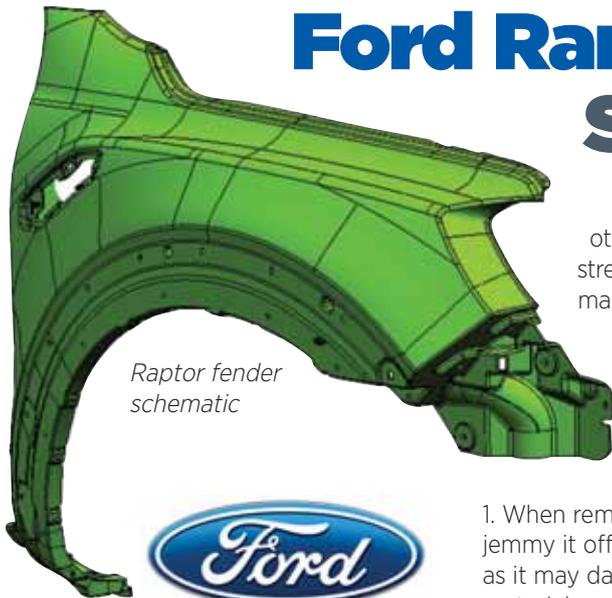




Ford Ranger Raptor's SMC fenders



Raptor fender schematic



The muscular look of the Ford Ranger Raptor has a great deal to do with the technologically advanced sheet-moulded composite (SMC) material used to make the fenders.

"One of the things Ford tried to achieve with the wider track the Ranger Raptor has over the standard Ranger family is a more dominant appearance or a stronger presence, so we had to change the surface geometry," said Richard Taube, Ford structural engineer. "To put it quite simply, you cannot get the shape of the panels we desired with a steel or aluminium panel. We had to use a composite material (SMC) that gives good performance in terms of ding and dent resistance. Most importantly, it has enabled us to get the surface language and appearance that we desired."

The panel is a compression moulding rather than the traditional injection moulding. The composite material is lightweight, strong and durable. When repairing, SMC has different properties and characteristics compared to thermoplastic (TPO), ABS or PVC compounds that are commonly used in automotive moulded components. Because SMC is reinforced with glass and

other fibres, it provides strength and rigidity whilst maintaining a high strength-to-weight ratio.

So what's important for collision repairers to know about this product?

1. When removing the panel, do not jemmy it off with a sharp instrument as it may damage and/or fracture the material – and never use pry bars or spoons to adjust.
2. SMC is different from fibreglass. It is smooth on both sides, whereas fibreglass is only smooth on one side. You won't see the fibres in the back of SMC panels. They require finishing/sanding on both sides of the repair. Don't use fibreglass repair material – there are specific materials to use, such as, but not limited to, 3M Rigid Parts Repair Adhesive.
3. You cannot plastic-weld this product and there is no adhesion promoter required for these repairs.
4. It is very important to protect any exposed fibres during the repair process.

Ford Australia, in conjunction with 3M's Automotive Aftermarket Division, have produced two repair procedures for the Ford Ranger Raptor front fenders.

These procedures allow for single-sided and dual-sided cosmetic repairs, though any major structural damage to the panel would require panel replacement. The process charts detail the steps in the repair process from the protection of exposed fibres, which eliminates the wicking of solvents and cleaners into the SMC, to the cleaning and preparation of the repair area prior to the application of the 3M 5885 Rigid Parts Repair Adhesive. This product is a two-part epoxy adhesive designed to be used as a filler and adhesive for the repair of SMC and other rigid plastic parts. It has an eight-minute worktime and 30-minute paint time, is an easy to sand material, and is formulated to provide an excellent featheredge.

For more detailed information, refer to the 2019 Ford Ranger Workshop Manual Section 501-25 Body General Procedures or contact your Local Ford Dealer or 3M Sales Representative.



Ford's awesome Ranger Raptor.



Battery technology has improved rapidly in recent times and this has helped drive a compact, portable tool revolution. Now repairers have the potential to quickly and conveniently target de-nibbing and polishing

operations wherever and whenever they want, while minimising the affected area to save valuable time.

Issues

In the past, the tools and pads used for surface rectification tended to be a one-size-fits-all approach. We are typically talking a 200mm electric polishing machine (either direct drive or random orbital) with corresponding sized buff pads. This is fine for large areas but no good for targeting a small de-nib spot and it has to be plugged into a power socket, which limits where it can be used.

Features and benefits

Modern battery powered tools, such as MIRKA's AOS-B 33mm de-nibbing tool, ARP-B 77mm polisher and AROP-B 77mm random orbital polisher, are game changers. Not only does the Li-ion battery technology make them powerful, high torque and long lasting, they also ditch the cord, which means you can use them anywhere.

For example, I was at a collision centre recently where a car was in the carpark ready to be picked up and ghosting was noticed on the dark colour. Traditionally, it would have been driven back into the detailing area to be corrected. However, with this one, they simply took the portable battery powered polishing kit to the car, polished the affected area and it was "job done".

Battery powered revolution



MIRKA

Small is fast

Compact battery powered tools and accessories have the potential to save a lot of time on a wide range of everyday jobs, including prepping for a blend, polishing prior to a spectro reading, de-nibbing and polishing out de-nib scratches and polishing small items, such as mirror casings.

Targeted de-nibbing

Forget manual de-nibbing. Technicians often de-nib in a back-and-forth motion that leaves linear scratches that take much longer to polish out. In contrast, something like MIRKA's AOS-B 33mm de-nibbing tool precisely targets and removes the dust nib with a circular random orbital motion, which is much easier

to polish out. This also provides a key advantage by minimising the area affected by the de-nib process. These fine de-nibbing scratches can then be quickly and effectively polished out with a 77mm polisher. Afterwards, a larger area or the entire vehicle can be polished with a conventional 200mm buff.

Set up to be mobile

Because it's not tied down to a power point, you can set up your portable battery powered de-nib and polish kit in a way that is most convenient to you. With its latest "Systainer" offer, MIRKA is including a handy carry case that contains everything needed, from three tools and a spare battery, to polishes, buff pads, de-nib roses, etc. Having said that, you could just as easily slot everything into a trolley that can easily be wheeled to wherever it's needed.





Opus IVS: supporting body shops to achieve consistent workmanship



More cars on the road means more collisions, and more complex cars on the road means more complex cars to repair after a collision. Body shops, if they choose to, must be equipped with the knowledge, experience, and technology to manage repairs of not only external body damage but that of mechanical and/or electrical systems that were damaged at the time of the collision.

The playing field has changed for body shops when it comes to repairing complex vehicles. As always, body shops want to ensure the vehicle is repaired correctly and is safe before it is returned to the customer. This means they need to equip and futureproof themselves with the ability to handle complex electrical systems to accurately quote for repair, as well as providing evidence that the vehicle has been returned to the customer in the correct state post-collision, all whilst meeting OEM standards.

Therefore, today's modern body shops are turning to industry collision diagnostic manufacturers to support their consistent workmanship, with the aim of establishing strong relationships with insurers and, of course, maintaining high standards of repair.

For many body shops it is new ground and often they will not know which way to turn when choosing the equipment to get the job done right first time. The body shop has the option to outsource the work, but this can be costly in lost time and revenue.

Opus IVS (the Intelligent Vehicle Support division of Opus Group) has introduced a solution for the body shop. The DrivePro Collision package will not only offer leading collision scan tool capabilities, but also expert step-by-step guidance from OEM brand-specific master technicians.

IVS 360 supports you and your technicians to complete the job with "peace of mind".

Pre-scan benefits include:

- Reduction in downtime for the insurer due to the ability to determine and identify components that need repairing or replacing prior to any work being carried out.
- Provision of complete reports of diagnostic trouble codes (DTCs) for the insurer.
- Ability to determine from the DTCs when a fault/collision actually occurred.

Post-scan benefits include:

- Assurances that the vehicle is repaired and calibrated correctly, reducing the risk that the vehicle is returned with malfunctioning systems.

Here is a recent IVS 360 case involving a Range Rover which, after a steering rack replacement due to a collision, was experiencing a major power steering fault.

Make and model: 2014 Range Rover Evoque

Symptom: The customer reported that the steering rack was replaced after a front corner collision, but now the power steering is not working.

Fault codes: Power steering control module (PSCM) – U2100-00 initial configuration not complete – no sub type information.

Repair details: An IVS 360 Land Rover support specialist explained to the

technician that the steering rack is electric and contains its own control module, and that this control module requires programming when first fitted. Programming the control module writes the correct software and aligns the control module with other vehicle systems such as the ABS and steering angle sensor.

The technician was asked to check that the steering angle sensor was aligned dead ahead and advised that the steering wheel must not be turned during the replacement of the steering rack.

The technician was guided on how to program the PSCM using DrivePro. After programming was completed successfully, the technician performed a full vehicle fault read and cleared the DTCs from all control modules before road testing the vehicle.

With IVS 360 guidance the technician was able to complete the repair using correct manufacturer methods, clear all faults and ensure a safe vehicle was returned to the road.

If you would like to know how you can complete more collision repairs in your body shop, without having to outsource jobs, get in touch with Opus IVS to discuss the DrivePro Collision Repair Solution.

For more information,
call Tel: +61 (03) 8561 7600,
email: sales-au@opusivs.com or
visit: www.opusivs-au.com



Born2Bond Engineering Adhesives



Born2Bond Repair is a patented, gap-filling, instant adhesive and repair product with excellent adhesion to a wide range of materials and surfaces. Repair is ideal for instant bonding and repairing as it combines the strength of a structural adhesive with the speed of an instant adhesive. The gel consistency enables application in any orientation and a hardened polymer is formed in less than 10 minutes.

Directions for use

1. Always ensure the surface is clean, dry and grease-free using a cleaner such as isopropanol.
2. Part A and Part B must be blended, so it is necessary to “equalise the cartridge”. The product can be applied directly from the cartridge using the customised gun and dispensed through the mixing nozzles supplied.
3. Once the cartridge is in the gun, take the cap off and extrude a bead to equalise. This is paramount – do not skip this step! Then attach the mixing nozzle and dispense the adhesive upward until any bubbles present in the smaller component have been removed.

4. Dispense and discard a bead as long as the mixing nozzle to ensure sufficient mixing.
5. Apply the mixed adhesive to repair surface. Smooth the repair mix to the desired shape or fill a hole. This is a small repairs product, so you will have about one minute.
6. The repair is ready to sand within 5-6 minutes, and the bond will develop full strength, typically in 24 hours, after which it will be ready for full service load.

One of the key features of this exciting new product is that it has a fixture time of 60 seconds and, subject to the type of substrate, hardens in 5-10 minutes. Repair provides instant adhesion with high bonding strength, has low volume shrinkage (4.3%), and fills gaps of any volume. It bonds a large range of materials (excluding polyolefins), and once hardened is machinable, sandable, paintable and is also impact resistant. The gel consistency is non-sagging for vertical applications and is engineered for precise application.

Typical applications for Repair include a range of aftermarket repairs, such as side mirrors, bumpers and spoiler aprons on cars, bikes, boats and jet skis. Wood repair and reconstruction, rubber door bonding and, of course, automotive joint bonds

are achievable with this multi surface adhesive/repairer product.

Optimal storage is between 2°C and 8°C, as storage outside this temperature range can adversely affect the product’s properties. If stored properly, the shelf life is 12 months from the packaging date.

The MSDS is available on the Bostik website and should be consulted prior to use for proper handling, clean-up and spill containment and, in line with good industrial hygiene practice, keep containers covered to minimise contamination.

As with any high-performance engineered product, Repair has its limitations. It is not recommended for use in pure oxygen and/or oxygen-rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials. In addition, material removed from containers may be contaminated during use. Do not return product to the original container as Bostik cannot assume responsibility for product that has been contaminated or stored under conditions other than those specified.

For more information, visit:
<https://born2bond.bostik.com/en/home>, or contact Ross Lewis
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