DECEMBER 2022

THE SHOP

For performance, restyling & customization professionals

NITROUS OXIDE

HITTING ITS MARKS

OUT FRONT WITH THE CIRCLE TRACK MARKET

CARGO MANAGEMENT

REBELLE RALLY



TURBOS

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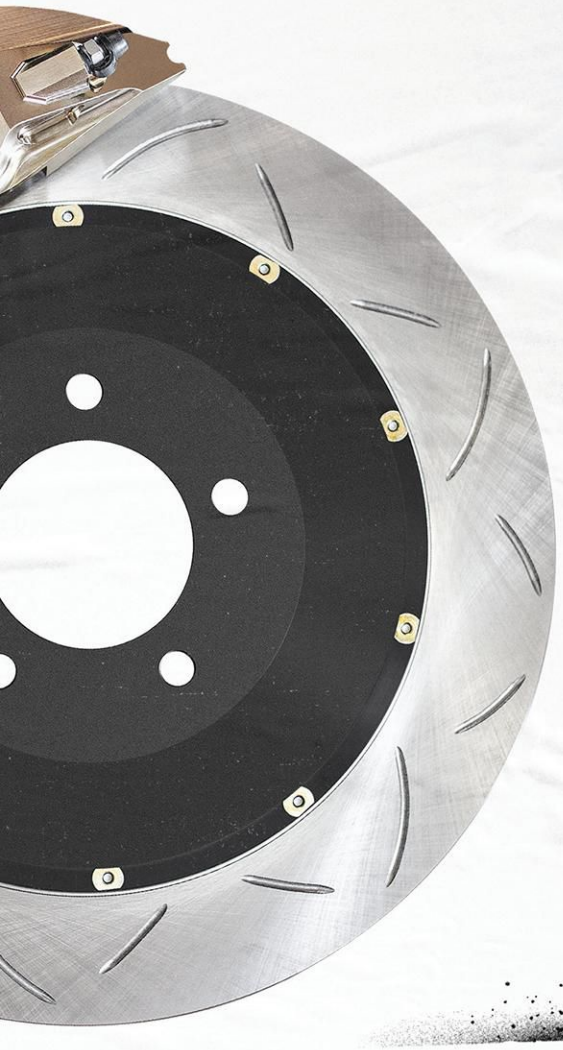
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(Photo courtesy Bilstein)

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Jef White
Editor
www.theshopmag.com

Industry Watches National REPAIR, SMART Acts

Companies in all corners of the aftermarket are watching the progress of the REPAIR and SMART Acts, national legislation aimed at protecting the rights of small businesses to work on newer vehicles.

In an effort to explain the issues, the CAR Coalition—"a group of independent automotive parts, management and repair companies, associations and insurers committed to preserving consumer choice and affordable vehicle repair"—has released a pair of research papers focused on the impact of right to repair legislation in the automotive industry.

The papers, which are focused on the REPAIR Act (H.R. 6570), authored by Aaron Perzanowski of the University of Michigan Law School, and the SMART Act (H.R. 3664), authored by Joshua Sarnoff of the DePaul University College of Law, argue that in the face of rising costs and restrictions to auto repairs, consumers will be forced to spend more without legislative action.

Approached from the collision industry viewpoint, the findings nonetheless highlight the importance of access to vehicle information for all aftermarket professionals.

The CAR Coalition outlines the legislation, stating that the REPAIR Act will:

- Preserve consumer access to high-quality and affordable vehicle repairs by ensuring that vehicle owners and their repairers of choice have access to necessary repair and maintenance tools and data as vehicles continue to become more advanced
- Ensure access to critical repair tools and information, including access to onboard diagnostic and telematic systems needed to repair a vehicle
- Ensure cybersecurity by allowing vehicle manufacturers to secure vehicle-generated data and requiring the National Highway Traffic Safety Administration (NHTSA) to develop standards for how vehicle-generated data necessary for repair can be accessed securely

While the SMART Act will:

- Amend U.S. design patent law to reduce from 14 years to 2.5 years the time car manufacturers can enforce design patents on collision repair parts (fenders, quarter panels, doors, etc.) against alternative parts suppliers
- Allow alternative parts suppliers to research, develop, make and test parts on a not-for-sale basis during the new patent period
- Allow alternative parts suppliers to sell an aftermarket collision repair part once 2.5 years have elapsed from the date of patent

"Repair restrictions on automobiles are driving prices higher at a time when many Americans can least afford it," says Justin Rzepka, executive director of the CAR Coalition. "These research papers demonstrate the impacts of these restrictions on consumers' bottom lines. As technology develops, policy surrounding these issues must as well. It's time for Congress to get serious about solutions, including the REPAIR Act and SMART Act, to ensure consumers have options for quality, safe, affordable auto repairs and more control over their data."

Both legislative efforts have bipartisan support. For more information visit carcoalition.com. ***TS***

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VOLUME 25 ISSUE 7

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MAXIMIZING YOUR MARKETING

Tactics to prioritize if you have limited time & money.

By Barry Alt

If you have a limited amount of time and money, then investing them in the right place is vital to the success of your aftermarket shop. To ensure your marketing investments hit the nail on the head, you must prioritize the most important places to invest.

From blogs and social media to video and email marketing, there are many essentials that contribute to your company's online success. But where should you focus your time and effort? Which should you prioritize to make the most of your marketing and get the best return on investment?

Today we'll guide you through some marketing tools you can use to get your name out there. We'll show you what they're used for, how to use them, and help determine which are the best options for your business.

WHERE TO START

What type of marketing should you invest in for your automotive aftermarket shop?

There are a lot of strategies designed to help you stand out online. But which are the best ones to invest in first—video, blogging, social media, email, PPC (Pay-Per-Click) or something else?



An active social media account shows that you're a trustworthy business.

With so many options, it can be pretty overwhelming when you're starting off. So, let's take a closer look at the top five marketing strategies used by aftermarket auto restoration and performance shops to help you get a better idea of what you're dealing with.

***NOTE**: For each section, we used dollar signs to indicate the possible cost range in time and money—one $ for the least expensive, up to five $$$$$ for the most expensive.*

1 Social Media Marketing $$$ - $$$$$

Studies show 77% of social media marketers say that their social media marketing

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SPECIALTY EQUIPMENT BUSINESSES REMAIN OPTIMISTIC

The record-high sales growth of the automotive specialty equipment market over the past two years is beginning to level off, according to new research from the Specialty Equipment Market Association.

Despite ongoing economic uncertainty, supply chain issues and rising costs, however, a new report shows companies are still optimistic about the industry, as sales remain solidly above pre-pandemic levels.



Despite ongoing economic uncertainty, supply chain issues and rising costs, research shows aftermarket companies are still optimistic about the industry.

"Businesses experienced record-high growth the past two years," says Gavin Knapp, SEMA director of market research. "We saw growth that was above the industry's norm, so it makes sense that we're returning to more normal levels. It's great to see that most companies are up from 2019 levels."

Conducted every six months since 2021, SEMA State of the Industry studies are designed to give companies clarity about the overall market during an uncertain time.

"The disruption from the pandemic made it difficult for members to understand what the market was going through, and nearly impossible to forecast," SEMA states. "Based on data from the automotive specialty equipment industry, the reports give readers a barometer to gauge how they are currently doing and make predictions about what's to come."

The newest Fall 2022 version of the study reveals that 47% of manufacturers, 48% of distributors and 44% of retailers expect sales to increase in the coming year. Additional findings include:

- Supply chain issues continue to affect the industry. Over 90% of companies say disruptions are having a moderate or significant impact on operations.
- Inflation and supply chain issues are resulting in higher costs for businesses. More than 90% of companies report an increase in supplier or production costs; most (around 80%) are compensating for the higher costs by raising prices. Despite this, consumer demand and revenue remain strong.
- Ongoing supply chain issues and high prices are slowing new vehicle sales. Sales are not expected to return to pre-pandemic levels until 2024 or 2025. Sales for 2022 are expected to fall about 1 million vehicles short of 2021, at 13.9 million units total. The average price of a new vehicle reached $48,301 in August 2022, a record high. The average price of an electric vehicle was even higher, at over $66,000.

The complete State of the Industry—Fall 2022 report is available to download for free at sema.org/research.

strategies have been effective this year.

So, social media is a fantastic option to invest in because of how effective it is and because it's easy to do. Plus, it doesn't take too much time out of your day.

You only have to update your social media three to five times a week, which isn't that much if you think about it. Plus, many social media platforms allow you to schedule posts in advance, so you can organize a whole month of posts in one day, if desired.

Organic social media marketing allows you to enhance your presence online. An active social media account also shows your audience that you're an actual, trustworthy business.

Be sure to update your social media with a variety of content, so your audience doesn't get bored. You can post videos, images and even audio.

It's important to include promotional posts and educational content to help your audience.

Valuable content can include:

- Tips
- How-Tos
- Statistics
- Entertainment
- Behind-the-Scenes Videos

Promotional posts can be effective, but if you post too many, you might appear spammy to your followers.

Keep in mind that you first need to know where your audience lives online. Many professionals use LinkedIn, older customers might prefer Facebook, and younger customers might spend most of their time on Instagram, as an example.

Also, remember to keep all your social media platforms up to date, even if you only post once a week. I can't tell you how many aftermarket shops have pages that haven't been updated in months or even years. If someone hits those pages in a


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search, they might think you're no longer in business.

So, be consistent. Even if it's once a week or once a month, post on your social media.

Social media marketing doesn't have to be expensive—you can do it yourself if you want to or have someone on your team take charge. If you don't have the time, skill or a team member to do it but still want to reap the rewards of active social media, then hire a third party that specializes in online digital marketing to take care of your social media for you.

If you're ready to pay for added exposure, Facebook and Instagram ads can be a fantastic way to gain more followers on your social media page, if done correctly. They can get you traction quickly and help you gain the audience you're looking for.

However, paid social media advertising takes a long time to build up a good ROI and can be expensive. Plus, it only works as long as you keep paying for it.

I recommend investing in social media marketing and then, when you've built a strong following, investing in Facebook and/or Instagram ads if you have the budget for it.

PRO TIP: See if any of your employees are good at social media and give them the task of updating your accounts. They could even post live updates of projects you're working on. This can save money and time.

2 Content Marketing $$ - $$$

Content marketing should be high on your list of investments. Investing in content for your website is key to showing your expertise and standing in your chosen field.

Content mainly includes blog article posts and website copy. Delivering valuable information demonstrates industry knowledge. The more you provide customers with high-quality, informative content, the more they'll feel confident in your abilities as a shop.

You should post at least once a month on your blog, but twice a month is ideal. The more you post and the more free information you give your audience, the more they'll engage with you.

Besides blogs, you can also look at getting published in industry publications or on sites that your niche prospects are reading. Well-written and researched content from industry experts is always in demand.

All you have to do is ask. In fact, that's how I started writing for *THE SHOP* magazine back in 2019!

Writing blog posts and articles also helps improve your website ranking for keywords. By including important keyword phrases your audience is searching for, you'll be able to increase the amount of traffic that comes to your website.

For example, from April to September of this year, six of the most popular landing pages on our Motorhead Digital website were the blog main page and blog posts.

	Landing Page
1.	/
2.	/why-ignoring-your-website-is-costing-you-money
3.	/about
4.	/blog
5.	/the-2021-sema-show-brings-out-the-best-of-the-best
6.	/free-custom-visibility-report
7.	/why-ignoring-your-linkedin-is-costing-you-money
8.	/why-ignoring-shops-online-presence-is-costing-you-money
9.	/contact
10.	/how-to-get-your-time-back-by-automating-processes

Six of the most popular landing pages on our website were the blog main page and blog posts.

PRO TIP: If you're not a writer or don't have time to write blog posts, consider hiring a professional content marketing agency to take care of your blogs and articles for you. They know what they're doing and will ensure the blogs help improve your search engine optimization (more on that later).



Investing in content for your website is key to showing your expertise.

3 Video Marketing $$$ - $$$$$

Video marketing is a brilliant strategy to educate your audience, generate leads and convert prospects into buyers. Some 86%

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A good video marketing strategy will improve your SEO and encourage people to convert.



Source: OptinMonster/Website Planet

of businesses use video marketing as part of their digital marketing strategies, and thanks to today's technology, it's relatively easy to do—even a modern smartphone can record high-quality video.

Video marketing is a lot easier for people to consume, too. Viewers tend to interact more with videos than with written content. With video, your audience will be more likely to like, comment and share with their followers.

A good video marketing strategy will improve your SEO and encourage people to convert. If you have videos on your website, people will stop to watch them, thus spending more time on your website and showing Google that you're a reliable and exciting company to push to the top of its search results.

Video also appeals to mobile users and helps build trust with your audience. Plus, video marketing enables you to improve the *know, like and trust* (KLT) factor between you and your audience.

When car enthusiasts see you and your team in the videos and listen to what you have to say, they'll view you as an expert and trust your capabilities.

Here's how to get started with video marketing:

- Find the best place to post videos
- Set a timeline & budget for your videos
- Hire someone or plan to do them yourself
- Figure out what you want to showcase
- Track progress & set goals
- Interact with comments
- Mention your audience in your videos to help them feel involved
- Include you and your team in videos to optimize KLT

If you're posting videos to social media, why not post them to YouTube too? YouTube is the second most-visited site on the planet, and all those videos you post on social media can easily be uploaded to a YouTube account.

With a keyword-rich title and description added, you'll improve your SEO and the chances of appearing in search results.

PRO TIP: If you're uploading videos to YouTube or another video platform, create custom thumbnails and descriptions to make them look more professional, and include an interesting intro so people keep watching.

4 Email Marketing
$$ - $$$

Email marketing is an excellent way to introduce the parts and services you offer. It's also the perfect tool for highlighting that you're an expert in your field.

An email marketing campaign keeps your business top of mind with your audience. So, when your current and potential clients are looking for a shop to work with or get more work done, they'll think of you first.

How do you create an email marketing campaign? The first thing I recommend is to get an account with one of the top email marketing providers: ActiveCampaign, Constant Contact or Mailchimp. (I'm a huge fan and partner of ActiveCampaign, so you can guess which one I'd recommend!)

Next, start gathering email addresses. You can easily build an email list by creating an irresistible lead magnet. This can be offering your clients how-to guides or videos in exchange for their email address. Even product discount codes can work—as long as it's valuable to your potential customers, they'll bite.

And don't forget your current clients.

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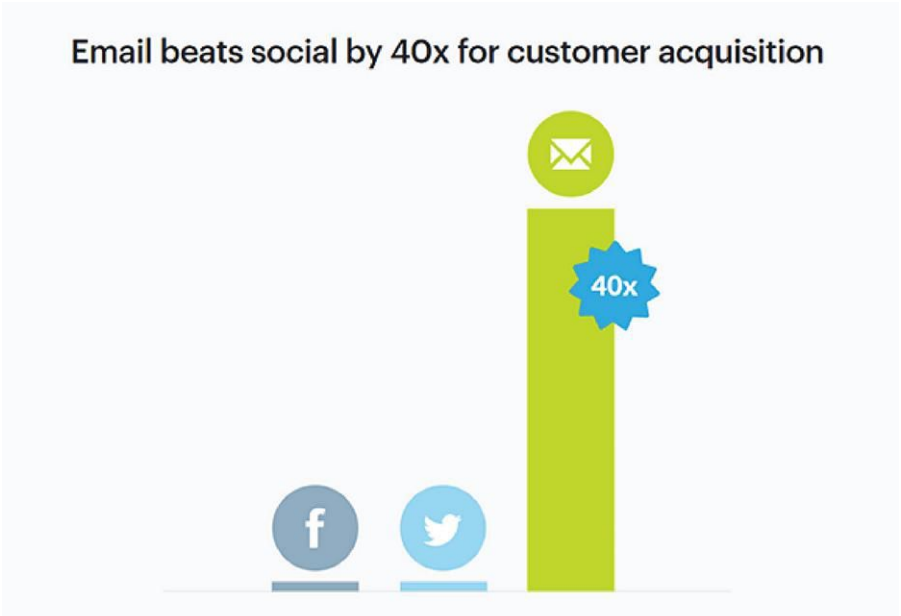
They should be included in your list, too. So without even doing any of the above, you likely already have a great start to your list.

To build momentum, first develop a strategy, then determine the type of content you want to include in your emails and make plans to send them out regularly. Content ideas include your latest blog with a link to the post, giveaways, discounts, and tips and tricks. The goal is to keep your audience engaged.

Remember, you must send regular emails for your campaign to work properly. Weekly or monthly emails are a great choice. Don't spam your audience with daily or hourly emails. I've seen it happen and it can be extremely annoying.

According to Blogging Wizard, email statistics say:

- Email was the third most used marketing channel in 2021
- Email marketing can yield as much as $36 for every $1 spent
- 64% of small businesses currently use email marketing as part of their marketing strategies
- When it comes to customer acquisition, email is 40x more effective than social media
- Three-quarters of marketers say personalization increases engagement
- Birthday emails generate over 3x more revenue than regular marketing emails
- A/B testing can improve email conversion by as much as 49%
- Over 60% of people will delete or ignore emails that don't work well on mobile



Source: McKinsey

Also, statistics show that Friday is the best day to send emails, and Saturday is the worst.

Email marketing is an affordable way to get more people interested in what you have to offer and is much more affordable than PPC advertising.

PRO TIP: Highlight important events that have happened in your shop to get people invested in your business. Don't forget to showcase new products and any new projects you're working on, too.

5 Search Engine Marketing $$$ - $$$$$

Search engine marketing, also called SEM, is a marketing strategy you should invest in if you want to make the most out of your money.

SEM uses Google and other search engines to advertise and promote your shop, aiming to make your shop appear high on SERPs (Search Engine Results Pages).

The best strategy for search engine marketing involves improving your SEO. Studies show 70% of marketers agree that SEO is better than PPC when it comes to generating sales and traffic.

Social media, content marketing and even video help improve SEO. And there are other ways you can enhance it as well. For example, Google Business Profile is a key area to target when trying to improve your SEO.

If you don't have a Google Business Profile, then be sure to set one up. It also improves credibility and trustworthiness. It's a fantastic marketing tool and it's free—so why not take advantage?

Some people also use PPC advertising for SEM, but this method isn't as kind to your wallet as other SEO improvements.

PRO TIP: Optimizing the digital footprint (see our article in the December 2019 issue of *THE SHOP*) of your website will also improve SEO. Getting backlinks from trusted websites will



Optimizing the digital footprint of your website will also improve SEO.

show Google and other search engines that you're a reliable company, and they'll push your site to the top of the search results.

MAKE IT HAPPEN

Now that you've read this article, we hope you have a better idea of what you should focus on regarding your marketing strategy.

There's a lot to think about, and choosing the perfect marketing investment for your aftermarket restyling, off-road, custom, race, restoration or performance shop is difficult. But getting the help you need to create the ideal strategy for your shop's marketing is the right step forward.

By investing in an in-house or third party team that knows what it's doing, you can rest assured that you'll get a great ROI and improve your company's conversions and sales. ***TS***



BARRY ALT *and his team at Motorhead Digital have over 25 years of experience in digital marketing and website development. Their Location, Site and Marketing Maximizer programs can supercharge your site, social media and online presence, helping attract better, higher-value leads to your shop. You can reach him at (585) 766-9785, balt@motorheaddigital.com or online at motorheaddigital.com.*



LANDING THE Big Wrap Jobs

Wrapmate makes it easier for franchises to brand their vehicles.

An online platform is looking to connect wraps installers with bigger jobs.

Wrapmate has announced a plan to connect its nationwide network of more than 1,400 vehicle graphics professionals to franchisors needing vinyl wraps for their company vehicles.

"Wrapmate's Franchise Wraps and Graphics Program meets franchises where they're at with an out-of-the-box solution to handle all things graphics," the company states in a release announcing the effort. "Entrepreneurs enter the franchise business with the expectations of marketing and operations already being pre-set and on autopilot. Franchises can now have their mind at ease knowing that wrapping franchisee vehicles is just as easy."

The core components of Wrapmate's turnkey program provide all U.S.-based franchisors with flexible pricing, branding consistency, standardized logistics and nationwide installation coverage for wraps and graphics on any vehicle type or quantity, according to the release.

A flexible pricing structure ensures no costs are charged to the corporate entity, including zero setup costs or monthly management fees. Franchisors are simply responsible for sharing the vehicle graphics program to their franchisees, and Wrapmate handles the rest, connecting local franchises with local wraps installers.

"We are beyond excited to provide franchisors across all U.S. markets with the effortless ability to offer wraps and graphic products to their franchisees, no matter where they are located," says Javier Lozano Jr., chief marketing officer of Wrapmate. "Thanks to Wrapmate's logistical prowess behind the scenes, we can ensure color consistency, branding perfection and flawless installation across every single franchisee's wrap project."

Included in the program comes a ready-to-use ordering platform where companies can visit a co-branded website to choose their vehicle, graphic size and creative theme, and then place an order for new vehicle graphics.

"Franchisees, in many cases small business owners, are generally not familiar with how onsite and offsite graphics have a very positive impact on business growth, nor do they know where to go to get these solutions. A one-stop shop for graphics facilitates the adoption of 3M trusted graphic solutions in this market segment, hence continuing to grow the overall graphics industry," says Carolina Bautista-Brown, 3M segment marketing senior manager.

Wrapmate can also facilitate other large format printing and installation projects like window signage, wall murals and floor graphics at any or all franchisee locations.

Jeremy Seiley, a franchisee of That 1 Painter based in Houston, says, "working with Wrapmate to put wraps on both my franchise vehicles has been incredibly simple and streamlined. Since getting my wraps completed, I literally have potential customers approaching my vehicles on a daily basis asking for price quotes, and it's grown my sales pipeline substantially."

Graphic professionals and wrap shops interested in receiving printing and installation projects from Wrapmate can sign up at wrapmate.com/pro. **TS**



Online wraps service provider Wrapmate has created a new Franchise Wraps and Graphics Program.

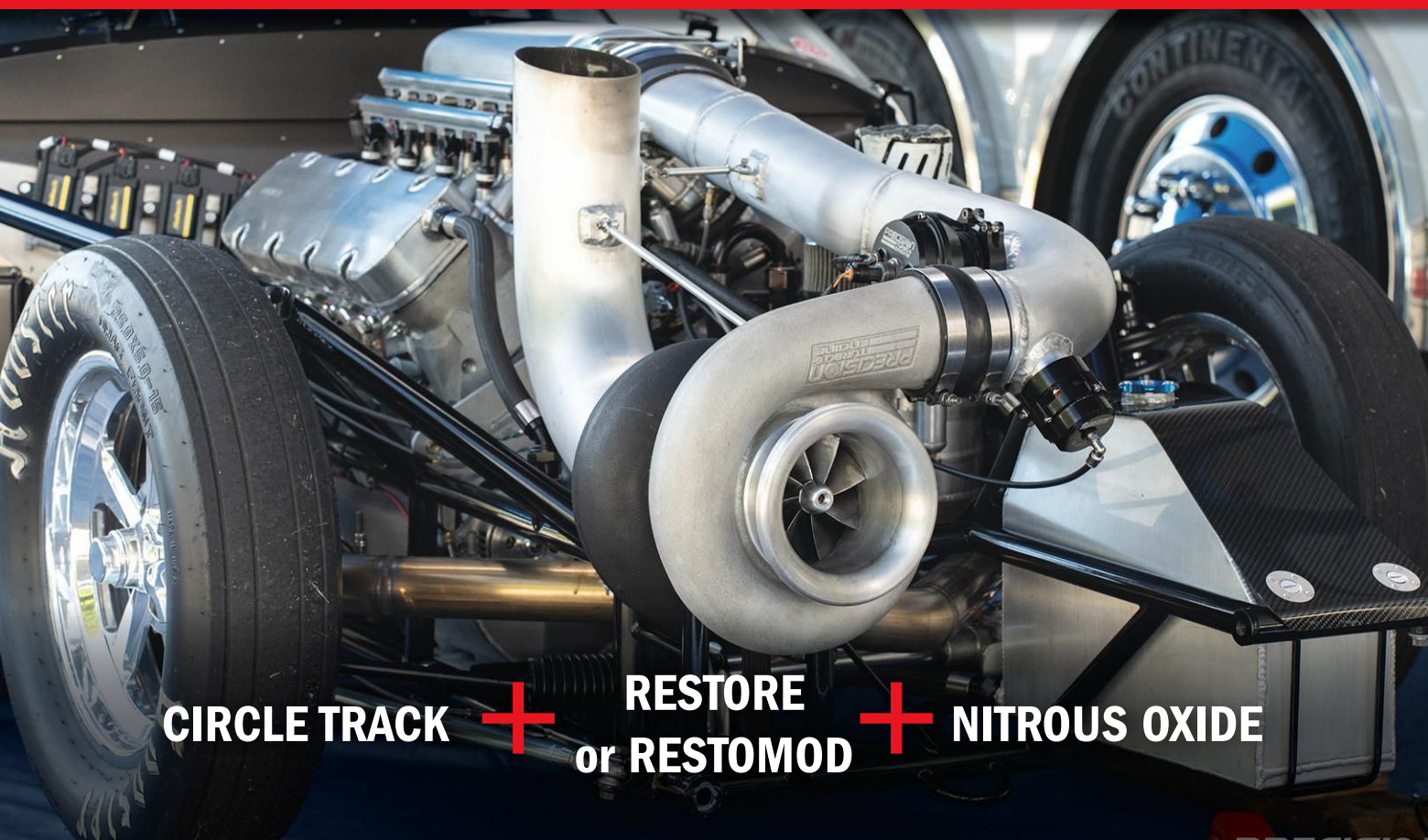
PERFORMANCE

DECEMBER 2022



COMPRESSED to IMPRESS

The turbo market continues to maximize opportunities



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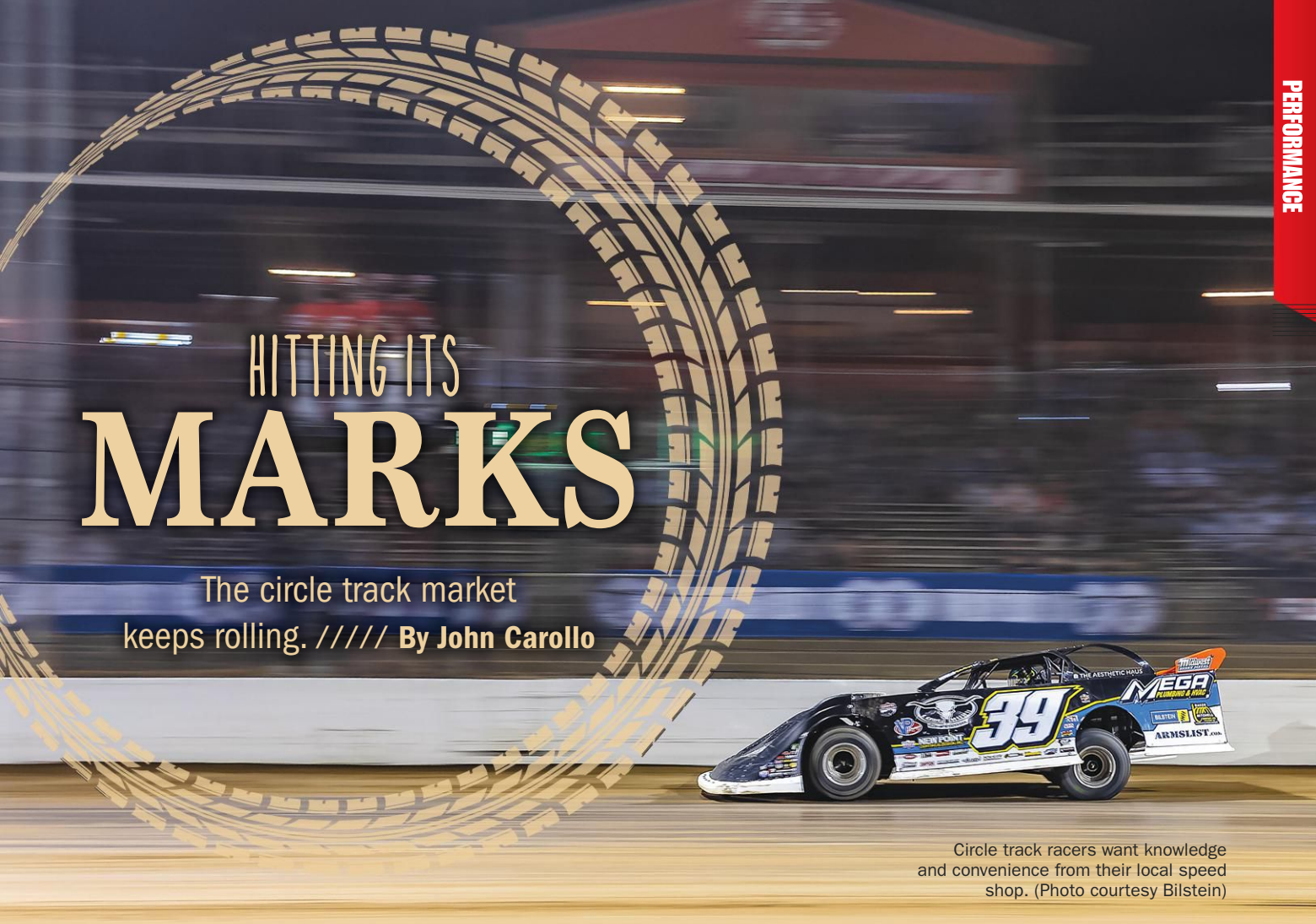
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HITTING ITS MARKS

The circle track market keeps rolling. ///// **By John Carollo**



Circle track racers want knowledge and convenience from their local speed shop. (Photo courtesy Bilstein)

Despite the obvious challenges, it's been a good year for circle track racing across the country. From NASCAR's new Gen 7 cars to Mini Stock racers at the local bullring, reports on the 2022 racing season are very favorable.

Still, shop owners need to know more about this market with the hectic offseason now upon us. Suppliers offer updates on changes the industry is experiencing, unexpected benefits shops can uncover this time of year, and tips for increasing business with the local circle track crowd.



Technology is always pushing the circle track market forward. (Photo courtesy Bilstein)

THE WHEELS GO ROUND

Racing is all about advancements and innovation, meaning it's no surprise that the market looks much different than it did even 10 years ago.

When it comes to a shop's interactions with its customers, one change may be in where racers go for advice.

"The circle track market has changed a lot over the last 10 years, mainly due to who influences buying today," observes Aaron Morey, head of motorsports for Bilstein. "If we look back 20 years ago, we used to see warehouse distribution sales teams influencing consumers on what brand of shocks they bought. Then, 10 years ago, we saw all of the shock rebuilders influencing the consumer on what brand of shocks racers needed. Now, in 2022, we see the chassis builders having the most influence."

However, one thing that's stayed the same, he adds, is that, if you want to go fast, it's going to cost you.

HITTING ITS
MARKS

HOT CIRCLE TRACK PRODUCTS

HOT PRODUCT:
AS2-R Shock
FEATURES & BENEFITS:
For use in the Dirt Late Model market, road racing and drag racing; all-aluminum design with a 46mm high- and low-speed compression-adjustable canister; adjustable shaft for rebound comes standard; can be compression jet, rebound jet or open jet.

Bilstein
Aaron Morey
Head of Motorsports

HOT PRODUCT:
20W-50 Synthetic-Blend Racing Oil
FEATURES & BENEFITS:
Contains high zinc, anti-wear additives, ZDDP and proprietary TVS (Thermal Viscosity Stabilizer) to increase high-temperature film strength and reduce coefficient friction; protects bearings; delivers upper cylinder anti-wear protection.

Champion Oil/PLZ Corp.
Scott Baubie
Director of Motorsports

HOT PRODUCTS:
H-Beam Connecting Rods
FEATURES & BENEFITS:
Quality materials; big radiuses for added strength; many big wins in 2022 including the Eldora Million.

Dyer's Top Rods LLC
Roger & Daren Friedman
Co-Owners

HOT PRODUCTS:
RaceQuip Safety Equipment
FEATURES & BENEFITS:
Top products include helmets, race suits, seats and other key safety equipment; quality products at affordable prices; compliance with various sanctioning body safety standards.

Holley
Evan Perkins
Digital Content Manager

HOT PRODUCTS:
Circle Track Lubricants
FEATURES & BENEFITS:
Quality, affordable products include specialized engine break-in oils; engine oils in synthetic, synthetic blend and petroleum varieties; transmission and gear lubricants and specialized drivetrain greases; oil additives for added performance.

Lucas Oil
Brandon Greene
Customer Service Manager



The circle track market continues to attract interest from competitors and fans. (Photo courtesy Champion Oil)

Brand recognition is important, along with product quality and performance. (Photo courtesy Champion Oil)

"If you look at the market as a whole, the biggest change is in technology," Morey notes. "When you increase technology, you increase cost, and when cost is increased without the purse increasing, you end up with a failing business."

Brandon Greene, customer service manager for Lucas Oil, agrees that the cost of participation continues to rise.

"As a manufacturer for this segment of motorsports, we have had to stay on our toes with the development and redevelopment of the lubricants necessary to provide the racer a quality product at a decent price," he says. "We believe that offering a product that helps protect the high-dollar investment of a circle track car will help enable the racer to continue to participate in this great form of motorsports. The cost of racing is expensive enough—having unnecessary parts failures due to an inferior lubricant is no fun for anyone."

Roger Friedman, co-owner of Dyer's Top Rods LLC with his son, Daren, notes that the horsepower and rpm numbers found in today's engines are



Innovation helps drive the circle track market. (Photos courtesy Dyer's Top Rods)



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HITTING ITS
MARKS

MEMBERS ONLY AT THIS YEAR'S PRI SHOW

Coming off a successful event last year, organizers are planning the 2022 PRI Show in Indianapolis with one notable change—Performance Racing Industry membership is now required for entry.



Anticipation is high for this year's PRI Show in Indianapolis, which will require Performance Racing Industry membership to attend.

Attendee registration for the 2022 PRI Trade Show, scheduled for Dec. 8-10 at the Indiana Convention Center and Lucas Oil Stadium in downtown Indianapolis, is now open.

For the first time, only qualified industry professionals who are also PRI members will be permitted to attend the show. Organizers say the requirement will ensure the highest-quality buyers and attendees will be on hand to shop the latest racing and performance products and services.

Individuals can sign up for PRI membership as part of the online attendee registration process at pri2022.com/attend.

"PRI Membership is at the forefront of protecting the racing community and creating a unified voice for the industry," says Dr. Jamie Meyer, PRI president. "The PRI membership program has been developed for both businesses and individuals as a way for them to get in on the ground level with this critical advocacy for the industry and the way of life that we all love."

The PRI Show encompasses all forms of motorsports and attracts attendees from across the country and around the world, including professional race teams, retail shops, warehouse distributors, engine builders, fabricators, dealers, installers, jobbers and media.

The event connects buyers with representatives from more than 1,000 exhibiting companies displaying their latest products, services, machinery, simulation and testing technologies, trailers, and more.

Officials note that PRI membership supports racetracks and race events, helps promote motorsports to a growing audience, and supports industry advocacy efforts.



Offer products that help protect racers' high-dollar investments. (Photos courtesy Lucas Oil)

far ahead of those from just a decade ago. He confirms that better performance means a larger investment.

Of course, the last 10 years have also included the pandemic and the resulting supply chain hardships that continue to affect the market, he adds.

"We can produce our connecting rods fairly quickly, but shops are telling us that some of the bigger items like blocks and crankshafts are taking longer to arrive," he says. "If they can't get parts, it worries me that some of the racers will stop racing and the shops might have to close up."

To combat some of those challenges, the industry is continuing to push to build awareness and spur participation.

"Although statistical data shows motorsports on the decline, I think with social media, streaming and digital marketing, the exposure of today compared to five to 10 years ago has actually helped increase the fan base and interest from newcomers," says Scott Baubie, director of motorsports at Champion Oil/PLZ Corp. "For example, you can sit in your living room in Texas and watch a dirt track race in Pennsylvania. Tracks are also doing a great job of entertaining families with special events on any given night, like autographs and driver meet-and-greets, fireworks shows, bicycle giveaways, kids' nights and novelties at the concession stands."

One other positive development over the last decade is the advancement of competitor safety.

"Safety standards are ever-increasing, and customers expect a one-click solution from their brand of choice," notes Evan Perkins, digital content manager at Holley.

RACER RAPPORT

Shops that can deliver the quality products racers want in the



Educate customers on everything from engine parts to safety gear. (Photo courtesy Holley/RaceQuip)



Creating a positive initial purchasing experience is often a gateway to long-term relationships and repeat business. (Photos courtesy Holley/RaceQuip)

timeframe they demand will quickly build a loyal customer base.

"In today's market, we need speed and convenience. The Amazon model has redefined how we buy," Morey says. "I don't see end users shopping on price as much as they did 10 years ago. Today, customers want it fast and easy. If you stock it, they will come."

Racers tend to break parts, advance in classes and demand the newest technology to give them even the slightest edge.

"Safety rules require that racers update their helmets, fire suits, etc. to comply with SNELL or FIA regulations," says Perkins. "Creating a memorable or quality initial purchasing experience is often a gateway to long-time relationships and repeat business."

Friedman has a friend who recently purchased a track and is working hard to increase purses and attract larger crowds. Shops involved in similar local projects can help build a client base and show active participation in the industry they serve.

"Earning the trust of racers is important,"



WORLD OF OUTLAWS SLIDES INTO A VIDEOGAME

The World of Outlaws returned to console gaming for the first time in more than a decade in September. *World of Outlaws: Dirt Racing* is available for PlayStation 4, PlayStation 5, Xbox One and Xbox Series X|S consoles.

The official game of *The Greatest Show* on Dirt features six different dirt series—from the premier World of Outlaws NOS Energy Sprint Cars and CASE Construction Equipment Late Models to four DIRTcar classes—and more than 40 tracks, including Eldora Speedway, Knoxville Raceway and Volusia Speedway Park.

"Many of our fans have been asking for a World of Outlaws console game and now, through our partnership with iRacing, we're able to deliver," says Brian Carter, World of Outlaws CEO. "Whether it's PlayStation or Xbox, fans can race against World of Outlaws drivers in the most realistic game available. The team at iRacing and Monster Games has really developed an authentic option to see what it's like to race on dirt against the best in the business."



The World of Outlaws returned to console gaming for the first time in over a decade in September with the release of "World of Outlaws: Dirt Racing."

World of Outlaws: Dirt Racing is the latest dirt racing-themed title from developer Monster Games, but its first since being acquired by iRacing in late 2021. All-new physics tuned by iRacing and a retooled, more competitive AI add to the challenge.

"We're thrilled to bring World of Outlaws back to console gaming," says Rich Garcia, Monster Games founder and general manager. "This is the most realistic, challenging, and most importantly, fun dirt racing experience ever seen on the PlayStation or Xbox. We can't wait for dirt racing fans to go wheel-to-wheel at Eldora, Knoxville and more."



Stanley Black & Decker and its CRAFTSMAN brand reunited with the Ace Hardware Foundation and Christopher Bell of Joe Gibbs Racing (JGR) to raise funds and awareness for Children's Miracle Network Hospitals.

he says, noting his company also exhibits at trade shows and works with builders from as far away as Australia and New Zealand.

Baubie also recommends carrying lines from suppliers that are active in the industry.

"I think the biggest thing moving forward is motorsports teams have to support the brands that support them," he says. "When you achieve this, OEMs, suppliers and B2Bs can provide them more products or monetary support."

Greene agrees as well.

"Racers like to support businesses that support the different series they race in. Lucas has and still does sponsor many different events in the circle track world, and these sponsorships allow those that are

passionate about many forms of racing an opportunity to get out there and participate," he notes. "Once the racer knows our products are available, they will likely continue to buy their Lucas racing products, and even their regular everyday Lucas products, from the race shop, which is a bonus for all."



Ally Financial, Milestone Media, DC and Warner Bros. Discovery unveiled a new paint scheme for the Ally-sponsored No. 48 Chevrolet Camaro in July at Atlanta Motor Speedway.

THE WINNING EDGE

If your shop is as competitive as your racing customers, here are some tips to put you in the pole position.

"Continue to offer great customer service to the racer and build those relationships," Greene advises. "Racers are a very dedicated and loyal group."

They also like to know and understand the products they use.

"Customer education is key," advises Holley's Perkins. "Not only explaining why safety gear needs to be replaced, but having an online resource packed with not only features and benefits but customer education materials."

Bilstein's Morey suggests blending your racing outreach with social media.

"Build an alliance with influencers. It's that simple in 2022."

A presence at your local tracks also creates trust, notes Friedman from Dyer's.

"Work closely with racers and really get to know them," he says. "It also helps to have people in the winner's circle."

Finally, keep working as closely as you can with your suppliers, adds Champion's Baubie.

"Brand recognition is crucial, along with quality and performance," he believes. "These factors can be achieved by being visible at motorsports events and trade shows, and more so by user testimonies on the characteristic benefits of products that help win races." ***TS***



COMPRESSED to IMPRESS



The turbo market continues to maximize opportunities.

By Jef White

Turbochargers help engines maximize performance, squeezing more air into each cylinder so more fuel can be added. The simple units increase efficiency and are available for more applications than ever.

Helping drive everything from small cars to big diesels, turbos are a power-adder that gets attention. For performance shops, they can also help turn more sales.

Suppliers share thoughts on the market, including how it's changed over the years, sales tips to consider and introductions to hot new products.

MARKET TRENDS

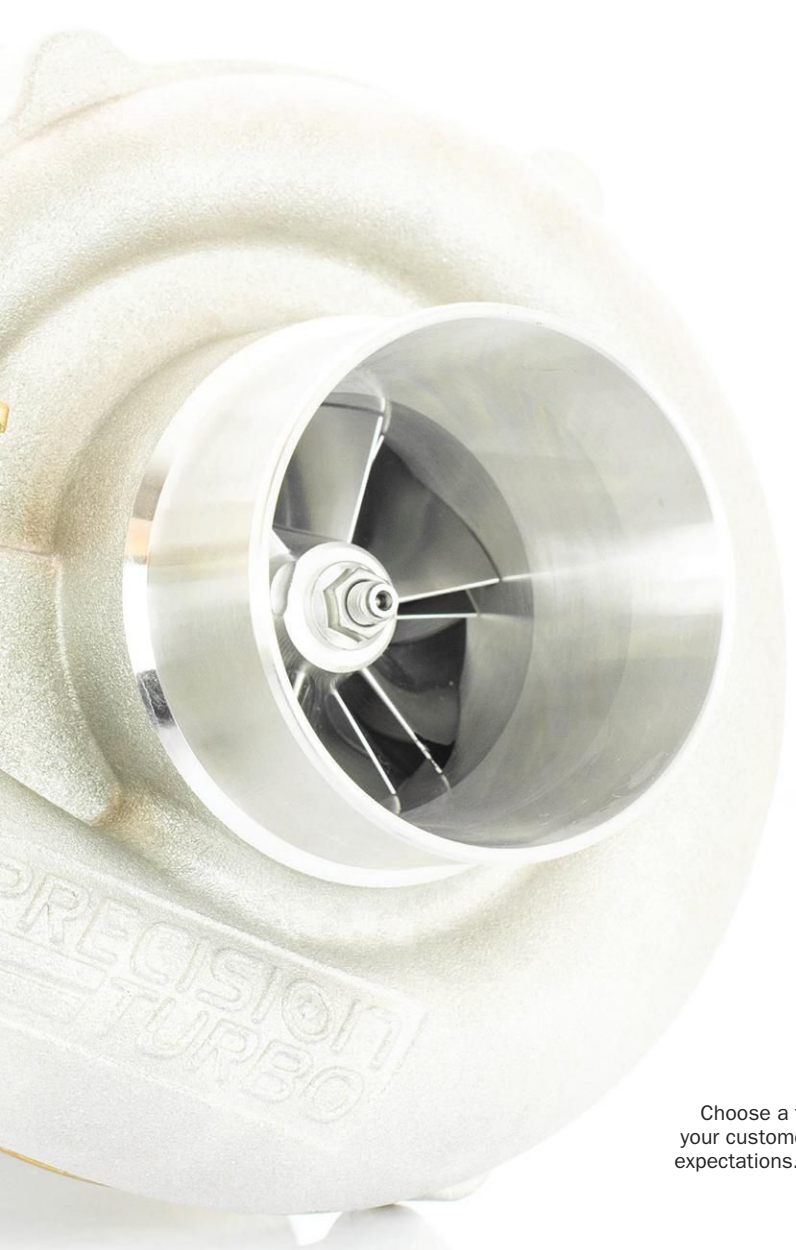
As the turbocharger industry has grown, so have supplier options. Jim Byrne of Precision Turbo cautions against the trend he sees of lower-quality generic units crowding the market.

"This has created a *buyer beware* situation," he says. "In the end, the customer may end up spending more money, get frustrated with turbochargers or even give up on the project all together. Our general advice is to know what you are buying and spend your money wisely."

Tim Coltey, global performance mar-



Collaborations are a great way to test products in extreme environments. (Photo courtesy Precision Turbo)



Choose a turbo that meets your customer's performance expectations. (Photo courtesy Precision Turbo)

keting manager for Garrett Advancing Motion, is also concerned about the potential long-term effects of this occurrence.

"There are increasingly more low-cost competitors making products very similar to the major brands," he says. "Although they may look the same on the outside, chances are they do not have the same



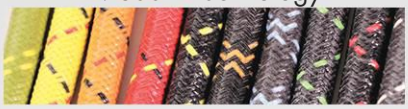
Improvements in aerodynamics have allowed turbos to make more power with smaller packaging. (Photo courtesy Garrett Advancing Motion)

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HOT TURBO PRODUCTS

HOT PRODUCTS:
Screamer Turbo Product Line
FEATURES & BENEFITS: Upgraded drop-in turbos don't require any extra modifications to be installed into the vehicle; performance increases in a stock-appearing drop-in package; like-stock drivability with increased boost and lower exhaust gas temperatures.

BD Diesel
Shayne Harder
Lead Design Engineer

HOT PRODUCTS:
EFR 8370 Super-Cores & Cartridges
FEATURES & BENEFITS: Capable of 475 to 700 hp; pairs the high-pressure-ratio compressor stage from the EFR 8374 with the turbine stage from the EFR 7670; choice of aluminum or iron bearing housing; lower tip speed provides additional altitude and pressure ratio margin.

BorgWarner Emissions, Thermal & Turbo Systems
John Vincent
Sales Manager – Performance, Passenger Car & Government

HOT PRODUCT:
2014-21 2.0L VW/Audi MK7/MK7.5 PowerMax Drop-In Turbo Upgrade
FEATURES & BENEFITS: PowerMax kits engineered for increased engine performance while maintaining OEM direct fitment; Stage 1 (485 bhp) and Stage 2 (600 bhp) compressor wheel options; turbochargers are complete units calibrated with an electronic actuator.

Garrett Advancing Motion
Tim Coltey
Global Performance Marketing Manager

HOT PRODUCT:
Hot Side Charge Pipe for 6.6L Duramax
FEATURES & BENEFITS:
Improved airflow; better performance; direct bolt-on installation.

Pacific Performance Engineering (PPE)
Eric Sempson
Operations Manager

HOT PRODUCT:
Next Generation Race Turbochargers
FEATURES & BENEFITS: The latest aerodynamics including Next Generation compressor wheels; cutting-edge manufacturing techniques; new lineup of race class-specific models; 30 years of market experience.

Precision Turbo
Jim Byrne



As vehicle manufacturers continue to roll out new technology, the aftermarket will continue to keep pace. (Photos courtesy BD Diesel)



Choose quality turbocharger systems and supporting components. (Photo courtesy BorgWarner/Papadakis Racing)

Reliable horsepower is the goal of any turbo setup. (Photo courtesy BorgWarner)

validation standards as major brands, and this can cause issues down the road for customers that end up costing them more than if they had purchased a high-quality turbocharger initially."

Quality is a must when taking on the demands of the latest high-power projects featuring turbocharged power plants.

"Formula Drift continues to be the fastest-growing motorsport in North America since originating in 2003. The need for high-power engines that come into their powerband quickly has increased the demand for performance turbocharger systems and supporting components," notes John Vincent, sales manager – performance, passenger car & government for BorgWarner Emissions, Thermal & Turbo Systems. "How to reliably make 1,000 hp is becoming the new baseline objective and BorgWarner's EFR and AirWerks turbochargers make this possible in single and twin configurations."

STRAIGHT TALK

Shayne Harder, lead design engineer for BD Diesel, is seeing an increased demand for variable-geometry turbos.

"VGT turbochargers have become more popular due to their simplicity of install. They also offer features, such as an exhaust brake function, that con-

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TOYOTA'S NEW TURBO GR COROLLA IS 'RALLY READY'

To see the impact turbocharging has in creating attractive performance models, look no further than the first-ever 2023 GR Corolla.

The newest member of TOYOTA'S GAZOO Racing sports car family, the company notes the hot hatch is "rooted in rally, developed under the scrutiny of master driver Akio Toyoda and inspired by Toyota's sports car lineage."

Powered by a compact-yet-powerful G16E-GTS turbocharged three-cylinder engine that reaches 300 hp, the GR Corolla will come in three grades: Core, Circuit Edition and the limited, track-focused MORIZO Edition.

All feature a unique triple exhaust that reduces backpressure for maximum power delivery.

GR Corolla highlights include: an intelligent Manual Transmission (iMT); GR-FOUR All-Wheel-Drive (AWD) drivetrain; a specially constructed, highly rigid body; MacPherson-type strut design front suspension; opposed, fixed-caliper disc brakes with 14-by-1.1-inch ventilated and slotted rotors outfitted with four-piston aluminum calipers on all grades; race-inspired interior; Toyota Audio multimedia; and Toyota Safety Sense 3.0 (TSS 3.0).

The GR Corolla Core grade is available in three packages—a Performance package, a Technology package and a Cold Weather package.

The rally-ready GR Corolla, alongside the GR86 and GR Supra, is featured prominently in Toyota's new GR Family marketing campaign, *Race Cars for the Real World*, that was launched in October.



The impact turbocharging has in creating attractive performance models is evident in the first-ever 2023 Toyota GR Corolla.



The GR Corolla is featured prominently alongside the GR86 and GR Supra in Toyota's new marketing campaign, "Race Cars for the Real World."



Consumers appreciate aftermarket upgrades that deliver real performance benefits. (Photo courtesy Pacific Performance Engineering)

sumers have come to enjoy," he reports. "Keeping these features in a performance build has become more important to consumers over the last 10 years or so."

Selecting the proper turbocharger for each application takes more work than simply reading numbers on a box. Byrne notes that even if they are similar in size and boost ratings, all turbos are not necessarily the same.

"As a shop, whether you are installing a prefabricated kit that comes with a turbo(s) or doing a one-off, hand-fabricated turbo installation, take the time to know what your customer's performance expectations are," he says. "Work with companies that provide quality products and can technically support and assist you before, during and after the sale."

There are times when desired power gains conflict with regulations, notes Eric Sempson, operations manager for Pacific Performance Engineering (PPE).

"Trying to balance customers' turbo goals while staying compliant with emissions regulations can be a challenge," he says. "If there's a turbo with CARB EO approval it's great for customers looking for a turbo solution while maintaining emissions standards."

Also, bigger isn't always better these days. When it comes to turbocharger design, manufacturers are doing more with less.

"Improvements in aerodynamics have allowed turbos to make more power with smaller packaging, and this gives kit builders more options to incorporate staged upgrades within the product lines," says Coltey.

Vincent explains that BorgWarner's online MatchBot system is one way to help identify the proper setup for every project.

"Don't just bolt on the turbo and hope for the best," he advises. "Doing a proper evaluation of the application, horsepower goals and where the customer plans to run the vehicle are important points to consider when matching a turbo."

TEAM APPROACH

Partnerships and collaborations are a great way to move the market forward, generating fresh ideas and providing real-world testing in extreme environments. Suppliers have plenty of success stories showing how a team approach benefits the industry.

"We recently partnered with Hoonigan and BBI Autosport for the 2022 Pikes Peak International Hill Climb," says Garrett's Coltey. "They used a pair of G-Series turbos and our new GVW 50mm external wastegates. The car performed great in testing but unfortunately had engine issues that kept it from performing on race day. It always impresses me to see how the aftermarket community supports racers, races and sponsors, and how much attention the fans provide."

After all, there's nothing like winning in a competitive environment.

"Within the first week of its release, racers running the Precision Turbo Next Generation R 73.9-85, SFWD/xFWD legal turbo experienced great success," notes Byrne, including:

NICHOLE ELFF

- First woman into the 7s in xFWD racing
- First woman on the xFWD racing top-10 list
- Fastest ET & mph of any FWD car at FL2K 2022

BRADLEY DILLON/PRAYOONTO RACING

- New xFWD world record for a Honda K Series engine platform
- Won Fall Nationals at ATCO Dragway
- Jumps to No. 3 overall on the xFWD racing top-10 list

On the drift side, Vincent points to the 2020 Toyota GR Supra fielded by Papadakis Racing featuring a turbocharged 3.2L B58 six-cylinder engine that reaches 1,095 hp and 950 pound-feet of torque.

"For a second season in a row, BorgWarner congratulates Papadakis Racing and Fredric Aasbo, who recently won the 2022 Formula Drift Championship while running an EFR 9280 turbocharger," he says.

Of course, not every turbo project hits the track.

"Our recent 3.0 LM2 Duramax intercooler project is designed to increase airflow, lower EGTs and lower intake temperatures, enhancing OEM turbo capabilities and allowing for more power and an increase in fuel efficiency," says Sempson from PPE. "This product is CARB EO-pending, knowing how important it is in these times to be emissions compliant."

BD's Harder explains that as vehicle manufacturers continue to roll out new technology, the aftermarket will continue to keep pace.

"The demand for modern diesel trucks to produce more power at higher efficiencies has put the turbocharger under the spotlight," he notes. "Original equipment manufacturers continue to push turbo technology forward to meet these requirements. As with all new technology, challenges and issues can arise. These technological advancement challenges continue to create opportunities for aftermarket suppliers to solve common failure points or offer upgrades." ***TS***





GM Truck Insulation Kits

Design Engineering Inc. (DEI), Avon Lake, Ohio, presents Interior Insulation Kits, including applications specifically cut for 1988-98 extended-cab GM pickups. Using a combination of proven 2mm damping material and Under Carpet Lite to control heat and block unwanted road, tire and engine noise, the kits cover specific interior areas including floors, firewalls, headliners and more.



Raptor Exhaust

MagnaFlow, Oceanside, California, presents an xMOD Series Performance Exhaust System for 2021-22 Ford F-150 Raptor applications. Designed to seamlessly integrate with the Raptor's Active Exhaust System, the xMOD Series includes two easily switchable exhaust modes offering distinct sound and driving experiences with no-drone technology. Each system ends in double-wall, 5-inch powder-coated tips.

SUV TBI Conversion Kits

Howell EFI, Marine City, Michigan, offers TBI Kits to convert first- or second-generation Dodge Ramcharger or Plymouth Trailduster SUV models to throttle body injection for improved drivability, cold starting and fuel mileage in one plug-and-play system. The kits improve starting and idling with a more consistent tune.





Ford Street Clutch Kit

Holley, Bowling Green, Kentucky, presents a **Hays** Hot Street Clutch kit that fits 1965-97 28-ounce external balance small-block Ford engines. Designed to deliver street/strip performance through matched components, the kit includes a 10.5-inch metallic disc with six-spring helix sprung hub that provides improved grip for drag racing. The matched diaphragm-style pressure plate offers a pedal feel comfortable enough for the street, with 30% more clamping pressure than through a billet steel flywheel.



High-Performance Tire

Yokohama Tire, Santa Ana, California, presents the ADVAN Neova AD09, the latest member of its ultra-high-performance ADVAN tire line. Available in sizes ranging from 15 to 20 inches, the AD09 features extreme grip for faster lap times, improved handling, superior wet performance and constant ability on the street and track. A total of 51 sizes are planned for the AD09, which replaces the ADVAN Neova AD08R.

Billet Backfire Plate Kits

Blower Drive Service (BDS), Whittier, California, presents its BDS Billet Backfire Plate Kits. Prior to blower manifolds being fit with backfire plates, it wasn't uncommon for a severe backfire to lift the blower, shear the studs and destroy the manifold. The use of backfire plates has significantly reduced or eliminated the issue. The backfire plates are available in small, medium or large.



Sport Compact Connecting Rods

Manley Performance, Lakewood, New Jersey, offers Turbo Tuff Tri-Beam forged steel connecting rods for highly boosted or nitrous oxide-fed sport compact applications. The exclusive Tri-Beam configuration is a hybrid incorporating both I-beam and H-beam features. Based on forgings of 4340 aircraft-quality, vacuum-degassed steel or 300M alloy, the I-beam is undercut so it has ribs that resemble a shallow H. The ribs continue around the pin end for added strength and to maintain pin bore roundness.



Under-Dash Louver Panel Kit

Vintage Air, San Antonio, presents its all-new Under-Dash Slimline Universal Louver Panel with Brushed Aluminum Trim Kit. The kit includes a two-piece louver panel, all four louvers and 2.5-inch hose adaptors, offering a stylish option to add A/C vents without cutting into the original dash. The louver panel comes with brushed aluminum trim to complement the interior designs of classic cars and can be painted to match the dash and interior.

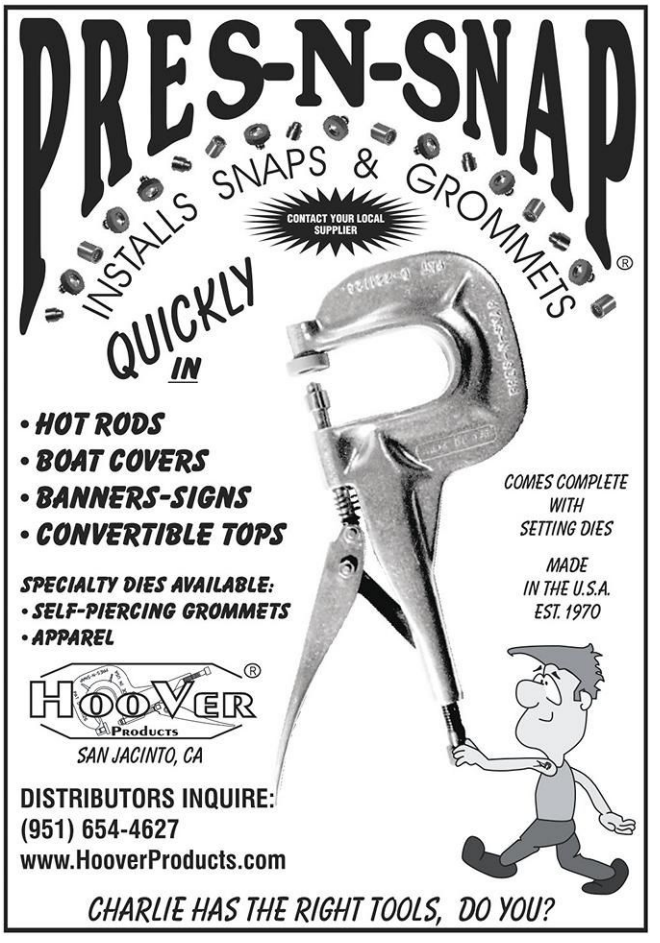


Budget Dry Sump Kits

Aviaid Oil Systems, Chatsworth, California, presents its G-Line series of budget dry sump kits. Designed for popular muscle car and sport compact applications, kits are available for small-block and LS series Chevy engines, small-block and modular Ford engines, plus Chrysler LA engines on the domestic side. Aviaid also manufactures over 40 different mounts (including universal designs) that allow installation of a dry sump (or external wet sump) pump on most any engine.









Jeep Clutches

Centerforce, Prescott, Arizona, presents new Centerforce II and Dual Friction Clutches for 2018-22 Jeep JL and 2020-22 Jeep Gladiator models. The Centerforce II Clutch Kit is designed for off-road enthusiasts with mild modifications to their vehicle, offering increased holding capacity and smoother engagement over factory. The Dual Friction Clutch is engineered to give additional clutch performance to off-road drivers with heavily modified vehicles, improving the driving experience on- or off-road. The kit allows for up to 700 pound-feet of holding force.



BMW Exhaust

Akrapovič, Horsham, Pennsylvania, offers its Evolution Line (Titanium) Exhaust System, available for BMW M440i (G26) applications. The high-grade lightweight titanium system is finished with handcrafted carbon fiber tailpipes. Valves on each side are calculated to tailor the sound, and two acoustic reflectors are fitted on the tailpipes to guide the sound into the car's cabin. A TNG controller is included in the product to activate the additional exhaust valve.

C10 Throttle Pedal Bracket

Level 7 Motorsports, Marion, Illinois, presents a Drive-by-Wire Throttle Pedal Bracket that correctly positions a 2005-13 Corvette pedal in 1967-72 and 1973-87 Chevrolet C10 pickups. The bracket bolts into the existing C10 throttle pedal location and includes stainless mounting bolts and an anodized beauty washer to dress up the engine bay side of the firewall. The heavy-duty, powder-coated steel brackets are made in the USA.





Buick/Olds/Pontiac Staggered Brake Kits

Wilwood Engineering, Camarillo, California, presents two new Brake Kits with staggered caliper mounting for 1964-71 Buick/Oldsmobile/Pontiac 10-bolt rear differentials. Created specifically for 1968-71 Firebirds with staggered shocks, the company offers Dynalite Pro Series brake kits with 12.19-inch rotors and DynaPro Low-Profile kits with 11-inch rotors. High-strength, forged aluminum calipers with four stainless steel pistons generate balanced clamping force in high-tech style with modern braking performance.



Pentastar Cartridge-to-Remote Adapter

Baxter Performance, Spokane Valley, Washington, introduces a new Cartridge-to-Remote Adapter for 2014-current Stellantis 3.2L and 3.6L Pentastar engines. The new MR-202-BK cartridge-to-remote adapter offers a practical way to add a remote oil filter and additional oil cooler options that are otherwise not available for Pentastar engines. The setup incorporates a Schrader valve for the option to use compressed air to evacuate oil back to the sump from all oil system components for an efficient oil change and servicing.

Scan Tool

TOPDON, Rockaway, New Jersey, presents the Phoenix Lite 2 compact, pro-level OBD-II scan tool designed specifically for smaller jobs that need to be performed quickly. The Phoenix Lite 2 differs from the other Phoenix line products in that the Lite does not include online-programming functions or topology mapping, meaning that ADAS functions cannot be performed. It is best utilized for basic functions including ECU lookup, reading and clearing fault codes and reading data streams.





Automotive Gloves

Protective Solutions, Cincinnati, a division of **Hillman**, presents Grease Monkey Dura-Knit gloves. The 3D-knit automotive work gloves enhance durability, control and comfort while offering protection. Featuring a breathable fabric that provides 360-degree stretch, Dura-Knit is digitally optimized to mold to the hand for a second-skin fit and all-day comfort. The seamless back design eliminates failure points and uncomfortable seams, while the grip-enhanced palm delivers the confidence and control to safely handle tools or small parts.



Push-Pull Cable

Pro-Werks, Mears, Michigan, presents Silver Jacket Push-Pull Cables available in 6-inch increments for a proper fit. Designed for flexibility with a unique inner core that enables tight bends with minimal resistance, the cables are made in the USA. Efficient, dynamic seals protect the inner core, which includes swedged end rods. Mounting options include bulkhead, clip type and chute cable with wire core. Cable ends and mounting clamps make installation easier. ***TS***





NO LAUGHING MATTER

Signs to help spot nitrous oxide abusers.

By Tony Thacker

Who knew? Certainly not me as I rode shotgun with my drag racing friend Kelly Anderson, jostling through L.A. traffic down to Downey to pick up her weekly dose of nitrous oxide from So-Cal Nitrous & Race Fuels.

Of course, I know from high school what nitrous is. Nitrous oxide—otherwise known as N2O and sometimes in the industry as NOS—was actually invented in 1772 by Joseph Priestly. Its psychotropic properties were explored by Humphrey Davy in the late 1790s, and in 1844 Horace Wells, a dentist, discovered N2O's anesthetic qualities. It earned the nickname *laughing gas*.

Fast-forward, literally, to 1914 when Robert H. Goddard, an American engineer and rocket pioneer, patented the idea of N2O combined with gasoline as a potential rocket fuel. It was also found to work in internal combustion engines, where it helped burn more fuel by providing more oxygen.

History says this mixture was first used by the German Luftwaffe during World War II when its Goring Mischung 1 system injected nitrous into Messerschmitt Bf 109 engines.

NITROUS SYSTEM DEVELOPMENT

The next recorded occurrence, according to Gary Hordemann writing for *MotorTrend*, came on Sept. 7, 1958, when Gary Harms


SPEED POWER SUSPENSION PRESENTS THE SENSATION OF THE SOARING SIXTIES

'SECOND WIND'

You Can Buy This New Fuel Any Place In America

[Limited In The Past To Soaring Through Space, This New Fuel Has Been Adapted By S.P.S. To Serve In All Type Engines Burning 'Nitro', 'Alcohol', Or 'Gasoline'.]

$ 225 00

Includes all necessary equipment to install on any type engine and absolutely guaranteed to add 20 m.p.h. top speed on any gasoline burning engine

★ SAFE AS GAS
★ MORE POWERFUL THAN ANY FUEL ON THE MARKET
★ CHEAPER THAN 'KEROSINE'

The only way you can detect those using SECOND WIND is that THEY ALWAYS WIN

The May 20, 1961, issue of "Drag News" spilled the beans on the nitrous advantage. The center spread was a thinly disguised ad for Speed Power Suspension's Second Wind systems.

filled an oxygen bottle with nitrous and laid it in the tool tray of his supercharged 1940 Ford. A hose ran from the bottle to an air gun nozzle set on his thigh.

From there another hose ran to a nipple at the base of a Stromberg carburetor jetted extra-rich. The jury-rigged device worked, and Harms won B/Gas.

In 1952, Bill Huth, builder of Willow Springs International Raceway in California, teamed with Pacific Northwest racers Dick Flynn and Jack Hordemann to market nitrous systems under the Second Wind brand.

Over the next few years, the racers experimented and refined the systems. At the 1961 Bakersfield Fuel and Gas Championships, several PNW cars were equipped with nitrous. Soon the gas was out of the bottle, so to speak.

The May 20, 1961, issue of *Drag News* spilled the beans. The center spread was a thinly disguised ad for Speed Power Suspension's Second Wind and featured the PNW boys and *This New Fuel* that's *Safe as Gas*. For a hefty ($225) price tag, you



Nitrous oxide system development has resulted in effective, dependable shots of power for drag racers.





Jim Tanner purchased So-Cal Nitrous & Race Fuels from friend and Sprint car racer Steve Howard in 2014.



The business has two California locations where racers can get their nitrous, race fuels and other accessories.

could buy a complete kit to "install on any engine and be absolutely guaranteed to add 20 mph top speed."

Ron Hammel, another PNW transplant, entered the picture in 1962. Hammel worked for Tony Capanna's Wilcap Co. and Jack Hordemann gave him a nitrous kit to test on Capanna's dyno where they were running Zane Shubert's Chevy. The results were encouraging and in 1964 Hammel founded 10,000 RPM Speed Equipment, supplying nitrous from a facility in Torrance, California.

Meanwhile, Shubert ran nitrous concealed in a black painted fire extinguisher. Unfortunately, he grenaded three blowers before abandoning the laughing gas as unreliable.

Back then nitrous was also sold in balloons at raves and concerts with the nickname *hippie crack*. The term whippet or *whippit* became common vernacular for nitrous used as a recreational inhalant—not surprisingly, as it was a propellant for whipped cream.



SHOP RULES

1. No bags allowed
2. Only 1 person allowed per transaction
3. Bottle venting is not allowed on premises
4. Customer with I.D. must
   - Provide payment
   - Carry bottle in and out of facility
5. All tanks must be transported in trunk of vehicle
6. Tanks with contamination will NOT be filled
7. Any paraphernalia will result in refused service
8. All tanks must be equipped with proper safety labels and equipment

So-Cal offers certification and refill services but is always on the lookout for customers looking to get some gas for non-racing purposes.

RACE-READY

Although Hammel sold a lot of nitrous kits to racers, the name *10,000 RPM* might have been too cumbersome to market. It sure wasn't as catchy as the letters NOS.

In 1978, inspired by one of the 10,000 RPM kits, Mike Thermos and friend Dale Vaznaian joined forces to develop their own nitrous kits under the name Nitrous Oxide Systems or simply NOS. They had a cool logo to boot, and took it to market.

NOS revolutionized the delivery of N2O, which in Hammel's time had primarily been a mechanically controlled device. The advent of electronic solenoid control made the gas delivery completely manageable.

In July 1981, *HOT ROD* published a David Vizard nitrous shootout article that tested systems from Internal Combustion Engines, NOS and 10,000 RPM on a well-prepared 350 Chevy-powered Camaro Z/28 running on 92-octane pump gas on a computerized SuperFlow 800 chassis dyno.

NOS won—with 102-octane gas and open pipes it recorded 529 hp at 5,500 rpm and 570 pound-feet of torque at 4,000 rpm.

NOS continued product development and nitrous oxide became the preferred performance-adder of the next decade. There was more to come in 2001 with the release of the first installment of the hugely popular and influential *Fast & Furious* movie franchise, and nitrous continues to power race cars nationwide.





THE DARKER SIDE OF N2O

Back in Downey, California, Sprint car racer Steve Howard, who operated So-Cal Performance, was suffering some health issues and reached out to his friend and customer Jim Tanner.

Tanner, a superkart and TQ midget racer, remembers, "We'd go there for tires and fuel. Howard had a 12,000-gallon underground tank containing race gas and he had three aboveground dispensing pumps. It was well known in the street racing fraternity as a place to buy used McCreary race tires and fuel.

"As Howard got sicker, he asked me if I would take over the business. I was a commercial real estate appraiser and not really interested, but Howard insisted saying, 'You're a businessman. Do it for me.'

"Howard died in 2014 and I took over the building and agreed to keep the name and retain the racing fuel business, but I had no idea what I was getting into."

It turns out, more than just racers come looking for N2O.

"There's a whole other side to nitrous—a dark side, that few know about. I had no clue that people abused nitrous, and it was a shock," Tanner reports.

"To prevent abuse, the manufacturers of nitrous—which is basically tasteless and odorless—infuse the industrial grade with 100ppm sulfur dioxide (SO2) to make it unpleasant for human consumption. However, users will squirt readily available vape juice or Kool-Aid into an empty nitrous bottle to disguise the sulfur taste. They then get the bottle filled with N2O and use



Non-racing stickers, traces of sweet-smelling liquids and/or modified nozzles can be a tip-off that nitrous is being used illicitly. In these instances, So-Cal Nitrous & Race Fuels will refuse service and confiscate the bottles.

that mixture to fill a balloon, which they suck on—often while driving. Nitrous is an analgesic and anesthetic that helps take the edge off pain."

An article in *The New York Times* cited a British government report saying that nitrous was second only to cannabis in illicit use among those aged 16 to 24 in Britain. Unfortunately, that trend is similar in the U.S. as well.

"The police know abuse is a problem," Tanner says, "and keep an eye on all nitrous retailers. Since I don't want to be in the drug business, my well-trained staff works with the police, and we educate each other about all the new tricks abusers use to get gas."

He says a first telltale sign of an abuser is when they arrive with a bottle rolling about in their car.

"Most racers have their bottles carefully stowed in the trunk, out of the cabin," he explains.

They may also not look the part.

"Sometimes the bottles are decorated with non-racing decals, whereas racers usually have racing decals. Thirdly, the abusers will



often leave the balloon ring on the valve—a dead giveaway."

At that point, So-Cal Nitrous & Race Fuels (socalnitrousandracefuels.com) turns them away. But not all suppliers are as conscientious.

"Sadly, there are plenty of places that turn a blind eye, and some will even replace the bottle valve with one from an oxygen bottle so that the customer can only get a refill from the same shop, because taking a nitrous bottle with an oxygen valve into a reputable shop such as So-Cal Nitrous would be an instant callout," says Tanner. "Incidentally, changing valves could potentially fool firemen responding to an accident believing it is oxygen and not nitrous and that could have disastrous consequences."

MORE SIGNS OF ABUSE

Tanner and his staff were quick to show me numerous nitrous outlets on social media platforms that sell *flavored* nitrous. Those outlets are also open at unconventional hours, some until 2 a.m.—another dead giveaway that they are likely seeking non-racing customers.

"If a bottle is equipped with the correct fittings and passes the *laugh* test, then the next giveaway occurs when we tip it upside down to make sure there's no foreign liquid in there," Tanner continues. "If liquid, especially sweet-smelling liquid, runs out we know the bottle is probably a party bottle and not being used for racing. We'll refuse service and we turn away people every day."

I asked if refusing a customer can become an issue.

"Absolutely," says Tanner. "We don't get many problems, but occasionally an abuser will get irate when we refuse them. Thankfully, my manager, Jorel Cuevas, handles most situations before they get ugly."

So-Cal Nitrous only sells directly to racers and not to other shops so it doesn't lose control of the end-user.

"We could probably sell more product if we were less strict, but I sleep happy knowing that we have not knowingly sold to an abuser," Tanner reports. "So-Cal Nitrous & Race Fuels has a great reputation for selling pre-packaged fuel and nitrous oxide. We are also one of the only shops that certifies bottles (they have to be certified every five years). We're well-known with a second store in Westminster, California and we're a proud sponsor of various racing classes. We want to make sure we run a clean ship. I don't have any desire to sully that reputation."



The shop pressure-tests bottles for safety.

In summary, Tanner concludes, "As a power-adder for racers, nitrous can be a wonderful, cost-effective horsepower boost, but in the hands of the wrong person it can create a deadly solution."

Now I know. ***TS***



Born in England, ***TONY THACKER*** *is an accredited automotive journalist, author and book publisher, and served as marketing director at the famed SO-CAL Speed Shop.*





Classic vehicles of all types preserve important memories to be shared with future generations.

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RESTORE OR RESTOMOD?

Customers have choices & that's a good thing. ////////////////// By Jeff Page

Since 1885 when Carl Benz introduced us to the first automobile, there has been a need for car repairs. A demand for people who understand how vehicles work and what it takes to get them back on the road created multiple professions and business opportunities over time.

At some point these automobiles got old enough that basic repairs weren't sufficient, and a restoration was required. This industry began to take shape just after World War II.

This was a time of peace and rebuilding for the United States, and many industrial entities were pivoting from manufacturing parts for the war effort to making automotive products. The availability of repair components and new performance parts helped jumpstart the hot rod culture.

Over time, that hot rod culture changed and evolved as mechanics and builders figured out different ways of doing things. Around the 1990s, a new trend began to emerge.

Car enthusiasts had always transplanted parts from one vehicle into another to improve performance, but suddenly the idea was taken to another level. The theme was to modernize as many functions of the classic vehicle as possible.

Restomods were born.

A NEW OPTION

This new trend didn't sit well with a lot of car enthusiasts who wanted to keep the automobiles as original as possible. These *purists* viewed the restomod trend as a direct assault on the originality of the classic vehicles they felt they were tasked with preserving.

But restomods continued to evolve, and suddenly owners of classic autos were faced with a difficult question—do I restore the vehicle or restomod the vehicle?

There are quite a few factors that can sway this decision. The first thing I feel should be considered is what the vehicle will be used for.

Are you building this car to be a daily driver, a weekend cruiser or maybe a trailer queen to only take to shows? Vehicles that won't be driven much probably don't warrant a restomod build.

The next consideration is the condition of the car. A vehicle that's missing its numbers-matching drivetrain is a perfect candidate for a restomod build, as a frame-off restoration would be incomplete if the original drivetrain was not included.

Of course, budget is also always a concern for someone who is thinking of redoing a classic vehicle.

While neither route is inexpensive, restomods typically cost more. Builders invest the same amount of work in a restomod as in a restoration, but you have the added costs of the modern parts added in.

There are projects that would be an exception to this rule. Rare vehicles where aftermarket replacement parts are not readily available can cost much more to restore, to the point where they exceed the cost of a restomod build.

Also, while the cost of the build is always a concern, so is the value of the vehicle once the restoration or restomod build is complete. This can vary drastically for spe-

cific makes, models and years of vehicles.

Consider a 1958 Chevrolet Corvette. An original restoration of a '58 'Vette would likely cost more than the car would be worth when completed.

However, a properly restomodded 1958 Corvette is worth exponentially more than it costs to build. Classic vehicle owners must consider these factors when making their decisions.



An original restoration is the most common form of restoration and is popular with older classic car enthusiasts.

RESTORATION CONSIDERATIONS

An original restoration is the most common form of restoration and is popular with older classic car enthusiasts who believe in the preservation side of the hobby. Whether it is a frame-on or a full frame-off project typically depends on how much the vehicle owner wants to spend.

A complete frame-off restoration costs much more, as the chassis is also restored in the process.

Original restoration projects can be lengthy and costly. The condition of the vehicle you start with makes a huge difference in time and cost estimates. Large amounts of rust can complicate things.

Parts availability can also add to the cost and time to build. Restorers of rare vehicles that are missing parts do not have the option of finding replacements online, meaning sometimes those items must be fabricated. This also goes for materials needed for the interior, where certain carpets or textiles may no longer be available.

Of course, this hard work can be worth it. There are some amazing Concours shows across the U.S. displaying classic vehicles in their original glory. You will find beautiful restorations from all over the world at these shows and get a free history lesson while you're there.

Still, the restomod trend is so popular now that you would be hard-pressed to





‘MUSCLE CAR CREW’ HITS SEMA

Members of *Kevin Hart’s Muscle Car Crew* were set to be keynote speakers at the 2022 SEMA Show, entertaining attendees with expanded stories of their inaugural television series and what it’s been like immersing themselves into car culture.



“Kevin Hart’s Muscle Car Crew represents SEMA’s membership and the tremendous enthusiasm we all have for this culture,” says Pamela Brown-Matthis, SEMA director of education. “Their story is driven by passion and a deep love for all things automotive. That passion shows through on the screen, and it will come through even more live on stage at the SEMA Show.”

The keynote address was part of a new component of the 2022 SEMA Show Education Program. Five keynote addresses were held during the week featuring “car enthusiasts, thought leaders, innovators and entertainers looking to bring fresh perspectives and innovative ideas to help elevate and strengthen attendees’ business and personal growth strategies,” according to Brown-Matthis.

Among those scheduled was NFL running back Emmitt Smith, who became a NASCAR Xfinity Series team co-owner last summer.



It’s also worth considering the cost of the restoration or renovation versus what the vehicle will be worth when completed.

go to a car show and not see multiple restomod builds as well.

FIND YOUR LEVEL

Just like anything else, there are many levels of restomods.

Some feature just a few upgrades, such as fuel injection added to the original engine, or a Vintage Air system installed for cooler summer cruises.

Other restomods, meanwhile, cost hundreds of thousands of dollars while modernizing every aspect of the vehicle.

Restomods have created an entire aftermarket segment that’s championed by companies like Art Morrison Enterprises and Roadster Shop. Companies like these offer full custom-built chassis that make it easier for the person doing the restomod build.

All the other functions of a vehicle have companies now making quality parts to add to a restomod build as well.

After the chassis has been modernized—which includes the drivetrain, suspension, brakes, steering and exhaust—a restomod requires modern creature comforts. Things like heated and cooled seats, modern gauges and high-end stereos are amenities we are accustomed to in our modern daily drivers that restomod owners want to enjoy as well.



Take into consideration how much time the vehicle will spend on the road when determining whether to restore or restomod.

Another feature to consider in a restomod is safety. Things like disc brakes and exterior LED lighting improve the safety of a classic vehicle. The blending of a classic vehicle with modern drivability and safety delivers the best of both worlds.

Having options when building a classic vehicle is one of the things that makes the industry so popular. The car owner gets to choose the build of their dreams.

Purists can seek to return to completely original while restomod lovers can modernize and the custom folks can change all kinds of things on the vehicle to make it unique.

Regardless of the route you choose to take with your customers, we are preserving these classic vehicles for generations to enjoy. These cars and trucks become part of the family and take on the role of time capsules, preserving special memories. ***TS***



JEFF PAGE *is the founder and CEO of Heartland Customs in Purcell, Oklahoma. The shop is world-renowned for its ability to build completely modernized classic vehicles while retaining the original OEM look. Its restomod Corvettes are considered the market benchmark and have won numerous top awards nationwide including the SEMA General Motors Car of the Year. Jeff is very active in giving back to his community and sharing his experience and knowledge with fellow builders and enthusiasts. Visit heartlandcustoms.us.*



Time and budget considerations can be factors when deciding between a traditional restoration or a restomod build.





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Time to Gear UP

By Jef White

Cargo management solutions enable drivers' can-do attitudes.



Innovative attachment systems and customizable features allow truck and van owners to create specialized setups for specific needs. (Photo courtesy DECKED)

Customers don't turn to the aftermarket unless they're gearing up to do something special. When it comes to cargo management systems for work or play, their desire is for innovative solutions that meet their unique needs and expectations.

The industry is happy to deliver with a wide variety of products that help streamline everything from commercial service calls to overlanding adventures and everything in between.

It used to be these systems would come with a price—adding weight and permanent attachment issues with limited options. These days, however, solutions feature lightweight-yet-durable components that can be rearranged as needed, and many can be installed and removed in minutes instead of hours with no long-term damage to the vehicle.

Suppliers note that the biggest challenge to selling these systems for shop owners is simply introducing drivers to the various options. From there, upsell opportunities and chances at landing repeat business become obvious as happy customers appreciate the ability to take it all with them.

INS & OUTS

It's not surprising that supply chain challenges are affecting the cargo management market, as confirmed by Paul Chapman, president/CEO of Stowe Cargo Systems.

Another factor he sees driving the industry, however, are the desires of truck owners to have custom solutions to fit their specific needs.

"Consumer expectations are evolving as they continue to look for opportunities to improve convenience and usage, particularly relative to the box areas of their trucks," Chapman notes.

Daniel O'Connor, senior category manager for Quadratec Inc., says many truck owners have three things on their minds when it comes to cargo management solutions:

"Fitment, adaptability, security."

With many of the setups now available, it's not


UNDERCOVER
TRUCK BED COVERS
THE ULTIMATE
TRUCK BED SOLUTION
RAM
ULTRA
FLEX
WE CAREFULLY CRAFTED THE ULTRA FLEX FROM UNDERCOVER TO BE THE ULTIMATE ALL-PURPOSE TRUCK BED COVER.
From its ultra-low profile design and matte black finish to the integrated Luminous Bed Rail Lights and plush carpeted underpanels, the Ultra Flex packs the premium features that put it in a class all its own.
TRUCK HERO
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HOT CARGO MANAGEMENT PRODUCTS

HOT PRODUCTS:
Universal & Tacoma-Specific Overland Bed Racks
FEATURES & BENEFITS:
Versatile storage, from bags and shovels to rotomolded cases and recovery gear; offered in mid-size and full-size lengths, both with a static weight rating of 800 pounds; no-drill mounting; highly durable two-stage powder-coating with light texture.

Body Armor 4x4
Nupesh Patel
Body Armor 4x4 Brand Manager

HOT PRODUCT:
DECKED CargoGlide
FEATURES & BENEFITS:
Burly and tough; slides the entire bed's cargo out; works with truck caps and tonneau covers; easily moved from one truck or van to another with the same bed length.

DECKED
Greg Randolph
VP of Marketing

HOT PRODUCT: Tactik Security Enclosure for 2007-23 Jeep Wranglers
FEATURES & BENEFITS:
Compatible with all 2007-23 Wrangler JK/JL models; secures to cargo area's flooring; lockable drawer; exterior tie-down points; internal rubber pad; hidden, lockable storage compartment within the slide-out drawer; powder-coat finish on all components.

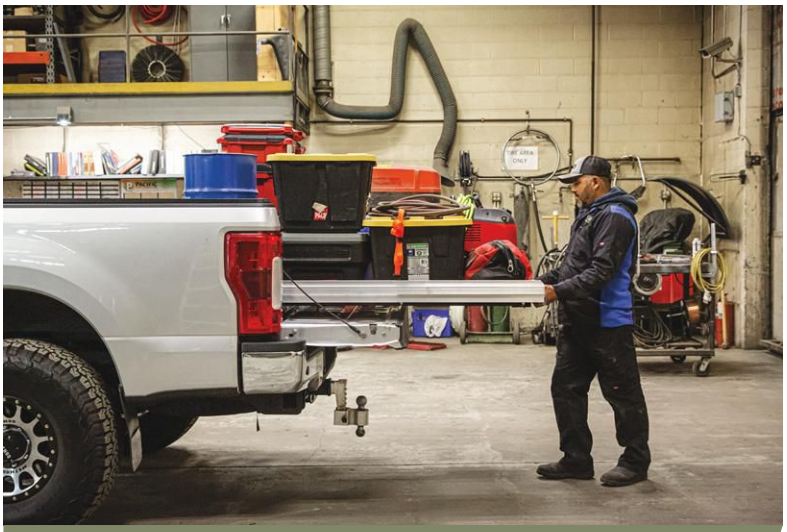
Quadratec Inc.
Daniel O'Connor
Senior Category Manager

HOT PRODUCT:
Reconn-Deck Truck Bed System
FEATURES & BENEFITS:
Modular design that allows unique setups; channels on all four sides for added accessories.

Rhino-Rack
Brian Graber
Digital Marketing Specialist

HOT PRODUCT:
2-in-1 Tonneau Cover & Toolbox Combo
FEATURES & BENEFITS:
Built-in low-profile, high-capacity toolbox; automotive OEM-level components; helps truck owners organize, protect and access gear easily and securely.

Stowe Cargo Systems
Paul Chapman
President/CEO



Shops that offer quality systems and useful information can build repeat sales. (Photo courtesy DECKED)



Many consumers are looking for systems that don't require permanent vehicle modifications. (Photos courtesy Rhino-Rack)

always necessary to make a lifetime commitment.

"Many consumers are looking for systems that don't require permanent vehicle modification," says Brian Graber, digital marketing specialist for Rhino-Rack, noting his company's modular Reconn-Deck setup "slides into existing bed rails and allows you to install and remove it with ease while still having one of the highest load-rating capacities in the industry."



Unique features are attractive to discriminating buyers. (Photo courtesy Stowe Cargo Systems)

Greg Randolph, VP of marketing for DECKED, notes the company recently purchased CargoGlide, a system that stores gear in a truck bed and slides out for access when needed.

The unit is "easily moved from one vehicle to another should the customer purchase a new truck or van with the same bed length."

On the recreational side, Nupesh Patel, brand manager for Body Armor

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BAK truck bed covers



REVOLVER X4s

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The premium option for a hard-rolling bed cover, Revolver X4s offers dependable bed & cargo protection when closed and full bed access when opened, with a stealthy profile and sleek matte black finish that delivers a stunning appearance from any angle.

How do you top the security & style of the Revolver X4s? With the assurance of BAK's 5-Year Warranty, of course.



Rolling cover for full-bed access

TRUCK HERO

BAKINDUSTRIES.COM

SPRINTER VANS INCLUDE NEW FEATURES



Mercedes-Benz Sprinter vans are arriving on dealers' lots with four-cylinder engines and AWD. (Photo courtesy Mercedes-Benz USA)

A favorite of commercial and recreational clients seeking organized storage solutions, Mercedes-Benz Sprinter vans are arriving on dealers' lots with new features.

Mercedes-Benz Vans announced earlier this year that the Mercedes-Benz Sprinter is transitioning to a fully four-cylinder lineup for gasoline and diesel engines for model year 2023, while also introducing a new all-wheel drive (AWD) system.

"The Mercedes-Benz Sprinter continues to raise the bar within the commercial vehicle segment, offering a streamlined packaging structure and improved features to fit a variety of customers—from everyday drivers to parcel delivery and construction workers, various upfit customers and everyone in between. The new 2023 Sprinter will provide the comfort, power and off-road capabilities needed to take on any project ahead," the company notes.

The new OM654 engine is said to achieve smoother acceleration, higher torque values, decreased emissions and lower noise and vibration levels. It will be available in two power output ratings: 168 hp and 208 hp.

Mercedes-Benz Vans will also be transitioning to a new 9G-TRONIC 9-speed transmission as standard for all variants.

Meanwhile, the new Sprinter AWD replaces the previous 4x4 system, providing more power, endurance and an overall seamless transition while maintaining the ground clearance, approach angles, departure angles and breakover angles of its predecessor, according to Mercedes-Benz USA.

HOURS EXTENDED AT WORK TRUCK WEEK



Attendees will have more time to check out the latest commercial vehicles, equipment and technology from 500 companies at Work Truck Week 2023, thanks to extended Work Truck Show exhibit hours. The popular New Exhibitor Pavilion also returns with an earlier start.

Set for March 7-10, 2023, at the Indiana Convention Center in Indianapolis, Work Truck Week encompasses The Work Truck Show, Green Truck Summit, Ride & Drive, an educational conference and more.

It is organized by NTEA – The Association for the Work Truck Industry.

The exhibit hall for next year's show will be open 9:30 a.m.-5 p.m. on Wednesday, March 8, and Thursday, March 9—30 minutes earlier than prior years. Friday's hours remain 9 a.m.-noon.

"As Work Truck Week has grown over the last two decades, attendees have asked for more time in the exhibit hall," says Steve Carey, NTEA president & CEO. "They use this time not just to see the latest products, but also to talk with engineering and technical experts in exhibitor booths, watch equipment demos and experience some of the latest technology in Ride & Drive. Opening earlier on Wednesday and Thursday helps them accomplish their goals."

Green Truck Summit, NTEA's full-day advanced fuels and vehicle technology conference, will be held Tuesday, March 7. Jennifer Rumsey, president and CEO of Cummins Inc., is the keynote speaker.

Registration information is available at worktruckweek.com.

4x4, sees the market benefiting from a new group of explorers who want to take it all with them.

"Off-roaders, campers and overlanders all have a large need for storage options and organization while on the trail," he says. "Our Overland Bed Rack and MOLLE panels offer just that—a solution for vehicle storage and organizational needs."

PACK UP & GO

While offering the safe, sturdy transport of gear, many cargo management products use innovative attachment systems that speed installations as well.

"A common misconception is that installs are more time-consuming and invasive than they actually are," says Graber.

Quality units benefit shops and drivers, agrees Patel.

"Our Overland Bed Racks and truck bed MOLLE panels install in about 30 minutes each with minimal tools and no drilling required—they are direct bolt-on applications," he explains. "This allows shops to complete the install quickly and efficiently, leaving more time for more customers."

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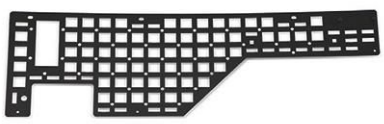
Today's off-road and work truck cargo management systems deliver fitment, adaptability and security. (Photo courtesy Quadratec Inc.)











Off-roaders, campers and overlanders need storage and organization options on the trail. (Photos courtesy Body Armor 4x4)

Unique features are also attractive to discriminating buyers, Chapman adds.

"Look at new products that break with the status quo—particularly those that add value with useful differentiation," he recommends, adding that his company's 2-in-1 Tonneau Cover and Toolbox Combo is designed "as a premium, next-generation product intended to offer the consumer more than just a lid for their truck box."

And since they can be used for work or play, durability is a key factor, notes Randolph, using CargoGlide as an example.

"It's burly, incredibly tough and built to take about anything the user can throw at it. *Idiotproof* is a good way to put it," he says. "Being able to slide your entire bed's cargo out to you is a gamechanger for anyone who owns a truck."

For shop owners, then, it's often simply a case of educating consumers about the available systems.

"Jeeps lack usable storage options and aftermarket cargo management products are an easy way to upsell a customer into something they might not know exists," O'Connor explains.

GET SALES HAULING

Customizable options are a proven way to maximize sales and client satisfaction, says Patel.

"By offering customers a simple Body Armor 4x4 MOLLE panel set for their Jeep JT or Tacoma truck bed, shops and installers now have a very easy way of upselling customers to products that mount to the MOLLE panels directly," he explains. "The same applies to our Overland Bed Racks—once mounted, the options are only limited by the mind of the builder."



Every consumer needs a secure, versatile cargo management system—even if they don't know it yet. (Photos courtesy Quadratec Inc.)



If retailers are unsure of where to start the cargo management discussion with customers, O'Connor offers a list of selling points for systems such as Quadratec's Tactik Security Enclosure for Wranglers:

- Easy upsell with an even easier install
- Many customizable options with an assortment of fitments, colors, materials, etc.
- Allows the customer to customize the inside of their Jeep as much as the outside
- Everyone needs these types of products, even if they don't know it yet!

Rhino-Rack's Graber recommends selling to customers "by emphasizing the ease of install for certain products and the warranties that they are backed by."

Partnering with suppliers that are well-known and recognized in the industry provides added support for retailers, says Chapman, who notes Stowe Cargo Systems works hard to advertise new solutions to installers and shops.

"We also invite dealers to visit our website to find those *must-have* next-gen cargo management products that will excite customers and bring them through the door." ***TS***

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"Ford Bronco Big Bend fandango" is a new 2022 four-door Bronco Big Bend build from BOOSTane and SCT Performance.

BRONCO BUILDING

A road-worthy SEMA project that embodies 'adventures with friends.'

By Josh Poulson

Have you ever seen the movie *Fandango* starring a very young Kevin Costner? I hadn't until my buddy Ian Lehn (owner of BOOSTane) told me he wanted us to build a SEMA vehicle based on the film.

Fandango is about friends coming together for one last road trip adventure. Lehn explained how he has always admired the movie and believes it symbolizes his journey so far in the automotive aftermarket—an adventure with friends.

So, why not base a build on a movie that was filmed in Big Bend, Texas and is about doing some foolish stuff with your buddies? Lehn had just bought a new 2022 four-door Bronco Big Bend and partnered with SCT Performance to create a project to be featured in the SCT booth at the 2022 SEMA Show.

He called me with the innocent-sounding question, "How do I get a SEMA build done?" Having completed a few of them in the past I talked to my team and we were up for the challenge of making something cool and custom that could still serve as an everyday driver after the show.

CREATIVITY INSIDE & OUT

Lehn and I were on the phone for about 30 minutes as he explained the history of *Fandango* and how it would fit in with the build.

His goal was to have everything done by mid-October so that he could take it on a cross-country road trip from Ohio down to Chattanooga, Tennessee to pick up a buddy and then on to Texas where he would go to Big Bend National Park to camp and take photos before eventually ending up in Las Vegas in time for the show, which began Nov. 1.

So, what goes into a SEMA build and how do you pull it together? It all starts with a vision.

Fortunately, Lehn had an idea of what he wanted, yet agreed to leave the creative execution up to us. During that first conversation we determined roughly the kind of package he was envisioning.

In this case it was going to be a lifted, overland/Baja-style Bronco with 37-inch tires. We immediately knew we'd need to find wheels, tires and a suspension kit.

Then it was time to get creative. I am a firm believer that if a project is going to be an everyday driver, the inside needs to be as nice as the outside, since we spend so much of our time interacting with the interiors of these vehicles.

Even though this was a lower-end Big Bend package, it did have the larger Ford media screen. So, adding just a few interior upgrades such as leather would go a long way.

I talked to my buddies at Katzkin (katzkin.com), who suggested a mahogany-colored leather kit with black wings and a hexagon stitch pattern on the inserts. The vehicle is painted Cactus Gray, so I decided to add gray piping on the leather to match the exterior. We also embroidered *fandango* on the headrests to keep the theme going.

With the leather installed, the basic beige Ford dash was a bit too plain, so we took it apart and wrapped it and all the door panels in mahogany vinyl to match the seats.



A retro/throwback graphics package was blended with modern amenities.

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- SCT Burst Throttle Booster
- SCT Livewire TS+
- SPD Performance Downpipes
- Ford Performance Spark Plugs
- MagnaFlow Exhaust

■ LIGHTING
- Morimoto 4Banger Off Road LED A-Pillar System (BAF005)
- Morimoto Front Bumper Lights (BAF070)
- ORACLE Lighting BRONCO Grille Lettering
- DV8 Roof Light Bar Cube Lights (B3CE16W4W)

■ WHEELS & TIRES
- BFGoodrich KM3 37-Inch Tires from Jackson Marketing
- Black Rhino 17-Inch Armory Wheels from Wheel Pros

■ EXTERIOR
- Eagle Enterprises Custom Big Bend fandango Graphics
- DV8 Front Bumper, Wings & Skid Plate (FBBR-02, FBBR-02W, SPBR-01)
- American Adventure Labs M.A.S.S. Spare Tire Platform
- American Adventure Labs M.A.S.S. Adjustable Cargo Shelf
- American Adventure Labs MAXTRAX & ROTOPAX Mounting Brackets
- LLumar PPF Hood & Fender Tips
- LLumar Window Tint

■ SUSPENSION
- Zone Offroad Products 4-Inch Lift (ZONF95)
- JKS Manufacturing Max Tire Clearance Kit (JKS8300)
- JKS Manufacturing Front & Rear Shock Skid Plates (JKS8301, JKS8308)

■ INTERIOR
- Katzkin Two-Tone Mahogany/Black Leather Seat Kit with Hex Stitch
- Katzkin Mahogany Wrap for Dash & Door Panels

■ BUILDER & INSTALLER
- Auto Additions, Columbus, Ohio



Highlights include a retro-style light bar and LEDs, illuminated badge letters and a winch.



MORE THAN MEETS THE EYE

Of course, everyone is going to see the exterior first, and we wanted to put together a modern-day off-road package with an older, retro theme like the movie.

One thing that really helps is graphics, so we talked to our friends at Eagle Enterprises (eagleict.com) and they worked with Lehn and me to come up with a scheme to really set off the Cactus Gray while matching the overall theme.

The color scheme naturally led to other decisions, such as lighting. ORACLE Lighting (oraclelights.com) pitched in with the company's BRONCO front letter lighting system. We chose the amber light color, again to keep with the retro theme.

But why stop there? Driven Lighting Group (drivenlightinggroup.com) sent us some Morimoto A-pillar cube 4Banger lights as well as additional cube lights for the front bumper, all with white and amber LEDs.

Zone Offroad Products (zoneoffroad.com) provided the 4-inch suspension lift and some JKS parts so that we could easily run 37-inch tires. The kit fit really well and gave us the look we wanted.

Jackson Marketing (jacksonmg.com) kept things rolling with awesome 37x12.5x17 BFGoodrich KM3 tires we mounted on a set of Black Rhino Armory

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If a project is going to be an everyday driver, the inside needs to be as nice as the outside.



A two-tone mahogany/black leather seat kit with hex stitching and gray piping is complemented by a mahogany wrap for the dash and door panels.



The lifted, overland/Baja-style Bronco runs on 37-inch tires and features plenty of off-road hardware.

wheels from the good people at Wheel Pros (wheelpros.com).

Off-road hardware was required to keep the theme going, so on went a DV8 front bumper and a light bar above the windshield. The bar holds 12 cubes that look great and deliver tremendous light output, controlled through the upfitter switches that Ford so wisely provides standard on the Bronco.

Next, our pals at Warn Industries (warn.com) helped us out with an 8,000-pound front winch. If Lehn ever gets stuck (his driving is kind of suspect at times!) he'll have everything needed to get going again.

Road trips require LLumar (llumar.com) paint protection film on the front, and we added the company's ceramic window tint to keep the Bronco cool.

And, for a little icing on the cake, the guys at American Adventure Labs hooked us up with their M.A.S.S. spare tire system and cargo organization for a well-equipped road trip.

COMING TOGETHER

It's true I'm more into the look of these vehicles while Lehn, being a true car guy, is into the look *and* the performance. (I guess that's why he started his company to begin with.)

He hit up his friends at MagnaFlow (magnaflow.com) for a throaty cat-back exhaust system that sounds awesome.

Then came his collaboration with the guys at SCT Performance, who supplied a Livewire programmer and throttle booster, followed by help from the mad scientists at 5 Star Tuning to build a custom BOOSTane tune for the 2.3L. It all added 100 hp and 120 pound-feet of torque while maintaining the OE features and settings.

We debated a few things here and there, but when it comes to these types of projects, it's best to set a theme, stay in your lane and stick with your planned products and budget. I'm sure as time goes by Lehn will add more parts, but the initial goal was to get everything done by SEMA.

This Bronco has plenty of adventures ahead of it, especially with Lehn behind the wheel. Maybe he'll swing by and pick me up for one of them.

If you missed it at the SEMA Show in the SCT booth, you can still see the full adventure on Instagram @boostaneworld. **TS**



JOSH POULSON *is the principal of Auto Additions in Columbus, Ohio, which was named Restyler of the Year, 2012-13. Auto Additions offers a complete line of product upgrades including 12V and appearance packages with a specific focus on the dealership segment. Josh is immediate past chairman of the SEMA PRO council and was named 2015-16 Person of the Year at the 2015 SEMA Show.*

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Off-Road Shocks

Eibach, Corona, California, present PRO-TRUCK Reservoir Shocks, the newest additions to its off-road selection of performance dampers. With hardened nitro-steel piston rods and 46mm monotube construction, the shocks are equipped with a piggyback remote reservoir system. Increased fluid capacity allows for more controlled pressures under severe abuse, translating into more consistent damping forces on extended runs, or with heavy loads over rough terrain.

Raptor Bump Stop Kit

Timbren Industries, Toronto, offers an Active Off-Road Bump Stop upgrade for the rear suspension on 2021-22 Ford F-150 Raptor pickups. Kit ABSFR150RC mounts to the frame using existing holes. The off-road bump stops smooth out the ride by softening axle engagement and disengagement, reducing stress on the vehicle and giving the driver more control.





Ford F-150 Hybrid Cat-Back System

BORLA Performance Industries, Johnson City, Tennessee, presents its Cat-Back Exhaust System for 2021-22 Ford F-150 PowerBoost hybrid applications that improves horsepower and torque. The S-Type system delivers a classic sound without any drone or resonance inside the vehicle. The system is made from T-304 stainless steel and features all-welded construction for durability and long life. An application with bright chrome on T-304 tips is available.

Bronco Slide Track Running Boards



Raptor Series, Hayward, California, offers Slide Track Running Boards, including applications for new Ford Bronco models. The boards feature slip-resistant treads along the entire stepping area for added traction and safety. Their stylish look is accented by unique angled end caps and a black textured or brushed aluminum finish. The boards are constructed of anti-corrosion aircraft-grade aluminum for long-lasting durability and weight savings. The brackets have a recommended weight rating of 400 pounds.



Dual-Zone Fridge-Freezers

4 Wheel Parts, Compton, California, presents battery-powered Smittybilt Basecamp 75L and Waypoint 55L Dual Zone Fridge Freezers. The mobile, technologically advanced, customizable fridge systems include smartphone controls via Bluetooth connectivity, removable wheels, extendable handles and dual-zone freezing and cooling capabilities.



Electric Retractable Tonneaus

EGR USA, Ontario, California, presents its expanded line of RollTrac Electric Retractable Bed Covers. New electric applications for 2019-23 short-bed Chevy/GMC and Ram pickups were introduced at the 2022 SEMA Show, with more applications to come. Operated by a touch of a button located in either corner of the side rails at the tailgate, the RollTrac provides quick, easy access to the cargo bed. Equipped with an onboard ECU for intelligent programming, it includes variable speed operations that are smooth, quiet and safe. ***TS***

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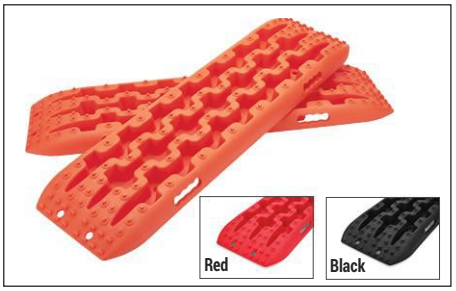
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Rebelle Alliance

Compiled by Jef White

Women's off-road rally brings the industry together.



Lee Riser, left, vice president of marketing for RealTruck, and Team Rugged RubiBelles partner Rebecca Gabel tackled the 2022 Rebelle Rally in a 2018 Rubicon Jeep Wrangler JLU. (Photo courtesy RealTruck)

The Rebelle Rally is quickly capturing the attention of the 4x4 aftermarket, with growing participation and support of the first women's off-road navigation competition of its type in the United States.

Traversing approximately 1,500 miles of iconic off-road terrain through Nevada and California, the cross-country endurance challenge focuses on precision driving and navigation skills—not the fastest speed. Female competitors driving street-legal, minimally modified vehicles use paper maps, compasses, roadbooks and strategy to find hidden checkpoints in what is known as the *Rebelle Format*.

Consisting of eight remote and off-grid competition days and two classes—4x4 and X-Cross—the Rebelle Rally is considered a proving ground for racers, vehicles and the specialty products that help power them. Both before and after the rally, which was held Oct. 7-15, aftermarket professionals and businesses shared the excitement and innovation surrounding this unique event.



Riser has nearly 20 years of experience in the automotive industry, while Gabel, a Navy veteran, grew up off-roading. (Photo courtesy RealTruck)

REALTRUCK

Aftermarket truck accessories manufacturer and online retailer RealTruck, formerly Truck Hero, sponsored Team Rugged RubiBelles (#158) at the 2022 Rebelle Rally.

The team was composed of Lee Riser and Rebecca Gabel, who tackled the course in a 2018 Rubicon Jeep Wrangler JLU. Riser is RealTruck's new vice president of marketing.

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Rebelle Rally officials used onX Offroad digital map and navigation features to set this year's route and organize the mobile base camp. (Photo courtesy onX Offroad)



Three factory-backed teams competed for Jeep at the 2022 Rebelle Rally in Wrangler 4xe hybrid models. (Photo courtesy Jeep)



For the second year in a row, the Jeep brand-supported team of Nena Barlow and Teralin Petereit piloted their Jeep Wrangler 4xe to the 4x4 Overall title and Bone Stock and Electrified category wins at the 2022 Rebelle Rally. (Photo courtesy Jeep)

"Rebecca and I are so excited to participate in our first Rebelle Rally race out west," Riser said prior to Day 1. "We know there will be some tough elements to face, but we both enjoy a challenge and know it's going to be a great experience."

The Rebelle Rally, which began in 2015, is the first women's off-road navigation race in America and the longest competitive off-road rally in the nation. This year, 55 teams competed in the weeklong endurance event.

Teams are made up of two women—a driver and a navigator—and participants hailed from 94 cities, 24 states and five countries, ranging in age from 23 to 74.

"We at RealTruck are so excited to follow Lee and Rebecca on their journey as they race at the 2022 Rebelle Rally," says Tony Ambroza, chief growth officer. "Our goal is to inspire people to get up, get out and live all of life's adventures. Lee and Rebecca epitomize the passion our team has for the RealTruck way of life. We couldn't be prouder to sponsor the Rugged Rubi-Belles to compete in this unique and demanding race."

Riser and Gabel met through a mutual friend and decided after just one phone call to take on Rebelle Rally together. Riser has nearly 20 years of experience in the automotive industry, while Gabel, a Navy veteran, grew up off-roading.

When the dust settled, the team finished in 42nd place in the 4x4 class, totaling 675 points.

"The Rebelle Rally was a phenomenal, challenging and once-in-a-lifetime experience," says Riser. "All the women who competed are truly inspiring and I'm honored I had the opportunity to race among them."

ONX OFFROAD

Overland trail map and navigation app company onX Offroad served as an important partner for the organizers of the 2022 Rebelle Rally.

While the female-only teams must rely solely on paper maps and compasses during competition—with GPS and cellphones strictly prohibited—course creators were under no such restrictions as they used onX Offroad to help plan the rally route and support maneuvers.

"We really use the onX Offroad app in every way possible," says Emily Miller, Rebelle Rally founder and rally director.

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"From planning out the course, laying out the course and running the course, it's a critical tool for us. Especially while pre-running and doing research, it's very clear and very visible on the onX Offroad app where trails are, and we can quickly know if they are usable trails or not."

Miller explains that each year's event includes new routes.

"As we go through the process of filing for permits, I can easily see what's public land and what's not," she says. "Then, I can turn on the Private Land Layer to determine if we need to route around the area, or if I need to contact the landowner to get permission to access it."

Once under way, the app serves as an important tool for the event staff of more than 130 people. The base camp, which functions as a small town during the rally (providing food, shelter, communications, etc.), picks up and moves for almost every stage.

This year, Miller set more than 300 individual waypoints, along with specific navigational routes to safely move everyone from one preplanned location to the next.

"The Rebelle Rally is such an incredible part of the off-road community," says Haley Fetzer, onX Offroad head of marketing, "Their team showcases just how versatile our app is and they provide a unique stress test to our features. The stakes are high when you are in the desert, so we know it needs to always be 100% perfect."

JEEP

It was all about environmentally friendly off-roading and defending its various titles at this year's Rebelle Rally for the Jeep brand.

Having swept the Overall title and Electrified and Bone Stock categories in 2021, Jeep supported three teams in this year's competition with its electric hybrid Wrangler 4xe.

"As the Jeep brand continues toward its goal to be the electrification leader in the 4x4 segment, the Rebelle Rally is the ultimate proving ground for our electrified future," said Jim Morrison, senior vice president and head of Jeep brand North America, prior to the 2022 rally. "This year, we're supporting three teams comprised of some amazing women, including last year's first-place winners Nena Barlow and Teralin Petereit, and a Navajo team that includes Jeep employee Kaitlyn Mulkey."

The brand estimated nearly a third of the 55 teams entered in this year's Rebelle Rally were using stock or modified Jeep vehicles. The factory Jeep Wrangler 4xe teams included:

- **Team 4xEventure (#129)**—Off-roading legends Barlow and Petereit returned to defend their 2021 Overall title and Electrified and Bone Stock category wins. The two veteran competitors had a combined 10 category wins and nine podiums coming into the event.
- **Team Nor'Wester (#111)**—Veterans Mercedes Lilienthal and Emily Winslow, boasting five combined Rebelle Rally runs prior to 2022, have competed in every category (4x4, X-Cross, Electrified and Bone Stock) in their careers.
- **Team Hózhó Vibrations (#160)**—Mulkey teamed with returning Rebelle competitor Racquel Black to represent the Navajo (Diné) Nation and Jeep in this year's rally.

"Jeep has believed in and supported the Rebelle Rally since the beginning and we are pleased and honored with their return," says Miller. "We have strived to put together a progressive electrified program, one that stresses both environmental and land stewardship responsibilities. As the world migrates to an electrified future, the Rebelle is the ultimate proving ground for automotive manufacturers and their electrified products."

In the end it was business as usual for Barlow and Petereit, who delivered a consistent and dominant performance, taking the most points in four of the seven stages and never scoring lower than third while piloting their 4xe to the 4x4 Overall title as well as Bone Stock and Electrified category wins for the second year in a row.

Meanwhile, Mulkey and Black finished ninth overall in 2022, Lilienthal and Winslow totaled 1,082 points, and Jeep Wranglers finished in five of the top 10 positions in the 4x4 class, the brand reported.

"The Wrangler 4xe's repeat wins are a testament to Nena and Teralin, as well as to the engineering teams at home," says Morrison. "Congratulations to everyone who rallied this year."



Kia returned to the Rebelle Rally with a 2023 Sportage X-Pro piloted by driver Verena Mei (front) and navigator Tana White. (Photo courtesy Kia)

KIA

Kia returned to the iconic Rebelle Rally for the third year in a row, this time with a 2023 Sportage X-Pro modified to handle the harsh topography that makes up the 1,500-mile navigational challenge.

Teammates Verena Mei (driver) and Tana White (navigator) were hoping to finish one place higher in the X-Cross class after coming in second in their Kia Sorento PHEV in 2021.

"Kia's longest-running nameplate has a storied past of off-road desert racing, with impressive results in the Paris-Dakar rally and Baja 1000 race," notes Steve Center,

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Pirelli North America returned to sponsor the 2022 Rebelle Rally, with a goal of giving back. (Photo courtesy Pirelli North America)



Auto writers Jill Ciminillo and Kristin Shaw, otherwise known as Team Brute Squad, piloted a Santa Cruz pickup in this year's Rebelle Rally for Hyundai Motor America. (Photo courtesy Hyundai Motor America)

COO and EVP, Kia America. "An incredible off-road contender back then, the latest iteration of the Sportage will build upon its legacy by tackling the arduous Rebelle Rally with finesse—especially with such a fierce team at the helm."

To further the success of the team out on the trail, Kia partnered with Theresa Contreras and Sara Morosan, sisters and owners of LGE-CTS Motorsports and Baja Forged off-road products, to prime the 2023 Sportage X-Pro for the rally. Wearing a wrap inspired by Kia's new slogan, *Movement that Inspires*, the Sportage features custom Baja Forged front and rear bumpers complete with tow points; a custom roof rack; skid plates for the front, rear and underbody; 17-inch Rhino wheels; and BFGoodrich All-Terrain T/A K02 tires, sponsored by Michelin.

The treatments enhance the already capable Sportage X-Pro, which is powered by a 187-hp, 2.5L I-4 engine paired with an 8-speed automatic transmission, Active AWD system, and multi-terrain drive modes including Normal, Sport, Smart and Snow.

Last year, two 2022 Sorento PHEVs earned podium spots in the 2021 X-Cross class with second- and third place finishes. The previous year, a 2020 Telluride narrowly missed first place in the X-Cross class, the brand reports.

Ultimately, the team finished in fifth place in X-Cross at this year's event, totaling 1,147 points.

PIRELLI

After a successful partnership last year, Pirelli North America returned to sponsor the 2022 Rebelle Rally, with a goal of giving back.

The event's reputation for putting 4x4 and crossover vehicles to the test allowed the tire brand to showcase its Scorpion all-terrain line, including Scorpion ATR and Scorpion All Terrain Plus models.

"It's not a coincidence that Pirelli confirmed its presence at the rally as one of the main sponsors this year, as the competition is the ideal proving ground for these two products," the company states. "Pirelli's flagship on- and off-road tires are developed for drivers of SUVs, pickups and crossovers who want to strike a balance between on-road performance and off-road capability, all with no compromise."

It was also announced that the top three teams competing on Scorpion tires in each class would win a donation toward a registered non-profit of their choice.

"Pirelli and Rebelle Rally share not only a passion for competition and off-roading, but the understanding—and common value—of the importance of giving back," the company notes. "The new element adds a layer of philanthropy so important to the women behind the wheels."

HYUNDAI

Auto writers Jill Ciminillo and Kristin Shaw, otherwise known as Team Brute Squad, piloted a Santa Cruz pickup in this year's Rebelle Rally for Hyundai Motor America.

The specially equipped crew cab received minimal modifications, including off-road tires, skid plate and lift kit. The upgrade team was led by Eric Buxton, Hyundai Motor America model line engineer.

The Santa Cruz also featured a paint scheme that blended the California surfing lifestyle with the motif of a custom bandana. It was created in California by Hyundai Design North America designers Brad Arnold, exterior design manager, and Matt Marble, senior graphic designer.

The rally livery also acknowledged the team's sponsors, which included Bose, Falken Tires, Rally Innovations, Gear Off Road, Truxxx and She Buys Travel.

The team ultimately finished in eighth place in the 2022 X-Cross class with 946 points. ***TS***

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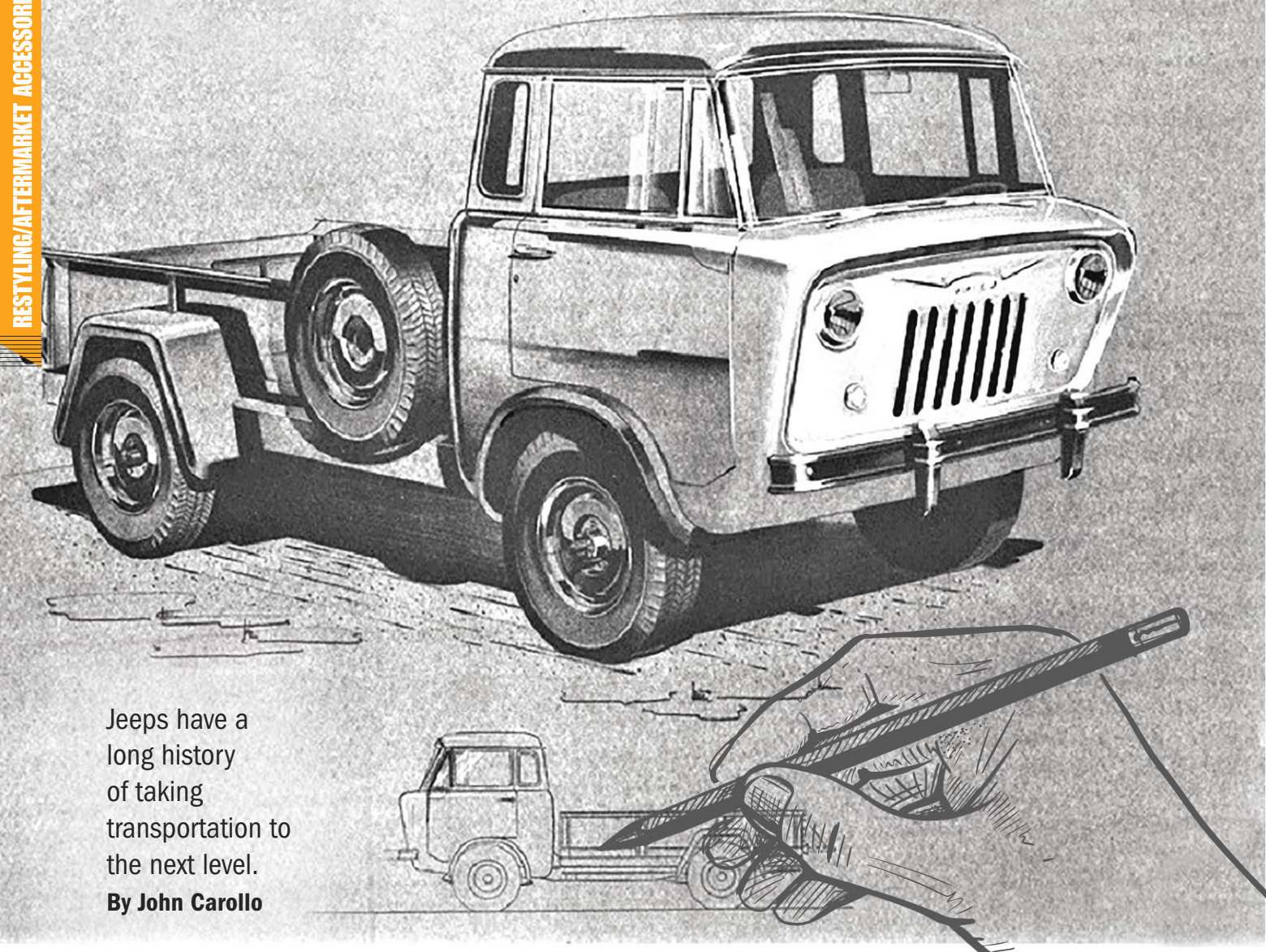
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BORN TO BE CUSTOMIZED



Jeeps have a long history of taking transportation to the next level.

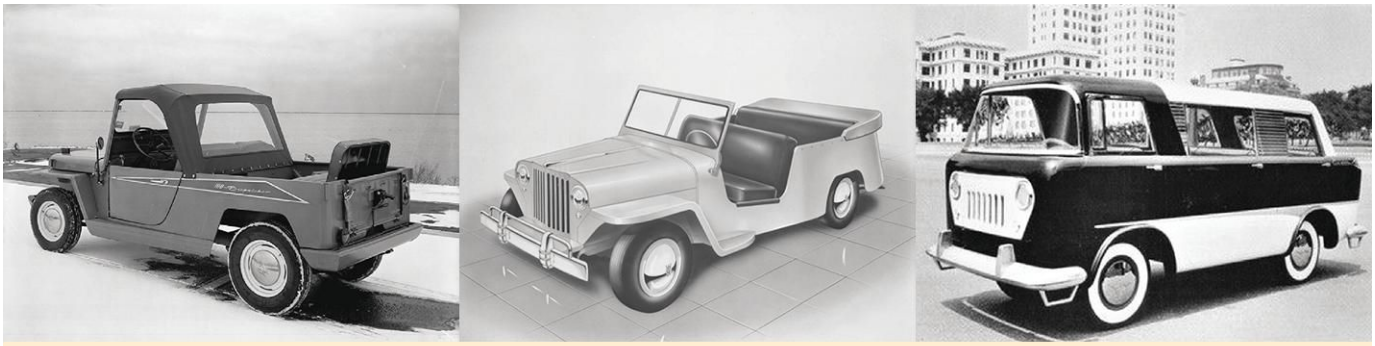
By John Carollo

The origins of the Jeep concept trace back 85 years to 1937, when Marmon-Herrington Co. presented the United States government with five Fords that had been fitted with the Indianapolis company's four-wheel drive conversions.

That same year, the U.S. Army built a prototype of a low-profile scout and gun mover called the Howie-Wiley Machine Gun Carrier. The prototype, built by Capt. Robert G. Howie and Master Sgt. Melvin C. Wiley—and later dubbed the *Wiley Belly Flopper*—was ordered by Gen. Walter Short, assistant commander of the Army Infantry School at Fort Benning, Georgia.

The scout car was completed in April 1937. It was designed to carry a driver and a gunner, in a prone position, able to operate a .30 caliber machine gun on the move. When the first military Jeeps were contracted out, they were officially specified as *Truck, 1/4-ton, 4x4*, although, in truth, they were more like that first scout car than a truck.

The earliest Jeeps—the Willys MB, the Ford GPW and a pilot model made by Checker—met the Army's truck requirements and were officially called Command



Several examples of Brooks Stevens' prototype designs for the Jeep utility and Jeep Forward-Control (FC) chassis.



The famous World War II Willys Model MB Jeep started it all.

Reconnaissance vehicles. They became highly successful U.S. military vehicles with off-road capabilities.

They had a more-or-less standardized design and were built in large numbers for the U.S. and its Allied forces for use in World War II.

POSTWAR TRANSPORTATION

After the MB model Jeep entered production at the Willys-Overland factory in Toledo, Ohio, the automaker went to work planning postwar civilian Jeep models. They included the Jeep station wagon, the Jeepster phaeton, and pickup and sedan delivery trucks.

Most came in 4x2 and 4x4 configurations, and both still show up at hot rod shows and events today. Enthusiasts like them because they are different and cool.

During WWII, industrial designer Brooks Stevens penned a magazine article that predicted a line of Jeep-based civilian vehicles would evolve in America after the fighting stopped. Barney Roos, the head of Willys engineering, read the article and hired Stevens to design a new line of Willys cars and trucks for the postwar marketplace.

While swoopy bodies could have been designed, Roos knew Willys faced production problems because body makers like Murray, Briggs and Budd were too busy working for Ford, GM and Chrysler to help Willys. His answer was to deal with a company that did sheet metal stampings for home appliances.

This worked fine but put limitations on styling concepts, which Stevens addressed with his design work.

The civilian models that he crafted had to be boxy, with panels that had a shallow depth of draw suitable for the stamping machines that usually made appliances. To compensate, Stevens came up with front end designs that were similar in appearance to the now legendary fighting Jeep.

He also invented some unique models. A two-door all-steel station wagon with wood-grained metal panels was his initial creation. He then filled the rear side window openings of the wagon with sheet metal panels to turn it into a sedan delivery truck that's often described as a *panel truck* or *utility wagon*.

Next, Stevens chopped off the upper back of the wagon and added a windowed rear panel to make a truck cab. He then created angular rear fenders and added a dispatch box with a tailgate and side-mounted spare tire.

In his 1996 book *The Story of Jeep* (Krause Publications) Jeep expert Patrick R. Foster described these trucks as being "rugged and handsome." They came with various engines and two- or four-wheel drive.

In May 1947, Willys released the truck in chassis ($1,175); chassis & cab ($1,524); pickup ($1,620); and stake bodied ($1,685) models. These prices were for the four-wheel drive versions.

At the time, the engine was a 134.2-ci, 60-hp inline-four. Advertisements described the pickup as a *farm-sized* truck.

All 1947 Jeep trucks had a 118-inch wheelbase and 183.75-inch length. The four-wheel drive versions were rated at 1 ton.

These trucks remained basically the same through 1965, although there were constant mechanical improvements, various engine choices and price updates.

DARING DESIGNS

When it comes to the aftermarket, not every Jeep is built as a rugged 4x4 adventurer. There's a hot rod angle as well.

And, when it comes to those hot rods, builders rarely leave Jeep engines in their classic Jeeps.

Many early V-6s and V-8s can be shoehorned into Jeep trucks. The Buick V-6 used in the small Buick Special models built in 1961 and '62 is a common swap, especially in Jeepster phaetons. For hot rodders, a cool swap is Ford's tiny V8-60 flathead.

When it comes to making a mark on the automotive landscape, the Jeepster was called "one of America's most daring

BORN TO BE CUSTOMIZED

HERITAGE-INSPIRED 2023 JEEP WRANGLER WILLYS 4XE



Jeep's Willys heritage is celebrated on the latest 2023 Wrangler 4xe model.

The Jeep Wrangler 4xe got a boost to its electrified lineup at this year's Detroit Auto Show with the debut of the new heritage-inspired 2023 Jeep Wrangler Willys 4xe.

"Jeep Wrangler 4xe customers looking for the ultimate combination of capability and electrification with a vintage twist can now have it in the 2023 Jeep Wrangler Willys 4xe," says Jim Morrison, senior vice president and head of Jeep brand North America. "The debut of the new heritage-inspired 2023 Wrangler Willys 4xe brings 49 mpge; 470 pound-feet of torque with unmatched Jeep capability; 2.72:1 4WD; low range-ratio, heavy-duty Dana 44 axles; and a new entry price point to the 2023 model year Wrangler 4xe lineup, which continues to be the best-selling plug-in hybrid in America."

The 2023 Jeep Wrangler Willys 4xe boasts 375 hp and 470 pound-feet of torque, and a 17 kWh battery that readily handles most daily commutes including 21 miles of all-electric range and hours on the trail with electric-only power, according to the company.

The Willys' 4xe factory suspension lift delivers 10.1 inches of ground clearance to ford 30 inches of water, with heavy-duty Dana 44 axles and mud-terrain tires.

The Jeep Wrangler Willys 4xe features standard LED headlamps and fog lamps, an Alpine nine-speaker premium audio system, all-weather floor mats, rear limited-slip differential, rock rails, black grille, and 17-inch, black-painted alloy wheels wearing LT255/75R17C mud-terrain tires.

A special *Willys* decal on the hood trimmed in the 4xe's signature Electric Blue and an *Electric 4-Wheel Drive* decal on the swing gate signify its plug-in hybrid status.

The off-roader includes Selec-Speed Control with Hill-ascent and Hill-descent Control, which allows the driver to control vehicle speed up and down steep, rugged grades with the transmission shift lever. Other 4x4 highlights include skid plates and front and rear blue tow hooks.

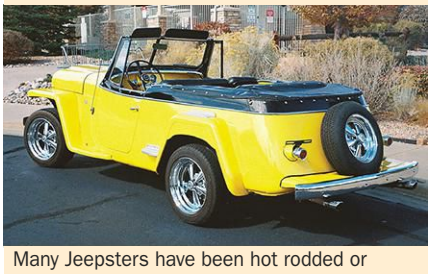
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The 1946 CJ-2A is called the first civilian Jeep. Many get restored, but this one came to the 2016 SEMA Show in "barn find" condition.


This 1-ton Willys pickup has been updated with a Mopar 440-ci V-8.


The Willys pickup evolved from the station wagon by adding a cab rear panel, angular rear fenders, a large cargo box and a fold-down tailgate.


A rat rod Jeep pickup at the Symco Hot Rod & Kustom Weekender in Wisconsin.


Many Jeepsters have been hot rodded or updated with V-6 or V-8 engines.


This Jeep pickup became a flatbed.

postwar automobile designs." Bridging the gap between utility vehicle and people mover, it was developed in 1948 with Stevens' help.

He had sketched a sporty two-door open car during the war. The Willys-Overland Jeepster (VJ model) was introduced in April 1948 and produced through 1950. Some leftovers were sold as 1951 models.

The Jeepster was a stylish, charming and sporty convertible sedan. It was a good cruiser with great fuel economy, deluxe fittings and interior trim. The laminated fabric top was hand-operated and unfolded fairly easily. To provide all-weather protection, plastic side curtains could be slid into sockets.

There was a chrome sidestep that could be used to hop in over the door with the top down—a styling cue aimed at younger buyers. Chrome trim included a T-bar on the grille, front bumper guards, hubcaps and bright trim rings.

The 1949 Jeepster was a one-model/one-engine offering. The price dropped to $1,495 and some previously standard features became options. Toward the middle of the year, an additional VJ3 6-63 model,



Step plates on bodyside and fender areas allow rear seat passengers to hop in.



This Jeep FC (Forward Control) pickup also became a flatbed.



Like any woodie, the Jeep wagon versions are popular with hot rodders.

This is a 1961 Jeep wagon; the styling didn't change much.





A hot-rodded FC Jeep pickup at the SEMA Show in Las Vegas shows the diversity of the market.

powered by a new six-cylinder engine, debuted.

The 1950 Jeepster model saw the first styling revisions including a redesigned front end with a V-shaped grille and horizontal chrome trim. There was also a new dashboard.

Jeepsters came in rear-wheel drive and, while their distinctive styling and performance were praised by auto journalists, they never fully caught on with buyers. Analysts say sales were limited by a lack of promotion and a small dealer network.

With customization options part of the brand's DNA, the Jeep Sedan Delivery is another favorite of today's traditional hot rodders. This truck was offered in two-wheel drive starting in 1947. In 1953, it became available with four-wheel drive.

A version with solid rear side panels and dual rear doors sold for $1,920. By 1956, the sedan delivery name was dropped, and *utility wagon* was used to describe all models, which by then featured glass side windows.

From 1957-65, Jeep offered a truly innovative line of forward control trucks that paved the way for the van-based Ford and Dodge pickups that came out in the early 1960s. The smaller FC-150 model was introduced on Nov. 27, 1956, and the larger FC-170 arrived on May 20, 1957.

The Forward Control Jeeps were offered in chassis & cab, pickup and stake-bodied models. These trucks are rare and hard to find today, but dedicated hot rodders have saved a bunch of them from the shredder by converting them into custom builds that range from drag racers to hopped-up beer wagons.

As anyone visiting the SEMA Show or a Barrett-Jackson auction over the past few years knows, Jeeps of all kinds are hot in the marketplace right now. Older models—military style, stock or modified—showcase the trend's versatility.

The Jeep customization phenomenon is happening everywhere, so get that old snowplow out from behind your hunting cabin and start dreaming about how neat it will look as your next custom build. ***TS***



JOHN GUNNELL *has been writing about classic cars since 1972. He is also the owner of Gunner's Great Garage in Manawa, Wisconsin. He owns 11 cars and seven motorcycles.*

NEW VEHICLE REPORT

A sampling of the latest models, special editions & updates.



Carmakers are busy rolling out new models, special editions and notable updates as 2023 vehicles begin appearing nationwide. Here's a sampling of what restylers may soon encounter on dealer lots.

2023 FORD F-SERIES SUPER DUTY LINEUP

Options for work & play

Redesigned inside and out, the all-new 2023 Ford F-Series Super Duty lineup of pickups and chassis cabs is ready to work harder and smarter with new capabilities, updated technology and a suite of cloud-based services for new levels of productivity.

Available engines include 6.8L and 7.3L V-8 gas models and a 6.7L Power Stroke V-8 diesel, all backed by a Ford designed and built 10-speed TorqShift automatic transmission. Every chassis cab model comes standard with a power take-off connection to run added equipment like boom lifts and plows. Four-wheel drive is now standard on XLT models and above.

The new Ford Pro Upfit Integration System makes adding a plow or utility crane easier. The digital solution provides aftermarket equipment makers with improved access to Super Duty's electrical system and signals to seamlessly integrate their hardware into the truck's digital displays.

Meanwhile, Pro Power Onboard exportable power works at the jobsite or tailgate party. Power outlets are accessible inside the truck and cargo box, and can be mounted on chassis cabs with a special outlet installation kit.

New available driver assist technologies designed to simplify the towing experience include onboard scales with Smart Hitch, a 360-degree trailer camera system, blind spot information system for fifth wheel and gooseneck, tailgate down camera and tailgate down reverse sensing system, Pro Trailer Hitch Assist, and Trailer Navigation that plots routes that can be safely navigated with given trailer dimensions and weight to avoid potential issues with low bridges and tight turns.



Redesigned inside and out, the all-new 2023 Ford F-Series Super Duty lineup of pickups and chassis cabs is ready to work harder and smarter.

2023 KIA SORENTO HEV



The 2023 Kia Sorento HEV includes range-topping SX-P trim.

Introducing updated trim levels

The Kia Sorento Hybrid has been optimized for the 2023 model year with updated trim levels, including the all-new, range-topping SX-P trim, which comes standard with an AWD system with center-locking differential and Drive Mode Select with Snow Mode.

Other standard features on the SX-P include 17-inch alloy wheels, LED foglamps, smart power tailgate, 12.3-inch digital cluster, perforated leather seats, Bose premium audio system, Navigation Smart Cruise Control – Curve, forward collision avoidance assist, surround view monitor, blind view monitor, parking distance warning (front and rear) and second row captain's chairs.

The EX remains in the trim lineup as well and gains an eight-way power front passenger seat and a frameless rearview mirror.

2024 HONDA PROLOGUE



Honda offered a first look at the styling of its 2024 Prologue BEV SUV.

First look at the all-electric SUV

Honda provided a first look at the exterior and interior styling of its all-new Prologue battery-electric SUV coming to market in North America in 2024.

With a design described as "clean and simple Neo-Rugged exterior and interior styling and ample interior space that's ready for adventure inside and outside the city limits," the BEV will be offered in an exclusive North Shore Pearl exterior color, with dimensions and an interior that position it alongside the Passport in Honda's light truck lineup.

Prologue will be AWD with a wheelbase of 121.8 inches, making it about 8 inches longer and 5 inches wider than the all-new 2023 Honda CR-V.

Showcasing a tech-rich cabin, the Prologue will come standard with a fully digital 11-inch driver display panel and an 11.3-inch audio/connectivity display.

RAM 1500 'BUILT TO SERVE'

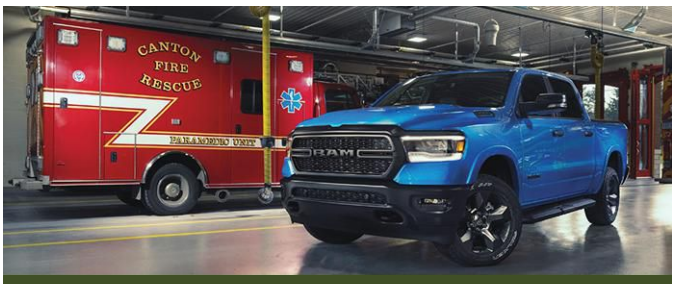
Recognizing first responders

The second installment of Ram's Built to Serve limited-edition models is geared toward first-responder services.

The Ram 1500 Built to Serve Emergency Medical Service (EMS) model "is our way of honoring and expressing deep gratitude to the frontline heroes who serve or have served our country," says Mike Koval Jr., Ram brand CEO – Stellantis. "At Ram, we are pleased to recognize the important work emergency medical service workers provide to their communities every day."

Offered in Hydro Blue and Bright White exterior colors with a black interior with blue accent stitching, the trucks feature unique interior and exterior features including a U.S. flag, a Built to Serve decal on the rear quarter panels, all-black grille and surround, black bumpers, black bezel premium lighting, and 20-inch aluminum wheels with a unique Technical Gray finish.

Complementing the look are black badges, black wheel-to-wheel side steps and dual 4-inch black exhaust tips. Body-color wheel flares accent the exterior.



Ram's latest "Built to Serve" edition honors first responders.

Velcro panels on each front seat inboard shoulder panel allow customers to apply their own patches—flags, name tapes or slogans—to personalize their pickups. Front seat-back panels are covered with Pouch Attachment Ladder System/Modular Lightweight Load-bearing Equipment (PALS/MOLLE) webbing to attach additional equipment or pouches.

2023 RAM 2500 HEAVY DUTY REBEL

Combining off-road & towing capabilities

Ram unveiled the 2023 Ram 2500 Heavy Duty Rebel at the State Fair of Texas. The new model expands the brand's heavy-duty lineup with off-road performance that doesn't sacrifice towing and payload capabilities.

Positioned between the brand's Laramie and Power Wagon models, Ram Heavy Duty Rebel models offer a choice between a 6.4L Hemi V-8 with cylinder deactivation and variable-cam timing (VCT), and a 6.7L Cummins turbo diesel I-6. Other features include a unique suspension, rear limited-slip differential, rear electronic locker and an available 12,000-pound WARN winch installed from the factory.

Exterior styling cues are shared with Power Wagon, but Rebel features unique badging and a sport performance hood from Mopar. Other highlights include 20-inch wheels, 33-inch off-road tires, and skid plates that protect the fuel tank and transfer case. Cargo tie-downs are standard and a spray-in bedliner, LED bed lighting and bed step are available.



The 2023 Ram 2500 Heavy Duty Rebel mixes off-road and towing capabilities.

Three seating options include a cloth bench or bucket seat, a Bristol leather bench or bucket seat, or a full Natura Plus leather bucket seat. Rebel also features a 360-degree Surround View camera, which includes forward-view camera gridlines.

2023 SUBARU FORESTER



The 2023 Subaru Forester SUV will be offered in six trim levels.

Available in six trim levels

The 2023 Subaru Forester SUV will be offered in six trim levels: Base, Premium, Sport, Wilderness, Limited and Touring.

Standard across the model line is EyeSight Driver Assist Technology. The latest version of the award-winning active safety system that debuted last year has an improved overall performance thanks to a wider field of view and updated software, the company reports. Automatic Emergency Steering is included on models equipped with Blind-Spot Detection with Lane Keep Assist and Rear Cross-Traffic Alert.

As in prior model years, all Forester models come standard with seven airbags: driver and front passenger frontal airbags, side curtain airbags and side pelvis/torso airbags, as well as a driver's knee airbag.

The SUVs are powered by a 2.5L SUBARU BOXER engine teamed with a Lineartronic CVT and Subaru Symmetrical All-Wheel Drive. The direct-injection engine produces 182 hp and 176 pound-feet of torque.

2022 AUDI RS 7



The 2022 Audi RS 7 has a limited production of 23 vehicles.

A black beauty limited to 23 units

There's still time to find a 2022 Audi RS 7. Limited to 23 vehicles, the exclusive edition joins the Audi Sport portfolio featuring tailored design cues and standout performance, including black leather and Dinamica treatments complemented by Sepang blue stitching woven throughout the interior.

Powering the RS 7 exclusive edition is the Audi 4.0L TFSI bi-turbo V-8 delivering 591 hp and 590 pound-feet of torque that sprints from 0-60 mph in 3.5 seconds. A standard Sport exhaust amplifies sound and heightens performance. The special edition RS 7 can reach an electronically controlled top track speed of 190 mph.

The exterior is painted in the exclusive Mamba Black pearl effect, with an exterior Carbon optic package and 22-inch V-spoke gloss anthracite wheels wrapped in 285/30 ZR22 summer performance tires.

The distinctly refined interior includes RS brand accents and bespoke Audi exclusive details.

2023 TAHOE RST PERFORMANCE EDITION



Tahoe, Chevrolet's most popular full-size SUV, has been specially tuned for performance.

Designed to deliver driving excitement

Chevrolet's most popular full-size SUV has been specially tuned for performance with the new 2023 Tahoe RST Performance Edition. With more horsepower and speed, the special edition four-wheel drive Tahoe is ready to impress performance enthusiasts who want the amenities of a full-size sport utility.

Leveraging a number of chassis, suspension and related elements from the pursuit-rated Tahoe PPV police package, many of the Tahoe RST Performance Edition's dynamics are calibrated by the same engineering team.

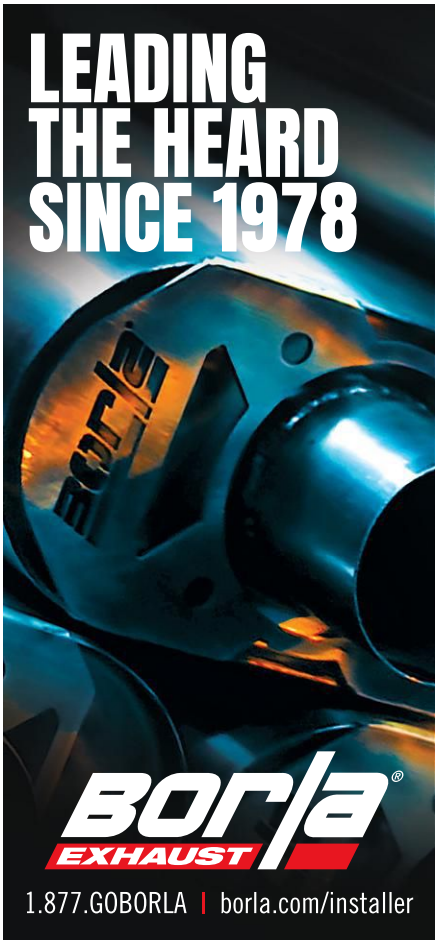
Standard components the RST Performance Edition borrowed from the pursuit-rated Tahoe include:

- Police-spec springs, retuned dampers & police-spec chassis calibrations
- Police-spec 0.4 inch (10mm) lowered ride height in front & 0.8 inch (20mm) in the rear
- Brembo front & rear brakes with unique Torch Red calipers. The front brake rotors are nearly 25% larger in diameter than the standard RST system
- Performance-calibrated brake pedal feel
- Police-spec Firestone Firehawk Pursuit 275/55R20 tires with 20-inch aluminum wheels in black

Chevrolet Performance induction and exhaust systems increase output of the standard 6.2L V-8 to 433 hp and 467 pound-feet of torque. ***TS***

AFTERMARKET ALLEY





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Exciting things will be revealed in early 2023.

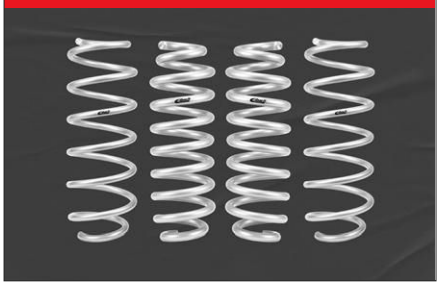
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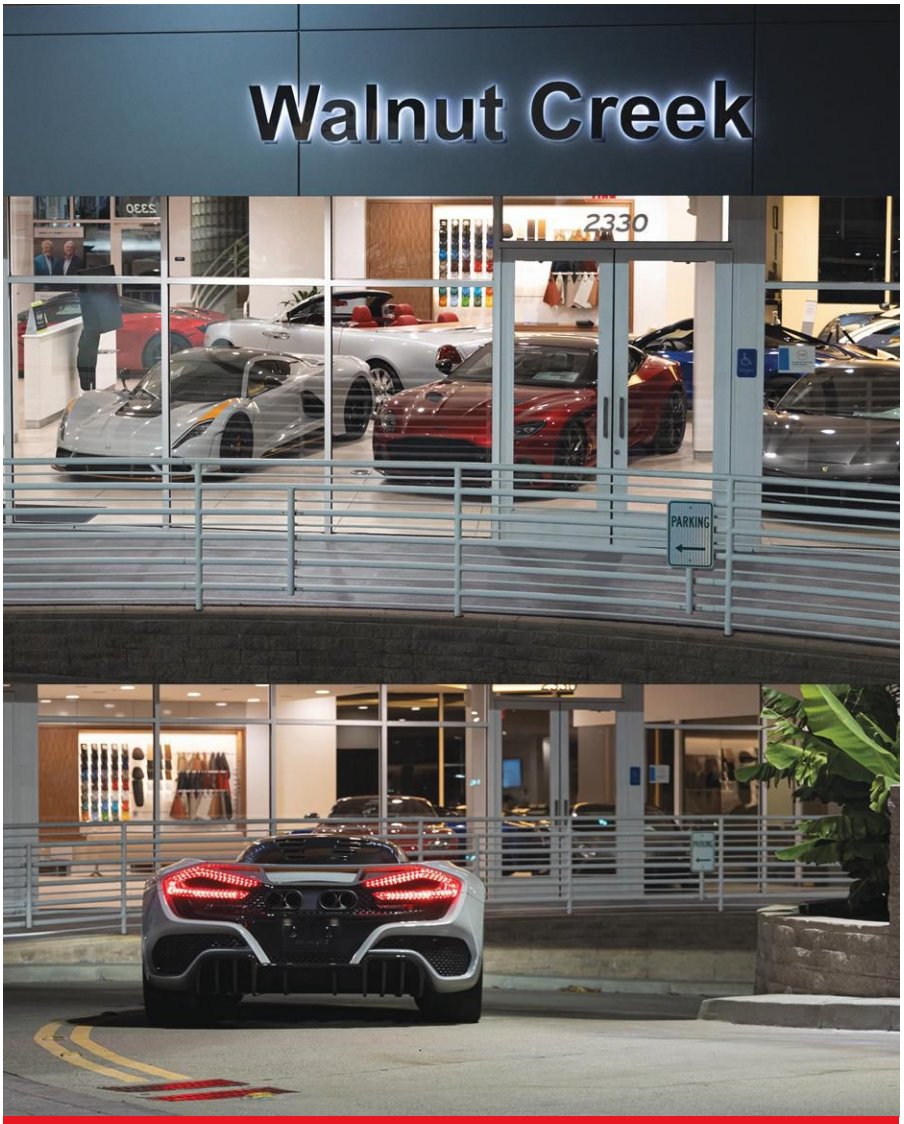
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Hennessey Partners With The Luxury Collection

The Luxury Collection Walnut Creek, a Northern California ultra-luxury franchised dealership, is now offering Hennessey hypercars.

Hennessey Special Vehicles, the Texas-based manufacturer of the Venom F5 and part of the Hennessey Performance family, unveiled Hennessey Walnut Creek in the East Bay region of San Francisco in October.

"Walnut Creek is the perfect setting for our newest retailer," says John Hennessey, company founder and CEO. "The Luxury Collection is a beautiful dealership with an upscale downtown location. Their team is professional and well-versed working with prestigious brands. We are honored to align with a retailer that shares our family ideals, excitement and passion for high-performance vehicles."



The Luxury Collection Walnut Creek, a Northern California ultra-luxury franchised dealership, is now offering Hennessey Venom F5 hypercars. (Photos courtesy Hennessey Performance)

Calling San Francisco "a vibrant hub for acclaimed car collectors," Hennessey Special Vehicles' main offering is the American-made hypercar, the Hennessey Venom F5. Engineered to exceed 300 mph and boasting 1,817 bhp from its 6.6L twin-turbocharged Fury V-8 engine, the Venom F5 "is unique, exclusive and devastatingly fast," according to the company.

Featuring a carbon fiber chassis and body that delivers a dry weight under 3,000 pounds, the Venom F5 can sprint from 0-124 mph in 4.7 seconds.

Founded in 2014, The Luxury Collection is part of the Price Simms Automotive group with six modern luxury new car franchises showcasing Aston Martin, Bentley, Hennessey, Lamborghini, Maserati and McLaren.

Based in Sealy, Texas, the Hennessey business comprises Hennessey Special Vehicles, Hennessey Performance (HPE), Tuner School and the Lonestar Motorsports Park. The company has re-engineered more than 12,000 vehicles for performance enthusiasts worldwide.

Alongside modifying a diverse range of sports and muscle cars since 1991, the company also applies its high-performance expertise to trucks and SUVs along with its own hypercars—the Venom GT and the Venom F5.

Every Hennessey product is dyno-proven, fully track-tested, street-legal and warrantied. Customers can choose from road-ready performance-enhanced cars by Hennessey from a wide variety of brands, including Chevrolet, Dodge, Ford, and Jeep, all benefitting from a host of high-performance upgrades.

Available in Coupe and Roadster, the Venom F5 sold out in 2021, with customer deliveries taking place from 2021-23.

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