

Maximize your refinish hours from the start.

Spending the time upfront can help save time in the end.



Achieving a successful paint job or repair starts from the beginning. As vehicle repairs become increasingly complex, the way in which work gets done continuously evolves. Removing all visual indications of a repair can be quite the task, but it doesn't always have to be.

What happens at the start of the process lays the foundation for a quality result in the end. Skipping key steps like researching OEM procedures, creating a solid repair plan, and even glossing over pre-scans and calibration could create some headaches before you even pickup a tool. While there are a variety of ways we could help adjust and improve processes during body repair, let's take a closer look at the surface and paint preparation process.

No sand scratch should be overlooked.

We all want to get to the finish line faster. When the day-to-day pressure kicks in and cycle times are at risk, it's easy to make a few mistakes or skip a few steps where you can. Many times, unfortunately, these errors or oversights happen in the prep process. But there's one thing to keep in mind – every sand scratch matters.

One inconsistent scratch could lead to a complete repaint of a panel or vehicle. Take the time to prevent rework and defects caused by imperfections during the sanding process or after the repair is complete. Let's deep dive into a few sanding imperfections to better understand how they're caused, how to avoid them, and why they should not be overlooked.



Removing deep inline scratches when sanding filler.

Sanding with coarse grade abrasives can leave deep scratches on a surface that resemble semi-straight lines put in from each pass. As you prepare to spray primer, it is important to completely remove any 80 or 180 grit scratches. Missing any of these scratches could result in potential rework.

How are these imperfections caused?

- **Coarse grade sanding:** At the start of the sanding process, it is typically required to block with 80 and 180 grit, working your way up through the grades to knock down and feather out any filler or glaze on a panel.

How are these imperfections avoided?

- **Proper grit selection:** Knowing the grit or grit range for each step of the sanding process is key. 80 -180 grit is typically recommended for shaping body filler, 120 - 180 for paint removal and dent removal prep, 220 – 240 for final sanding of filler and featheredging, and 320 - 400 for surface prep for primer and e-coat sanding. Take the time to work your way up through the grades, carefully refining these deep scratches before primer application. If you look at the technical data sheet for most primers, they typically don't recommend priming over DA scratches coarser than 320 – 400.
- **Applying guide coat:** Using powders or guide coat can help highlight sand scratches and any high or low spots in the panel. It is a best practice to use guide coat after each sanding step, to continuously highlight any surface imperfections that otherwise could be missed. It is recommended to use a dry guide coat that drops down into the sand scratches rather than a wet guide coat that only highlights low spots. This is an extremely helpful tool to correct problems early on before they become bigger problems later.

Avoiding an inconsistent scratch profile during blend panel prep.

With challenging colors and metallics on the market today, achieving a proper color match can be quite complex. The repair process needs to be adjusted to accommodate these difficult colors and avoid repeat repairs. Although these inconsistent scratches might be hard to detect with the naked eye, using best practices can help ensure these imperfections are not left behind. With some ADAS-equipped vehicles, there are strict OEM requirements around paint mil thickness and only allowing you to paint certain parts one time. With these requirements in place, the prep process becomes even more crucial.



How are these imperfections caused?

- **Improper removal of paint build up:** Sometimes “picture framing” can occur, which is paint build up around the edges of a panel, creating a raised edge all the way around. If you jump right into sanding with an interface pad, the texture could get knocked down a bit but that raised edge might still be there. Spraying an ultrafine metallic over the top, could highlight this imperfection in the final product.
- **Too deep of a scratch:** When hand sanding around edges of a panel, body lines or curves, many times one can apply too much pressure with the abrasive they are using, which can increase the grit level and create too coarse of a scratch for basecoat to fill.
- **Inadequate dust removal:** Dust could drop down into scratches, making it difficult to visually see the scratch profile on the panel and increasing the chances of finely ground metallics settling into those scratches.

How are these imperfections avoided?

- **Removal of paint build up or dirt nibs:** First off, rub your hand across the panel to feel for any spots that may need to be knocked down. If you feel any nibs on the panel, you can take a blade and carefully glide over the spot until it's removed and smooth. Once you have a flatter surface, then take a look at picture framing around the panel. By lightly sanding over the corner and edges with a really fine grade abrasive, pay close attention to any shiny lines that may appear and remove them. This indicates where clear coat is actually lower than the edge. Anytime paint curls around the edge of a panel, it tends to build up on that side. When working with a fine metallic, those edges need to be knocked down as much as possible before spraying base color, or it may be noticeable after spraying clear coat. Clear coat may be thin on some of the newer vehicles, so be cautious when sanding down the raised edge to avoid burn through.
- **Proper sanding techniques:** It's a best practice to start with the edges of the panel first, then sand the face of the panel after. Hand sanding or scuffing around edges or body lines can put in additional straight-line scratches. Following up with a DA can get all of those inline scratches out. Sanding with a DA first then hand sanding the edges, could result in some of those inline scratches being left in the panel. Finely ground metallics would settle into those scratches and could be seen in the end result.
- **Using dust extraction:** Using a dust extraction system can help vacuum any dust remaining on the panel to help identify any areas that need additional work or remove dust from settling into any scratches that could later affect your paint job. In some cases, additional scuffing might be needed. Removing excess dust off of the panel can also allow the scratch profile to be more visible, instilling more confidence that the panel is ready to be sprayed. Disc loading or clogging that could lead to pigtailed, can be minimized with the use of dust extraction and a quality abrasive.
- **Check paint company tech sheets:** Always refer to the paint company's recommendations based on the paint line being sprayed. These tech sheets will note exactly what grade abrasive to use on blend panels. Most paint lines recommend sanding with 800, 1000, or even finer grade abrasives for blend panels.



Preventing unwanted “pigtailed” during surface prep.

One common issue that can arise during surface prep is the formation of ‘pigtailed’ or spiral-shaped scratches. These pigtailed can compromise the quality of the final finish by creating visible imperfections. Removing pigtailed can help enhance the overall quality of the paint job and prevent possible rework later on.

How are these imperfections caused?

- **Improper grit selection:** Jumping from a coarse grade to a finer grade abrasive too quickly, could result in not properly removing the coarser scratches initially put in.
- **Loaded or clogged abrasive discs:** Trying to get the most life out of an abrasive disc can lead to worn-down and loaded sandpaper that can leave scratches when abrasive particles get trapped between the sanding pad and the surface. Using abrasives past the end of life can cause uneven sanding and increase the risk of pigtailed.
- **Applying too much pressure:** Deep scratches or pigtailed can form when too much pressure is applied while sanding. Concentrating pressure on a single area of the panel can also lead to the formation of these imperfections.

How are these imperfections avoided?

- **Regularly replace abrasive discs:** Knowing when it's time to use a new disc is key. Replace abrasive discs as soon as they show any sign of wear or clogging. Pigtailed can trap dirt, dust, and other contaminants, which can cause further issues during the painting process. Using fine grade abrasives will always lead to pigtailed, so it important to know when it's time to clean the surface or changeout the disc.
- **Proper sanding techniques:** Keeping the sanding tool moving in a consistent, overlapping pattern can help ensure an evenly sanded surface. Apply even pressure and avoid tilting the sander to avoid creating unnecessary pigtailed or low spots.
- **Utilize dust extraction:** Using dust extraction systems can help remove dust and debris from the sanding area. This helps keep the surface clean and reduces the risk of particles causing pigtailed.
- **Using quality abrasives and proper grit selection:** Choosing high-quality abrasives can prolong the life of the disc, making it less likely to break down and cause pigtailed as fast. Stepping up progressively using the proper grit sequence can also decrease the likelihood of pigtailed forming.
- **Maintaining a consistent process:** While you might be able to cover up some imperfections when spraying some solid colors, you could start to see these pigtailed again when spraying a metallic color. Having a consistent surface prep process no matter what color you plan to spray, can help prevent rework in the end.

Consistently strive for quality.

While sanding may seem like second nature for some or a whole new process to grasp for novice techs, quality tools and consistent processes are a must. Surface prep requires a variety of steps but at the end of the day, achieving a consistent, textured surface that will properly grip to your primer and paint is the goal.

Take note of some of the commonalities across the pain points discussed above. Proper grit selection, sanding techniques, abrasive quality, and even the use of dust extraction can help enhance the overall quality of the paint job. Maintaining an optimal sanding process can significantly reduce the risk of imperfections appearing after paint or once the repair is complete.