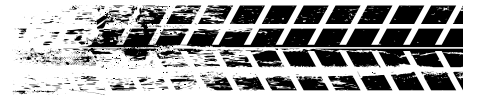




**INSTALLATION  
INSTRUCTIONS**



**Part # 12299521**



**Axle Flip Kit**

**2015-2026 Ford F-150 2WD/4WD**

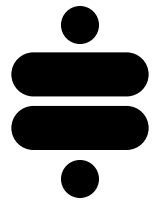


[www.ridetech.com](http://www.ridetech.com)  
812.482.2932





**Please Read And Understand All Instructions  
And Warnings Prior To The Installation Of  
This Product.**



**THANK YOU**

Congratulations on your new Ridetech product! It's an honor that you've selected the Ridetech brand to upgrade your ride. Our products are developed around quality and performance without compromise. We're confident you'll have many years (and miles) of pure driving enjoyment.  
Thank you for choosing Ridetech!

## **Road Map**

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# PRE-INSTALLATION NOTES

## AXLE/WHEEL POSITION

On some trucks, the rear axle may be slightly offset (left to right) from the factory. Lowering the vehicle may cause this variance to appear more pronounced. One wheel may visibly protrude from the bedside more than the other. To identify if your vehicle is affected by this variance, before lowering your truck, place a straight edge across the wheel and measure its position relative to the bed on each side.

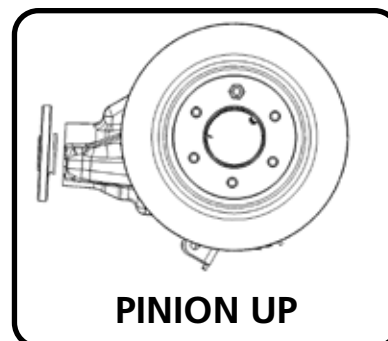
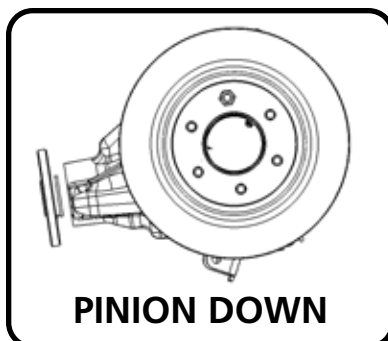
## HEADLIGHT SENSORS

Trucks equipped with headlight sensors require bracket kit # 12299501.

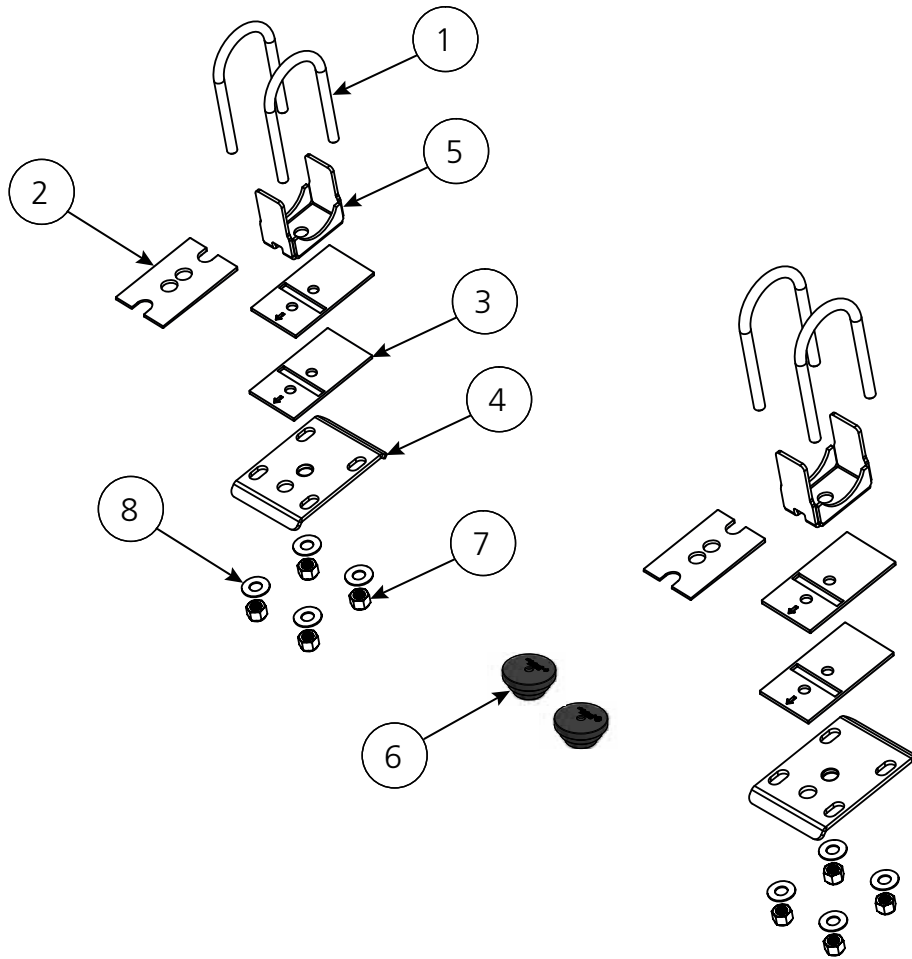
Trucks equipped with the "On-Board Scale" option (4 headlight sensors) require bracket kit # 12299502.

## PINION ANGLE

To avoid any confusion in the "Pinion Angle Assessment" on page 14, please see the two side views below to clearly illustrate how we define Pinion Down and Pinion Up.

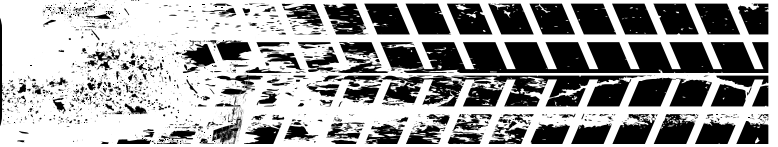


# EXPLODED VIEWS AND PARTS LISTING



Item #	Part #	Description	Qty
1	99626006	U-Bolt, 5/8" -18 x 3.375" x 8.00"	4
2	90003296	2 Degree Pinion Shim	2
3	90003292	Leaf Spring Shim	4
4	90003275	Axle Mount Plate	2
5	90003274	Flip Bracket	2
6	70015643	Bump Stop	2
<b>U-Bolts</b>			
7	99622001	5/8" -18 Nylok Nut	8
8	99623001	5/8" SAE Flat Washer	8
<b>Bump Stop</b>			
-	99115005	M10-1.5 x 30mm SHCS	2
-	99113002	M10 Flat Washer	2
<b>Lower Shock Bolt (Driver)</b>			
-	99121016	M12-1.75 x 70mm Flange Bolt	1

## Disassembly



**NOTE:** If you will be installing this flip kit in conjunction with the Ridetech #12299516 Leaf Spring Bracket kit, we recommend installing that kit first (using the leaf spring shims from this kit), and then jumping to step 15 on page 8 in the following instructions. If you will not be installing the bracket kit, begin with step 1 below.

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 on the shocks and then remove them.
3. **2021 & Newer Trucks Only:** Disconnect the headlight sensor linkage from the driver side leaf spring mount (Figure 1). There is no sensor on the passenger side.
4. **2015-2017 Trucks Only:** These trucks may have a cable operated emergency brake. If this applies to your truck, disconnect the emergency brake cable brackets from the driver side front leaf spring mount and passenger side leaf spring axle pad. Retain the hardware. These will be reattached later.
5. Lower the jack to relieve the tension on the rear springs, but keep the jack touching the rear axle.
6. Remove the u-bolts and axle clamps to disengage the axle from the leaf springs, then lower the axle to gain clearance on the leaf springs, but DO NOT strain the brake lines.
7. Loosen the front leaf spring mounting bolt enough to expose the shank of the bolt (Figure 2). The bolt does not need to be removed.



Figure 1

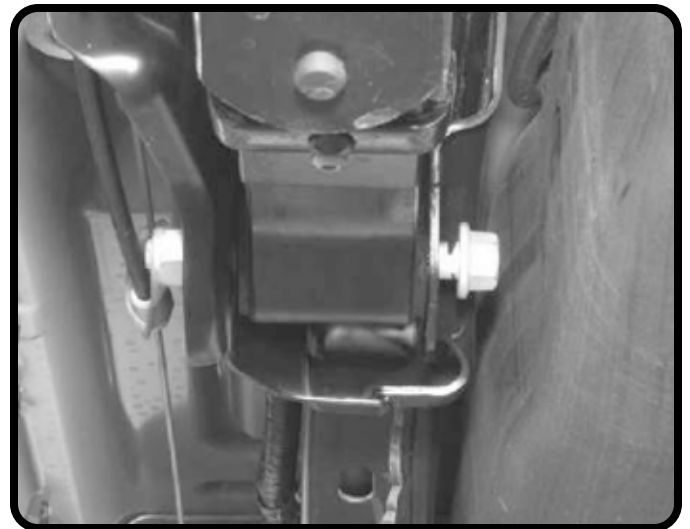


Figure 2

## Disassembly

8. Support the rear of the leaf spring and remove the bottom leaf spring shackle bolt (Figure 3).

9. The leaf springs can be flipped to the bottom side of the axle without removing the axle or the front of the leaf spring. Start by pushing the axle to one side. **Avoid excessive force on the brake lines and ABS wires.** Push the leaf spring over to clear the end of the axle (Figure 4). While pushing the leaf spring over, move the leaf spring down to get below the axle. Repeat for the second spring, pushing the axle in the opposite direction.

**NOTE:** For clarity, steps 10-14 show the leaf spring off the vehicle. The spring does not have to be removed to replace the shims.

10. Remove the nuts securing the u-bolt locating plate. The pins can be held with a pair of vise grips while remove the nuts as shown in Figure 5.

11. Remove and discard the U-bolt locator (Figure 6).



Figure 3



Figure 4



Figure 6



Figure 5

# Shim Replacement

**12.** Remove and discard the top shim as shown in Figure 7.  
The CENTER & BOTTOM shims will be replaced with the offset shims supplied with this kit.

**13.** Remove the locating pins and remove the center and bottom shims (Figure 7).

The OEM shims have the holes centered in the plate as shown in Figure 8 (top image).

The replacement shims have the holes offset to the front of the truck as shown in Figure 8 (bottom image).

**14.** Install the new offset shims with the arrows pointing to the front of the truck.  
Reinstall the locating pins from the TOP side.  
Reinstall the nuts on the BOTTOM side and tighten (Figure 9).  
Torque the nuts to **35 ft-lbs.**



Figure 7

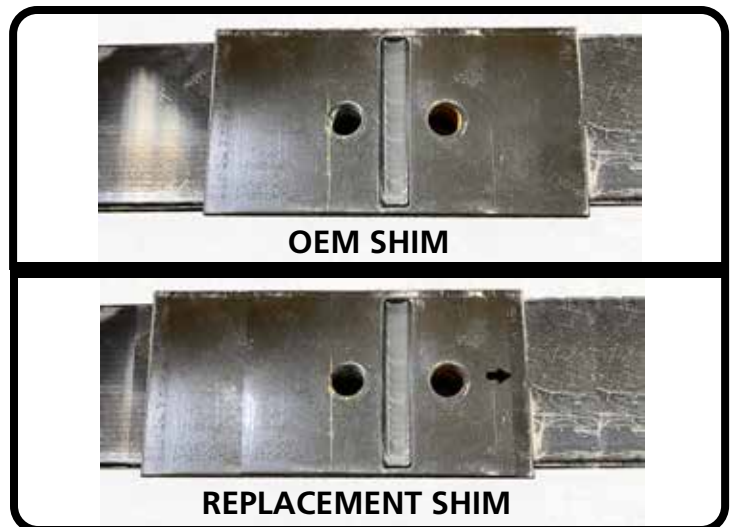


Figure 8



Figure 9

## Bump Stop

15. Remove the OEM bump stop (Figure 10).



Figure 10

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 bump stop (Figure 11). Use a hex key (Allen) wrench to attach the bump stop in the OEM location. Torque to **35 in-lbs.**



Figure 11

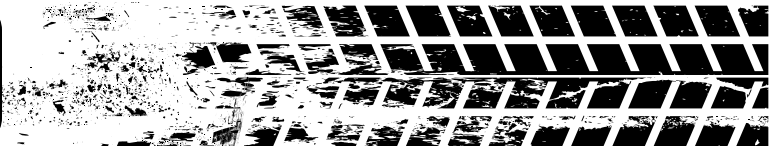
17. Reattach the rear shackle, but **do not** tighten until the truck is back on the ground (Figure 12).

Repeat on the opposite side.



Figure 12

# Flip Bracket Overview



**18.** The flip kit has offset locating holes to center the wheel in the wheel opening.

Figures 13 & 14 show a top view of the wedge shim and flip bracket relative to the location of the leaf spring pins. Figure 15 shows the leaf spring clamp plate.

The holes are offset to the FRONT of the truck. The flip bracket and wedge shim each have 2 sets of holes so that they can be mounted in 2 different directions. See the instructions on pages 10 & 11 to determine the correct orientation for your particular application.

**19.** Figure 16 below illustrates how these components are positioned relative to each other, the leaf spring and the axle.

If you have **steel leaf springs**, refer to Page 10 for the correct component orientation.

If you have a **composite overload spring**, refer to Page 11 for the correct component orientation.

**WEDGE SHIM**

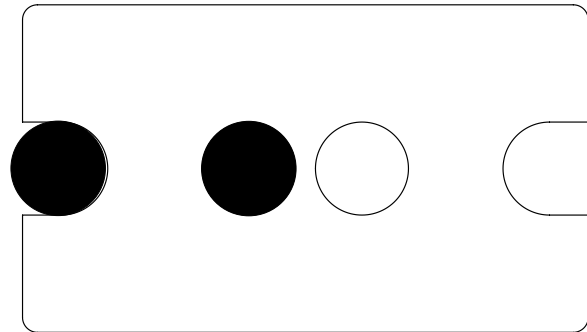


Figure 13

**FLIP BRACKET**

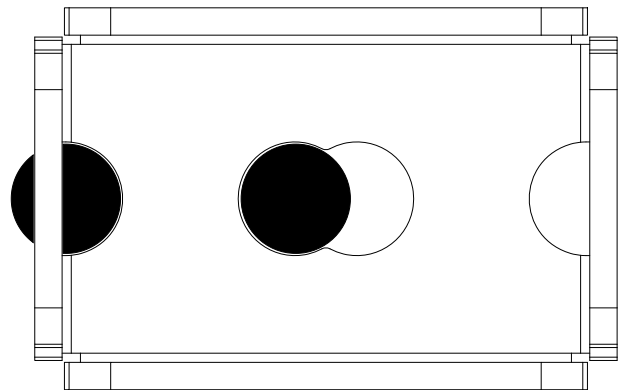


Figure 14

**CLAMP PLATE**

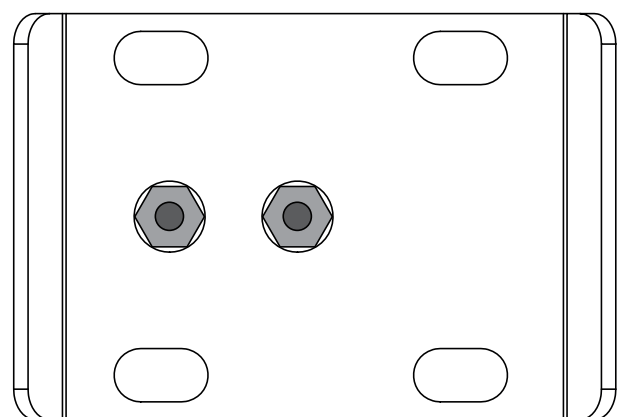


Figure 15

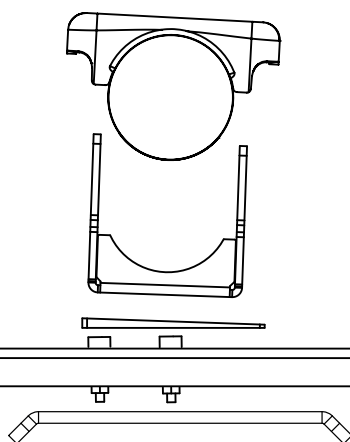
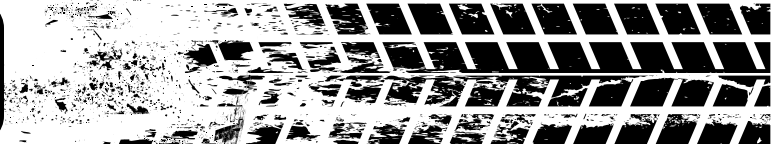


Figure 16

# Flip Bracket Installation All Steel Leaf Springs



**IF YOUR TRUCK HAS A COMPOSITE OVERLOAD SPRING, PROCEED TO STEP 24 ON PAGE 11.**

- 20.** Raise the axle high enough to get the wedge shim & flip bracket positioned on the leaf spring.
- 21.** Position the wedge shim & flip bracket on the locating pins using Figures 17a & 17b below as a guide. The thick end of the wedge and the notch on the flip bracket will go to the front of the truck.
- 22.** 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.**
- 23.** Proceed to Step 28 for installation of the U-bolts.

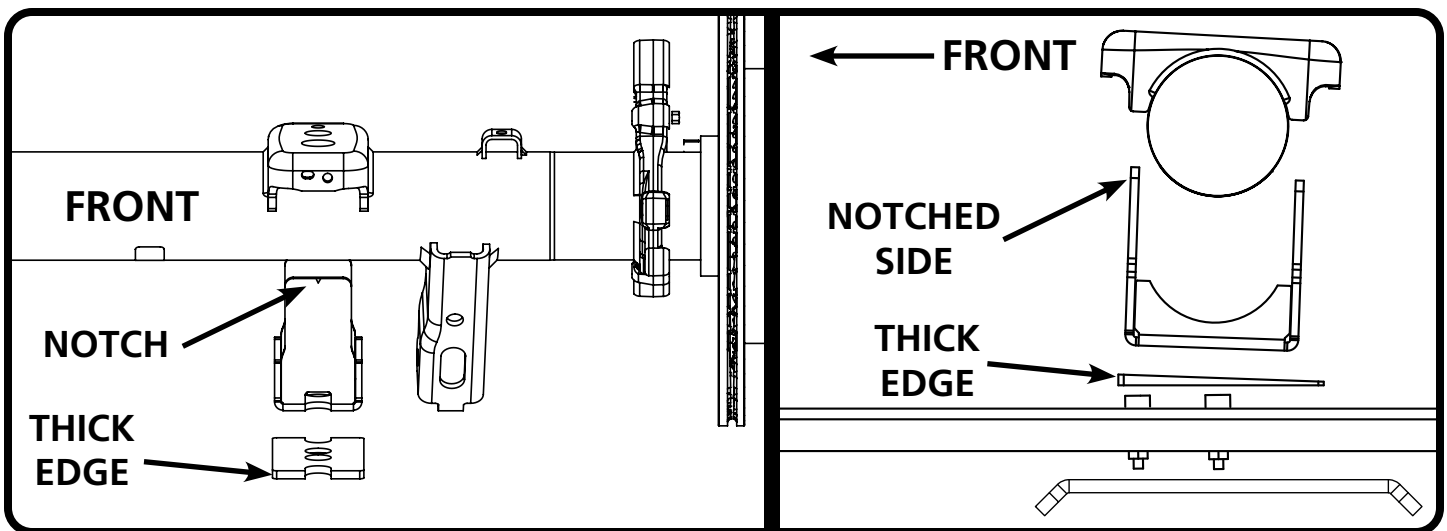


Figure 17a

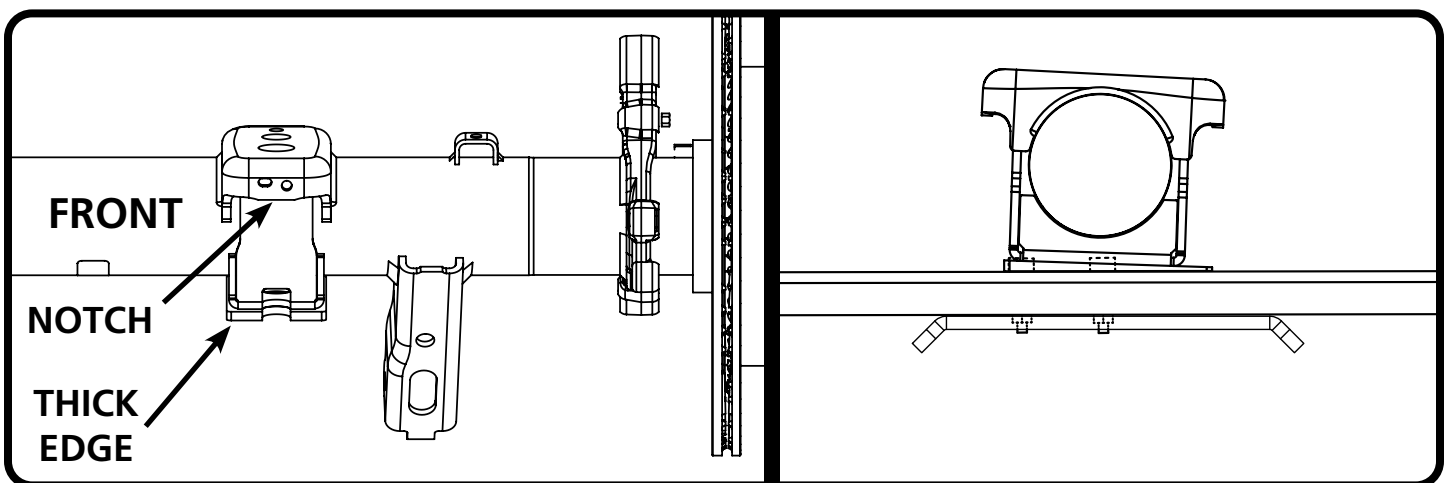
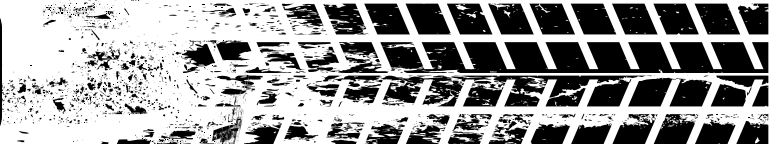


Figure 17b

## Flip Bracket Installation Composite Overload Spring



24. Raise the axle high enough to get the wedge shim & flip bracket positioned on the leaf spring.
25. Position the wedge shim & flip bracket on the locating pins using Figures 18a & 18b below as a guide. The thick end of the wedge will go to the front of the truck. The notch in the flip bracket will go to the **rear**.
26. 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.
27. Proceed to step 28 for installation of the U-bolts.

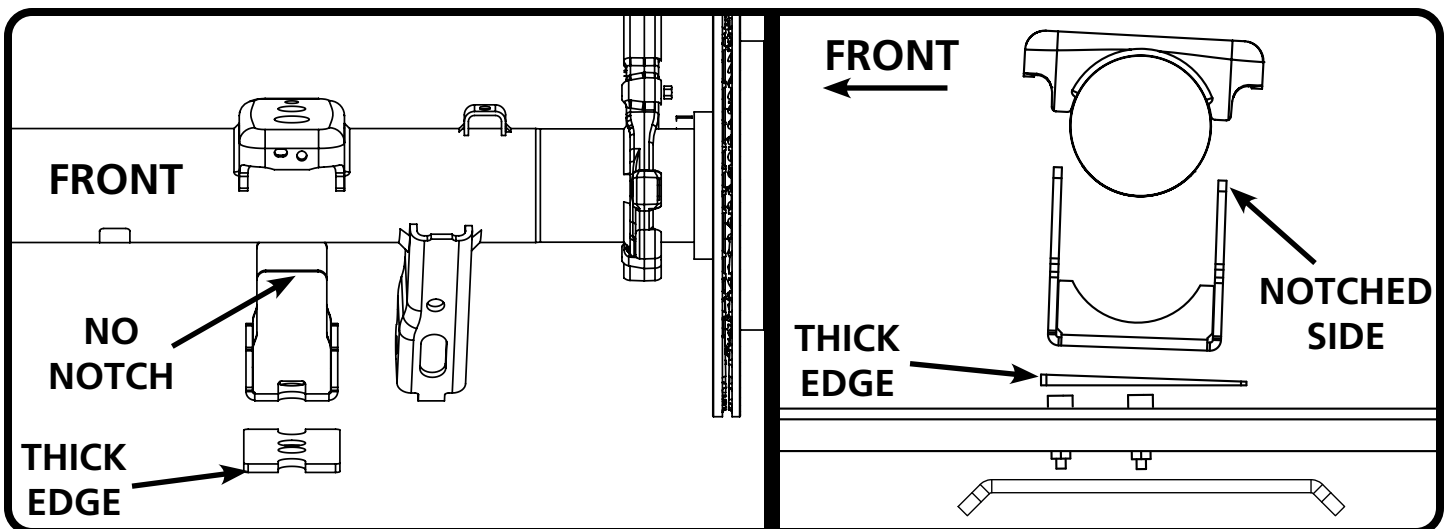


Figure 18a

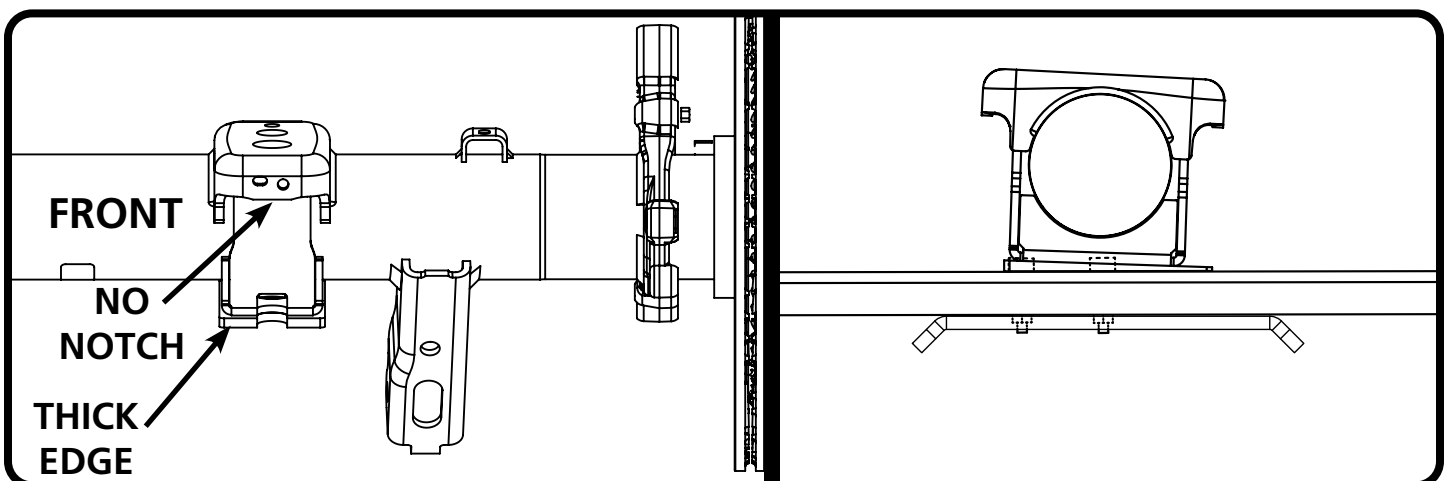
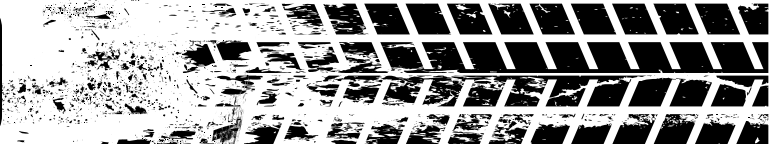


Figure 18b

## U-Bolt Installation



**28.** Slip the U-Bolts over the axle tube with the threads pointing down (Figure 19).

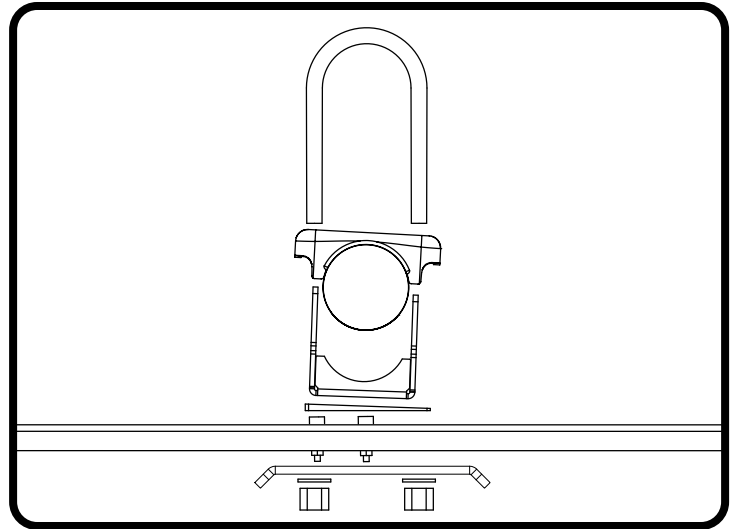


Figure 19

**29.** Slide the leaf spring clamp plate up onto the u-bolts (Figure 20). **The offset holes should be to the front of the truck.**

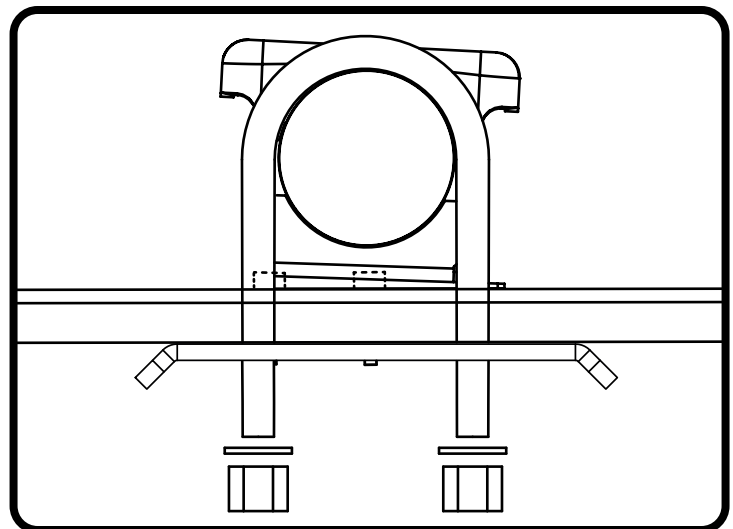


Figure 20

**30.** While holding the leaf spring clamp plate in place, 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 ft-lbs.**

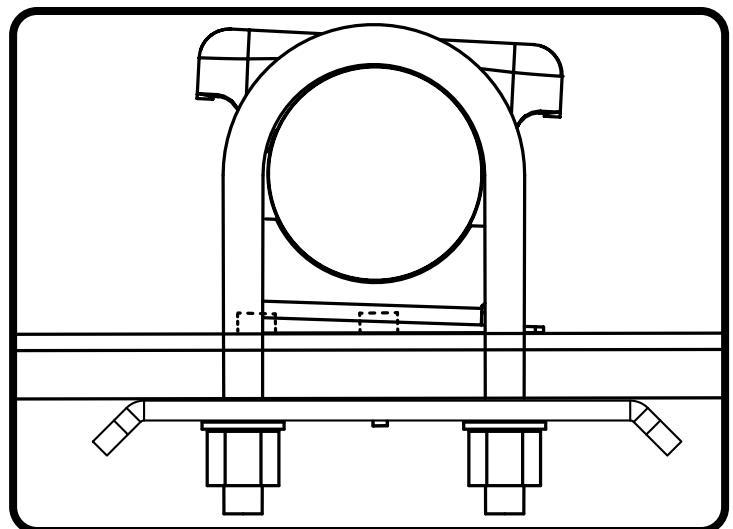


Figure 21

## Final Assembly

### 2015-2017 Trucks with E-Brake Cable Only

**31.** Reattach the drivers side emergency brake cable bracket to the front leaf spring mount. If you installed the Ridetech #12299516 Leaf Spring Bracket kit, you may need to trim the back edge of bracket to clear the leaf spring mount. Use the OEM hardware to reattach the bracket (Figure 22).

**32.** Reattach the passenger side emergency brake cable bracket in the OEM location. If you are running the Ridetech traction bar kit, there is a provision for reattaching the bracket (Figure 23). Use the OEM hardware to reattach the bracket.

**33.** Install your Ridetech HQ Series shocks. Refer to the instructions included with Ridetech kit # 12299515.

**NOTE:** To ensure clearance of the flip bracket, a new driver side lower shock bolt is supplied with this kit.



Figure 22



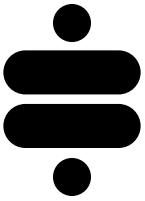
Figure 23

**Due to variations in the OEM shock mounts, the shocks may need to be installed body up or body down. Check the clearance after the shocks are installed. If the shock interferes with the mount, flip it over. Inverting the shock does not affect the performance.**

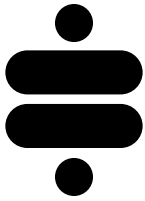
**34.** Set the truck on the ground and torque the leaf spring & shackle bolts to **167 ft-lbs**.

**35.** **DOUBLE CHECK ALL HARDWARE TO ENSURE IT IS PROPERLY TORQUED.**

**36.** On 2021 & newer trucks, do not forget to adjust the headlight sensor(s) for your new ride height.



# PINION ANGLE ASSESSMENT



If you have a PowerBoost truck, check to ensure there is adequate clearance between the driveshaft and the PowerBoost battery.

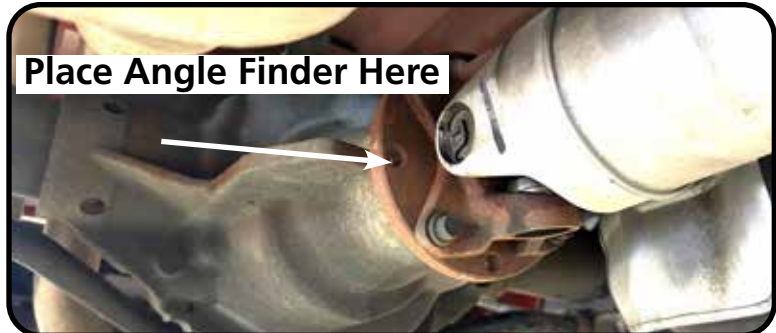
We have found some variation of the pinion angle on trucks with composite leaf springs. We suggest using a Klein digital angle finder (shown below) to measure the rear pinion angle. The measurements should be taken at ride height and with the truck on the same surface every time.

We suggest measuring pinion angle by placing the gauge on the flat of the pinion flange as shown in the picture below. You may need to roll the truck forward or backward to ensure the angle gauge is not rotated.

**THE PINION ANGLE SHOULD BE APPROXIMATELY 1° DOWN.**

If your pinion angle is not close to 1° down, use the chart below to help determine the required combination and/or orientation of the shim and flip bracket to achieve a 1° down pinion angle on your vehicle.

If you discover you need to make a change, be sure to re-torque the U-bolts evenly in a criss-cross pattern to 130 ft-lbs.



PINION CHANGE FROM STANDARD	FLIP BRACKET	ANGLE SHIM	NOTES
5° UP	NOTCH TO FRONT	THICK EDGE TO FRONT	
3° UP	NOTCH TO FRONT	NONE	
1° UP	NOTCH TO FRONT	THICK EDGE TO REAR	
<b>STANDARD</b>	NOTCH TO REAR	THICK EDGE TO FRONT	COMPOSITE LEAF SPRING TRUCKS
2° DOWN	NOTCH TO REAR	NONE	
4° DOWN	NOTCH TO REAR	THICK EDGE TO REAR	