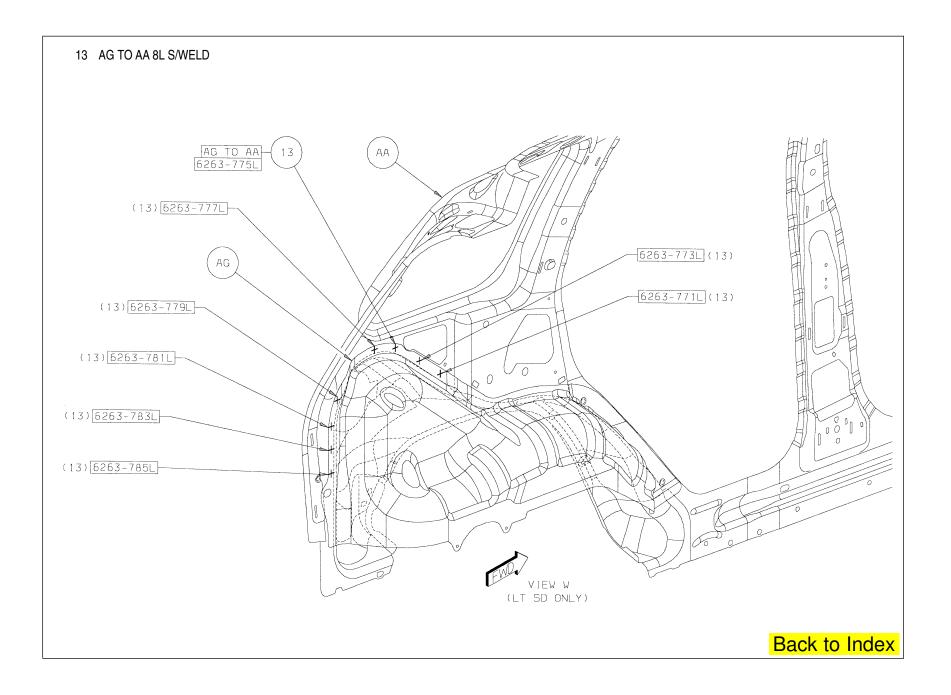
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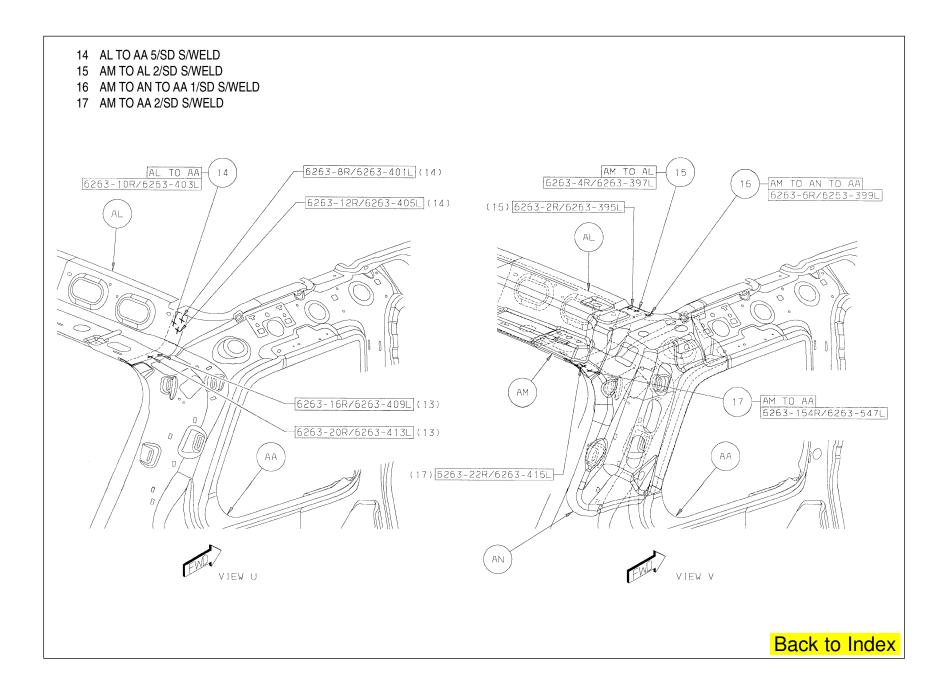


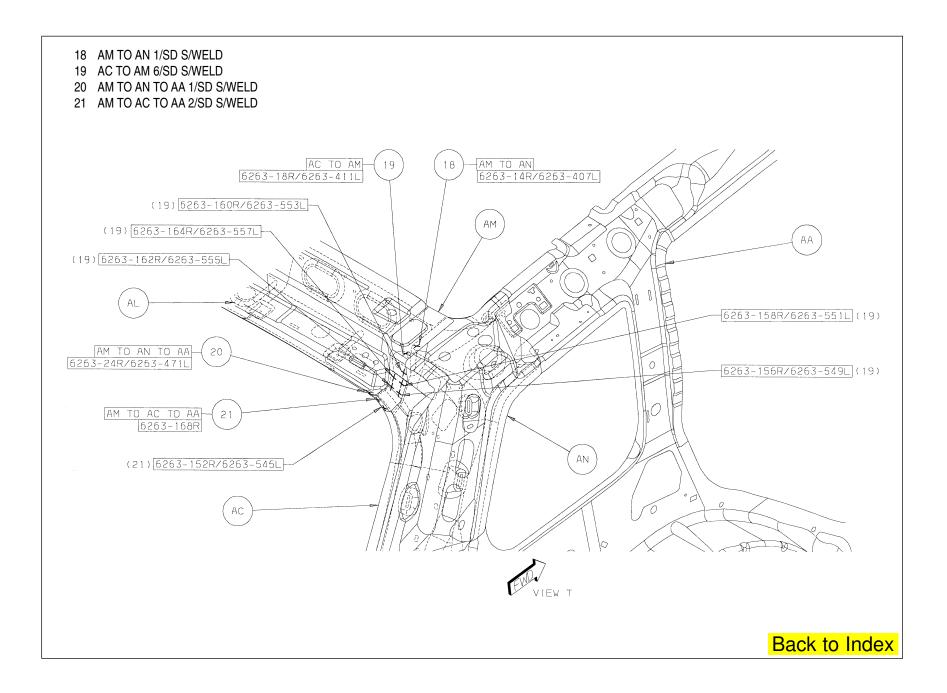


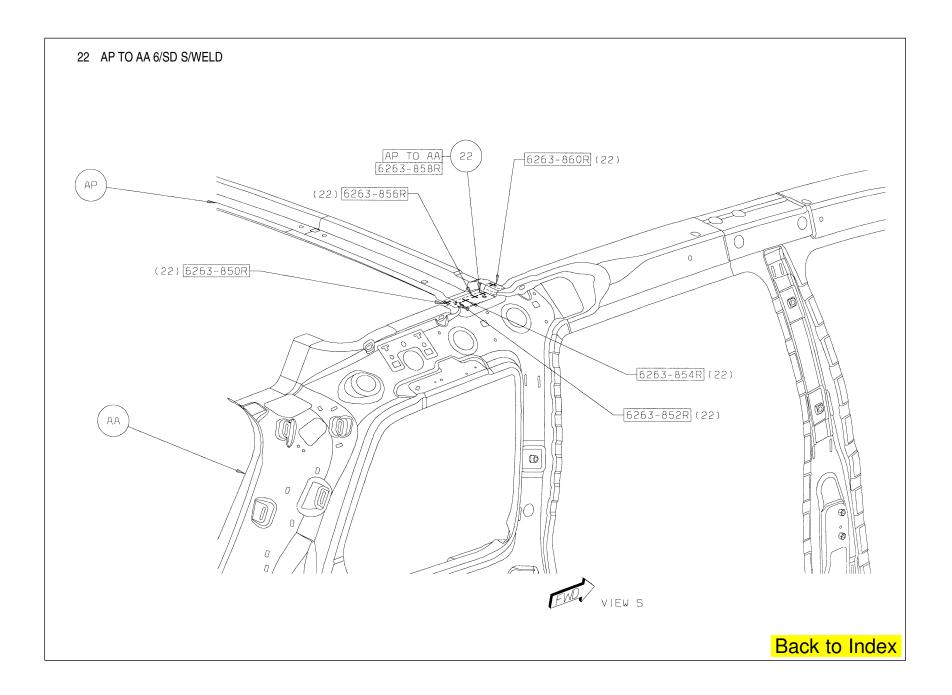


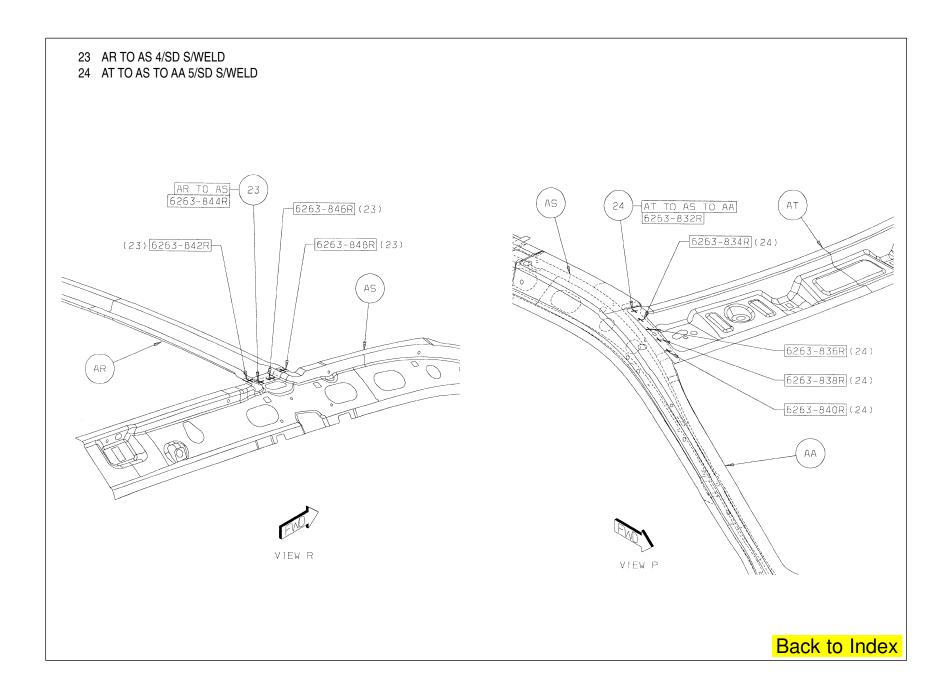


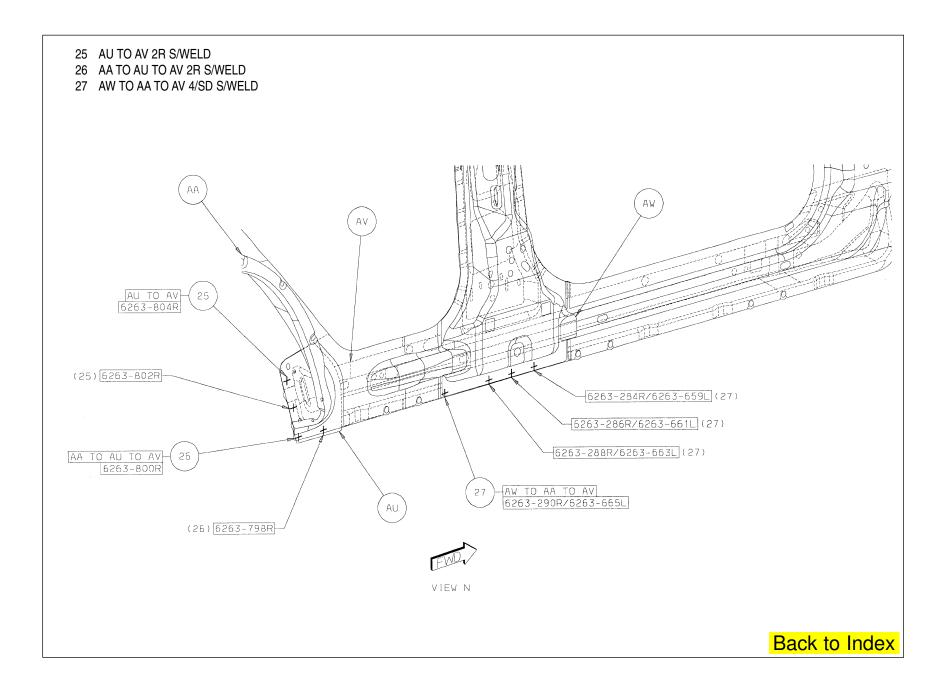


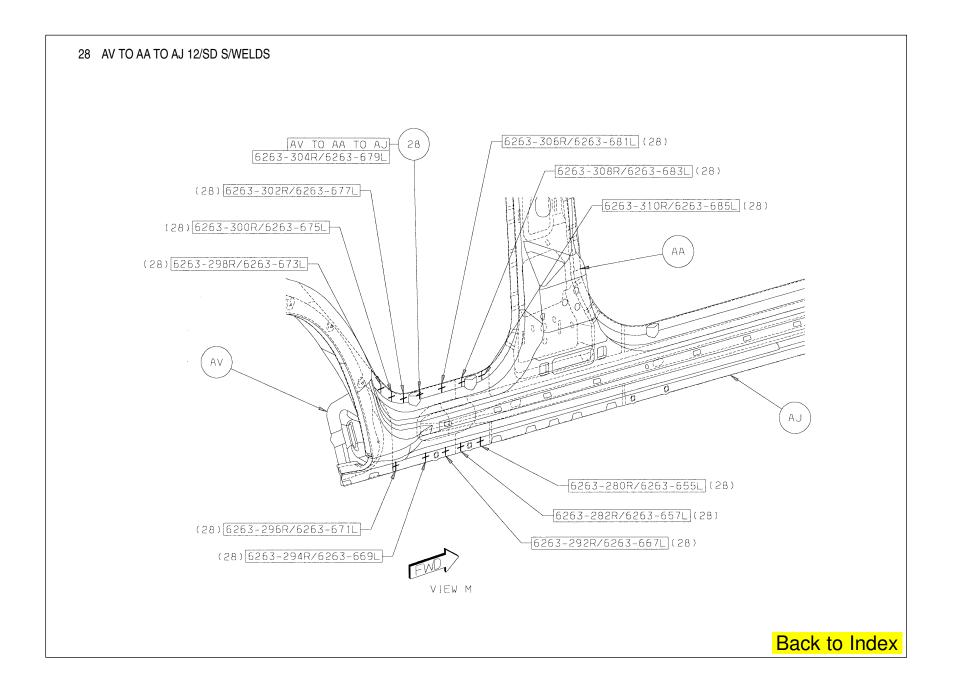


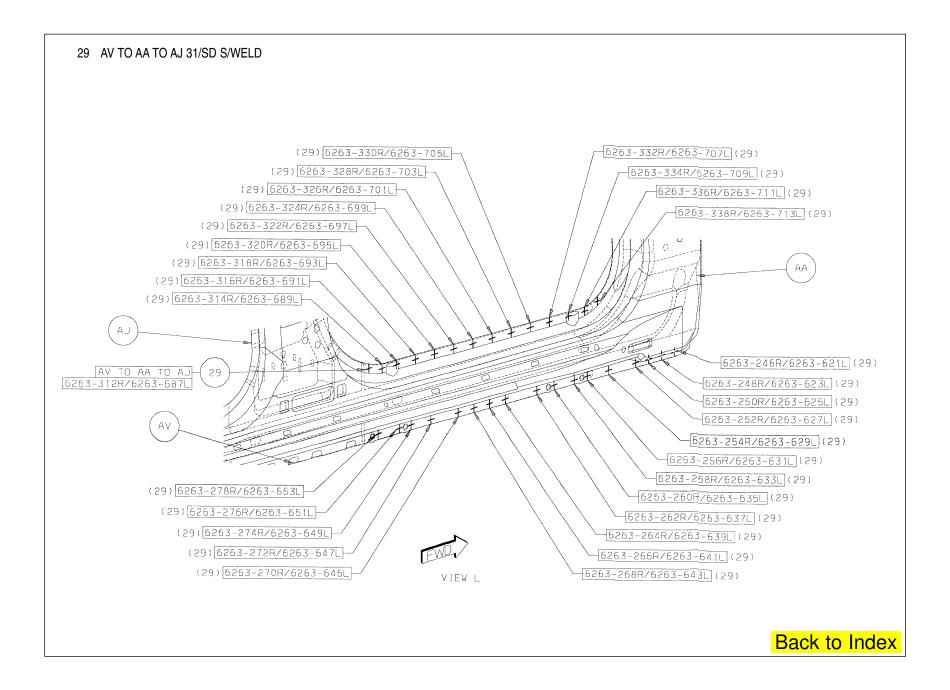


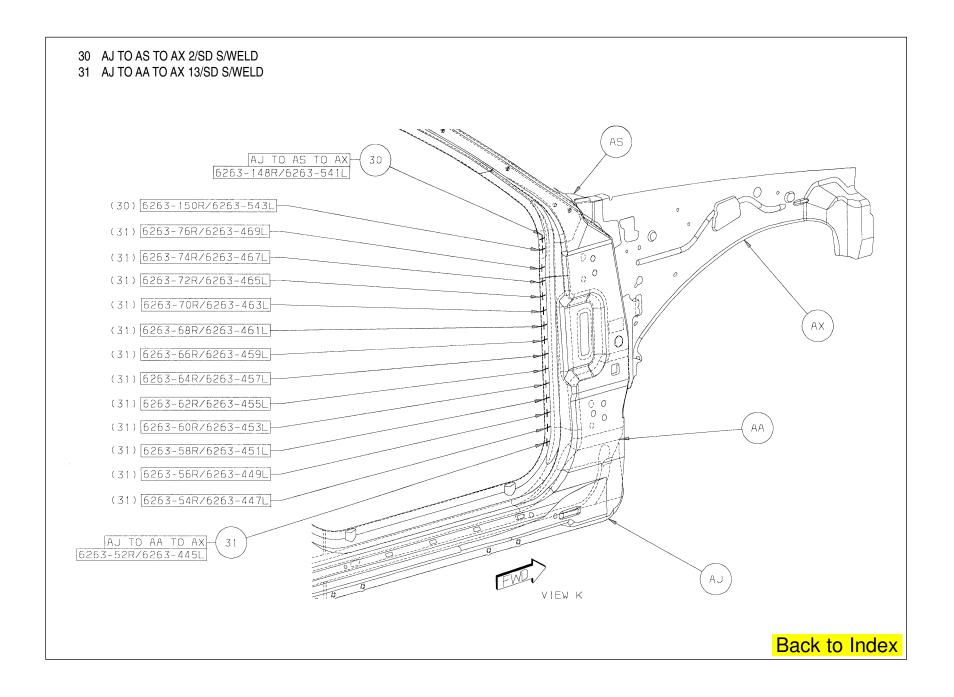


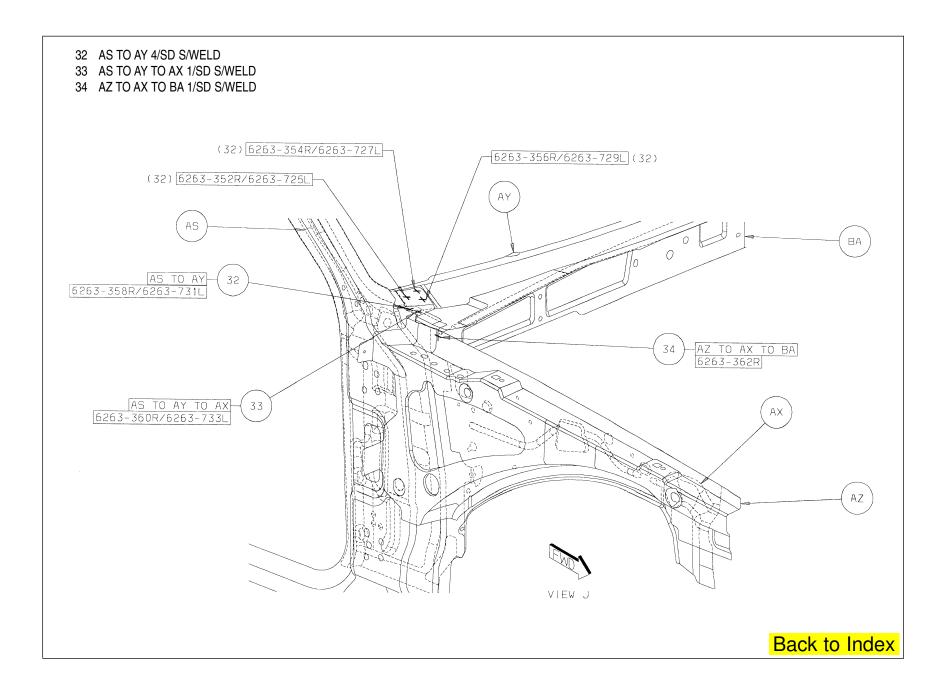


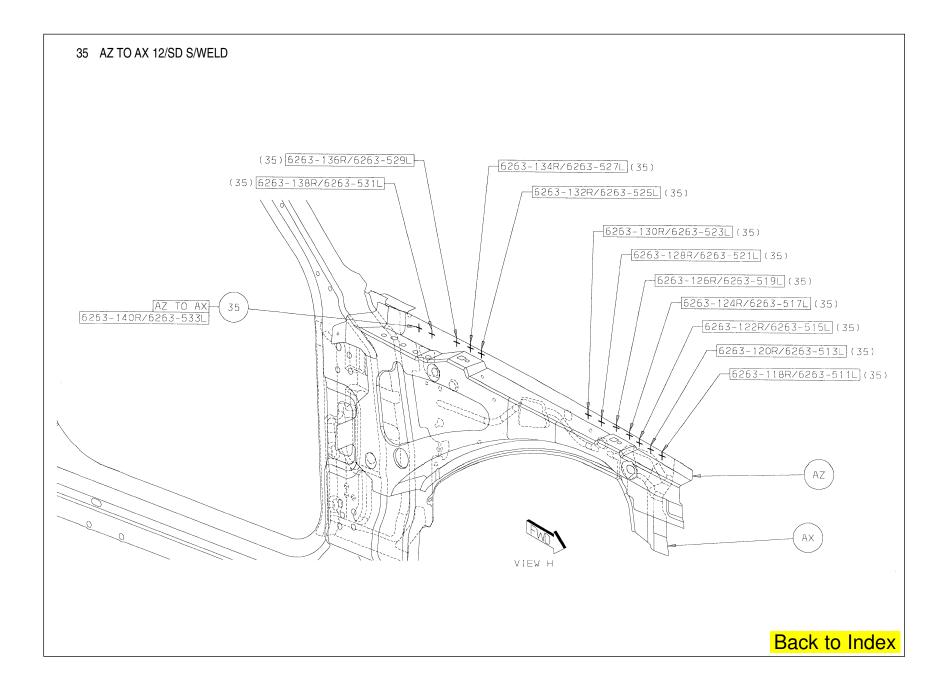


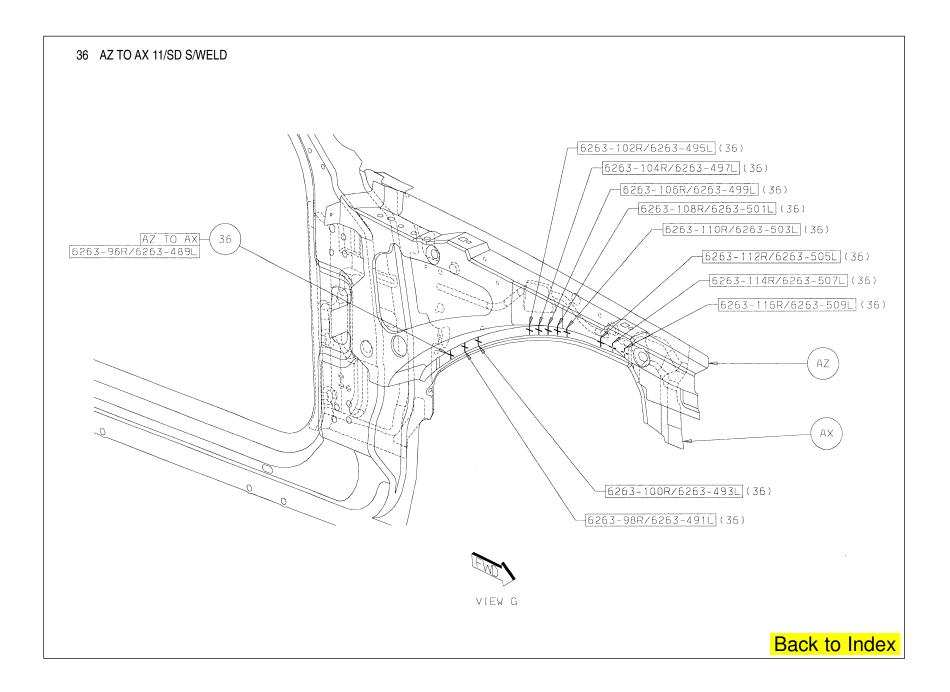


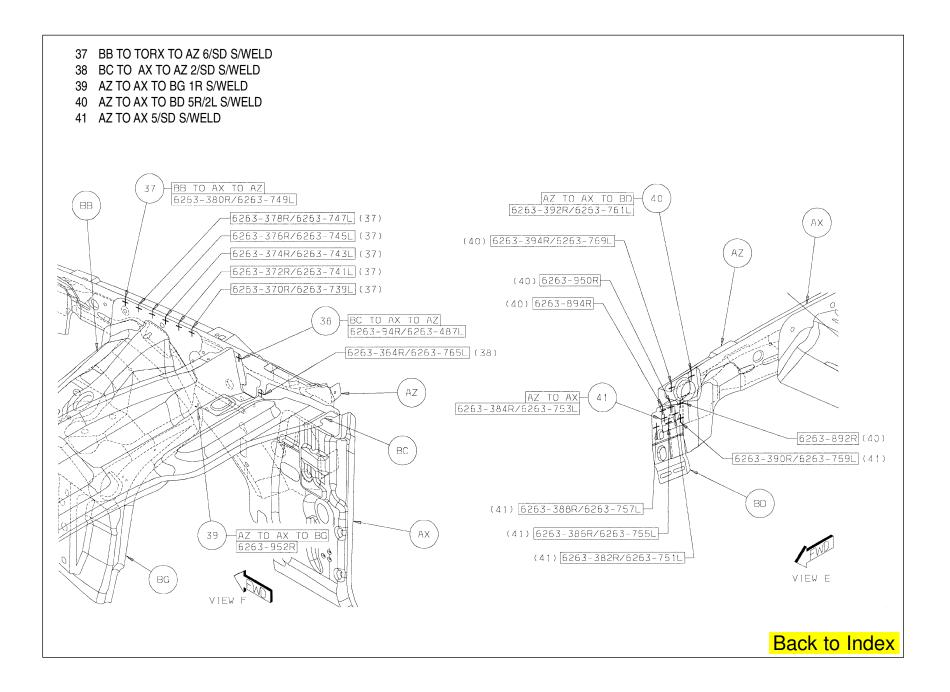


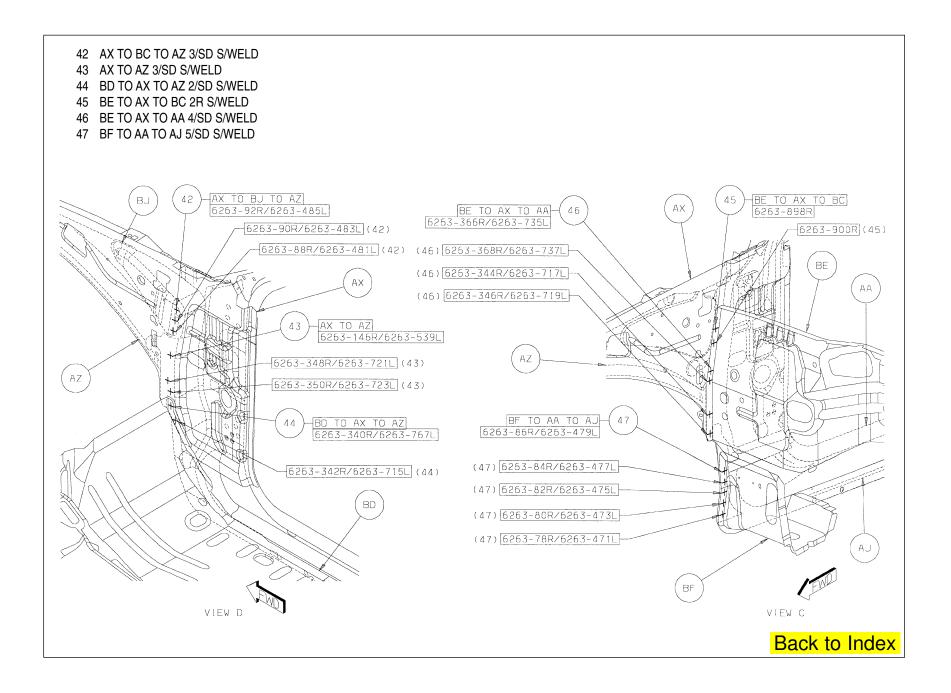


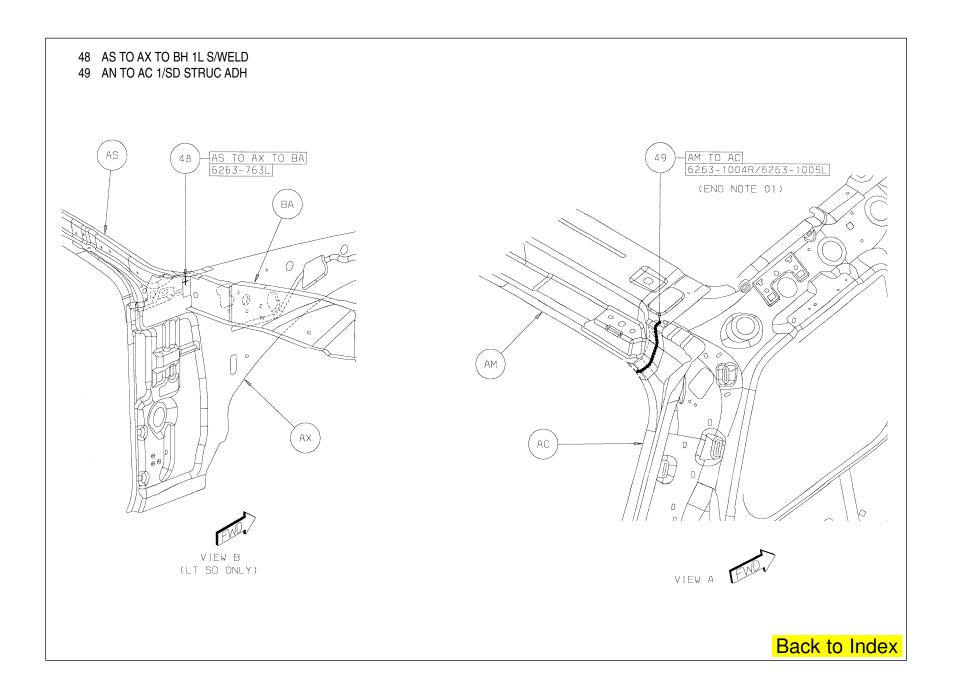


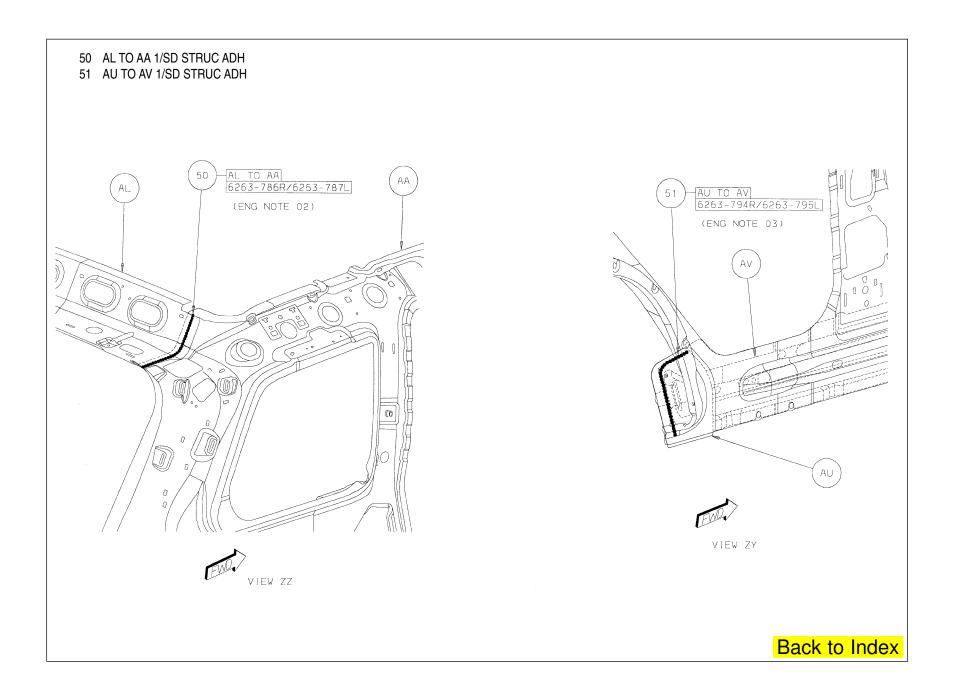


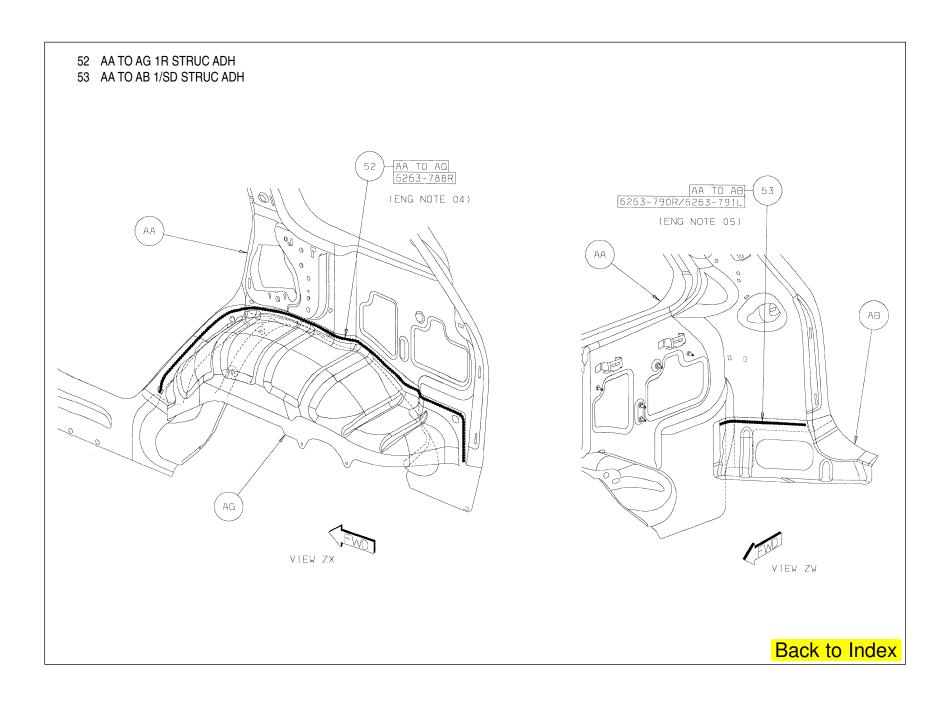


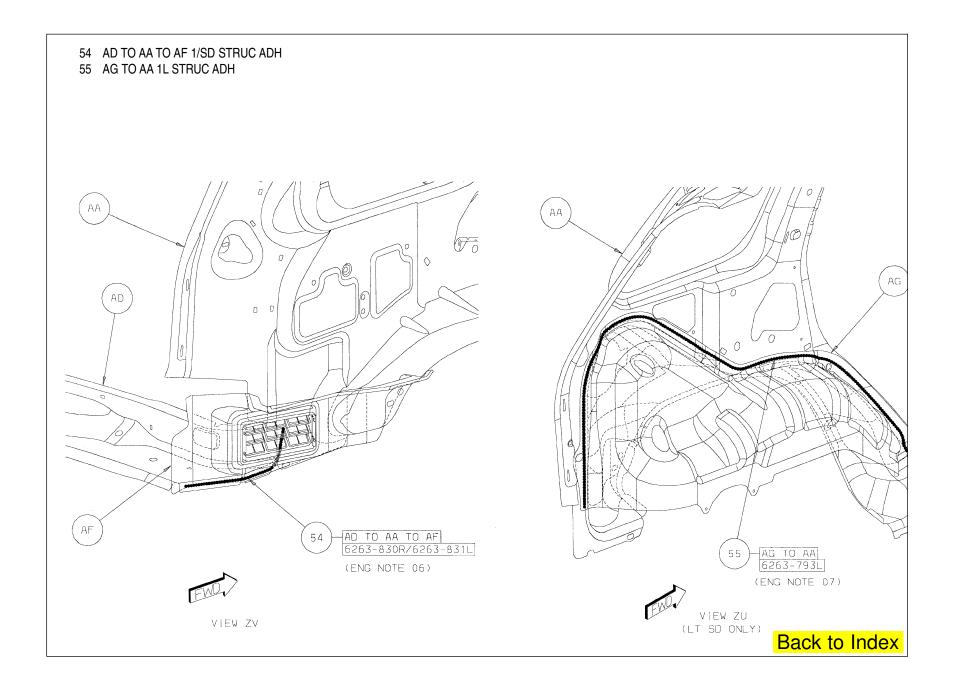














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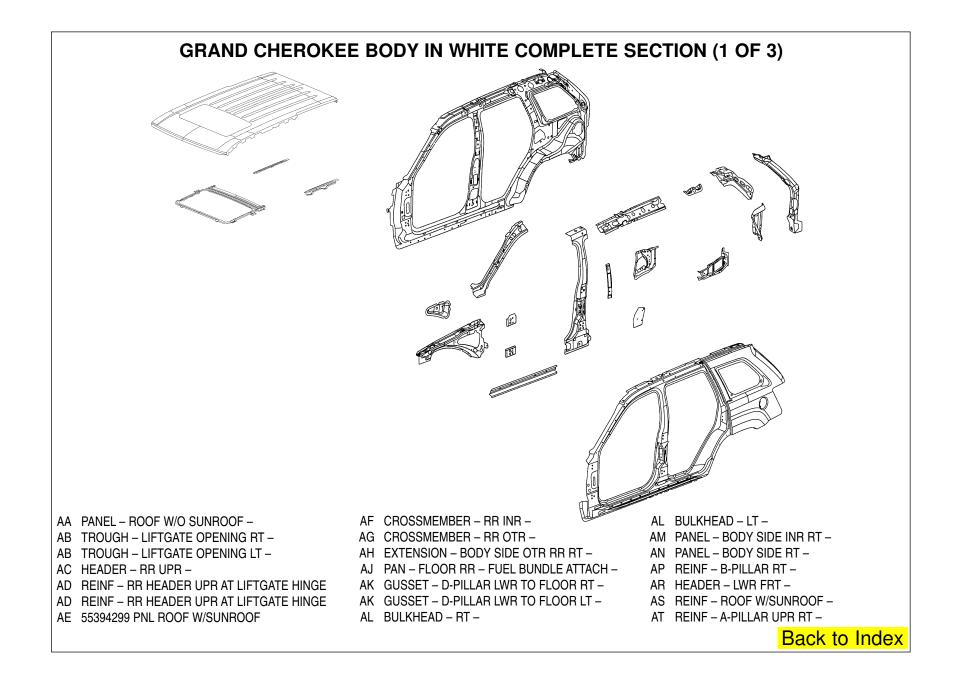
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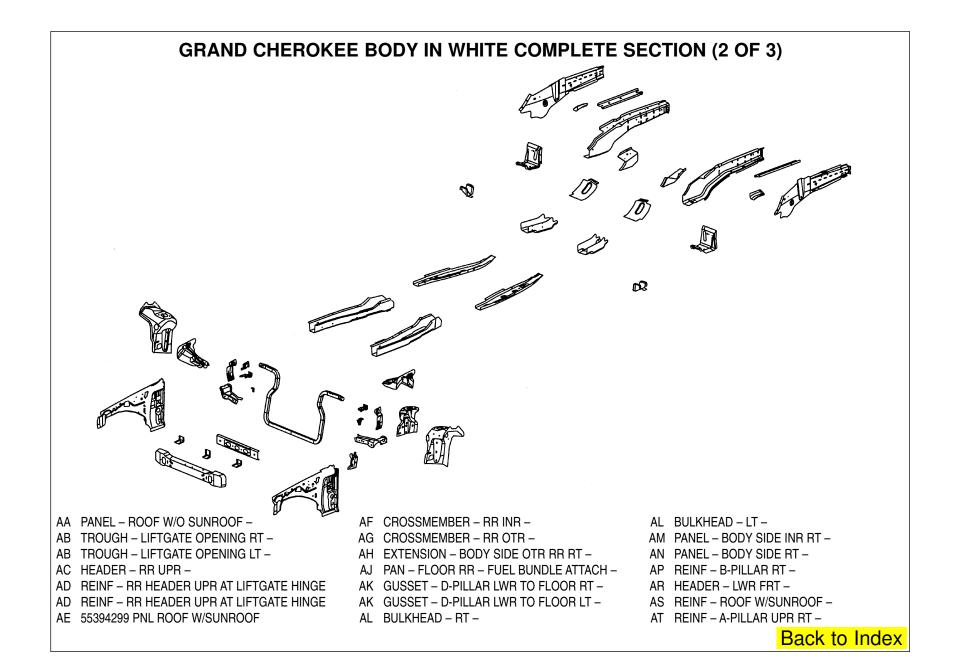
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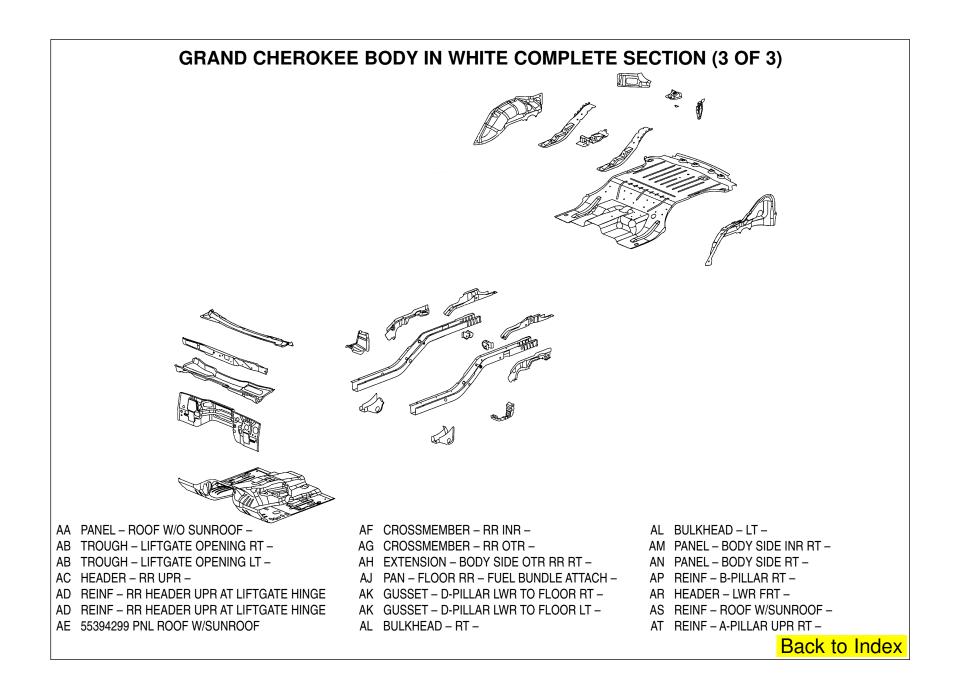
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Glasurit

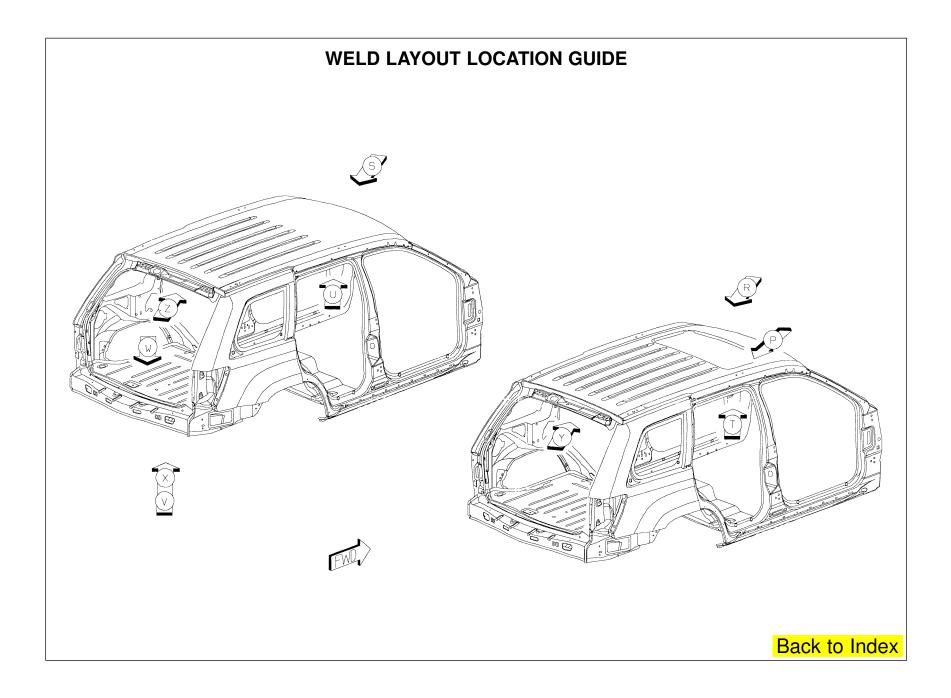
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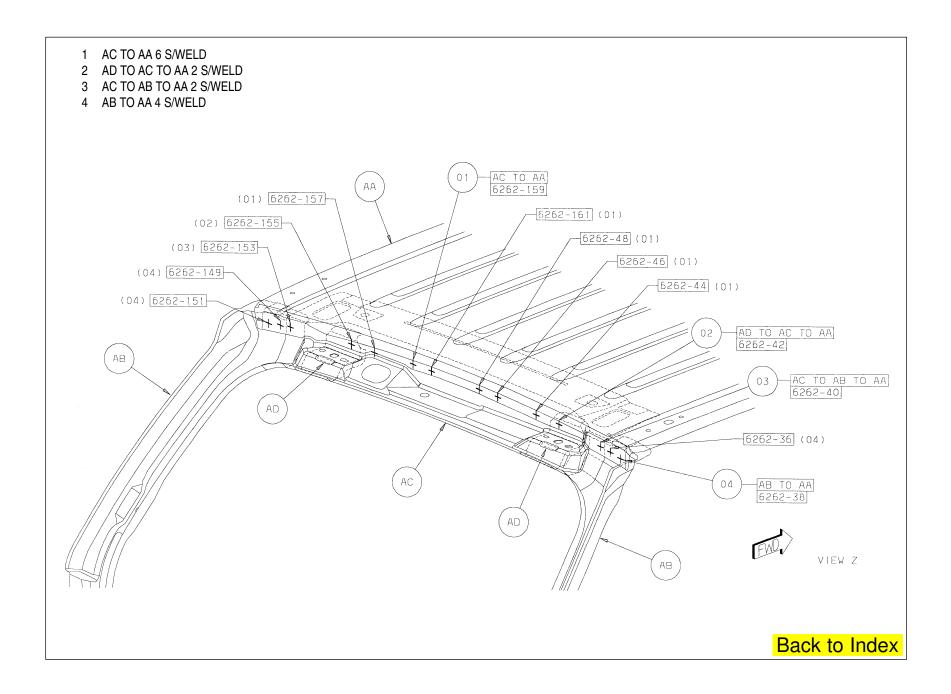


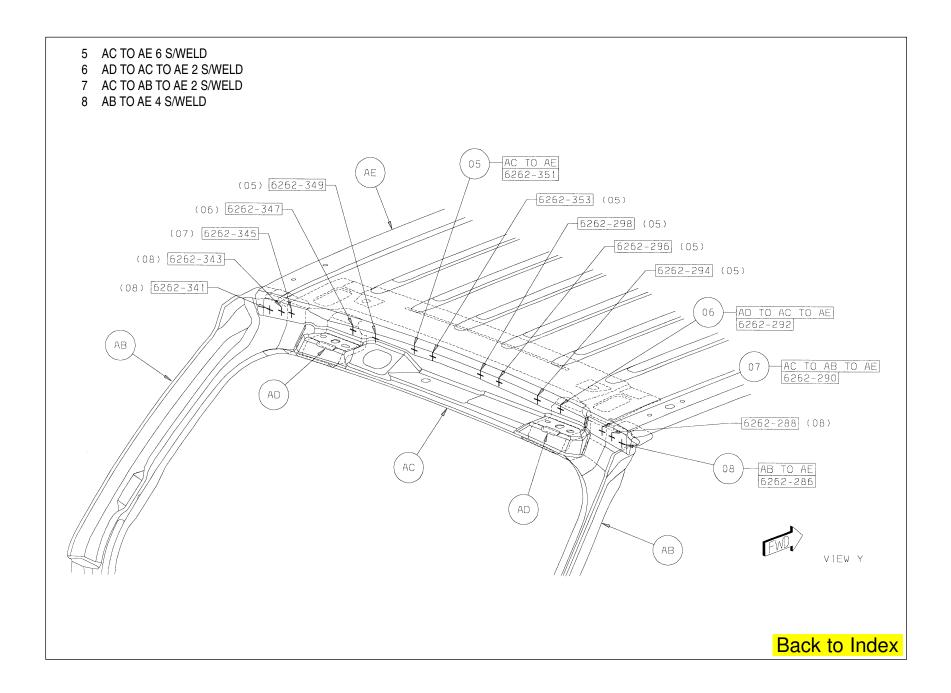


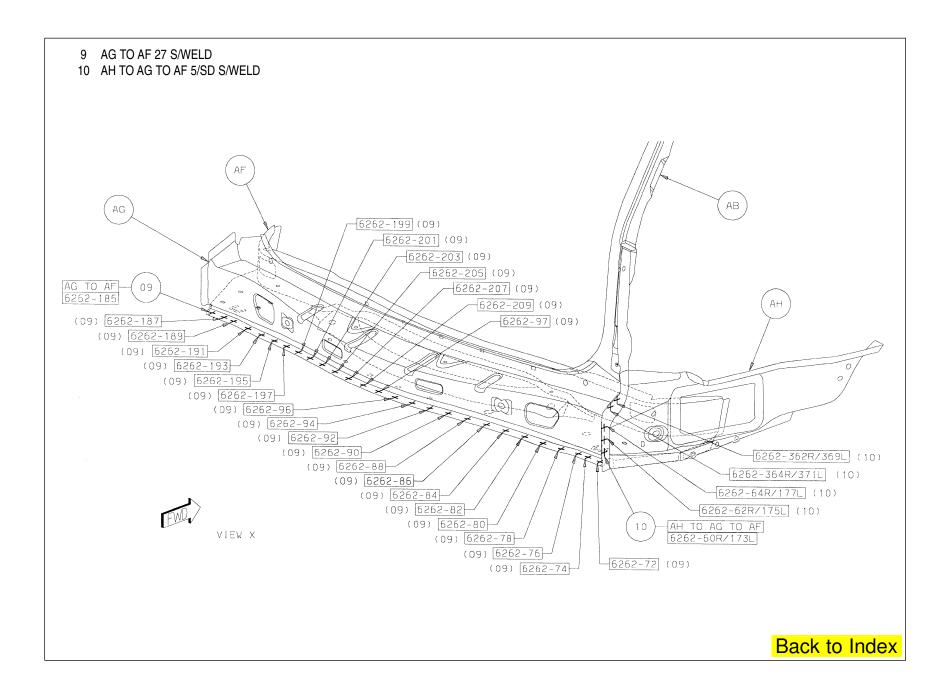


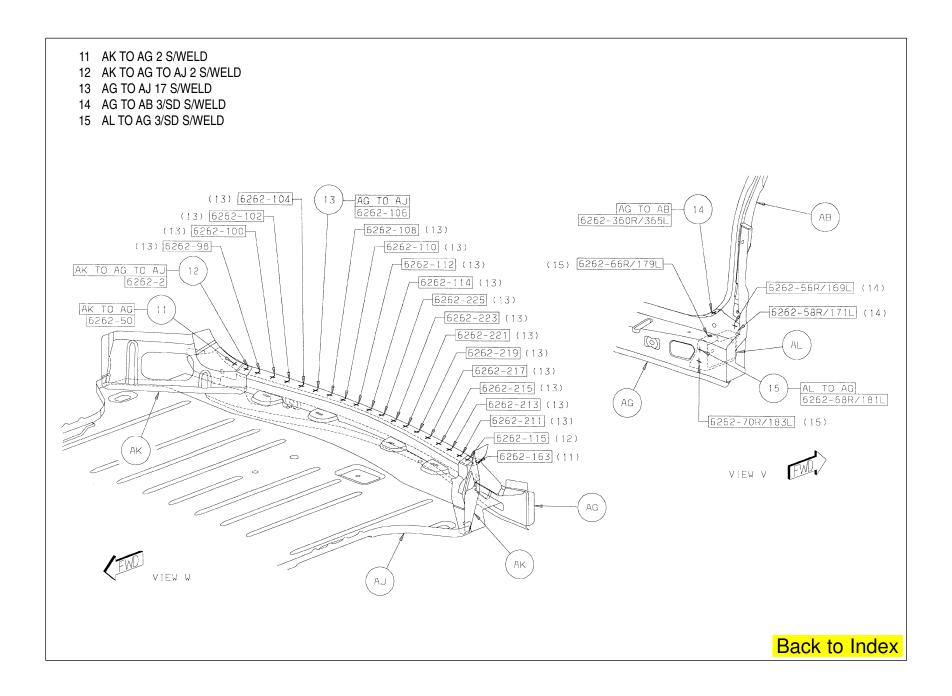
## **PARTS IDENTIFICATION LEGEND, OVERVIEW 25** AF CROSSMEMBER - RR INR -AA PANEL - ROOF W/O SUNROOF -AL BULKHEAD – LT – AB TROUGH - LIFTGATE OPENING RT -AG CROSSMEMBER - RR OTR -AM PANEL - BODY SIDE INR RT -AB TROUGH - LIFTGATE OPENING LT -AH EXTENSION – BODY SIDE OTR RR RT – AN PANEL - BODY SIDE RT -AC HEADER - RR UPR -AJ PAN – FLOOR RR – FUEL BUNDLE ATTACH – AP REINF – B-PILLAR RT – AD REINF – RR HEADER UPR AT LIFTGATE HINGE AK GUSSET – D-PILLAR LWR TO FLOOR RT – AR HEADER – LWR FRT – AD REINF – RR HEADER UPR AT LIFTGATE HINGE AK GUSSET – D-PILLAR LWR TO FLOOR LT – AS REINF - ROOF W/SUNROOF -AE 55394299 PNL ROOF W/SUNROOF AL BULKHEAD – RT – AT REINF – A-PILLAR UPR RT – Back to Index

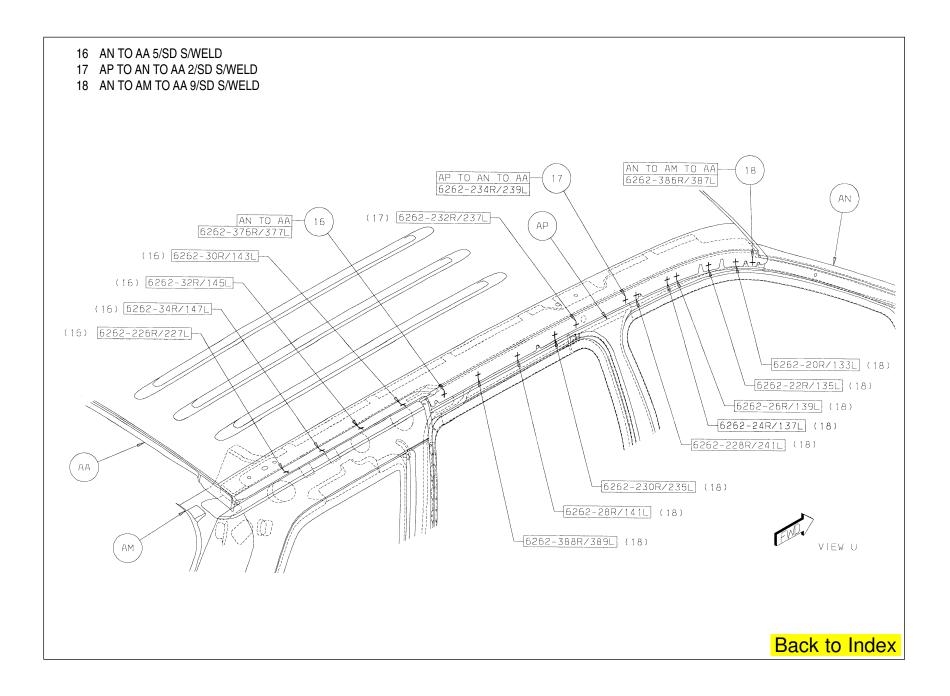


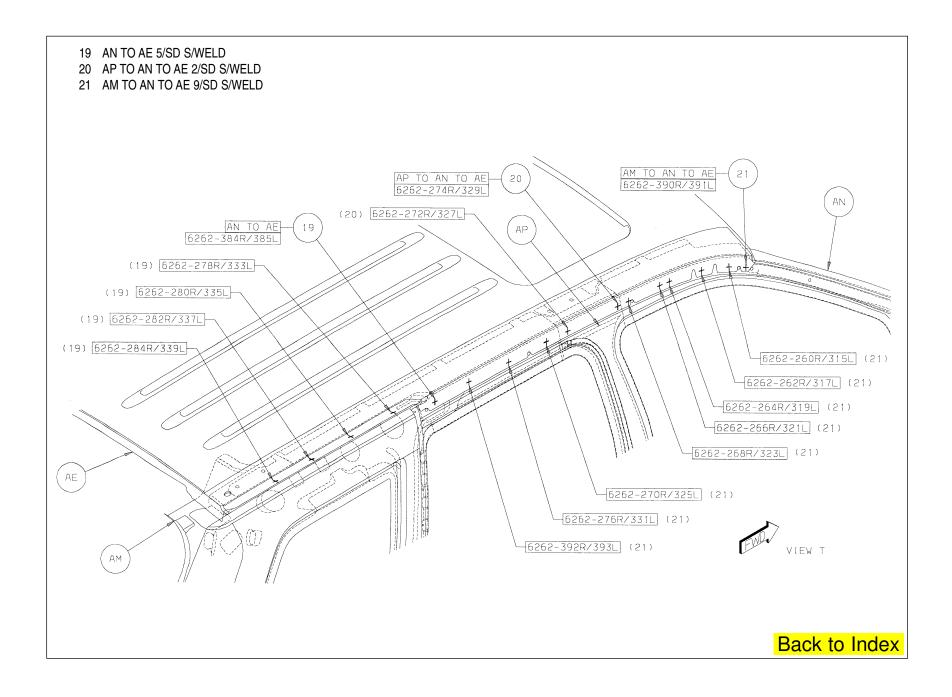


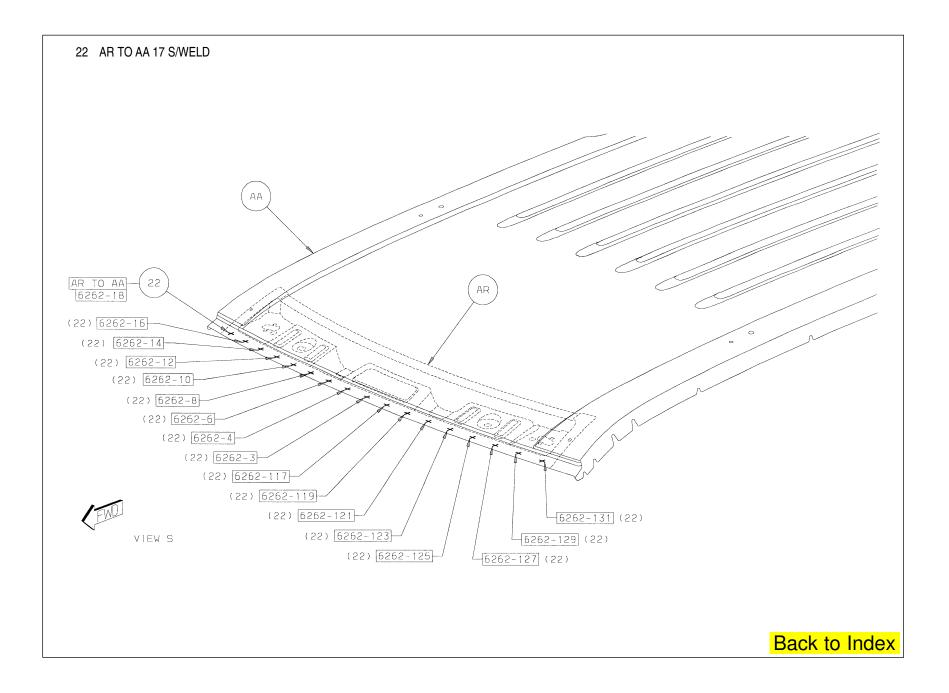


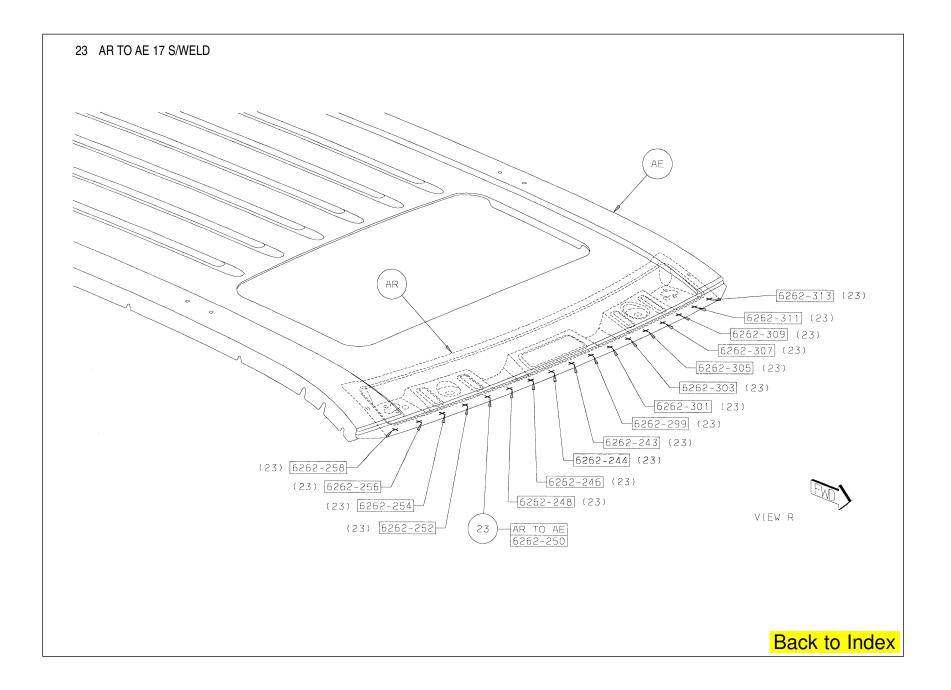


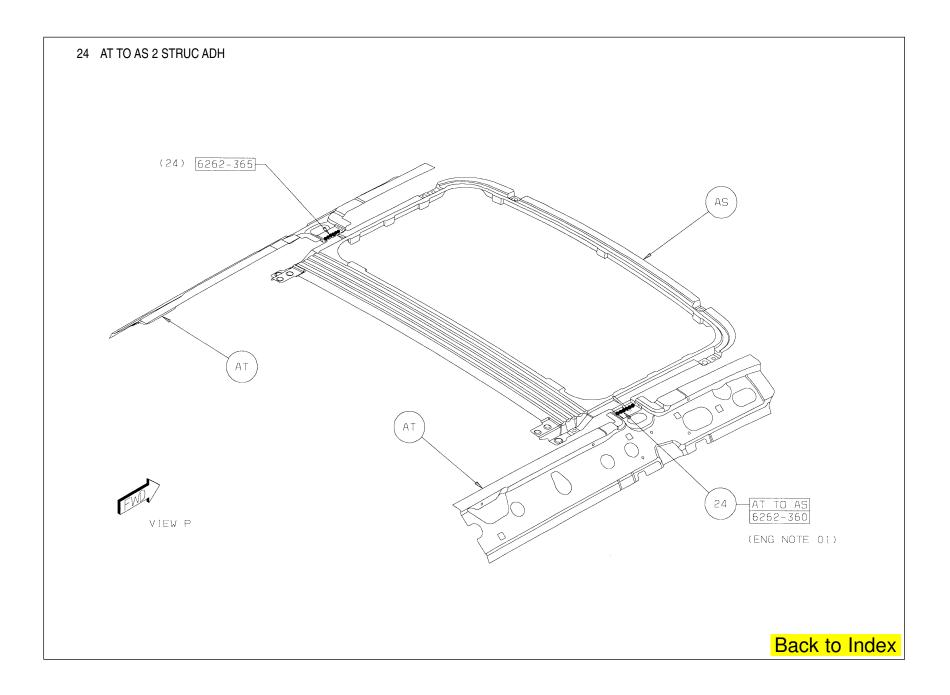












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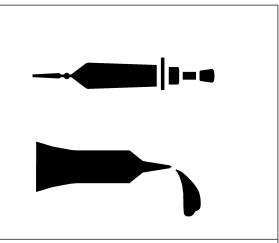
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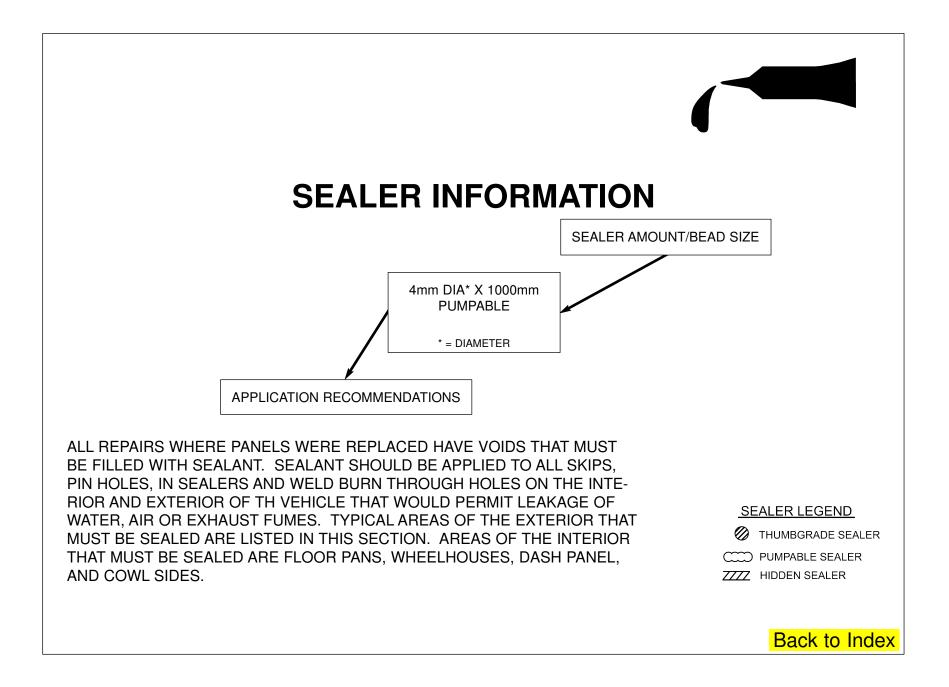
### Sealer/Sound Deadener/ Structural Adhesive/ Foam Locations Jeep Grand Cherokee



This section shows the different locations for Sealers, Sound Deadeners and Structural Adhesives and has been prepared for use by all body technicians involved in the repair of Jeep Grand Cherokee.

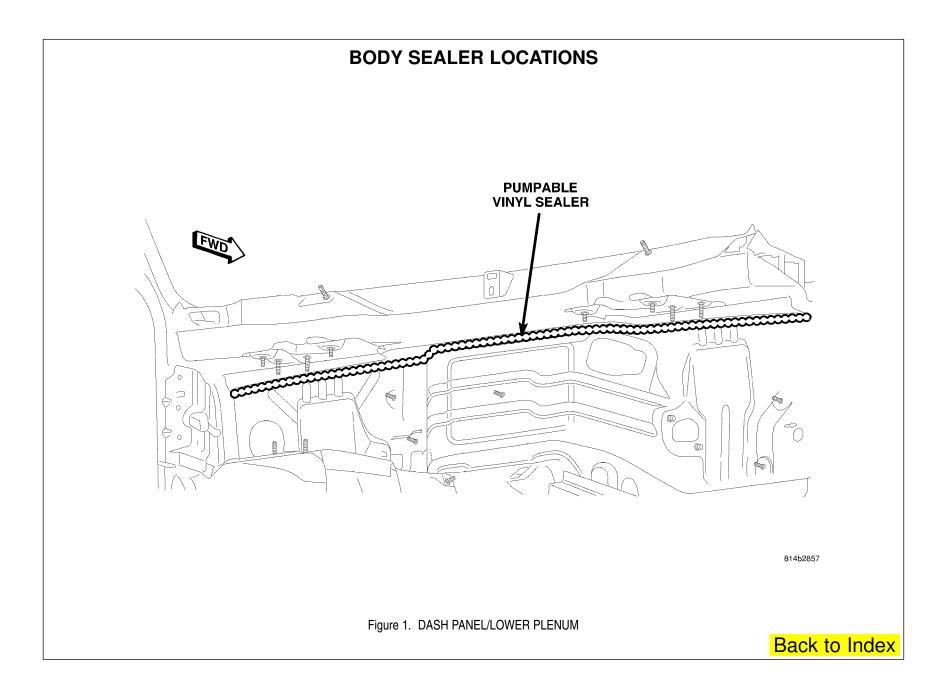
Body/Paint Sealer Locations
Structural Adhesive Locations
NVH/Structural Foam Locations
Sound Deadener Locations

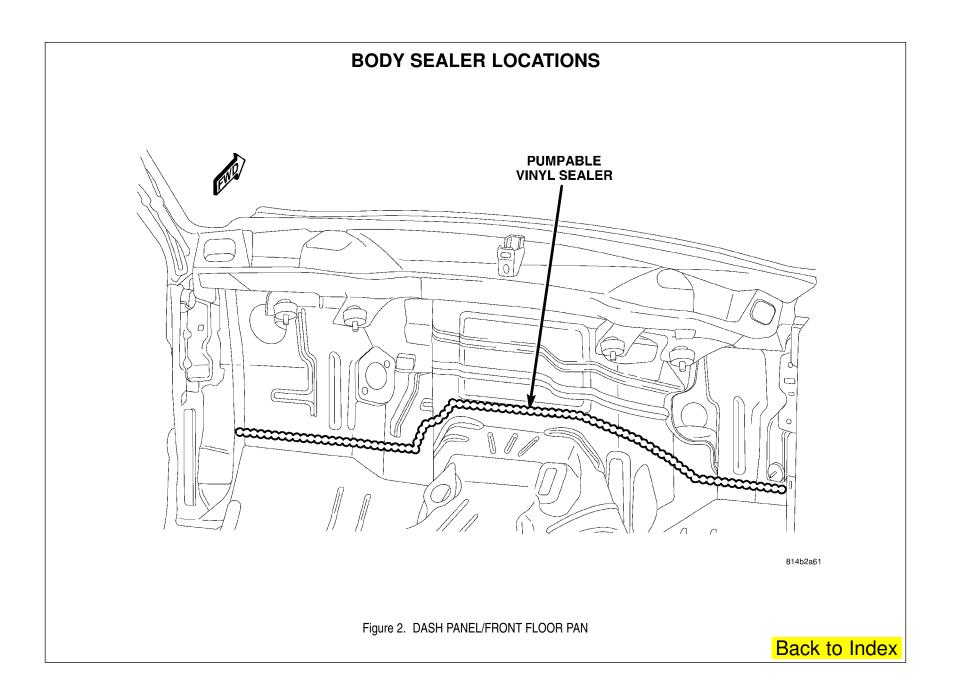
DaimlerChrysler Motors Corporation reserves the right to make improvements in design or to change specifications to these vehicles without incurring any obligation upon itself.

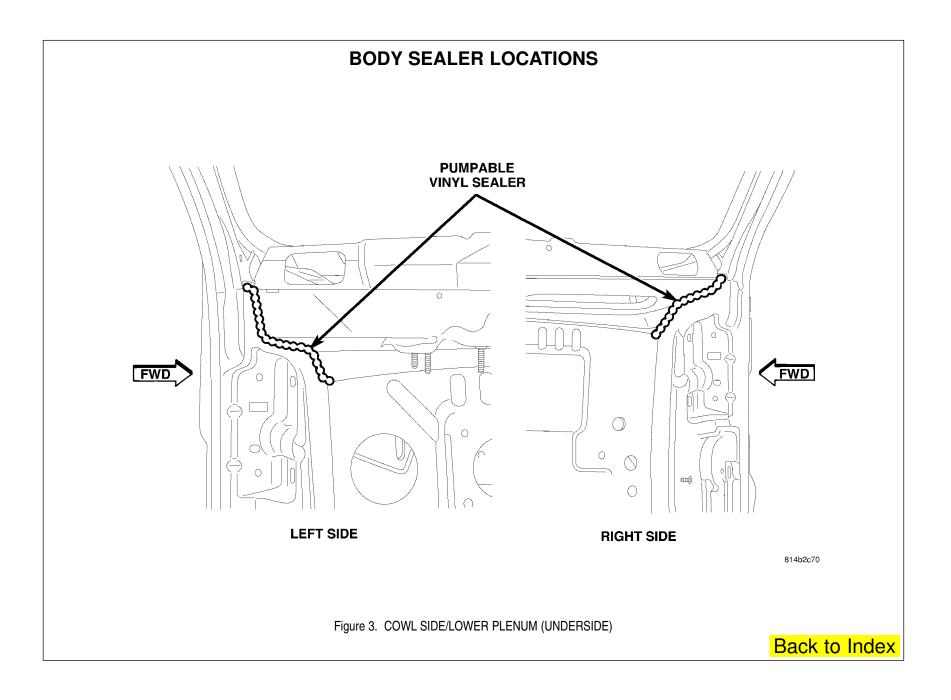


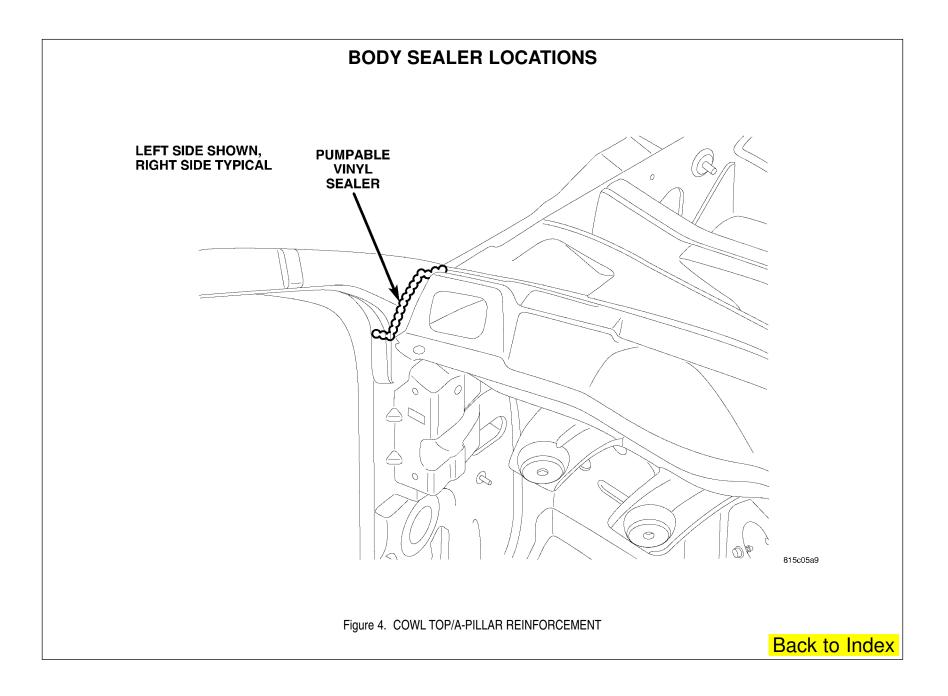
#### **BODY SEALER LOCATIONS**

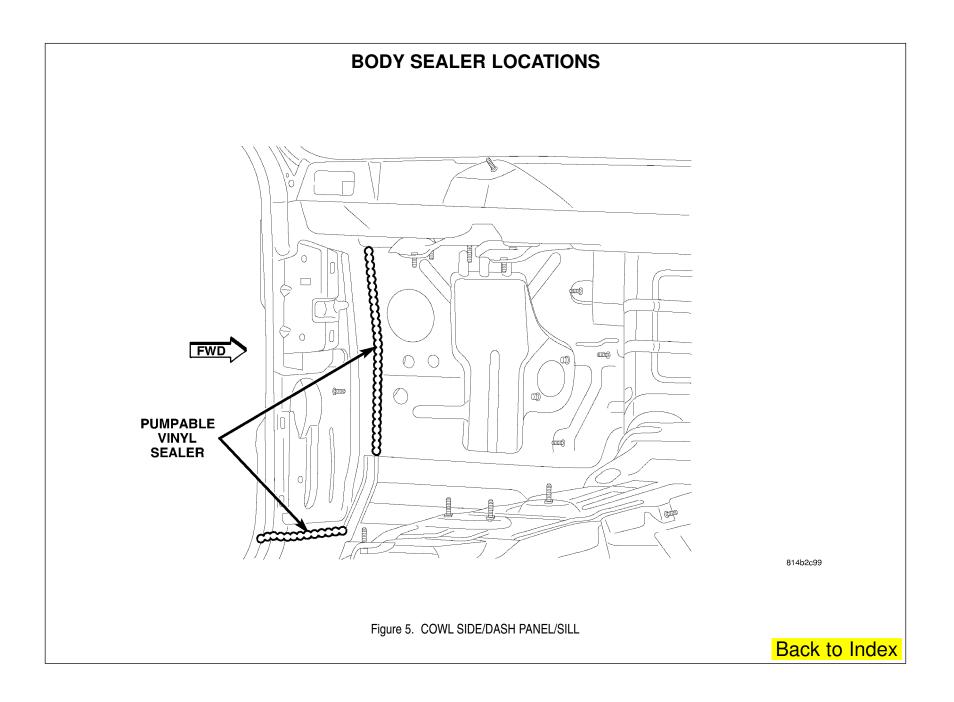
DESCRIPTION	FIGURE
DASH PANEL/LOWER PLENUM	1
DASH PANEL/FRONT FLOOR PAN	2
COWL SIDE/LOWER PLENUM (UNDERSIDE)	3
COWL TOP/A-PILLAR REINFORCEMENT	4
COWL SIDE/DASH PANEL/SILL	5
ROOF/BODY SIDE WINDSHIELD HEADER	6
FRONT FLOOR PAN/REAR FLOOR PAN	7
REAR FLOOR PAN/REAR WHEELHOUSE	8
D-PILLAR GUSSET	9
FLOOR PAN/SILL/PARKING BRAKE	10
REAR WHEELHOUSE—RIGHT SIDE	11
REAR WHEELHOUSE—LEFT SIDE	12
REAR ROOF/BODY SIDE APERTURE	13
D-PILLAR/REAR HEADER	14
TAIL LAMP CAN/BODY SIDE EXTENSION	15
STEERING COLUMN BRACKET	16
FLOOR PAN SEALER PLUGS	17
D-PILLAR GUSSET SEALER PATCHES	18
COWL TOP SEALER PATCHES	19
REAR CROSSMEMBER SEALER PATCHES	20
TAIL LAMP CAN SEALER PATCHES	21

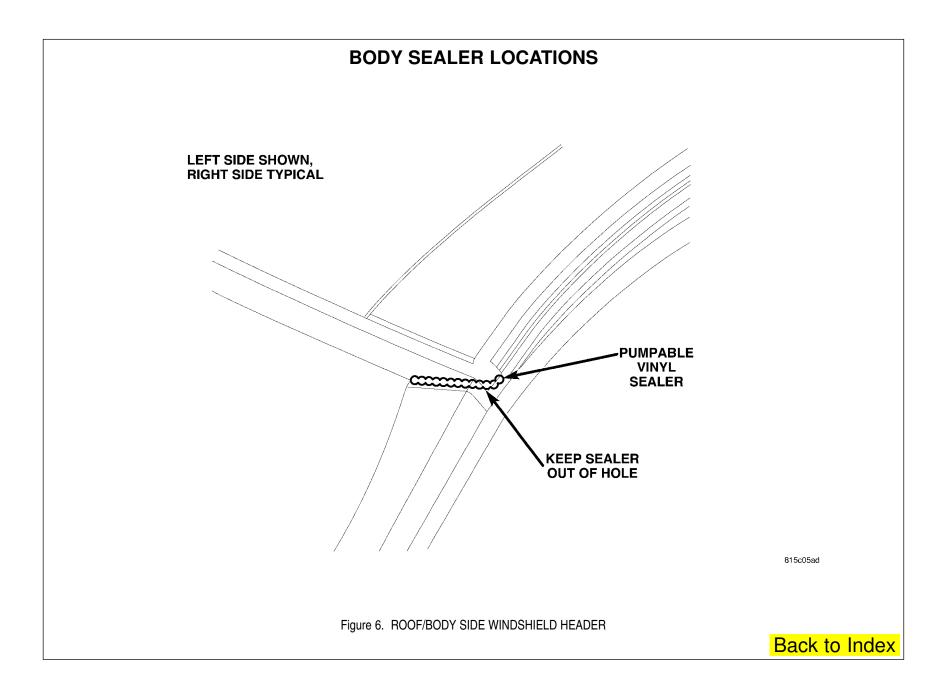


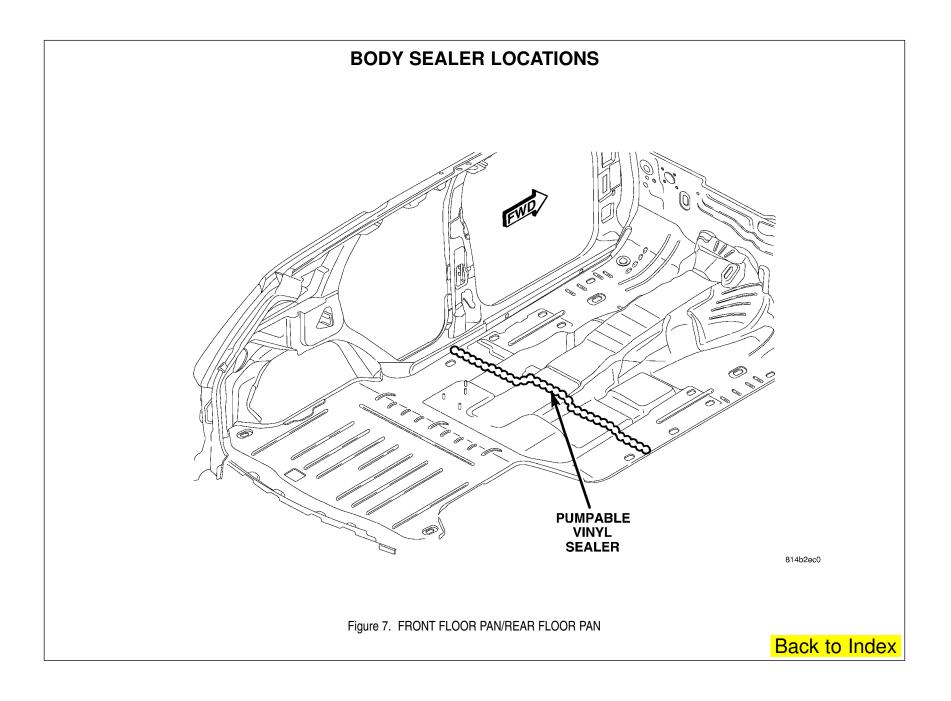


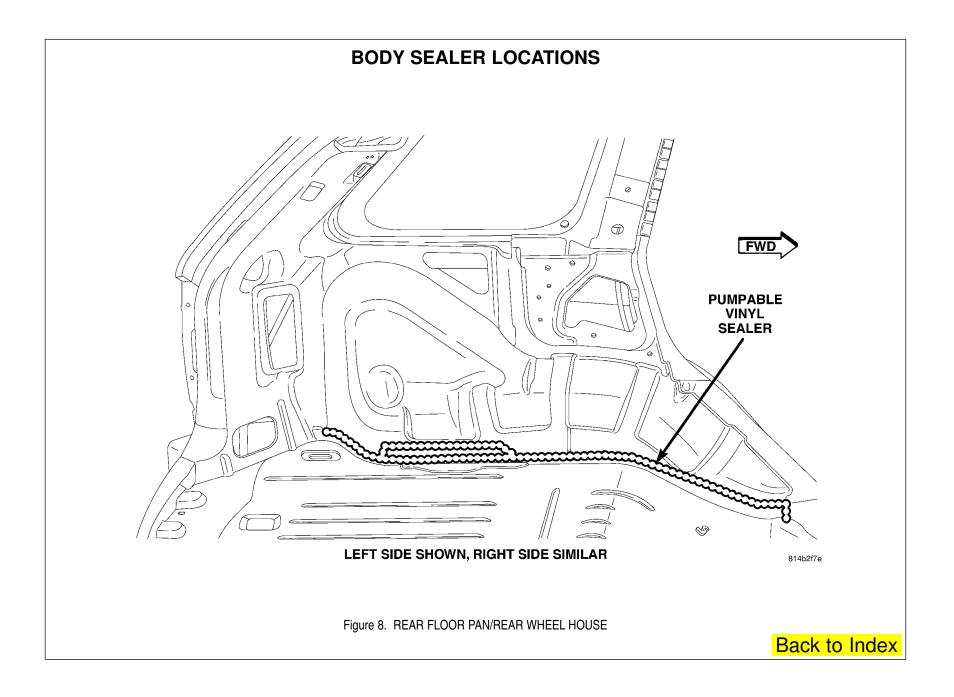


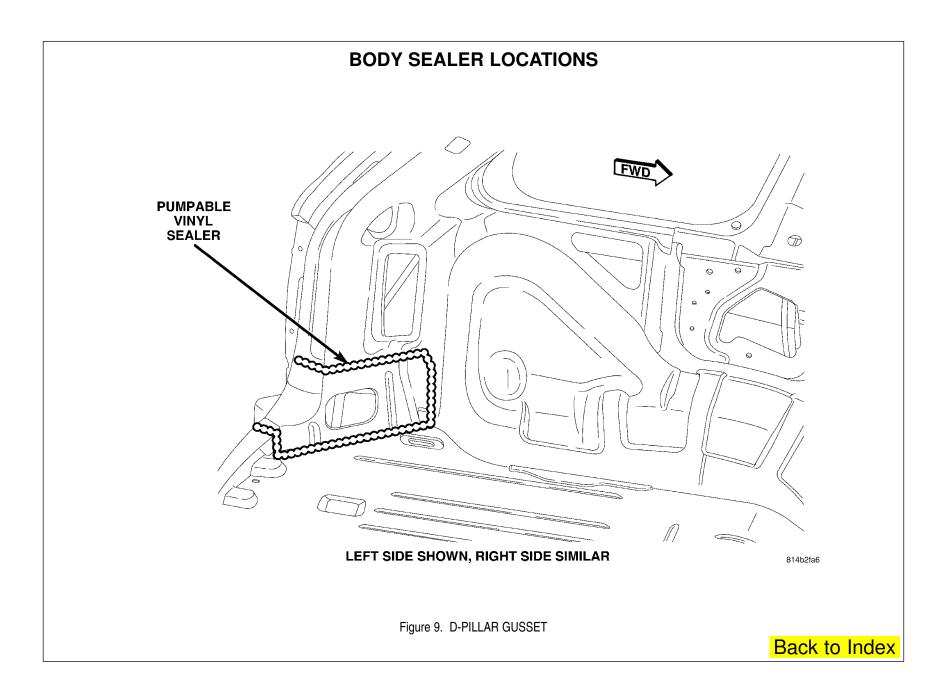


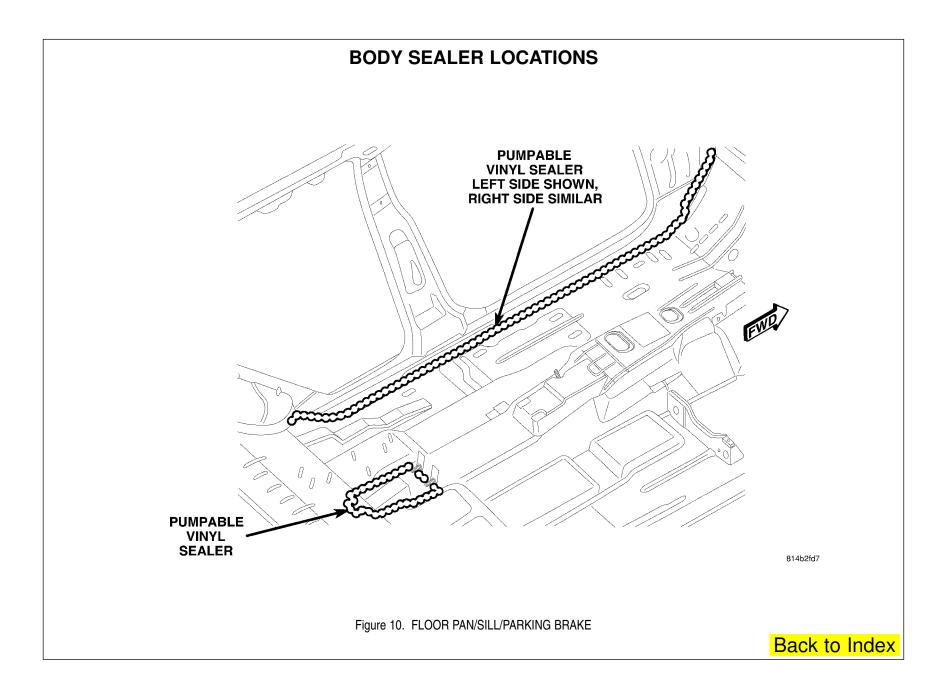


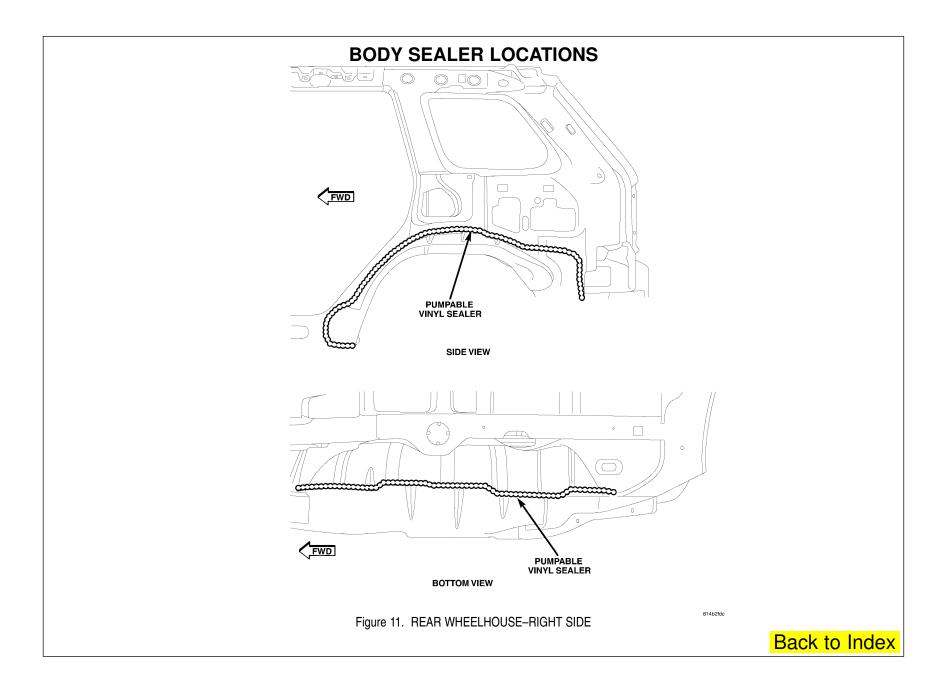


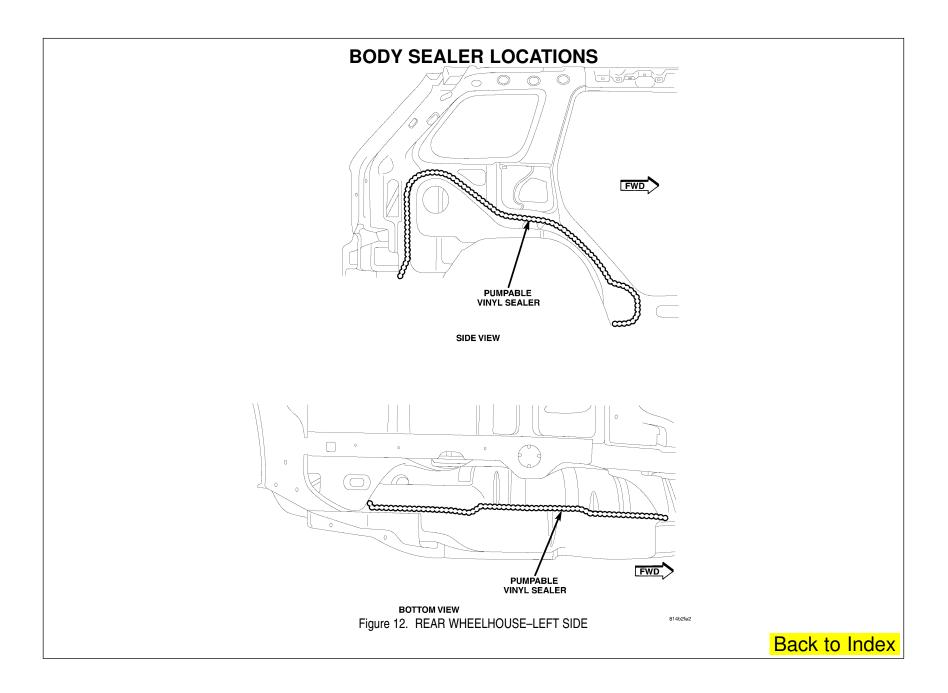


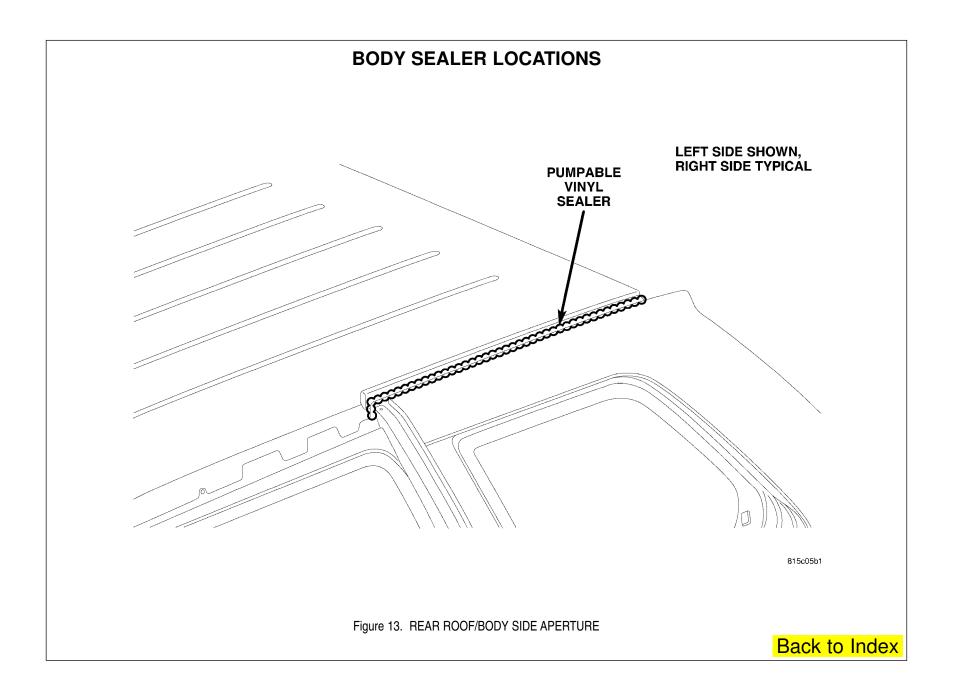


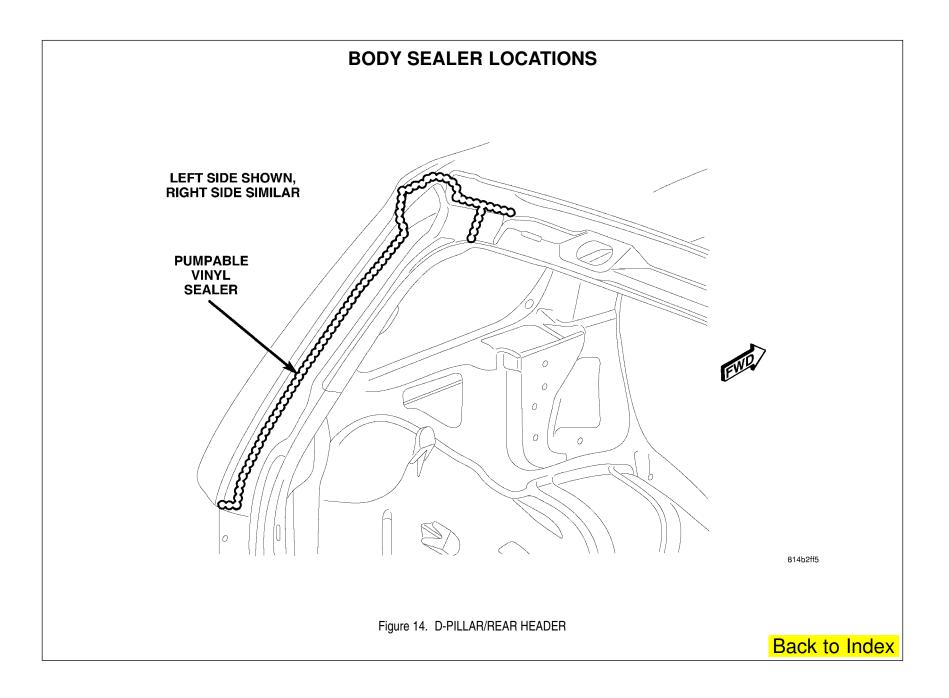


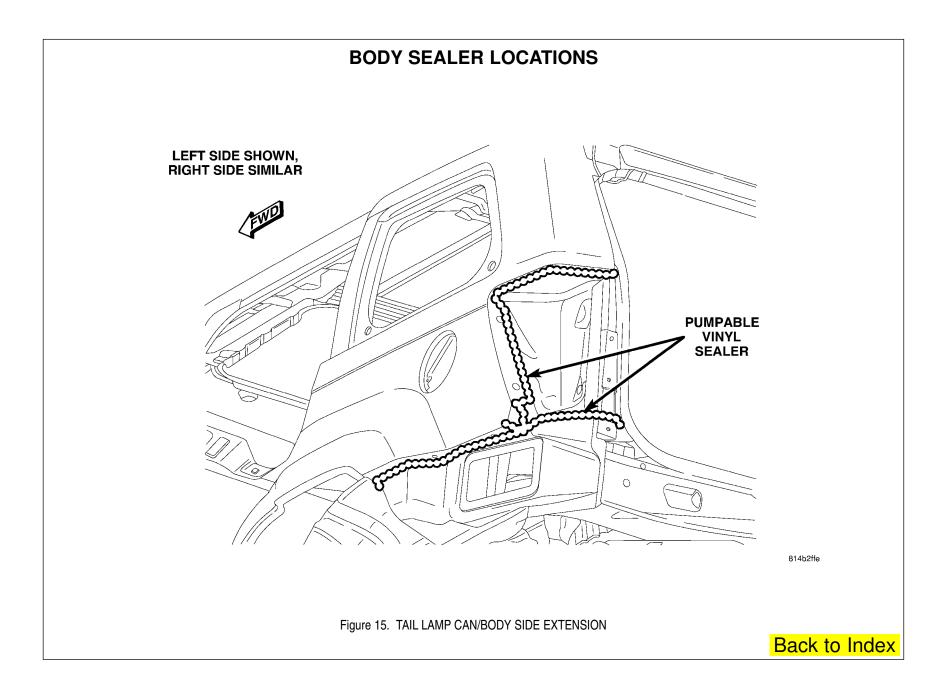


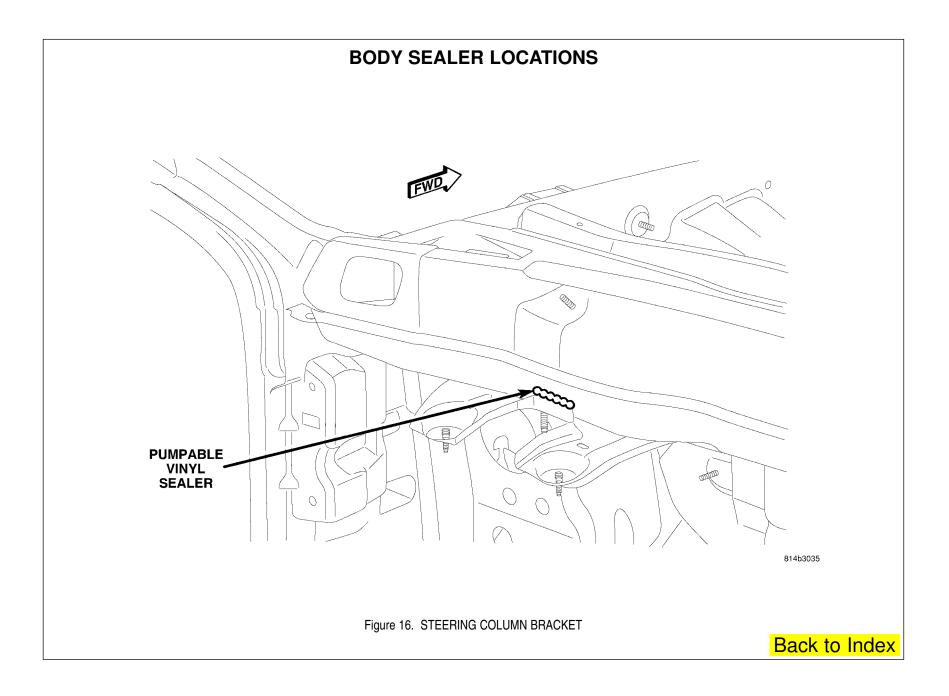


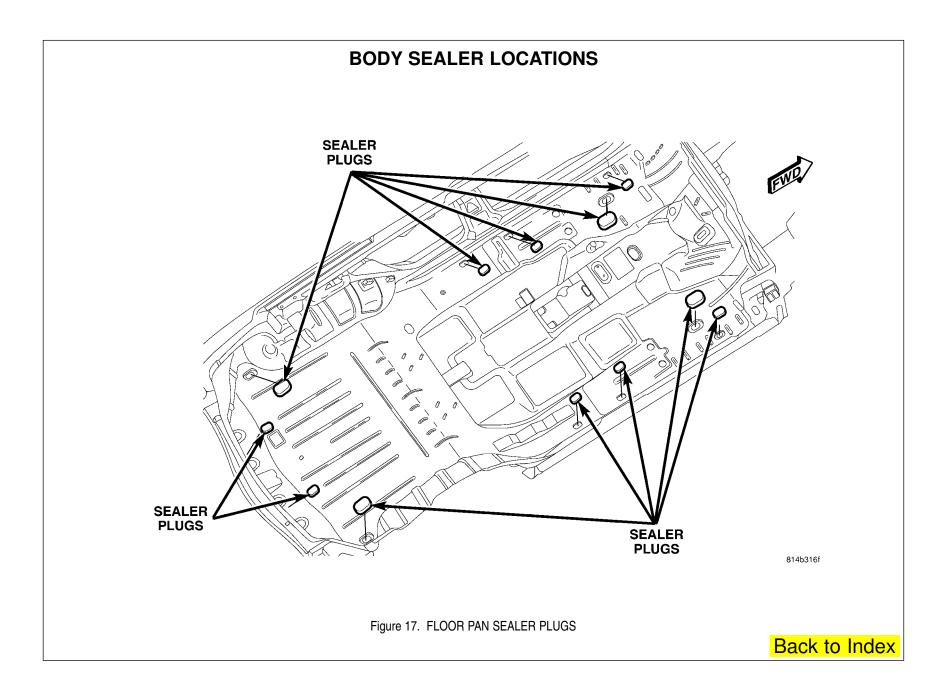


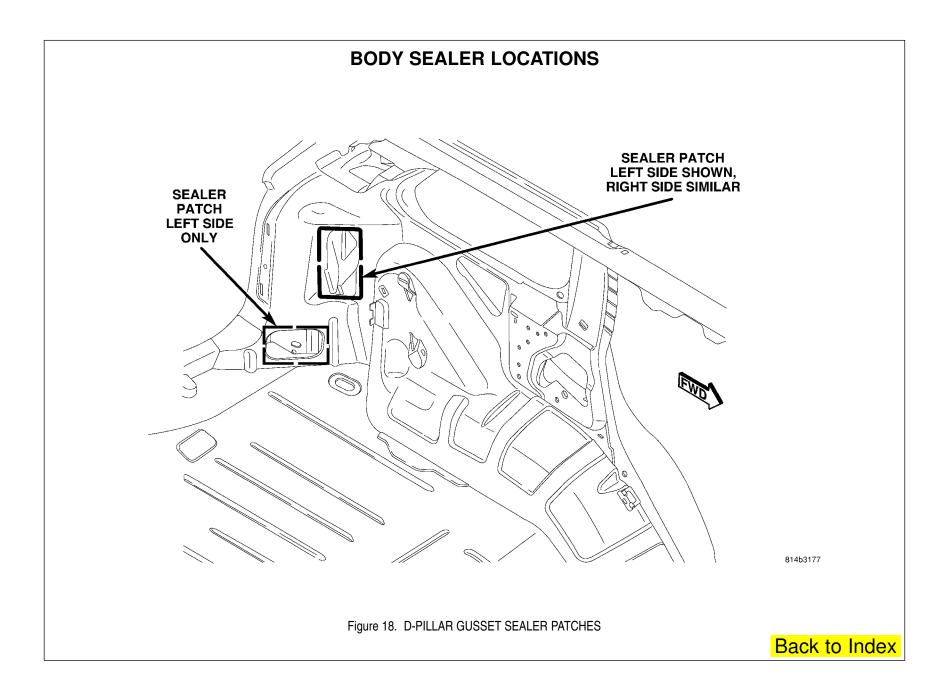


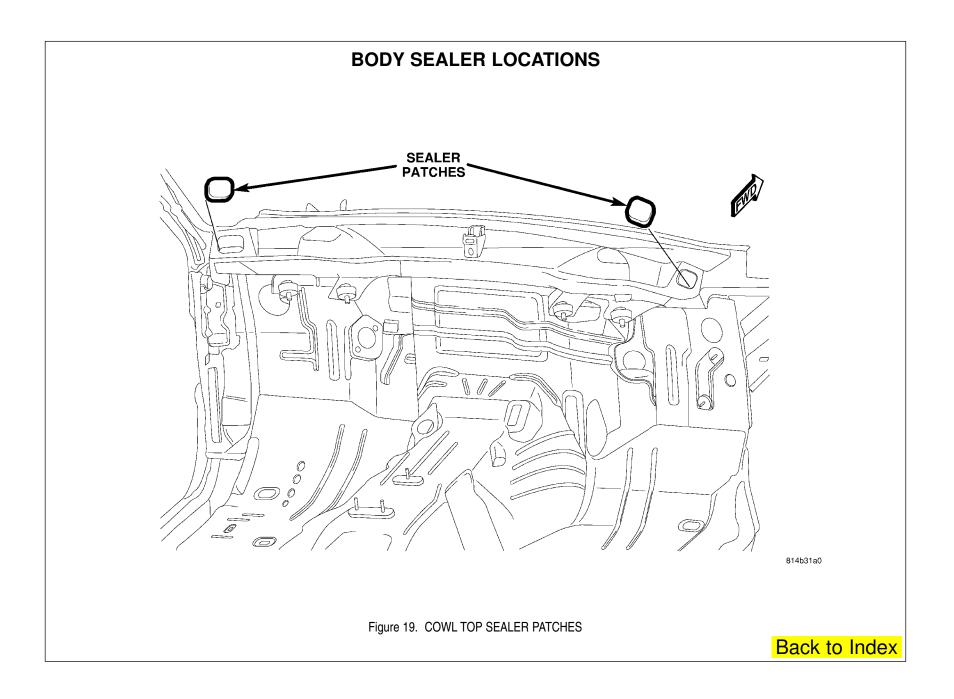


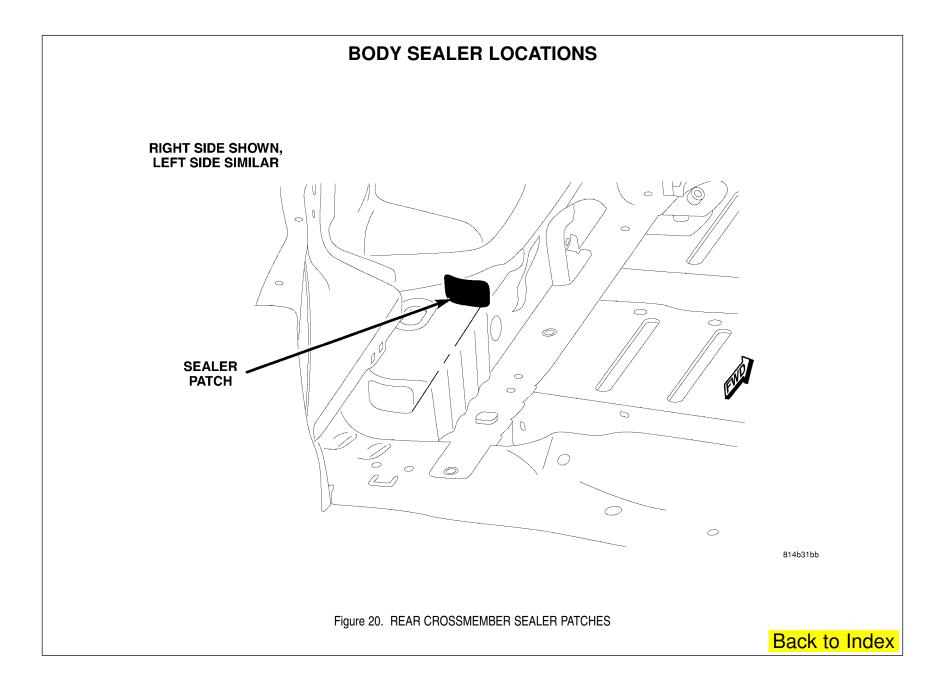


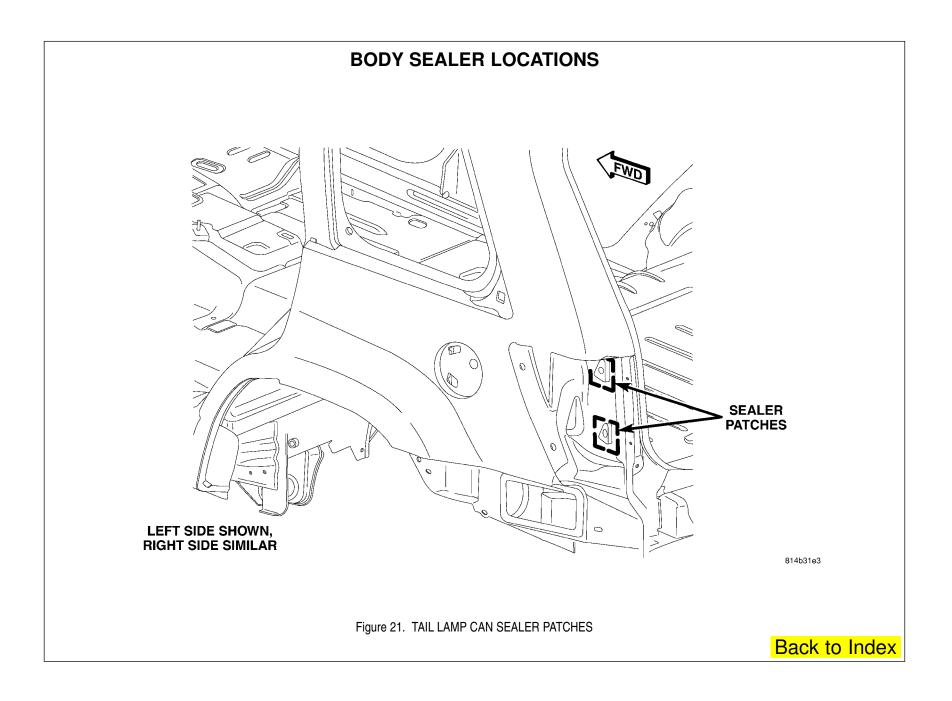










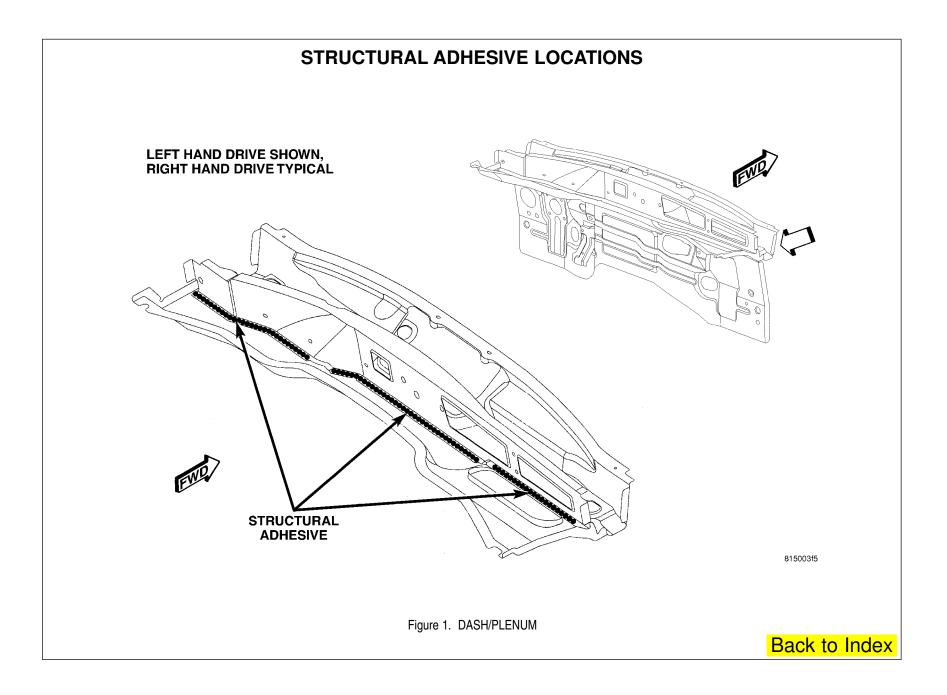


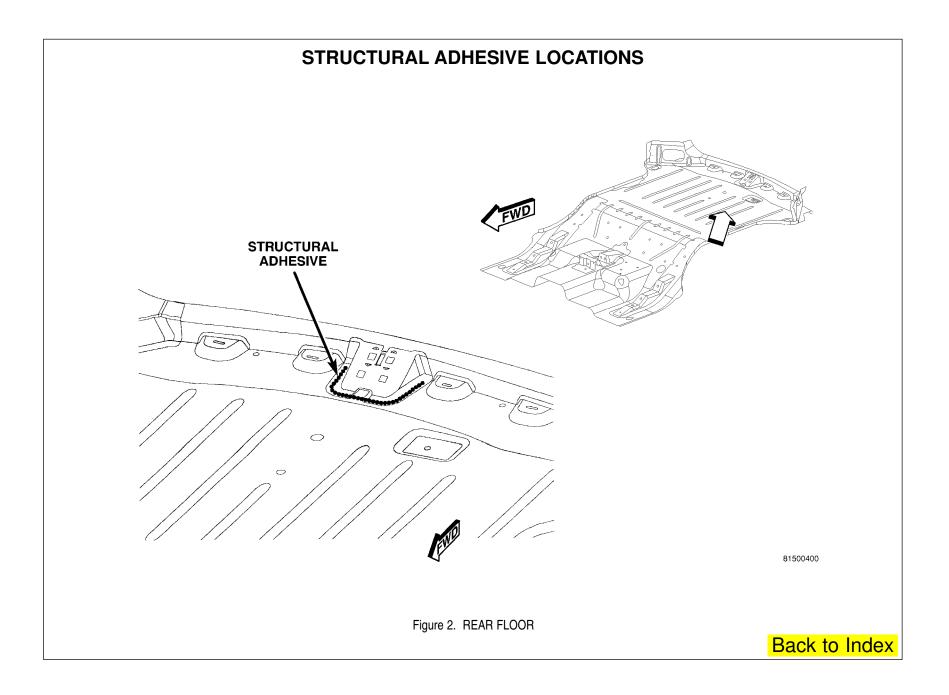
# GRAND CHEROKEE STRUCTURAL ADHESIVE LOCATIONS

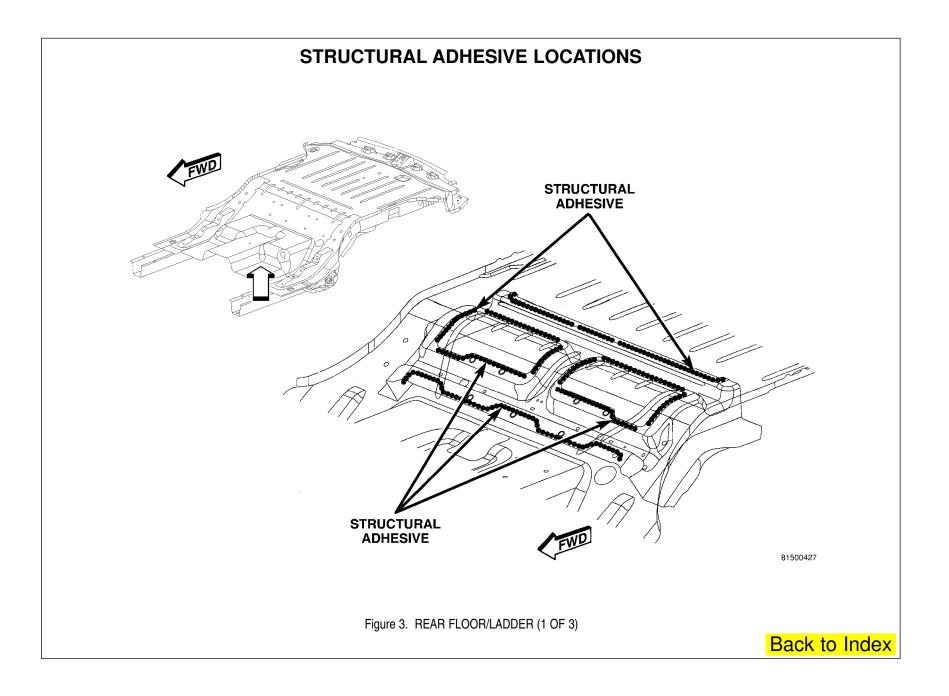
### STRUCTURAL ADHESIVE LOCATION INDEX

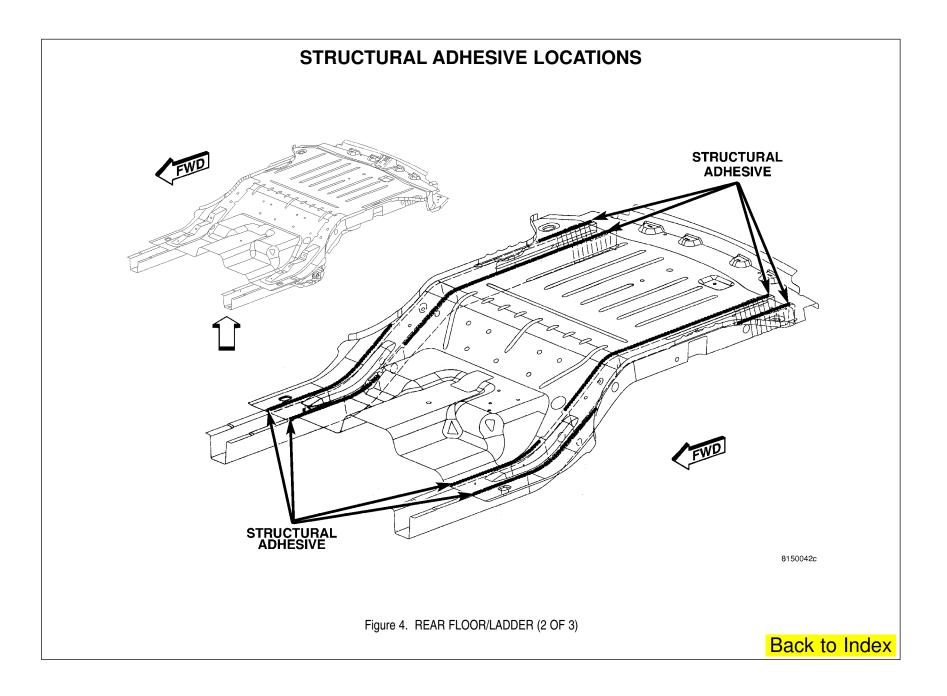
NOTE: Structural Adhesives used are a high strength epoxy and a high expansion lower strength antiflutter material. High strength epoxy is used on all areas.

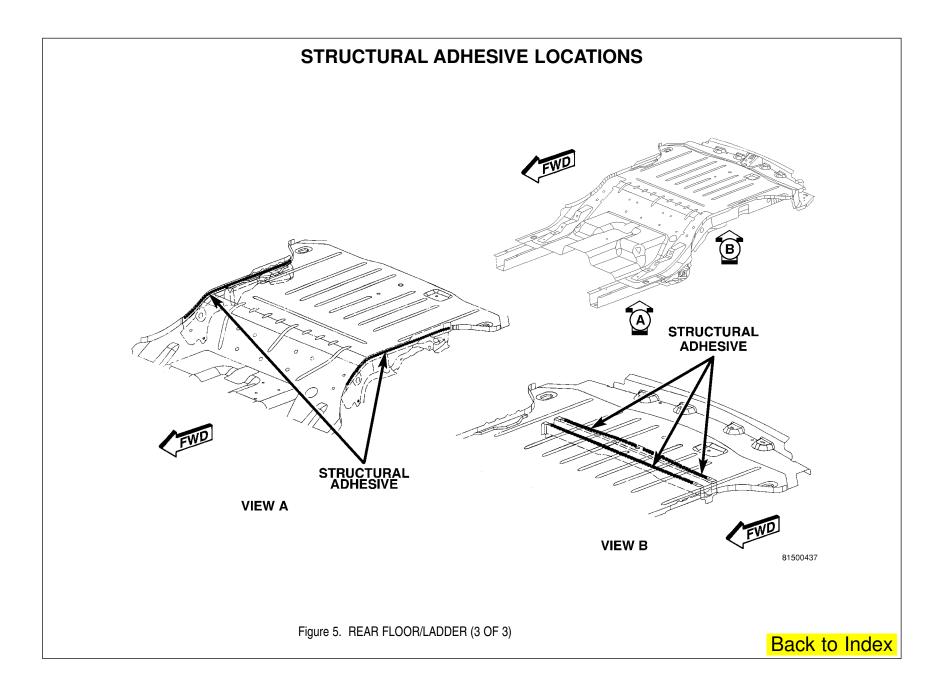
DESCRIPTION	FIGURE
DASH/PLENUM	1
REAR FLOOR	2
REAR FLOOR/LADDER (1 OF 3)	3
REAR FLOOR/LADDER (2 OF 3)	4
REAR FLOOR/LADDER (3 OF 3)	5
UNDERBODY COMPLETE (1 OF 2)	6
UNDERBODY COMPLETE (2 of 2)	7
OUTER BODY SIDE APERTURE	8
BODY SIDE APERTURE COMPLETE	9
BODY SIDE SILL/EXTENSION	10
INNER REAR WHEELHOUSE (1 OF 2)	11
INNER REAR WHEELHOUSE (2 OF 2)	12
LIFTGATE OPENING HEADER	13
SUNROOF FRAME	14
ROOF/SUNROOF	15

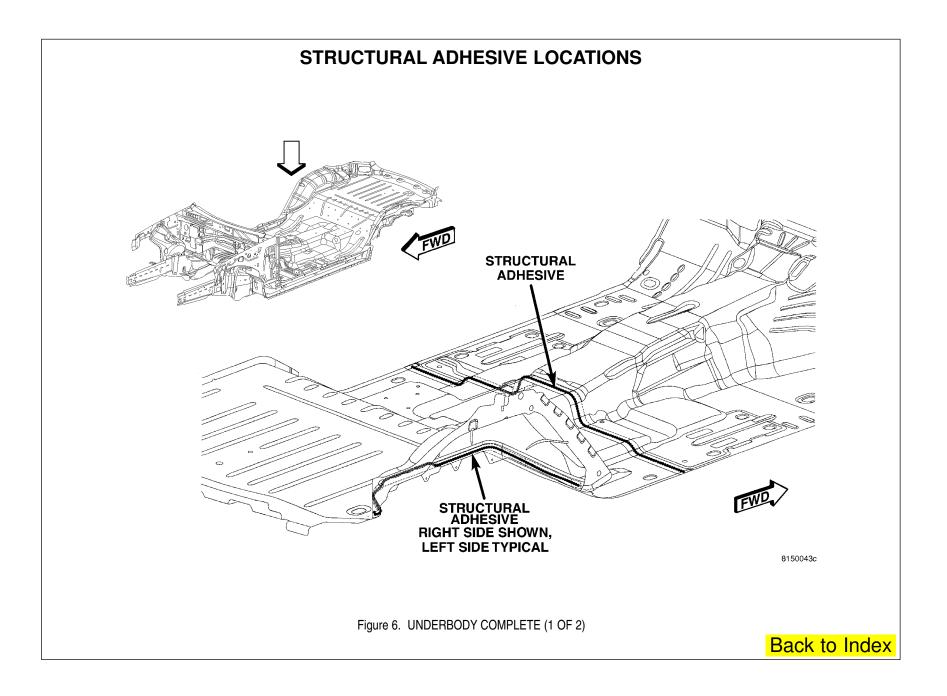


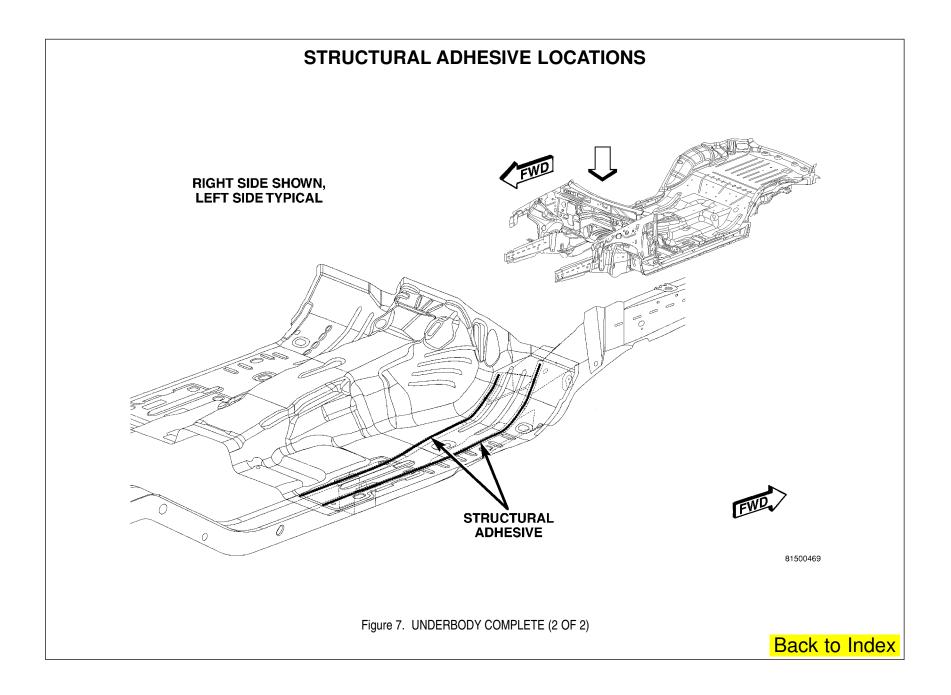


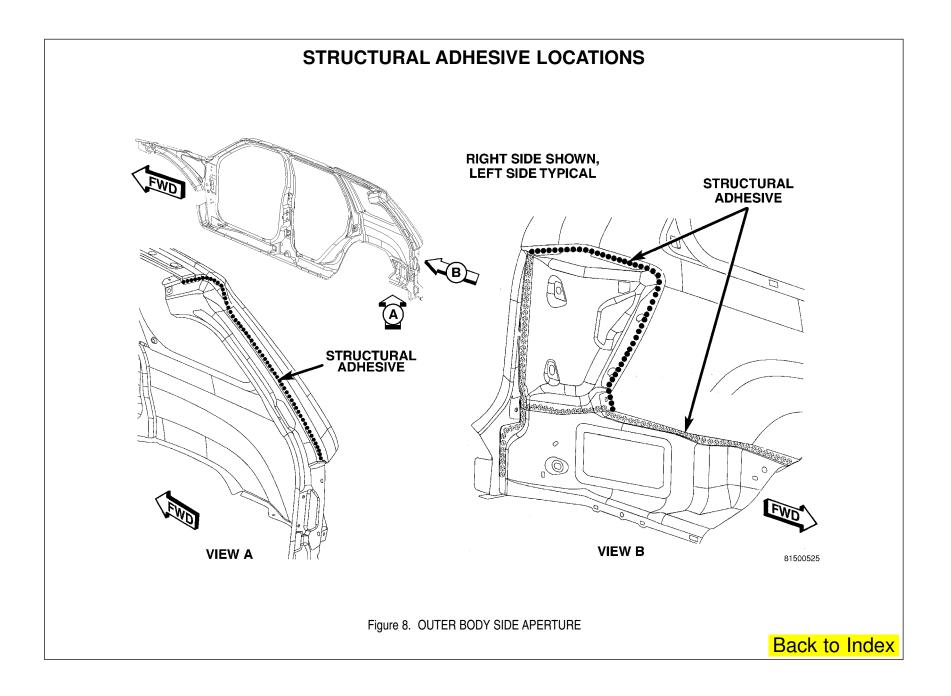


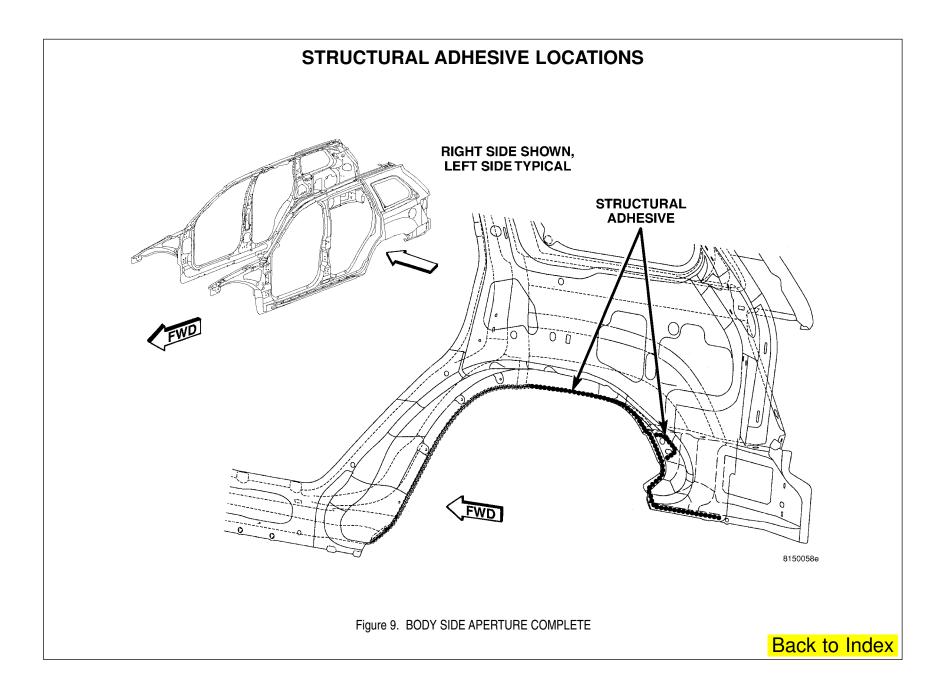


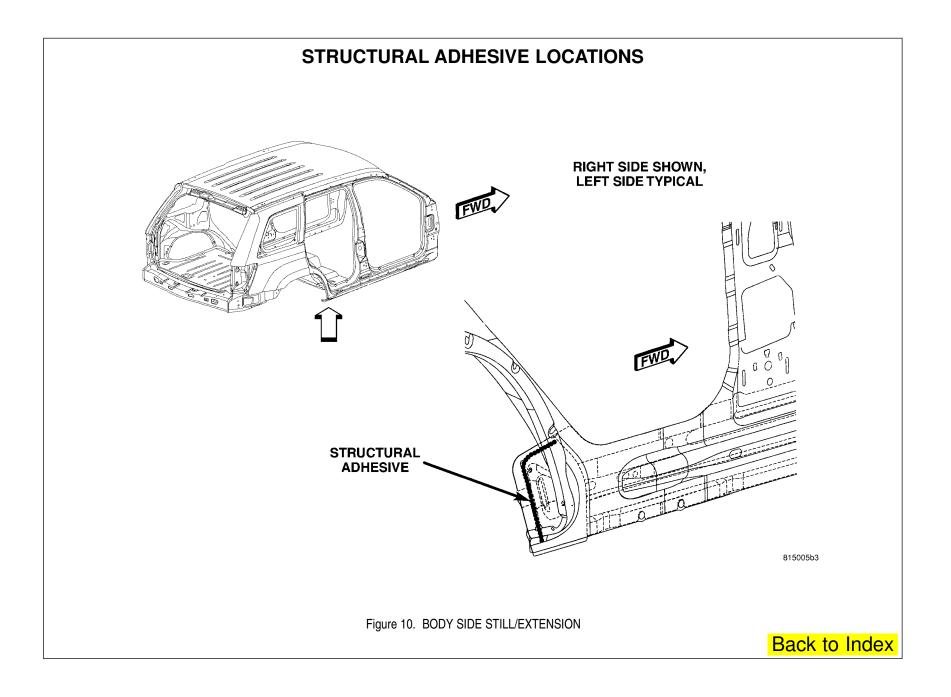


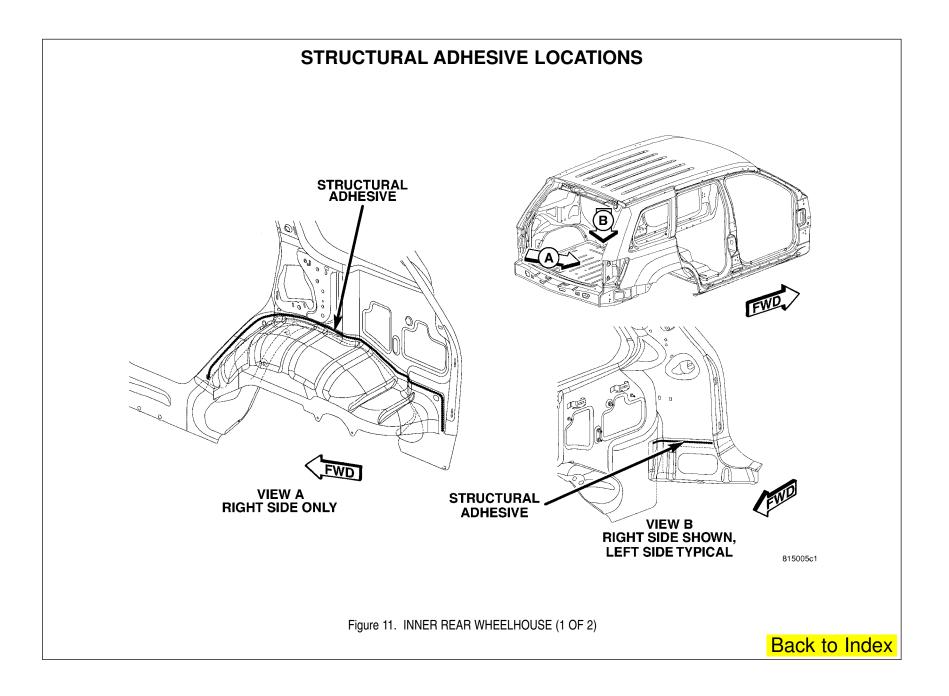


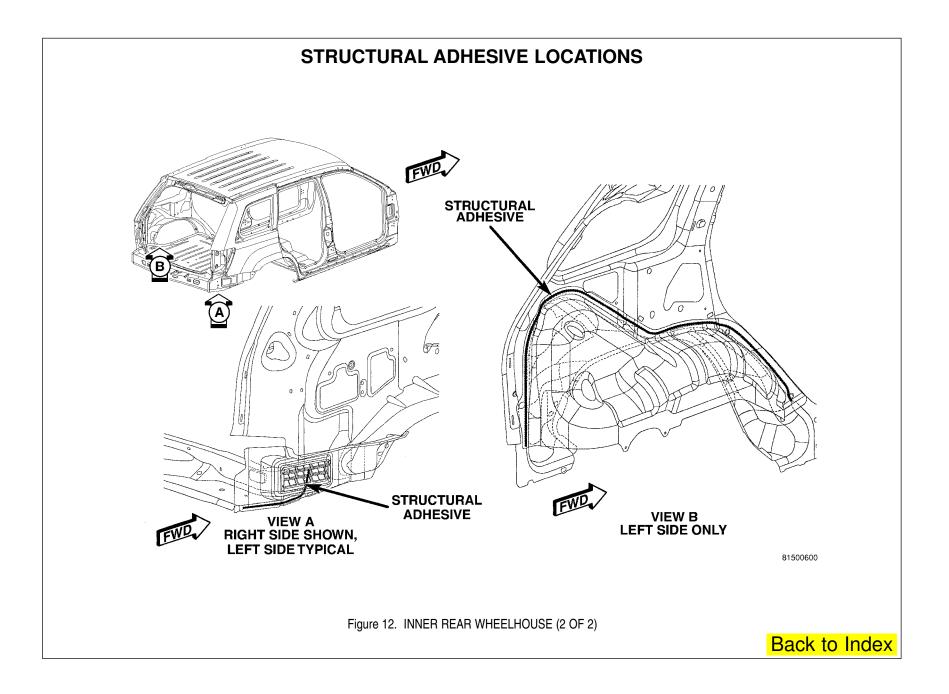


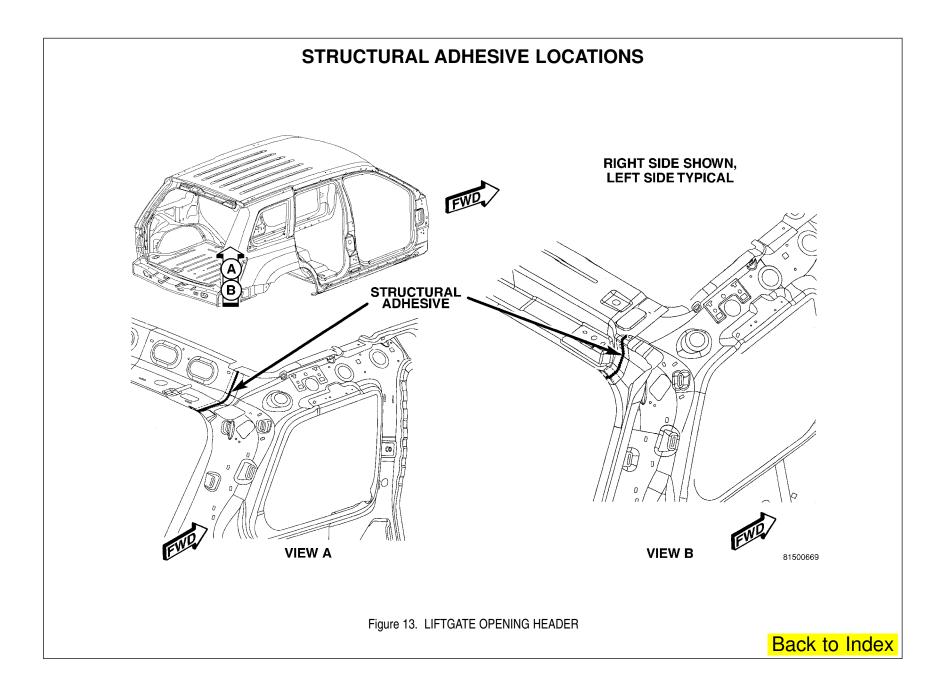


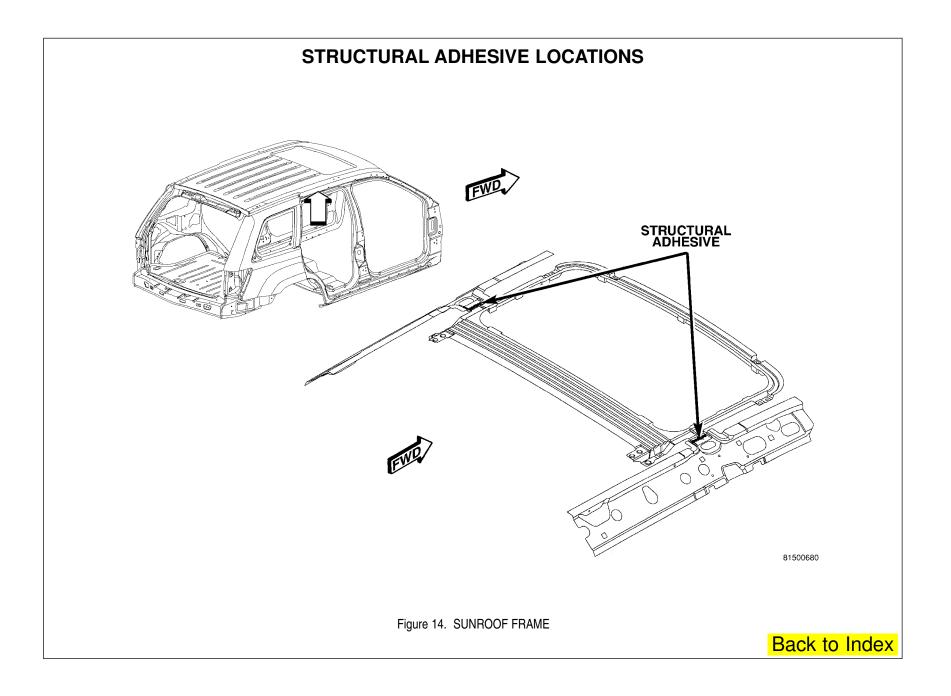


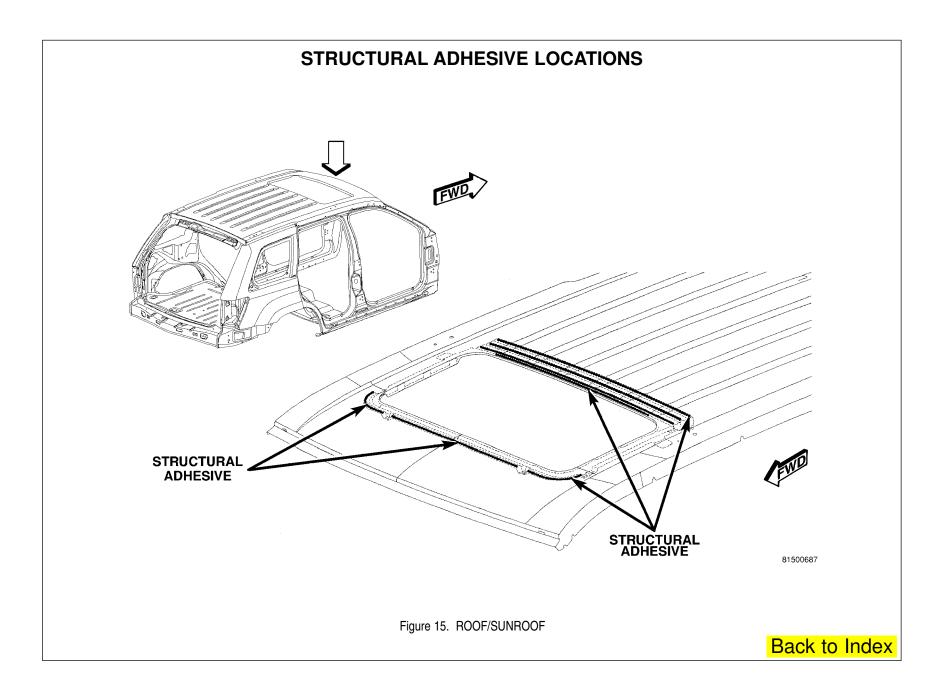














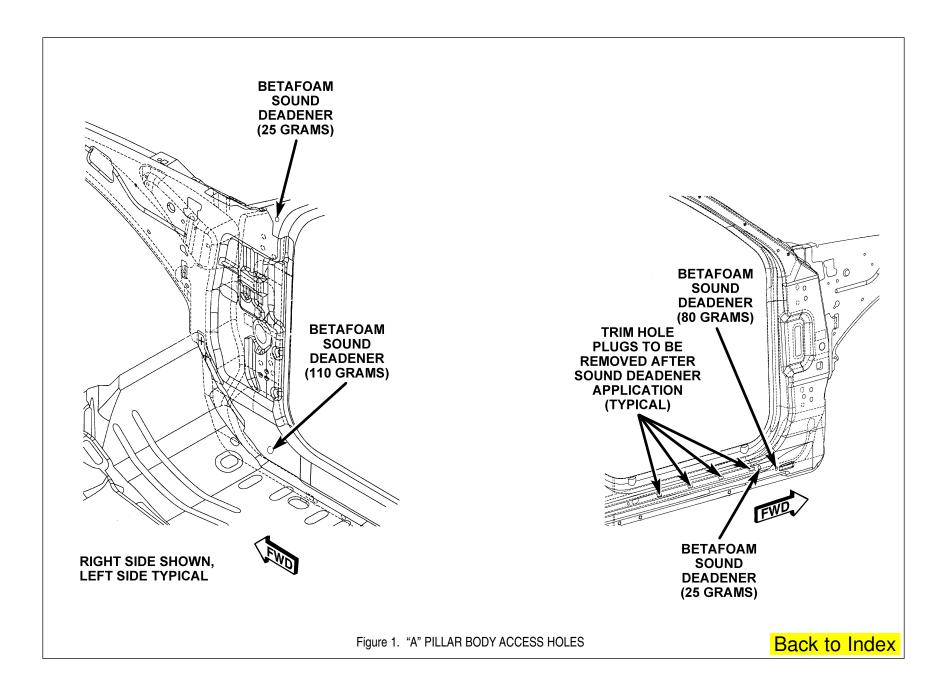
# 2005 Jeep Grand Cherokee

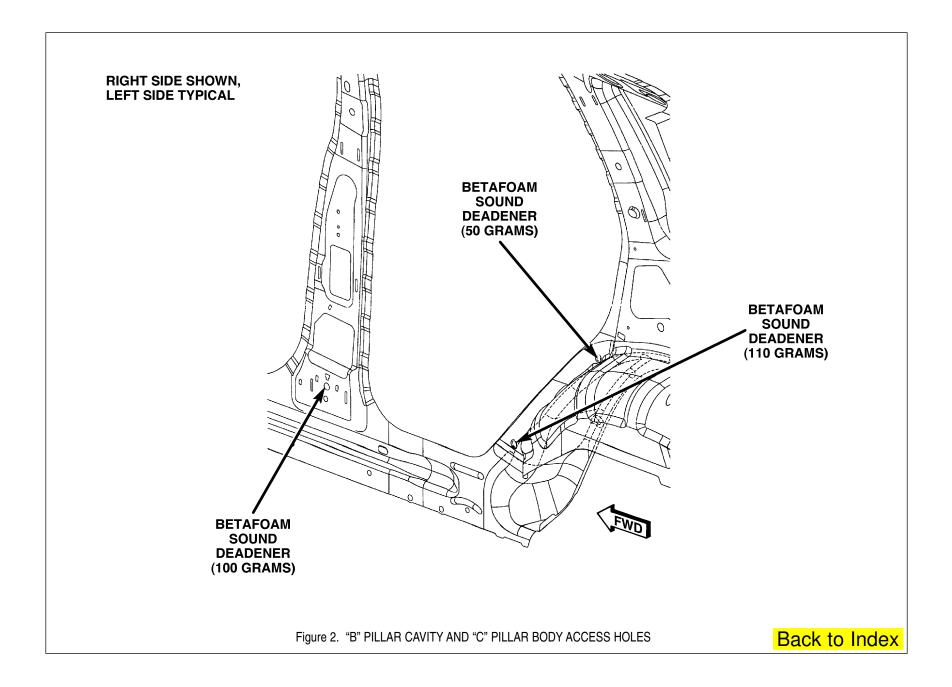
# NVH/STRUCTURAL FOAM INFORMATION

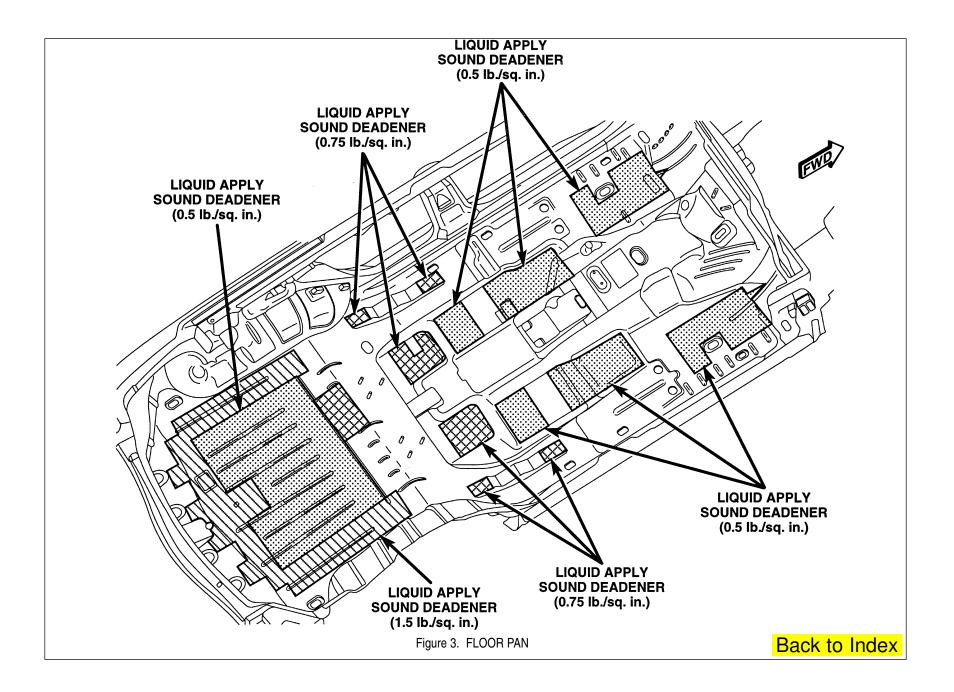
# SOUND DEADENER

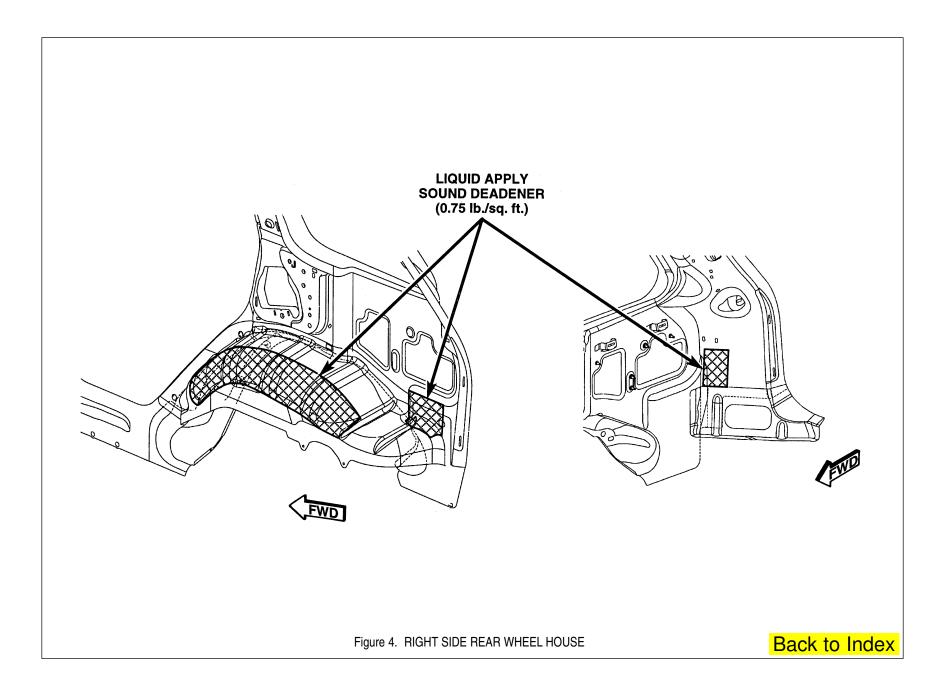
# JEEP GRAND CHEROKEE NVH/STRUCTURAL FOAM/ SOUND DEADENER LOCATIONS

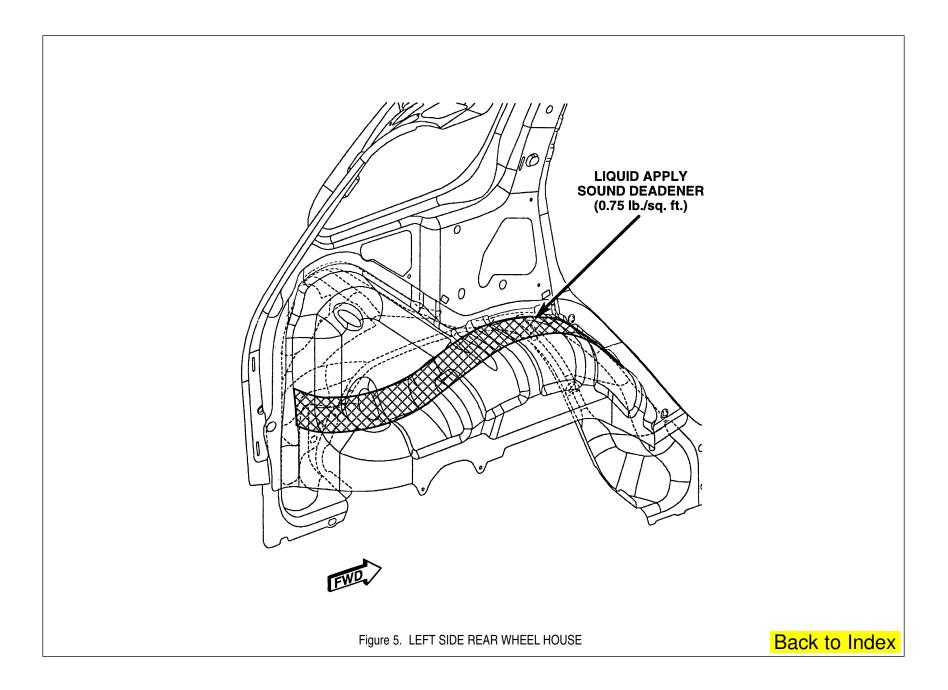
FIGURE	DESCRIPTION	
1	"A" Pillar Body Access Holes	
2	"B" Pillar Cavity and "C" Pillar Body Access Holes	
3	Floor Pan	
4	Right Side Rear Wheelhouse	
5	5 Left Side Rear Wheelhouse	
6	"D" Pillar Body Access Holes	

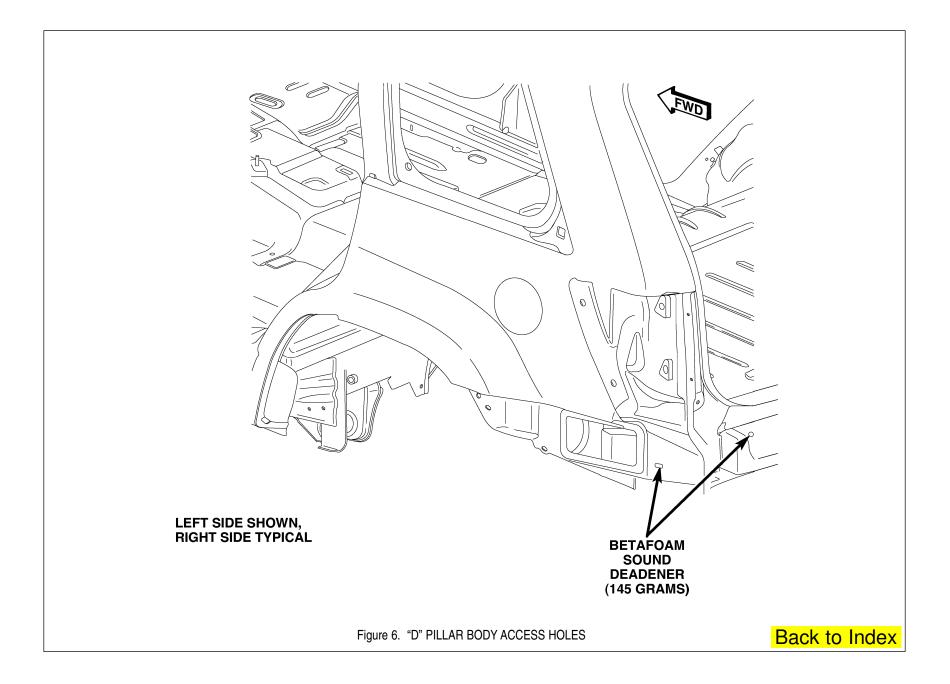


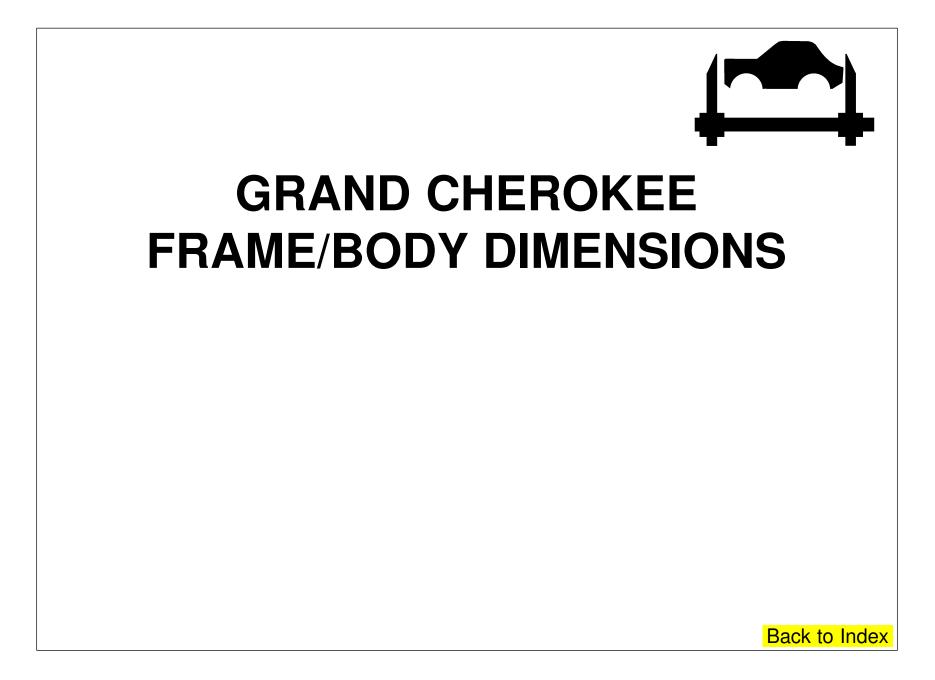


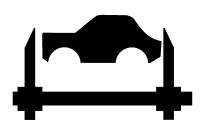










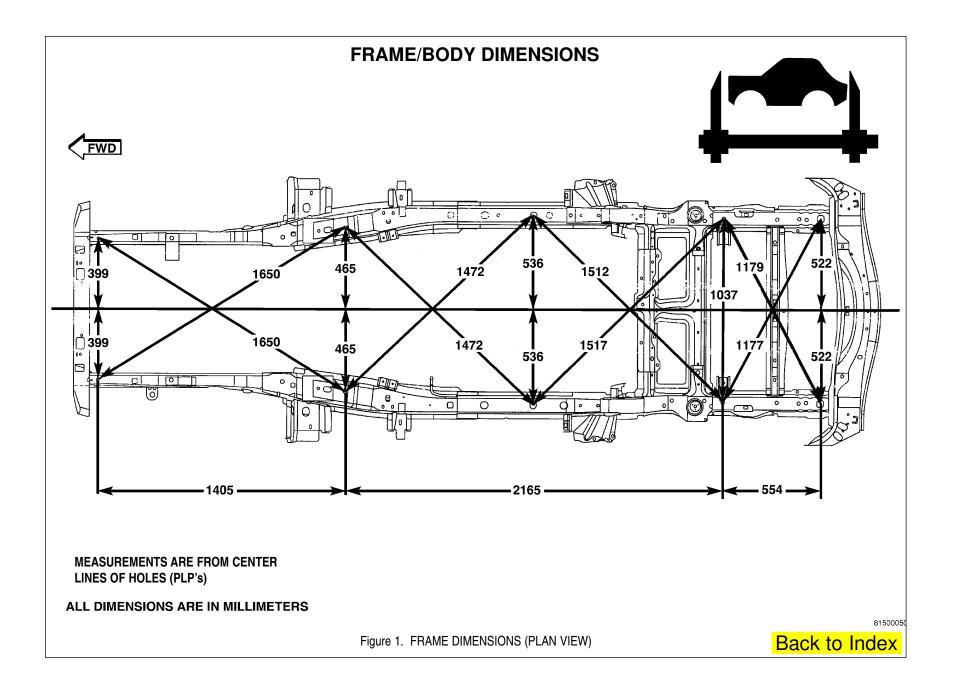


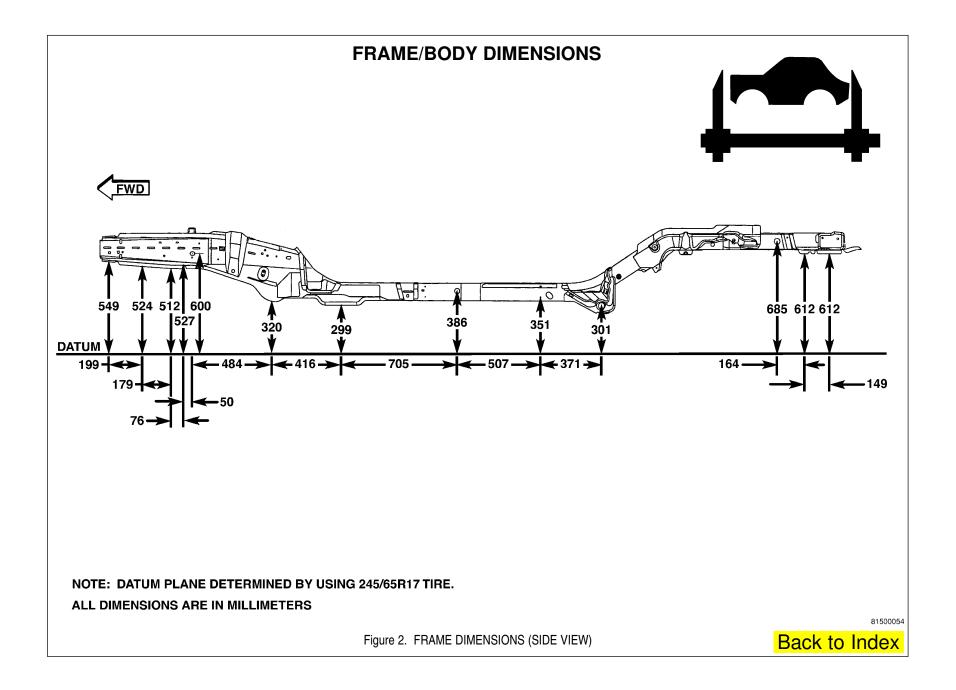
## FRAME DIMENSIONS

Frame dimensions are listed in metric scale then converted to inch scale listed in parenthesis. All dimensions are from center of Principal Locating Point (PLP), or from center to center of PLP and transfer location. Vertical dimensions can be taken from the work surface to the locations indicated.

### INDEX

DESCRIPTION	FIGURE
FRAME DIMENSIONS (PLAN VIEW)	1
FRAME DIMENSIONS (SIDE VIEW)	2

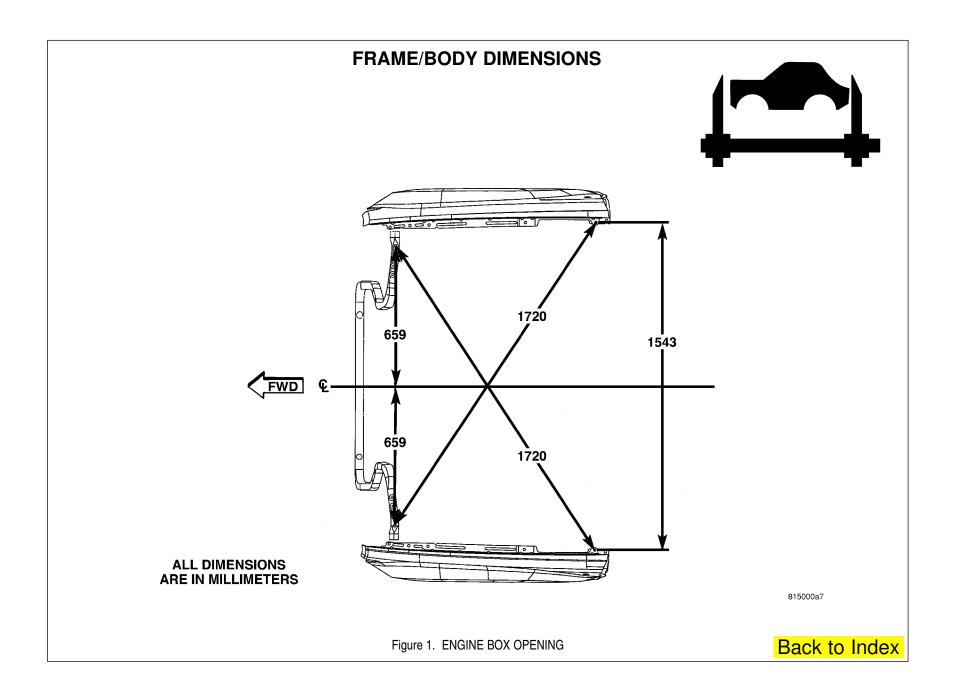


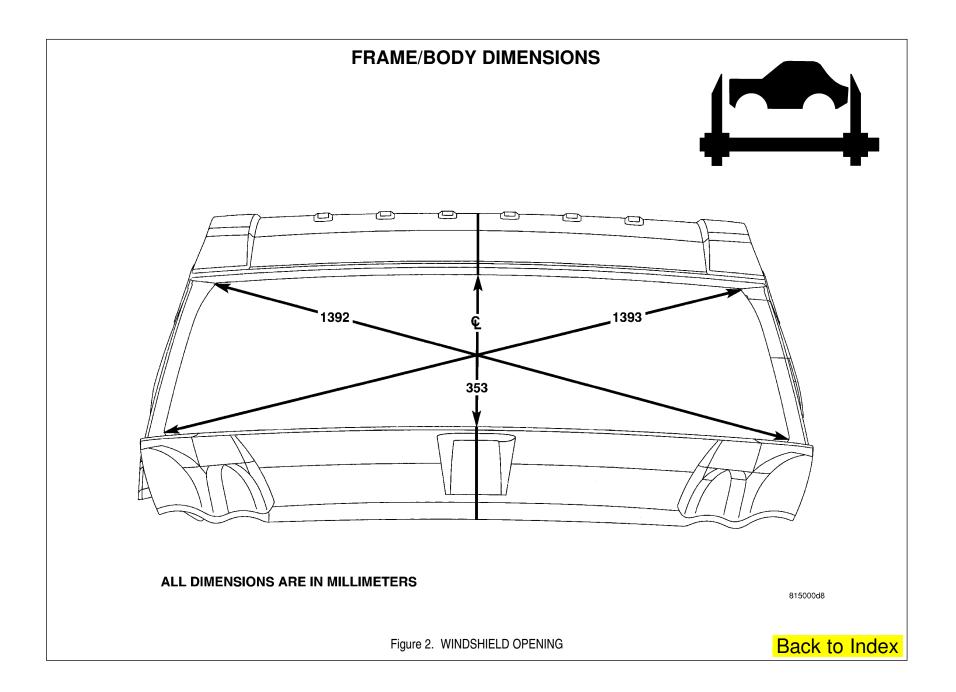


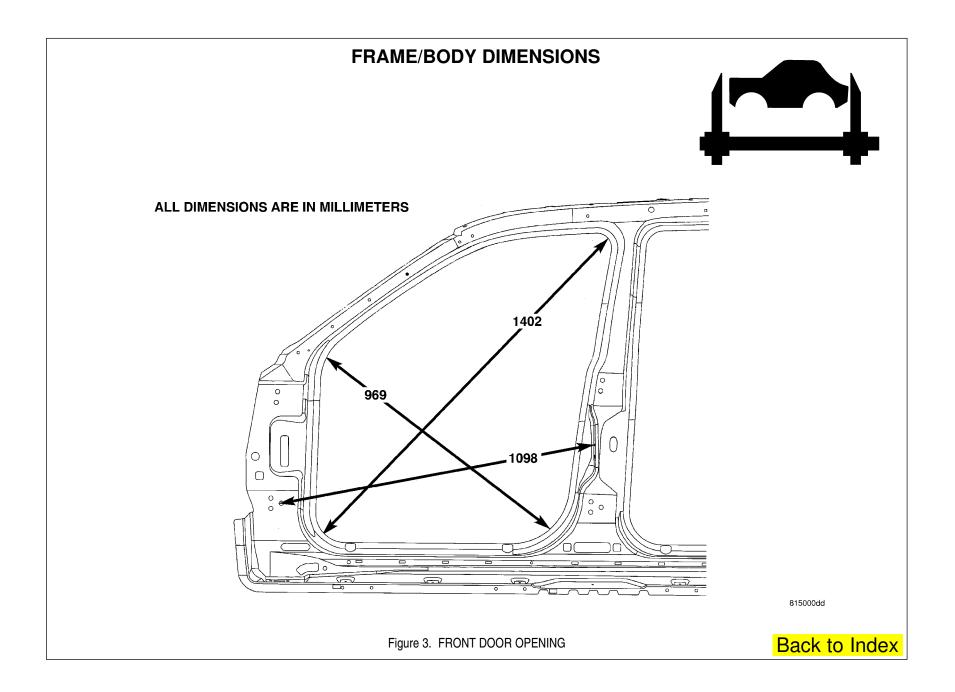
# 

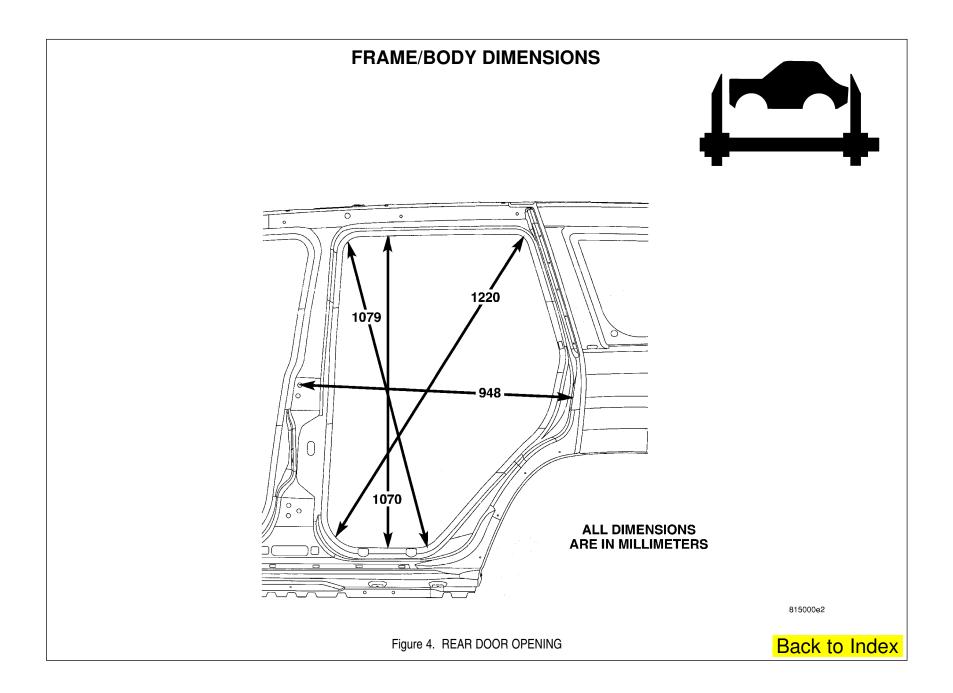
## **OPENING DIMENSIONS**

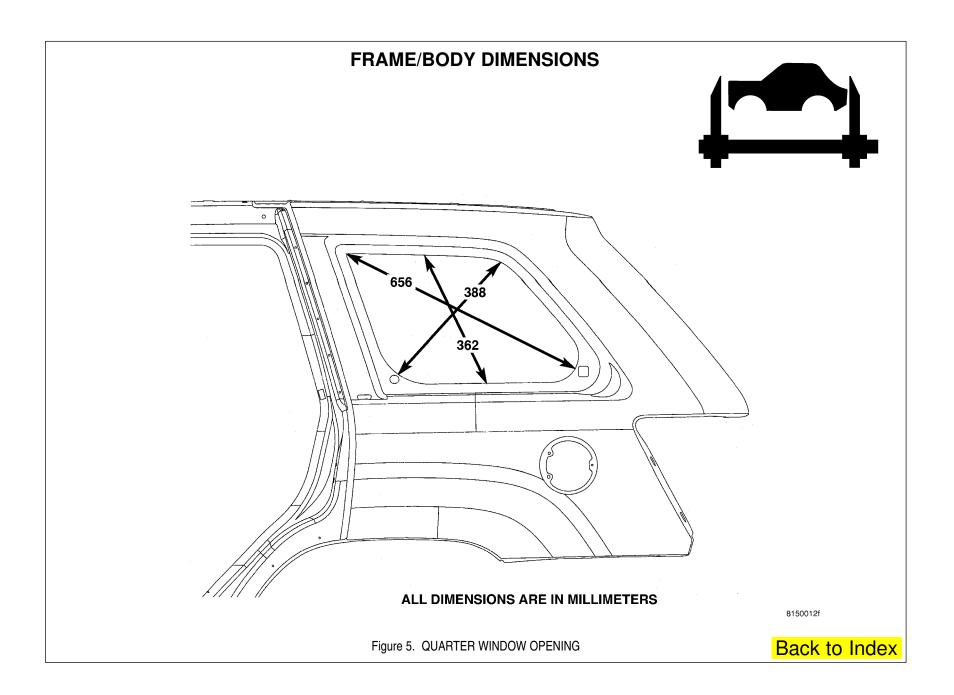
DESCRIPTION	FIGURE
ENGINE BOX OPENING	1
WINDSHIELD OPENING	2
FRONT DOOR OPENING	3
REAR DOOR OPENING	4
QUARTER WINDOW OPENING	5
LIFTGATE OPENING	6

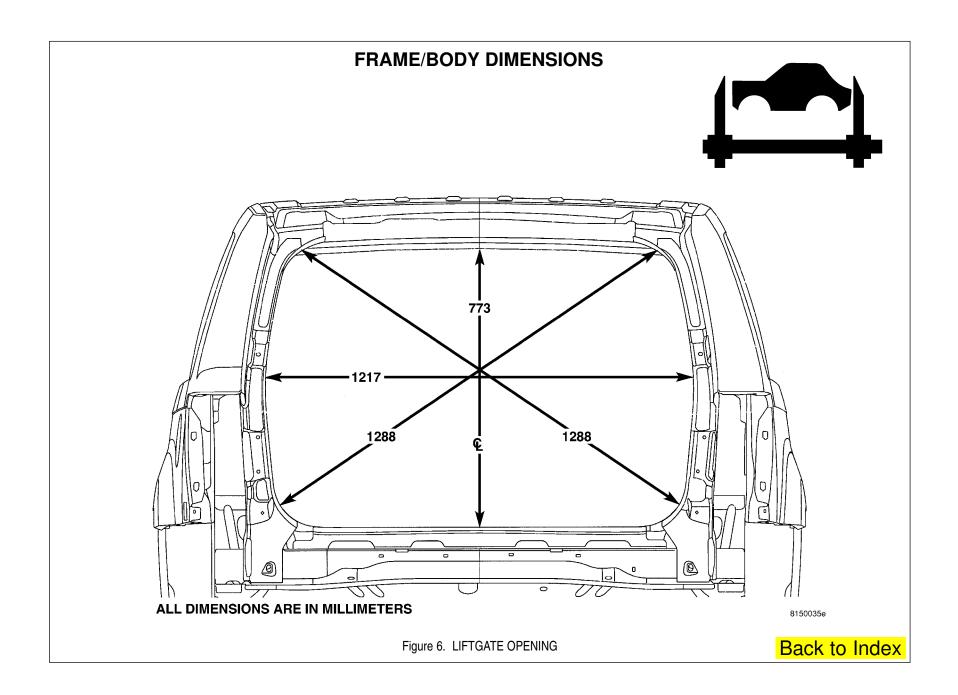


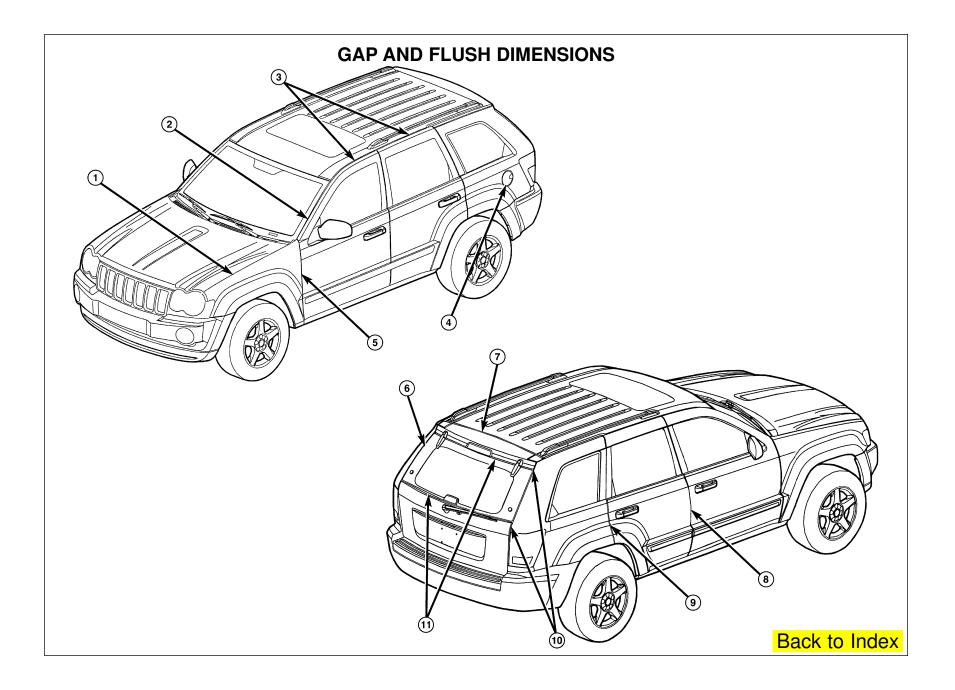








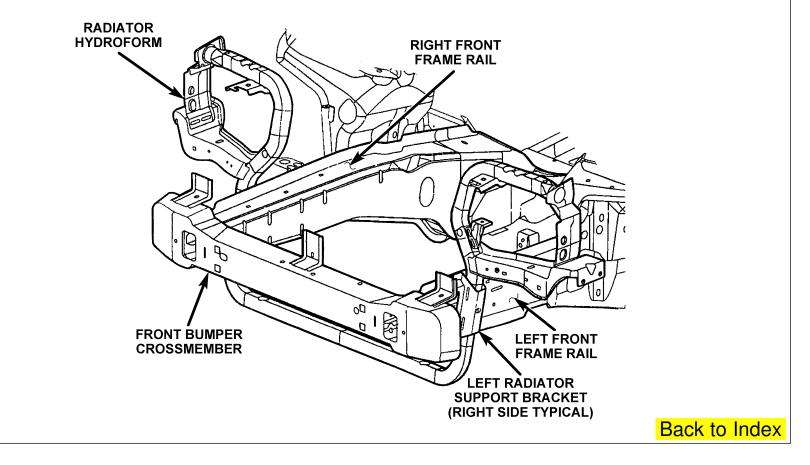


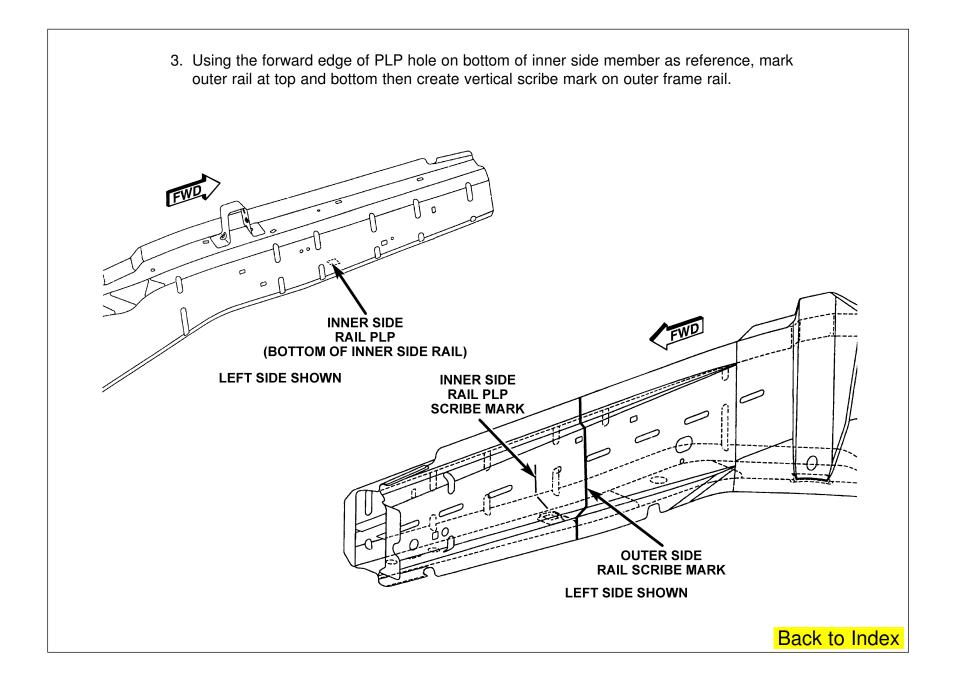


	DESCRIPTION	GAP	FLUSH	
1	HOOD TO FENDER	4.0 +/- 1.5	HOOD UNDERFLUSH	
		PARALLEL	-0.5 +/- 1.5	
		WITHIN 1.5	PARALLEL	
			WITHIN 1.5	
2	WINDSHIELD MOULDING TO FRONT DOOR	6.0 +/- 2.0	MOULDING OVERFLUSH	
			3.0 +/- 1.0	
3	FRONT AND REAR DOORS TO ROOF	6.0 +/- 1.5	DOORS OVERFLUSH	
		PARALLEL	2.0 +/- 1.5	
		WITHIN 2.5		
4	FUEL DOOR TO BODY SIDE	3.0 +/- 1.0	FUEL DOOR	
			UNDERFLUSH	
			-0.5 +/- 1.0	
5	FENDER TO FRONT DOOR	4.5 +/- 1.25	FENDER	
		PARALLEL	OVERFLUSH	
		WITHIN 1.25	0.5 +/- 1.0	
6	FLIPPER GLASS TO BODY SIDE	4.0 +/- 1.5	GLASS UNDERFLUSH	
		PARALLEL	-2.5 +/- 2.5	
		WITHIN 1.5,		
		SIDE TO SIDE		
		WITHIN 1.5		
7	LIFTGATE TO ROOF	9.0 +/- 2.0	LIFTGATE UNDERFLUSH	
			-1.0 +/- 1.5 PARALLEL	
			WITHIN 1.5	
8	FRONT DOOR TO REAR DOOR	4.5 +/- 1.0	0.0 +/- 1.25	
0		PARALLEL	PARALLEL	
		WITHIN 1.0	WITHIN 1.5	
9	REAR DOOR TO BODY SIDE	4.5 +/- 1.0	0.0 +/- 1.25	
0		PARALLEL	PARALLEL	
		WITHIN 1.0	WITHIN 1.5	
10	LIFTGATE TO BODY SIDE	4.0 +/- 1.5	LIFTGATE UNDERFLUSH	
		PARALLEL	-0.5 +/- 1.5	
		WITHIN 1.5		
		SIDE TO SIDE		
		WITHIN 1.5		
11	FLIPPER GLASS TO LIFTGATE	5.0 +/- 1.5		
	IMENSIONS ARE IN MILLIMETERS 2005 WK			

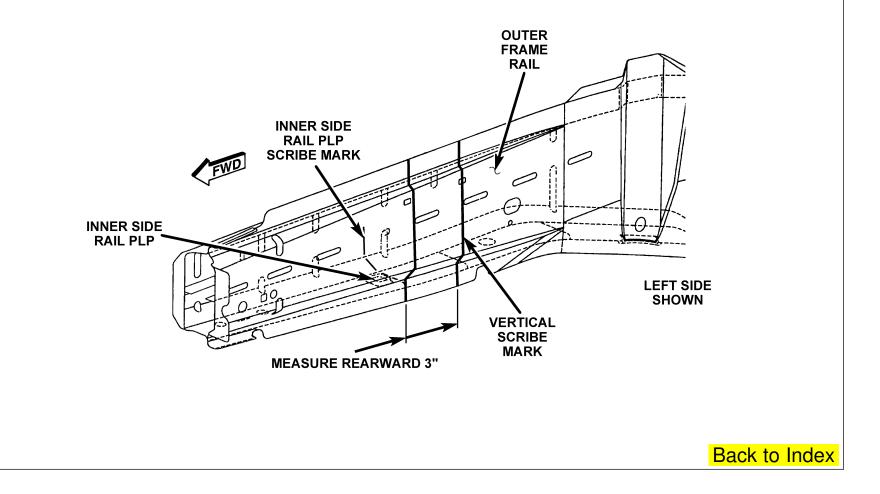
# JEEP GRAND CHEROKEE FRONT FRAME RAIL SECTIONING PROCEDURE

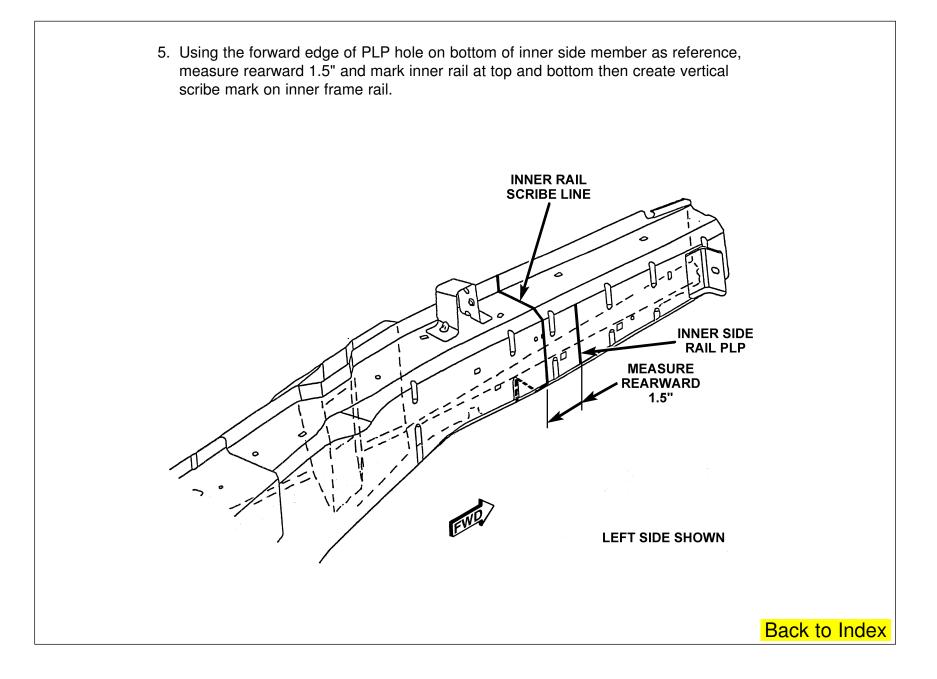
- 1. Remove front bumper cross member using a Rotabroach (hole saw).
- 2. Release welds securing radiator support brackets to the side of outer frame rails using a Rotabroach (hole saw) and only mill through the bracket if possible. If replacing one frame rail, replacing part of radiator hydroform can be done.



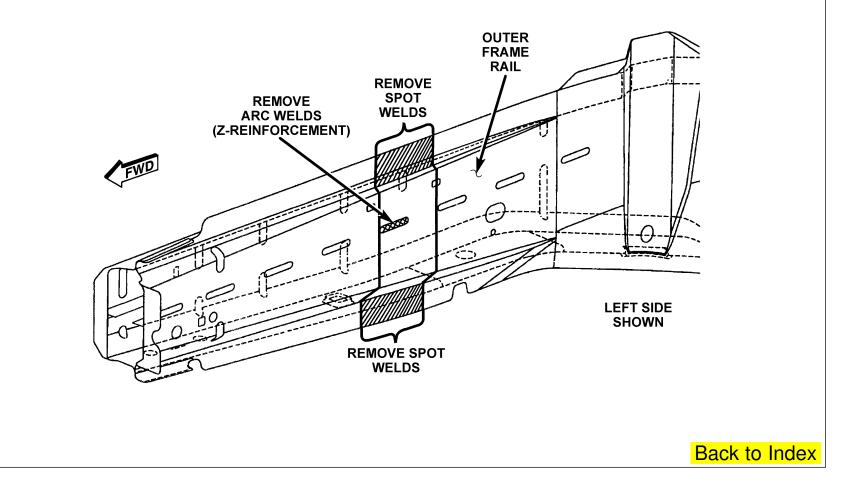


4. Using the forward edge of PLP hole on bottom of inner side member as reference, measure rearward 3" and mark outer rail at top and bottom then create vertical scribe mark on outer frame rail.

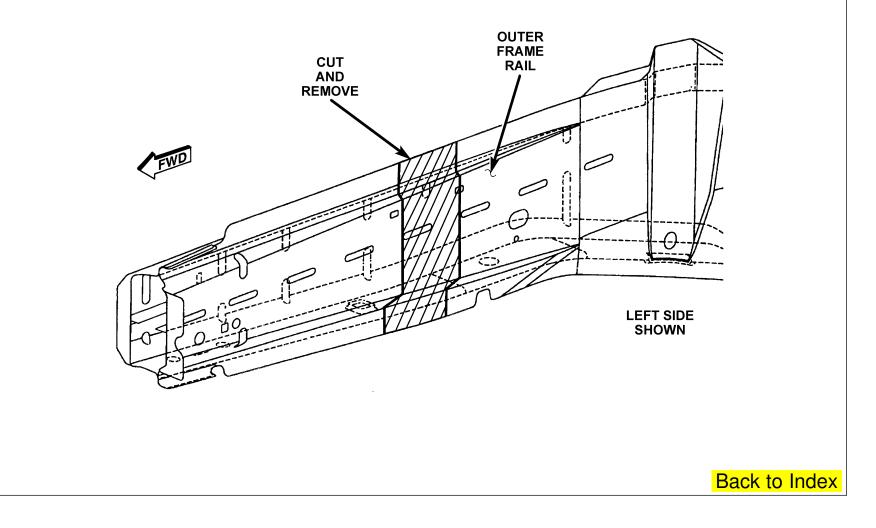


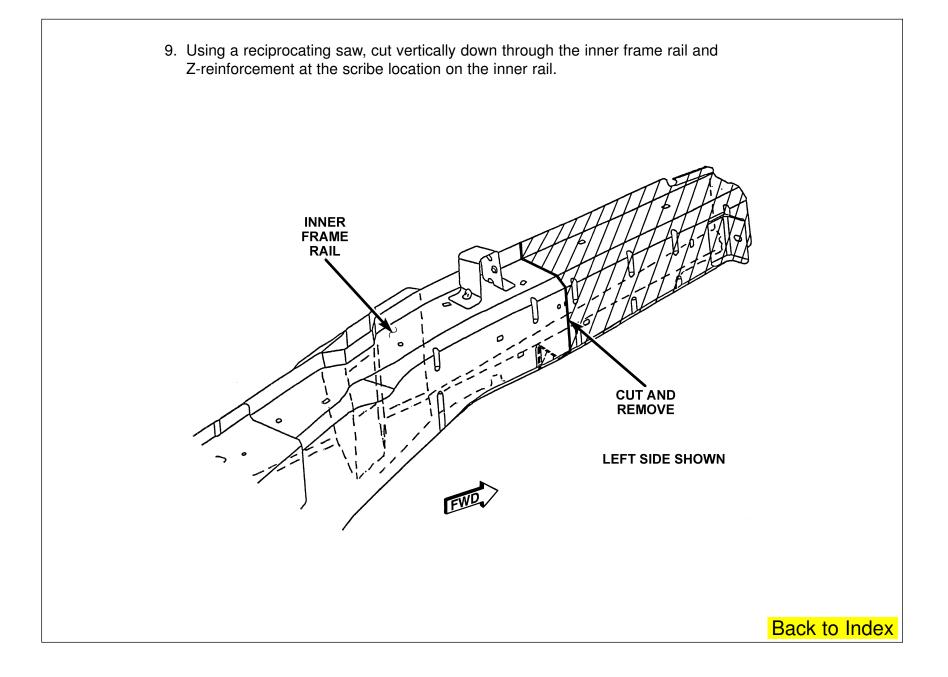


- 6. Remove spot welds holding the inner and outer side members together between the two scribe lines on the outer rail.
- 7. Remove the MIG welds holding the internal Z-reinforcement to the outer rail between the two scribe lines.

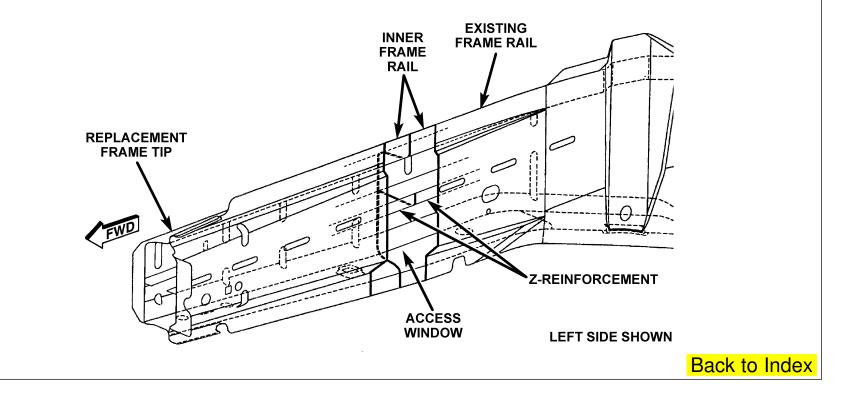


8. Carefully cut the outer side member top to bottom at the scribe lines using a cut-off wheel without damaging the inner side member or the Z-reinforcement inside the rail and remove the access panel or "window".

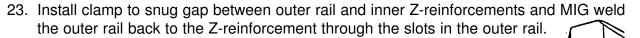


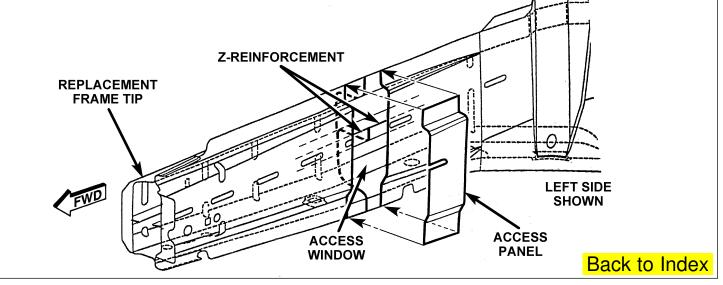


- 10. Carefully clean and de-burr all cut edges and prepare for welding.
- 11. Remove any paint, e-coat, or other coatings within 1-inch of any weld area.
- 12. Using the same procedures previously described, prepare the service rail tip for installation.
- 13. Fit and position the new rail tip to the vehicle using xyz dimensions and measurement equipment.
- 14. Confirm good joint fit-up with inner frame rail and Z-reinforcement and root gap equal to width of saw cut.
- 15. Tack weld the new tip into position using the weld chart located at the end of repair procedure section.
- 16. Reconfirm proper tip location.

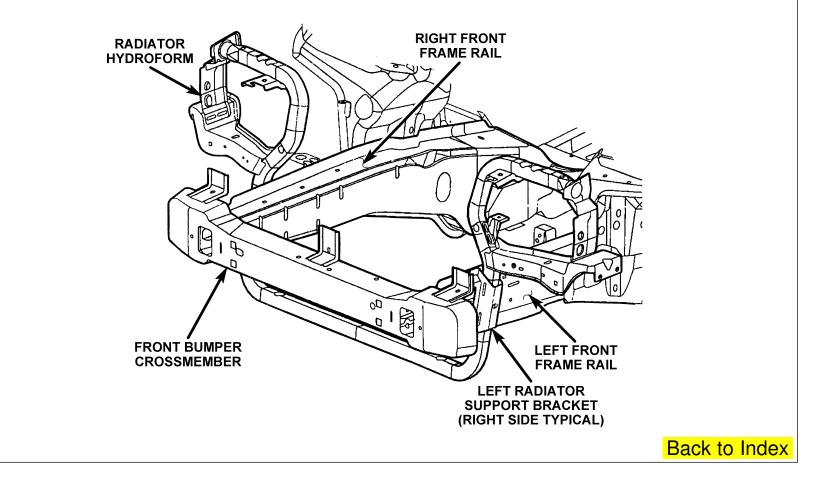


- 17. Weld inner frame rail in the following sequence.
  - a. Upper half from the access window.
  - b. Lower half from exterior of rail
  - c. Clean backside of above two welds in preparation for welding.
  - d. Upper half from exterior.
  - e. Lower half from access window.
- 18. Weld Z-reinforcement from top and from bottom, from inner side rail to outer side rail.
- 19. Prepare access panel for reinstallation.
- 20. Clamp the access panel back to rail assembly.
- 21. Weld the butt-joints completely using a skip/stitch method to reduce the heat affected zone and distortion.
- 22. Weld the access window at the top and bottom to the inner frame rail using ring filet (puddle) welds.





- 24. Install the radiator hydroform with four MIG welds holding each bracket to the outer frame rails at the location of the original welds.
- 25. Ensure that the cut-off location of the hydroform is the same as that removed earlier and modify if not.
- 26. Install the front bumper crossmember using MIG welds where the original spot welds were removed.



## WELD PROCESS

CAUTION: All welds should conform to DaimlerChrysler vehicle engineering process standard "ps 9472".

#### WELDING PARAMETERS

WELDING PROCESS	FLUX CORED ARC	GAS METAL ARC (MIG)*	SHIELDED METAL ARC (STICK)					
Material Thickness	3.7 mm to 4.2 mm	3.7 mm to 4.2 mm	3.7 mm to 4.2 mm					
Electrode Type	Lincoln Electrical Co. Product #: NR-211 MP (Do Not Substitute)	AWS ER70S-3 (Do Not Substitute)	** AWS E 7018					
Electrodes Size Inches	.045 Tubular	.035 Solid	3/32″					
Electrode Stick Out	3/8" - 1/2"	1/2" - 5/8"	N/A					
Polarity	Electrode "-" Work Piece "+"	Electrode "+" Work Piece "-"	Electrode "+" Work Piece "-"					
Shielding Gas	Self Shielded	75% Ar 25% CO2	Self Shielded					
Gas Flow Rate	N/A	25 - 35 CFM	N/A					
Wire Feed Speed (inches per minute)	110 - 130 Vertical Down 70 - 90 Flat & Overhead	245 - 250 Vertical Down 210 - 225 Flat & Overhead	N/A					
Approximate Amperage								
Vertical	110 - 130	175	85 (3/32" Diameter)					
Flat & Overhead	70 - 90	155	90 (3/32" Diameter)					
Voltage	15 - 18	19 - 20	N/A					
Direction of Welding								
Vertical	Vertical Down Hill (only)	Vertical Down Hill (only)	Vertical - Up Hill (only)					
Flat & Overhead	Flat - Push or Drag	Flat - Push or Drag	Flat - Drag					

\*First choice - Gas Metal Arc Welding Process: Butt joints - apply two layers (passes) of weld metal. First pass should only fill approximately ½ the thickness. Vertical position welds - maintain electrode wire at leading edge of weld puddle while traveling down hill to produce maximum penetration into the sleeve. These techniques work for FCAW as well.

