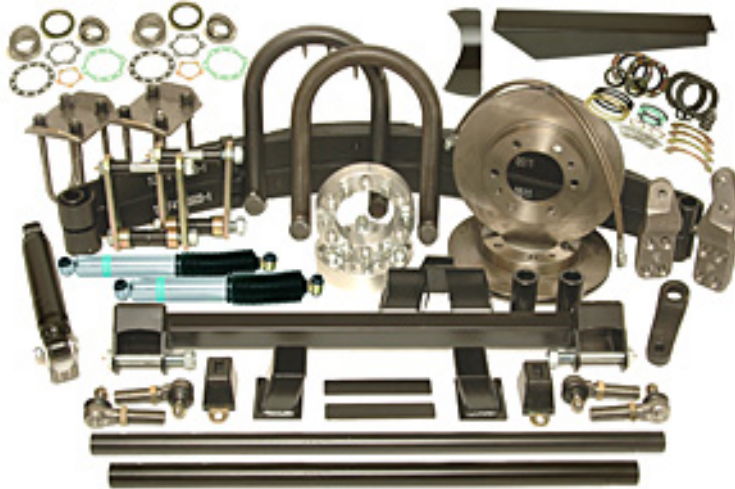




TRAIL-GEAR^{INC}

Off Road Supply

IFS Eliminator Kit, 110001-1



IFS Eliminator Kit Contents:

Front Leaf Springs (choice 3", 4", or 5")	1.0
High Steer Crossover Steering Kit	1.0
Frame Tube Jig Kit	1.0
Steering Stabilizer Kit	1.0
U-bolt Flip Kit	1.0
Knuckle Service Kit	1.0
Wheel Bearing Kit	2.0
Front Drop Hanger with Greasable Bolts	1.0
Greasable 5" Shackles (choice 5", 5.5", or 6")	1.0
Shock Hoops	2.0
Bilstein Shocks (12" or 14")	2.0
Front Brake Lines	2.0
Vented Rotors	2.0
Bumpstop Extensions	2.0
Wheel Spacers	2.0
Bumpstops	2.0
Front Axle Gusset	1.0
Axle Diff Armor	1.0
Motor Mount Cover Plates	2.0
Spring Pad	2.0

If you have questions about installing your IFS Eliminator Kit,
please call us at 559-252-4950.

This kit is designed to replace the IFS suspension on 1986-1995 Toyota Pickup's and 4Runners. Installation time is typically 2 to 3 days. In addition to common hand tools, you will also need a plasma cutter or torch, grinder and 230V welder.

This kit is designed for use with 1981-1985 solid axles. In addition to this kit you will need to have a custom drive shaft made. We recommend measuring for the drive shaft after the installation of the kit. Using a drive shaft with a minimum of 10" of drive shaft slip spline will prevent the drive shaft from separating due to the extreme flexibility of this kit. Drive shaft tubing should be a minimum of .095" thickness.

Axle Preparation:

When installing a solid axle swap, new ring, pinion gears and a locker are normally installed into the front end. Our IFS eliminator kit includes a knuckle rebuild kit and 2 wheel bearing kits. These should be used to replace worn out parts in your donor front axle upon reassembly.

A small 3/8" thick pad is provided for the driver side (left) spring perch. This pad raises the spring mounting surface to match the passenger side. Weld the spring pad onto the left front axle spring perch. Weld across the front and back. Do not weld the sides so that the pad can be removed with a grinder if needed in the future.

The upper axle gusset is installed on top of the axle. Place the gusset on the axle and tap lightly with a hammer to seat it onto the axle. Make note of where the gusset contacts the axle and remove all paint and grease from the axle housing. Weld the gusset in place using 1" stitch welds.

The front diff armor welds directly to the face of the housing and prevents trail damage to the ring gear. Remove the paint from the front of the housing. Place the diff armor in position on the housing. The bottom of the armor should sit flush with the step in the face of the housing. Start welding the armor in place from the top down. After welding the top two inches of the plate, stop welding. Using a 5 lb sledge hammer, hit the un-welded part of the armor until it is touching the housing. Continue welding from the top to the bottom stopping occasionally to hammer the armor down for a snug fit. Near the bottom, repeated hard hits with the hammer are needed to ensure a tight fit.

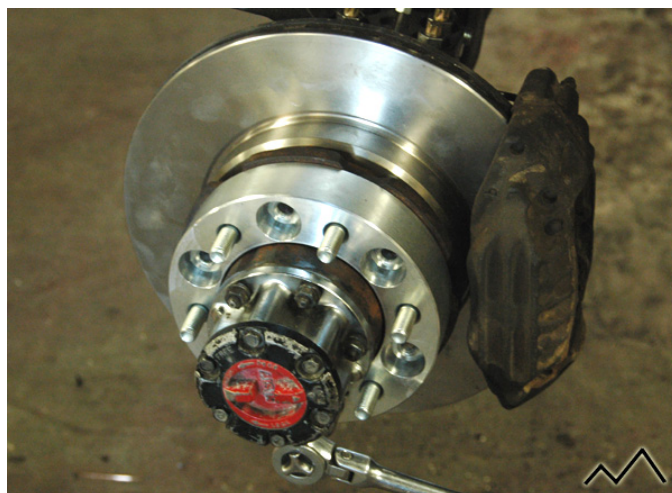
After welding on the gusset, armor and spring pad, paint the housing as desired. Once dry, the 3rd member, axles and knuckles can be reassembled. During reassembly, discard the stock steering arms and install the included high steer arms. The steering arm with two rod end holes is installed on the passenger side (right).



Driver Side Front Spring Pad



Front Gusset and Armor Installed



Wheel Spacers

The steering arm with one rod end hole is installed on the driver side (left) of the axle. Also install the provided wheel spacers and torque nuts to 100 ft/lbs. Wheel spacer nuts should be re-torqued after 100 miles of driving. Two steering rods with tie rod ends are included with the kit. The shorter rod is the drag link and this will be installed later. The longer rod is the tie rod. Install the tie rod with the left end in the only remaining hole on the left side steering arm. On the right side of the axle, the tie rod is attached to the rear open hole on the steering arm. The front hole is used for the drag link. Leave the jam nuts loose for now.

IFS Removal:

Unbolt and remove the front axle half shafts, differential, idler arm, tie rod, A-arms, sway bars and torsion bars. Using a torch or plasma cutter, cut off the A-arm mounting brackets. Once removed, use a grinder to remove the remnants of the brackets. Grind the until frame is completely smooth and flat (see photo). When removing the A-arms, part of the engine motor mounts will be removed. This is normal, and later, plates will be installed to fill the void created by removing the IFS suspension. Remove as little of the motor mount as possible.

When using a torch to remove the IFS brackets, it is possible to nick the frame with the torch. If this has happened, fill the nicks by welding them up and grind flush with the frame. Use a relatively high setting on your welder when filling nicks.



IFS Suspension Removed

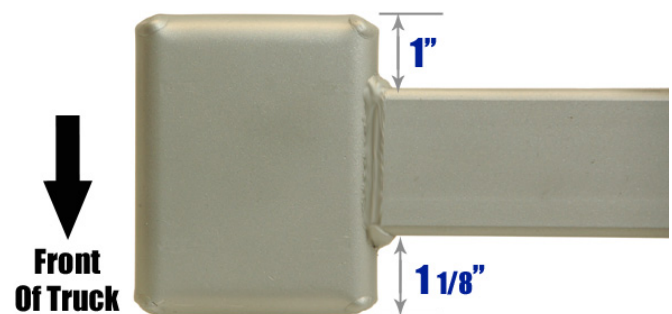


IFS Brackets Ground Off

Front Spring Hanger:

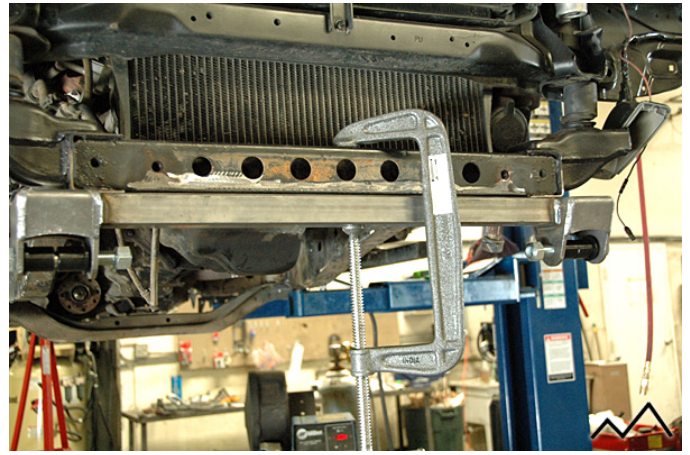
With the front stock suspension removed and the frame cleaned, installation of the new spring hangers can begin. The front spring hanger has a front and back side to it. If you look close, the spring hanger ends are offset from the tubing by 1/8". These hangers should be offset forward for installation (see photo).

The front spring hanger can be installed flush with the front of the frame or offset up to 3/4" forward of the front of the frame depending on the desired shackle angle. With 4" and 5" springs we recommend offsetting the front hanger 3/4" forward of the front of the frame. With 3" springs we recommend installing the front hanger flush with the front frame crossmember.



Front Spring Hanger Continued:

Center the hanger left to right on the frame. Hold the hanger in place with a C-clamp (see photo) and tack weld the hanger in place. Do not finish welding the front hanger until after you have placed the entire weight of the truck on the springs and verified your shackle angle. Shackles should be just a little back of vertical during this test. Later the springs will break in and shackles should be about 20 back.



Frame Tubes and Jigs:

To mount the front shackles, tubes are installed into the frame. Jigs are provided to properly position the tubes in the frame. Each jig is labeled with an arrow and "R" or "L". The jig labeled R is for the Right side (passenger) and the jig labeled L is for the Left side (driver). The arrow points toward the front of the truck.

Place the frame jig onto the frame and center the jig in the body mount under the firewall. Mark or scribe both the inside and outside of the frame rails. Using a plasma cutter or torch, cut the holes through the frame. The jigs can also be tacked into place and used as a guide during cutting. Slide each frame tube into the frame. Center the frame tube in its hole. After centering the tube, push the tube toward the outside of the frame 1/4". Weld the frame tube in place. Now do the other frame tube, centering it up and then pushing it out 1/4" before welding into place. Weld both the inside and outside of the frame around the shackle tube.



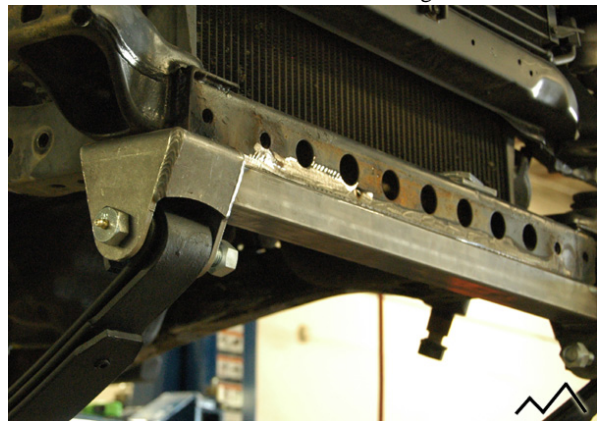
Frame Tube Jig Placement



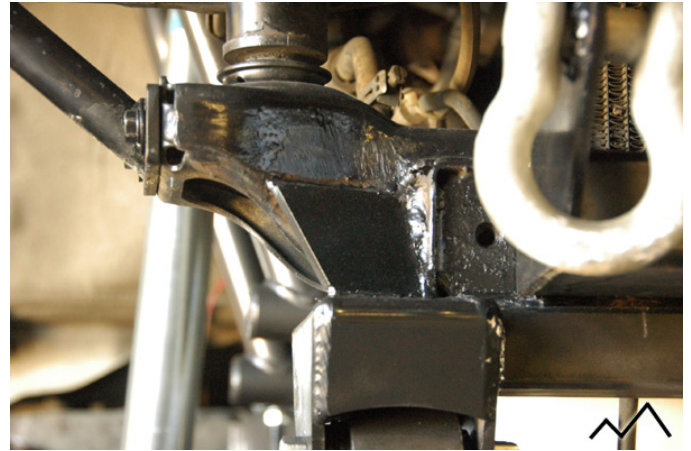
Frame Tube Hole Cutting

Final Spring Hanger Welding:

Weld the front spring hanger in place with a series of 2" long beads between the frame and hanger. Be sure to fully weld around the spring hangers as this is where most of the stress will be transferred to the frame. It is normal for there to be a small gap between the bottom of the frame and the top of the hanger. Two small gussets are provided for the top of the front spring hanger. These should be welded in place to support the outer end of the spring hanger (see photo right).



Final Spring Hanger Welding Continued:



Front Hanger Gussets

Install Leaf Springs:

Weld the provided bumpstops on to the top of the u-bolt flip plates.

Grease (using axle grease) the small, short bushings and install into the leaf springs.

The end of the spring that has a full double wrap goes in front. Hold the spring in place, then slide 120mm long greasable bolts through the spring and hanger. Grease the exposed threads of the bolt before installing the crimp nuts.

Pick up the rear of the spring and install the rear shackles through the frame tubes. The shackle bolts are 150mm long. Use two 3/4" spacers on each shackle as shown in photo. Grease the exposed threads of the of the bolt before installing the crimp nuts.

Place the axle under the truck and lower the truck with the springs installed down onto the axle. Spring pin bolts should fit into the holes on top of axle housing spring pads. Use the provided u-bolts to attach axle to springs. Torque u-bolts to 90 ft/lbs.

Install Leaf Springs Continued:

Re-torque u-bolts after 100 miles. Check the u-bolt nuts are tight after every off-road trip. Loose u-bolts will cause failure of the leaf spring pin bolts and can result in loss of steering control. Keep your u-bolts tight!

Six u-bolts are provided with the kit. Two round u-bolts should be used on the passenger side on all axles. 1979-1983 axles use two additional round u-bolts on the driver side. Later 1984-1985 axles use two square u-bolts on the driver side. All u-bolt threads should face up.

After installation of the u-bolts, cut off excess bolt threads so that the u-bolt is flush with the nut.



Bumpstop & Flip Plate Welded Together



Assembled Shackle

Shocks and Shock Hoops:

To install the shock hoops it may be necessary to cut open the inner fender. If 14" shocks are used you will most likely need to bring the shock hoop up through the fenders. This may require relocation some items directly above the shocks. If your using 12" shocks and short style hoops, there is no need to cut open the fenders.

Shock and Shock Hoops Continued:

Using the two 5" X 2" plates, cover the ends of the motor mounts. Weld the plates in place and grind off any rough edges.

Install shocks and hoops so that approximately 60% of the shock is in the tube and 40% is out or as close to this as you can. Exact positioning will depend on the spring height, vehicle weight, and shock choice. Shocks should be mounted vertically with the "Can" or body of the shock in the up position.

Test the fit shocks before making any permanent welds. Do not weld near the shocks unless the chrome plating of the shock rod is covered. If weld splatter attaches to the shock rod, it will damage the shock seal and destroy the shock. This type of shock failure is not covered by warranty.

With the hoops tacked in place and the shocks installed, use a ramp or forklift to flex the suspension. Make sure that the shocks are not limiting compression or extension travel. Adjust the position of the shock hoops as needed.

After the hoops are installed, install two gussets on each shock hoop. The gussets (1" round tubing) will need to be finish trimmed to fit before welding in position. Steel shock sleeves (included with shocks) should be installed in the top and bottom of each shock before installation.

Install the bumpstop extensions on the frame. *Note* the axle moves back as it travels up. The bumpstops should contact as close as possible to the center of the extension. We recommend that you tack weld the extension in place first, then using a large rock, ramp or forklift, verify that the bumpstop and extension contact correctly. The gap between the bump stop and the extension should be 3"-4". It may be necessary to shorten the bumpstop when using 3" springs. Actual bumpstop extension length depends on a number of factors including, truck weight, accessories such and aftermarket front bumper/winch, position of the front hanger and position of the frame tubes.



Motor Mount Plate



Shock Hoop



Bumpstop Extension

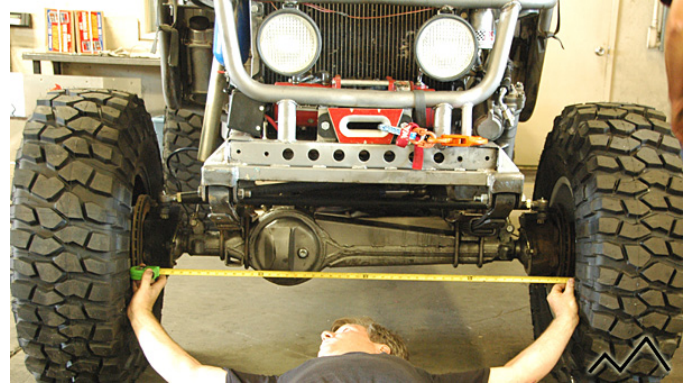
Drag Link & Pitman Arm

Place the steering wheel so that it is in the center of its movement left to right. Bolt on the pitman arm using the stock nut and washer. Connect the left side of the steering Drag Link to the front most hole in the right side steering arm. Tie rod ends should have approximately 3 exposed threads. Do not expose more than 1/2 of the tie rod end threads as this can cause an unsafe driving condition.

With the truck on the ground, set the tow-in of the front tires at 1/8". This is done by turning the Tie Rod with the jam nuts loose. Measure the widest part of the tire at the front and rear of the tire. Adjust the Tie Rod until the front is 1/8" narrower than the rear.

Once completed, turn the steering wheel all the way left and right. Verify that the wheels turn the same amount left and right. If not, adjust the length of the drag link or adjust the position of the pitman arm.

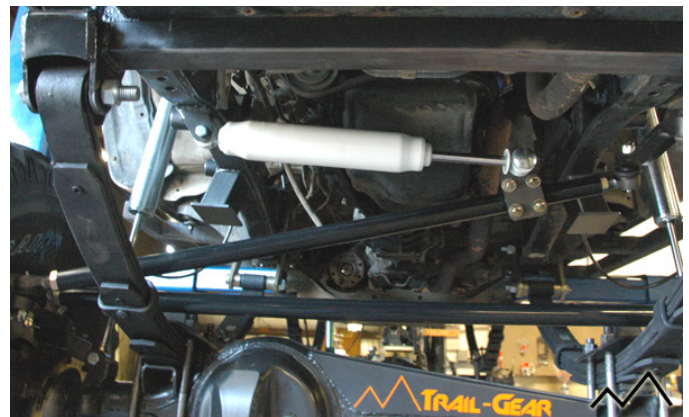
Tighten the pitman nut to 130 ft/lbs. Tighten the jam nuts on the Tie Rod and Drag Link using an adjustable wrench.



Setting Tie Rod Adjustments

Steering Stabilizer

The steering stabilizer included in the kit is designed to help reduce steering wheel vibrations at higher speeds. To install, weld the notched end to the passenger side frame rail. Pull the shock out half of its length. Using the provided u-bolts attach the stabilizer to the upper steering rod.



Steering Stabilizer



These instructions are designed as a general installation guide. Installation of many Trail-Gear Products require specialized skills such as metal fabrication, welding and mechanical trouble shooting. If you have any questions or are unsure about how to proceed, please contact our shop at 559-252-4950 or seek help from a competent fabricator. Using fabrication tools such as welders, torches and grinders can cause serious bodily harm and death. Please operate equipment carefully and observe proper safety procedures.

Rock crawling and off-road driving are inherently dangerous activities. Some modifications will adversely affect the on-road handling characteristics of your vehicle. All products sold by Trail-Gear Inc are sold for off road use only. Any other use or application is the responsibility of the purchaser and/or user. Some modifications and installation of certain aftermarket parts may under certain circumstances void your original dealer warranty. Modification of your vehicle may create dangerous conditions, which could cause roll-overs resulting in serious bodily injury or death. Buyers and users of these products hereby expressly assume all risks associated with any such modifications and use.

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