



### Part # 12290110/12290115 - 2015-2022 Ford F150 2WD/4WD Lowering Kit

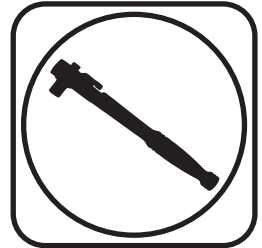
#### Front Components

12293699 Front Upper Control Arms  
12293110/12293115 2WD/4WD Front CoilOver Kit

#### Rear Components

12299512 Rear Flip Kit  
12299510 Rear HQ Series Shocks

#### Recommended Tools



## 15-22 Ford F150 2WD/4WD Lowering Kit Installation Instructions

#### Table of contents

Page 2-11.....Front Installation Instructions  
Page 12-24..... Rear Installation Instructions  
Page 24-25..... CoilSpring Adjustment & Alignment  
Page 26..... Torque Specifications

We recommend installing some components in conjunction with each other. On the front, the CoilOvers and Upper Control Arms should be installed at the same time. In the rear, install the Flip Kit before installing the HQ Series Shocks.

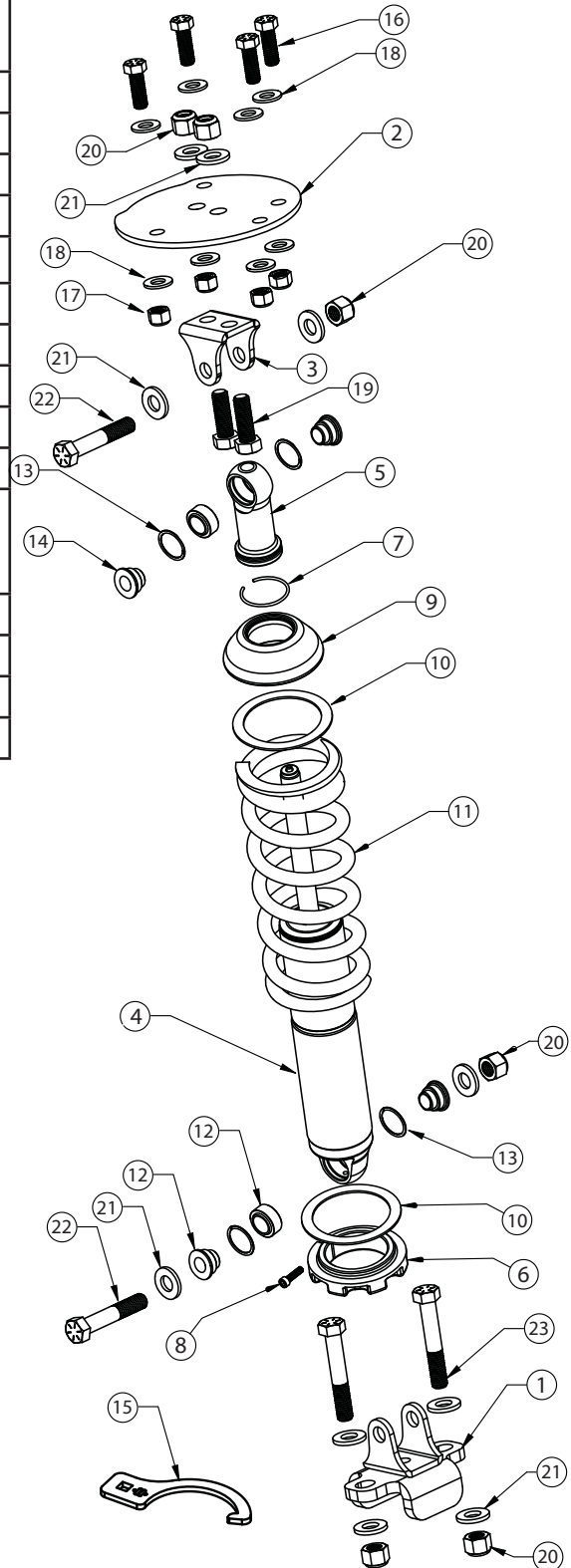
**IF YOU ARE INSTALLING THIS KIT ON A 2021-2022 WITH HEADLIGHT SENSORS, YOU WILL ALSO NEED KIT # 12299501.**





### Major CoilOver Components .....In the box

| Item # | Part #                                 | Description  | QTY          |
|--------|--|--|--------------|
| 1      | 90003270                               | Lower CoilOver Mount   | 2            |
| 2      | 90003271                               | Upper CoilOver Mounting Plate  | 2            |
| 3      | 90002158                               | Upper CoilOver Mounting Bracket  | 2            |
| 4      | 982-10-805                             | 5.2" Stroke HQ Series Shock  | 2            |
| 5      | 90002025                               | 2.7" Shock Eyelet Assembly   | 2            |
| 6      | 234-15-200                             | Lower Spring Adjuster Nut  | 2            |
| 7      | 038-01-006-A                           | CoilSpring Plate Retaining Ring  | 2            |
| 8      | 99050001                               | Adjuster Nut Locking Screw   | 2            |
| 9      | 90002070                               | Dropped CoilSpring Cap   | 2            |
| 10     | 70010828                               | Delrin Spring Washer   | 4            |
| 11     | 59100650 (2WD)<br>or<br>59100750 (4WD) | CoilSpring 10" (2WD) 650lb - 2WD<br>or<br>CoilSpring 10" (4WD) 650lb - 4WD | 2<br>or<br>2 |
| 12     | 90001994                               | 5/8" ID Shock Bearing  | 4            |
| 13     | 90001995                               | Shock Bearing Snap Ring  | 8            |
| 14     | 90002043                               | .500 x .365 Shock Bearing Spacers  | 8            |
| 15     | 85000000                               | Spanner Wrench   | 1            |



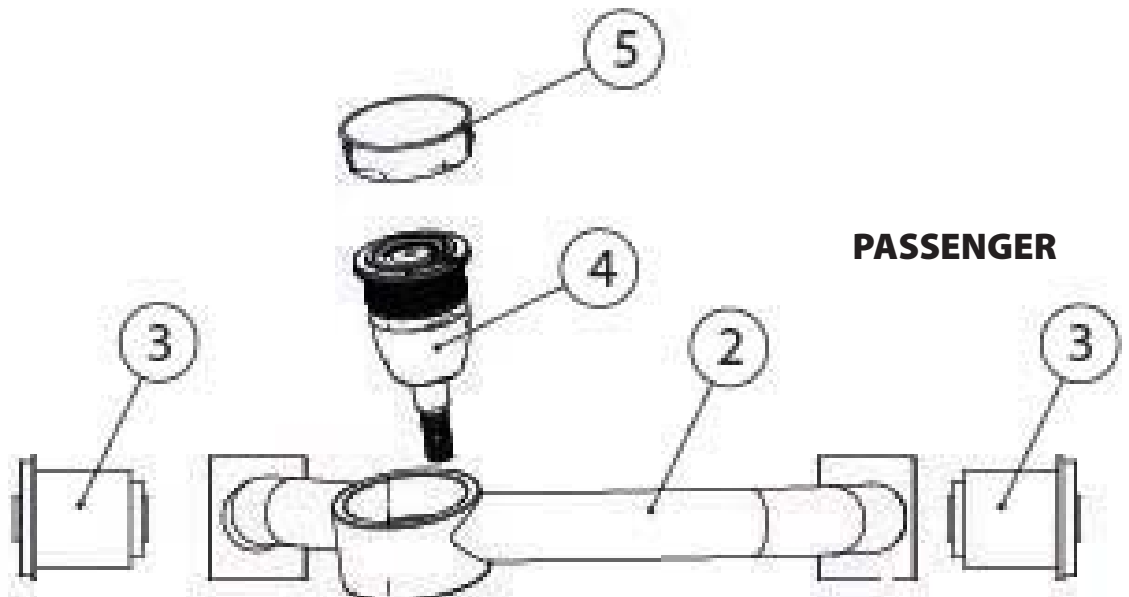
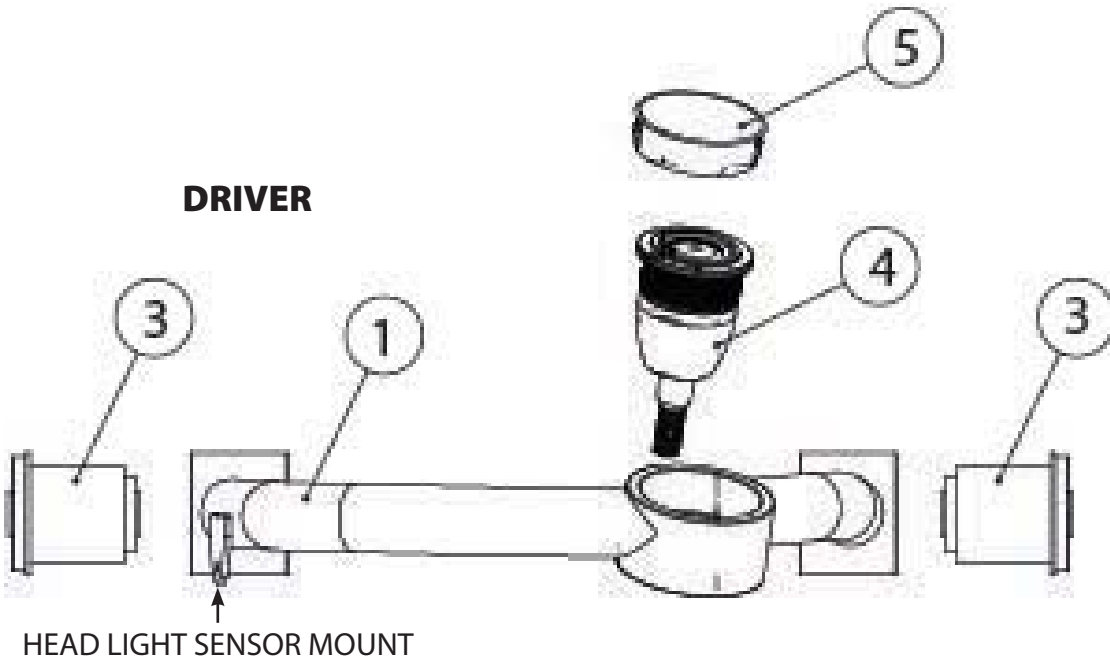
#### HARDWARE LIST - Kit # 99010168

| Item #                                 | Part #   | Description                | QTY |
|--|----------|----------------------------|-----|
| <b>UPPER MOUNT TO STRUT TOWER</b>      |          |                            |     |
| 16                                     | 99431021 | 7/16"-14 x 1 1/4" Hex Bolt | 8   |
| 17                                     | 99432010 | 7/16"-14 Nylok Nut         | 8   |
| 18                                     | 99433005 | 7/16" SAE Flat Washer      | 16  |
| <b>UPPER COILOVER MOUNT TO BRACKET</b> |          |                            |     |
| 19                                     | 99501053 | 1/2"-13 x 1 1/2" Hex Bolt  | 4   |
| 20                                     | 99502009 | 1/2"-13 Nylok Nut          | 4   |
| 21                                     | 99503014 | 1/2" SAE Flat Washer       | 4   |
| <b>SHOCK TO SHOCK MOUNT</b>            |          |                            |     |
| 20                                     | 99502009 | 1/2"-13 Nylok Nut          | 4   |
| 21                                     | 99503014 | 1/2" SAE Flat Washer       | 8   |
| 22                                     | 99501064 | 1/2"-13 x 2 3/4" Hex Bolt  | 4   |
| <b>LOWER MOUNT TO CONTROL ARM</b>      |          |                            |     |
| 20                                     | 99502009 | 1/2"-13 Nylok Nut          | 4   |
| 21                                     | 99503014 | 1/2" SAE Flat Washer       | 8   |
| 23                                     | 99501004 | 1/2"-13 x 3" Hex Bolt      | 4   |



### Major Upper Control Arm Components ....In the box

| Item # | Part #   | Description                   | QTY |
|--------|----------|-------------------------------|-----|
| 1      | 90003266 | Upper Control Arm - Driver    | 1   |
| 2      | 90003267 | Upper Control Arm - Passenger | 1   |
| 3      | 90003269 | Upper Control Arm Bushings    | 4   |
| 4      | 90003268 | Upper Control Arm Ball Joint  | 2   |
| 5      | 70015619 | Upper Ball Joint Dust Cap     | 2   |





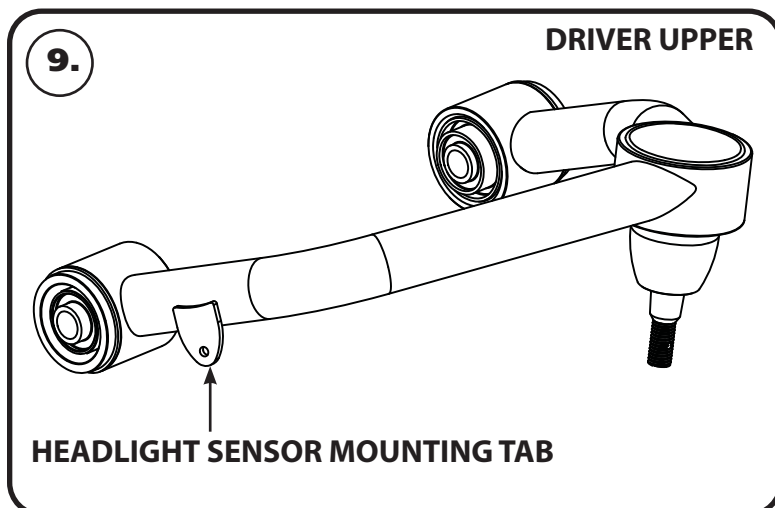
### Disassembly

This CoilOver System is Designed to replace the factory Shocks and Springs.

The front OEM Shock and Spring assemblies will need to be removed from the front of the truck. **DO NOT DISASSEMBLE THE SHOCK/SPRING ASSEMBLY, THE COILSPRING IS UNDER COMPRESSION AND COULD CAUSE BODILY INJURY!**

1. Block the rear wheels of the truck to prevent it from rolling.
2. Raise the front of the truck and support it by the frame, allowing the suspension to hang freely.
3. Remove the wheels.
4. Disconnect the sway bar linkage from the sway bar. This allows the lower control arm to move easier during the CoilOver installation.
5. Disconnect the upper ball joint from the steering knuckle. Do not hit the spindle with a hammer, use the appropriate ball joint separation tool to disengage the ball joint pin from the knuckle.
6. Remove the OEM upper control arm. Retain the hardware to install the new upper control arm. **2021 F150 will require the headlight sensor linkage to be disconnected from the driver side upper control arm.**
7. Support the lower control arm before removing the OEM shock/spring setup. This will prevent the lower control arm from swinging down abruptly when the shock/spring is unbolted from the truck.
8. Remove the shock/spring assembly from both sides of the truck. **DO NOT DISASSEMBLE THE SHOCK/SPRING ASSEMBLY, THE COILSPRING IS UNDER COMPRESSION AND COULD CAUSE BODILY INJURY!**

### Installation



6. The driver upper control arm has a headlight sensor tab on the front tube. The headlight sensor is only on 2021 model year trucks. The passenger side upper control arm does NOT have this tab.



### Installation



7. Install the Ridetech upper control arms using the OEM hardware. Again, the drivers side control arm has a headlight sensor tab on it. If installing controls arms on a 2021 F150, reattach the headlight sensor linkage to the tab of the control arm. The control arm mounting bolts will need to be tightened after the truck is sitting on the ground.

### Getting Started.....

11. The CoilOvers need to be assembled before putting the shocks in the mounts. Assemble the shocks and springs using the instructions below.

#### CoilOver Assembly...



12 First, using the supplied lower adjuster nut (803-00-199) thread the nut onto the shock from the bottom side as seen in figure 6. Remove the plastic pellet that is in the split of the adjuster nut.



15 Once the knob is removed slide a Delrin washer over the eyelet. Next, slide the upper spring mount (803-00-199) over eyelet as seen in figure 9.



13 Next, install a delrin washer then coil spring over the top of the shock as seen in figure 7.



16 Install upper spring mount retainer clip (803-00-199) into the groove on the upper eyelet as seen in figure 10. Then, reinstall adjuster to complete assembly.



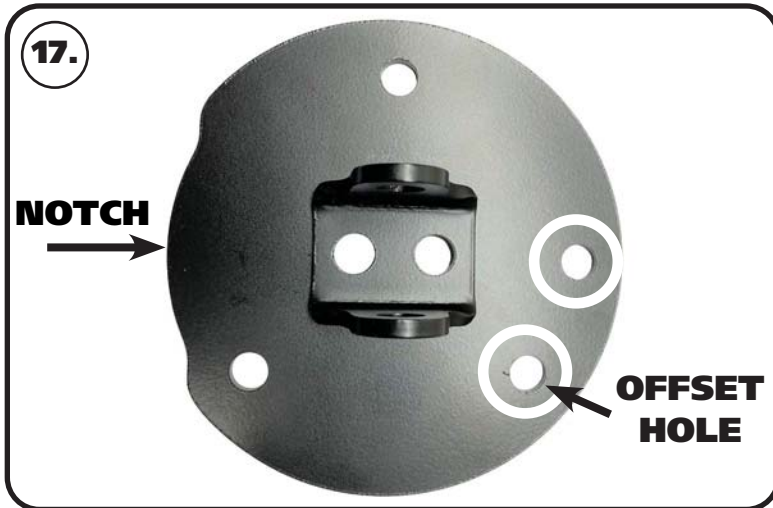
14 Before the upper spring mount can be installed screw the adjuster knob on the upper eye mount to the firmest setting (clockwise) as seen in figure 8. Then remove the Knob by holding it while removing the center screw.

**Install the locking screw in the adjuster nut before setting spring preload, but DO NOT tighten until the spring preload has been set. Set the spring preload after the CoilOver has been installed.**

**NOTE:** Remember to adjust the shock valving before driving, the shock is currently set to full stiff.



### Assembling Upper Mount



**17.** Line up the 2 mounting holes in the upper mounting flange with the 2 holes of the mounting bracket. The location of the offset hole is critical. Make sure it is located the same as **Image 11**. The front hole is a locating hole.

**NOTE:** The Upper Mounts are not side specific so they are the same for both sides of the truck.



**18.** Insert a 1/2"-13 x 1 1/2" bolt through each hole of the flange/mount. The bolts need to be installed with the bolt head in the upper bracket. Refer to **Images 18 & 19**.



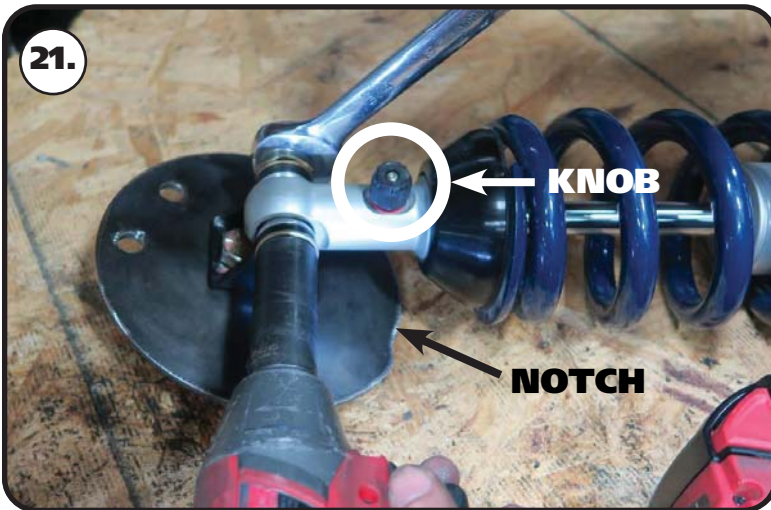
**19.** Install a 1/2" SAE flat washer & 1/2"-13 nylok nut on the threads of each bolt that is sticking through the mount. Torque to 75 ftlbs.



### Assembling CoilOver



**20.** Install the 1/2" I.D. bearing spacers into the bearing in the shock eyelet. These spacers have a through hole that is 1/2" diameter. The small diameter of the spacers will insert into the shock bearing.



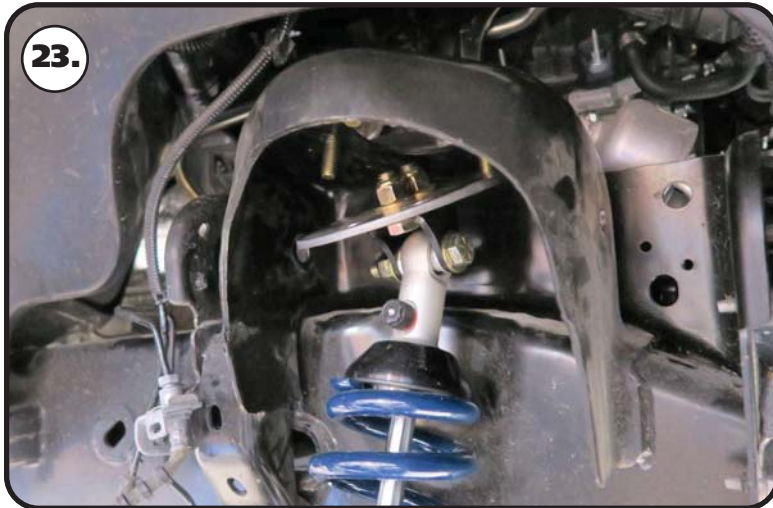
**21.** Insert the shock eyelet into the upper mount. **Install each CoilOver in the upper mount with the Adjusting Knob facing the opposite side as the notch in the upper plate.** Line up the shock bearing/spacers hole with the mounting holes of the upper mount. Install a 1/2" flat washer on a 1/2"-13 x 2 3/4" bolt. Insert a bolt/washer through the mount/shock. Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of the bolt that are sticking through the mount. Torque the upper mounting hardware to 75 ftlbs.



**22.** The upper mount has 4 holes in the perimeter of the flange. The flange is also notched out on one side. The upper mount needs to be installed in the truck with the notch to the frame.



### Installation of CoilOver Assembly



**23.** Position the mount/coilover in the truck. It will be placed in the OEM location. Line up the locating hole and 3 mounting holes.



**24.** Install a 7/16" flat washer on each of (4) 7/16"-14 x 1 1/4" hex bolts. Install the bolt/washer in the frame/mount from the top side with the threads pointing down. Install a 7/16" flat washer and 7/16"-14 nylok nut on the threads of each bolt sticking through the frame. Torque the hardware to 50 ftlbs. Repeat steps 17-24 on the remaining side.



**25.** The lower shock mount bolts to the lower control arm in the same location as the OEM shock. Sit the mount on the lower control arm, aligning the mounting holes with the shock mounting holes





### Installation of CoilOver Assembly



**26.** . Install a 1/2" flat washer on each of (2) 1/2" 13 x 3" hex bolts. Insert a bolt/washer in each mounting hole.



**27.** Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of each bolt sticking through the control arm. Torque the hardware to 75 ftlbs.



**28.** Install the 1/2" I.D. bearing spacers into bearing in the shock body. These spacers have a through hole that is 1/2" diameter. The small diameter of the spacers will insert into the shock bearing.



### Installation of CoilOver Assembly



**29.** Insert the shock into the lower mount. Line up the shock bearing/spacers hole with the mounting holes of the lower mount. Insert a 1/2"-13 x 2 3/4" bolt through the mount/shock.



**30.** Install a 1/2" flat washer and 1/2"-13 nylok nut on the threads of the bolt that are sticking through the mount.



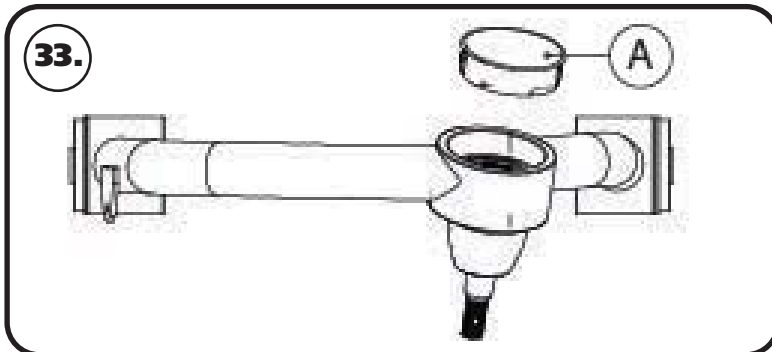
**31.** Insert the ball joint stud into the spindle. Install the flat washer supplied with the ball joint nut. Next, install the ball joint nut and torque to 50 ft-lbs. Tighten the nut until a slot in the nut aligns with the hole in the ball joint pin. **NEVER LOOSEN THE NUT TO ALIGN THE HOLE!**



### Installing Upper Control Arm



**32.** Install the supplied cotter pin. Bend the tabs of the cotter pin.



**33.** Insert the grease zerks in the ball joints. Grease the ball joints and install the supplied caps(A). These caps will help keep debris out of the control arms.

**34.** Repeat steps 9-33 on the other side of the truck.

**35.** Reattach the sway bar linkage. The lower sway bar linkage nut is torqued to 60 ft-lbs. The upper linkage nut is torqued 50-55 ft-lbs.

**36.** Verify all the hardware is tight before continuing to coil spring adjustment.

**37.** Preload the springs of the CoilOver 3/4" to start. **Steps 37a - 37e** will assist you with preloading the coil spring. You may need to adjust the amount of preload in the spring, but this will be determined after the truck has been sat on the ground.

**37a.** Verify the adjuster nut locking screw is installed in the adjuster nut, but not tight.

**37b.** Screw the spring adjuster nut up the shock body until it is snug against the spring. You should NOT be able to move the spring up and down on the shock (0 preload). Verify the dropped upper coil spring cap is seated correctly on the upper shock eyelet.

**37c.** Measure from the bottom of the adjuster nut to the flat of the shock. You may want to write the measurement down.

**37d.** Using a spanner wrench, thread the adjuster up the shock an additional 3/4" (from the measurement you took in step 2) to preload the spring.

**37e.** Lock the adjusting nut in place by tightening the adjuster nut locking screw.

**38.** Reinstall wheels and torque lug nuts to factory specifications.

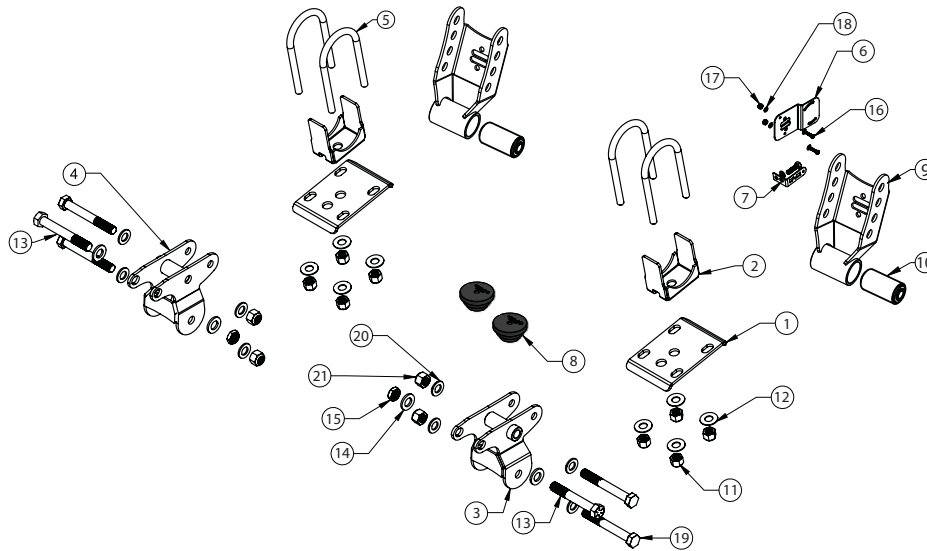
**39.** Lower the front of the truck to the ground and torque upper control arm hardware to 111 ft-lbs.

**40.** Remove the cap and grease the ball joint at regular service intervals.



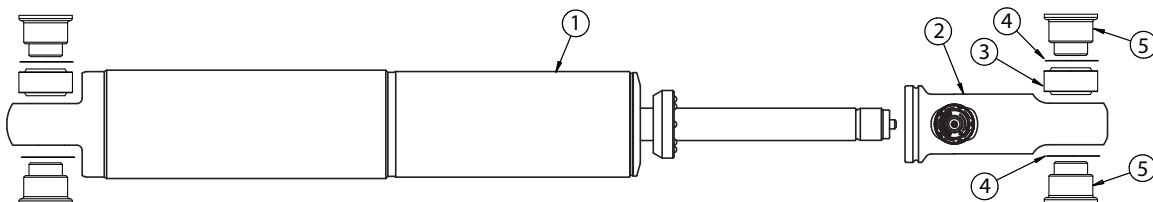
### Major Flip Kit Components ....In the box

| Item # | Part #   | Description                                      | QTY |
|--------|----------|--|-----|
| 1      | 90003275 | Rear Axle Mounting Plate                         | 2   |
| 2      | 90003274 | Axle Flip Bracket                                | 2   |
| 3      | 90003272 | Front Leaf Spring Relocation Bracket - Driver    | 1   |
| 4      | 90003273 | Front Leaf Spring Relocation Bracket - Passenger | 1   |
| 5      | 99626004 | U-bolt - 3.375" W x 7.00" long x 5/8"-18 thread  | 4   |
| 6      | 70015487 | 2021 Rear Headlight Sensor Relocation Bracket    | 1   |
| 7      | 70015489 | 2021 Rear Headlight Sensor Bracket               | 1   |
| 8      | 70015643 | Bump Stops                                       | 2   |
| 9      | 90003364 | Adjustable Shackle                               | 2   |
| 10     | 70015559 | Shackle Bushing - installed in shackle           | 2   |



### Major Rear Shock Components ....In the box

| Item # | Part #     | Description                         | QTY |
|--------|------------|-------------------------------------|-----|
| 1      | 982-10-807 | 6.9" Stroke Single Adjustable Shock | 2   |
| 2      | 90002026   | 3.7" Adjustable Shock Eyelet        | 2   |
| 3      | 90001994   | Shock Bearing                       | 4   |
| 4      | 90001995   | Bearing Snap Ring                   | 8   |
| 5      | 70015463   | Shock Bearing Spacers               | 8   |





### Hardware Kit .....# 99010169

| Item #  | Part #   | Description                | QTY | Item #                                    | Part #   | Description            | QTY |
|---|----------|----------------------------|-----|---|----------|------------------------|-----|
| <b>U-BOLT</b>                                 |          |                            |     | <b>HANGER TO FACTORY LEAF SPRING HOLE</b> |          |                        |     |
| 11  | 99622001 | 5/8"-18 Nylok Nut          | 8   | 19  | 99181001 | M18-2.5 X 130 Hex Bolt | 2   |
| 12  | 99623001 | 5/8" SAE Flat Washer       | 8   | 20  | 99183001 | M18 Flat Washer        | 4   |
| <b>PASSENGER FRONT LEAF SPRING MOUNT</b>      |          |                            |     | 21  | 99182001 | M18-2.5 Nylok Nut      | 2   |
| 13  | 99751011 | 3/4"-16 X 5" Hex Bolt      | 2   | <b>LEAF SPRING TO HANGER</b>              |          |                        |     |
| 14  | 99753004 | 3/4" SAE Flat Washer       | 4   | 19  | 99181001 | M18-2.5 X 130 Hex Bolt | 2   |
| 15  | 99752001 | 3/4"-16 Thin Nylok Nut     | 2   | 20  | 99183001 | M18 Flat Washer        | 4   |
| <b>HEADLIGHT SENSOR TO RELOCATION BRACKET</b> |          |                            |     | 21  | 99182001 | M18-2.5 Nylok Nut      | 2   |
| 16  | 99101006 | 10-24 X 3/4" Phillips Head | 2   | <b>BUMPSTOP</b>                           |          |                        |     |
| 17  | 99102002 | 10-24 Nylok Nut            | 2   |   |          | M10-1.5 X 30mm SHCS    | 2   |
| 18  | 99103001 | #10 SAE Flat Washer        | 4   |   |          | M10 Flat Washer        | 2   |

## Getting Started.....

THIS KIT CAN BE SETUP TO LOWER THE REAR OF YOUR TRUCK 4 DIFFERENT HEIGHTS. THERE IS 3" DIFFERENCE BETWEEN THE 4 SETTINGS. THIS HEIGHT ADJUSTMENT IS BUILT INTO THE REAR SPRING SHACKLE. THE PICKUP STYLE AND ACCESSORIES WILL AFFECT WHICH HOLE IS THE BETTER CHOICE. IF YOU HAVE A REGULAR CAB SHORT BED, WE SUGGEST STARTING WITH THE LOWEST SETTING(LONGEST SETTING ON THE SHACKLE). IF YOU HAVE A CREW OR EXTENDED CAB, START WITH THE HIGHEST SETTING(SHORTEST SETTING ON THE SHACKLE). BEFORE YOU START THE INSTALL, MEASURE THE HEIGHT OF YOUR TRUCK TO HELP DETERMINE HOW YOU WANT IT TO SIT. THE RIDETECH FRONT KIT HAS SOME ADJUSTMENT TOO. THE FRONT KIT WILL LOWER THE TRUCK 1 1/2"-3 1/2". YOUR TIRE HEIGHT WILL PLAY A FACTOR ON HOW LOW YOU CAN SET THE FRONT SUSPENSION.

1. Raise the vehicle to a safe and comfortable working height and support it by the frame. You will need to be able to move the rear differential up and down. Use a jack under the rear axle to raise and lower it during the install.
2. Jack up the rear end slightly to remove the tension from the rear shocks. Remove the shock absorbers. For proper function, they should be replaced with the Ridetech HQ Series shocks 12299510. Shocks are included with Kit # 12299511. Shocks are NOT included with Kit # 12299512.

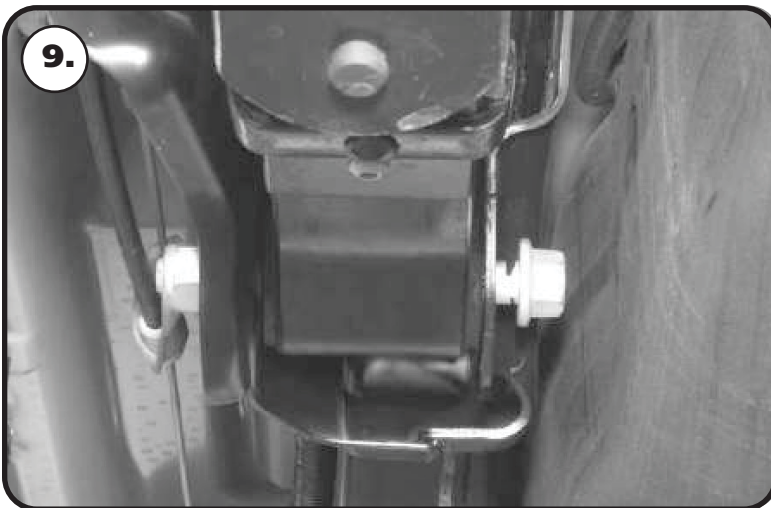


3. **2021 ONLY!** Disconnect the headlight sensor linkage from the Drivers side leaf spring mount. Remove the linkage bracket from the axle. There isn't a sensor on the Passenger side of the truck.



### Disassembly

4. Mark the leaf springs driver and passenger.
5. **2015-2017 ONLY!** These year range of F150s may have a cable operated emergency brake. If your truck does, you will need to unbolt the emergency brake cable brackets from the drivers side front leaf spring mount and passenger side leaf spring axle pad. Retain the hardware, these will get reattached later.
6. Lower the jack to relieve the tension on the rear springs, but keep the jack touching the rear axle.
7. Remove the u-bolts and axle clamps to disengage the axle from the leaf springs.
8. Lower the axle to get clearance on the leaf springs, but **DO NOT** strain the brake lines.



**9.** The front of the leaf springs will need to be disconnected to install the front bracket and to move the springs under the axle. Due to the location of the fuel tank and exhaust, cutting the bolt head off is the easiest way to remove it. Loosen the nut enough to expose the shank of the bolt. Push the bolt in toward the fuel tank/exhaust. Cut off the head of the bolt, being careful to not damage the fuel tank, exhaust, or frame.

**10.** Support the front of the leaf spring and remove the remainder of the leaf spring hanger bolt.



**11.** The rear of the leaf springs will need to be disconnected to move the springs under the axle and to also replace the shackle. Support the rear of the leaf spring and remove the bottom leaf spring shackle bolt. Remove the rear shackle from the leaf spring.

Repeat Steps 9-11 on the 2nd leaf spring.



### Disassembly



**12.** The leaf spring locating pins need to be flipped over. Currently, the nuts for the pins are on the top side of the leaf spring pack. The nuts will need to be on the bottom side for proper location of the flip bracket. The u-bolt locating plate will need to be removed and discarded. The pins can be held with a pair of vise grips to loosen and remove the nuts.



**13.** Next, remove the u-bolt locator and discard it.



**14.** Remove the locating pins from the leaf spring pack. Reinstall the locating pins from the TOP side. Reinstall the nuts on the BOTTOM side and tighten. Torque the nuts to 35 ftlbs Repeat on the second spring.



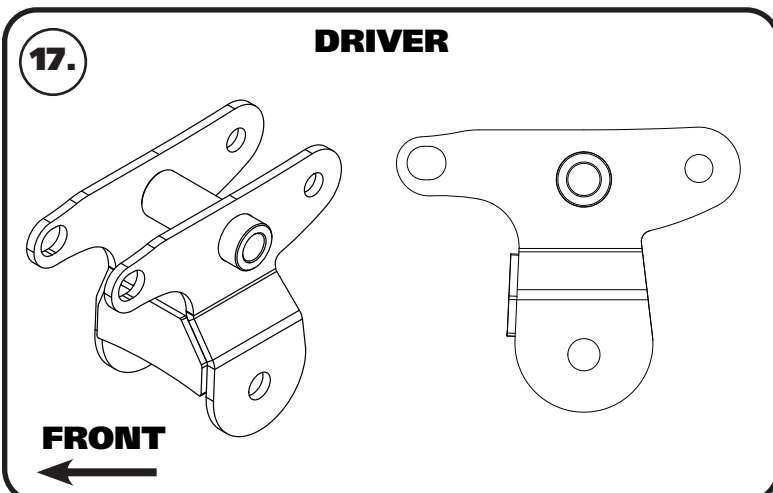
### Bumpstop & Leaf Spring Bracket Installation



15. The OEM bump stop mount will need to be removed.



16. Install a M10 flat washer on a M10-1.5 x 30 mm socket head cap screw. Insert the washer/bolt in the center hole of the bumpstop. Use a hex key (allen) wrench to attach the bumpstop in the OEM location. Repeat on the other side and torque to 35 in-lbs.



17. The kit includes brackets to relocate the front of the leaf spring. The brackets have a "D" or "P" stamped into the side of the bracket. The Driver side is shown in **Image 17**. The bracket is mounted in the truck with the cross tube to the top and the long tabs to the front of the truck.





### Leaf Spring Bracket Installation



**18.** Insert the leaf spring hanger bracket into the OEM leaf spring mount. The long tabs will point to the front of the truck and insert into the OEM mount. Position the bracket so that the tube lines up with the OEM leaf spring mounting hole.



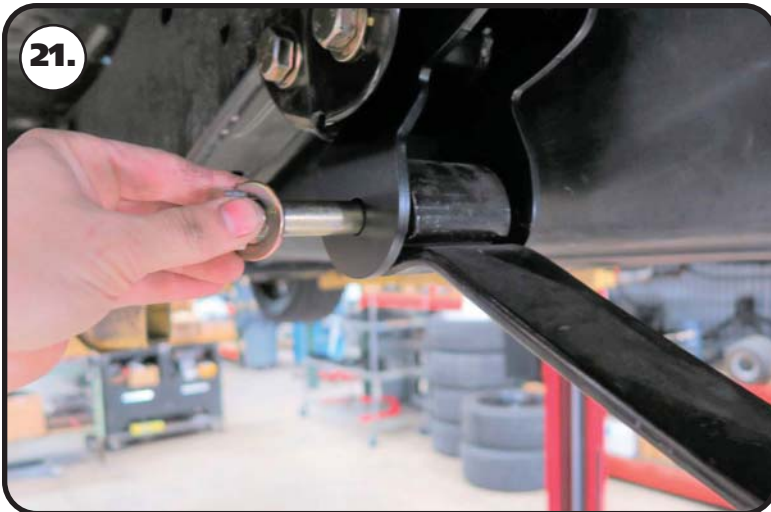
**19.** Install a M18 flat washer on a M18-2.5 x 130mm bolt. Insert the bolt into the OEM leaf spring hole. Install a M18 flat washer & M18-2.5 nylok nut on the threads of the bolt. Do not tighten at this time.



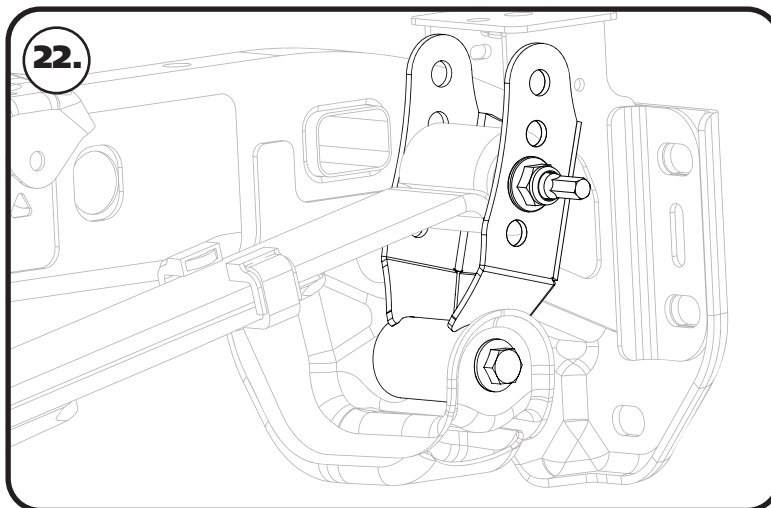
**20.** Make sure the holes in the front tab line up with the front hole of the OEM leaf spring mount. Install a 3/4" flat washer on a 3/4"-16 x 5" bolt. Insert the bolt/washer through the front hole of the leaf spring mount. Install a 3/4" flat washer & 3/4"-16 thin nylok nut on the threads of the bolt. Torque the hardware to 75 ftlbs.



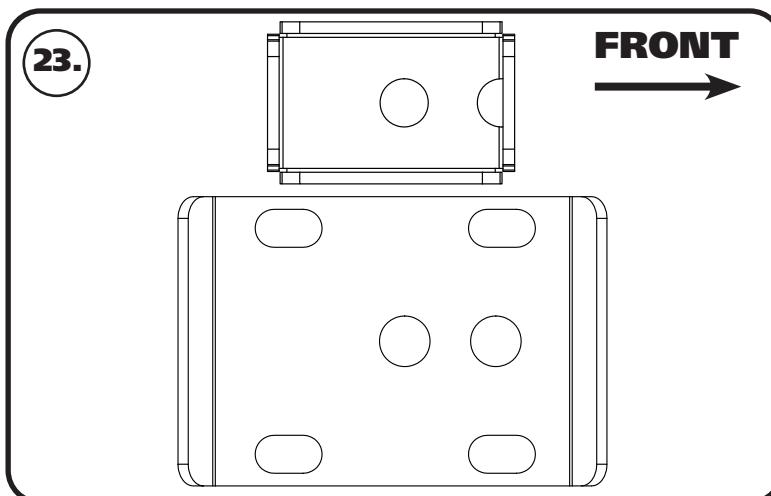
### Leaf Spring Bracket & Flip Bracket Installation



**21.** Insert the front of the leaf spring in the new bracket. Install a M18 flat washer on a M18-2.5 x 130mm bolt. With the mounting holes aligned with the inner sleeve of the leaf spring, insert the bolt/washer. Install a M18 flat washer and M18-2.5 nylok nut on the threads of the bolt. Repeat on the second side. Do not tighten this hardware until the truck is sitting on the ground



**22.** Make sure the rear differential is raised high enough to get the leaf springs in position. The shackle will need to be bolted to the leaf spring with the OPEN side to the FRONT of the truck. Use the info on **Page 3** to help determine which holes to use. Line up the holes in the shackle with the through hole of the leaf spring. Insert the bolt/washer through the leaf spring and shackle FROM THE FRAME SIDE. The threads MUST point to the outside of the truck for clearance reasons. Line up the holes in the hanger with the inner sleeve of the shackle. Reinstall the OEM hardware. Do not tighten the hardware at this time.



**23.** The flip kit has the locating holes offset to center the wheel in the wheel opening. **Image 23** illustrates a top view of the flip bracket and the leaf spring plate. Notice the HOLES are offset to the FRONT of the truck.



### Flip Bracket Installation



**24.** Raise the axle high enough to get the flip bracket positioned on the leaf spring.



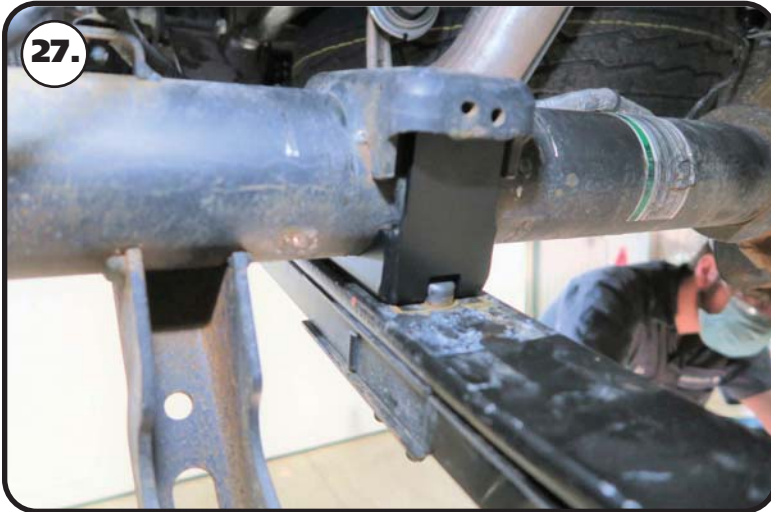
**25.** The flip bracket is positioned on the leaf spring locating pins. The locating pin holes will need to be positioned to the front of the truck.



**26.** Position the flip bracket on the locating pins. Again, the locating pin holes go to the front of the truck.



### Flip Bracket Installation



**27.** Slowly lower the axle into the flip bracket, making sure the tabs go up into the leaf spring saddle. THE FLIP BRACKET WILL POSITION THE PINION AT THE CORRECT ANGLE.



**28.** Slip the u-bolts over the axle tube with the threads pointing down.



**29.** Slip the leaf spring bracket up onto the u-bolts WITH THE OFFSET HOLES FORWARD. . Hold the leaf spring bracket in place and install a 5/8" flat washer & 5/8"-18 nylok nut on the threads of the u-bolts. Snug the nuts down evenly and tighten them in a criss-cross fashion to 130 ftlbs.

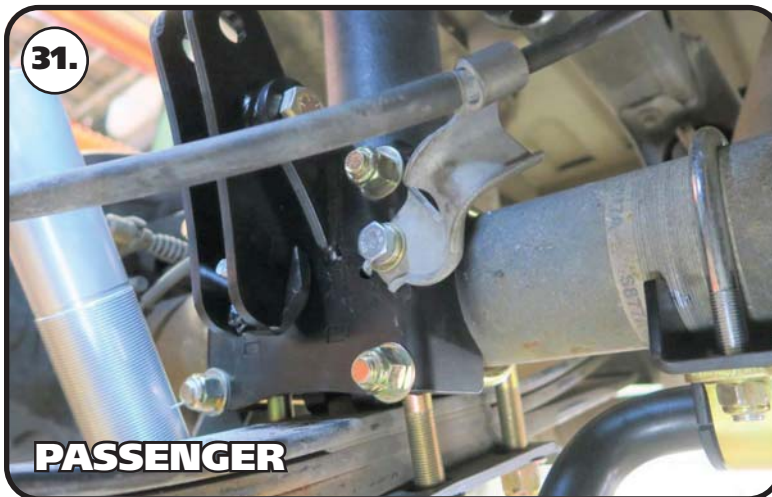


### 2015-2017 Emergency Brake Cable Brackets



#### 2015-2017 WITH CABLE OPERATED EMERGENCY BRAKE ONLY!

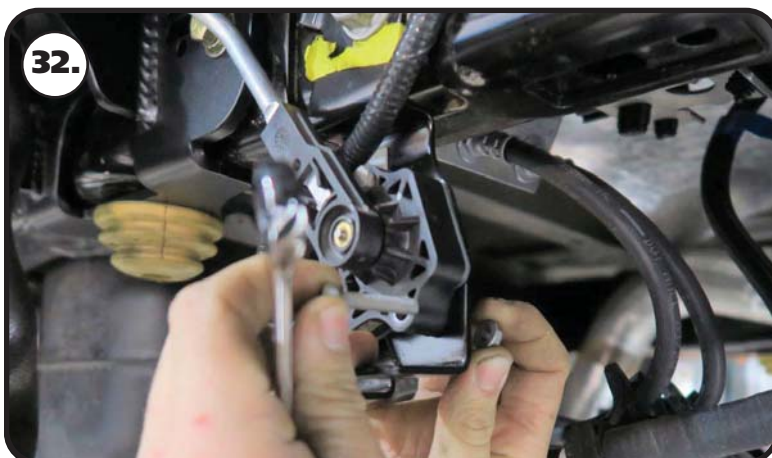
**30.** Reattach the drivers side emergency brake cable bracket to the front leaf spring mount. You may need to trim the back edge of bracket to clear the leaf spring mount. Use the OEM hardware to reattach the bracket.



#### 2015-2017 WITH CABLE OPERATED EMERGENCY BRAKE ONLY!

**31.** Reattach the passenger side emergency brake cable bracket. If you are using the Traction Bar kit, it will go back in the OEM location. If you are using the traction bar kit, there is a provision for reattaching the bracket. Use the OEM hardware to reattach the bracket.

### Head Light Sensor Relocation 2021-2022 F150 ONLY



#### IF YOU ARE INSTALLING THE KIT ON A 2015-2020, SKIP TO STEP 38!!

**32.** Remove the headlight sensor from the frame bracket. Retain the hardware to reinstall the sensor.



### Head Light Sensor Relocation 2021-2022 F150 ONLY



**33.** Align the relocation bracket holes with the mounting holes of the OEM bracket. Attach the new bracket using the supplied 10-24 x 3/4" bolts/ washer and nylok nuts. Tighten to 22 in-lbs.



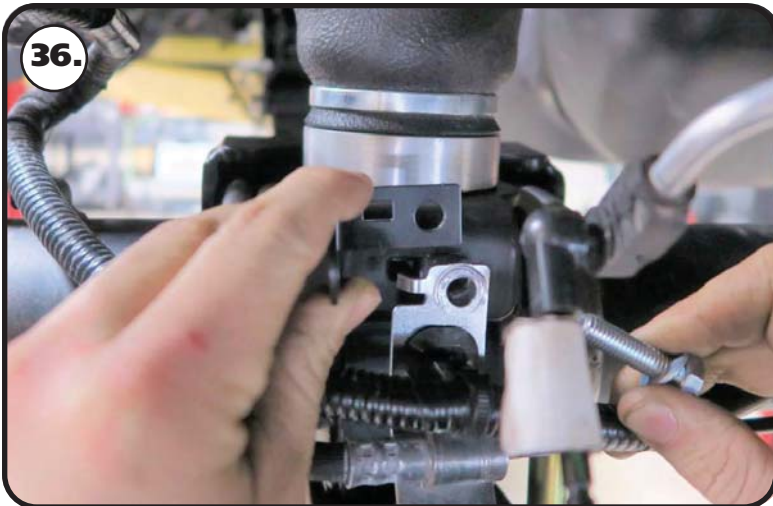
**34.** Reinstall the headlight sensor on the new bracket using the OEM hardware. The new bracket is slotted to allow for adjustment to set the headlights to your new ride height.



**35.** Remove the brake line bracket bolt from the rear of the drivers side leaf spring pad. Retain the hardware for assembly. If you are using the optional air springs, a longer bolt is supplied.



### Head Light Sensor Relocation 2021-2022 F150 ONLY

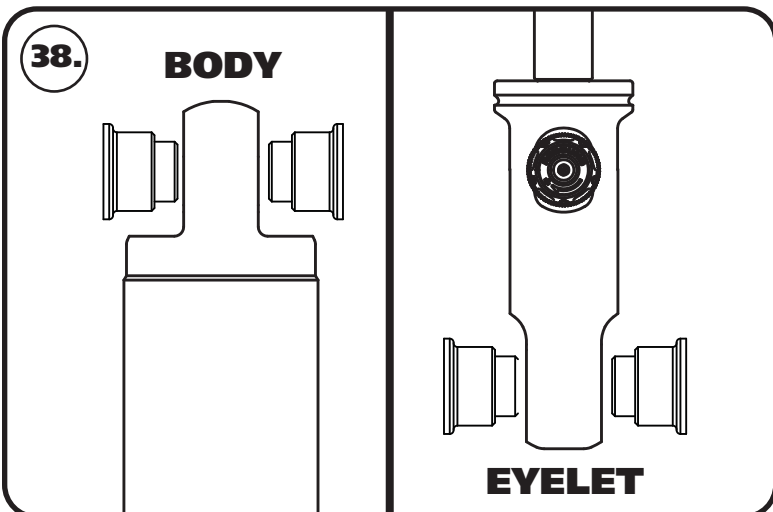


**36.** The lower relocation bracket will get positioned under the brake line mount. The tab of the brake line mount needs to be engaged in the bracket and leaf spring pad. Reinstall the OEM hardware if you're not running the helper air spring kit. If you are using the helper air spring kit, use the supplied M8-1.25 x 30mm bolt and M8 flat washer. Torque to 169 in-lbs.



**37.** Reattach the headlight sensor linkage to the new bracket.

*DUE TO VARIATIONS IN THE OEM SHOCK MOUNTS, THE SHOCKS MAY NEED TO BE INSTALLED BODY UP OR BODY DOWN. CHECK FOR CLEARANCE AFTER YOU GET THE SHOCKS INSTALLED. IF IT LOOKS LIKE IT IS GOING TO HIT THE MOUNT, FLIP IT OVER. THIS SHOCK CAN BE RAN WITH THE SHOCK BODY UP OR DOWN, IT DOES NOT AFFECT THE PERFORMANCE.*



**38.** Insert the SMALL end of the bearing spacers into the shock bearings.

**39.** Position the BODY of the shock into the OEM mount.

**40.** Insert the OEM hardware and torque to 60 ft-lbs.

**41.** Insert the EYELET of the shock into the OEM shock mount. **We recommend having the adjuster knob pointing away from the differential for easier adjustment.**

**42.** Insert the OEM hardware and torque to 60 ft-lbs.



### Final Assembly and Tightening.

43. Set the truck on the ground and torque the leaf spring & shackle bolts to 167 ftlbs.
44. **DOUBLE CHECK THE HARDWARE TO MAKE SURE IT IS TIGHT.**
45. If you are doing the install on a 2021 F150, the headlight sensor will need to be adjusted at for your new ride height.

### CoilSpring Adjustment

46. After entire weight of truck is on the wheels, jounce the suspension and roll the truck forward and backward to alleviate suspension bind. **THIS IS NECESSARY BEFORE TIGHTENING THE LEAF SPRING BOLTS AND MEASURING RIDE HEIGHT.**
47. Torque the leaf spring bolts to 167 ftlbs.
48. **DOUBLE CHECK THE HARDWARE TO MAKE SURE IT IS TIGHT.**
49. If you determine you need to adjust the ride height of the front suspension after getting the truck on the ground, **Steps 49a - 49e** will assist you in adjusting the ride height.
  - 49a. Raise the vehicle and support it by the frame, allowing the suspension to hang freely. You do NOT need to remove the front wheels, but you may want to turn the steering wheel to gain better access to the CoilOver.
  - 49b. Loosen the locking screw in the adjuster nut, but do not remove the locking screw.
  - 49c. Measure from the bottom of the adjuster nut to the flat of the shock. You may want to write the measurement down.
  - 49d. Using a spanner wrench, thread the adjuster up or down the shock to obtain the correct ride height. One complete revolution of the adjuster nut is approximately 1/8" at the wheel. Threading the adjuster nut up the shock will raise the ride height, threading it down will lower the ride height.
  - 49e. Lock the adjusting nut in place by tightening the adjuster nut locking screw.
50. Turn the steering wheel until the front wheels are straight and set the front of the truck back on the ground.
51. After entire weight of truck is on the wheels, jounce the suspension and roll the truck forward and backward to alleviate suspension bind. **THIS IS NECESSARY BEFORE MEASURING RIDE HEIGHT.**
52. Recheck your ride height. If you need to readjust, repeat **Steps 49-51**.





### Alignment & Adjustment

Any time you replace front suspension components, you should have the alignment checked.

#### Suggested Alignment Specs:

|         |                       |
|---------|-----------------------|
| Camber: | 0 to -.75 degrees     |
| Caster: | +5.5 to + 7.5 degrees |
| Toe:    | 1/16" to 1/8" toe in  |

#### Headlight Adjustment:

If you are doing the install on a 2021 F150, the headlight sensor will need to be adjusted at for your new ride height.

#### Shock Adjustment:

We recommend starting with the shock adjustment at 12 clicks out from full stiff. Adjust the shock full stiff (clockwise) and count the clicks as you adjust the knob counter clockwise.

### Shock Adjustment 101- Single Adjustable

#### Rebound Adjustment:

How to adjust your new shocks.

The rebound adjustment knob is located on the top of the shock absorber protruding from the eyelet.

You must first begin at the ZERO setting, then set the shock to a medium setting of 12.



-Begin with the shocks adjusted to the ZERO rebound position (full stiff). Do this by rotating the rebound adjuster knob clockwise until it stops.



-Now turn the rebound adjuster knob counter clock wise 12 clicks. This sets the shock at 12. (settings 21-24 are typically too soft for street use).

Take the vehicle for a test drive.



-if you are satisfied with the ride quality, do not do anything, you are set!



-if the ride quality is too soft increase the damping effect by rotating the rebound knob clock wise 3 clicks.

#### Take the vehicle for another test drive.



-if the vehicle is too soft increase the damping effect by rotating the rebound knob clock wise 3 additional clicks.



-If the vehicle is too stiff rotate the rebound adjustment knob counter clock wise 2 clicks and you are set!

Take the vehicle for another test drive and repeat the above steps until the ride quality is satisfactory.

#### Note:

One end of the vehicle will likely reach the desired setting before the other end. If this happens stop adjusting the satisfied end and keep adjusting the unsatisfied end until the overall ride quality is satisfactory.



### Torque Specifications

| COMPONENTS   | TORQUE     |
|--|------------|
| ASSEMBLING UPPER MOUNT   | 75 FT-LBS  |
| SHOCK MOUNTING BOLTS   | 75 FT-LBS  |
| FRONT UPPER SHOCK MOUNT TO FRAME                                   | 50 FT-LBS  |
| LOWER SHOCK MOUNT TO CONTROL ARM                                   | 75 FT-LBS  |
| UPPER BALL JOINT (tighten to align cotter pin hole after torquing) | 50 FT-LBS  |
| UPPER CONTROL ARM TO FRAME HARDWARE                                | 111 FT-LBS |
| LEAF SPRING LOCATING PIN   | 35 FT-LBS  |
| REAR BUMPSTOP  | 35 IN-LBS  |
| LEAF SPRING MOUNT TO FRAME   | 75 FT-LBS  |
| LEAF SPRING U-BOLTS  | 130 FT-LBS |
| HEADLIGHT SENSOR RELOCATION BRACKET TO FRAME                       | 22 IN-LBS  |
| HEADLIGHT SENSOR BRACKET TO AXLE                                   | 169 IN-LBS |
| REAR SHOCK MOUNTING  | 60 FT-LBS  |
| LEAF SPRING BOLTS  | 167 FT-LBS |