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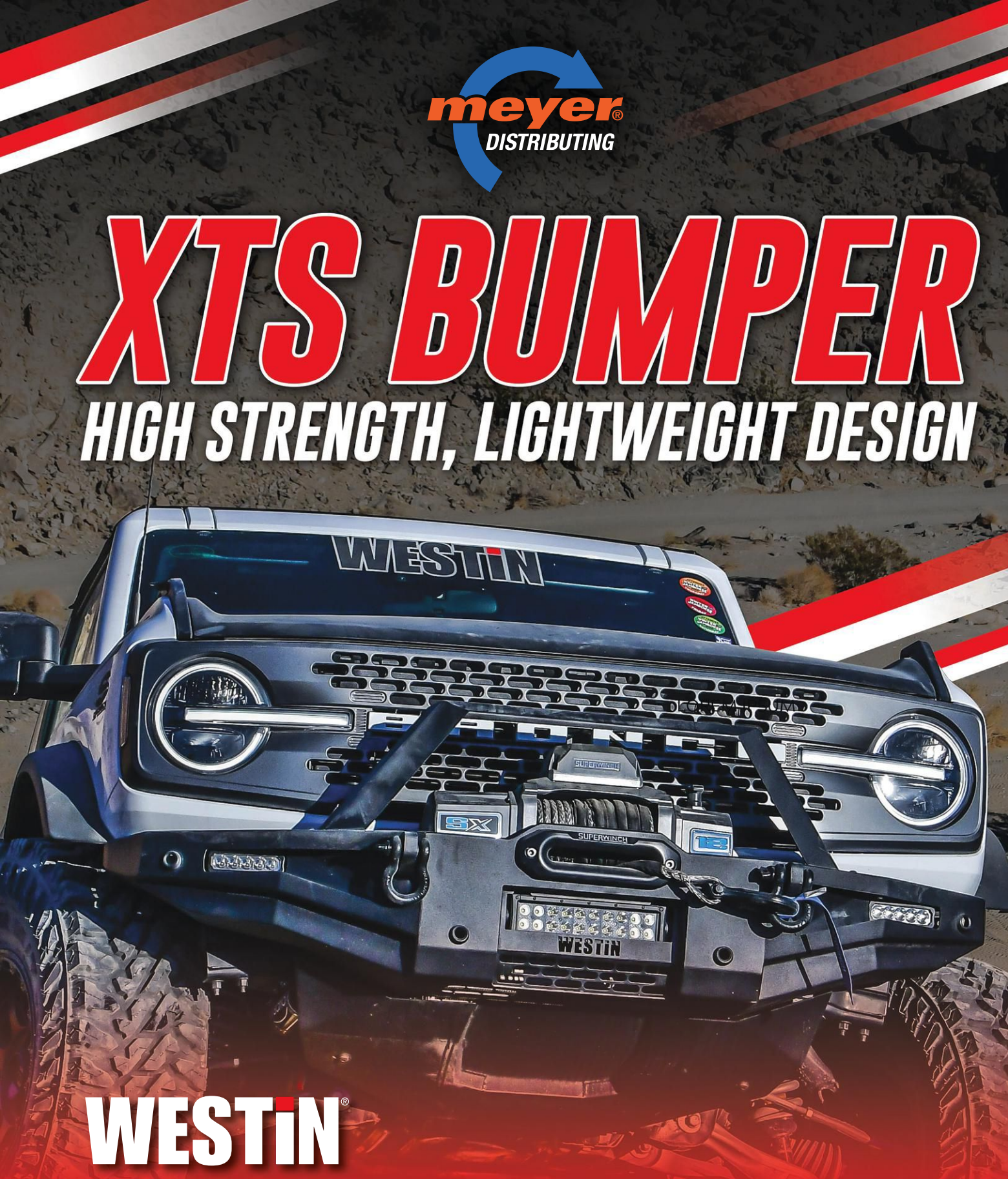
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Jef White
Editor
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Expanding Horizons

Chances are, if you've experienced business success over the past year it's because you were able to do more than expected.

Whether it's diversification of products and services, increased efficiencies or a reshuffling of priorities, keeping pace with customer demand is driving innovation and new thinking as we head into 2023.

The end of the year is a great time to take stock of achievements and celebrate 2022's victories, big and small. That's certainly true for all of us here at *THE SHOP*, and we thank you for allowing us to be a small part of the big impact you make on your clients.

Heading into the new year, it's helpful to recognize the wide variety of opportunities our industry presents. To that end, here's our annual look at some of the main topics covered in the magazine and online over the past 12 months, with the goal of helping expand your business horizons.

- ***JAN 2022*** – Performance oils and fluids go with the flow; campervans hit the trail; PPF profits hide in plain sight.
- ***FEB*** – Commercial customers appreciate workable solutions; EVs show their performance potential; the drag racing market is still turning heads.
- ***MAR*** – Overlanding finds its sweet spot; when to break up with a client; the benefits of aftermarket lighting are easy to see.
- ***APR*** – Anchor your sales with winch offerings; performance clutches hold tight; keeping in touch with wayfinding apps.
- ***MAY*** – The calming influence of heat and sound control products; an exit strategy for exhausts; bumper product comings and goings.
- ***JUN*** – Stay stable with lift and leveling kits; new dynos pass the test; ways to help dealers carry the load.
- ***JUL*** – The rise of the Gladiator; smooth sailing on performance shocks; the Deuce turns 90.
- ***AUG*** – Verified suppliers have what you need, when you need it; pit equipment is more than a toolbox on wheels; the tonneau market can't be topped.
- ***SEP*** – Enjoy the high life with rooftop tents; it's still bright skies for the sunroof market; sport compacts are small and in charge.
- ***OCT*** – Light bars receive glowing reviews; staying connected to the drivetrain market; new vehicles deliver the latest and greatest.
- ***NOV*** – Project vehicles are the wheels of progress; towing and hauling products to hook you up; Pro-Tourers keep improving on the classics.
- ***DEC*** – The circle track market hits its marks; gear up with cargo management solutions; Rebelle Rally brings the industry together.

Here's to another year of aiming high and welcoming opportunities with open arms. ***TS***

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RETAIL FORECAST 2023

Shops can expect an inflation slowdown & other challenges. **By Phillip M. Perry**

After two years of frenetic activity fueled by a post-pandemic recovery, retailers will confront a tougher operating environment in 2023, experts predict. Growing headwinds include rising inflation, higher interest rates, a softening housing market, continuing supply chain disruptions, declining capital investments, and escalating costs for wages and energy.

"2023 is likely to be a challenging year for retailers," says Scott Hoyt, senior director of consumer economics for Moody's Analytics (economy.com). "We are projecting growth of only 2.8%, well below the sector's historic 4.3% average."

The forecast represents a decline from the 8.3% increase expected when 2022 numbers are finally tallied. The recent trend is also well below 2021's 17.5% increase, fueled by a consumer shift away from services and toward goods.

"Of the many factors weighing on growth, the biggest will be a slowdown in inflation, since retail activity is measured in nominal terms," says Hoyt. Moody's Analytics forecasts that by the end of 2023 inflation will have declined from its recent 8% pace to the 2% target favored by the Federal Reserve.

Inflation is a double-edged sword since it helps raise merchandise prices while dampening shopper behavior. While retailers will be hurt by a decline in inflation over the coming 12 months, rising prices were not a panacea in 2022.

"Inflation is particularly pernicious for retailers right now because it is running higher today for goods than for services," Hoyt explains. "That has been encouraging consumers to switch to more spending on the latter."

As for the current state of shopper psychology, it remains as unsettled as it was a year ago.

"It's hard to get a handle on consumer confidence right now," Hoyt says. "If you ask people about their finances and they think about the stock market or gasoline prices compared to a year ago, they're really depressed. If you ask them about the labor market and their job situation, they're feeling pretty good."

Other factors that will weigh on retail activity in 2023 include the loss of some helpful economic initiatives.

"Government stimulus packages, ultra-low interest rates and strong money supply creation had been helping to compel business activity until mid-2022," says Anirban Basu, chairman & CEO of Sage Policy Group (sagepolicy.com). "All those fundamentals have been inverted."

The deceleration in retail operations is echoed in the larger economy.



Retail sales are expected to slow in 2023.

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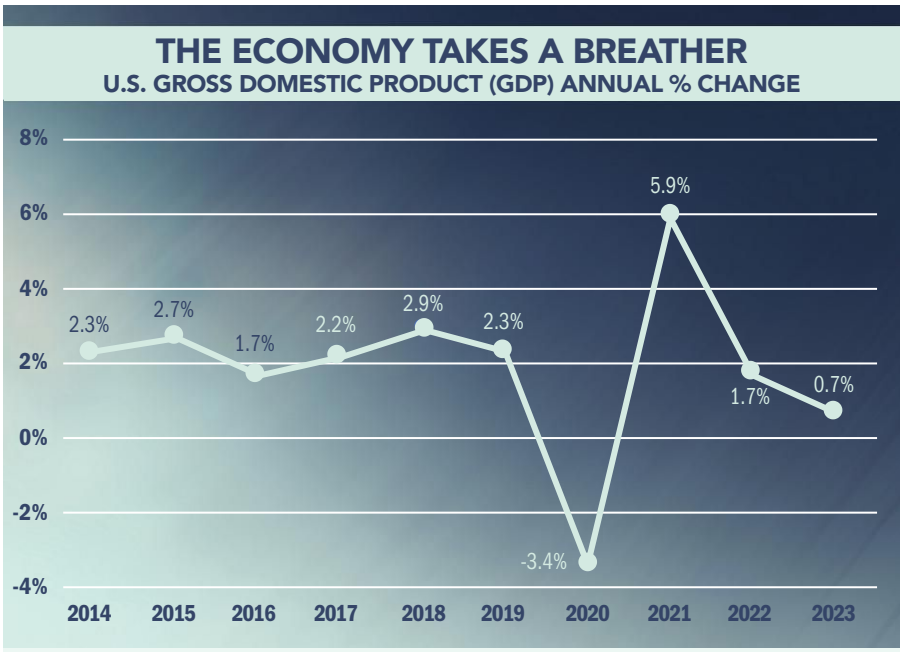


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Sources: World Bank; projections by Moody's Analytics.

"We project real Gross Domestic Product (GDP) will increase by 0.7% in 2023," says Bernard Yaros Jr., assistant director and economist at Moody's Analytics. "The expectation for 2022 is 1.7%. Both figures represent much slower activity than the 5.9% increase of 2021."

(GDP, the total of the nation's goods and services, is the most commonly accepted measure of economic growth. "Real" GDP adjusts for inflation.)

The slowdown in the overall economy should have a depressing effect on corporate profits, projected by Moody's Analytics to increase at a 5.2% clip in 2023. That represents a decline from the 7.9% figure anticipated for 2022. Both estimates are much lower than the 25% increase of 2021.

HEALTHY EMPLOYMENT

Reports from the field support the analysis of economists.

"In the first half of 2022, many of our members were still experiencing high demand," says Tom Palisin, executive director of The Manufacturers' Association, a York, Pennsylvania-based regional organization with more than 390 member companies (mascpa.org). "But as the year progressed there was a significant slowdown caused by the labor shortage, inflationary issues and global events."

With its diverse membership in food processing, defense, fabrication and machinery building, Palisin's association is something of a proxy for all American industry. The good news is that strong employment conditions at the association's member businesses—as well as at companies elsewhere in the nation—are helping alleviate the negative impact of the economy's headwinds.

Moody's Analytics expects a continuation of that favorable condition, forecasting an unemployment rate of 4.1% by the end of 2023. That's not much higher than the 3.7% rate of late 2022. (Many economists peg an unemployment rate of between 3.5% and 4.5% as the "sweet spot" that balances the risks of wage escalation and economic recession.)

High employment levels tend to spark wage increases that fill workers' pockets with cash to spend at retail outlets such as their local speed shop or accessories center.

"Wage rates, as measured by the Employment Cost Index (ECI), remain very high by the standards of the last couple of decades," says Hoyt.

Increases in 2023 are expected to come in at 3.7%, a healthy level that reflects the strong growth of a tight labor market.

"While we've had growth over 3% for the last three years, prior to 2020 the last time we had growth in the ECI of over 3% was 2007," he notes.

On the flipside, higher wages increase operating costs that can dampen profits.

WORKER SHORTAGES

The tight labor market hits profitability not only in the form of higher wages, but also in a scarcity of the very workers needed for retail operations.

The accompanying article suggests an economic slowdown as the likeliest scenario for 2023. But what are the chances of a recession, or an actual decline in business activity?

While Moody's Analytics sets the odds at 50/50, avoiding a recession will require a bit of luck.

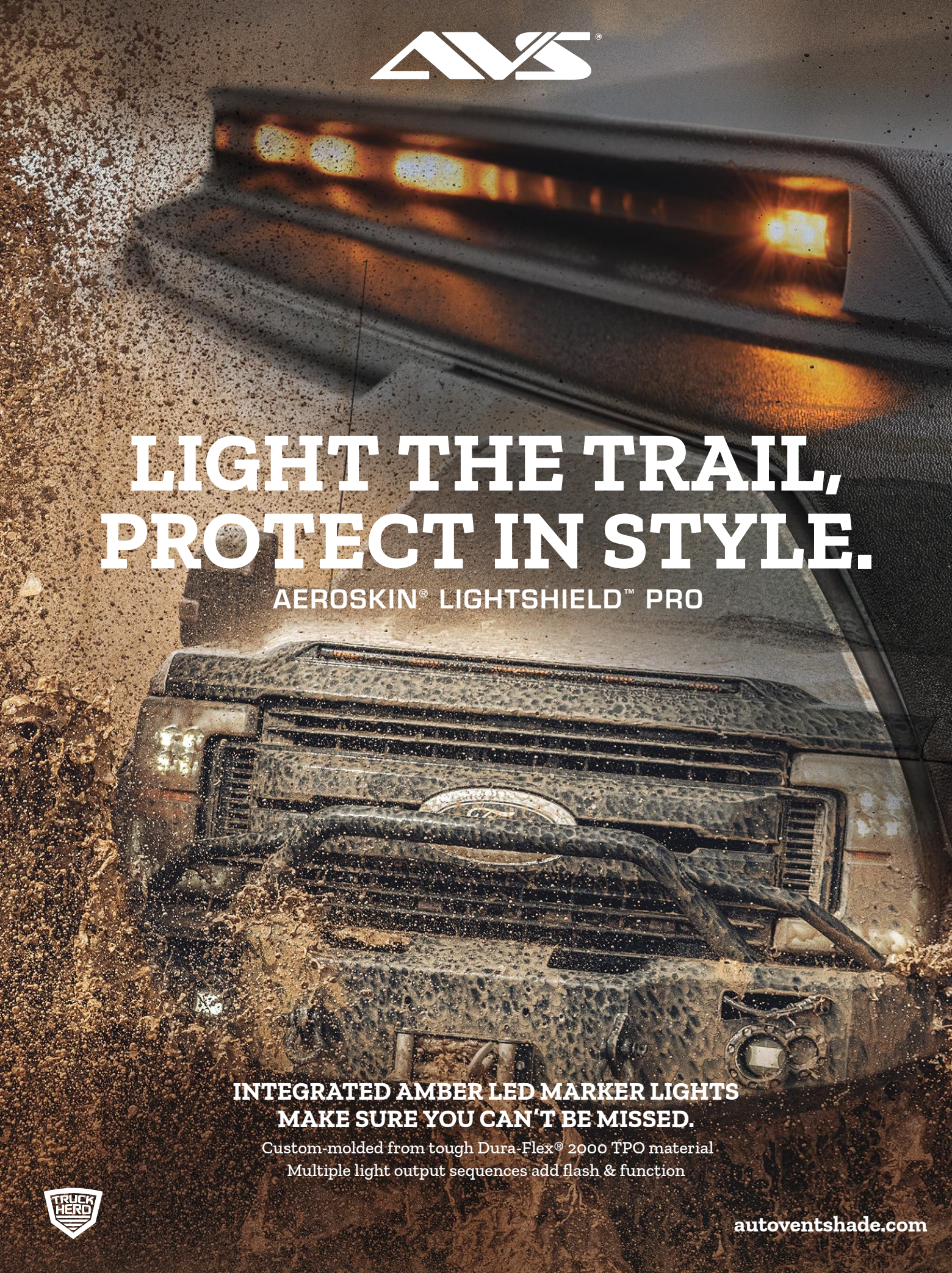
"The U.S. economy will enter 2023 being vulnerable to anything that might go wrong," says Bernard Yaros Jr., assistant director and economist at Moody's Analytics. He points to risks such as a resurgence of the pandemic in China, a worsening of the Russia-Ukraine war, and another energy supply shock that would hit consumer pocketbooks.

Avoiding a recession will also depend on a couple of things going right, Yaros adds. The ebullient labor market will need to cool down at a pace that softens wage increases without sparking economic turmoil.

Most importantly, the Federal Reserve will need to successfully tame inflation without allowing interest rates to spike the economy. Yaros, however, is optimistic.

"We think inflation will steadily slow from more than 8% to a pace that is consistent with the central bank's 2% target by the end of 2023."

–Phillip M. Perry


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Employers will be very focused on labor availability.

"Employers will be very focused on labor availability in 2023, as baby boomers continue to retire and the supply of immigrant labor has yet to fully recover from severe pandemic-related disruptions," says Yaros. "Despite a slowing economy, layoffs are low, indicating that businesses are holding onto labor in a reaction to the hiring difficulties they encountered during the pandemic."

When will the available workforce grow? Not anytime soon, say most observers.

"The labor market's going to be tight for years to come," says Bill Conerly, principal of his own consulting firm in Lake Oswego, Oregon (conerlyconsulting.com). "The decade from 2020 to 2030 is expected to have the lowest growth of working age population since the Civil War. One reason is the retirement of the baby boomers; another is the low rate of immigration over the last few years."

Palisin agrees that a labor shortage is going to be a long-term condition, and says his members are making moves to lessen the effects.

"Employers are trying to be creative in the ways they keep and retain workers, not only by offering higher salary rates but also by extending benefits and encouraging work flexibility. They are also investing more in automation for labor-intensive tasks."

SUPPLY DISRUPTIONS

Higher wages and a scarcity of workers are not the only forces threatening retail profits. Another major factor is a rise in interest rates—the Feds' favorite tool for fighting inflation.

"The purpose of increasing interest rates is to drive down demand," says Palisin. "So, our members are expecting to see a decrease in new orders that will impact the overall economy. Also, many of our companies have lines of credit that rely on floating interest rates. Rising rates will mean a hit to the bottom line as companies decide whether to utilize those lines of credit to support their cash flow and investments."

Adding downward pressure is the disruption in the delivery of goods that continues to plague retailers large and small.

"Supply chain problems have improved over the past year, but there hasn't been the significant resolution we had hoped for," says Palisin. "Random shortages in materials and deliveries are still plaguing our members, and that's leading to backlogging of orders. Companies just can't get materials or parts."

The Russia-Ukraine war has worsened the situation, notes Palisin.

"The war has created an energy crunch and a disruption in raw materials from that region that have trickled through the economy to exacerbate supply chain issues."

Companies are responding by expanding their sourcing from countries other than China.

HOUSING HEADWINDS

Homebuyers tend to shop a lot at retail outlets, and that sector is also entering a period of correction.

"The underlying dynamics of the housing market are changing as lower affordability spurred by higher prices and mortgage rates is weighing on demand," says Yaros.

The rise in prices is discouraging some consumers from signing on the bottom line. Median prices for existing single-family homes are expected to increase 11.5% when 2022 figures are finally tallied. That comes off a strong 18% increase in 2021.

Any relief will only come in 2023, when prices should decline by 2.6%.

While affordability has sunk to its lowest level since late-2007, the 30-year fixed mortgage rate is within striking distance of its highest level in over a decade, leading to a decline in purchase applications.

Tight housing supply is only adding to upward pricing pressure. The inventory of for-sale homes remains historically low, and new ones will be scarce.

"We expect housing starts to fall by 1.8% and 2% in 2022 and 2023, respectively," says Yaros. "This compares with a 15.1% increase in 2021."

There's only so much the industry can do to bolster housing supply—one big reason being the above-mentioned labor shortage.

"The unemployment rate for experienced construction workers is about as low as it's ever been," Yaros notes. "Capacity limits have delayed housing completions and contributed to a record number of housing units in the pipeline."

One bright spot in the housing picture: mortgage credit quality has never been better.

"The percentage of loans delinquent and in foreclosure is at a record low," says Yaros. "This goes to the stellar underwriting standards since the financial crisis, and bor-

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SEMA IDENTIFIES TOP TRENDING VEHICLES

The Specialty Equipment Market Association (SEMA) announced the best new vehicles for personalization at the annual SEMA Show in November, offering a forecast of potential accessorization favorites for the coming year.

The annual SEMA Awards are presented to original equipment manufacturers exhibiting at the show to recognize automakers for supporting the aftermarket with vehicle platforms that encourage customization.

With a new electric vehicle category this year, the SEMA Awards were voted on by exhibiting manufacturers in six categories. Categories and this year's winners are:

- ***Car of the Year:*** Dodge Challenger
- ***Sport Compact of the Year:*** Toyota GR86
- ***4x4/SUV of the Year:*** Jeep Wrangler
- ***Full-Size Truck of the Year:*** Ram
- ***Mid-Size Truck of the Year:*** Jeep Gladiator
- ***Electric Vehicle of the Year:*** Volkswagen ID.4



SEMA Awards were presented at the 2022 SEMA Show, recognizing the Dodge Challenger, Toyota GR86, Jeep Wrangler, Ram pickup, Jeep Gladiator and Volkswagen ID.4 as the best new vehicles for personalization.

"The SEMA Awards recognize the hottest new vehicles on the market that offer the greatest opportunities for customization," says Warren Kosikov, SEMA vice president of sales. "SEMA Award-winning vehicles are setting worldwide trends in the automotive enthusiast industry."

The SEMA Awards were presented to automakers during the SEMA Show Monday Reveal, where media and exhibitors got a sneak peek at some of the vehicles debuting at the 2022 trade-only event.

rowers' credit scores are much higher."

While lending standards for mortgage loans are now tightening, the credit spigot is unlikely to seize up as it did during the financial crisis of 2008.

LOOKING AHEAD

Given the above concerns, it's little wonder business confidence is taking a hit.

"Retailers are worried about a number of things right now," says Hoyt. He offers the following comments on the most important ones:

Inflation. "While it does bump up retailers' nominal sales, it also undermines consumer confidence and spending."

Worker scarcity. "Retailers are having to pay a lot to get staff, and turnover is high."

The post-pandemic shift to service spending. People are spending more on travel, hotels and restaurants.

Rising interest rates. This is another depressant on shopper activity.

Recession risk. "There's a lot of talk about the high probability that the Feds won't get this right. A recession is never good for retailers."

Supply chain issues. "Delivery disruptions translate into higher costs for merchandise and higher inflation, which eats into real spending and consumer confidence."

Uncertainty about all of the above is the name of the game, and that makes planning difficult.

"We are faced with a kind of two-sided coin," says Palisin. "The positive side represents strong current orders and a continuing need for more workers, while the negative side represents inflationary pressures and global headwinds."

Which side of the coin will show its face in 2023? Economists advise keeping an eye out for a few key leading indicators.

"In the early part of the year retailers should watch what is happening to the cost of money," advises Basu of Sage Policy Group. "Inflation is the driver of near- and medium-term economic outlooks."

A second vital element, he adds, is the employment picture.

"Employers should watch for any emerging weakness in the labor market."

Finally, what about consumers?

"Any softening of spending would point to a looming recession," he predicts. ***TS***

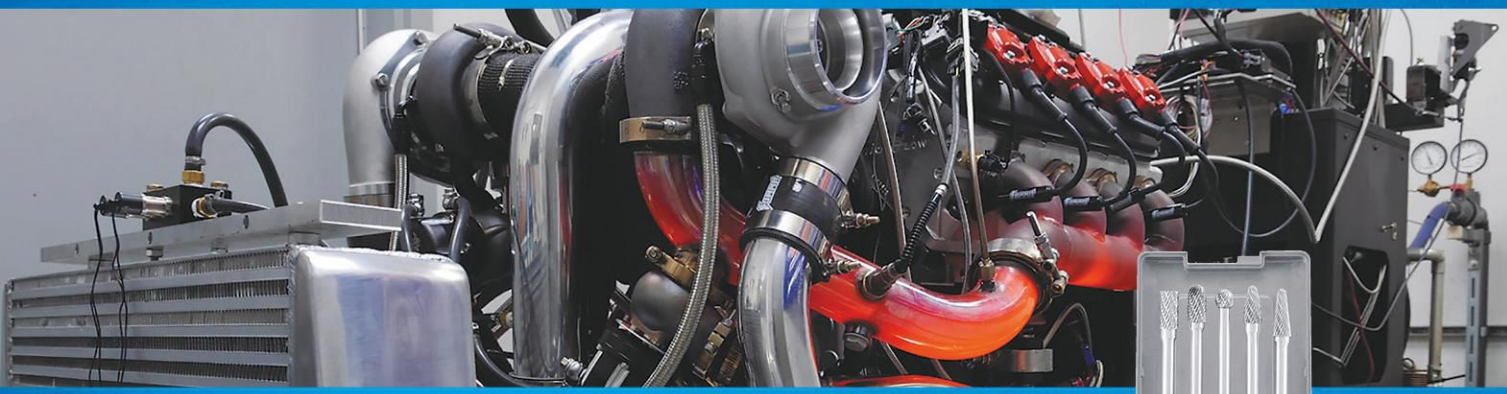


New York City-based journalist ***PHILLIP M. PERRY*** *publishes widely in the fields of business management and law.*

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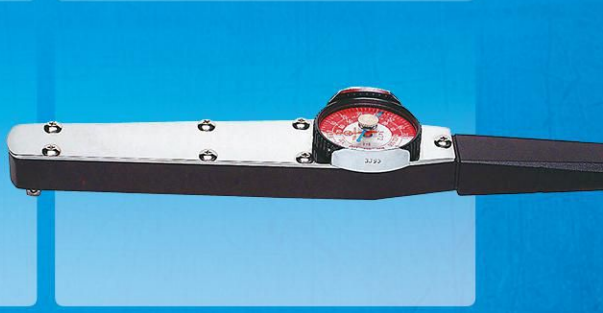












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WHSE23TS

GET READY FOR 'SEMA WEEK'

New activities aim to bring enthusiasts & professionals together.

The 2022 SEMA Show wrapped up the first week of November by bestowing various industry awards and unveiling steps to expand its visibility and accessibility among companies, builders and enthusiasts.

Building on post-pandemic industry growth, the Specialty Equipment Market Association announced a five-year vision to expand the annual SEMA Show trade event in Las Vegas into an "all-city" experience. Officially called "SEMA Week," the expansion's goal is "to create the most passionate and exciting automotive event in the world," organizers say.

SEMA Week will be headlined by the traditional SEMA Show, which will remain a trade-only event Mondays through Thursdays. On Fridays, the final day of the SEMA Show, a limited number of enthusiasts will be able to walk the show floor through the Friday Experience program, which was launched in 2021.

Then, beginning on Friday evenings of SEMA Week after the show has closed, SEMA will take over the Las Vegas Festival Grounds through Saturday night with the all-new SEMA Fest that will include a car show and related activities designed to celebrate the automotive aftermarket.

"We have been watching the connection between enthusiasts and our industry grow for more than a decade and, as the industry's trade association, have a responsibility to help facilitate that connection in new and meaningful ways," says James Lawrence, SEMA chairman. "By creating SEMA Week and SEMA Fest, we will be able to maintain the integrity of the trade show that makes it a must-attend event for automotive professionals while introducing a new platform for enthusiasts and the industry to engage with one another."

For 2023, SEMA Fest will take place at the Las Vegas Festival Grounds and be open to everyone, bringing together automotive enthusiasts with the aftermarket industry in an immersive festival-like celebration of car culture. SEMA Fest will feature music and entertainment, a car show and a cruise, VIP experiences, craft food, automotive celebrity appearances and a vehicle auction.

It will run alongside the popular SEMA Ignited Cruise and SEMA Show afterparty, which draw thousands of enthusiasts on Friday nights.

"SEMA will continue to expand and refine SEMA Week over the next five years, rolling out new events and activities throughout the city of Las Vegas," organizers note. "The evolution of SEMA Week preserves the trade aspects of the industry and business components of the SEMA Show while enabling enthusiasts from all over to join in the festivities and enjoy car culture-focused events throughout the SEMA Week experience."

POULSON NAMED PERSON OF THE YEAR

Josh Poulson, chairman of the SEMA PRO council, principal of Auto Additions in Ohio and a regular columnist for *THE SHOP* magazine, was named SEMA Person of the Year at the 2022 SEMA Show.

Recognized for his "volunteer leadership contributions, philanthropy and overall influence on the industry," Poulson has been volunteering on the Professional Restylers Organization (PRO) select committee since 2012 and was recognized as SEMA PRO Restyler of the Year in 2012 and SEMA PRO Person of the Year in 2015.



Josh Poulson, right, was named the 2022 SEMA Person of the Year.



Mike Burns, center, CEO of ValvoMax, was named Gen-III Innovator of the Year.

Meanwhile, Mike Burns, CEO of ValvoMax, was named Gen-III Innovator of the Year, recognizing his "outstanding commitment to the industry and a high level of involvement with SEMA committees, task forces, councils and overall

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participation."

The award is presented annually to an entrepreneurial individual 40 years old or younger who "is creating new, innovative breakthroughs within the areas of industry opportunities and advancements," officials say.

Burns was a 2018 SEMA Launch Pad semifinalist for developing an oil change system.

Also, in a new category, content creator and renowned automotive photographer Larry Chen was named the winner of the inaugural SEMA Automotive Influencer of the Year award.

The award "was created to honor a content creator or influencer who has built an engaged audience and used his or her platform to positively impact car enthusiasts of all ages," officials say, adding that the honor marks the growing influence content creators and social media influencers have on the industry.

Finalists for the award were selected based on their presence and influence across social media channels including YouTube, Instagram, Facebook, TikTok and others. Finalists included Chen, ChrisFix, TJ Hunt, Adam LZ and Alex Taylor.

Chen is well known for his work with Hoonigan, Hagerty and other top automotive media companies. He shoots for major OEMs, top builders, multiple race and event series and top automotive brands around the world and is also a photography instructor.

"Larry embodies what it means to be an ambassador for the automotive industry and car culture. He is a true enthusiast, and his contagious passion for the subject matter has not only been embraced by the car community but also continues to bring new people into our hobby," says Lawrence.



A restyling package for the 2022 Toyota Rav4 XLE from Automotion Customs in Georgia was the winner of the 2022 PRO Cup Challenge.

Other SEMA awards included:

- *Manufacturer of the Year* – Baja Designs
- *Channel Partner of the Year* – Turn 14 Distribution
- *SEMA Launch Pad Competition* – Kevin Robinson, TRAC Tire Jack

AUTOMOTION CUSTOMS WINS PRO CUP CHALLENGE

Automotion Customs Inc., an automotive restyling shop in Warner Robins, Georgia, was the winner of the SEMA Professional Restylers Organization (PRO) Cup Challenge.

Now in its third year, the PRO Cup Challenge features accessory packages designed to appeal to car dealerships. Entrants were restricted to creating a package for a new-model car or truck that would take less than 40 hours to execute and cost no more than $12,500 to the dealer.

Packages were judged on their mass appeal, ease to replicate and profitability potential.

Automotion Customs' winning package for the 2022 Toyota Rav4 XLE includes a custom leather interior, satin roof wrap, 2-inch lift kit, wheels, tires, roof rack, side awning and a multitude of professional touches. See it outlined in full detail in an upcoming issue of *THE SHOP* magazine.

"Automotion Customs created a unique accessory package that is not only stylish and affordable for dealerships but showcases the many possibilities that consumers have when choosing to accessorize their new-model cars and trucks," says Poulson. "We are proud of Automotion Customs for their win and are confident that this package will create profitable business relationships among restylers and new-car dealerships nationwide."

Other companies that competed in the PRO Cup Challenge included Auto Image, 2022 Ford Mustang Mach E; Auto Trim Restyling, 2022 Cadillac Escalade Sport; Automotive Concepts, 2022 Ford Lightning; DPS Automotive, 2022 Jeep Grand Cherokee L; and Pickup Outfitters of Waco, 2023 GMC Sierra 2500 SLE.

Top Coverage LTD's 2022 Ford F-150 Lightning won the Fan Favorite Award, which was voted on by SEMA showgoers.



Ringbrothers won SEMA's Battle of the Builders 2022 Ultimate Builder Award for its 1948 Chevrolet Loadmaster build dubbed "ENYO."

RINGBROTHERS WINS BATTLE OF THE BUILDERS

Ringbrothers won SEMA's Battle of the Builders 2022 Ultimate Builder Award for its 1948 Chevrolet Loadmaster build dubbed "ENYO."

Based in Spring Green, Wisconsin, the custom car builder and parts manufacturer also showcased a 1972 Chevrolet K5 Blazer codenamed "BULLY" and two other builds at the show. Other accolades for Ringbrothers included HRIA's Design and Innovation Award and BASF's Best Paint Award.

"Year after year, the SEMA Show gives us the opportunity to showcase what we are most passionate about," says Mike Ring, co-owner of Ringbrothers. "This year, we had the opportunity to unveil four of our most extreme builds, both in design and execution. With the support from our partners and the enthusiast community, we continue to push the boundaries of custom car building, which is what we originally set out to do."

Bearing the name of the Greek goddess of war, the 1,010-hp "ENYO" was nearly 10 years in the making. With 10,000 build hours, the "anti-street rod" is chopped, channeled and sectioned, with details including CAD-designed trim and parts that were cut in-house at the Ringbrothers machining facility.

NEW PRODUCT AWARD WINNERS

The 2022 SEMA Show Best New Product Awards recognize "outstanding achievements in the development of products being introduced to the automotive specialty equipment market" at the SEMA Show.

Nearly 2,000 products were entered in 18 award categories. Each category has one winner and one or two runners-up:











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The TrailFX Angled Front Fender Flare for Bronco won a SEMA Award for Best Exterior Accessory Product.

ADVANCED DRIVER ASSISTANCE SYSTEM (ADAS) PRODUCT
- *Winner:* ALLDATA ADAS Quick Reference, ALLDATA
- *Runner Up:* Hands-On ADAS Calibration Training, I-CAR
- *Runner Up:* Test Drive CoPilot, Opus IVS

COLLISION REPAIR & REFINISH PRODUCT
- *Winner:* Test Drive CoPilot, Opus IVS
- *Runner Up:* 3M RepairStack Performance Solutions, 3M
- *Runner Up:* Fast Puller by GUNIWHEEL, GUNIWHEEL

ELECTRIC VEHICLE PRODUCT
- *Winner:* Active Performance Sound, Borla Performance
- *Runner Up:* APP EV Systems Battery Conversion Kit, APP EV Systems

ENGINEERED NEW PRODUCT
- *Winner:* Pneumatic StraightGate50 Butterfly Style External Wastegate, Turbosmart
- *Runner Up:* Fuel Tank Laser Sensor/Sender, International Industry LLC
- *Runner Up:* ORANGETOP HYPERCORE Lithium, OPTIMA Batteries

EXTERIOR ACCESSORY PRODUCT
- *Winner:* Angled Front Fender Flare for Bronco, TrailFX
- *Runner Up:* Armor Box, Hammerhead Armor
- *Runner Up:* Classic Ski Rack, SeaSucker

INTERIOR ACCESSORY PRODUCT
- *Winner:* The Legend Mirror DVR Power Switch System, Acumen Robot Intelligence
- *Runner Up:* RFX-55C-PU 1955-59 Chevy Truck Grafix Series Gauge System, Dakota Digital
- *Runner Up:* TYPE S Formula DRIFT Pro Series Ultra-Slim Smart LED Trim Kit, Horizon Brands

MERCHANDISING DISPLAY
- *Winner:* Bed Mat Counter Display, Dee Zee
- *Runner Up:* Dee Zee Totem Displays, Dee Zee
- *Runner Up:* M1 Powered Display Stand, Mach Built

MOBILE ELECTRONICS PRODUCT
- *Winner:* SRK-JK11H, AudioControl
- *Runner Up:* Ford Bronco Rear Speaker Pods, Metra Electronics Corp.
- *Runner Up:* LPHFD31, AudioControl

OFF-ROAD/4-WHEEL DRIVE PRODUCT
- *Winner:* Jeep JL, JT & JK Adjustable Front Bump Stop Kit, RockJock 4x4 by John Currie
- *Runner Up:* Integrated Aero Windshield LED Light Bar System for 2021+ Ford Bronco by ORACLE Lighting, ORACLE Lighting
- *Runner Up:* KIT175 Ford Extreme Duty Tie Rod and Drag Link Assembly Fits 2017-2022 F-250/F-350 Super Duty, Apex Chassis

PACKAGING DESIGN
- *Winner:* Bubba Off-Road Truck Recovery Gear Set, Bubba Off-Road Recovery Gear
- *Runner Up:* J-Mount, BOLT Lock
- *Runner Up:* TYPE S Formula DRIFT Pro Series Exterior Smart Lighting Kit, Horizon Brands

PERFORMANCE-RACING PRODUCT
- *Winner:* All New OPR Turbocharger Oil Pressure Regulator, Turbosmart
- *Runner Up:* Peterson Fluid Systems R4 Oil Pump w/ Rear Accessory Drive & Front ProCharger Shaft, Specialty Products Company/SPC Performance
- *Runner Up:* Smart Canards, Victor Racing, Inc.

PERFORMANCE-STREET PRODUCT
- *Winner:* Antigravity Batteries RE-START Lithium Starter Battery, Antigravity Lithium Batteries
- *Runner Up:* Hypertech REACT Throttle Optimizer, Hypertech
- *Runner Up:* TractionMAX, JMS Chip & Performance

POWERSPORTS PRODUCT
- *Winner:* MLX-9000 Series Motorcycle Gauge, Dakota Digital
- *Runner Up:* Belt Temperature Sensor for Polaris/Can-Am, Dynojet Research Inc.
- *Runner Up:* Hypertech Spectrum Power Programmer for Polaris, Hypertech

STREET ROD/CUSTOM CAR PRODUCT
- *Winner:* Custom Microsteer Integrated Column Program, Flaming River Industries Inc.
- *Runner Up:* Gen 5 Super Magnum Heat/Cool/Defrost System, Vintage Air Inc.
- *Runner Up:* RTX-33F-X 1933-34 Ford Car Retrotech Series Gauge System, Dakota Digital

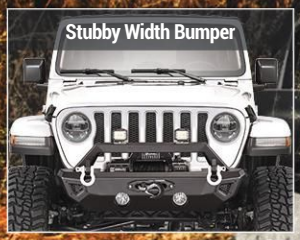
TIRE & RELATED PRODUCT
- *Winner:* Victra Sport EV, Maxxis Tire
- *Runner Up:* Mastercraft Courser Trail HD, Cooper Tire & Rubber Co.
- *Runner Up:* Open Country R/T Trail, Toyo Tire U.S.A. Corp.

TOOLS & EQUIPMENT PRODUCT
- *Winner:* The 92110-SGX Surface Grinder, Burr King Manufacturing Co. Inc.
- *Runner Up:* Vyper Creeper, Vyper Industrial
- *Runner Up:* Buddy Load Binder Attachment, Buddy Load Binder Attachment

VAN/PICKUP/SPORT UTILITY PRODUCT
- *Winner:* Monkey Bars (Ridge Ready), SeaSucker
- *Runner Up:* Antigravity Batteries RE-START Lithium Starter Battery, Antigravity Lithium Batteries
- *Runner Up:* Smartop Platform Truck Bed Cover, Smartop

WHEEL & RELATED PRODUCT
- *Winner:* MMX Forged Wheel, MMX Wheels
- *Runner Up:* ICON Alloys 17" Rebound SLX, ICON Vehicle Dynamics
- *Runner Up:* Lynx Trail Gunner Wheel for Bronco, Quadratec **TS**

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For '18+ JL Wrangler 4 Door #12056-3102

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Restyling AFTERMARKET ACCESSORIES

The Future of Restyling p. 26 | Products p. 30 | EV Mobility p. 34 | BDM Customs p. 38



The latest step products offer strength and good looks. (Photo courtesy ARB 4x4 Accessories)

SOLID FOOTING

Climb aboard the boards & steps market. ///// **By Jef White**

Running boards and steps serve a practical purpose by easing entry into taller vehicles, an aesthetic purpose by adding off-road appeal to trucks and SUVs, and even a protective purpose by guarding doors and fender areas from chips and dings.

If that's not enough, they can also be an entry point to additional accessorization options for consumers new to the market who discover they prefer not just entering but also riding in style.

Today's board and step products are keeping pace with new-vehicle designs, meaning there's always something fresh to consider.

To learn more, suppliers outline recent changes to the market and sales tips for building business.

WHAT CONSUMERS WANT

Truck and SUV customers, and particularly those looking to go off-road, are prime candidates for board and step products.

"The category has grown tremendously over the years, with most Jeep packages not including a step from the factory," says Howard Fullerton, senior category manager for Quadratec.

SUVs in particular continue to be a strong segment of the market, notes Hugo Baeza, executive director at Romik.

"I remember sitting in front of a few large regional distributors telling them

that the SUV market was growing, and they should consider carrying our SUV products. Over and over, we were told 'nobody needs running boards on SUVs.' Fast-forward to 2022 and look around your neighborhood—every driveway has an SUV or CUV," he says. "This segment was ignored by many but it's not too late for distributors to start carrying SUV running boards."

Creative innovations drive interest and growth in the products.

"New step profiles and materials give consumers more style options at different price points than ever before," says Jane Donnelly, director of marketing for TrailFX.

Jesse Brown, director of marketing for Raptor Series, has watched the market "explode" over the past decade with many different brands and styles, meaning the choices can be overwhelming.

"I strongly suggest getting to know your reps and understanding what sets each brand apart," he says. "You may have some of the newer brands who come in with a stellar price point but simply will not deliver when it comes to service after the sale. Do your due diligence and seek out the brands that are committed to your success."

Coelette Chenier, marketing manager for ICON Vehicle Dynamics, has also seen a rise in suppliers.

"The market has become very saturated with options, especially overseas knockoffs using subpar materials," she says, referencing reports of failed off-road applications. "It seems the most dependable and longest lasting of these types of products are those of rigidity and strength."

MATCHING THE MARKET

Today's running boards and steps must match the construction and appearance standards of the latest new-vehicle designs.

"The market has changed and evolved over the years due to advances in vehicle technology. Our own electronics must evolve to meet the changes with these new vehicles," says Trina Hemann, marketing manager for RealTruck. "In addition, the contours of the vehicles affect how boards and steps are designed and installed."

Processes continue to move forward.

"The evolution of material science and the implementation of FEA have been the

HOT BOARDS & STEPS

HOT PRODUCT:
Summit Step for Toyota Tacoma
FEATURES & BENEFITS:
Shields vulnerable lower panels from rocks and road debris while providing easy vehicle access; steel construction ensures longevity; Integrit finish is durable and stylish; compatible with side curtain airbags.
ARB 4x4 Accessories
Moea Theroux
Marketing Manager

HOT PRODUCTS:
New E-BOARD E1 Electric Running Boards
FEATURES & BENEFITS:
Dual-motor technology on every board with sealed stainless steel gears that don't need cleaning or maintenance; available in textured black powder-coat or exclusive protective bedliner coating finishes.
Go Rhino
Dave Williams
Director of Sales

HOT PRODUCTS:
Impact 2020-up Jeep JT PRO Series Frame Mount Sliders
FEATURES & BENEFITS:
Extreme-duty wall DOM tube and 3/16 plate steel construction; bolt directly on the vehicle's frame rails, absorbing impact with no stress to the body sheet metal; rocker protection.
ICON Vehicle Dynamics
Coelette Chenier
Marketing Manager

HOT PRODUCTS:
LUVERNE SlimGrip & ARIES RidgeStep Running Boards
FEATURES & BENEFITS:
LUVERNE SlimGrip boards feature expanded aluminum treads for traction in all conditions; ARIES RidgeStep boards have raised treads stamped from heavy-duty steel; ARIES VersaTrac brackets are compatible with many of our hottest-selling boards.
Lippert
Evan Grass
Product Manager for Truck Accessories

HOT PRODUCT:
QRC Side Armor with Steps
FEATURES & BENEFITS:
Designed to protect Jeep bodies with a fully welded one-piece design using mandrel-bent, 2-inch-diameter tubing; includes a convenient step that has a dimple die tread pattern to avoid slipping upon entering or exiting the vehicle.
Quadratec
Howard Fullerton
Senior Category Manager

HOT PRODUCTS:
Aluminum Slide Track Series Running Boards
FEATURES & BENEFITS:
Constructed from strong, lightweight, corrosion-resistant aircraft-grade aluminum; track system works with any of our vehicle-specific brackets for easy, no-drill installation; adjustable positioning of the boards; change steps without changing brackets.
Raptor Series
Jesse Brown
Director of Marketing

HOT PRODUCT:
AMP Research Power Step
FEATURES & BENEFITS:
The original electric running board; there when you need it and tucked in out of sight when you don't; provides sleek, reliable step-on convenience into and out of current model trucks, Jeeps, SUVs and Sprinter vans.
RealTruck
Trina Hemann
Marketing Manger

HOT PRODUCTS:
REC Series Running Boards
FEATURES & BENEFITS:
Modern styling that fits today's trucks and SUVs; DRP bracket system can be used with any of our truck running boards and offers four height adjustments to find the correct height for each customer and vehicle; ease of maintenance; attractive price point.
Romik
Hugo Baeza
Executive Director

HOT PRODUCTS:
TrailFX A4 Extruded Aluminum 4.5-Inch Hexagonal Step Bars
FEATURES & BENEFITS:
All-aluminum construction for rust and corrosion resistance; polymer end caps and mounting bracket covers for a clean, finished appearance.
TrailFX
Jane Donnelly
Director of Marketing





Boards and steps help introduce customers to further customization options. (Photos courtesy Go Rhino)



P.O.P. displays help educate customers and generate excitement for boards and steps. (Photo courtesy Go Rhino)

most influential changes to steps in the past decade," says Moea Theroux, marketing manager for ARB 4x4 Accessories. "With material advancements, off-road vehicle bodies are becoming more sculpted and aesthetic, but with less inherent strength. While there are design benefits to this, it's made chassis mounting running boards and steps even more important to maximize strength and protection."

"Warranty and workmanship have become more important factors in closing the sale," agrees Dave Williams, director of sales for Go Rhino. "Certain styles, primarily the shiny traditional looks, have become commodities. Customers are leaning more toward off-road styling and durable black powder-coat finishes."

Current vehicle trends are favorable to the running boards and steps market, says Evan Grass, product manager for truck accessories at Lippert.

"Over the last 10 years, trucks and SUVs have increased in size and height, and tire size has increased as well. Today, many SUVs come standard with 33-inch tires and some such as the Ford Bronco, Ram TRX and Ford Raptor come standard with 35-inch tires," he says. "As the popularity of larger tire sizes has increased, the popularity of running boards and steps has increased as well. With this increase in popularity there's a larger variety of board and step styles, finishes and features available."

There are also more options for unique technology, such as powered running boards, Grass continues.

"This means that shops have the advantage of having a much larger selection of styles, designs and technologies to sell that are tailored to suit the customer's exact needs and budget."

NO TROUBLE AT ALL

Suppliers note that drivers seeking suspension lifts, flares and related products will likely be interested in a board or step to ease vehicle entry and complete the look.

"Most steps are very easy to install, so they can be a very easy way to increase a build's value," Fullerton notes.

And customers can come from many walks of life.

"There is a step or board for every consumer segment, from the lifted pickup owner to the off-road Jeep enthusiast seeking body protection to the professional contractor who is concerned about safety on the jobsite," Donnelly reveals. "A selection of steps and boards serving all these segments can absolutely lead to other segment-specific product sales to these customers, such as bed protection, recovery products and cargo management solutions."

The products can serve as an entry point into added accessorization, says Grass.

"Running boards and steps are often the first customization a truck owner will make. When shops sell steps, they have a customer that may be interested in upgrading their bumpers or adding hitches, headache racks, lift kits, etc."

Brown calls boards and steps "just the tip of the iceberg when it comes to accessorizing your vehicle" and notes the products don't have to be one-and-done.

"Not only are there other areas of your clients' vehicles that more than likely could use some attention, but often there are upgrades for the boards and steps as well, which can help increase their investment on their first visit," he explains, noting that for his company's Slide Track Series running boards, "we offer additional upgrades such as bracket covers and LED lighting kits to customize the running boards to your clients' liking."

Chenier believes that when a customer walks in the door for steps or running boards, there is an opportunity to upsell.

"They might be inquiring about steps, so why not offer them the matching bumper or body protection, too?" she asks, adding that "these items typically have more margin to gain, being that they are usually less engineered, so pricing is usually in the



Education goes a long way toward a successful sale. (Photo courtesy ICON Vehicle Dynamics)

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Offer a selection tailored to suit the customer's exact needs and budget. (Photo courtesy Lippert/ARIES)



Current vehicle trends are favorable to the running boards and steps market. (Photo courtesy Lippert/LUVERNE)



Recommend steps as a necessity for any customer who is looking to lift their Jeep. (Photo courtesy Quadratec)



Seek out the brands that are committed to your success. (Photos courtesy Raptor Series)



Vehicle contours affect how boards and steps are designed and installed. (Photos courtesy realtruck.com)

dealer's favor."

Other attractive package sales could include bike racks, roof boxes, roof rails, wind deflectors and more for retail and wholesale clients, adds Baeza.

"If your shop services car dealers, you will be able to expand your market share by offering them running boards."

Complementary products are a good place to start.

"Consumers interested in steps are a great upsell opportunity for rock sliders or side rails," Theroux says.

And their utility builds trust in other accessories.

"While boards and steps provide an access solution to getting into and out of vehicles, they are also an introduction to customization for many consumers," says Williams. "This creates the opportunity for shops to expose consumers to many other product categories for accessorizing their vehicles."

When in doubt, determine what your customers enjoy and go from there.

"Whether for fishing, off-roading, camping or any adventure, accessories give the vehicle owner their own look and feel to complement their style," says Hemann. "A step is a huge piece that adds form and function to the build."

MAKE YOUR PITCH

When it comes to increasing sales of boards and steps, again it makes sense to start with drivers looking to ride high.

"Recommend steps as a necessity for any customer who is looking to lift their Jeep," says Fullerton from Quadratec.

Brown from Raptor Series suggests including boards and steps in your sales area.

"Assess your showroom setup and ensure that you have all of the latest information available on the brands that you have access to," he says. "We have several products that have been available for a few years now that some of our clients simply are still unfamiliar with. Make sure you are receiving all of the latest product update emails from



Height adjustments allow the perfect setup. (Photos courtesy Romik)

your go-to brands to ensure you are getting the latest and greatest products that are available to you."

P.O.P. stands can trigger interest with walk-in clients.

"Feature step displays offered by many manufacturers prominently in your shop and ask how the customer uses their vehicle before making a recommendation," says Donnelly of TrailFX. "Suggest matching wheel and bumper finishes to create a packaged look."

The more detailed the areas are, the more helpful they can be, says Williams from Go Rhino.

"Have displays on the showroom floor that show a variety of styles and price points so the customer can experience the product's weight, feel, width, look, etc. Then combine that with a configurator tool to show the customer what the product will look like on their vehicle."

Including the latest offerings on your shop truck is also helpful, adds ARB's Theroux.

"Display steps on-vehicle whenever possible to demonstrate how much more accessible they make a vehicle."

Education goes a long way toward a successful sale, says ICON's Chenier, meaning a conversation is often in order.

"Provide your customer with information they didn't know they needed; always ask how they intend to use their vehicle. Is it a daily driver? How often or how extreme is their off-road lifestyle? Do children ride in the vehicle? By asking these questions, you help the customer realize needs beyond their initial inquiry. You can help teach them what they need and don't need, and that creates a trusting relationship, thus creating maximum opportunity on both sides of the counter," she says.

Shops can use displays, pamphlets and related printed and online literature to help educate customers about the products, and then be ready to answer questions as they arise, says Lippert's Grass.

"Have knowledgeable staff available in your storefront to help guide the customer on varying lineups, their unique features and price points. Each customer has differing preferences and budget, as well as differing functional needs."

A large selection is also advised, according to RealTruck's Hemann.

"Make sure that your offerings are diverse. Have a variety of products on hand to meet the customers' needs," she says. "You will want to offer entry-level, mid-price point and best-in-class options in the step/board category to be sure you capture all the potential sales, no matter what the customer is looking for."

Finally, be open-minded and never say no, if possible, recommends Baeza.



New step profiles and materials give consumers more style options at different price points. (Photo courtesy TrailFX)

"When a customer walks in with an Audi, BMW, Cadillac, Land Rover, Subaru or any other SUV that your shop normally does not service, look to Romik for your SUV running board needs," he says. "When word gets around that your shop is a complete one-stop shop your business will flourish." ***TS***



READY FOR WHAT'S NEXT

Eyeing the future of the restyling industry.

By Josh Poulson



Challenges with new vehicle inventories provide opportunities for restylers to add sought-after accessories and offer protection products to preserve investments.

What does the future hold for the restyling industry? A panel of experts at the 2022 SEMA Show debated the big questions and came away optimistic that the market is ready to handle whatever comes next.

Here are the questions and a summary of the responses from the "Forecasting the Future of the Restyling Industry" panel, which included Ron Leslie, vice president of sales for Katzkin; Kevin Gillis, general manager at Integrity Customs; Josh Poulson, principal of Auto Additions; and Steve Gilmore, design chief of vehicle personalization at Ford Motor Co., and was moderated by Rod Bennett, general manager of Chrome Enhancements.

According to SEMA's Fall 2022 State of the Industry report, the specialty equipment industry continues to experience growth and strong demand, but is starting to see sales level off from the record highs of the last two years. Ongoing product supply chain issues, rising product prices and economic uncertainty present challenges for the aftermarket industry moving forward.



A panel of experts tackled the market's biggest questions at the "Forecasting the Future of the Restyling Industry" seminar at the 2022 SEMA Show.

Q Based on your personal experience in the industry, what short- and long-term impacts do you believe product supply chain issues, rising product prices and inflation will have on our industry?

A The experts agree that supply chains for the OEs are going to continue to be a problem for years to come. And it's not just the chip shortage—many products are affected by supply chains and even more by rising prices.

So, yes, there will continue to be constraints on new car inventory and with inflation and rising prices will come tighter margins.

In response, now is the time for restyling shops to raise their prices if they haven't already. Customers expect it and, despite any pushback you might initially receive, it really is the only way to survive. Everyone understands it.

According to SEMA's Fall 2022 State of the Industry Report, new vehicle sales have slowed in 2022 due to ongoing supply issues, high prices and rising interest rates. The average price of a new gas-powered vehicle skyrocketed to a record $48,301 as of August 2022, a 10.8% increase from a year ago. The average new EV price is even

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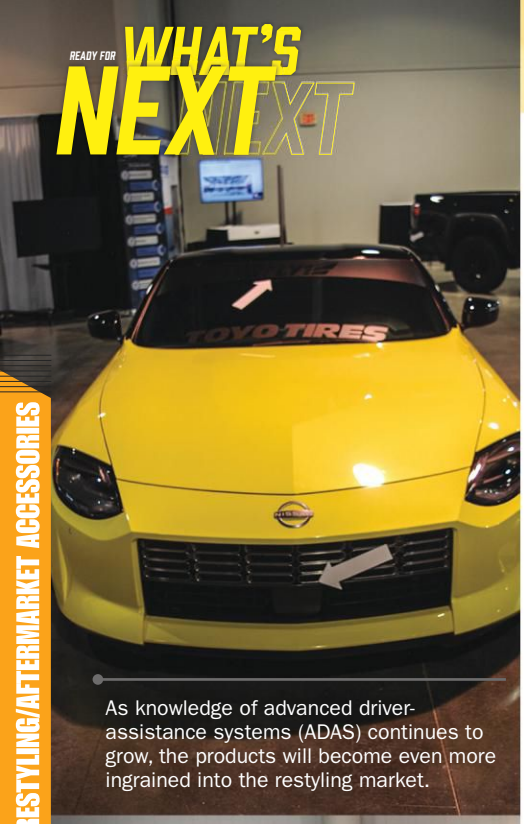
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As knowledge of advanced driver-assistance systems (ADAS) continues to grow, the products will become even more ingrained into the restyling market.





Fewer trim levels for electric vehicles mean more opportunities for restylers.

higher at $66,000. According to a recent SEMA survey, 79% of consumers think it is a bad time to buy a car.

Q In your opinion, what impact will the ongoing vehicle chip supply issues, lack of vehicle inventory, high prices and rising interest rates have on the restyling market?

A Challenges usually always open up an opportunity of some kind. With the pricing of cars being so high, many restylers are looking to products and services that provide "protection" to those high-dollar investments.

That includes things like security products, paint protection film, ceramic coatings or anything else that brings value to a consumer to help protect their vehicles.

Meanwhile, an opportunity for lower-end trim level models to be more popular will also help restylers. Four years ago, people were buying loaded trucks and enjoying discounts and rebates. Now, the payments are almost double what they were back then for the same truck models.

This means many new buyers will drop down in trim level to something they can afford and will then opt to add a few of the accessories that they love and are accustomed to like leather, remote starts or heated seats.

Again, this can be an opportunity for restylers to help dealerships get customers what they want.

According to SEMA's Future Trends report, America is aging. The number of Americans aged 65 or older is expected to grow by nearly 30 million in the next 30 years. Conversely, the number of Americans under age 35 is expected to only grow by 6 million.

Q According to the same SEMA report, nearly 70% of specialty equipment sales came from accessorizers under the age of 40. How do you feel the aging of our country will impact the future of the restyling industry?

A The experts agree that arguments stating that young people don't want to drive or get their license and thus won't care about their car or accessorizing their vehicles is false. Many young drivers are doing what drivers have always done—they want their vehicles to be personalized.

As for the older generation continuing to get older, the opportunity to protect their investments remains. Older consumers also have the funds to get exactly what they want in a vehicle later in life, and there are many aftermarket comfort and convenience items that are attractive to more mature drivers.

Thus, sales should continue to be strong for the next few years as these customers buy and upgrade their vehicles.

SEMA's Future Trends Report published in



PPF and wraps appeal to a wide range of restyling customers.

January 2022 predicts the specialty equipment industry will grow from $50.55 billion in 2022 to $66.57 billion in 2030.

Q Where do you feel this $16-plus billion increase will come from and what should restylers be focused on to participate in the predicted future growth revenue?

A Obviously, pricing will go up, which will account for some of the growth, but many of the core restyling products will continue to be strong for many years to come.

Restylers will also see growth in many non-traditional restyling products that have come to the market like PPF, wrap film and ceramic coatings. Truck accessories will continue to remain strong as well.

According to a Sept. 21, 2022, Automotive News *article, Bloomberg puts the U.S. on track to hit more than half of U.S. car sales being EV by 2030. However, according to a SEMA Future Trends Report, SEMA projects that alternative power will make up 45% of new vehicles sold by 2035—of which 26% will be fully electric.*

Q Which prediction would you deem to be more accurate, if either, and what impact will the growing EV market have on the restyling industry?

A No one can really know what the percentage of EVs will be. With that said, the infrastructure is not where it needs to be in the U.S. and may continue to restrain people from fully embracing EVs the way some predict.

Regardless, the great position restylers are in is that whether a vehicle is ICE or EV, it can still be restyled with many of our products and services. As EVs become more abundant, so will products for these vehicles.

Also, today's EVs have just a few trim levels, which allows for aftermarket products to fill the gaps.

According to an Automotive News *article dated Sept. 12, 2022, advanced driver-assistance systems, referred to as ADAS, are poised to radically change and disrupt the automotive industry for both OEMs and consumers.*

Q How do you feel ADAS and its associated government regulations will impact the future of the restyling industry?

A The more we learn and understand ADAS and how it works in vehicles, the less scary it is.

I compare it to when tire pressure monitoring systems (TPMS) came out and the industry thought we would never be able to sell wheels and tires again. But our knowledge grew and now we know where that wheel and tire market stands.

The same could also be said about airbag sensors in seats—when these became prevalent, we wondered if we'd ever be able to add leather interiors again.

We have learned a lot about ADAS already, and the new SEMA Garage in Detroit has a complete ADAS testing facility.

Also, government regulations have been slow to react to setting complete standards. All of this being the case, it should be business as usual—with a bit of caution—as we move forward with improved safety systems. ***TS***



Named the 2022-23 SEMA Person of the Year, ***JOSH POULSON*** *is chairman of the SEMA PRO council and the principal of Auto Additions in Columbus, Ohio, which was named Restyler of the Year for 2012-13. Auto Additions offers a complete line of product upgrades including 12V and appearance packages with a specific focus on the dealership segment.*



Dual-Mode Fog Light

KC Lights, Williams, Arizona, introduces the FLEX ERA 3 Dual Mode SAE Light featuring a dual-mode SAE fog light and high-powered off-road light combined in one compact package. Light up the roadways with the true SAE J583 fog beam light as a low beam, then flip the switch for an off-road spot beam as a high beam when crossing into the dirt. It can be combined with a master kit that also includes SAE Selective Yellow lenses for even greater visibility in heavy rain, fog, snow and dust.

Silent Helper Springs



Hellwig Products, Visalia, California, presents its new Silent Support System, a polyurethane bushing upgrade that eliminates metal-to-metal contact on helper springs for a smooth and quiet ride. The new, patented system acts as a barrier between surfaces to reduce the metal-to-metal contact common with aftermarket helper springs that typically results in unwanted metallic harmonics. The bushings will come standard on all of the company's helper springs and are also sold separately as a retrofit upgrade for existing Hellwig helper spring kits.

Flexible Plastics Primer



KBS Coatings, Valparaiso, Indiana, presents KBS Fusion FPP Flexible Plastics Primer that promotes a tight bond between difficult-to-paint flexible surfaces and most varieties of topcoats. The aerosol primer can be used on plastics, urethanes, fiberglass and carbon fiber. It coats fast and easily to provide a strong-yet-flexible basecoat that moves with the surface without flaking, peeling or cracking. The gray primer has a fast dry time and allows film thickness to be built quickly. It can be block-sanded after drying for 30 minutes and top-coated after one hour.



Manual Bed Covers

EGR, Ontario, California, offers new Manual Bed Covers featuring a sleek style and black powder-coated aluminum construction. The manual EGR RollTrac can be opened and closed with a built-in latch handle that allows the operator to easily slide the roll cover to any position. For security, it can be locked in four different locations including at the tailgate. The covers are available for most popular short-box, non-HD applications including 2019-23 Chevrolet Silverado and GMC Sierra 1500, 2019-23 Ram 1500 and 2015-23 Ford F-150 models.



Tundra Rear Suspension Upgrade

Timbren Industries, Toronto, presents a Timbren SES upgrade for the rear suspension on 2022 Toyota Tundra 4x4 models. The new TORTNDR kit mounts to the frame using existing holes. The no-maintenance upgrade is designed to prevent sag, reduce sway and enhance ride quality under load without compromising unloaded ride quality.

Galley Compact Stove & Kitchen

4 Wheel Parts, Compton, California, presents the **Smittybilt** Galley Compact Stove & Kitchen that offers convenience and space for outdoor cooking. A stainless steel command center includes a two-burner stove, cutting board, sink, slide-out table and drawer that all fold into one compact container for storage.





Super Duty Replacement Fuel Tank

Transfer Flow, Chico, California, introduces a High-Capacity Replacement Fuel Tank for 2020-22 Ford F-250 and F-350 Super Duty short-bed, crew cab pickups with 6.2L and 7.3L engines. The 58-gallon fuel tank system passed emissions testing and has been granted an Executive Order from the California Air Resources Board. The larger tank increases the truck's driving range and is constructed from American-made, 12-gauge aluminized steel for strength and corrosion resistance. Exterior fuel lines and an evaporative emissions system are included.

Paint Protection Film



3M, St. Paul, Minnesota, presents new Scotchgard Paint Protection Film (PPF) Pro Series 200 Gloss. The new film is designed to protect automotive paint and other vulnerable vehicle surfaces from stone chips, scratches, bug damage, road tar, stains and outdoor weathering including UV radiation. Highlights include an optimized adhesive for a more flexible product and easier installation experience. Offering high gloss and improved clarity with hydrophobic features, the PPF is available in a new 72-inch film width.



Ford Radio

Retro Manufacturing, Henderson, Nevada, presents the RetroSound Dallas Radio Face, its latest officially licensed Ford Radio Face. Designed to replicate the original factory radio in 1985-86 Ford F-Series trucks and Broncos, the system features a subtle, straightforward design with replica black plastic knobs, rounded pushbuttons and a thin seek bar, finished in matte black with the official Ford logo for added authenticity. The Dallas mounts directly into the factory opening and includes a vehicle-specific wiring harness.

Jack Mount System

BOLT Lock, Milwaukee, presents its redesigned J-Mount Jack Mounting System for Jeep JL and Gladiator models. The new system makes it easier to mount and remove a jack and can be installed on either side of the vehicle using existing mounting points. It fits most popular brands of jacks including **Smittybilt** and **Hi-Lift** and includes a matching ditch light mount for both sides.

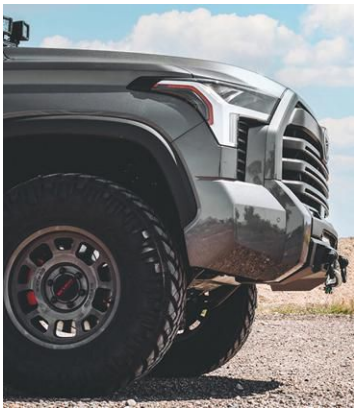


Camry Control Arm Kit



SuperPro Suspension Parts, Queensland, Australia, presents a Control Arm Kit for 2017-newer Toyota Camry models. Designed as an easy repair solution offering both alignment and vehicle handling improvements, the complete kit comes fully assembled with proprietary SuperPro bushings. The arms are manufactured from a high-strength material, with a design that eliminates OE-style rubber bushings for longevity, durability and performance without any unwanted NVH.

Tundra Modular Winch Bumper



Scorpion Extreme Products, Phoenix, one of the **DPI Off-Road Brands**, presents its 2022 Toyota Tundra Modular Winch Mount Bumper. The modular bumper features 1-inch D-ring tabs and a hidden winch mount location allowing for various recovery methods. The internal winch mounting plate is laser-cut from 1/4-inch steel. Stage 1 bumpers offer an increased approach angle and multiple light mounting locations to install two pod lights and a 20-inch light bar. Stage 2 delivers greater protection and more benefits. ***TS***

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ADRO's dry carbon fiber body kit for the Tesla Model 3 is as aerodynamically efficient as it is aesthetically pleasing. (Photo courtesy ADRO)

DRIVING INTO THE FUTURE

Tracking the course of the 'mobility' movement.

By Jason R. Sakurai

It's all the same, only the names have changed—from "automotive" to "mobility."

With it has come differing attitudes and ideologies. Electric vehicles (EVs) aren't going away, and we have politicians, environmentalists, advocates and futurists to thank for it.

Ernst & Young LLP launched a survey called the EY Mobility Consumer Index (MCI) in 2020 to document changes in travel patterns in what it calls "the post-COVID world." Monitoring car buying intent, the pace at which EVs are being adopted and consumers' car buying processes, plans call for yearly updates, with the information used in this article coming from March 2022.

What can be gleaned from the survey's four major themes—Mobility & Travel Behavior, Electric Vehicles & Sustainability, Car Buying & Powertrain, and Retail Analysis—is information that, as aftermarket professionals, we may not agree with or have read previously.

Despite knowledge to the contrary or differing opinions, however, it's important to understand that these types of surveys influence those in positions of power and help shape the policies they put in place that affect the automotive industry.

MOBILITY & TRAVEL BEHAVIOR

Since the pandemic, travel has declined 9% overall, including approximately 11% work-related travel and 8% leisure travel.



A fully adjustable suspension kit for 2017-present Tesla 3 models from MSS greatly improves handling. (Photo courtesy MSS Automotive)



AEM Electronics' Tesla-powered Mustang produces plenty of power. (Photo courtesy AEM Electronics)

Further, 17% of respondents worked from home three to four times a week before COVID, a figure that's now at 31%.

Public transit saw the greatest pandemic-related decline at 13%, with much of the dip due to heightened safety concerns. Post-pandemic, many of those safety concerns remain and riders have not returned in numbers seen previously.

Meanwhile, instances of subscribing to or renting a car also dropped a percentage point over the past two years, from 17% to 16%.

This satisfaction gap is a challenge for public transit authorities while sustainable transportation remains a climate change initiative. The survey shows 46% of consumers say they would reduce private vehicle usage if public transit was free and 38% say tolls or charges in urban areas would make them take fewer trips by car.

Road usage fees are being used by city officials to offset decreasing fuel taxes as EVs become more prevalent.

ELECTRIC VEHICLES & SUSTAINABILITY

The 2022 survey says 52% of car buyers would prefer an EV as their next purchase, whether it's fully electric, a plug-in hybrid or a traditional hybrid. These days, nearly three times the number of buyers want a fully electric car—20% versus 7% in 2020. Meanwhile, desire for plug-in hybrids grew from 7% to 10%, and for traditional hybrids from 16% to 21%.

At 38%, the environment is the major motivating factor for purchasing an EV, with penalties on internal combustion engines (ICE) next at 34%. One-quarter of respondents believe EVs represent a lower ownership cost, equal to those stimulated by monetary incentives. At 24%, EVs with longer ranges impacted buying decisions.

More than 20 governments have increased electrification targets or ICE bans, and 60 countries including the European Union have made net-zero pledges through 2050, further driving EV adoption.

The top inhibitor to an EV purchase in 2020 was the high upfront cost, which two years later is now third at 27%. These days, uppermost in buyers' minds at 34% is the lack of charging stations, followed by range anxiety at 33%.

Nearly two-thirds of buyers expect home charging to be included in the price of an EV and delivered with the vehicle, an expectation shared with 52% who already own an EV.

Meanwhile, 44% believe EVs should be part of their home energy management system, and 47% say that for them to buy an EV it needs to be part of a complete energy package that also includes things like solar panels, in-home storage and the ability to feed the grid.

CAR BUYING & POWERTRAIN

The 2022 survey shows 45% of consumers intend to buy a car, up 12% since the 2020 poll.

Around 63% said they planned to buy in the next 12 months, with the balance at 24 months. Nearly two-thirds were eyeing a new car, while 13% would opt for a pre-owned vehicle.

Demand is occurring despite the Federal Reserve raising the Federal Funds Rate in March, May, June, July and September 2022. Gross Domestic Product increased by 6.9% in 2021, the largest one-year jump since 1984, while inflation soared by 7%, the largest increase since 1982.

In one year, the need for a personal car increased by 8%, up to 63%, the same percentage buyers attributed to their safety and well-being. In 2021, EVs more than doubled their global market share to 17%, up from 7% in 2019.

Results show 64% of EV buyers care about the well-being of the environment and are open to using environmentally friendly transportation modes, versus 46% overall. That same number, 64%, believe it is their responsibility to reduce their personal environmental impact, and 58% prefer EVs when riding in a cab or taxi.

Nearly 41 million used cars were sold in the U.S. in 2021, a 10% year-over-year increase, while 15 million new cars were sold—numbers expected to remain constant this year.

Personal mobility preferences, lower new-car inventories and technological advancements that increased the average price of a new vehicle have caused more buyers to consider used vehicles. In the first half of 2021, CarMax noted triple the number of used vehicles purchased directly from owners as dealership trade-ins lose share.

OEMs say improvements in new-vehicle production in 2022 are helping stabilize used vehicle prices, but looking at the dearth of inventory at dealerships the rise in used car sales will likely continue.

RETAIL ANALYSIS

Demographics from the survey are 12% Gen Z, 29% millennials, 25% Gen X and



Restyling a Tesla Model S with Vossen wheels. (Photo courtesy Vossen Wheels)

SHYFT GROUP'S EV DELIVERY VANS READY TO HIT THE MARKET

The Shyft Group has announced the first pre-orders for its all-electric Blue Arc EV Solutions Class 3, 4 and 5 walk-in delivery vans from Randy Marion Automotive Group in the Carolinas.

"I am extremely proud of the work the Shyft team has done positioning Blue Arc EV Solutions to meet customer needs," says Daryl Adams, Shyft CEO. "From the beginning just 14 short months ago, we've been confident in our EV commercial vehicle design because we have served last-mile delivery customers for nearly 50 years. We've hit all of our critical development milestones and most recently we've validated that our range will meet our customers' expectations."

Following the expected receipt of government approvals this winter, Shyft plans to finalize a multi-year purchase order with Randy Marion for the pre-ordered walk-in vans, begin production in the Midwest and start delivery by mid-2023.

Fleet customers have been able to pre-order online or at the dealership since September.

"Our long history working with Shyft through its Utilimaster brand and the overwhelmingly positive response to the Blue Arc Class 3 all-electric delivery walk-in van gives us great confidence in the entire Blue Arc lineup—the Class 3 and 4, as well as the Class 5 that is in development now," says Brad Sigmon, VP of sales at Randy Marion Automotive Group. "The commercial-grade features from Shyft, engineered with firsthand knowledge of last-mile delivery, are true differentiators versus the other EV options."

Using insights from Shyft's Work-Driven Design process, the electric vans feature a spacious cargo area and offer a choice of vocational packages specifically designed for functionality.



The Blue Arc delivery van is a 100% battery-powered electric commercial delivery vehicle designed for high-frequency, last-mile delivery fleets. (Photo courtesy The Shyft Group)



The SEMA Electrified section of the 2022 SEMA Show demonstrated how EVs of all types are integrating into the market.

34% baby boomers. Approximately one-third reside in cities and 19% in suburbs, with rural areas at 20%, medium-sized cities at 19%, and small towns at 11%.

While 31% were considered low income, 57% were middle income and 12% high income. Gender was split evenly between men and women.

The retail analysis also shows that digital sales and service models are evolving, driven by changes in customer buying preferences and technological advancements. Nearly 60% of buyers use online price calculators, and 58% say booking a test drive interests them.

Car configurators appeal to 47% of buyers, while payment by card, making an offer and having a vehicle delivered to their home are all reasons to shop online.

As the customer buying journey trends more virtual, dealers need to reassess how to integrate both online and offline elements. Digital tools have caused buyers to have different vehicle purchasing expectations, and the technology present on one dealer's website is expected to be the same or similar to that of their competitors.

THE AFTERMARKET'S FUTURE

To capitalize on strong consumer interest in EVs, shops need to rethink their dialogue by developing new messages, relationships and tools. Look to the companies that have products for EVs on the market, and those that are developing new parts and accessories.

Replacement battery packs may be another way to become involved with EV owners. While dealerships remain central during the initial warranty period, as EVs age and require replacement parts, shops that have built relationships with owners will become expert advisors. This will put shops in a position to seize new opportunities as they arise.

Many automotive journalists have been EV proponents and continue to lead the charge. My interest in and support of ICEs initially clashed with the rationale for EVs, and to some extent it still does.

However, we can no longer ignore their advent as a strong segment that represents the present and the future of aftermarket accessorization. ***TS***



JASON SAKURAI *heads up Roadhouse Marketing, a marketing, advertising and sales solutions firm dedicated to the automotive aftermarket. A frequent contributor to THE SHOP, Jason's byline appears in many enthusiast and trade publications, in print and online.*



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By Mark Bach

BUILDING THE DREAM

Dealer lift packages & off-road accessories have BDM Customs riding high.

When a shop has been in business for more than 26 years and continues to expand, chances are the owners are doing something right.

BDM Customs has a strong presence in and around Tempe, Arizona with its lifted truck packages for dealerships, combined with offering off-road accessories, vehicle repair work and the services of a newly acquired tire shop. Owned by brothers Marc and Mike McCombs, the shop originally performed a variety of automotive tasks but soon gravitated toward the truck market, which has always been a strong segment in Arizona.

The brothers grew up watching their dad work on old cars and trucks while also being the general manager for a string of auto repair shops in three states. Over the years, Mike developed some contacts in the wholesale market and at local car dealerships before launching BDM Customs in 1996, and soon Marc joined him in the business full-time.

A BOOST FOR BUSINESS

Having built a reputation in the off-road and accessory segments, BDM Customs (short for Building Dream Machines) moved to its present location, which encompasses nearly 25,000 square feet, about two years ago.

Half of the space is dedicated to repair and upgrade projects, with four bays and room to accommodate seven vehicles. The balance of the shop is used for storing inventory for its wholesale work.

The group recently bought a tire shop in



Marc McCombs and his brother Mike opened the shop 26 years ago. They originally performed a variety of automotive tasks but soon gravitated toward the truck market.



BDM Customs has a strong presence in and around Tempe, Arizona.





BDM offers lifted truck packages for dealerships, off-road accessories, vehicle repair work and the products and services of a newly acquired tire shop.

nearby Chandler called Tire Pros as well.

Marc McCombs explains that wholesale work mainly focuses on installing basic truck lift kit packages consisting of new tires, rims and a suspension lift for vehicles at both new and used car dealerships. With plenty of experience and inventory on hand, the shop prides itself on turning jobs quickly.

Presently, BDM (bdmcustom.com) works with more than 20 used car dealerships and a handful of new car dealers.

The other portion of its wholesale division consists of delivering parts and equipment to other shops in the area. The team typically has one or two drivers a day out filling orders throughout the Valley of the Sun, McCombs explains.

Wholesale business spiked when the shop became a distributor of BDS Suspension products about six years ago, and McCombs says plans call for adding more lines soon.

At one point, the shop also had an active online sales presence, but when COVID impacted supply issues, that business slowed. The brothers determined it was better to distribute what little product was available to their own customers and local accounts rather than chase a one-time sale over the internet, McCombs explains.

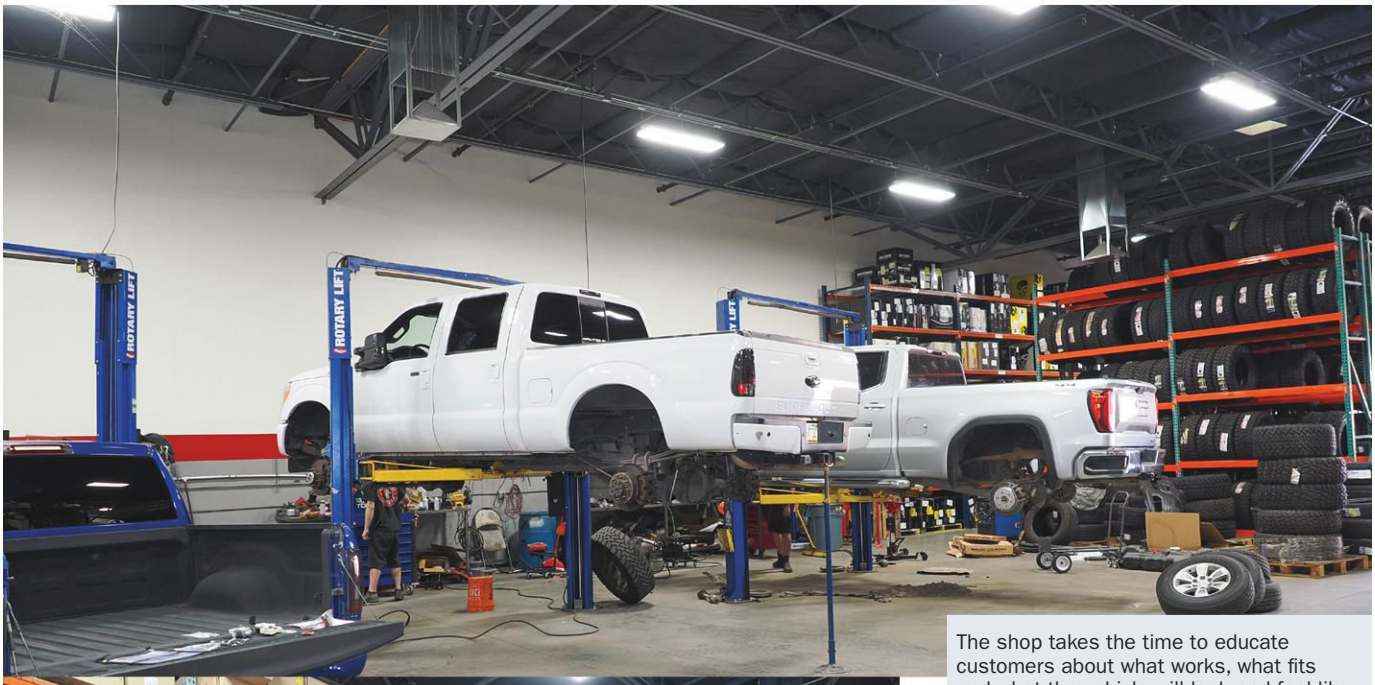
The good news, he adds, is that supplies seem to be ramping back up.

As an example, McCombs reports that at one point only one foundry in the United States was making steering knuckles—obviously a big factor in lift kits. So, the shop would place large orders with its vendors whenever it had the chance, not knowing when the next opportunity would arise to get the parts it needed.

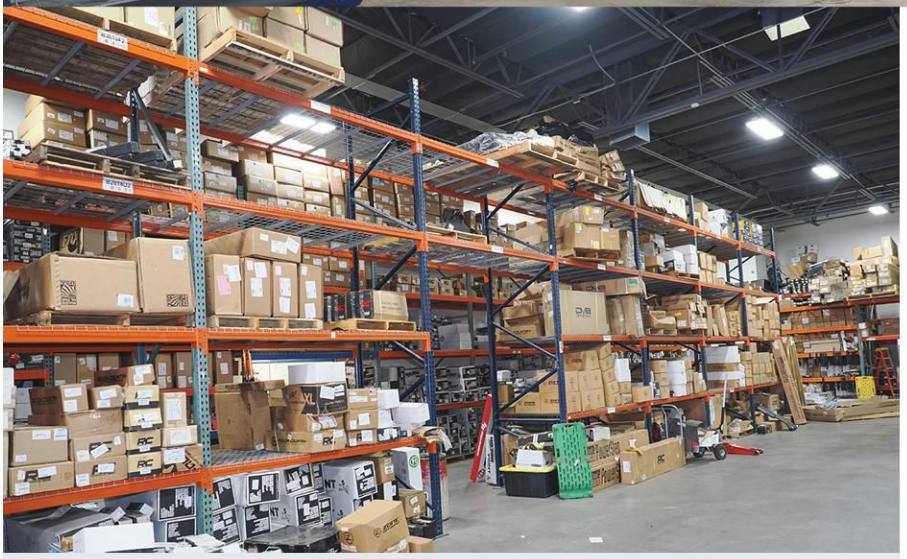
That type of crunch has subsided, though presently the shop still has a two-week waiting list for basic installs.

MAKING IT WORK

Unlike many shops nationwide, McCombs notes that employee turnover has not been



The shop takes the time to educate customers about what works, what fits and what the vehicle will look and feel like when completed before starting any job.



Part of BDM Customs' wholesale division consists of delivering parts and equipment to other shops in the area.

a big concern for BDM, thanks to a commitment to treat employees and vendors like family and to listen and respond when issues arise. The company's talented technicians have a combined 60 years of experience in the market.

Meanwhile, the heart of its customer service interactions is to "take care of the customer, be fair and treat them like you would want to be treated."

One way BDM does this is by taking the time to educate customers about what works, what fits and what the vehicle will look and feel like when completed before starting any job. Financing support is also available.

Once completed, the shop offers a lifetime warranty on its workmanship and will work with the customer and the manufacturer if parts ever fail.

While BDM Customs has modified trucks that ended up at SEMA and other big shows, the business generally focuses specifically on suspension lifts while letting others do the remaining portions of the build. Lately, those projects have included more Chevy Silverados and Ram trucks, which are favorites in Arizona, McCombs observes.

Interesting and noteworthy projects are highlighted on Instagram (@bdmcustoms).

While still going strong, the shop hasn't been immune to recent economic challenges. While there is still a customer segment that has the funds readily available to outfit their pickups as desired, other clients have become a bit more frugal with their builds, McCombs reports.

A basic, simple build for a lifted truck used to be around $3,500, for example, but now comes in at about $4,500, with no additional profit for the shop, he explains.

For budget-conscious customers, the shop has a Garage Sale tab on the website highlighting "Cheap Lift Kits" for certain Chevrolet/GMC, Ford, Ram, Subaru and Jeep applications.

Meanwhile, the brothers have an eye on expanding their business on several fronts, including an added emphasis on overland van kits, suspensions and accessories, and are optimistic about the future of the industry. With their track record, it's sure to be a success. ***TS***

MARK C. BACH *is a well-preserved automotive junkie with 30W oil in his veins who remembers feeler gauges and brake springs. He has a love for all things that move, especially old-school muscle cars. Bach covers car auctions and the automotive scene and writes for a variety of outlets, including Chevy Classics, Round-Up Publications and eBay Motors, and maintains Route66pubco.com.*

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Vintage Parts of Arizona p. 46 / Performance Products p. 50



Performance oils and fluids can be a vital, fun part of your shop's offerings. (Photo courtesy VP Racing Fuels)

Filling the Funnel

There's much to be gained through performance oils & fluids.

By John Carollo

Performance oils and fluids are protection for your customer's power investments. Engineered for specific uses and backed by lab and real-world testing, these products are a fun and vital part of a speed shop's offerings.

From supply chain issues to common misconceptions, there's currently a lot to talk about when it comes to performance oils and fluids. Suppliers and manufacturers are happy to share their observations.

LINKS IN THE CHAIN

It's supply chain issues—and a little bit the rise of EVs—that's top of mind for most performance oil companies these days.

"Supply chain issues are having a large impact on the performance oils and fluids market," says Josh Steinmetz, eCommerce and brand manager for Hot Shot's Secret/Lubrication Specialties. "Prices of base oils and additives have risen drastically, and availability is an issue leading to backorders and delays in shipments. Manufacturers and distributors/shops alike are being forced to buy in large quantities just to keep product available while they wait for additional supply."

And no one's been immune, says Art Kendrick, sales director at Red Line Oil.

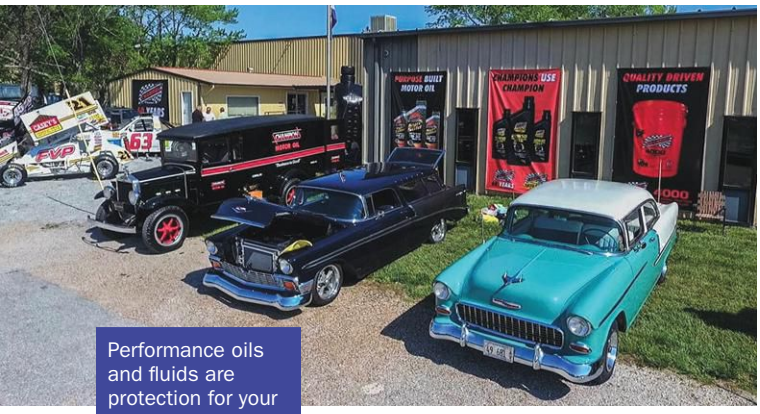
"Everything related to manufacturing/packaging has been impacted, with reduced availability and historic price increases," he says.

Richard E. Glady, director of sales, lubricant division at VP Racing Fuels, outlines some of the specifics.

"The industry has realized 12 price increases over the past two years, force majeures were implemented by a number of major oil and additive companies, and there's been a shortage of labor to unload parked ships, along with truck driver and rail car shortages that have all led to delays and increased shipping costs," Glady says, adding that "engine designs continue to change, often with tighter clearances, forcing lighter-viscosity oils and additional performance demands on the performance oils."

Challenges include obtaining the ingredients needed to create high-performing specialty offerings, says Brandon Greene, customer service manager for Lucas Oil.

"One factor that impacted us was the ability to get the additives we needed to blend our performance fluids," he says. "Things have gotten much better, but for a while it was difficult getting those products."



Performance oils and fluids are protection for your customer's power investments. (Photo courtesy Champion Oil)

Of course, one of the unfortunate results has been increased costs.

"The volatile lubricants market is still having raw material/supply chain issues that have created some availability problems along with higher prices," notes Scott Baubie, director of motorsports for Champion Oil/Hi-Tech Lubricants, a division of PLZ Corp.

Once it's all settled, the industry will then likely turn its attention to the increasing number of EVs coming to market, predicts Sebastian Zelger, CEO of LIQUI MOLY USA, when asked about the outside factors most affecting the market.

"Electric mobility, because the fluid demand is lower and less frequent."

MORE TO LEARN

Suppliers explain there are plenty of misconceptions and lots of false information surrounding the performance oils and fluids market. One of the biggest issues is that many people believe they know more than they actually do.

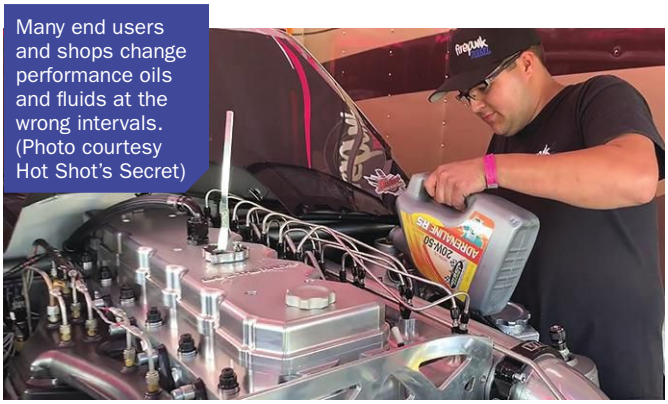
"A general consumer mindset—and a misconception—is that all oil is oil," says Baubie.

Zelger expounds.

"Customers don't understand that motor oil is not a universal lubricant anymore like it was in the past, but a fluid spare part that needs to fit precisely to the specific engine," he says, noting LIQUI MOLY hosts a specification guide on its website to help direct buyers to the proper product for each application.

Of course, performance industry suppliers have spent years developing and testing advanced offerings.

"There have been a lot of improvements over the years and the quality of the oils has come a long way," says Greene. "Performance



Many end users and shops change performance oils and fluids at the wrong intervals. (Photo courtesy Hot Shot's Secret)

HOT OILS & FLUIDS

■ **HOT PRODUCT:** Champion 20W-50 Synthetic Blend Racing Oil
■ **FEATURES & BENEFITS:** Champion's top seller; low coefficient of friction; film strength and viscosity stability at higher temperatures; protection for flat tappet cams, roller cams and bearings in turbo and supercharged racing engines; increases high-temp oil pressure.

Champion Oil/Hi-Tech Lubricants
Scott Baubie
Director of Motorsports

■ **HOT PRODUCT:** Adrenaline PAO Racing Engine Oil
■ **FEATURES & BENEFITS:** 100% pure synthetic using only Group IV base oils; patented nano carbon technology and high-zinc additive package extend the oil's performance and anti-wear protection; Adrenaline R-Series racing oil increases oxidation and thermal stability.

Hot Shot's Secret/Lubrication Specialties
Josh Steinmetz
eCommerce and Brand Manager

■ **HOT PRODUCTS:** Molygen Motor Oil Series
■ **FEATURES & BENEFITS:** Special wear protection; green color that sets them apart from other oils and offers a "wow" factor for customers.

LIQUI MOLY USA
Sebastian Zelger
CEO

■ **HOT PRODUCT:** Lucas FL-0 Oil
■ **FEATURES & BENEFITS:** Offers performance increases for drag racing applications; can be run for long periods of time before needing to be changed; can be paired with Lucas Type F Semi-Synthetic Transmission Fluid.

Lucas Oil
Brandon Greene
Customer Service Manager

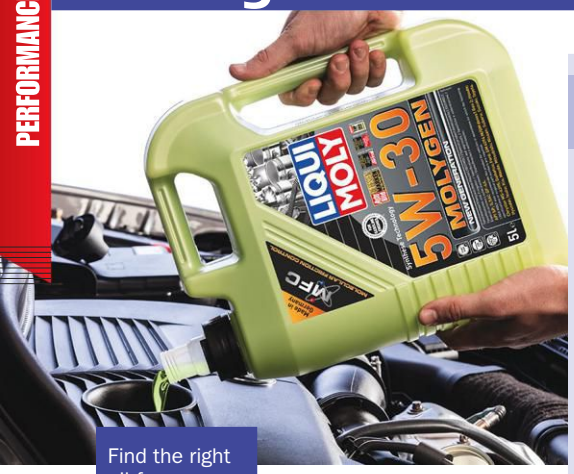
■ **HOT PRODUCT:** 75W85 GL-5 Gear Oil
■ **FEATURES & BENEFITS:** Required in 95% of today's OEM vehicles but typically only available from the dealer; correct fluid weight preserves performance and fuel economy; typically half the cost of OEM products; limited-slip additive included.

Red Line Oil
Art Kendrick
Sales Director

■ **HOT PRODUCTS:**
VP Professional Grade Full Synthetic Racing Oils
■ **FEATURES & BENEFITS:** Available in SAE 0W-20, 5W-30, 10W-40 and 15W-50 weights; alleviates engine wear issues; used and endorsed by Joe Gibbs Engines.

VP Racing Fuels Inc.
Richard E. Glady
Director of Sales, Lubricant Division

Filling the Funnel



Find the right oil for your customer's specific application. (Photo courtesy LIQUI MOLY)

oil can help an engine last longer, perform better and even make more power."

This means that speed shops and builders can emphasize and expand their product lines to achieve greater results, Glady believes.

"Often shops are only willing to add one or two SKUs, thinking that the product will move only to a select customer base and they will not make money selling the product," he observes. "Performance oils and fluids provide increased margins to the shop as compared to mainstream products. In addition, they offer products to a loyal customer base and an opportunity to cross-sell other products."

With those multiple visits comes a necessity to understand what's needed and when, Steinmetz says.

"Many end users and shops alike often change performance oils and fluids at the wrong intervals. Many have the misconception that 'my oil will only last X number of times down the track' based on the behavior of fluids of years past," he says. "Doing an oil analysis is a great tool to understand the fluid's health and longevity. Once the proper drain interval is discovered, care can be taken to find other weak points in the race program."



The quality of performance oils and fluids has come a long way. (Photo courtesy Lucas Oil)

Finally, in a surprising plot twist, the availability and use of performance fluids can be expanded to less power-hungry applications.

"A common misconception is that these products are only for use in performance applications," notes Kendrick. "Performance oils and fluids give every application better anti-wear protection with additional benefits such as increased fuel economy and horsepower gains. For vehicles outside of warranty, extended oil drains are an additional benefit as well."

SLICK SALES TECHNIQUES

When looking to increase sales in the performance oils and fluids market, Steinmetz from Hot Shot's Secret suggests starting with the clients you already have.

"Customer retention is a growth opportunity. Performance oils often have results that can be quickly recognized by the end user. While the wear protection really cannot be seen without doing an oil analysis, the performance increases should be identifiable early on—such as increased power, improved fuel economy, lower operating temps and improved torque," he says. "When the customer gets noticeable results

SOBEY CROWNED OUSCI CHAMPION

OPTIMA Batteries crowned Bob Sobey and his 2013 Nissan GT-R as the winner of the 15th annual OPTIMA Ultimate Street Car Invitational (OUSCI) presented by Advance Auto Parts, the company announced.

Sobey, a three-time competitor who finished third last year, won the 2022 title over reigning champion Jake Rozelle by seven points.

"We did not expect the win. We had a huge lead all the way until the very last day in Vegas, but the car caught fire during warm-up," Sobey reveals. "We made a diaper for the engine to catch the leaking oil and hoped for the best. Thanks to my crew member Brian, my family and the other competitors who helped me out. If somebody in the series needs a hand, there are lots of people willing to help. That's what's great about the OPTIMA series."

Throughout the 2022 OUSCI championship, competitors and their vehicles faced a series of five challenges—the Lingenfelter Design and Engineering Challenge, Lucas Oil Road Rally, Peak Performance Challenge, QA1 Autocross and the Falken Tire Road Course Time Trial.

Rozelle finished in second place in his 2003 Chevrolet Corvette Z06, and Dave Schotz finished third in his 2020 Chevrolet Camaro ZL1.

"It was an intense season with great showings and incredible racing by everyone involved," says Cam Douglass, director of marketing for OPTIMA Batteries. "It makes me proud to know that 15 years after we started the series, the builds continue to get better and the culture continues to grow. We are really proud of Bob Sobey, and you can see his passion for the sport in his GT-R. After the scare on Sunday, we're glad everyone is safe and that he was able to earn the title."

OUSCI winners are awarded commemorative jackets and are the first to be invited to the following year's event. All competing vehicles had to be licensed, registered and insured for street use to be eligible to compete.



Bob Sobey was crowned champion of the 15th annual OPTIMA Ultimate Street Car Invitational (OUSCI).

quickly, the shop has gained a loyal customer. By offering high-quality, proven performance fluids and oils, a shop has the opportunity to upsell, build a valuable new revenue stream and serve as a trusted advisor for repeat business."

Such relationship building requires trust, notes Baubie from Champion Oil.

"Oils and lubricants are unique products that are widely misunderstood. Educating consumers on value instead of front-end price or lowest price purchasing is important, especially for longevity and performance. With the internet, everyone seems to become subject matter experts on everything and value nothing."

A wide selection is also important, says Lucas Oil's Greene.



Achieve higher margins by selling services with your performance oils. (Photo courtesy redlineoil.com)

"Offer the customer different products rather than just carrying two or three performance oils Most manufacturers offer many different weights of oils along with synthetic, semi-synthetic and conventional oils. The performance fluids market has grown over the years, and it is important to keep up with what's new and what the customer is looking for."

Once you have strengthened your sales of oils and fluids, you can then branch out to related products, adds Red Line's Kendrick.

"Achieve higher margins by selling services with your performance oils," he suggests. "Upsell opportunities with other products include coolants and additives with radiator sales, gear oils with differential cover sales, and transmission fluids with transmissions, coolers and trans pan sales."

A complete package has many benefits, says Zelger of LIQUI MOLY.

"Our wide range of additives and service products allows shops to create individual service packages. For example, a performance oil change comprises Pro-Line Engine Flush to clean the oil system right before the oil change, the right oil for that car and finally Cera Tec added to the fresh oil because it protects the engine from wear and tear, reduces friction and thereby improves the power output."

And you don't have to stop there, as VP Racing's Glady recommends widening your scope.

"It's important for shops to connect with the racing community as well as the classic car market," he says. "Also, the powersports sector, especially the UTV/ATV niche, creates another opportunity for shop growth. In addition, expanding sales through the internet is always a possibility." ***TS***



HOT ROD PRODUCTS IN THE DESERT



Vintage Parts of Arizona builds on five decades of experience. ///// **By Tony Thacker**

"Change is the only constant in life," said the Greek philosopher Heraclitus. I doubt he was even aware of the performance aftermarket 500 years before Christ, but he was right on the money.

Change is constant in our business and staying on your toes as the world about you shifts takes balance, vision and a willingness to do it a little differently than you might have done it last year.

Take, for example, Vintage Parts of Arizona (VPA) located in Phoenix, which is coming up on its 50th anniversary and has consequently seen five decades of change.

The business was started in 1974 when friends Wally Lassila and Frank Pittenger were on a weekend trip to the city of Show Low looking for old Ford Model A components. With $300 between them they bought parts and just as quickly turned around and sold them for a profit.

The pair continued to flip old tin until their side business turned into, well, a business, prompting them to open Vintage Ford Parts of Arizona.



Wally Lassila and Frank Pittenger founded Vintage Ford Parts of Arizona in 1974 after growing their side business of buying and selling Model A components.

Now owned by Brian and Angie Benzing, Vintage Parts of Arizona is an old-fashioned hot rod parts shop serving the Phoenix area.

A GROWING BUSINESS

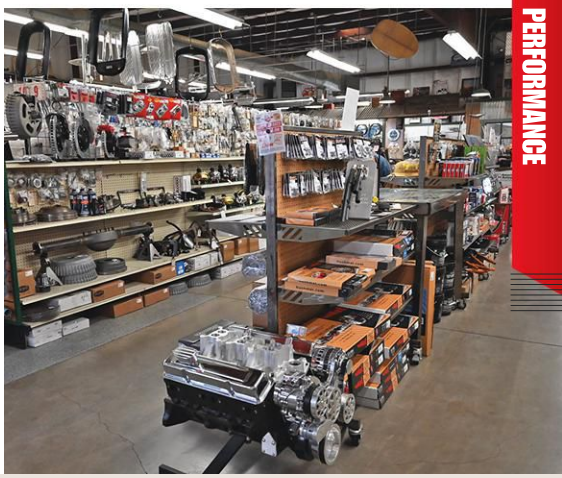
As Pittenger and Lassila both had day jobs, the store was only open afternoons and weekends. However, as the business grew, they expanded their hours until they realized they needed help.

That help came in the form of 19-year-old Frank Streff. As one door closes another opens, and Streff had been working since he was 15 at Antique Auto, which was about to close its doors.

Pittenger and Lassila recognized their same passion for vintage tin in Streff and with him manning the sales counter the side hustle soon turned into a solid, six-day-a-week, full-time business.

In the 1970s the antique Ford products business was taking off, with a growing demand for replacement and restoration parts for both restored and hot rodded





VPA keeps plenty of popular items in stock to accommodate walk-in sales.

cars. Dennis Carpenter founded his Ford Restoration Parts business in 1970, Bob Drake followed in 1971 and Lynn Williams founded C.W. Moss in 1978 (it was so named because Williams resembled the character C.W. Moss in the 1967 movie "Bonnie and Clyde").

Each of these companies, and others, are still in the restoration parts business today.

VPA blossomed along with the industry as a whole and Streff, along with his very capable wife Mary, continued to work the counter—but with an eye to the future. Impressed by the company, the Streffs took full ownership in 1990 and upped the ante with the addition of Chevrolet parts and a name change to Vintage Ford and Chevy Parts of Arizona.

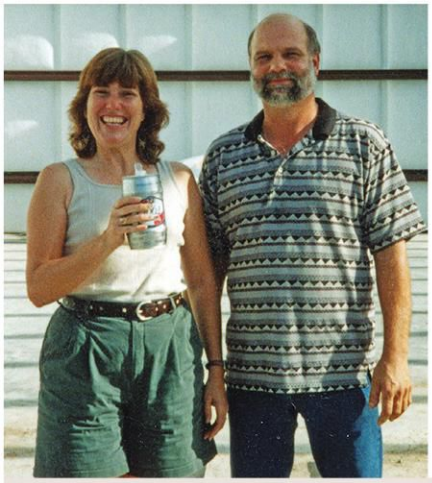
Meanwhile, in 1992, Brian Benzing and Dave Sexton joined the company.

"I maintained the used parts in the backyard and kept the store clean, which meant I swept floors and cleaned the bathroom," Benzing recalls. "Eventually I moved up to shipping and receiving, and then onto the sales counter."

The more-or-less doubling of inventory meant a new building, and in 1998 Frank and Mary were in the middle of construction when Bob Everts introduced them to Pete Chapouris, who had just a year earlier resurrected the SO-CAL Speed Shop, founded in 1946 by Alex Xydias.



HOT ROD PRODUCTS IN THE DESERT





Frank and Mary Streff took full ownership of the company in 1990 and added Chevrolet parts to the store's product mix.



For about 30 years, VPA enjoyed an association with SO-CAL Speed Shop, which included support and encouragement from Alex Xydias and the chance to build the brand through SO-CAL's iconic red-and-white hot rods.

Right time, right place as the Streffs were looking for something—they just weren't sure what. SO-CAL offered a new identity in an ever-changing market and the association with the famed speed shop gave them a bigger, more visible profile with national advertising and reams of magazine ink.

The license also included one of the famous red and white SO-CAL roadsters and the association grandfathered them in with numerous manufacturers whose products could now be easily and cost-effectively added to the traditional VPA lines.

SO-CAL Arizona was on the map—indeed, it was the flagship store of the SO-CAL chain.

BUILDING MOMENTUM

The Streffs fit right in with the hot rod scene that was enjoying a resurgence at the time and embarked on a 1953 Ford F-100 truck project as a tribute to founder Xydias' original build. The truck eventually graced the cover of the April 2002 issue of "Classic Truck" magazine following a four-part buildup.

The truck was a hit and later immortalized in miniature—first with a 1/64-scale diecast made by SO-CAL and then a whopping 1/18-scale version made by Acme.

And, if that wasn't enough, in 2010 the original SO-CAL belly tank lakester that Chapouris had restored for current custodian Bruce Meyer was invited to the prestigious Pebble Beach Concours d'Elegance and, because the tank didn't run, Frank and Mary were asked to push it to the podium—something that's never happened before or since.

In the eternal search for what works compared to what doesn't, SO-CAL Arizona was everywhere, from Barrett-Jackson just up the road in Scottsdale to the "Rod & Custom" magazine Americruise.

However, they ultimately decided that staying close to home was more cost-effective and the Streffs began to host Second Saturday events at their store. The parking lot would open at 6 a.m. for a car show, swap meet, and free coffee and donuts for all comers.

The shop also hosted educational seminars and how-to workshops with suppliers such as Vintage Air, Classic Instruments, RideTech and Dakota Digital, to name just a few.

LOOKING FORWARD

In 2017, the Streffs decided that it was time to step aside, take a less active role and hand the keys to longtime trusted manager Benzing and his wife, Angie.

"Frank and Mary did a great job of preparing us for the role of owner," says Benzing, "but to know everything was now going to be on our shoulders—the responsibility of continuing and growing this business—gave us some big shoes to fill. It was both easy, because of the groundwork Frank and Mary had done, and scary,"

Around the same time as the sale, market forces were dictating yet another slight shift in focus. To announce the move, the Benzings launched a '65 Chevy Malibu build using parts that the company now carried. The whole build was documented on social media at #MondayMalibu.

The new owners also continued to host seminars and workshops.

"It's important to connect with your cus-

tomers," Brian Benzing explains, "and add value to product sales with complementary events and seminars. This is just one way that we are more than just a hot rod shop."

As noted earlier, there's nothing as constant as change, and in 2021 the Benzings decided to diverge from the SO-CAL umbrella and re-brand the business Vintage Parts of Arizona—much as it had been in the beginning.

With the name change came a new logo, new clothing and yet another makeover for the shop's exterior, and the emphasis on a brick-and-mortar location is paying off.

"Our customers appreciate one-on-one customer service and knowledge, and we see them moving from the online experience back to one where they can see it before buying it," Brian notes. "They like to ask questions and have someone to follow up with, face to face."

That said, online orders have picked up since the company (vintagepartsofarizona.com) revamped its website and committed to keeping popular items in stock.



Customers appreciate the one-on-one service and knowledge only experienced counter people can provide. L-R: Dave Sexton, Kristina Keepers, Jake Crittenden, Hayden Benzing, and Brian Benzing.

"We added more inventory and we are working on keeping inventory current," says Benzing. "We ship daily all over the country through UPS."

As VPA approaches its 50th anniversary, the desire to get better is stronger than ever.

"We're continuing to improve on what we already do—stay on top of the trends and treat customers the way we appreciate being treated," he notes. "Customer service remains our key focus" ***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.*





GM Truck Exhaust

BORLA Performance Industries, Johnson City, Tennessee, presents its Cat-Back Exhaust system for 2020-22 Chevrolet Silverado 2500/3500 and GMC Sierra 2500/3500 pickups that improves horsepower and torque. The S-Type system delivers a classic sound without any drone or resonance inside the vehicle. It is made from T-304 stainless steel and features all-welded construction for durability and long life. A system with black chrome on T-304 tips is also available.



Transmission Installation Kits

Holley, Bowling Green, Kentucky, offers complete Transmission Installation Kits. Available for a wide variety of applications, the kits are designed to take the guesswork out of manual transmission swaps. Most kits include the correct clutch, pressure plate, flywheel, bellhousing, and block plate for specific engine and power goals.

Vintage IRS Components

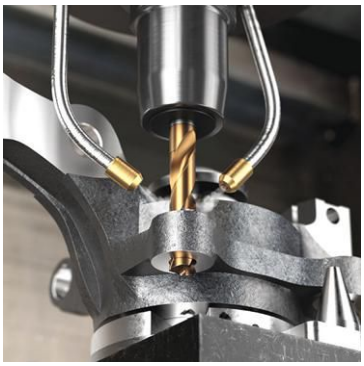
Mark Williams Enterprises, Louisville, Colorado, presents high-strength Driveline Components for vintage Corvette, Jaguar, Pantera and Viper independent rear suspension setups. The parts utilize contemporary metallurgical and manufacturing technologies to bolster the reliability of the popular rear ends, which are often used in road racing, autocross and street rod applications.





MB Exhaust Line

Akrapovič Horsham, Pennsylvania, offers its Mercedes-Benz G 500/G 550/G 63 AMG (W463A) Evolution Line (Titanium) exhaust system. Created with performance and durability in mind, the system is crafted using high-grade, durable, lightweight titanium, making it 45% lighter than stock. It is finished with specially designed tailpipes exiting on either side of the vehicle. A pair of exhaust valves behind the rear mufflers allow control of the exhaust tone, and power and torque levels are increased throughout the rpm range.



Steel Drill

Sandvik Coromant, Mebane, North Carolina, presents the upgraded CoroDrill 860 Drill, designed to improve productivity in drilling ISO P steels. The drill features a new grade with an improved multilayer physical vapor deposition (PVD) coating for enhanced wear resistance, better tool life and an overall increase in productivity. CoroDrill 860 with -PM geometry is available in standard stocked diameters from 3mm (0.12 inch) to 16mm (0.63 inch). Tailor-made tools are also available to customize the drill to match a user's specific machining requirements.

Hand Tool Sets

GEARWRENCH, Sparks, Maryland, part of the **Apex Tool Group**, presents 10 new Professional Mechanics Hand Tool Sets. Designed with no gaps in sizes or styles, comprehensive sets are available with tools including sockets and socket extensions, screwdrivers, hex and Torx bits, wrenches and combination ratcheting wrenches. The pro sets feature storage solutions that make them easy to use right out of the box.



High-Mileage Power Steering Solution

Rislone, Holly, Michigan, offers High Mileage Power Steering Stop Whine with Leak Repair. Designed as a quick and dependable solution for customers suffering steering "whine," sluggish steering or a power-steering system leak in their high-mileage cars, SUVs and light trucks, the all-new product contains a special blend of viscosity improvers, anti-wear friction modifiers and extreme-pressure performance additives. It is formulated to stop bearing, piston and valve noises inside the power-steering pump.



GM Under-Dash Clutch & Pedal System



American Powertrain, Cookeville, Tennessee, presents a HYDRAMAX Hydraulic Clutch and Pedal System for a variety of General Motors 5- and 6-speed transmission applications. The new system features an integrated under-dash hydraulic master cylinder and a bolt-in clutch pedal. The included clutch pedal allows for easy conversion to hydraulic or swapping of an automatic car to manual. Kits include a master cylinder, clutch pedal, lines and a billet HYDRAMAX hydraulic slave cylinder bearing.

Engine-Driven Welder

Lincoln Electric, Cleveland, presents the Lincoln Electric Eagle 10,000 Plus Welder with a GV750 Engine. As both a welder and a generator, the multipurpose machine offers flexibility for a variety of projects. The Eagle delivers up to 10,500W of surge power and 9,500W of continuous power. It can be used to weld and provide power for lights, grinders, plasma cutters and more. With optional equipment, the Eagle is capable of MIG or flux-cored welding, or basic TIG welding in constant current mode.



Steering Wheels



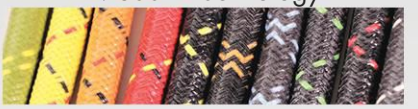
Lokar Performance Products, Knoxville, Tennessee, presents Lecarra Steering Wheels handcrafted in the USA, including Mark 4 Double Slot, Mark 9 Elegante and Banjo styles. The Mark 4 and Mark 9 are machined from aluminum and available in polished or black powder-coated finishes. The Banjo is handcrafted with polished stainless steel spokes. A variety of hub adapters allow for a virtually unlimited number of vehicle fitments, and the hand-stitched genuine leather wraps are available in 12 color options. ***TS***

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Flathead 8BA Rebuild, Part IV

Installing the cylinder heads, water pumps, distributor & more.

Build, text and photos by Mike Mavrigian

EDITOR'S NOTE: *This is the fourth installment in a five-part series documenting the rebuild of a Ford flathead 8BA engine. Part I appeared in the April 2022 issue of* THE SHOP, *Part II in the July 2022 issue and Part III in the October 2022 issue.*

CYLINDER HEADS

The Edelbrock aluminum cylinder heads (P/N 1115) are beautifully cast and CNC machined (I suspect much more precisely than Ford's original cast iron pieces). Absolutely no modifications were needed to these heads. They were truly ready-to-bolt-on examples.

After cleaning the block's head decks of oil, the Best Gaskets' large-bore composite head gaskets were carefully positioned on the decks (the flathead requires dedicated righthand and lefthand gaskets).

To maintain alignment, I temporarily installed a few 7/16"-14 studs in the block decks. The heads were carefully lowered over the guide studs. After a handful of head bolts were finger-installed, I removed the studs.



The cast iron timing cover/distributor housing was one of the few original parts we reused. This was degreased, particle-blasted and powder-coated in a black wrinkle finish.

The head bolts feature a 7/16-inch diameter with a 14 pitch. The hex bolt heads require the use of an 11/16-inch wrench.

With the new head bolt threads and bolt head undersides coated with ARP moly, thick head bolt washers were installed (the bolts were obtained from H&H Flatheads, and the washers were obtained from Totally Stainless).

All 24 head bolts (on each head) were tightened in three stages, starting at 25 pound-feet, then 45 pound-feet and finally 60 pound-feet, following Edelbrock's recommended tightening sequence.

The gasket set provided by Egge initially included copper head gaskets (P/N 521-1 & 521-2), which are intended for the standard bore size. Since I'm using plus-0.125-inch oversized Egge pistons (3-5/16-inch), I needed the big-bore head gaskets.

Best Gaskets offers both copper and graphite head gaskets, so I opted for its GraphTite set (P/N 536 G 1 & 536 G 2). To compare thicknesses, the copper gaskets measured about 0.060-inch crushed while the GraphTite gaskets measured about 0.052-inch crushed.

Strictly for the sake of appearance, I installed a set of chrome acorn covers onto the head bolt heads. These popular dress-up items provide a finished look for any flathead. However, the inexpensive set I purchased (sized for 11/16-inch bolt heads) provided an extremely tight fit, requiring big swings with a rubber mallet.

If the head bolts ever require retorquing (which they will after the first few engine runs), these decorative covers must be removed to provide wrench clearance. They fit so tight that they'll likely be destroyed during removal.

H&H Flatheads offers a much nicer set of chrome acorn covers—they're pricey, but probably worth the extra money. The only reason I installed the covers at this point was for photos. You really should wait until after initial running and retorquing.

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The crank damper/pulley is a Fluidampr unit.

DISTRIBUTOR

Addressing the increased popularity of the flathead, MSD developed a "Ready-To-Run" billet distributor specifically for the flattie.

Using the MSD Flathead billet distributor (P/N 8573), a supplied aluminum chamfered depth-seating adapter is first installed to the bottom of the distributor shaft (prior to gear installation) and secured with a set screw.

With the distributor's depth-seating adapter seated against the cam's distributor gear, the adjustable collar on the distributor shaft housing is placed on top of the flat-milled location at the front of the right side cylinder head and tightened.

This sets the distributor depth. In order to secure the distributor, a universal Ford-type distributor hold-down clamp (or a custom-made clamp) secures the MSD collar to the cylinder head.

Instead of using a bolt for the hold-down clamp, I installed an ARP bullet-nose stainless 5/16-inch stud, washer and nut for added convenience.

The MSD Flathead distributor features vacuum advance. If you wish to eliminate the vacuum setup and lock the advance, MSD supplies all of the parts needed.

I opted to do this, to both clean up the visual appearance and to provide added clearance for my planned water pump/alternator belt routing.

Installing the distributor to the original cast iron timing cover/distributor housing presented a bit of a challenge. First, the distributor bore in the cast iron housing wasn't exactly smooth. I cured this by running a hone in the bore to obtain a smooth surface.

In addition, the original cast iron distributor housing features a raised radial ridge on the rear face that registers to the front of the block. I originally installed the housing using a gasket from the Egge kit and 5/16"x18 socket head cap screws from Totally Stainless, adding a light film of RTV.

However, when I attempted to install the distributor with its gear attached, the gear teeth would only engage by about 0.300-inch (about halfway) and the distributor would not fully seat. I removed the housing, cleaned off the gasket and RTV material and installed a fresh gasket. I then loosely installed the housing (starting all bolts).

Before tightening the bolts, I installed the distributor to gain full gear engagement. I then gradually began to tighten the bolts, turning the crank (and engaged distributor) to verify smooth operation until fully tightened at 18 pound-feet.

Apparently, enough rotational play of the housing to the block is present to move the distributor angle (relative to the cam's drive gear) to cause a clearance issue.

Also, after setting the final depth of the distributor, the MSD billet clamp (the edge of the clamp rests on a milled flat portion of the righthand cylinder head) moved fully upward on the distributor shaft and would not seat on the cylinder head flat (the clamp thickness was too great), so I milled 0.125-inch of material from the underside of the billet clamp.

None of the problems can be blamed on MSD. Rather, it's simply the nature of the beast when dealing with the antiquated flathead distributor housing.

TIMING COVER/DISTRIBUTOR HOUSING

There are two different timing cover/dis-

tributor housings that apply to the full-size distributor (not the early pancake distributor), including the cast iron 8BA-6059 housing and the OBA-6059-A aluminum housing.

The type of housing needed will be based on the distributor you choose.

If using the MSD Pro-Billet Ready-To-Run distributor (P/N 8573) along with the MSD drive gear, you'll need the cast iron cover (Ford P/N 8BA-6059, used on 1949-50 engines). If you buy the MSD distributor but already have the aluminum housing, you can use the Ford gear 12390 (1951-53) or 12390-C (1949-50).

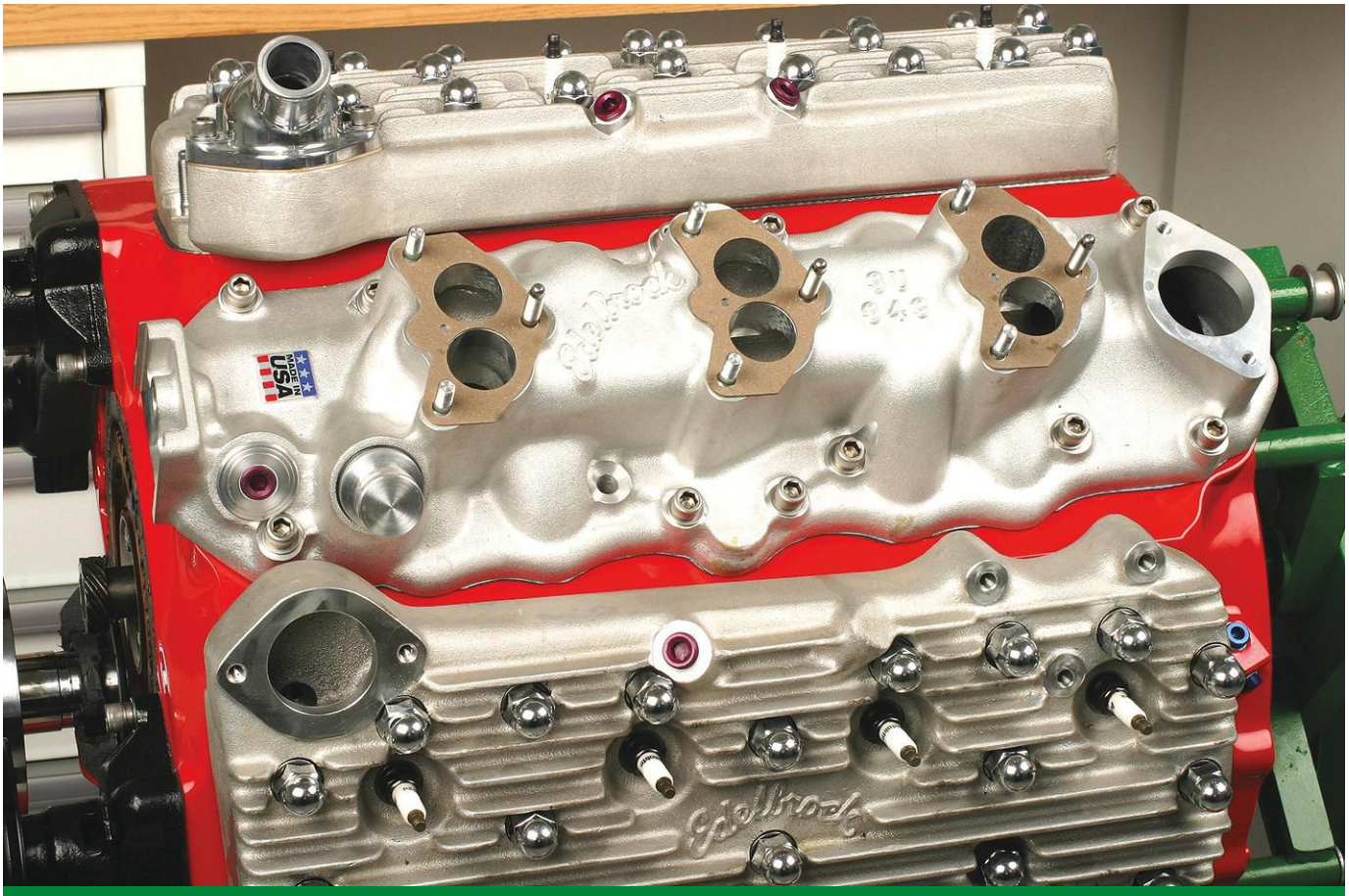
In other words, depending on which drive gear you have, you can use either cover. If you use the MSD-supplied gear with its distributor, you'll need the cast iron cover.

Note: the original distributor hold-down clamp (Ford 12270 from 1949-53) won't work on the MSD distributor because of the larger diameter of the billet aluminum shaft housing. You can make one or buy a clamp from suppliers including



The new water pumps are shown here during mock fitting. They were eventually chrome-plated at Tuff Stuff, and the right side pulley was swapped out to allow belt alignment with our new setup.





The Edelbrock tri-power intake manifold is mounted with stainless steel socket head cap screws from Totally Stainless.

H&H Flatheads and Luke's Custom Machine & Design.

The timing cover/distributor housing is attached to the block face with five 5/16"x18x1" stainless steel socket head cap screws using a kit from Totally Stainless.

Before mounting the timing cover, I applied a bead of RTV to the radius pocket for the front crank seal (since I'm using a one-piece rubber front seal). This filled any voids between the seal O.D. and the timing cover seal pocket.

I also applied a thin bead of RTV to both sides of the timing cover gasket. The female threaded holes in the block are blind, so there's no need to seal the threads from an oil leak standpoint, but I applied a drop of Valco threadlocker to each bolt's threads in addition to the stainless lock washers from the Totally Stainless kit. The timing cover bolts were snugged to a value of 15 pound-feet.

Aside from main cap bolts and head bolts, I'm using an array of stainless socket head cap screw kits from Totally Stainless. The kits are packaged in labeled, sealed bags and well-organized—all bolt diameters, thread pitches and shank lengths are correct, and all kits include any necessary lock and/or flat washers.

I also used the company's crankshaft damper bolt, which is a high-strength stainless hex-headed bolt featuring a 5/8"x18x1"shank, along with a high-strength stainless flat washer.

WATER PUMPS

The flathead 8BA features twin water pumps—one at each side of the block face. For this build, I used new (not rebuilt) pumps from Egge.

Each pump is mounted with four 3/8"x16 bolts, one of which enters through the lower radiator hose neck (don't forget this one!). I applied RTV to each side of the Egge pump gaskets, and even though the bolt holes in the block are blind, I also applied a dot of threadlocker to the bolt threads for additional security, in addition to the Totally Stainless lock washers.

These 3/8-inch bolts were tightened to 25 pound-feet (spec is 23-28 pound-feet).

Tip: Start the lower bolt that enters through the base of the lower hose neck first, then start the remaining bolts. After all four bolts have been started in their threads, begin to tighten in an even pattern to the final torque value. If you install the upper two and center bolts first, you may have difficulty in aligning the lower (inside the hose neck) bolt.

Polished aluminum and chrome pumps are available (as well as polished aluminum pulleys), but I opted to use the stock replacement-type pumps, painted in a low-gloss black, primarily to reduce build cost.

The understated black wrinkle finish powder-coated timing cover along with the black water pumps provide a nicely understated contrast to the bright red block.

As I mentioned earlier, I've since decided to have both pump bodies and pulleys fully polished and chrome-plated at Tuff Stuff's Cleveland manufacturing facility.

The original-style water pump pulleys feature different pulley diameters and offsets. The lefthand pulley offset places the belt groove closer to the block than the righthand pump pulley. In order to run a single belt, I removed the RH water pump pulley and installed a LH pulley to the RH pump.

In this way, both water pump pulleys feature the same offset, which aligns both pump pulleys to the rear belt groove on both the crank pulley and alternator pulley. Removing the original pulley from the RH pump was fairly easy using a three-jaw puller.

The measured interference fit of the pulley-to-pump-shaft was 0.0035-inch. I removed the RH pump from the block and pressed the new LH pulley onto the RH pump shaft, with the shaft impeller resting on a flat base to avoid damaging the pump seals. I purchased the replacement cast iron pulley from Mac's Antique Auto Parts.

Note: Your choice of distributor will also dictate water pump pulley selection. Installing LH pulleys on both pumps places the belt in line with the rear crankshaft pulley groove and closer to the block. If your distributor features a vacuum advance housing, this may create a belt interference with the vacuum advance.

Since I removed the vacuum advance from my MSD distributor (and used MSD's supplied advance lockout kit), I was able to use the rear crank pulley groove and the set-back LH water pump pulleys.

If you encounter belt-to-distributor interference, simply install RH pulleys on both pumps and use the front groove on the crank pulley. The RH pulleys feature less offset and place the belt further away from the block, aligned to the rear groove on the crank pulley.

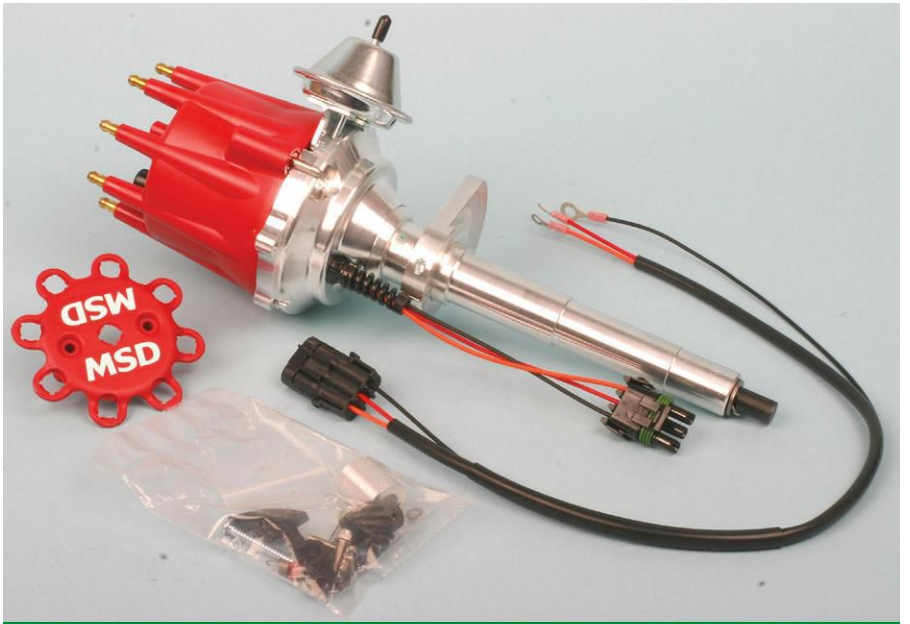
INTAKE MANIFOLD

While a variety of intake manifold brands and styles are available for the flathead, for this build I used Edelbrock's new triple-deuce aluminum intake manifold (P/N 1109), a reproduction of Edelbrock's classic Model SU-349.

Edelbrock currently offers several intake manifolds for 1939-48 and 1949-53 flatheads, for single three-bolt, dual three-bolt, single four-barrel and triple three-bolt carbs. The three-bolt carbs that apply include the Holley 94, Stromberg 97 and the Demon 98.

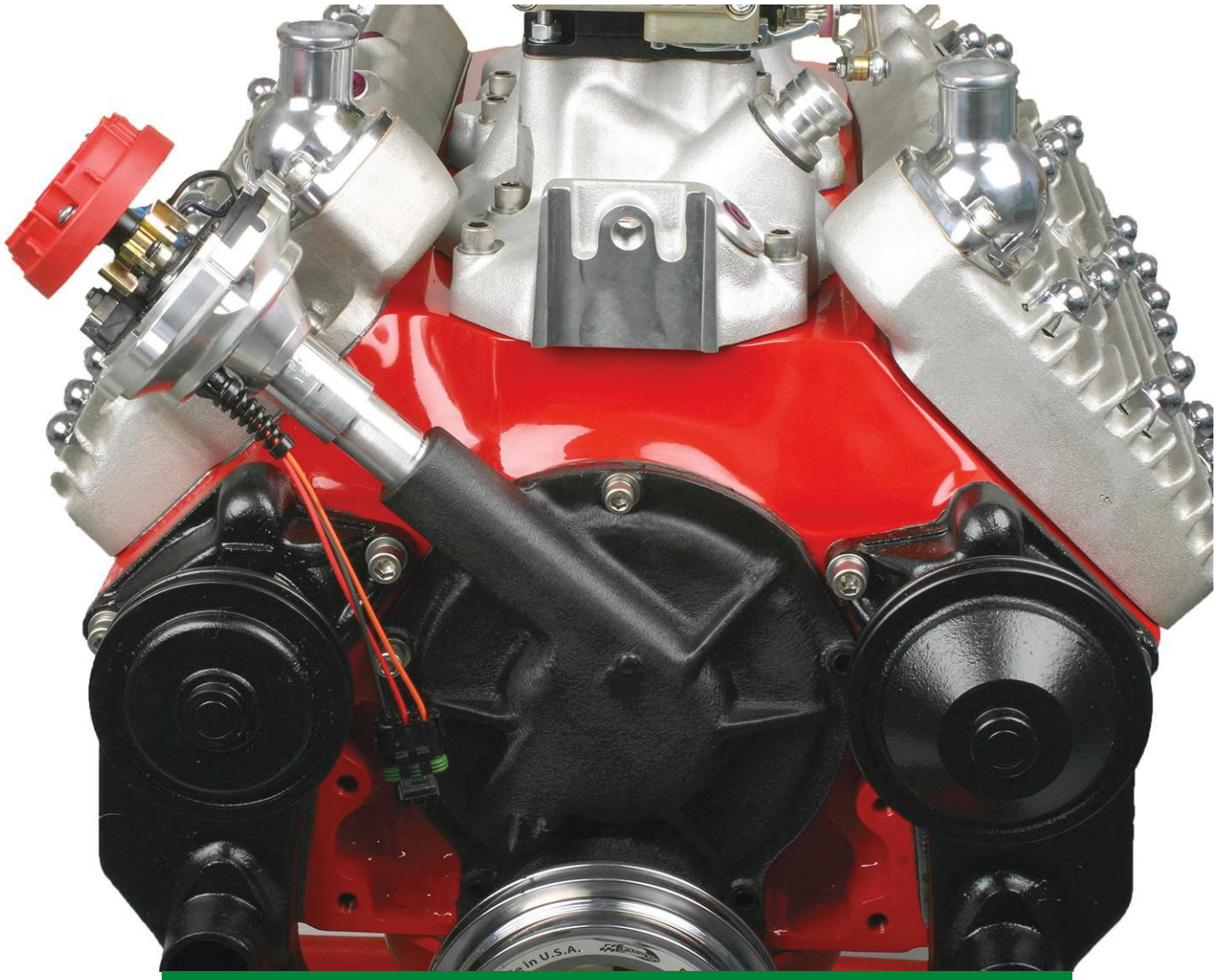
Our block's top deck features fourteen 3/8"x16 bolt holes for the intake manifold. However, the new Edelbrock manifold features 15 bolt holes, with three holes facing bare undrilled locations on the block's manifold deck.

This does not mean that the manifold is incorrect. Ford had so many versions of this bolt hole layout (early and late versions of both 1939-48 and 1949-53) that this is common. I spoke with Edelbrock technicians who assured me that this is



MSD's billet "Ready-To-Run" distributor.





After setting the distributor depth, a locking collar was installed to retain the proper mounting depth.

nothing to worry about—simply use the holes that align.

In this particular build, the unused manifold bolt holes include the second-from-front on the left side and the second and third holes on the right side. For the sake of appearance, I filled the manifold's unused bolt holes with 3/8"x16x1/2" stainless steel socket head cap screws and stainless steel mil-spec flat washers, secured with RTV.

Before installing these dummy fasteners, I punch-marked each inside the female hex drive for easy identification. This provides a reference in the future during any manifold servicing and/or bolt retorquing so that I avoid disturbing these dummy fasteners.

Note: Before installing the intake manifold, install the OE crankcase breather tube in the tube pocket located in the right front of the lifter valley (if you plan to use the OE-style road draft tube).

The valley tube is 5.5 inches long. The distance from the tube's pocket bottom ledge where the tube will rest once tapped into place to the top block deck is approximately 5.5 inches, and the pocket depth is approximately 0.5-inch.

Theoretically, the top of the tube should be about flush with the block's manifold deck. Check to make sure that the tube does not protrude above the deck, as this will prevent manifold seating on the block deck.

Since I decided not to use the OE-type draft tube and breather—opting to vent the crankcase using a rear-mounted breather instead—I saw no reason to install the vertical tube in the valley.

One manifold bolt location (right side, second-from-front adjacent to the carb base) features a milled entry path for the right-side carburetor base bolt. However, the cut wasn't really relieved with enough height to provide clearance to install this bolt, so I relieved the cut about 0.5-inch higher, which allowed the installation of the 3/8-inch socket head cap screws.

The other option would have been to use a 3/8"x16x 2.25" stud at that location, but removing the extra aluminum from the intake was a quick and easy job using a 3/8"x13 mini pneumatic belt sander.

Using a manifold gasket from the Egge gasket kit, I mounted the intake manifold using a 3/8"x16x 1.5" stainless steel socket head cap screw kit from Totally Stainless. All bolts (with threads coated with ARP moly) were tightened to a value of 20-25 pound-feet.

In terms of the tightening sequence, start at the center area and work your way outward in a crisscross pattern. I tightened the intake bolts in two steps, starting with

a value of 12 pound-feet and final-tightening at a value of 24 pound-feet.

Edelbrock recommends using a Fel-Pro intake gasket (MS2853). Apply Edelbrock Gasgacinch sealant (P/N 9300) to the engine block mounting surface, allowing the sealant to air-dry before installing the intake gasket.

The front left of the manifold features two bores that are open to the crankcase. The front bore was originally designed for the road draft tube, and the second-from-front bore was for the original-style breather tube and breather cap assembly.

Since I planned to install a stack breather tube at the rear mechanical fuel pump location, I plugged the two front bores. The front bore measures 1.243-inches I.D. and the second bore measures 1.370-inches I.D.

Using a piece of aluminum round bar stock, I made two plugs for these holes on my lathe. The front plug measures 1.240-inches O.D. by 0.880-inch long, with two O-ring grooves that were cut 0.135-inch wide by 0.123-inch deep. This plug accommodates a pair of O-rings that measure 0.135-inch cross-section by 1.140-inches O.D.

The next bore (original breather bore) plug was 1.870-inches long. I machined a knob for future removal. The shank length was 0.827-inch long. I cut two groves in this plug as well, at a width of 0.135-inch and a depth of 0.144-inch.

The O-rings measured 0.135-inch (cross-section) by 1.40-inches O.D. These plugs provide a snug fit for sealing and are removable. I know that I could have simply installed a couple of expansion plugs, but I like playing with the lathe!

To provide the crankcase with a breather as well as an oil-fill location, I installed a tall breather assembly (P/N FJ-44, purchased from Flathead Jack) at the rear of the intake manifold at the location that would originally have accommodated the mechanical fuel pump. This provided the ventilation function while cleaning up the engine by eliminating the original front-mounted road draft tube and breather tube units.

The breather assembly consists of an aluminum billet-machined base that bolts to the intake manifold using a pair of 5/16"x18x1" stainless steel socket head cap screws with a stock-type fuel pump gasket between the intake and the breather base.

The chrome-plated breather tube locks into the base via a two-eared engagement similar to a radiator cap engagement. A rubber gasket is located between the base and tube for compression retention.

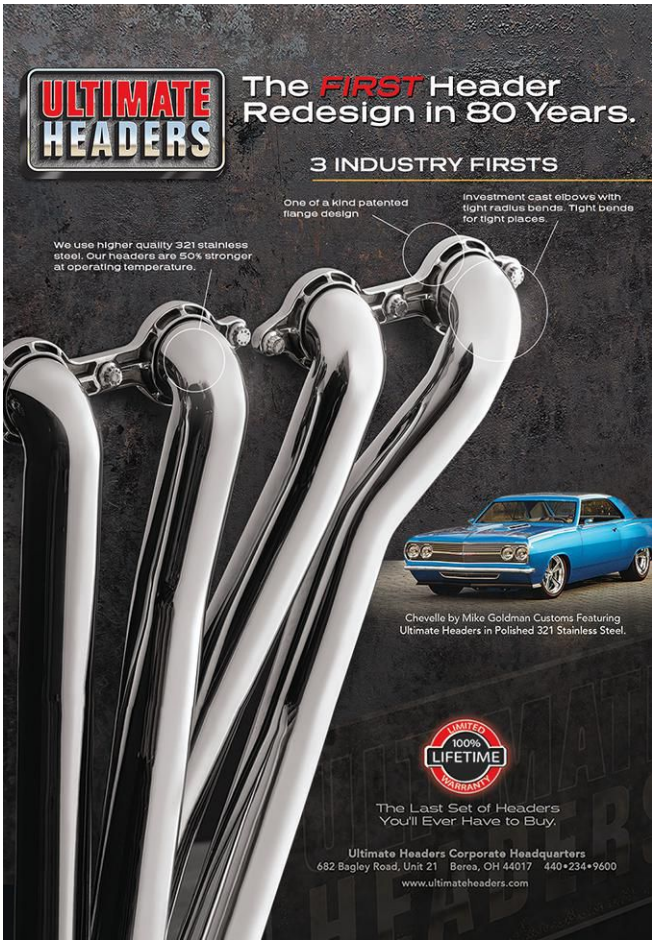
The chromed breather cap then locks onto the top of the tube in a similar manner. This will serve as both a crankcase breather and an oil fill location.

Next time we'll wrap it all up. ***TS***



MIKE MAVRIGIAN *owns and operates Birchwood Automotive in Creston, Ohio, where he builds custom engines and street rods, and performs vehicle restorations. He has written thousands of technical articles, as well as nine books on automotive technology during the past 30 years. Mike can be reached at (330) 435-6347 or birchwdag@frontier.com. Visit Birchwood's website at birchwoodautomotive.com.*







Chevy LT Dry Sump Packages

Aviaid Oil Systems, Chatsworth, California, introduces two new Dry Sump Packages for the Chevrolet LT engine family. Benefits include eliminating power-robbing windage; assuring a constant supply of lubricant during hard acceleration, braking or cornering; and providing a regulated flow of cool, clean oil to reduce engine wear. The low-profile oil pan allows for lower engine placement. Block-hugging packages are offered for both lefthand and righthand pump installations, available from three- to six-stage designs.



High-Flow Check Valve

Improved Racing, Orlando, presents a new, high-flow, low-restriction Check Valve. Based on a design used in military jet turbines, the valve features a flapper that swings completely out of the fluid's flow path for virtually no additional flow restriction. The internal geometry of the check valve body is based on a math model that presents the lowest possible pressure drop. Each part was completely designed and optimized using commercial-grade CAD and flow simulation software.

Mustang Flex Fuel System

Advanced Fuel Dynamics (AFD), Troy, Texas, presents its new ProFlex DX Flex Fuel System for 2018-up Ford Mustang GT and Mach 1 models. The plug-and-play system utilizes patented technology specifically developed for Ford's dual-injection 5.0L Coyote engine. A naturally aspirated test car showed 40 additional wheel horsepower on E85 with no tuning or bolt-on upgrades. Installation takes about an hour with fully modular connectors and quick-connect fuel lines, as well as a smartphone app to monitor performance.





Sprint Car SBC Pistons

JE Pistons, Cypress, California, offers ASCS 360 pistons for small-block Chevy engines. Designed specifically for the demanding conditions of ASCS Sprint car racing, the pistons are engineered, forged and machined in-house in the USA using 2618-T6 aluminum. The SBC pistons are offered in a range of bore sizes from 4.020 to 4.165 inches and can be used with several different sizes of combustion chambers to achieve desired compression ratio. A specially designed skirt shape reduces piston knock at TDC and BDC, improving ring seal.

Heavy-Duty Engine Oil

Shell Lubricants, Houston, introduces Shell Rotella T6 10W-30 full-synthetic heavy-duty engine oil. Designed to provide the benefits of a full-synthetic engine oil in the fastest-growing viscosity grade for diesel-powered vehicles, the versatile oil offers fuel economy benefits and engine protection. Its formulation delivers improved wear performance compared to conventional and synthetic-blend Shell Rotella 15W-40 and 10W-30 products.





LS Serpentine System

Kwik Performance, Springfield, Missouri, offers a space-saving Serpentine Drive System that allows the installation of Chevrolet LS engines into early street rods. Systems are available in configurations from alternator-only to more complete packages that can add power steering and air conditioning. The total system includes a new harmonic balancer and water pump. Builders can customize the bracket system, with variations to match any of the three Chevy LS belt paths.

Blower

Blower Drive Service, Whittier, California, presents its 1471 Black Out Blower, designed to deliver performance, strength and appearance improvements. Proven on land and water, the 1471 is a popular choice for street and show machines and is 100% made in the USA from high-quality billet aluminum. Available in several performance stages, kits can be purchased in hard black anodized or fully polished finishes. The units are offered in standard helix or Hi-Helix configurations and Stage II, Stage III and Stage IV models are available.



GM Dual-Valve Spring Kits

Livernois Motorsports & Engineering, Dearborn Heights, Michigan, offers Dual-Valve Spring Kits for Gen 3/4/5 LS and LT GM engines. Using the latest manufacturing technologies, practices and materials, the USA-made springs provide improved lift capabilities and pressures to allow for more aggressive cam profiles and are rated up to 0.700-inch lift while still being 0.100-inch from coil bind. Two retainer options are available: steel retainers with OEM-quality locks, or titanium retainers with high-strength steel locks for maximum durability and stability.



Line Connector Kits

AirSept, Atlanta, presents Smart Splice Fluid Line Connector Kits. An easy and economical way to improve repair turnaround, the connectors enable quick, durable repairs to A/C, transmission and power steering lines without adhesives or special tools.



Universal Clamps

Pro-Werks, Muskegon Heights, Michigan, presents Universal Clamps that mount to flat surfaces or tubing. Available in several sizes, the clamps can be used to attach add-ons including fuel pumps, filters, exhaust tubing, fluid reservoirs and accessory equipment.





SBC Competition Piston Kit

MAHLE Motorsport, Fletcher, North Carolina, presents a Small-Block Chevy 23-degree USRA Factory Stock PowerPak Piston Kit designed to meet all USRA Factory Stock rules. PowerPak kits are available for 357-, 359-, 361- and 362-ci engines and include a 1.5, 1.5, 3.0mm file-fit performance ring set and heavy-duty steel wrist pins. The 23-degree SBC forged pistons are manufactured from high-strength 4032 aluminum alloy and have a four equal valve relief design.

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Tuners Showcase Integra's Potential

Acura has partnered with three top tuners to showcase the personalized performance potential of the next-generation Integra and celebrate the return of the iconic nameplate to its lineup.

DAI YOSHIHARA

Build by Evasive Motorsports

Based in Southern California, Yoshihara is a professional driver from Tokyo with notable motorsports accolades including a Formula DRIFT championship and class wins at the Pikes Peak International Hill Climb, 25 Hours of Thunderhill, Global Time Attack and Super Lap Battle.

His motorsports roots are clearly reflected in his project Integra, which includes a full roll cage, racing seats, adjustable suspension and racing slicks.

"Growing up in the 1980s and '90s, Integra was always one of my favorite Acuras, so it's such an honor to get to build a brand-new 2023 Integra," Yoshihara says. "I wanted to take the sporty theme from the iconic DB8 Integra and fuse it into my build."

SARA CHOI

Build by Tony Star Performance

Born and raised in Honolulu, Choi began her automotive career at Sonic Motorsports, a well-known tuning shop in Hawaii, at age 15. Now living in Los Angeles, the car enthusiast, drifter, model, host and actor is connecting the automotive community with her passion for art, music, fashion and gaming.

An artistic approach to tuning is exhibited in her custom widebody.

"My favorite part of being a car builder is that you get to express yourself however you want, especially when you're building a car as exciting as the next-gen Acura Integra," Choi says. "It's a thrill building my own version of such an iconic car."

COCO ZURITA

Build by Autotuned

From Santiago, Chile, pro BMX athlete, car builder and amateur drifter Zurita has competed in over a dozen X Games with multiple podiums. Now living in Southern California, a love of action sports competition has inspired the design of his project Integra, which includes a coil-over suspension, carbon bodywork and a custom wrap designed by artist Andreas Wennevold.

"It's a dream come true to be one of the first builders on the planet to get their hands on the new Acura Integra," Zurita says. "We grabbed some inspo from the NSX GT designs and added some race car features to help bring in my own personal style and achieve this new look for the next-gen Integra." ***TS***

Daijiro "Dai" Yoshihara, Sara Choi and Coco Zurita have created personal interpretations of their ultimate 2023 Acura Integras, adding personal style, power and performance touches.



Dai Yoshihara


Sara Choi


Coco Zurita

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