

DESCRIPTION AND OPERATION > SPECIAL REPAIR CONSIDERATIONS FOR ALUMINUM REPAIRS

Repair of aluminum vehicle components requires some specialized handling and the proper isolation of the work area from steel repairs and dedicated hand and power tools that will be used only for aluminum repair. The following details some of these considerations.

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Galvanic corrosion is caused through dissimilar metals remaining in contact with one another. Eventually, the softer or more corrosively reactive metal will act as a sacrificial anode and accelerated corrosion will result. Working with dissimilar metals in the same environment increases the potential for galvanic corrosion which can cause repair and paint failures for either steel or aluminum systems

Because of this, it is necessary to create an isolation area dedicated to aluminum repairs. This isolation area can consist of an area walled off through the use of curtain walls, or a dedicated and separate working room or preparation booth.

In addition, a wet mix vacuum and air filtration system should be employed in the isolated work area to remove contaminants or dust particles caused by sanding and grinding, further reducing the potential for repair failures. The use of compressed air should also be avoided for cleaning (when possible) in all areas of the shop to reduce cross contamination of systems.

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The hand and power tools utilized in the aluminum work area should be dedicated for use with aluminum only, and should be labeled and stored in a separate tool box. This will help minimize the potential for galvanic corrosion, which may create paint and repair failure.

Hand Tools

Hand tools, such as hammers and dollies, must be dedicated and labeled for each substrate worked on. Metal hand tools used in aluminum repairs must consist of polished surfaces and should be stored in a dedicated tool box when not in use. When possible, the use of rubber or wooden mallets is recommended providing these are also dedicated to aluminum repairs only.

Hammers and dollies used in steel component repair may create the concern of embedding steel particles in aluminum if used for both systems. In addition, tools used for steel repair may have a rougher than required surface created through regular use which may also result in cross contamination. **Tools with serrated faces should never be used in aluminum repairs .**

Power Tools

Equally important is the need for dedicated power tools when working with aluminum. Sanding and grinding discs and the associated dust build up on the power tool housing have a high potential for introducing dissimilar metals to repairs and may create galvanic corrosion concerns.

Ford Motor Company through Motorcraft® has published suggested hand tool and shop equipment lists