

TCT MAGAZINE



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1996 to early '99 4Runner CBI Front Hybrid Bumper Installation

Beau Johnston

Difficulty: 3 out of 5

This project requires cutting and welding of the frame and should only be tackled by someone with previous welding experience. Those tackling this project should wear proper personal protective equipment to help prevent injury. Do not attempt this project without a helper, or two, to prevent straining one's back by trying to hold a bumper in place while bolting it up.

Tools Required:

- Ratchet and Socket Set (Metric & SAE)
- Combination Wrench Set (Metric & SAE)
- Torque Wrench
- Soldering Iron
- Grinder with Cutoff Wheel
- Welder

Step 1: Factory Bumper Removal

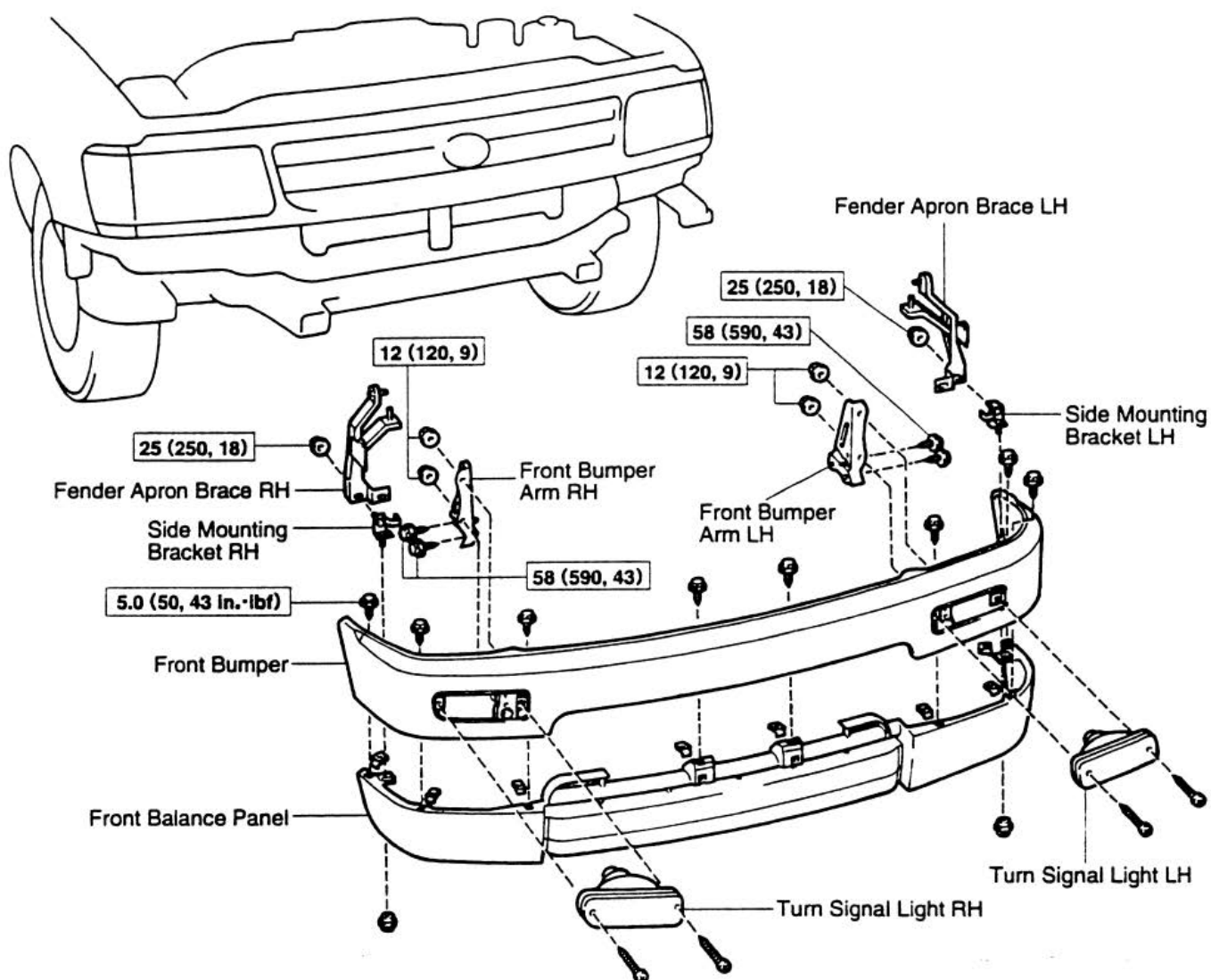
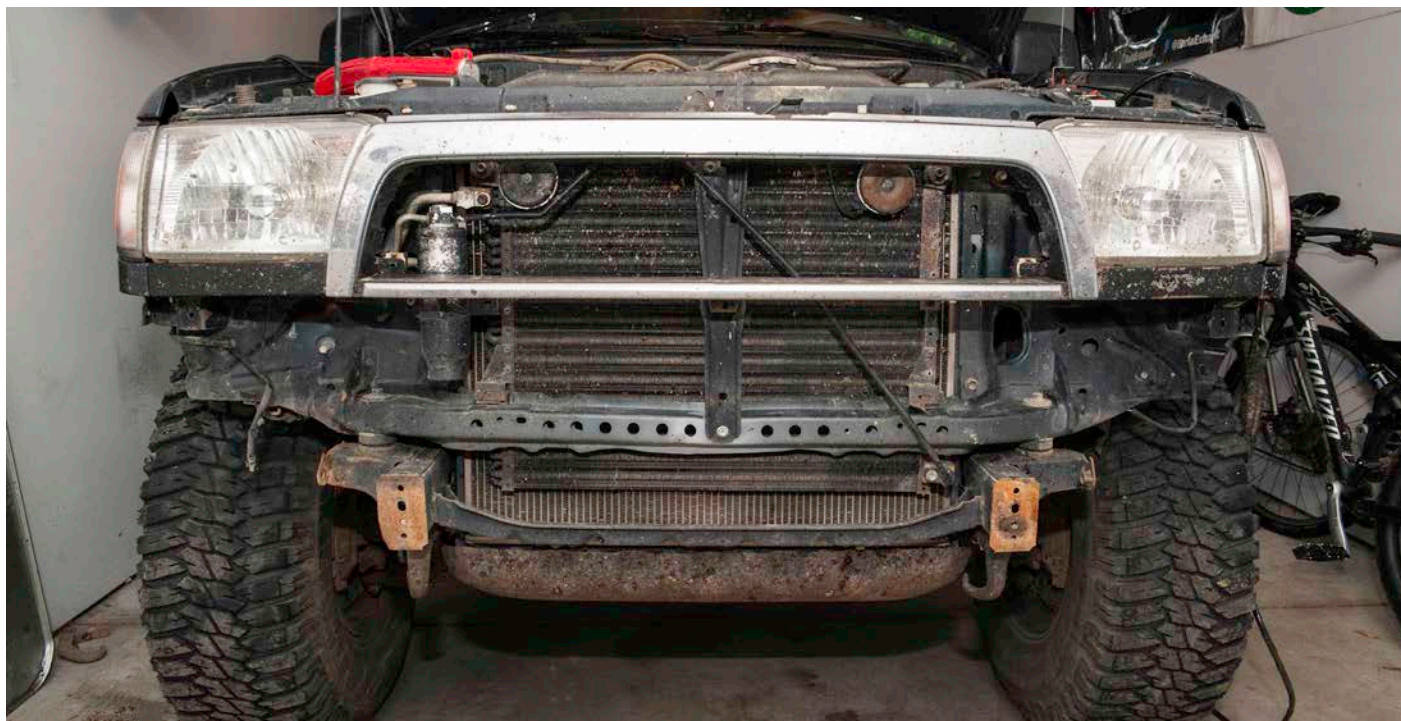
Locate and unplug the wiring harnesses from the turn signals.

Locate and unbolt the two Fender Apron Braces, there is one brace on each side. A single nut is used to connect the brace to the side mounting bracket.

Locate and unbolt the two Front Bumper Arms from the frame. There is one bumper arm on each rail. Note: Do not discard the hex-head cap screws as they will be used to install the new bumper.

With the bumper removed, locate and unbolt the two Fender Apron Braces from the inner fenders.





N·m (kgf·cm, ft·lbf): Specified torque



Step 2: Modifying the Frame

Before the new CBI Front Hybrid Bumper can be installed, the frames of 1996 through early 1999 4Runners need to be modified. These years of 4Runners had a different plate on the front of each frame rail than the late 1999 through 2002 models. *If you are reading this installation and own a late '99 through 2002 4Runner you can skip this and jump Step 3. The frame end plates need to be replaced with the new plates supplied by CBI. This is done by grinding off the welds securing the factory end plates to the frame.

Now, with the factory plates removed, temporarily bolt the new mounting plates to the CBI Hybrid Bumper. With the help of a friend, lift the bumper into place and use the Front Bumper Arm bolts to temporarily secure it in place. The new mounting plates need to be flush with the frame rails and tacked into place. Note: My 4Runner was in an accident prior to us purchasing it. This resulted in the passenger-side frame rail needing to be trimmed an extra 1/4 inch to get everything to line up properly.

With the new mounting plates tacked into place, the bumper can be unbolted and removed. The new mounting plates can now be welded into place. Once complete, the frame and mounting plates should be painted with a liberal coat of paint to prevent rust from developing.



Step 3: Bolting Everything Up

The new Hybrid Bumper can be bolted up once the paint has dried. Now is a great time to install a winch, if you are choosing to install one. CBI recommends that you torque the six main mounting bolts to 70 ft-lbf to ensure a solid connection to the vehicle.



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With the bumper mounted, the new turn signals can be installed and wired up. The factory plugs will need to be cut off of the wiring harness and soldered to the new light pigtails. Be sure to cover the wires with heat-shrink tubing to prevent corrosion.



Conclusion

Even with the extra bit of cutting and fitting required by my 4Runner's bent frame the installation went very quickly. I had the help of two friends during the project. One helped me lift the bumper into place as the second bolted everything up. This worked out rather well as the bumper needed to come on and off a few times to get the fitment just right. In all I am very impressed with the bumper's construction and I cannot wait to hit the trails to test its durability! 🇺🇸





FRAMED



Ernesto and Taisa (overlandtheamericas.com)—Taisa preps dinner on the back of their 4Runner (Sooty). The photo was taken around golden hour at the Iztaccihuatl Popocatepetl National Park in the state of Puebla, Mexico. That particular spot is called La Joya at 3,940 m / 12,940 ft. | Ernesto.

White Rim Trail Experience

(and Planning Advice)

by Scott Hunt

It's 4 a.m. the day before Christmas Eve. This might sound early, but for a snow plow driver it's more like sleeping in for 3 hours. As I quickly donned some snow boots and coat to head out into the cold, I could tell my wife was more bummed than usual about the alarm clock having gone off because this time she actually had to get up. Two months of planning had led up to this moment, and it was time to book our adventure on the White Rim Road.

Some of the trail books would suggest that you can book campsites six months in advance, but this is false. It can be done exactly four months to the day you plan to arrive. This is a very popular trail, and with only 20 campsites along the trail's 100 miles, it fills up very quick. Case in point: We had a plan B in place to run the route in the opposite direction if the two sites we wanted were already reserved. When my wife logged in to make our reservation at 0400 hours, our first choice sites were already taken and as she moved on to plan B, (more like plan D) we reserved the last two available on the route for those dates ... at 4 a.m. Next time we will be up at midnight to make our reservations.





Different types of back-country permits exist: day-use, overnight, river and special-use permits. If you intend to drive or ride the White Rim in one day, a day-use permit can be acquired at the visitor center or ranger station the day before, or day of your trip. I would not recommend doing this trail in a day, as there is far too much amazing scenery to appreciate in one continuous 11-hour drive.

We reserved our overnight permit with our campsites since the permit is required to be able to camp. *Camping in non-designated areas is strictly prohibited.* Make sure to read all the regulations and requirements for the type of permit you need. Back-country permit and campsite reservations can be made at canypermits.nps.gov.



The trail can be done in either direction: Clockwise or counter-clockwise. I can't say for sure if I would prefer one direction over the other, but we started in Mineral Bottom (counter-clockwise, plan B) and camped in two different spots along the route to make sure we saw as much as we could. Strictly speaking, this is a moderate 4WD trail that can be done in a stock, high-clearance 4WD with low-range. Aside from a few notable obstacles, the trail is easy to navigate, though I would urge caution for full-size and/or long wheelbase vehicles. An experienced driver who won't get too "twitchy" on a steep, narrow shelf-road is a plus too. Passing isn't possible in areas like the Murphy Hogback, but for the most part, you can see far enough up or down the more dangerous sections before taking your turn.

Another small concern that we read about, and actually experienced while on the trail, are trail closures. Leave yourself plenty of time to get in or out. On our second night, a windy thunderstorm moved in. For hours, the truck and roof top tent shook, while sheets of rain approached sideways like the nozzles in a car-wash. Getting any sleep was laughable. Storms can be violent in the desert, and the next morning we heard from a passer-by that the Shafer switchbacks had been closed earlier that morning due to muddy conditions. The nice thing about driving the trail counter-clockwise is that Potash Road exits just before the switchbacks where closures are common, so it provides a bailout option if you're close to the exit point. We lucked out, and were able to finish the trail via Shafer as it had re-opened before we arrived. If it rains, you may have to take out a second mortgage to get the red mud off your rig when you return home.

ATVs, UTVs and OHVs are not permitted. Motorcycles must be licensed and highway-legal. I'm sure some will find this annoying, but I couldn't have been happier as it added almost complete serenity to the outstanding backdrop Canyonlands National Park provides in spades. As we plodded along the gorgeous desert landscape, there were times when we didn't see another human for more than an hour. I was so relaxed, that returning to Moab after completing the trail



PHOTO BY ALEX MOLICK, CAPTURE COLORADO PHOTOGRAPHY



PHOTO BY SCOTT JOSEPH HUNT 2015

nearly put me on the verge of an anxiety attack. I admit to being a bit of a recluse, and there was an event going on in town.

This was a definite bucket-list item for my wife and I, as we continue to seek adventure further from our home at the base of the Rocky Mountains. This is one of the coolest adventures we have had in a vehicle and we will return to do it again. With all our back-country adventures, we strive to Tread Lightly and Leave No Trace. Our National Parks are certainly no exception, so please keep it clean, be safe and remember extra camera batteries.

Scott is a contributor for TCT Magazine and an Assistant Editor for ForgeOverland.com.



PHOTO BY SCOTT JOSEPH HUNT 2015



2015 Wild West Overland Trip

Story by Jordyn Pitts with input from Joey Pitts



PHOTO BY JOSEPH HAEERLE PHOTOGRAPHY

Catching the sunset before the super moon in Laramie, WY.

This past September, Joey and Jordyn Pitts of Potts-Stop Adventures decided to set off on a road trip to the Rocky Mountains and surrounding areas. They started their 21 day trip in Paradise, Texas and traveled with their two dogs through eight states in their 2014 Toyota Trail Edition 4Runner. While on their journey, they primarily chose to camp and live out of their Little Guy, Boss Edition teardrop camper. This is the first of a 2-part series.

Planning a twenty-one day road trip can be a bit overwhelming. Actually, it's incredibly overwhelming. It took me several hours and many weeks to figure out the major places we wanted to visit. After what seemed like an eternity, it was finally time for us to leave our little town of Paradise, Texas and head out to the Wild West! We began our 21-day, overland anniversary adventure in our newly-lifted, Toyota 4Runner, which totes along our teardrop camper.

Our first main destination was the never disappointing Salida, Colorado. One of my favorite things about a road trip is trying out great new food destinations along the way. If you ever find yourself in Salida, don't leave before you try out Moonlight Pizza. Add cream cheese to your pie; you will have no regrets. After lunch and a stroll around the town with the pups, we made our way to the KOA campground in Buena Vista, Colorado. This campground boasts gorgeous views of the Collegiate Peaks mountain range. Just wait until sunset; you won't be sorry.

After setting up camp, I told Joey I had an anniversary surprise for him. Quick side note: Every vehicle we own somehow makes its way off-road not too long after we purchase it. The 4Runner is mine and I make every effort I can to let Joey know that. I don't care if it's meant to go off-road, I don't want it scratched, dented, dinged, etc. So when Joey decided a month prior to our trip that we needed to lift the rig (3-inch Old Man Emu Medium Duty springs—rear and 2.5-inch TOYTEC—front) and replace the original highway tires with the all new BFGoodrich A/T KO2's, I knew the inevitable was coming. I decided to embrace the inevitable and told him we had a mini off-road adventure we should go on; The Aspen Ridge Trail.

My research led me to believe this trail would be a beautiful way to see the changing aspens and boy, was Google right! Like any responsible adventurer, we left with less than a quarter tank of gas and hoped for the best (just kidding, we don't recommend that). The trail actually dumps out back into Salida, but we didn't mind backtracking, especially without the added weight of the trailer. This was essentially the maiden voyage for the 4Runner. I would recommend airing down a bit because of the trail's rocky nature, but this trail could easily be done (weather permitting) in almost any vehicle with a slight amount of clearance.



Stopped along the scenic Aspen Ridge Trail near Salida, CO.

The views were killer. The dogs made a couple of new cow friends along the way (Be aware! They often stand in the road.) and the trail was only a couple of hours long. The sunset near the end of the trail was such a beautiful sight and we were able to make it to the town of Salida around dusk.

The next day we tried out a local coffee shop and found our way up to the Mount Princeton trail head. Of course we put it in four-wheel-drive and drove as far up as we could. For whatever reason, hiking a 14er has always been on my bucket list. I am in no way an avid hiker but I still just couldn't pass this opportunity up. If you think the Collegiate Peaks are daunting from the town of Buena, I dare you to make your way past the tree line. That's a long scramble up for a bunch of low-altitude Texans. We made it way further than we ever imagined we would, but near the summit we decided to turn around because the dog's paws were getting raw. The dogs had so much energy left but we bipeds were beat. What better way to finish off the day than dinner with a new-found Toyota friend—shout out to Matt Berzon and his 4Runner! Definitely check out Eddy Line Brewery if you find yourself in Buena Vista, and grab a pumpkin beer and a burger.



4Runner taking on the Mt Princeton trail near Buena Vista, Co.



We made it to the top of Mt Princeton!

The next few days we found ourselves traversing through central Colorado and on to the Rocky Mountain National Park. This was one of my favorite days of the trip. The views were unbelievable everywhere we turned. The drive through RMNP way exceeded my expectations. The sun was starting to set when we drove through and the light bouncing off the mountains was to die for. The end of the park road left us in Estes Park which we had originally planned to stay in. However, a short drive through the downtown area had us hightailing it out of there away from the masses. We decided to head on to our next destination in

Ft. Collins, Colorado. We spent a day or two roughing it in a hotel and checking out the stores and eateries. If you have the chance, make sure to stop by the JAX Outdoor Store - (leave your wallet in the car). Don't forget to grab some grub at any of the several restaurants around town; our favorites are Yeti Bar and Grill, Rio Grande, Blue Agave, and Snooze.



PHOTO BY JORDYN PITTS

Freeeedom! Landi enjoying the Rocky Mountain National Park.

The next portion of our trip had us heading into Wyoming. Laramie is where we stopped first and met up with an awesome photographer, Joe Haeberle. We lucked out and made another new friend on the trip. He captured some great shots of us and the rig, a couple of which are featured with this article. After a day or two in Laramie, we made the long trek north to the Grand Tetons. After a day's worth of driving, the majestic peaks were finally in sight. I was in awe at the ominous, craggily peaks. They aren't your average mountain range and I found myself taking way too many pictures of them.

We made our way into the little community of Moose where a local bar tender told us where we could find primitive camping. We nabbed a great little spot down by a river where we celebrated our anniversary with some grilled bratwursts, while we sipped on a Jenny Lake Lager. It's the simple things! We spent most of the night warming ourselves around a fire while I fretted about being eaten by a bear. Sunrise proved we had survived the night with no such intruder, so we moseyed on over to Jackson, Wyoming. This is an area of our trip where I wished we had allowed ourselves more time. Jackson is such an interesting place; we found it to be one of our favorite parts of the trip.



Appreciating the Grand Tetons near Moose, WY.

The story continues with Part 2 of Toyota Cruisers & Trucks Magazine. 📖

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Toyota Fortuner

Toyota's Answer to a Growing Demand for a Rugged Mid-Sized SUV

Beau Johnston

The new Toyota Fortuner has made its way into New Zealand dealerships and it is turning a lot of heads. As the country continues to embrace the outdoor lifestyle image, the demand for SUVs capable of fueling the population's adventure-seeking way of life also increases. We were lucky enough to spend two weeks touring the North Island in a manual transmission GX Fortuner this past March and immediately fell in love with it.



The new to New Zealand SUV bridges the gap between the Highlander and Land Cruiser Prado. It targets buyers looking for a rugged, diesel-powered SUV that can handle the demands of daily commutes and the rigors of hauling the family to the mountains for holiday. The Fortuner offers the same 2.8 L turbo diesel engine recently introduced in both the Hilux and Prado. It also shares the Hilux's drive train, coming standard with a 6-speed manual transmission and part-time four-wheel drive system.

I quite liked the look of the new Fortuner with its distinctive, sweeping lines. Even the stripped-down GX version I test drove looked like it was plucked from the premium SUV category. Chrome highlights were tastefully done and only served to accent the look. I found the overall styling to be a welcome change to its more aggressive looking American cousin, the 4Runner. It is a large SUV, by New Zealand standards, but its overall appearance does not suggest as much. It isn't until you sit inside of the Fortuner that it is packing a lot of space into what appears to be a small shell.

As noted earlier, the Fortuner shares much of its components with Toyota's other popular models. It incorporates the same double wishbone front suspension, with coil springs and stabilizer bar, as the Hilux and a 4-link rear axle similar to the design of the Land Cruiser Prado. Despite what seems to be Toyota's pulling parts that are already on the shelf and installing them on the Fortuner, the ride was extremely pleasant. It handled the curves of Wairata Canyon with less body roll than I was expecting. It also chewed up the miles along the dusty road to Port Jackson with ease.

In a word Toyota's new 2.8 L in-line four-cylinder turbo diesel is a fuel-efficient powerhouse. Okay, I know that was three words, but I cannot talk about one without the other. The "little" four-cylinder puts out a cool 130 kW (174 hp) of power and an astonishing 420 Nm (310 lb-ft) of torque. Now I know what you are thinking, "Doesn't the 4.0 L V6 found in Toyota's 2016 4Runner put out 75 kW (100 hp) more power and nearly





as much torque?" Well, in a nutshell, you are right BUT the 4Runner cannot boast an advertised combined fuel economy of 7.8 L/100 km (that is slightly over 30 mpg for us "Yanks"). Not once during our trip did I wish we had more power and we averaged 8.7 L per 100 km. I never babied the gas pedal during our travels and even during our short stint in Auckland's rush-hour traffic did we see the fuel economy drop to 9 L per 100 k.

The new 2016 Fortuner is also packed full of features to make driving a little easier. One of my favorites was the Inelegant Manual Transmission function, or iMT, found on our manual equipped GX Fortuner. When engaged, using the button located on the center console, the engine computer uses the vehicle speed to determine the appropriate engine RPM for smooth downshifting. I found

Fortuner Specifications (as tested)

Engine: 2.8 L in-line 4-cylinder turbo diesel

Transmission: 6-speed manual

Wheels and Tires: 265/65R17

Power: 130 kW @ 3400 rpm

Torque: 420 Nm @ 1400-2600 rpm

Fuel Economy: 7.8 L/100 km
(combined)

Acceleration: 12.6 sec (0-100 km/h)

Max Speed: 180 km/h

Overall Length (mm): 4795

Overall Width (mm): 1855

Overall Height (mm): 1835

Wheelbase (mm): 2750

**Ground Clearance (Exhaust Pipe)
(mm):** 279

Approach Angle (mm): 30

Departure Angle: 25

Max. Wading Depth (mm): 700

Gross Combined Mass (kg): 5745

Max. Towing Capacity Braked (kg):
3000

Price: \$60,990 NZD





the system to work brilliantly, although I wish it were a feature you could set and forget. Unlike economy mode the iMT system turns itself off after you turn off the engine and I constantly found myself forgetting to turn it back on each time I got back in to drive.

So is the new 2016 Fortuner Toyota's answer to New Zealand's growing demand for a rugged mid-sized SUV? Based off of the wildly popular Hilux and Land Cruiser Prado models, it is certainly from the right pedigree to be a hit. The new to New Zealand SUV features attractive styling and superior ride handling should be well received. The market should also enjoy Toyota's new 2.8 L turbo diesel, with its excellent fuel economy and ample power. I really enjoyed driving the GX Fortuner on our two-week New Zealand adventure and, if it were available here in The States, wouldn't think twice about buying one to replace our aging 1998 4Runner. ❤️



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2015 Wild West Overland Trip

Story by Jordyn Pitts with input from Joey Pitts

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The next day was a chance for us to check off another one of our bucket list items. We ditched the camper and spent the day driving through Grand Teton and Yellowstone National Parks. Everywhere you turned there was a sight to see. Some of the highlights were seeing moose, waterfalls, and of course, Old Faithful. After experiencing as many sights as possible for our short little day trip, we finally made our way out of the park and into West Yellowstone, Montana. We decided on a whim to take the drive back to Jackson, WY by driving through Idaho. We were pleasantly surprised with the beauty that Idaho had to offer. Seeing the backside of the Tetons from the rolling potato farmland provided plenty of picture-perfect moments. We topped the night off by grabbing some dinner at a last minute stop called Three Peaks Dinner Table. This is a place you definitely have to try if you ever pass through Driggs, Idaho. Make sure to try the house made chips topped off with mushrooms and cheese.



Elk grazing in Yellowstone National Park.

PHOTO BY JORDYN PITTS

After an hour-long drive back to camp in Jackson, we hit the hay and rested up for the next day's journey to Lava Hot Springs, Idaho. This is a unique little town complete with beautiful countryside and, as the name states, hot springs! We parked our home at the local KOA which happened to be within walking distance of the springs. After setting up camp, making new friends, and doing some laundry, we decided to grab a bite to eat and try out the hot springs. The hot water is piped into several different improved pools, each pool having a different temperature (102-112 degrees Fahrenheit). They weren't as eventful as taking a dip in a natural hot spring, but refreshing none the less.

We awoke to a dreary morning and headed on to our next stop, Park City, Utah. We made a pit stop in Salt Lake City to visit one of Joey's long-time friends, Joshua Moses, who works at a custom car shop called Kindig-it Design, where he gave us a tour and an opportunity to see some of the car projects. We then headed up in elevation to our next camping spot in the Jordanelle State Park outside of Park City. This is a really gorgeous state park with stunning lake views and an abundance of wildlife.

Downtown Park City is also a great little place to visit. As luck would have it, I randomly found

out that one of my favorite newfound artists was having an art exhibit the same time we were there. Of course I had to stop by and meet her. Teshia uses vivid colors to create huge paintings of various wildlife animals. It was such a pleasure to meet and speak with her. Check her out...she goes by TeshiaArt on Facebook.

The next day we set off in search of a nearby town called Midway. It's a quaint little town rich in history and great food! We tried a Mexican food joint called Tarahumara. The food was good but the ginger margarita was even better. We stopped at the local dairy, Heber Valley Milk, to grab some ice-cream and headed back to camp where we spent the rest of our time being lazy.



Top of the hilly, yet scenic, high elevation climb to Park City, UT.

PHOTO BY JORDYN PITTS

By morning, we were headed out again towards a major change in scenery. We decided to make a last minute run to Moab, Utah to meet up again with our new friend, Matt, whom we had met in Buena Vista. He had been in Moab for a few days



The stunning Kepler Cascades at Yellowstone.

PHOTO BY JORDYN PITTS



Mesa Falls Scenic Byway in Idaho

PHOTO BY JOEY PITTS



Meeting up again with our new friend, Matt Burzon, in Moab, UT

PHOTO BY JOEY PITTS



Posing on the infamous Moab rocks.

PHOTO BY JORDYN PITTS

and hooked us up with a great camping spot in the Sand Flats Recreation Area. We were so blessed the whole trip to come in contact with awesome people, such as Matt. We spent the night chatting around the campfire and experimenting with cameras. Matt was able to grab an awesome shot of our rig that night, which can also be seen

in this article. New friends and new places, it doesn't get much better than that.

The next morning had us sad to leave Moab. It is a place we will definitely visit again. We headed back to Colorado. We had booked a condo in Telluride for a few days so that



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Some of the classic Toyota trucks in the unintentionally discovered collection.

PHOTO BY JORDYN PITTS

we could take a vacation from our vacation; funny how that works. We were about 30 minutes away from our long awaited condo when we passed by a storage facility with an old, red Land Cruiser parked out front with a for sale sign on it. I have this real weak spot in my heart for Toyotas and pestered Joey to turn around and check it out. And boy did we hit the Toyota jackpot! Not only did this guy have a beautiful Land Cruiser, but he was sitting on a goldmine of old Toyota vehicles. He was nice enough to show us his impressive collection which ultimately left me trying to figure out how to bring one home with us. That was probably the best spur of the moment stop we made the whole trip. I'm still dreaming about a way to go back up there and take one of those vehicles back to Texas.

We eventually made our way over to Telluride where the next few days provided us with just what we needed to recharge. It was raining on and off which gave us a great excuse to be lazy. We had made a day trip to Telluride last year while doing Black Bear Pass and Imogene, but this year we had no shame in living it up in our condo and checking out the touristy side of Telluride. There are a great bunch of shops around town and the free gondola ride over to Mountain Village is always fun. The fall colors are amazing during late September and early October, all of which you get to soak-up while riding high in the gondola. Brown Dog Pizza was probably our favorite restaurant from the area,

The vibrant colors of Telluride.

PHOTO BY JORDYN PITTS



but we also enjoyed Smugglers and La Cocina de Luz.

As we came near to the end of our trip, there was only one stop left to visit. You see, I have always been a Toyota gal but Joey has always had a love/hate relationship with Land Rovers. I suppose that by default, I too am part of this love/hate relationship. And so, as luck would have it, there happened to be a Land Rover rally in Sedona, Arizona during the time we were on our road-trip. We found out many of our Texas Rovers friends were heading out to the Western National Land Rover Rally and decided to see if they would let us sneak in with a 4Runner. We didn't do much sneaking, but they were nice enough to let us camp out and join in on the fun. We obviously got roped into going on a true trail run (which had me freaking out the whole time) called the Broken Arrow trail. The views were killer and the 4Runner did amazing over any obstacles we approached. My fear of accumulating body damage did not come to fruition, so I was a very happy camper.

We drove back to the rally and enjoyed a beautiful sunset and a great evening with friends. We even had the privilege of seeing our good friend and off-road guru, Bill Burke, who was also attending the rally. The next morning, we awoke for one last adventure with a few buddies from the rally. We spent the day hiking near Flagstaff and we ended our road trip with a family style meal with new and old friends. It was probably the absolute best way to top off the trip! The next morning, we grudgingly said our good-byes and started the long haul back east to Paradise, Texas.

This was by far the longest road trip we have ever taken. There were so many beautiful sights and awesome people we met along the way. The 4Runner was a reliable companion that towed our cozy tear-drop and enabled us to pick a new home wherever we decided to park it. There's not much that can beat a night under the stars sitting around a campfire near the mountains. I'm already counting down the days until we can hit the road again. I'll always have a gypsy soul. 🍷

Jordyn & Joey Pitts, J – J Adventures



4Runner tackling *The Steps* on the Broken Arrow Trail in Sedona, AZ

PHOTO BY JORDYN PITTS



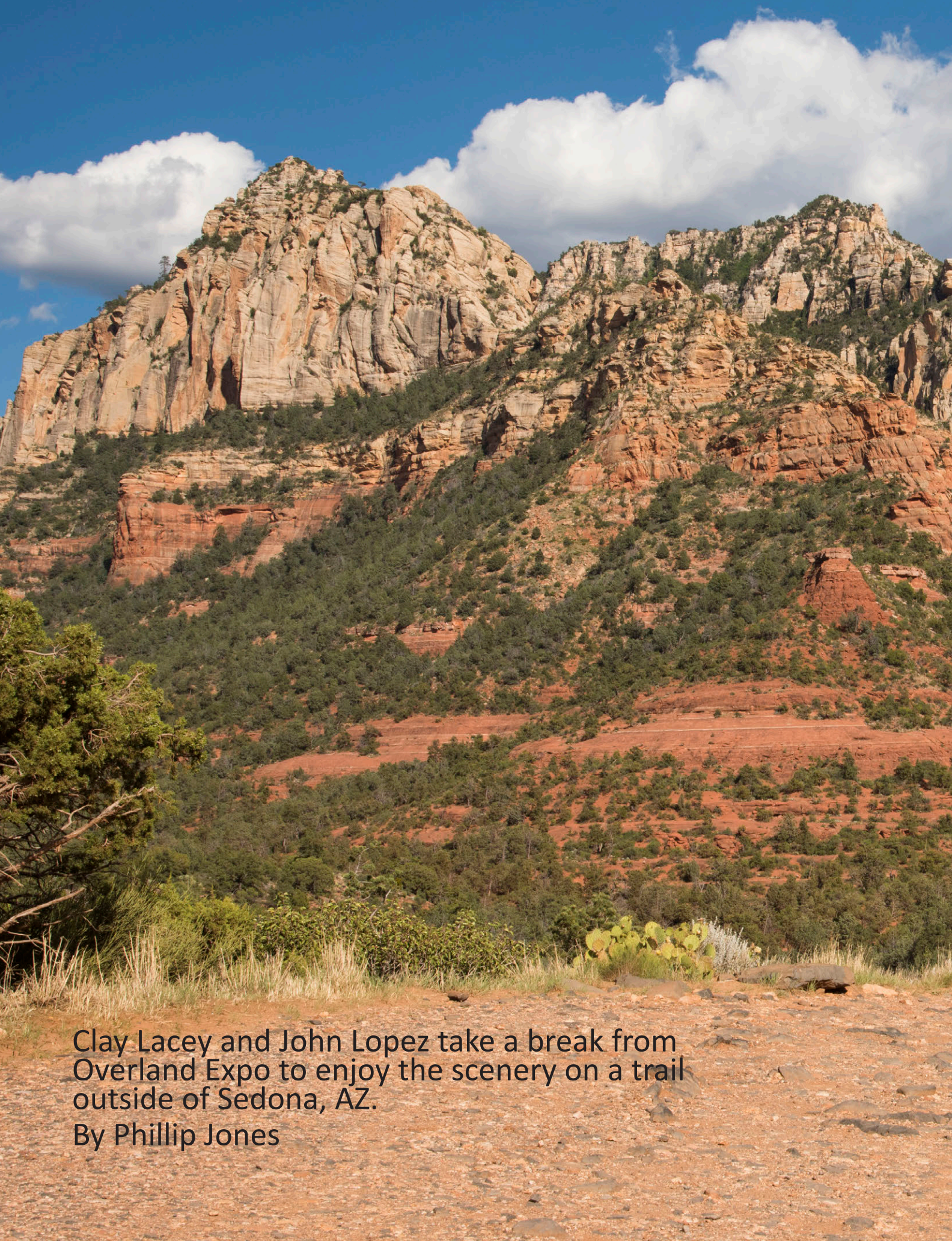
Joey working on the camper wheel bearings only 3 hours into the trip.

PHOTO BY JORDYN PITTS



The author next to her 4Runner

PHOTO BY JOEY PITTS



Clay Lacey and John Lopez take a break from
Overland Expo to enjoy the scenery on a trail
outside of Sedona, AZ.
By Phillip Jones

FRAMED

f/14 1/400s 44mm



Crawl Control Retrofit on 2015 4Runner SR5? *YOU BET!*

By Steven Knaus

Like a lot of people, I am disappointed Toyota does not offer the Trail Edition 4Runner with a third row seating option. We decided to settle on the SR5 4Runner because seating for more than five people was mandatory for our family. One option is to get a Trail Edition and add a third row, but safety for my family is of utmost importance. The SR5 includes additional air bags and safety equipment designed for the third row. Being the engineer that I am, I decided to look a little further into the Crawl Control Circuit and see if it was somehow possible to put this into my SR5. Why not just go straight for lockers? I am a technology guy, and Toyota has really developed some great off-road Technology and I really wanted to use this over lockers anyway.

I started off by doing a pretty extensive search of the internet forums and found nothing, just a lot of people wanting a Trail with third row seating (BIG HINT TOYOTA). I started by purchasing a two day subscription to the Toyota TIS website for \$15 (<https://techinfo.toyota.com>). This provides access to schematics and repair manual information needed for this mod.

I found the schematic for the Crawl Control and Multi-Terrain Select. Upon closer examination, Toyota actually calls the Crawl Control Switch, the "Drive Monitor Switch." There are six connections on this switch and they are Constant +12V(+B), Switched +12V(IG), Ground, 2 CAN bus connections (CANN and CANP) and LINT. From finding a section in the repair manual about the Drive Monitor switch, it appeared that the brains for all of this are right in the switch assembly itself and it communicates with the Combination Meter via LINT and the rest of the system via the CAN bus.

I examined the actual wiring in my SR5. Removing the dash components is pretty straightforward (FIG 1A-D). From the overhead console (Connection SU1, FIG 2A) down to the A-Pillar (Connection FS1 Male, FIG 2B) all wiring was in place. From Connection FS1 (Female, FIG 2B) down, the needed wires were missing. The connection F14 (FIG 2C

and 2D) for Combination Meter was missing the LINT wire and the F10 Connection on the Body Control Module was missing the 2 CAN bus wires as well.



Fig. 1A



Fig. 1B



Fig. 1C



Fig. 1D

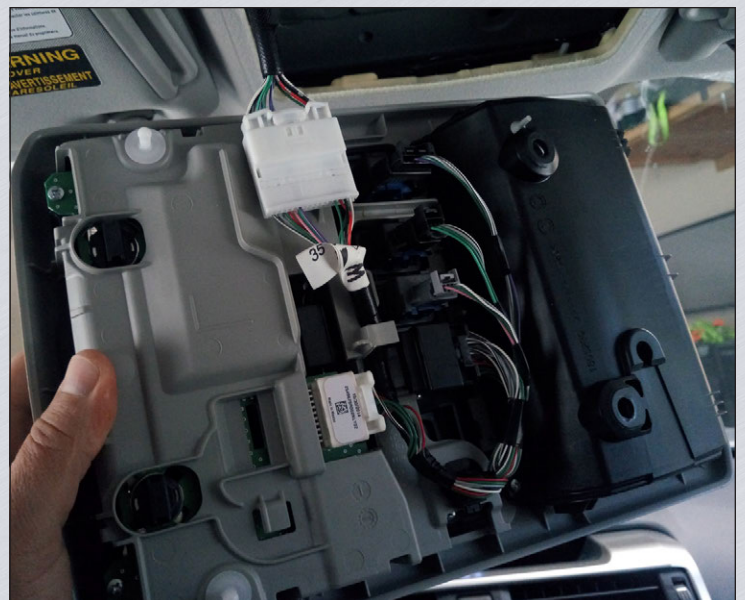


Fig. 2A

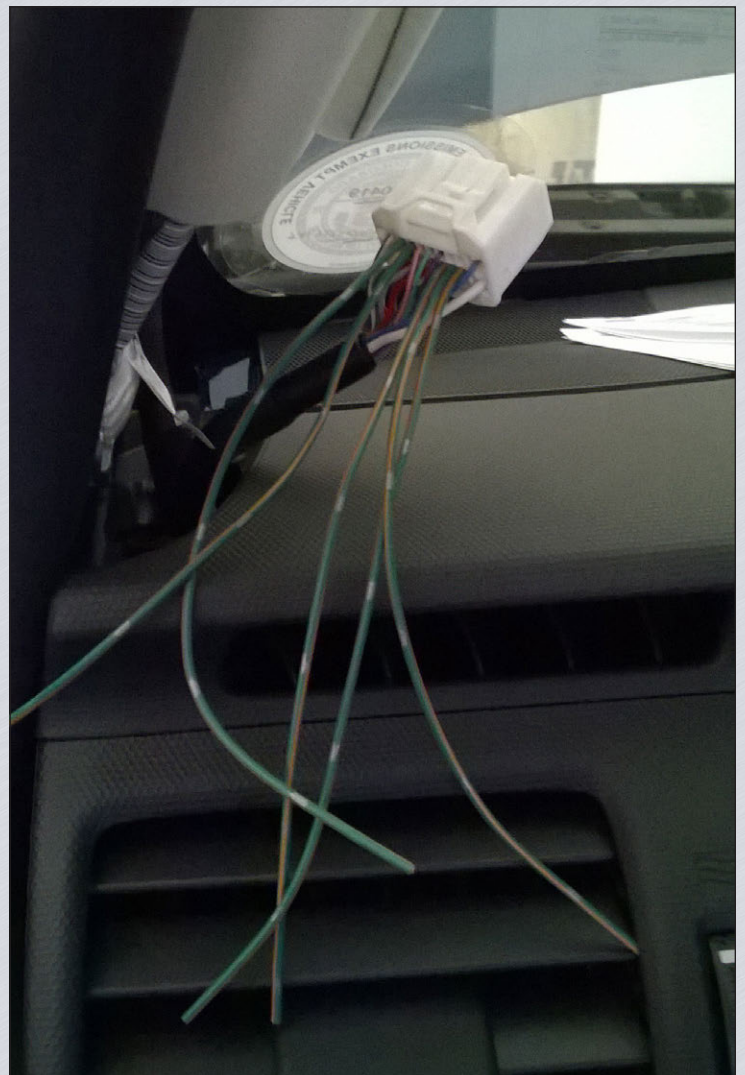


Fig. 2B

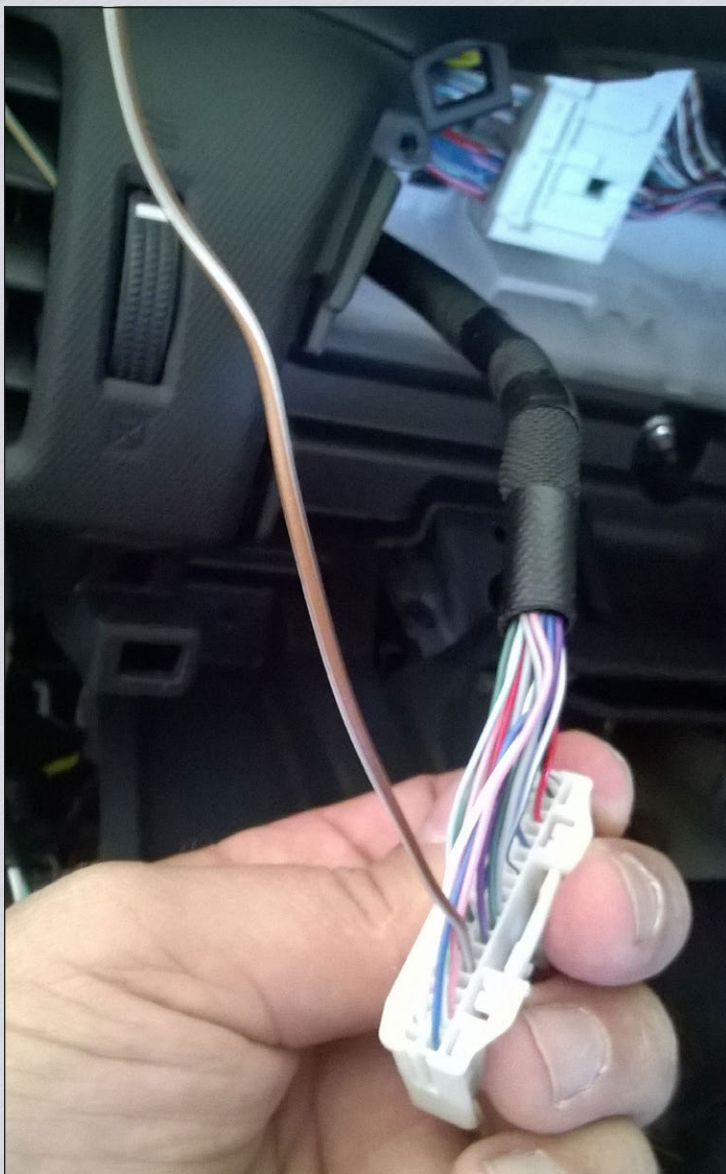


Fig. 2C

I researched to find the proper repair harness parts that plug directly into the connectors. I was able to find all of the connector repair parts except for the F10 connector on the Body Control Module (still working this through Toyota as the repair manual shows no repair part numbers for this connector). For this one I was able to strip the 22AWG wire back and fold it back on itself and slide it in the connector with some dielectric grease to make a good connection. If I cannot get a repair part, I will just epoxy the wire in place as-is. I got all of the other repair parts plugged into the proper connectors and soldered the physical connections between all the wires and used heat-shrink tubing to protect the connections. AWG 22 wire was used between all the points. I connected the source ends of the +12V switched (IG) and Constant (+B) to the switched and constant wires leading to the Steering Sensor right in the steering column. The Trail has them connected this same way but through connectors hidden way up under the dash. I tried to find them, but it was easier to do it this way. I used some T-Taps for these, which is easy to access by pulling off the plastic covers on the steering column. You could always use whatever switched and constant sources you want, but I chose to keep it the same as the Trail.

Next up is replacing the stock Body Control Module (BCM) with one from a Trail. This unit acts as a gateway for the Drive Monitor Switch to communicate on the CAN bus and the 2 pins needed (CANN and CANP) are disabled on the stock SR5 BCM. This is quite simple and you just need to unplug the harnesses from the BCM and use the release mechanism to allow the BCM to come out of its holder. You do not need to do any kind of initialization on the BCM; just plug and play.

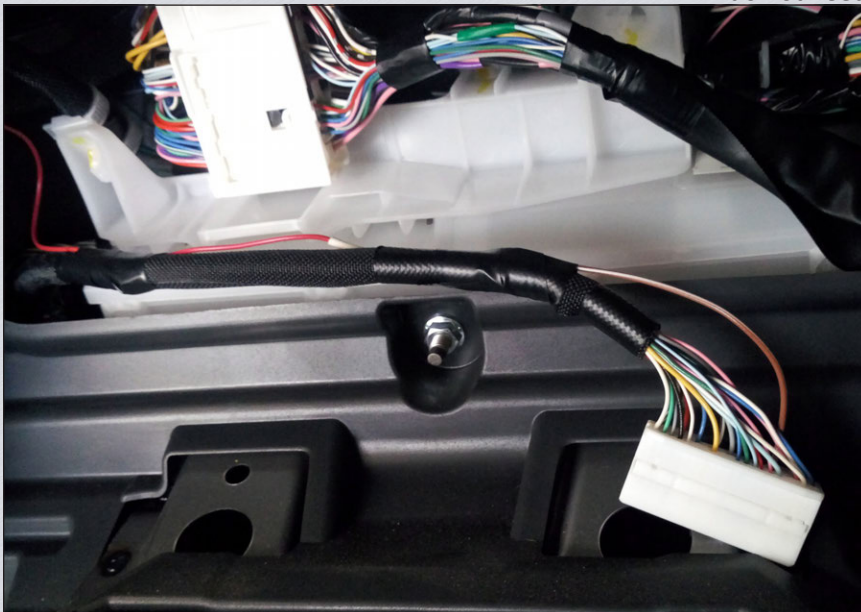


Fig. 2D

After this is complete, the hard stuff is done. The Combination Meter needs to be swapped out with one from a Trail unit as well (FIG 1E, FIG 3). The Trail unit has the LINT connection enabled and the programming to display and enable the Multi-Terrain Select and Crawl Control. This may be the most difficult part to get.



Fig. 1E



Fig. 3

I connected with a great dealership that wanted to help me out and was able to order a new Combination Meter with the correct mileage on my 4Runner (more on this below). You will also have to order the Drive Monitor Switch and a new Overhead Console from a Trail to mount the switch. Once you have these you can get everything plugged in. One thing I was hoping to do was keep the Downhill-Assist Control (DAC). What I found out is that when you do a memory reset and do the Crawl Control Calibration, it disables the DAC Calibration. Whatever one you do first, the other is disabled. Thus, there is no way to have Crawl Control and DAC.

Once everything is hooked up and back in place, you will need to do a Memory Reset for the Skid Control ECU, then a Crawl Control Calibration and Zero Point Calibration. It is important to do the memory reset otherwise the crawl control calibration will not work. These can be easily done through Techstream Lite with the mini-vci connector or you can do it manually by using a jumper wire on the



ODBI port. See the repair manual for detailed information on this procedure. After this, everything will work just like the Trail. Overall I am extremely happy with this retrofit and looks completely factory including the display lights in the combo meter (FIG 4A-4D).



Fig. 4A



Fig. 4B



Fig. 4C

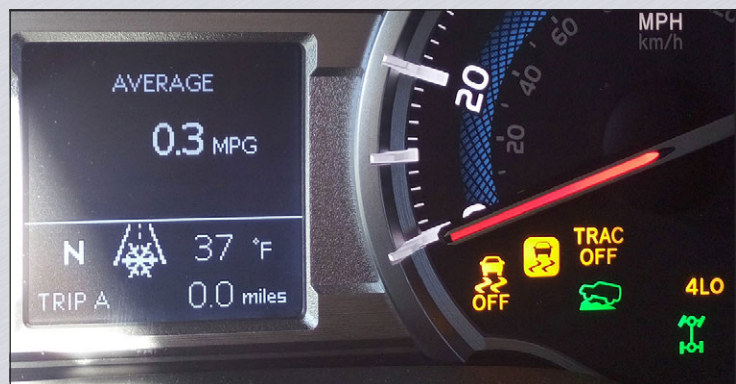


Fig. 4D

Certainly feel free to e-mail me (stevek@staythetrail.org) with any questions or comments you may have about this and I will do my best to help.

Some things to note:

I did this on a 2015 SR5 4Runner base model. The part numbers listed below are what I used for this mod.

Part Numbers used:

- Drive Monitor Switch: 84977-35020 (x1)
- Trail Body Control Module: 89220-35340 (x1)
- Trail Combination Meter: 83800-35R40-RP (x1)
- Base Trail Overhead Console: 81260-35650-B0 (x1)
- FS1 Connector Repair wire (Female side): 82998-24290 (x5)
- F14 Connector Repair wire: 82998-12870 (x1)

Misc. items used:

AWG 22 wire, heat shrink tubing, soldering iron and solder, wire strippers/cutters, screw drivers, and plastic trim removal tools.

There may be some slight variance in the BCM part number needed and Overhead Console depending on what configuration you have. If you have a Premium model, you would need the Overhead Console from a Trail Premium. There are a few choices with the BCM as well: just try to match the version you have to the equivalent Trail version. The part number stamped on the BCM does not always

dictate what you may have. This stumped me for a bit as I was researching this. A lot of people who have a Trail version do not have a part number that corresponds to a Trail version. It would appear the BCM modules themselves are the same, it is just the program in them is different. When I received the Trail version I ordered, the right part number was on the box, but the one on the actual BCM was showing for something else.

From 2014 on up, Toyota Changed the Combination Meter as well as the part number for the Crawl Control Switch. Make sure you get the equivalent part numbers from your year. For 2010 to 2013 you should still be able to do this mod, but you will need the center display that is in the middle of the dash as well (Accessory Meter). I am not sure if you will need additional wiring, but possibly.

If you have a Limited, I am unsure whether or not this will work, but I'm leaning towards it not working. The Skid

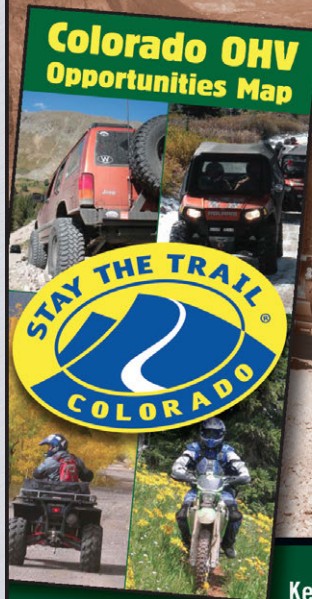
Control ECU Part numbers are different on the Limited so it probably has different programming. Also, there is no center diff lock light in the trail Combo Meter. It would be interesting to see if it could be done though.

Special Thanks

I could have not have completed this mod without the help of *Toyota Cruisers and Trucks Magazine* and them putting me in touch with Tim Bernard, the Parts Manager, at Larry H. Miller Toyota in Colorado Springs, Colorado. Tim was extremely receptive to what I was trying to do and offered to help out in any way he could. He was able to get the remaining pieces I needed to complete this mod without any issue. He is willing to help anyone out there that reads this article and wants to do the same thing. Please contact the dealership at 866-554-0772 and ask for Tim Bernard in parts. Please let Tim know that you read about him in this article and that we sent you. 🇺🇸



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Storm Chase 4Runner

By Brandon Sullivan

While out storm chasing in his own 4Runner, Senior Editor Phillip Jones came across this well-built 4Runner and met the owner, who is a seasoned storm chaser. Phillip invited Brandon to submit an article about his build and his chasing experience.



Part of the enjoyment of storm chasing is witnessing the raw power of a supercell.

4Runner Build List

- 2014 4Runner Trail Premium
- Fuel wheels
- Nitto Trail Grapplers tires
- 3-inch lift
- Custom front/rear bumpers/skid plate
- LED lit steps in back
- 10,000 lb. waterproof winch
- Rigid LED's in front/back and underneath
- Wireless Internet
- ChargeGuard (for electronics)
- Optima Yellowtop battery
- RAM laptop mount
- Kicker sound system with new L7 QB8 in back



When I went in search of a 4Runner, I found an Oklahoma City-based dealership that did a lot of modifications to the dealer's 4Runner inventory. Seeing those decked out rides got the gears in my head turning. My 2014 4Runner already came with the big wheels, tinted windows, and nice powder coating on the logos. It was the rolling definition of "blacked out!" After purchasing my 4Runner, I definitely knew I wanted an LED light bar. They were growing popular on off-road vehicles and I wanted to fit in. Getting one put into the grill wasn't going to be easy. I considered a grill guard, but it seemed grill guards really offered no protection. If I was going to spend money, I may as well do it right! I located a steel fabrication shop in Lubbock, TX named Fearless Fabrication and let them have it for a week. They put together the plans for the bumper, lighting, and other items.



Brandon's 4Runner equipped with custom front bumper and lighting.

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Road conditions can change quickly, causing storm chasers to become stranded. Good off-road tires and 4WD are must-have features.

During the previous week, I was storm chasing in Colorado. My friend got stuck in the mud as a tornado was barreling down on us. I had him jump in my 4Runner, and we were able to escape. That was the day I knew I had picked the right vehicle. We later tried to extract his vehicle with a simple tow rope we found at a gas station, but it didn't work. This incident served as motivation to purchase a winch, which has come in handy.

The original plan was to only do the front bumper, but the shop owner talked me into the rear bumper as well. I am certainly glad I took his advice because shortly afterward, I was rear-ended by a drunk driver. My 4Runner experienced zero damage.

I have always been in some sort of off-road vehicle for storm chasing, mostly out of necessity. We encounter terrible road conditions in rural areas where dirt roads can instantly turn into mud pits due to flash flooding. Fallen trees and downed power poles sometimes require going through a ditch to maneuver around. Debris and/or high water require adequate clearance. Sometimes, there isn't even a road. Sometimes we turn around and the road we were just on has transformed into an obstacle course. A coating of hail can make for slippery traction.



Before my I purchased the 4Runner, I had two different Jeeps, and a GMC Envoy. The 4Runner by far has received the most investment in modifications. I know it will hold great durability and value.

At a young age, long before I was interested in off-road vehicles, I grew interested in weather. It wasn't until I was in high school that I became interested in storm chasing. In 2008, at the age of 17, I went on my first big chasing trip. We drove from to Kansas from Illinois and spent a week chasing tornadoes. After that, I was hooked. I enrolled in the University of Oklahoma in 2010 to study meteorology and earned my degree in 2014. That educational experience only took me deeper into chasing, because I could see all of the classroom and textbook knowledge unfolding in the field.

Chasing in the 4Runner has increased Brandon's confidence when traveling in rural areas.

My wildest storm chasing adventure was in 2013, during the El Reno, OK tornado on May 31. We got caught in the outer circulations of the tornado,



The author with his storm-chasing 4Runner.

and a barn was destroyed in front of us, sending flying debris into my car. My windshield was shattered, a hay bale tossed into my car, destroying my front end, and all the paint wiped off the passenger side of my car. It was both a horrifying and humbling experience.

I'd love to do go off-roading with my rig. So many times I see other Toyota owners who drool over my ride and ask if I go off-roading, and I have to let them down! I'd love to go somewhere super remote and scenic, like Utah, climb over some rocks, and get to some places that nobody else could really get to! 🇺🇸

Follow Brandon's Storm Chasing adventures:

- Twitter/Instagram [btsullivan91](#)
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f/16 1/160s 24mm

Rufio from Expedition Overland
leads the Toyota Drive To The
Summit Team. | Beau A. Johnston





Tom Schafer pulls his Turtleback Trailer on the White Rim Trail. | Jim McCoy

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