

# TECH: MAKE MINE MODERN

**EVERYTHING YOU NEED FOR GREAT MUSTANG DRIVELINE UPGRADES (AND SERVICE!) ALL IN ONE STOP**



Text and Photos by Jim Smart

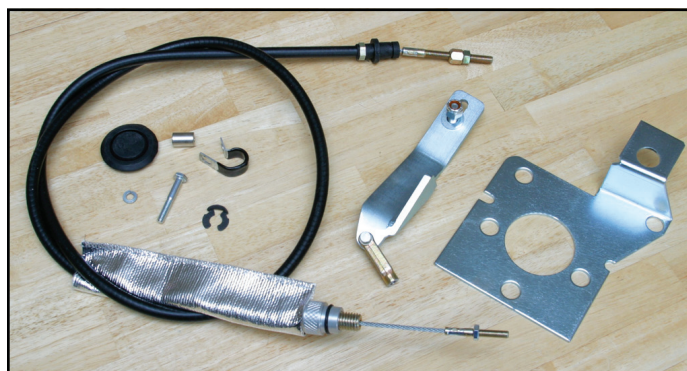
**W**hen Ford first fit new Mustangs with five-speed overdrive transmissions in mid-year 1983, it was the beginning of less wear and tear and improved fuel economy thanks to that extra set of cogs. What's more, with 3.08:1 or 3.27:1 rear end gears, you could go gangbusters in gears one through four and slip smoothly into fifth for low rpm highway cruising.

As new five-speed Mustangs became the norm in the years to follow, classic Mustang owners began to wonder how they could also reap the benefits. T-5 five-speed conversion kits entered the market; however, they were not complete kits. There were always parts you had to chase through another source in order to get your Mustang back on the road.

Bruce Couture, who has an extensive engineering background, founded Modern Driveline to provide vintage

Mustang enthusiasts with complete five-speed conversion kits and the smooth function of easy-to-install cable clutch conversion packages. He didn't do this with an eye on the fast buck, but to make it easier for fellow enthusiasts to step up to overdrive and smooth shifting in a weekend. Bruce saw his company as an opportunity to serve enthusiasts with not only great driveline products, but also the best technical support in the industry.

For going on two decades, Modern Driveline has been helping vintage Mustang enthusiasts convert from straight drive automatics and manual sticks to the efficiency of five-speed overdrives in one stop without having to chase all over town for parts most conversion kits don't have. Everything has been thought of right down to every nut, bolt, and cotter pin, which means you can tackle this in a weekend and be back on the road Monday. **MT**



▲ *Modern Driveline's original mission consisted of five-speed conversion kits. Once it had these packages perfected, it began looking at where else it could improve the powertrain experience for Mustang enthusiasts. This cable clutch conversion kit replaces the outdated Z-bar bellcrank with buttery smooth cable function thanks to heavy-duty lined cable conduit.*



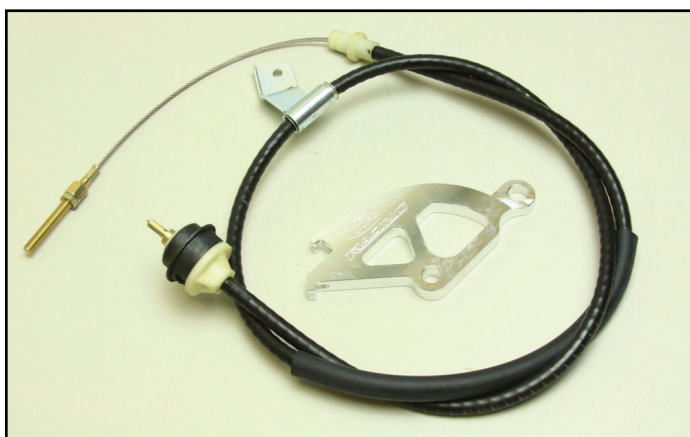
▲ This is what the Modern Driveline cable clutch conversion looks like under dash. It bolts onto the existing clutch pedal as shown offering excellent mechanical advantage.

## ALL MUSTANGS, MANY APPLICATIONS

Though Modern Driveline has its roots in classic Mustang powertrain upgrades, it serves all Mustang model years including '74-'78 Mustang II, 1979-'93 Fox, 1994-'04 SN-95, and 2005-'13 S197 Mustangs. Modern Driveline also offers kits and parts for a wide variety of vintage Fords and Mercurys—and the list of applications is growing all the time including Shelby Cobra. Come to Modern Driveline with your greatest challenges and chat with Bruce, Paul, or Will. These guys know their business and will always find a way to help.

### Modern Driveline Cable Clutch Kits

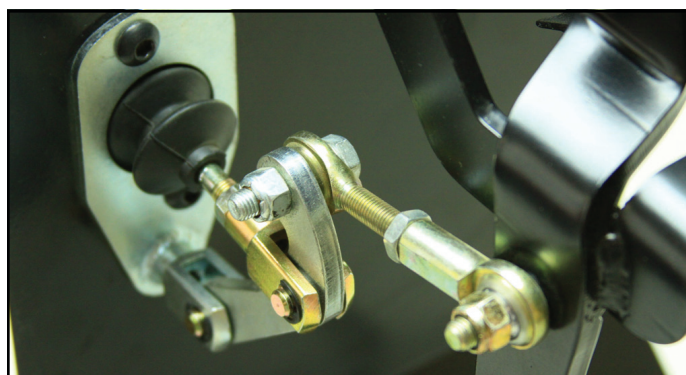
Model Years	Part Number	Price
1965-'66	MD-6566M-CC	\$259.00
1967-'68	MD-6768M-CC	\$259.00
1969-'70	MD-6970M-CC	\$259.00
1971-'73	MD-7173M-CC	\$259.00



▲ Adjustable replacement Ford Racing clutch cable kits are available for 1979-'93 Fox and 1994-'04 SN-95 Mustangs from Modern Driveline.



▲ Modern Driveline's hydraulic clutch system employs race-proven Wilwood hydraulics. Aside from minor firewall modifications on '65-'66 Mustangs, this system is a bolt-in snap. The reservoir can be hidden to where no one will know it is there. The result is the softest clutch pedal in the business.



▲ The Modern Driveline hydraulic clutch utilizes your existing clutch pedal assembly or you can order a new easy to install clutch pedal if yours is excessively worn. While you're in there, consider a pivot bearing kit from Modern Driveline, which means you will never have to replace pedal support bushings again. The beauty of this system is smooth mechanical advantage coupled with the earth moving power of hydraulics.



▲ Clutch release happens via external or internal slave cylinder. External makes replacement and service easier. Internal slave/release bearing provides more external room on installations where a clutch fork cannot be used like the T-56 six-speed.

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## FIVE-SPEED CONVERSIONS

Modern Driveline was founded to make light work of a classic Mustang five-speed conversion. This is TREMEC's T-5 transmission, which is perfect for mild mannered street Mustangs and the occasional weekend bracket racer. Not only does Modern Driveline sell new TREMEC T-5s, it also services all variations of the T-5. It can rebuild yours or send you a remanufactured unit. Doesn't matter what parts you may need for your T-5, Modern Driveline can help.

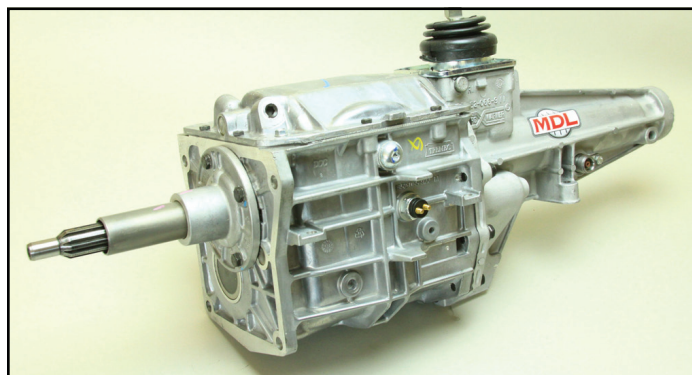
The TREMEC TKO from Modern Driveline is the clear choice when expected horsepower and torque are above 450. Modern Driveline offers a family of TKO five-speed transmissions designed for your toughest mission requirements. The TKO's internal shift rail system allows up to eight different shifter locations from 14- to 27-inches from the bellhousing. There's even an optional shifter offset that allows two-inches to the left or right of centerline to meet your individual driving requirements. There are provisions for back-up light and neutral safety switches along with dual speedometer pick-ups for electronic or mechanical.

What makes the TKO-500 (500 lb-ft torque capacity) and TKO-600 (600 lb-ft) transmissions bulletproof is gears and shafts made from 4615 steel alloy along with a 31-spline output shaft that can take extraordinary punishment. The TREMEC TKO series is a natural evolution of the TR-3550. TREMEC looked to consumers and dealers for feedback taking the 3550 to the next level in its TKO. There isn't a more durable five-speed transmission out there for Mustangs.

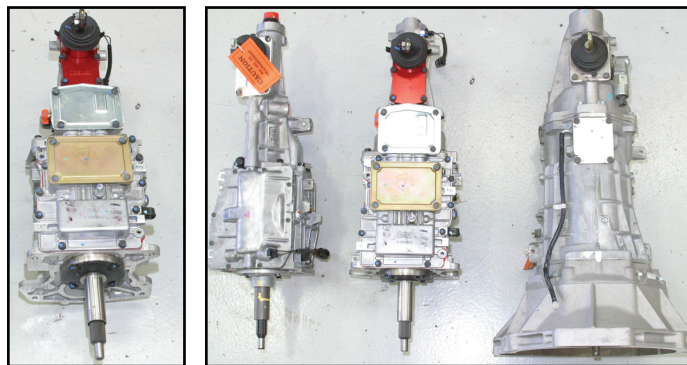
### TREMEC TKO From Modern Driveline

Model	1st	2nd	3rd	4th	5th	Reverse
TKO-500	3.27	1.97	1.34	1.00	.68	3.00
TKO-600	2.87	1.89	1.28	1.00	.82	2.56
TKO-600	2.87	1.89	1.28	1.00	.64	2.56

If you didn't think the TKO could be made better, Modern Driveline has more in store. Bruce tells *Mustang Times*, "Several upgrades are available from Modern Driveline including carbon fiber synchro' rings, shifter rods, polished gears to reduce friction (heat and power loss), and even cryogenic treatment of gears for additional torque capacity."



▲ The TREMEC T-5 is torque rated to 330 lb-ft of twist. This makes it optimum for classic and Fox Mustangs with mild small-blocks and sixes. Modern Driveline makes it possible to put a T-5 behind your 170, 200, or 250ci six.



▲ (L) The TREMEC TKO from Modern Driveline is a natural evolution of the TR-3550 five-speed and offers 600 lb-ft torque capacity. (R) Here's the TREMEC family of performance transmissions from Modern Driveline—from left the World Class T-5, TKO, and T-56 Magnum.

## TREMEC T-56

TREMEC's T-56 six-speed offers two overdrive ranges for a wide variety of driving experiences. We put one of these in Project Reclaim from Mustangs Plus and found the two overdrive ranges helpful on the open road—and with 3.89:1 rear end gears. The T-56 mandates transmission tunnel modifications for clearance. However, if you're stepping up to a six-speed, you're not concerned with originality.

The new TREMEC T-56 Magnum XL (pictured) is a drop in replacement for 2005-'13 Mustangs with TREMEC and Getrag boxes where improved drivability and sixth gear are desired. Modern Driveline has everything needed to put the Magnum XL in your S197 Mustang.

## CLUTCH TECH

Modern Driveline is a brain trust of technical information because this is what they do. They also race and test what they sell. We learn from Bruce Couture there's a huge difference in clutches. You need to know all about clutches before buying one. Classic Mustangs were originally fitted with three-finger clutches from the factory. Through the years, three finger Long style clutches have been replaced with three-finger clutches and the cycle of misery (and failed left knee joints) continues.

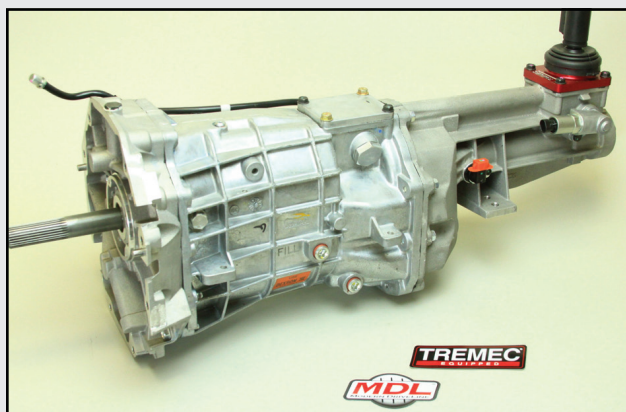
From a pedal effort and durability standpoint, the diaphragm clutch is the better choice according to Bruce. There are fewer moving parts along with the reputable Superior Clutch name. "We offer our customers a complete line of Superior Clutches," Bruce comments, "with each being handcrafted and extensively tested and inspected before it leaves the factory."

When it comes to high-performance Kevlar clutch discs, Modern Driveline refuses to cut corners in the interest of profits, "Our Kevlar clutch frictions are nearly 100-percent Kevlar unlike manufacturers out there who claim Kevlar, but are only 10 to 20-percent Kevlar impregnated," Bruce tells *Mustang Times*, "Our Kevlar clutch disc may well be the last clutch you ever buy because it is that durable. It will stand up to a lot of punishment. We carry everything from mild to wild including performance clutches for Ford sixes."

## SIDEBAR

### TREMEC TRANSMISSIONS

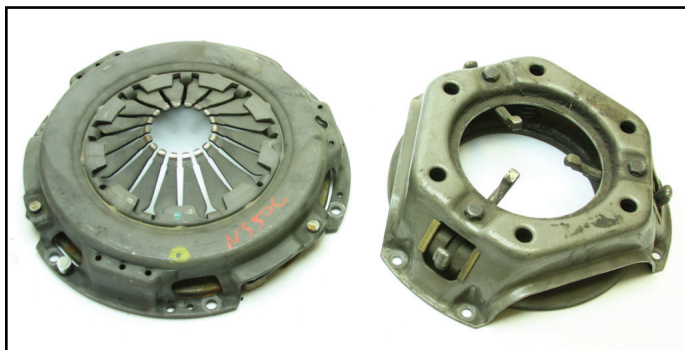
Modern Driveline, one of very few TREMEC Elite dealers who work directly with TREMEC, has a complete line of new and remanufactured transmissions in stock or for special order including T-5, TKO-500, TKO-600, T-45, T-56 Magnum and Magnum XL. The new T-56 Magnum XL for S197 Mustangs eliminates problematic semi-remote shifter issues with 2005-'12 Mustangs because the entire shifter system is integral to the transmission offering crisp, precise shifting.



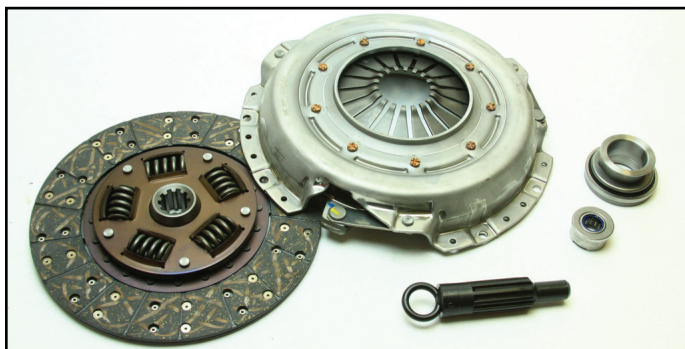
▲ This is TREMEC's new T-56 Magnum XL six-speed for S197 2005-13 Mustangs for under \$5000, which includes everything you need to complete the conversion. What you get from the Magnum XL is OEM reliability and direct shifting coupled with the brute strength of a TKO for world beating Mustang performance. No sloppy incomplete shifts, but instead smooth shifts whether you are upshifting at warp speed or shifting down into a tricky hairpin turn.



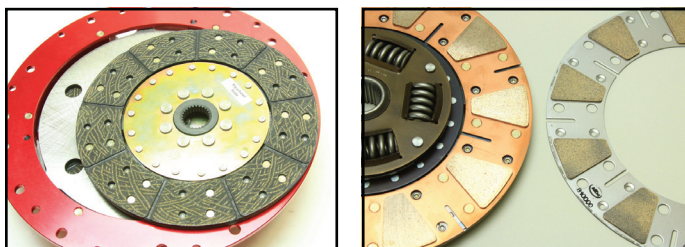
▲ Each of the TREMEC boxes including the T-56 Magnum fit classic Mustang shifter locations perfectly. Modern Driveline has all of the transmission crossmembers necessary to get this swap accomplished in all Mustang generations.



▲ On the left is a conventional diaphragm-style clutch. On the right is a Long-style three-finger clutch. Where these clutches differ is spring pressure. The three-finger clutch calls for great pedal effort because you are fighting great spring pressure. Diaphragm-style clutches offer great gripping power without pedal effort. What's more, by their very design, they offer smooth engagement.



▲ This is Modern Driveline's stock replacement diaphragm clutch from Superior, which has a higher torque capacity than stock. What makes it a good investment is close attention to detail in manufacturing where each clutch goes through a series of tests and inspections to ensure durability. And because Superior is confident of its process, you have a one-year warranty for workmanship and defects from an industry leader. Bruce adds, "Most clutch manufacturers don't offer a warranty at all."



▲ The McLeod RST/RXT twin-disc clutch from Modern Driveline is intended for street and race enthusiasts and priced for most budgets. This organic friction clutch can handle 800 horsepower and remain quite streetable with unequalled smoothness. Nice part about the RST/RXT is its ability to bolt up to a stock flywheel because it employs a multi bolt pattern. For S197 Mustangs, the stock flywheel must be replaced due to differences in the center bolt valley diameter.

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## SHOPPING CLUTCHES

When you are shopping clutches, you want to think about flywheel and bellhousing sizes because this is an easy place to miss. Most classic Mustangs have a 157-tooth flywheel and either 10- or 10.5-inch clutch. This should be checked before ordering your Modern Driveline clutch. If you are stumped, talk with Bruce, Will, or Paul who can get you dialed in with the right parts. Late-model 1987-'95 5.0L H.O. small-block applications tend to be 157-tooth with a 10.5-inch clutch. Modular 1996-up 4.6L and 5.4L engines sport a 164 tooth, 10.5 or 11-inch clutch. Modern Driveline can set you up with an identification chart to determine size.

And remember, if you have a 289/302ci small-block with 157-tooth flywheel, you must have a 157-tooth bell. Likewise, a 164-tooth flywheel calls for a 164-tooth bell. The larger 164-tooth won't fit in a 157-tooth bell. A 157-tooth flywheel in a 164-tooth bell will experience starter reach issues. While you are thinking about bell housings, pause for a moment to consider your application. "We offer a fulcrum kit that bolts to the inside of a vintage bellhousing with a spacer," Bruce comments, "the cable clutch bell will not fit to a classic four-speed transmission."



▲ Modern Driveline isn't a mass production shop, but more an affordable custom TREMEC transmission builder. When you ship your TREMEC box to Modern Driveline, you get your box back. Modern also has ready to go units on the shelf both new and rebuilt for your Mustang project.

## TREMEC AUTHORIZED WARRANTY SERVICE

If ever you've experienced transmission malfunction or failure, it can be very unsettling because you don't always know who you can trust. You ask all over town but get few answers. But here's the real deal. Modern Driveline is an authorized TREMEC warranty service dealer, which means you can ship your TREMEC transmission with confidence and know it will be right. What's more, Modern Driveline is a TREMEC Elite dealer, which means few know any more about your transmission than these guys.

Modern Driveline's shop offers the warmth of a Mom and Pop style business where everyone knows their job and does it to the best of their ability. And should you have a problem, you will get a familiar voice—not someone in a sales boiler room with a quota to meet. Whatever the issue, Modern Driveline will talk you through it and get you back on the road. If you're working with a local repair shop, Modern offers technician-to-technician support.

## TALKIN' ABOUT SHAFT

When you're doing any kind of driveline upgrade, consider driveshaft replacement while you're at it especially if you have a two-piece steel vibration-absorbing driveshaft (automatics only). Modern Driveline keeps steel and aluminum driveshafts in stock ready for delivery for the more common applications. It can also build a shaft to your custom order. When pressed to decide between steel and aluminum, aluminum is the better choice because, with less weight, you free up power. "Aluminum does a better job of reaching critical rpm speeds than steel," Bruce tells us, "In most cases, steel is fine for the street."

Modern Driveline also stocks everything you need to rebuild an existing driveshaft—universal joints, slip yokes, pinion yokes, seals, and U-bolts. If you are rebuilding an existing driveshaft, have it done by a trusted driveshaft shop that can check it for run out and dynamic balance. If the shop determines it is too out of specification to rebuild, contact Modern Driveline for a new shaft.

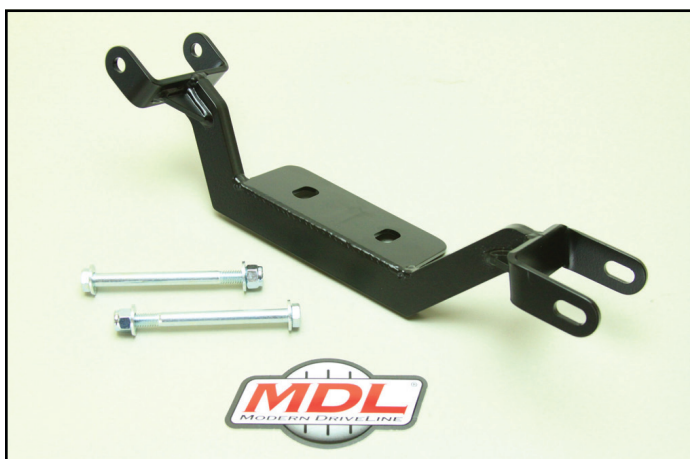


▲ Modern Driveline has an inventory of steel and aluminum driveshaft assemblies ready to ship and even more ready for installation. Aluminum offers reduced weight and faster ramp up to critical rpm. Steel is certainly stronger and arrives at your door painted gloss black. All you have to do is lube the slip yoke with transmission fluid (late model) or gear lube (classics) and you're good to go. We also stocks shafts for automatics.

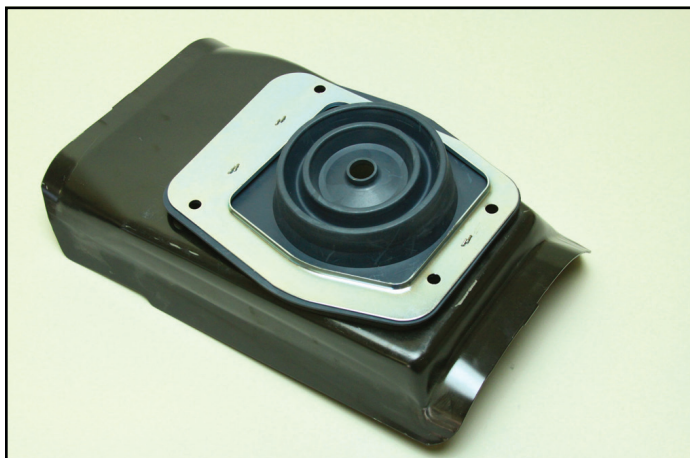
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▲ Modern Driveline also has stock crossmembers for the 1979-'93 Fox body and 1994-'04 SN-95 Mustangs.



▲ There are a lot of five-speed swap crossmembers out there for classic Mustangs. However, not all of them clear headers and other underpinnings. All of Modern's transmission crossmembers are engineered to fit perfectly and clear nearly anything you've planned for underneath.



▲ Your needs aren't always about transmissions, clutches, and driveshafts—but also shifters, boots, escutcheons, and the like. These are common wear items you replace during transmission service. Modern Driveline has most of it.



▲ One of the classic Mustang's weakest links is brake and clutch pedals. They were factory fitted with plastic bushings that didn't last, which led to excessive wear. If originality is important to you, you can weld up and machine damaged factory pedal assemblies. However, if you want precision and perfect fit, Modern Driveline has new pedals and a bulletproof needle bearing pedal pivot that will ensure solid durability for years to come.

## TRANSMISSION ACCESSORIES

If you're thinking about a transmission swap, there's probably not a more extensive inventory in the world than you will find at Modern Driveline. Bellhousings—both stock and QuickTime high-performance. Modern Driveline's own adaptors for a number of transmission and bell applications. Transmission crossmembers for classic, Fox, SN-95, and S197. Modern Driveline also keeps an extensive line of hardware for nearly any powertrain upgrade you may be doing.

## ONE STOP, MANY SOLUTIONS

Modern Driveline was founded on one basic philosophy—service to fellow enthusiasts. Bruce Couture saw a calling no one else in the industry seemed to be hearing when he founded Modern Driveline. And despite his great business success, he has never forgotten why he started his business to begin with. Each and every customer call gets personal attention. That's key. A good many of these calls and emails lead to more and more product introductions because it is all about fulfilling a need. Bruce's business policy is simple—take good care of the customer and never have to worry about profits. With good customer service and technical support, the public will beat a path to your door. It works for Southwest Airlines and Amazon and it surely works for Modern Driveline.

**SOURCE:**

**MODERN DRIVELINE**

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