



Total Control Products helps get our '70 Mustang project track-ready with new suspension

READY FOR ACTION, PART 1

By Mark Houlahan

As we've slowly improved our High School Hauler '70 Mustang coupe project, we've kept a fairly narrow focus on dragstrip performance with the ability to maintain the car's streetability (no trailers here, just a nice 45-minute ride to the track, burn some tire, and then a 45-minute ride home). Over the last year,

we've dropped the gear ratio, added stronger axles, sticky tires out back, full dual exhaust with long tube headers, a new transmission, front disc brakes, and gave the 302 a serious shot in the arm with a Summit top-end kit. The Mustang is more fun to drive, sounds better, stops better, and really moves out nicely now. The one last piece of the performance puzzle is the

coupe's aging stock suspension.

Adding horsepower to the car means the car wants to spin the tires now, as the unibody flexes and the rear leaf springs wrap up, also causing wheelhop. Lord only knows how old the shocks are, and when we upgraded the front discs a couple of issues back, we didn't like what we saw in the front suspension either (shot ball joints, an idler

arm about to fall apart, and upper control arm shafts full of slop). To get our Hauler to hook and go down the track straight—not to mention just getting to the track safely in the first place—we need to completely overhaul the car's suspension.

This month, we're going to tackle the Hauler's front suspension with Total Control Products' coilover shock conversion kit, shock tower export bracing, fender mount Monte Carlo brace, and truss brace system. TCP's coilover shock kit is a nice budget alternative to a full-on replacement front suspension system. The TCP coilover simply replaces your Mustang's (or Falcon, Comet, Cougar, Maverick, Torino, and more) shock absorber, coil spring, and spring perch, bolting into the upper control arm and secured by a special tower adapter at the top. The lightweight billet aluminum coilover shock features easy adjustments for ride quality with 7½-inches of suspension travel. Adding TCP's full complement of engine compartment bracing will help keep the shock towers in place during hard acceleration and braking and we'll also drop a new set of stock control arms in place just so the whole front suspension is up to the task.



1

The TCP coilover shocks come unassembled and will require some basic prep before they can be installed. First, a liberal coat of antiseize is applied to the shock's threads in preparation for installing the adjustable spring seat.



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Thread the spring seat onto the shock from the top and follow the spring seat with the coilover spring, seating it onto the seat.



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With high-rate front springs, it's often a little difficult to install the upper spring seat. The easy solution is a spring compressor. TCP offers a nice, simple compressor that works easily by registering on the lip of the lower spring seat and compressing the spring as shown. Compress the spring just enough to slip the upper spring seat into place and back the compressor off to seat the spring fully.



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TCP's coilovers can be configured for cross-bolt mounting or for vertical mounting, which is what the Mustang uses. The conversion to vertical mounting begins with the installation of the eye bushings and a liberal application of grease.



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The TCP cross-shaft uses a large set screw to assemble the two halves. Following the directions, the two halves are chased with a ½-20 tap and then the set screw is threaded into one side. Measure the remaining set screw protruding to verify it is between 0.525 and 0.625-inch. We had to grind ours down slightly to get it within spec.

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After you have the set screw length confirmed, thread the two cross-shaft halves together until the set screw seats and measure the gap, if any. You want less than 0.070-inch gap. As confirmed here, our cross-shaft assembly was in spec.



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With the Mustang supported (we're using our in-house, two post lift and a jack stand under the lower control arm), the lower shock attaching hardware is removed, allowing the old shock and mounting cap to come out as an assembly.



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Add the aluminum crush washer to the cross-shaft half with the set screw in it and press it into the shock end. Press the other half of the cross-shaft into the opposite shock end, and while applying pressure to the cross-shaft, thread the two halves together until they seat and then tighten the two halves until they're even.



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The stock coil spring requires a spring compressor for safe removal. We're using an internal compressor from Snap-on to safely compress the coil. While not necessary, we removed the shock tower bump stop cover for better photography and access.



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Once the coil is compressed and the pressure is off of the upper control arm, the upper arm can be unbolted to give the spring room to be released.



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With our shocks assembled, we can now move forward with disassembly of our stock components—mainly the shock and coil spring. Remove the shock mounting cap retaining nuts (the mounting caps will not be reused). We're installing TCP's Tower Export Brace kit as well, so we're removing the stock braces at this time, too.

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The upper control arm, spindle and brakes can be pulled out of the way for the next few installation steps, just make sure you don't stress the brake hose. Unfortunately, our control arm's ball joints were shot, so replacements had to be ordered.



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A quick call to Mustangs Unlimited solved our ball joint problem. Mustangs Unlimited suggested Scott Drake's new show-quality control arms. While far from a show car, these new control arms are built with OE level steel in the right thickness with high-quality riveted ball joints—just what the High School Hauler needs!



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Back under our Mustang, the coil spring compressor is loosened to allow the spring to come out. Be sure to only use handtools and lubricate the tool's threads during operation.

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For some applications, including our '70 coupe, the upper spring locator needs to be removed before the coilover spring mount can be installed. TCP includes a spot-weld cutter to help in the removal. Simply drill out the three spot-welds, as we've done here, and then use a pry bar to separate the mount from the shock tower. Grind any remaining spot-weld burrs flush and add a shot of paint to the bare metal.

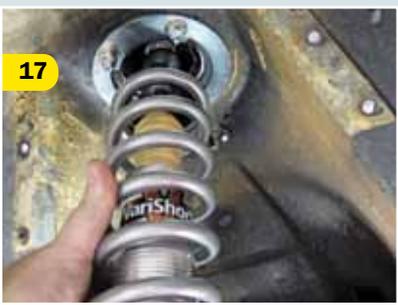


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The coilover upper mount sandwiches the shock tower. The upper plate is placed over the shock opening while the backing ring is installed from inside the shock tower. If you're installing TCP's Tower Export Brace kit as well, you'll have to decide whether you want the mounting plate above or below the coilover plate. Mounting it below, as we have, lowers the front suspension approximately another 1/2-inch.

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The previously assembled coilover shock can now be fitted to the upper shock mount. Secure the coilover with the included mounting hardware and then grease the coilover's upper pivot through the grease fitting at the very top of the coilover shaft.



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TCP offers these polished coilover mount covers if you're looking to add a little shine to your installation. They install easily by removing the coilover's grease fitting and securing the mount cover with the included Allen screw into the grease fitting hole.

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With our new upper control arm installed and bolted back into the shock tower, the final step is to mount the coilover to the upper control arm. If you're reusing a good control arm the stock spring perch will need to be removed, of course, but our new upper arm was already sans spring perch.



20

With the coilover installed you can see how simple, yet effective, the TCP coilover kit is. The double adjustable configuration of our shock setup means we have two separate adjustment knobs. We decided to face them inboard for access through the center of the upper control arm. You can easily rotate the shock body to face the knobs towards the tire if you wish.



23

While under the '70 replacing the upper and lower control arms as a safety precaution, we had a need to turn the spindles for ball joint access and that's when we discovered the High School Hauler's idler arm was shot and sans any rubber bushing, as you can see compared next to its replacement from Mustangs Unlimited.



21

Replacing the lower control arms was a given, as they were shot as well. After unbolting the strut rod, sway bar endlink and loosening the ball joint castle nut, a few nice hits with a ball-peen hammer on the spindle "eye" will shock the ball joint free. Once the ball joint "pops," you can remove the castle nut.



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The new idler arm is a direct swap for the worn out unit we found. Two framrail bolts and one retaining nut on the center link are all it takes to swap out. Don't forget a new cotter pin, too!



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The lower control arm's inner pivot bolt is all that's left to free the lower control arm. On '67 and up Mustangs, this bolt is a cam-style bolt that is used to adjust camber on the car. We're planning a full alignment when we're done anyway, but we made a note of the current position for a "ball park" to get us to the alignment shop.



25

As mentioned earlier, we're installing the TCP Tower Export Brace kit, as well as its Monte Carlo bar with truss support brace add-on. The Tower Export Brace shock tower plates were installed earlier, so now we're tackling the firewall bracket. Install the vertical attaching bolts and tighten them up just enough to keep the bracket snug.



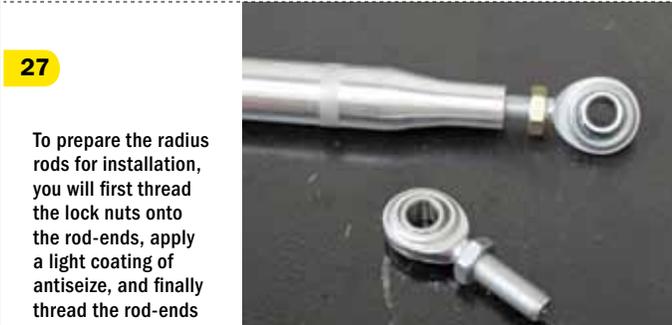
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You will have to drill the three holes for the horizontal bolts, ensuring the firewall is clear of any wiring before you do so. It'll take a second set of hands to slip the support plate up under the dash and hold the retaining nuts while you tighten the bolts from the engine bay side.



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The Monte Carlo bar kit requires carefully aligning the inner fender brackets and drilling four mounting holes per bracket to install. The Monte Carlo bar uses threaded rod-ends just like the Tower Export Brace kit and is assembled in the same manner. Note, if you're installing the optional truss support brace kit, be sure to slide the collar clamps onto the Monte Carlo bar before you install the rod-ends.



27

To prepare the radius rods for installation, you will first thread the lock nuts onto the rod-ends, apply a light coating of antiseize, and finally thread the rod-ends into the rods an equal amount of threads/turns. The zinc-colored nut is for the left-hand threaded rod-end, which is threaded into the radius rod end with the knurling on it, shown here.



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The truss support brace kit is a nice option, tying the Monte Carlo bar kit into the Tower Export Brace kit with a second pair of radius rods that attach to the shock tower plates.



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Assemble the radius rods to the firewall bracket first, and then rotate the rod (hold the loose rod-end to maintain even thread engagement) until the rod-end lines up with the shock tower mounting hole and assemble with the included hardware.

SOURCES

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The finished installation of our brace kits adds form and function to the High School Hauler's engine bay, while the coilover mount plates offer a hint that the front suspension is no longer stock. In an upcoming issue, we'll tackle the rear suspension upgrades from TCP and then hit the track. Stay tuned! **MMSE**