



TOYOTA

Your Toyota Collision & Mechanical Repair Resource

TOYOTA

Plastic and Resin Body Part Repairs

Understanding when to replace, or how to repair

PAGE 4

Corrosion Prevention

When and How to Use
Weld-Thru Primer

PAGE 6

Insurance App Estimates

Knowing how to interact with
customers and insurance companies

PAGE 10



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The Right Resources, The Right Processes

Each year, millions of new and used automobiles will need to be repaired. Because a large percentage of this work is performed by independent auto repair shops, investing in training, the right tools, equipment and technology is critical to a proper repair.

First and foremost, you must have the right diagnostic and technical information to repair vehicles properly. In this issue, you'll find out why the most proactive shops rely on a Toyota Information System (TIS) subscription and Techstream Lite, which provides factory level support for Toyota/Scion/Lexus vehicles. Because everything is designed to run on your existing PC, you'll find Techstream Lite to be both convenient and cost effective.

You understand that in any repair, preparation is key. For instance, when you're performing welding repairs, weld-thru primer is a must because it helps protect the metal from future corrosion—without it you run the risk of deterioration down the line. We cover some tips on the preferred type of weld-thru primer for Toyota and Lexus vehicles as well as proper preparation to achieve the best repair results.

There are times when you might ask whether it's possible to repair a part, or if the only option is to replace a part. In this issue you'll see that when it comes to plastic, or resin parts, the answer may rely upon the type of plastic involved. Similarly, when it comes to radiators it may depend upon the kind of damage incurred. In both cases TIS reveals the answer.

Being properly prepared to handle the variety of vehicles and type of damage they may incur is critical to your shop's success. Take advantage of Toyota and Lexus resources to ensure your shop is always prepared to offer the best repairs possible. 🚗



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THE ADVANTAGES OF TECHSTREAM LITE OVER AFTERMARKET SCAN TOOLS

A PROPER REPAIR REQUIRES A PROPER DIAGNOSIS

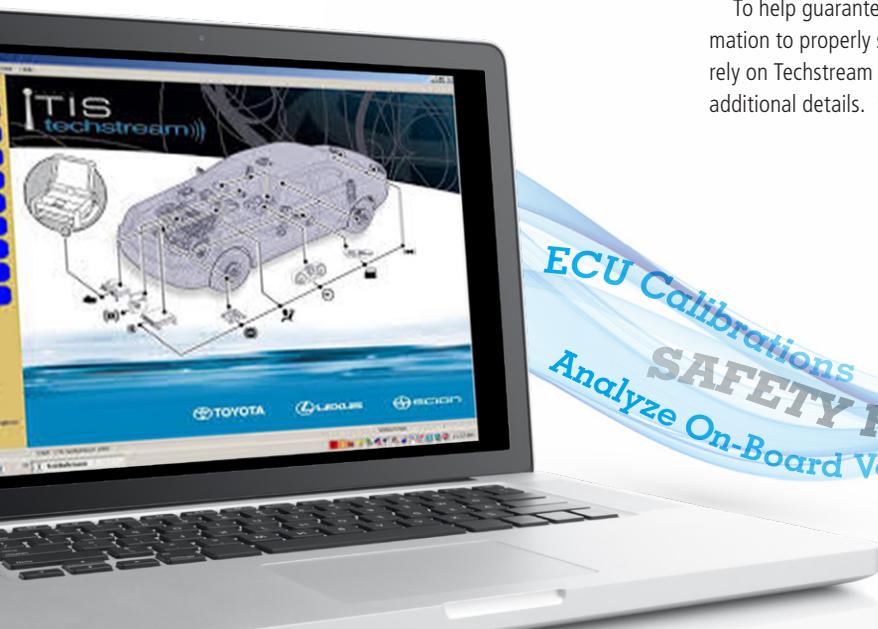
WHEN REPAIRING A TOYOTA, LEXUS OR SCION VEHICLE, TECHSTREAM LITE HELPS TO ENSURE THAT YOU'RE RECEIVING ORIGINAL EQUIPMENT MANUFACTURER (OEM)-DEVELOPED DIAGNOSTIC DATA. Users will find Toyota's Techstream Lite to be a convenient and cost-effective way to get the most current data on 1996 and later Toyota, Lexus, and Scion vehicles marketed in North America. An active professional level subscription is required to use Techstream software.

Updated quarterly, Techstream software helps to ensure your technicians have the most current information available. It provides additional advantages by integrating functionality between the diagnostic software and Toyota's Technical Information System (TIS). With an internet connection, the diagnostic software passes vehicle data directly to TIS for real time service information. Users can search for applicable safety recalls, TSBs, ECU calibrations, and diagnostic and repair procedures; view and analyze on-board vehicle data; and even re-program Toyota, Lexus, and Scion vehicles.

Techstream Diagnostics are more affordable with Techstream Lite because the same software capabilities are leveraged with a Toyota specific Vehicle Interface Module (VIM). Everything is designed to run on your existing PC. The Techstream Lite kit includes: Techstream Diagnostic Software, the MongoosePRO MFC2 VIM interface cable and a one-year professional subscription to TIS. The subscription includes:

- Techstream Diagnostic Software
- Library Access (repair manuals, wiring diagrams, etc.)
- ECU Reprogramming calibrations, and much more

To help guarantee that you're getting the most current information to properly service Toyota, Lexus and Scion vehicles, rely on Techstream Lite. Visit <https://techinfo.toyota.com> for additional details. 📄



PLASTIC AND RESIN BODY PART REPAIRS

UNDERSTANDING WHEN TO REPLACE, OR HOW TO REPAIR

WEIGHT AFFECTS EFFICIENCY. That's why Toyota and Lexus use various plastic and resin body parts, which are lighter than steel. Some vehicles used to be manufactured with aluminum hoods and trunks to reduce weight. However, aluminum is expensive and hard to repair. Now, on select Toyota and Lexus vehicles, aluminum has been replaced with resin.

When a Toyota or Lexus is in your shop and has plastic or resin body parts, you'll need to question if the part should be replaced or repaired. If a repair is the answer, you'll need to know the proper repair techniques.

THE BASICS

Plastics fall into two basic categories of synthetic resins: thermoplastic and thermoset. The question of whether a part can be repaired or replaced requires knowledge of the damaged parts and answers to these three questions:

- Does the repaired component meet factory appearance and fit?
- Does it meet factory function standards?
- Does it pass factory safety standards?

If the answer is "no" to any of these questions, then the component should be replaced with a Toyota Genuine part and not repaired. If you're unsure, then the best way to proceed is to replace the part.

The difference between thermoplastic and thermoset:

- **Thermoplastic** resins begin as liquid and can be either soft or hard. They can be softened repeatedly by heating or adding solvents, and become solid after cooling or after the solvent has evaporated. An example of a rigid thermoplastic component is a side mirror housing or door handle. An example of a flexible thermoplastic component is a front or rear bumper fascia or fender wheel liner.
- **Thermoset** resins also begin as a liquid, but change into a solid when chemical hardeners or a catalyst are added. They cannot be softened like thermoplastic parts, and are generally hard and can be brittle. Most thermoset parts are resistant to most solvents. Thermoset components include carbon fiber reinforced plastic, sheet molded compounds, polyurethane, polyester and epoxy resins, all of which are inflexible. Examples of rigid thermoset plastic components include truck bed liners, some spoilers, and the 2012-2018 Prius v polycarbonate roof.

This shows the location of various plastic parts on a 2020 Toyota Camry.



THERMOSET RESINS: Tacoma bed liners are a good example of rigid thermoset plastic. They begin as a liquid, but change into a solid when chemical hardeners or a catalyst is added.

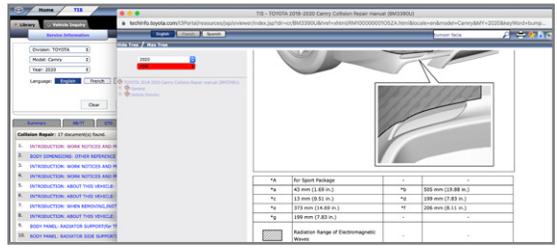


HERE ARE A FEW EXAMPLES OF WHAT YOU'LL FIND IN TIS:

Once you've identified the model and year, you can search for parts characteristics and precautions. Here, for example, you'll find exterior resin parts and resin characteristics for a 2020 Camry.

CODE	PARTIAL NAME	MIN. RECOMMENDED TEMPERATURE LIMIT (% F/°C)	RESISTANCE TO ALCOHOL OR SOLVENTS	NOTES
AAA	Accessory Acrylic Surface	80 (170)	Adhesive is flammable if applied only for short time in small amounts. (Do not apply to remove grease)	Avoid gasoline and organic or aromatic solvents.
AAA	Accessory Adhesive Surface	80 (170)	Adhesive is flammable if applied only for short time in small amounts. (Do not apply to remove grease)	Avoid gasoline and organic or aromatic solvents.
AAA	Accessory Chrome Surface	80 (170)	Adhesive is flammable if applied only for short time in small amounts. (Do not apply to remove grease)	Avoid gasoline and organic or aromatic solvents.
AAA	Accessory Surface	80 (170)	Adhesive is flammable if applied only for short time in small amounts. (Do not apply to remove grease)	Avoid gasoline and organic or aromatic solvents.

Here, under the "Work Notices and Precautions" section, you find the areas on a 2020 Camry bumper fascia that can be repaired, the repair limitations, and refinishing specifications.



In this example from the TIS Body Repair Manual you see the 2020 Toyota Supra rear bumper fascia. Note that under the "Work Notices and Precautions" section no repairs are to be performed—the part must be replaced if it is damaged.

PRECAUTIONS FOR BLIND SPOT MONITOR

NOTICE:

- If the rear bumper is damaged, replace it. Do not perform repairs, as the damage may affect blind-spot monitor operation.
- The unpainted replacement rear bumper can only be painted 1 time. Afterward, the rear bumper cannot be repainted.

HOW DO YOU KNOW WHICH IS WHICH?

For collision repair, you need to know which material you're working with—thermoplastic or thermoset—and if it's repairable or if it must be replaced. You can start by referring to Toyota's Technical Information System (TIS) <https://one.tis.toyota.com>. Look up the specific make, model, and year of the vehicle and go to the Collision Repair tab. This will show you the attachment location and identifies the type of plastic used in that part.

HANDLING RAW PLASTIC BUMPERS

When a damaged plastic bumper needs to be replaced, proper preparation and refinishing are required to ensure high quality, long-term durability and customer satisfaction. You'll find Toyota's recommended procedures for cleaning and preparing original equipment raw plastic bumpers in Collision Repair Information Bulletin (CRIB) 170.

KNOW YOUR PLASTICS BEFORE STARTING A REPAIR

Be sure to follow the recommended procedures based on the parts you're working with to ensure you return a vehicle that looks perfect, functions as new, and maintains Toyota and Lexus safety standards.

CORROSION PREVENTION

WHEN AND HOW TO USE WELD-THRU PRIMER



YOU KNOW A PROPER REPAIR IS MORE THAN JUST RESTORING THE APPEARANCE OF A VEHICLE—it's protecting the vehicle from corrosion and damage down the line. Following Toyota's established corrosion prevention processes helps to ensure that the vehicle you repair can perform as designed for years to come.

WHY IS WELD-THRU PRIMER USED?

Over time, metal reacts with the environment and can deteriorate, or corrode, when liquids, gasses, and other contaminants affect its strength and appearance. Coatings like weld-thru primer, epoxy primer, paint, seam sealer, and cavity waxes are commonly used to help protect to protect bare metal from corrosion and rust. Specifically, Toyota requires the use of weld-thru primer during welding procedures on collision repairs to help prevent corrosion and rust where two metal pieces are welded together.

WHAT IS WELD-THRU PRIMER?

Weld-thru primer may be confused with paint primer, but they have entirely different uses. Weld-thru primer is used to protect bare metal from corrosion during the collision repair process, whereas paint primer is used to cover surface flaws and provide a proper foundation for the paint.

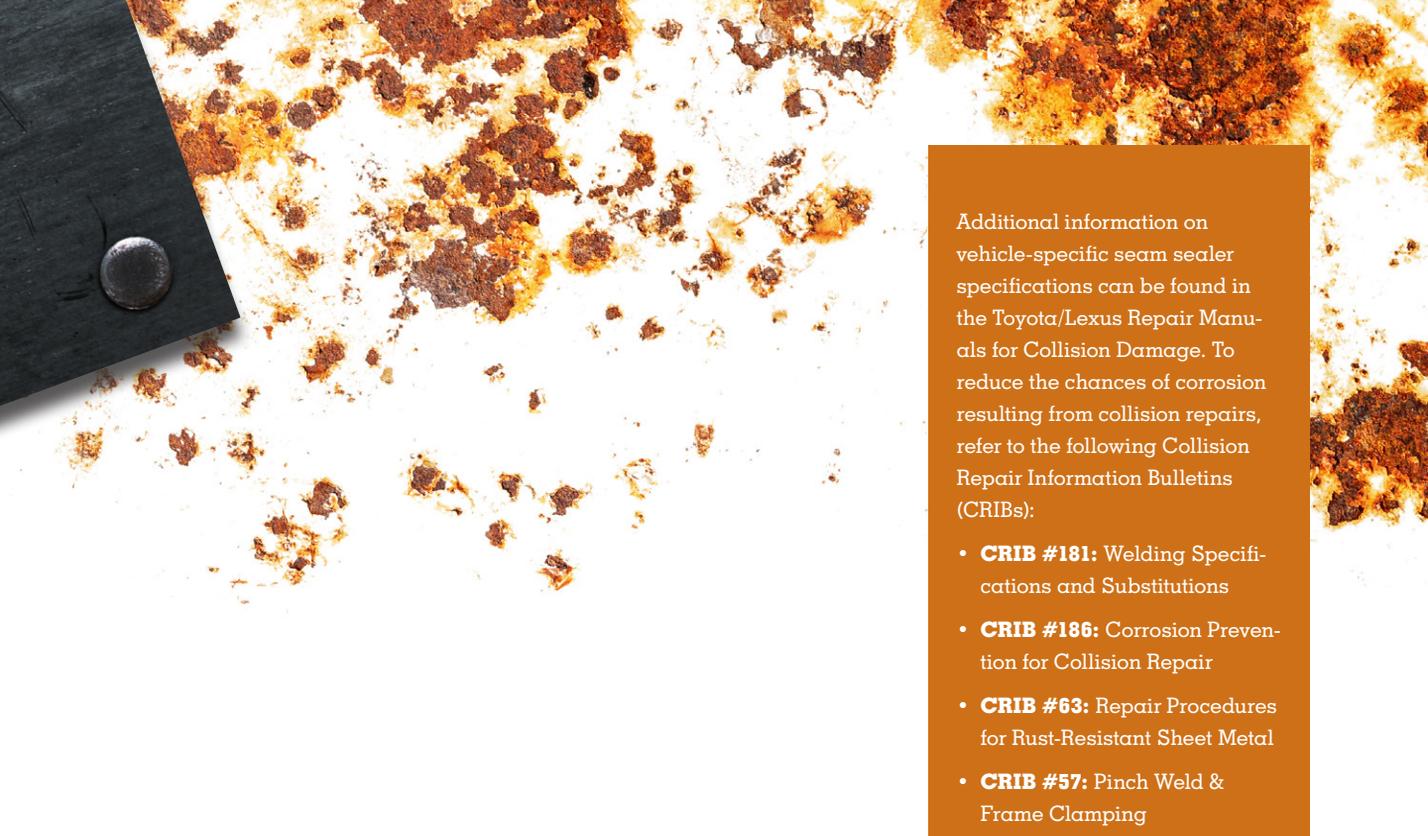
Weld-thru primer is usually made with zinc; however, some are copper based. For collision repairs on Toyota and Lexus vehicles, zinc-based primer must be used (consult the repair manual) during welding procedures because these vehicles are manufactured using an e-coat process. Zinc is also more resistant to corrosion than other types of primers, such as those made with copper.

HOW MUST WELD-THRU PRIMER BE USED DURING THE COLLISION REPAIR PROCESS?

Before welding, weld-thru primer is sprayed or brushed onto the bare metal around the welding area. During the welding process, the weld-thru primer liquefies and galvanizes the metal around the weld which helps protect the metal from future corrosion. It helps provide permanent rust protection on the inner edges of the welded metal pieces.

For the best results when using a weld-thru primer:

- The area to be welded should be thoroughly clean, bare metal. Remove any paint or protective coatings, clean the surface with a solvent and sand lightly.
- Coat the bare metal surface, including any overlaps, with weld-through primer.
- Let the primer cure thoroughly before welding to ensure the zinc bonds properly to the metal.
- After welding, remove any remaining weld-through primer before painting to ensure paint will adhere to painted surfaces.



Additional information on vehicle-specific seam sealer specifications can be found in the Toyota/Lexus Repair Manuals for Collision Damage. To reduce the chances of corrosion resulting from collision repairs, refer to the following Collision Repair Information Bulletins (CRIBs):

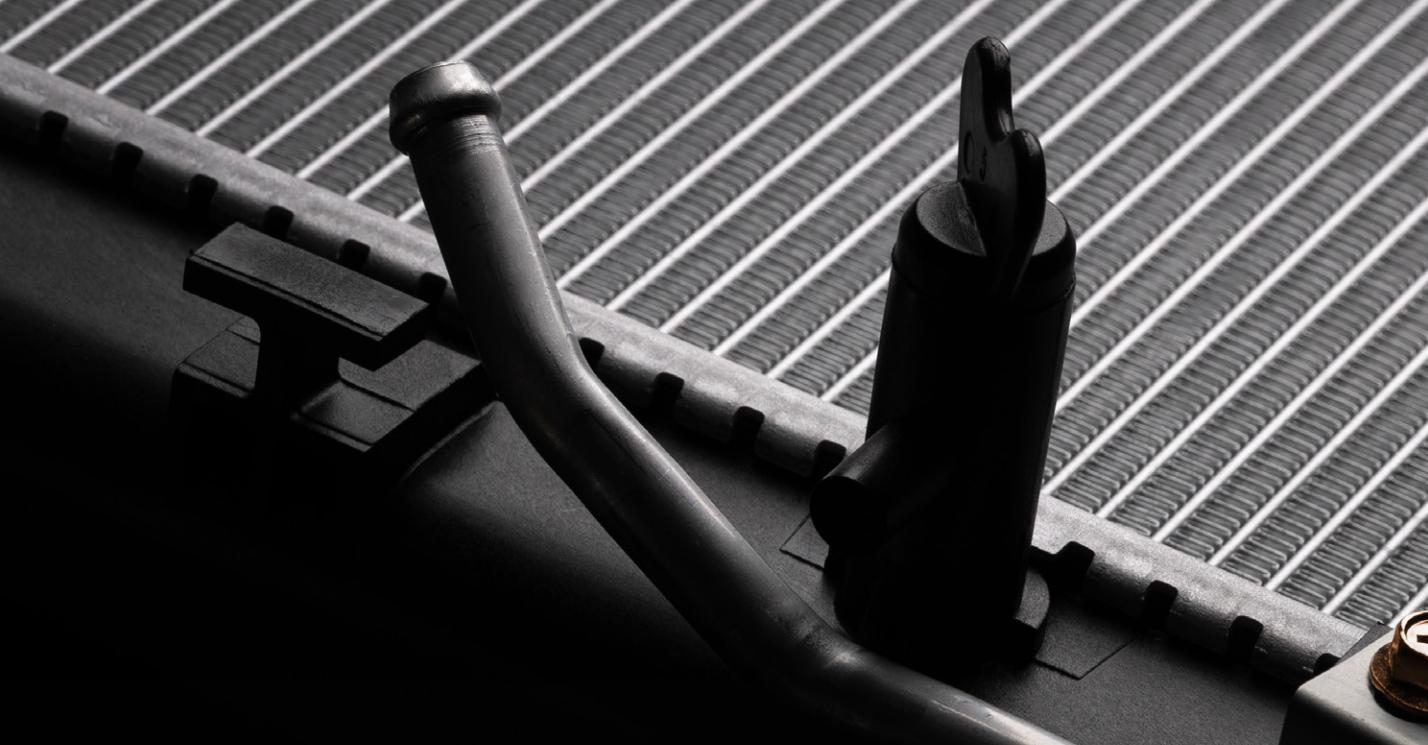
- **CRIB #181:** Welding Specifications and Substitutions
- **CRIB #186:** Corrosion Prevention for Collision Repair
- **CRIB #63:** Repair Procedures for Rust-Resistant Sheet Metal
- **CRIB #57:** Pinch Weld & Frame Clamping
- **CRIB #127:** Glass Replacement
- **CRIB #163:** Sealing Hem-Flanges & Body Seams



When new customers come into your shop, they expect their vehicle to be returned to factory specifications. So, it's important to properly apply corrosion preventative compounds (i.e. anti-chipping coatings, seam sealers, anti-rust agents, etc.) that will help inhibit the development of corrosion and rust and help maintain vehicle value. By consistently following Toyota and Lexus repair recommendations, you can help to ensure the best repair outcome resulting in an experience your customers will be happy to share with friends and family. 📌



FOR ACCESS TO COLLISION REPAIR MANUALS AND CRIBS, go to Toyota's Technical Information System website (TIS) <https://one.tis.toyota.com>



TOYOTA RADIATORS AND REPAIRS

KNOWING WHEN TO REPAIR OR REPLACE A RADIATOR OR CONDENSER

RADIATOR PERFORMANCE IS DIRECTLY RELATED TO VEHICLE PERFORMANCE. If a radiator is damaged in a collision and not properly repaired, the engine could overheat, could cause a coolant leak, or the transmission could fail.

That's why it's critical to properly assess front-end damage to determine if the radiator or the condenser have been affected by a collision, then follow the proper procedures to repair or replace.

AFTER A COLLISION—LOOK FOR CLUES

All modern Toyota and Lexus models use unibody construction. Unibody structural components support the weight of the vehicle and absorb road shock as well as the energy of an impact. This includes components like the radiator support. Whenever there is damage to the radiator support, you need to inspect both the support and the condition of the radiator.

If the radiator or the condenser have been crushed by the impact, repair is never an option—replacement is required.

There may be hidden damage to the radiator, so take the time to test the components thoroughly to determine if a repair is possible, or if replacement is required.

Inspect the vehicle for all forms of damage:

- Visible damage
- Dimensional misalignment
- Improper previous repairs

Any of these can affect radiator performance, which ultimately affects vehicle performance. If you don't catch this kind of damage before returning the vehicle to the customer, you may risk damaging customer satisfaction.



RADIATORS HAVE EVOLVED

Just as today's vehicles have evolved, so have radiators. Radiators used to be made of brass and copper. They did a great job of keeping an engine cool, but they were heavy and expensive to produce. Next, aluminum radiators became popular because they weigh approximately sixty percent less than brass and copper ones, while still delivering excellent engine cooling performance. Today, while many radiators still maintain an aluminum core, they now include plastic top and bottom tanks. This helps keep weight and cost down while maintaining efficiency.

IT'S GOOD TO BE GENUINE

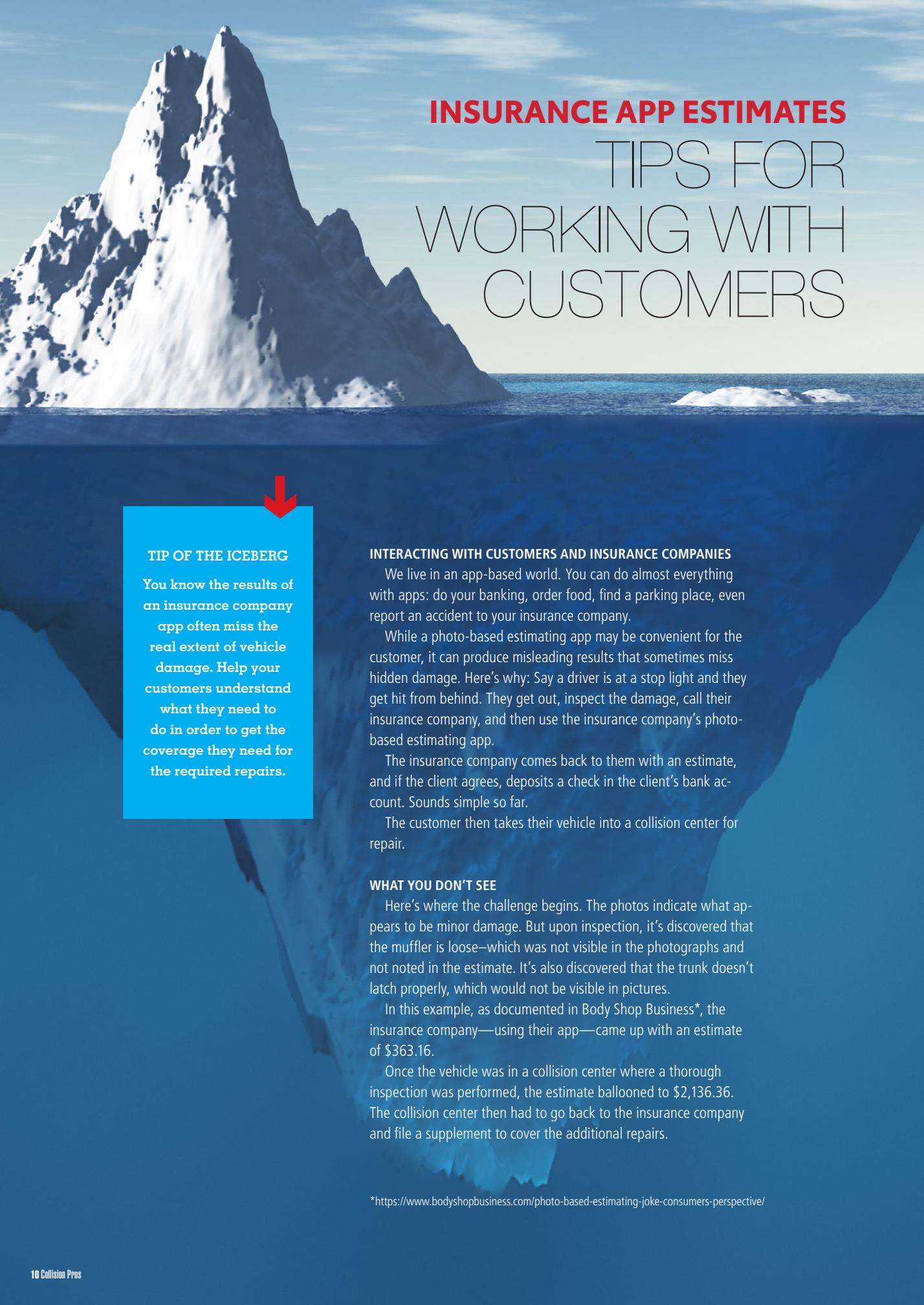
If you have to replace the radiator or condenser, Genuine Toyota parts are the best choice because:

- They're guaranteed to fit right the first time, making installation easy.
- They're engineered to meet all applicable federal regulations required when the vehicle was produced. Additionally, they meet Toyota and Lexus crashworthiness and occupant safety standards in the event of a subsequent collision.
- Genuine Toyota and Lexus radiators have outstanding durability and cooling performance:
 - They have thermoplastic tanks to ensure consistent tank thickness and shape for accurate mounting and optimal performance; plus, they're designed for long-term durability and can withstand high fluid temperatures and heat radiated from the engine.
 - Header plates are engineered and precision stamped to provide secure mating to the core, which helps to ensure dependable long-lasting performance.
 - Radiator tubes and fins are designed for optimum coolant flow, allowing efficient heat transfer to fins; the fin pitch and louver design create the optimum balance between air flow and heat transfer.
 - Tubes are designed to be strong so they withstand the impact from road debris.
 - The radiator tank gasket is made of a unique rubber material to help ensure durability due to temperature cycling.
 - The thick aluminum condenser tank is engineered to sustain a highly pressurized system.
 - The receiver dryer has the same size desiccant bag as the OE equivalent.
 - They're built to withstand a boiling point over 10,000 times, up to twice as much as top imitations.
 - They're backed by the Genuine Toyota Parts 12-month, unlimited mileage warranty.

You may think that quality comes at a cost. Not with Genuine Toyota and Lexus radiators. With competitive pricing and outstanding engineering, you and your customers benefit from Genuine Toyota and Lexus quality, fit, form, and function at a price that's competitive with the aftermarket. ▶

INSURANCE APP ESTIMATES

TIPS FOR WORKING WITH CUSTOMERS



TIP OF THE ICEBERG

You know the results of an insurance company app often miss the real extent of vehicle damage. Help your customers understand what they need to do in order to get the coverage they need for the required repairs.

INTERACTING WITH CUSTOMERS AND INSURANCE COMPANIES

We live in an app-based world. You can do almost everything with apps: do your banking, order food, find a parking place, even report an accident to your insurance company.

While a photo-based estimating app may be convenient for the customer, it can produce misleading results that sometimes miss hidden damage. Here's why: Say a driver is at a stop light and they get hit from behind. They get out, inspect the damage, call their insurance company, and then use the insurance company's photo-based estimating app.

The insurance company comes back to them with an estimate, and if the client agrees, deposits a check in the client's bank account. Sounds simple so far.

The customer then takes their vehicle into a collision center for repair.

WHAT YOU DON'T SEE

Here's where the challenge begins. The photos indicate what appears to be minor damage. But upon inspection, it's discovered that the muffler is loose—which was not visible in the photographs and not noted in the estimate. It's also discovered that the trunk doesn't latch properly, which would not be visible in pictures.

In this example, as documented in *Body Shop Business**, the insurance company—using their app—came up with an estimate of \$363.16.

Once the vehicle was in a collision center where a thorough inspection was performed, the estimate ballooned to \$2,136.36. The collision center then had to go back to the insurance company and file a supplement to cover the additional repairs.

*<https://www.bodyshopbusiness.com/photo-based-estimating-joke-consumers-perspective/>

HOW TO INTERACT WITH CUSTOMERS USING INSURANCE COMPANY APPS

Here are a few tips for working with a customer who arrives at your shop with an app-based estimate:

- Explain that the insurance adjusters can only react to what they see in your photos. This is not like seeing the damage in real life, because there may be hidden damage that's not visible to the camera.
- Tell the customer that before you can provide them with an estimate, you have to disassemble the vehicle to see what was damaged. For example:
 - An inspection may reveal that the body was "bent" and requires realignment
 - Sensors and cameras need to be tested to ensure they're still functioning properly and are properly aligned
- After inspection, carefully explain your findings to the customer:
 - Outline the steps you took to inspect the vehicle
 - Show them your estimate for parts and labor
 - Discuss the discrepancy between the app-based estimate and what really occurred during the collision
 - Tell the customer you'll work with their insurance company to explain the differences in an effort to help your customer file a claim for the true cost

Let your customer know that if you only perform the repairs authorized by the insurance company app (when there is hidden damage), that may put them in danger of accruing additional liability. When it comes time to trade or turn in the vehicle, the customer may become liable for additional hidden damage that may be discovered, which may also diminish the value of their vehicle. In the example above, the damage appears to be minimal. If the customer opted to skip the repair, keep the insurance money, and live with the damage, they may discover later that the value of their vehicle really took a hit.

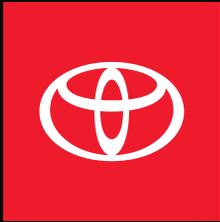
Many insurance adjusters are busy. A vehicle may sit in a body shop for a few days before an adjuster shows up to do a proper evaluation and provide an estimate. So, while these photo estimating apps may save insurance companies time and money, they may also compromise the quality of the repair.

Insurance companies are giving consumers what they want—quick service—but, it might not include everything they need. Be upfront and honest with customers about the potential danger of using a photo-based app so you can fix their vehicle right the first time. 🚗



Upon inspection, additional damage is often discovered. It's important to discuss the damage with your customer and explain why the cost is higher than the estimate. Let them know you will talk to the insurance company on their behalf to file a supplement for the additional repairs.





IT'S GOOD TO BE **GENUINE**



GENUINE • QUALITY • RELIABILITY • FIT • VALUE

Toyota Genuine Filters provide uncompromising quality, perfect fit, and exceptional value. They're engineered and tested by Toyota and backed by our Toyota Genuine Warranty, with all the benefits you need to help increase your shop efficiency and profitability. Now you can breathe easy—It's Good to be Genuine.



Wholesale Parts

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EXCLUSIVELY FROM YOUR TOYOTA DEALER

For complete details about Toyota's warranties, please refer to the applicable Warranty & Maintenance Guide or see your Toyota Dealer.