



DODGE CALIBER BODY REPAIR MANUAL



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.

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- Chrysler 300 (81-316-0531CD)
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INTRODUCTION

Dodge Caliber



This manual has been prepared for use by all body technicians involved in the repair of the Dodge Caliber.

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

Body Construction Characteristics	
History of Collision Repair.....	
Corrosion Protection	
Vehicle Identification Number Information	
Paint Codes Information	
Welded Panel Replacement.....	
Sealer Locations	
Structural Adhesive Locations	
NVH/Structural Foam Locations	
Sound Deadener Locations	
Frame/Body Dimensions.....	
Front Frame Rail Sectioning Procedure	
Additional Support/Information.....	

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 Compass:

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 galvaneal (or EGA) with 45 g/m² 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/m² minimum coating weight on both sides.

- Most common high strength coated steel product used by Chrysler.

MS 10176 - Boron-alloyed steels ate analogy with 22MnB5 which are matched to the hardening process die. Sheet

blanks are heat treated in the furnace on an inert gas or air atmosphere and then formed in the press die and hard-

ened at the same time. The boron is produced in two configurations one for use in upper body and one that has hot-

dip aluminized coating for corrosion protection.

MS82-1228 - Represent a coated high strength low alloy (HSLA) hot or cold rolled sheet steel used in applications where structural

integrity is critical.

PARTIAL LIST OF STEEL APPLICATIONS

Galvanealed 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 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

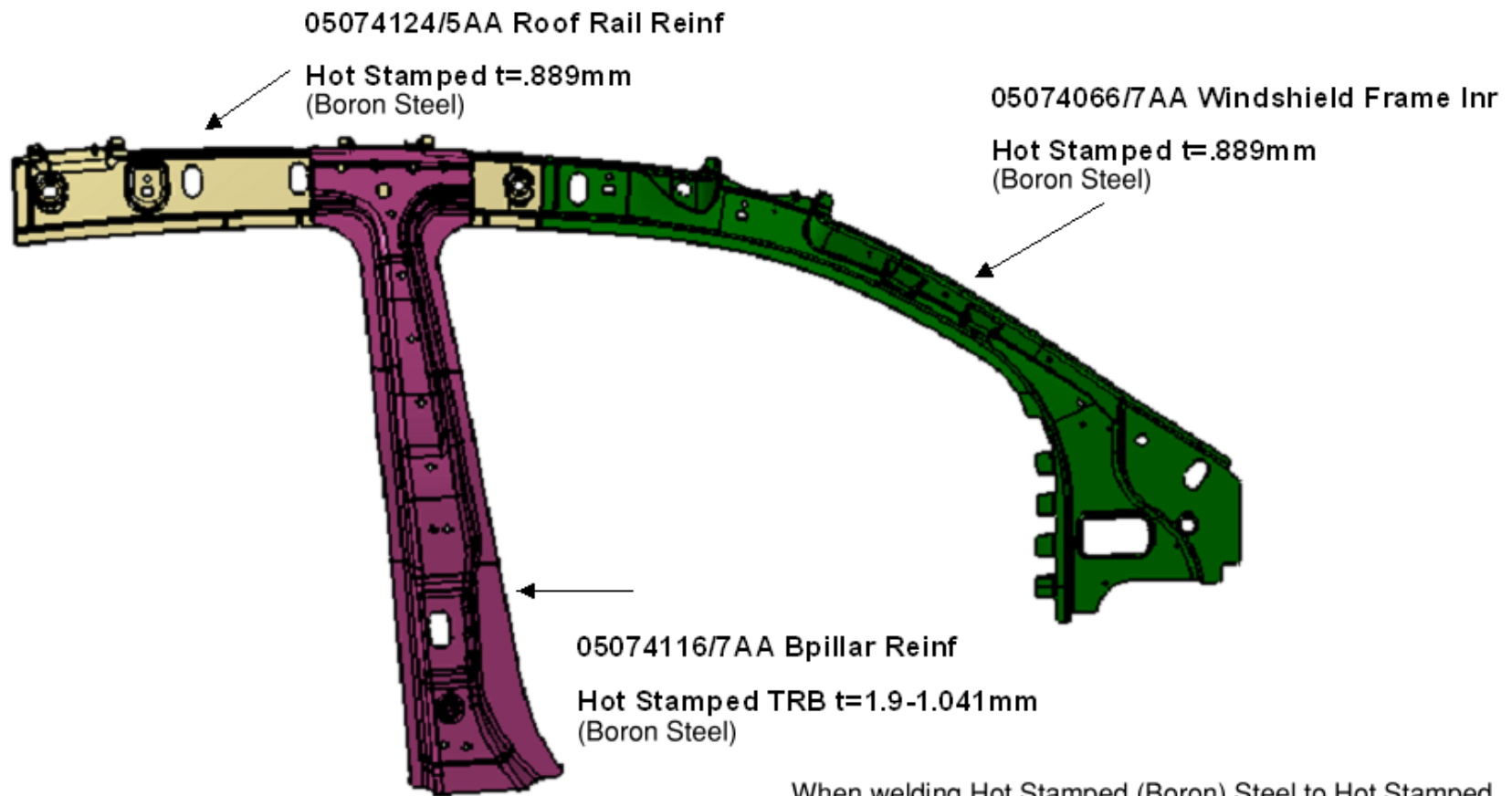
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BODY CONSTRUCTION CHARACTERISTICS

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

1. The use of galvanized 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.

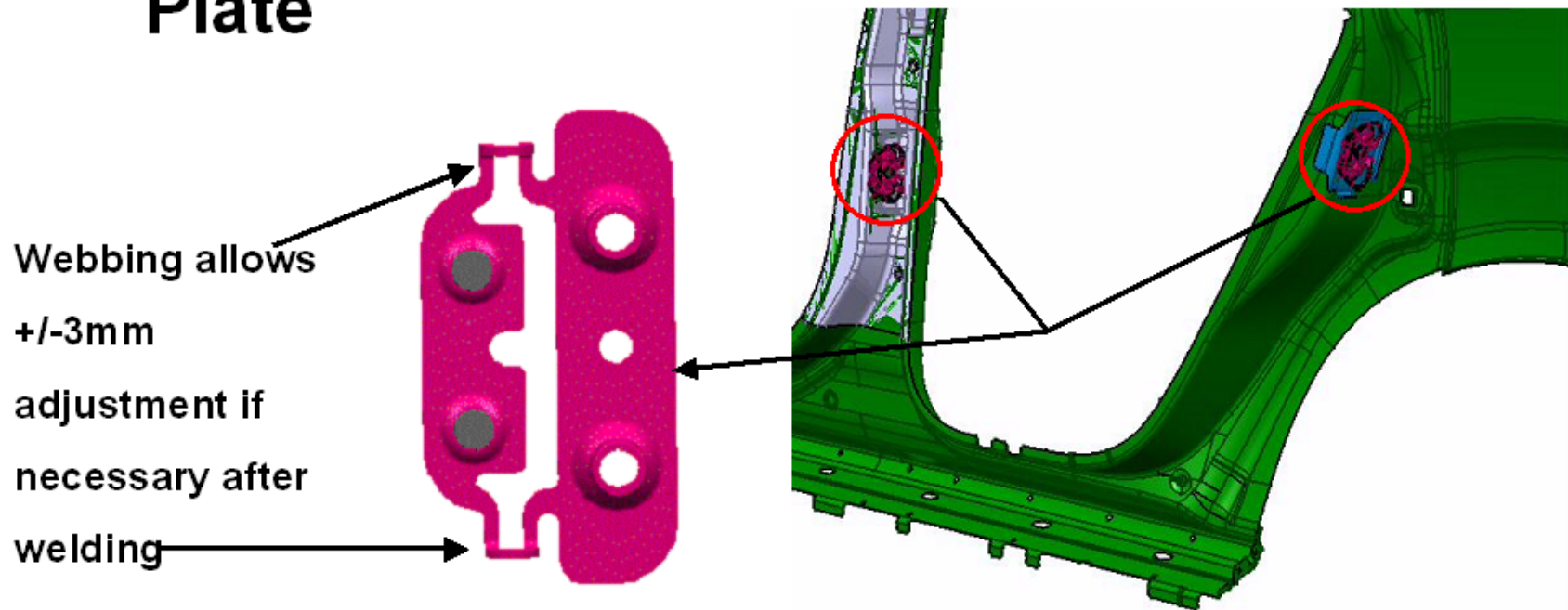
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When welding Hot Stamped (Boron) Steel to Hot Stamped (Boron) Steel use resistance spot welds and Mopar structural adhesive.
Weld nuggets should be 6.5mm.

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PM-49 New Net Build Door Striker Tap Plate





Tech Authority Website contains the most complete listings, descriptions, and ordering information for DaimlerChrysler Corporation service information materials. The materials included in Tech Authority cover every aspect of repairing and maintaining Chrysler, 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.

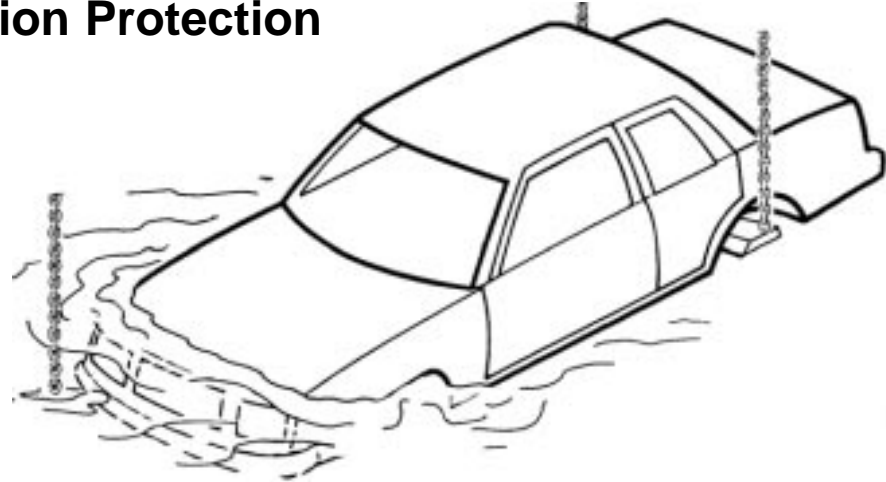
Cars that were repaired were not repaired correctly. Everybody was in a **quandary** - auto manufacturer - insurance company - repair equipment people - body shops - and repair technicians.

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.

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Corrosion Protection



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.

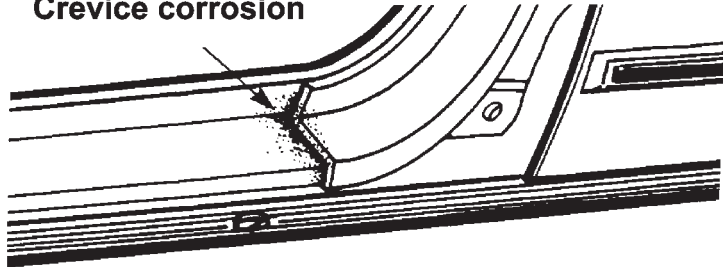
This corrosion protection is required regardless of the environment and weather conditions the vehicle will be operated in. Corrosion protection is as important in the desert as it is at the seaside. Corrosion damage can literally destroy the structural integrity of a unibody vehicle from within. Many 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.**

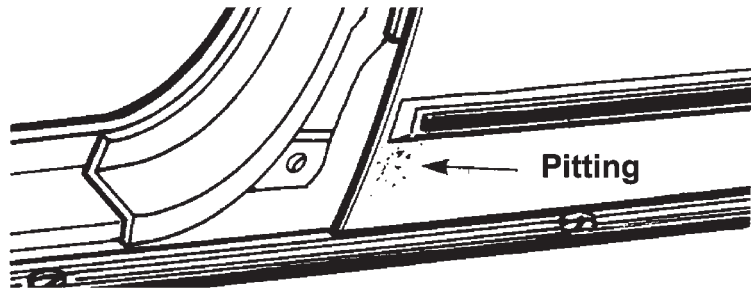
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Corrosion Protection

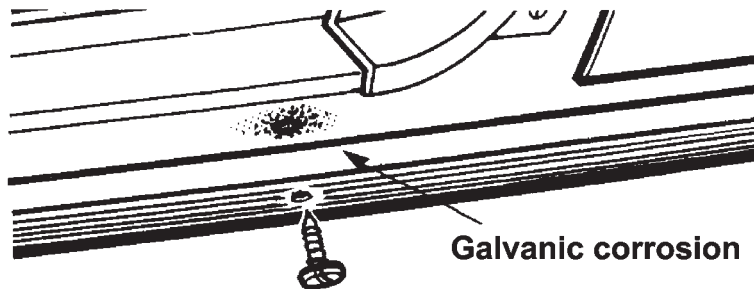
Crevice corrosion



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.

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Corrosion Protection

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.

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Corrosion Protection

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.

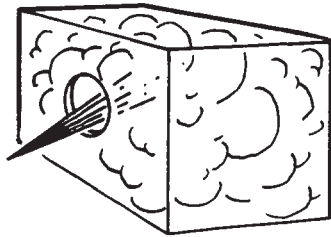
Materials containing silicones will cause paint conditions such as fish eyes if they are applied before the repaired vehicle is painted. So no silicone containing material is to be used. As many of the repair areas are more accessible before final assembly and painting, the non-silicone type materials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

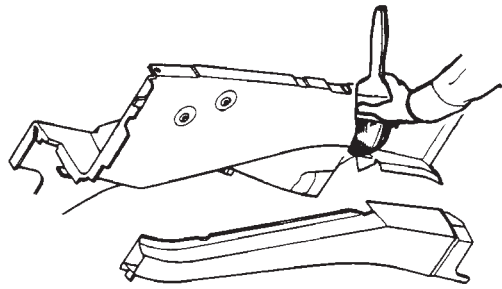
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Corrosion Protection

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.

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Corrosion Protection

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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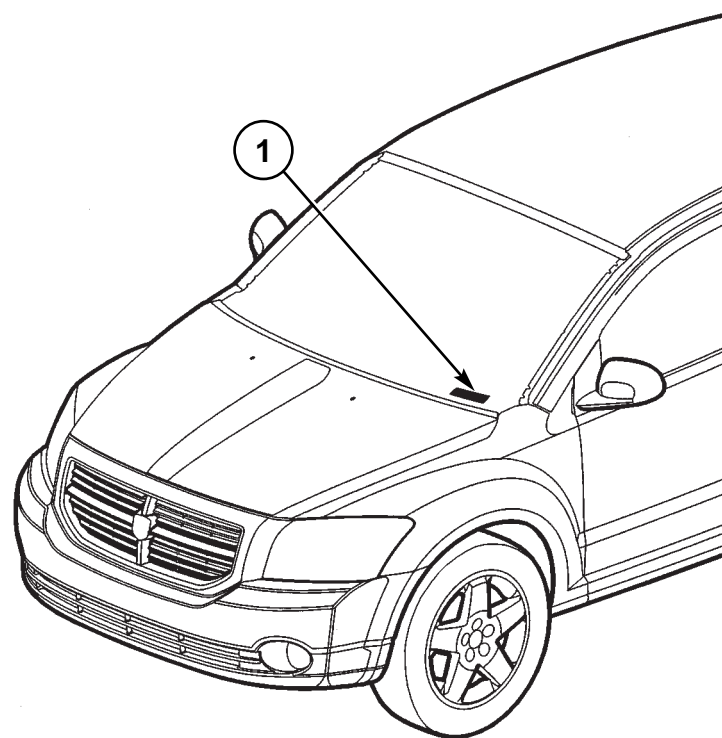


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DODGE CALIBER VEHICLE IDENTIFICATION NUMBER DESCRIPTION

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)



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VEHICLE IDENTIFICATION NUMBER DECODING CHART

POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = Manufactured by Daimler Chrysler Corporation
2	Make	B = Dodge
3	Vehicle Type	3 = Passenger Car
4	Restraint System	J = Without Side Air Bags H = With Side Air Bags
5	Vehicle Line (PM)	3 = Caliber Right Hand Drive (FWD) B = Caliber Left Hand Drive (FWD) E = Caliber Left Hand Drive (AWD)
6	Series	2 = Caliber 4 = Caliber SXT 7 = Caliber R/T
7	Body Style	8 = Hatchback 4 Door
8	Engine	C = 1.8L 4 Cyl. 16V DOHC Dual VVT Gasoline A = 2.0L 4 Cyl. 16V DOHC Diesel B = 2.0L 4 Cyl. 16V DOHC 5MPI Gasoline K = 2.4L 4 Cyl. 16V Dual VVT Gasoline
9	Check Digit	0 through 9 or X
10	Model Year	7 = 2007
11	Assembly Plant	D = Belvidere Assembly
12 through 17	Vehicle Build Sequence	

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