

# SAFETY FIRST!

The crew at Powerhaus showed Hot VWs how to install a bolt-in roll bar kit from Ron Lummus racing

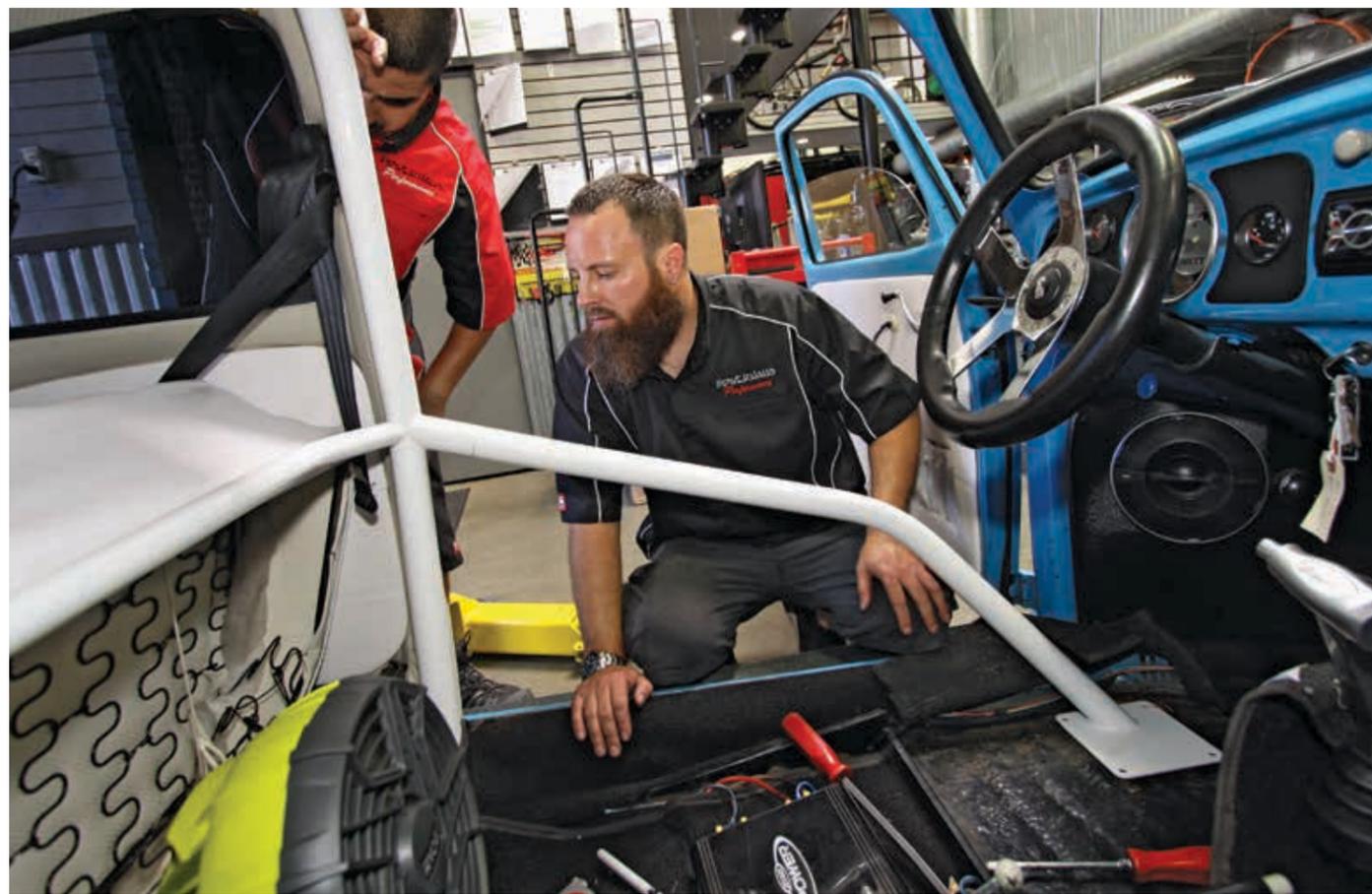
By Bruce Simurda

**W**hen building a high-performance air-cooled VW, whether for drag racing, off-road, or street use, it's important to not only pay attention to engine and transaxle modifications, but also to the safety aspect of the vehicle. Components like the brakes, seat belts, suspension, steering system, tires and wheels should all be in tip-top condition, and upgraded as necessary to mirror any increases in performance. If you are anticipating a substantial boosts in power, additional safety measures, such as a roll bar or roll cage, should also be considered.

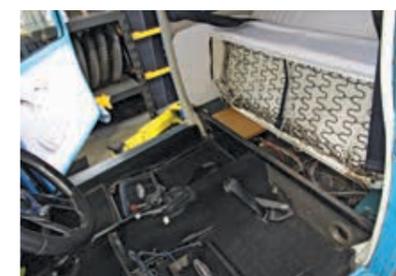
According to NHRA, vehicles that run between 11.49 and 10-seconds (under 145 mph) in the quarter mile must have a minimum of a 5-point roll bar fabricated of 1-3/4-inch x .118-inch-wall mild steel or .083-inch-wall 4130 chromoly tubing (convertibles have additional rules - visit the NHRA website for complete rulebook information). For performance VWs, this is a smart safety idea even if your VW doesn't run that quick, due to its short wheelbase and less than aerodynamic design. We've seen more than one Beetle

get airborne while competing at over 100mph, so if you're going to be racing your VW the small investment in a roll bar makes a lot of sense!

One option in this area is the bolt-in roll bar kit from Ron Lummus Racing in Anaheim, California. RLR's bolt-in roll bar kits have been around for quite some time as they were first introduced in 1999 for performance street applications. This roll bar is made in the USA from 1-3/4-inch chromoly tubing, and is available as a 5-point system, and can be upgraded



Components of the RLR bolt-in roll bar kit include the large main loop, two rear bars, driver's side door bar, and both flat and contoured plates for under the pan. Optional components here include a passenger's side door bar and traction bars.



The first step is to locate the car in an area where you will be able to easily work with the doors open, remove the front seats, and raise the car on secure jacks so you can work on the underside.



The crew at Powerhaus then tightened a tie-down snugly around the lower legs of the main loop, to help it slip between the contours of the pan. If the shifter is in place, do this after the roll bar is in the car.



According to the RLR instructions, the roll bar can be mounted either on top or below the carpet. For the main loop on this install, they chose to mount it under the carpet. Be sure all wires are out of the way.



You can see how the mounting pad fits the contour of the floorpan nicely. The main hoop's forward edge should be aligned with the flat edge of the door jam. Again, watch for those wires!



With the main loop set in place, you can attach the two rear bars. It's possible that powdercoating got inside the rear bar tubing, and will have to be removed. A sanding roll removes it quickly.



The fit should be tight, so if necessary give it a few taps with a soft hammer while protecting the powdercoat finish. Wiggling the bar as you push it on it also helps.



Insert one of the provided Phillips head screw and Nylock nuts into each rear bar, but do not tighten yet. This locates the two components and prevents them from turning during installation.



Measure that the main loop is positioned correctly at the door jam, centered side-to-side, and both sides are in the same location. Your finger should barely fit between the tubing and the door jam.



Once everything is correct, drill a 3/8-inch hole through one of the main loop roll bar plates and into the pan. Install a bolt, and lightly tighten before drilling and installing the second bolt.



Here, Powerhaus' Corey Siler puts the passenger side door bar in place. For this installation they will be placing the roll bar mounting pads under the carpet.



The factory tar boards needed to be removed, so the location of the mounting pad was marked. Once trimmed with a box knife, the tar board was removed from the mount location.



Corey and Moises Guerrero checking the alignment of the holes in the door bar. Correct alignment will ensure that the pads sit flat on the floorpan.



As with the rear bars, Philips head bolts are installed in the door bars, with the nuts left loose until later.



The next step is to drill the holes for the rear bar pads, but before you do, double-check to see what lurks under the parcel tray! Oftentimes we forget components — like this oil cooler!



They decided to install the rear bar on top of the carpet, but you know how a drill bit can grab a strand of material, leaving a line of missing carpet! Check out the sidebar on heating your drill bit!



Flat roll bar plates are used to secure the rear bars to the parcel tray when the traction bars are not used. Use either to locate the rear bars by installing two screws and lightly tightening the nuts.



With the center and rear bars lightly secured, the door bars are next. Drill one hole and install the bolts with the nut lightly tightened, then install a second.



After all the pads have two bolts lightly securing them in place, it's time to drill the remaining holes and install all the bolts and nuts. You may have to massage the floorpan to get it flat enough.



An installed roll bar plate. Note how this plate is bent to perfectly fit the shape of the floorpan.



Because this Bug will receive the optional traction bars, the flat plates were removed and the bars added in their place. With all the components under the parcel tray it's a close fit.



One of the last jobs is to bolt the traction bar to the trans mount, which can be quite difficult with the engine in place.



Here, Corey clamped the bar to the trans mount, and then used a long drill under the pushrod tubes to drill through the mount and mark where the traction bar should be drilled.



A close-up of the drill shows how it's at an angle, so just use the long drill to mark the location on the traction bar.



Use the 3/8-inch drill bit to finish the hole in the transaxle mount, then install the bolt and tighten the nut.



The last thing to do is go back and fully tighten all the roll bar bolts, both at the slip joints and all the plates.



Now remove the traction bar from the car, secure in a vise, and drill the 3/8-inch hole at the mark as square as possible.



The complete roll bar installation. What a great way to add a new level of protection when racing on the quartermile, or simply driving your VW on today's always-hectic streets.

as well to a 6-point with the addition of a passenger side door bar kit and is available with a powdercoated finish. The design of the kit keeps the door bars low to make entry and exit easier, and an optional traction bar, which goes between the rear bars and frame horns, is also available for high horsepower and turbo cars. Besides adding driver protection, the RLR roll bar increases the VW pan's rigidity resulting in improved track stability. We should also mention that, according to Ron Lummus Racing, in order to be NHRA-legal the sleeves have to be welded together with the rear cage supports (instead of bolted), and roll bar padding added in helmet contact areas.

To see how one of these cages fit in an early VW Beetle, we hooked up with the crew at Powerhaus in Torrance, California where they were about to install one in a turbo street sedan. The Powerhaus team showed us that the installation can be completed with a handful of standard tools in an afternoon and is very straightforward. There are also some tips to make the job easier (such as tightening a strap around the legs for an easier fit, or heating the bit before drilling through the carpeting). It's good to see how it all goes together beforehand in order to avoid making any unsightly drilling mistakes. The installation process amounts to installing

the main hoop, followed by the rear bars that mount to the cargo area floor and then the door bar. As mentioned, the passenger side bar is optional and was included in this installation. Another option are the traction bars that are installed last and can be either welded to the frame horns or bolted to an aftermarket trans mount. The Powerhaus team bolted the traction bars to the trans mount in this application, and found that this is a lot easier done without the engine in place as there is little room for a drill in the area the holes need to be made. Also, always check under your car before drilling any holes through the body or pan, as you might not remember what is mounted directly beneath (like an oil cooler or fuel line!).

Without a doubt, a roll bar adds an additional amount of safety to any high performance vehicle and the RLR system makes the addition of such a device simple and inexpensive. Just don't forget to add a high quality set of racing harnesses and quality brakes to provide the level of protection you deserve.

## SOURCES

### Ron Lummus Racing (RLR)

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## HEAT YOUR DRILL BIT!



Have you ever tried drilling a hole through your VW's carpet, only to have it grab a line of material and strip it off your carpet? Well we have, and so has the crew at Powerhaus. That's why when photographing this article, they showed us their simple but effective solution for this problem. They simply heat the drill bit's tip with a torch, which melts the carpet material as you drill, preventing it from grabbing a thread and destroying your carpet! We have to thank the Powerhaus team for such a great tip....