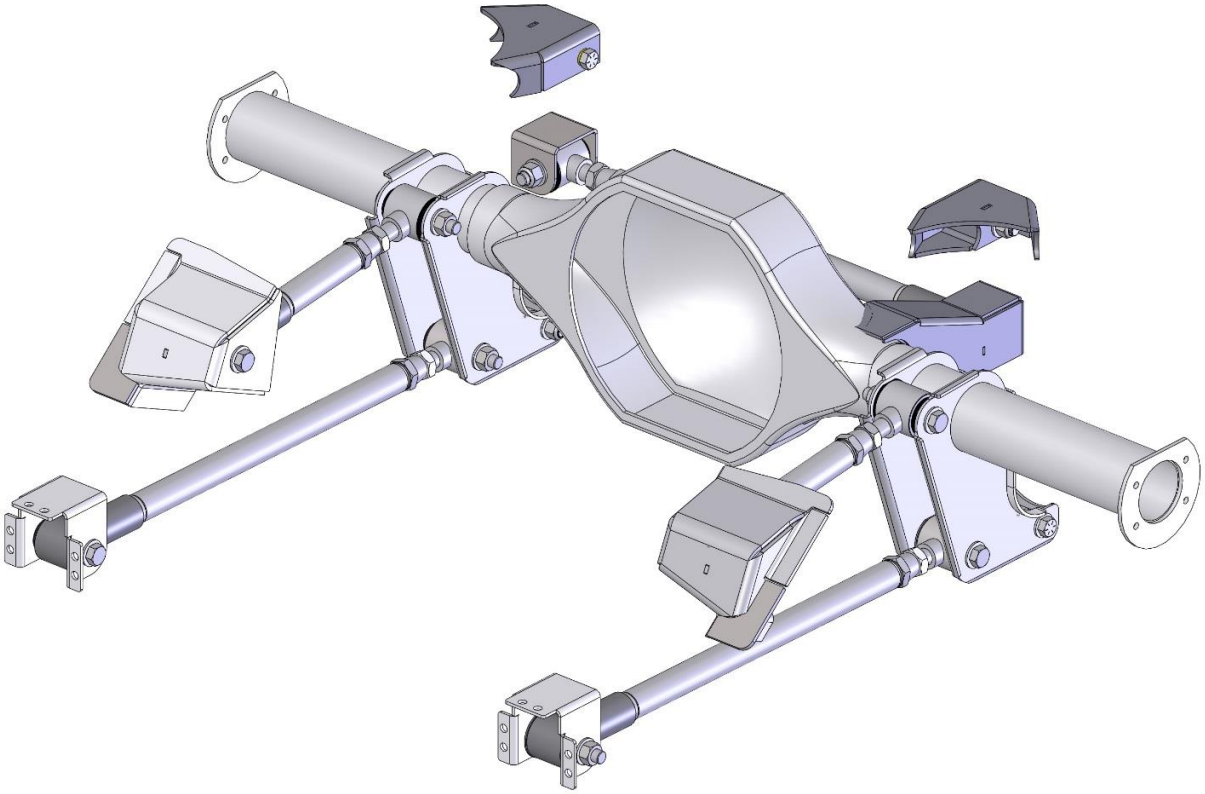
Detroit Speed, Inc.
X-Gen Universal QUADRALink Rear Suspension Kit
Non-Staggered
P/N: 041720

Detroit Speed's universal non-staggered rear suspension system allows you to integrate Detroit Speed suspension technology into any vehicle and makes a great compliment to Detroit Speed's X-Gen series of front suspension systems. Detroit Speed's exclusive 4-link geometry design is uncompromised and designed to achieve the best possible handling during all conditions. The patented "Swivel-Link" technology in combination with tuned high-durometer rubber bushings allow the suspension to fully articulate with smooth silent motion. This system utilizes a horizontal track bar that provides precise and effective rear axle lateral location during hard cornering.



NOTE: Ford 9" housing is not provided

IMPORTANT

All work should be performed by a qualified welder and technician. Please read the entire set of instructions and fully understand all of the steps involved before beginning the project. Always make sure to wear the appropriate safety equipment for the job and properly support the vehicle. If you have any questions before, during, or after the installation, feel free to contact Detroit Speed by phone at (704) 662-3272 or by email at tech@detroitspeed.com.

Item	Part Description	Quantity
1	Upper Shock Mount Pocket, LH and RH	2
2	Upper Shock Mount Pocket Close Out, LH and RH	2
3	Upper Link Chassis Mount, LH and RH	2
4	Lower Link Chassis Mount	2
5	Track Bar Chassis Mount	1
6	Link/Coilover Axle Mount Bracket	2
7	Link Coilover Axle Mount Bracket Reinforcement	2
8	Track Bar Axle Mount Bracket	1
9	2' Swivel-Link (Upper Links)	2
10	4' Swivel-Link (Lower Links & Track Bar)	3
11	Link/Shock Hardware Kit	1
12	Installation Kit	1
13	Instructions	1

Hardware Checklist – Universal Rear Suspension Kit			
Part Number	Description	Quantity	Check
9304066	**Link/Shock Hardware Bag**	**1**	
980034FS	9/16"-18 x 3-3/4"L Hex Head Bolt	10	
960022FS	9/16"-18 Nylock Nut	10	
970020FS	9/16" SAE Washer	20	
980021FS	1/2"-20 x 3-1/2"L Hex Head Lower Shock Bolt	2	
980000FS	1/2"-20 x 3-1/4"L Hex Head Upper Shock Bolt	2	
960004FS	1/2"-20 Nylock Nut	4	
970037FS	1/2" SAE Washer	6	
9304067	**Installation Bag**	**1**	
9304019	Axle Bracket Weld Spacers	2	
99030028	Upper Shock Mount Steel Bushing	2	

Fastener Torque Specifications		
Application	Torque (ft-lbs)	Threads
Swivel-Link and Track Bar Bolts	100	
Swivel-Link and Track Bar Jam Nuts	55	
Coilover Shock Mounting Bolts	70	Anti-Seize

NOTE: Due to the universal nature of this rear suspension kit, Detroit Speed does not include shocks or springs in this kit. Use the following chart as a guide for determining the correct shocks and spring rate for your application. Custom shocks and springs are available. Detroit Speed can help you with your shock and spring selection or any other questions you may have.

JRi/Detroit Speed Coilover Shocks					
Part Number	Adjustable	Jounce Bumper	Stroke	Overall Length	Ride Height*
041307	Non-Adjustable	3/4"	5"	17"	14" to 15"
041317	Single Adjustable	3/4"	5"	17"	14" to 15"
041308	Double Adjustable	3/4"	5"	17"	14" to 15"
041309	Double Adj. w/Canisters	3/4"	5"	17"	14" to 15"
041310	Non-Adjustable	3/4"	4-3/4"	16"	13" to 13-3/4"
041318	Single Adjustable	3/4"	4-3/4"	16"	13" to 13-3/4"
041311	Double Adjustable	3/4"	4-3/4"	16"	13" to 13-3/4"
041315	Double Adj. w/Canisters	3/4"	4-3/4"	16"	13" to 13-3/4"
041313	Non-Adjustable	3/4"	3-3/4"	14"	12" to 12-1/4"
041322	Single Adjustable	3/4"	3-1/2"	14"	12" to 12-1/4"
041314	Double Adjustable	3/4"	3-3/4"	14"	12" to 12-1/4"
041323	Double Adj. w/Canisters	3/4"	3-3/4"	14"	12" to 12-1/4"

*Measured center to center between the upper and lower shock bolts.

Detroit Speed Coilover Springs			
Part Number	Free Length	Spring Rate (lbs./in)	Shock Stroke
041801	8”	250	3-1/2” to 4-3/4”
99030113	8”	450	3-1/2” to 4-3/4”
041815	10”	275	5”
99030289	10”	400	5”
041806	11”	150	5”
041808	11”	175	5”

Axle Bracket Installation:

1. If you are using a stock rear axle and will be replacing the housing ends, remove them from the axle tubes. Remove the factory leaf spring or coil spring brackets from the axle tubes (Figure 1). Grind the factory welds on the axle tubes for a clean finish.

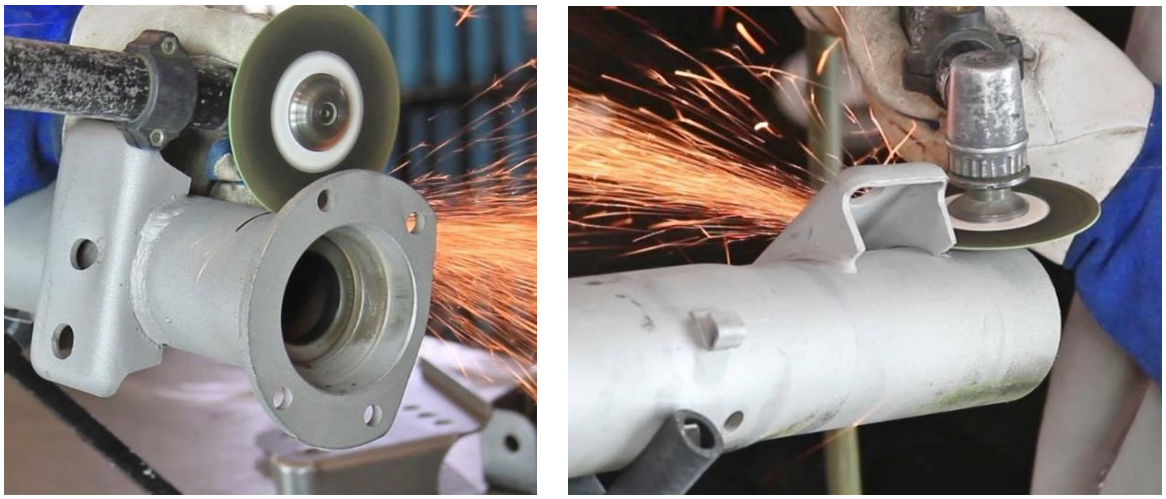


Figure 1 – Remove Housing Ends & Leaf/Coil Spring Brackets

2. Install the provided 2.42”L weld spacers into the axle bracket upper and lower link holes along with the provided 9/16”-18 bolts. Place the lower link/coilover axle bracket reinforcement onto the back of the axle bracket and weld in place (Figure 2). Grind the axle bracket smooth for a clean finish.

Figure 2 – Weld Axle Bracket Reinforcement

3. Prepare the axle tubes to weld the axle bracket to the axle. **NOTE:** The Detroit Speed axle brackets are designed for a 3" axle tube, so if you have smaller axle tubes, you will need to make an adapter ring.

4. Using a pinion centering tool, measure from the centerline of the rear axle outward in both directions to mark your axle bracket location. This will be the location where the inside edge of the axle brackets will be positioned. Use the diagram in these instructions to locate the axle brackets on the axle housing (Figure 12 on page 10). **NOTE:** Detroit Speed offers a pinion centering tool (P/N: 070202) that will be helpful in placing your axle brackets in the correct location on your axle tube. Draw a scribe line around the axle tube at the marked locations (Figure 3).

Figure 3 – Locate Axle Brackets on Axle Tubes

5. Install the axle brackets over the axle tubes and position the inside flange of the brackets at the scribed circle on the axle tubes. Clamp the rear axle in place on a bench. Rotate the housing forward so that the center section mounting flange is 4° down from vertical (Figure 12 on page 10). Install the 2.42"L weld spacers into the upper link holes along with the 9/16"-18 bolts (Figure 4).

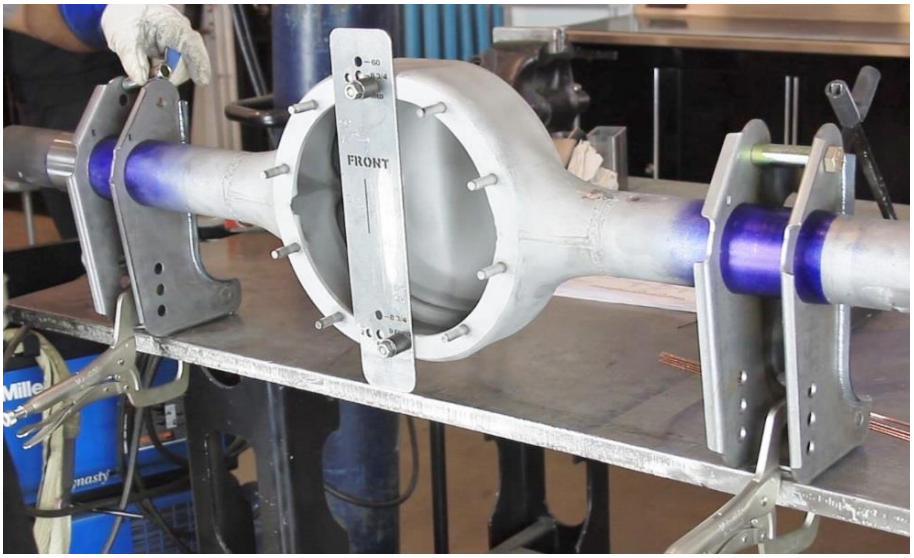


Figure 4 – Install Axle Brackets

6. Once the axle brackets are in the correct location, tack weld them to the axle tubes. Verify the correct location and then finish weld all the way around the brackets to the axle tubes (Figure 5 on the next page).

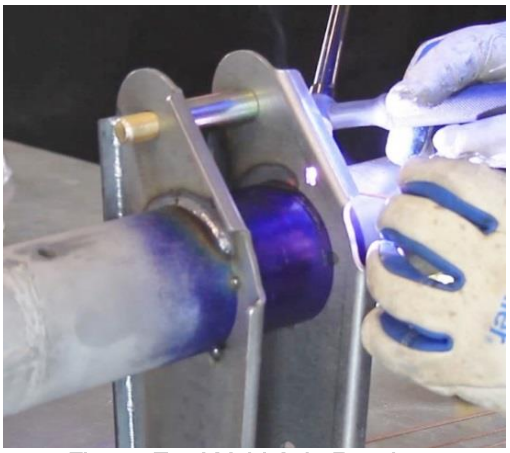


Figure 5 – Weld Axle Brackets

7. Install the track bar axle bracket up against the rear axle housing. Trim the bracket as needed to fit against the axle housing. Verify that it is 90° to the axle tube and tack weld them in place (Figure 12 on page 10). Verify that the bracket fits tight to the rear housing and finish weld (Figure 6).

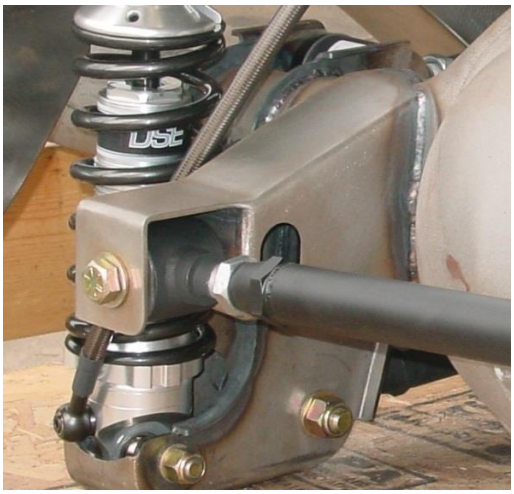


Figure 6 – Track Bar Axle Bracket

8. At this point the fabrication on the rear axle housing is complete. Send the axle to a qualified shop to have the housing ends welded (if necessary). Check the axle tubes and have them straightened (If necessary).

Chassis Bracket Installation:

1. Place the rear axle housing under the frame and determine the ride height and wheel base of your vehicle.

2. Detroit Speed recommends installing the upper link pointing down 7° and the lower link pointing up 0.5° at ride height (Fig. 12 on page 10). This would give you an instant center of 57.0" forward of the rear axle centerline with a height of 6.8" above ground level.

3. Locate the upper and lower link chassis brackets onto your frame. The lower link brackets will need to be welded to a crossmember (Figure 7 on the next page). The upper link brackets will need to be welded to the top side and inside of the frame rail (Figure 8 on the next page). Trim brackets as needed to fit tight against your frame rails. Tack weld in place.

Figure 7 – Lower Link Chassis Bracket

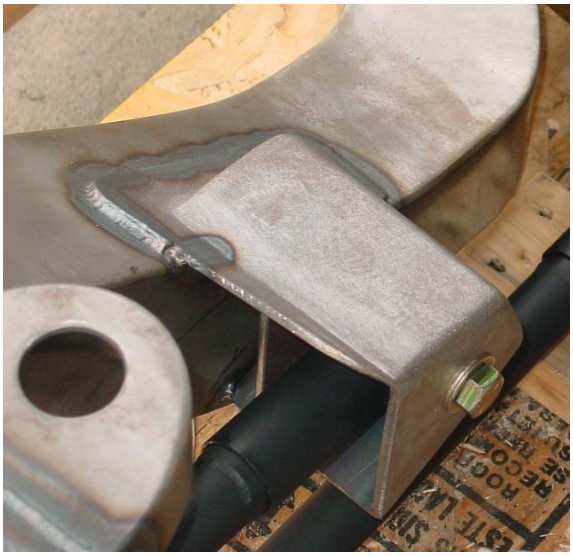


Figure 8 – Upper Link Chassis Bracket

4. Position the track bar chassis mount against the inside of the passenger side framerail. It should be square to the framerail with the opening of the bracket facing down so the track bar can be easily removed. The track bar mount should be located on the framerail so that the track bar is level with the ground at ride height (Figure 9). Tack weld in place.

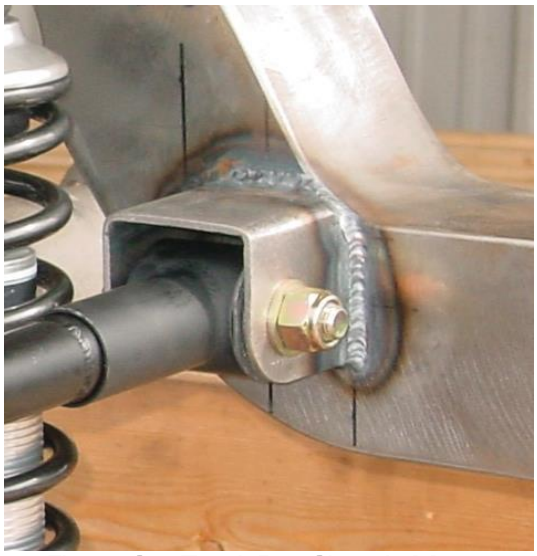


Figure 9 – Track Bar Chassis Mount

5. Once you have your chassis brackets located and tacked to your frame, finish weld around the brackets.

Upper Shock Mounts:

1. With the rear axle positioned under the frame, locate the left and right hand upper shock mount brackets. **NOTE:** These upper shock mounts are coped to be welded to a round tube, they can be modified to fit your crossmember.

2. With your ride height and shock length determined, the upper shock mounts will need to be welded directly over the lower shock mounts so that the shocks will stand straight up and down. The upper shock mounts will also need to be welded to an upper shock crossmember (Figure 10 on the next page).

Figure 10 – Upper Shock Mounts

3. Once they are welded in place, install and weld the upper shock mount close-outs to the upper shock mounts (Figure 11).

Figure 11 – Upper Shock Mount

4. Use the provided 1/2"-20 fasteners to install your shocks into the upper and lower shock mounts. Use anti-seize on the threads of the bolts and torque to 70 ft-lbs. **NOTE:** The upper shock mount steel bushing will go onto the upper shock bolt and then pass through the upper shock mount from the center of the vehicle outwards.

Universal Swivel-Link Assembly:

1. Determine the length of your trailing arm for your application. Install the adjuster end assembly into the weld nut leaving exposed threads for adjustment. **NOTE: There can be no more than 2" of exposed threads on the end link (3/4" of thread engagement in the tube). This measurement does not include the jam nut (See Page 11).**

2. Install the weld nut and adjuster end into the Swivel-Link sleeve assembly and hold in place with tape for mock up purpose. Measure the length of the Swivel-Link to determine how much you need to shorten the tube for your application.

3. Remove the weld nut and adjuster end and cut the Swivel-Link sleeve down to fit your application. Tack weld the weld nut to the tube and thread the adjuster end into the Swivel-Link assembly. Install into your vehicle and check the length.

4. Once you have the correct length finish weld the weld nut to the Swivel-Link sleeve.

5. Repeat steps 1 thru 4 for the remaining links on your application.

6. Protect and paint your Swivel-Link Tubes. Assemble and install the Swivel-Links in your vehicle. **CAUTION:** Do not powder coat these links as that process will permanently damage the Swivel-Link.

Final Assembly

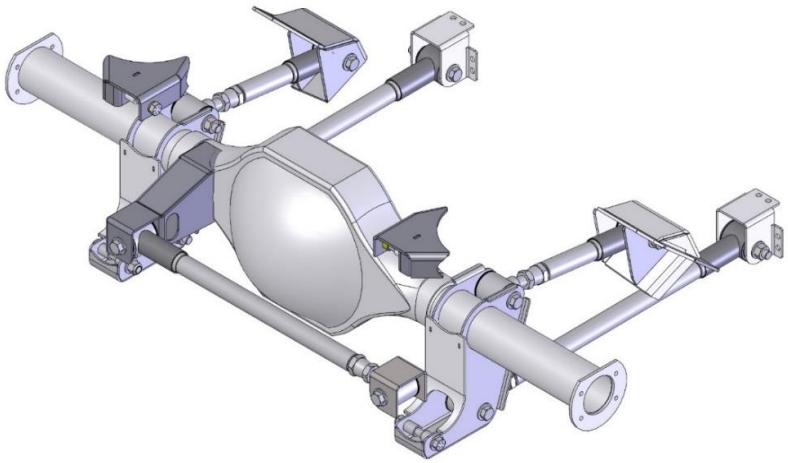
1. Once all of the links are installed with the provided 9/16"-18 fasteners, verify the rear axle is centered in the car and the wheelbase is correct. Also, make sure the pinion angle is set correctly by using the upper link adjustments. The pinion angle should be measured and adjusted to your preference. 4° down is recommended. Verify your wheel base by using the lower link adjustments. It may be necessary to adjust the links both top and bottom to obtain proper fitment. **NOTE: There can be no more than 2" of exposed threads on the end link (3/4" of thread engagement in the tube). This measurement does not include the jam nut (See page 11).**

2. Once the rear axle is in the proper position, torque the end link jam nuts to 55 ft-lbs. Do not torque the Swivel-Link hardware at this time.

3. Once the rest of the rear suspension is installed and the vehicle is close to completion, install the wheels/tires and rest the vehicle on all four tires. Double check that the rear axle is positioned correctly in the vehicle. It should be centered from side to side, and the wheelbase should be correct on both sides of the vehicle. Raise and lower the vehicle to verify that there is no interference.

4. Settle the suspension by bouncing the vehicle several times. With the vehicle at ride height, torque the Swivel-Link and track bar bolts to 100 ft-lbs. Confirm the rear axle position again. Double check that all of the bolts and jam nuts are tightened to their respective torque specifications.

If you have any questions before or during the installation of this product please contact Detroit Speed Inc. at tech@detroitspeed.com or 704.662.3272



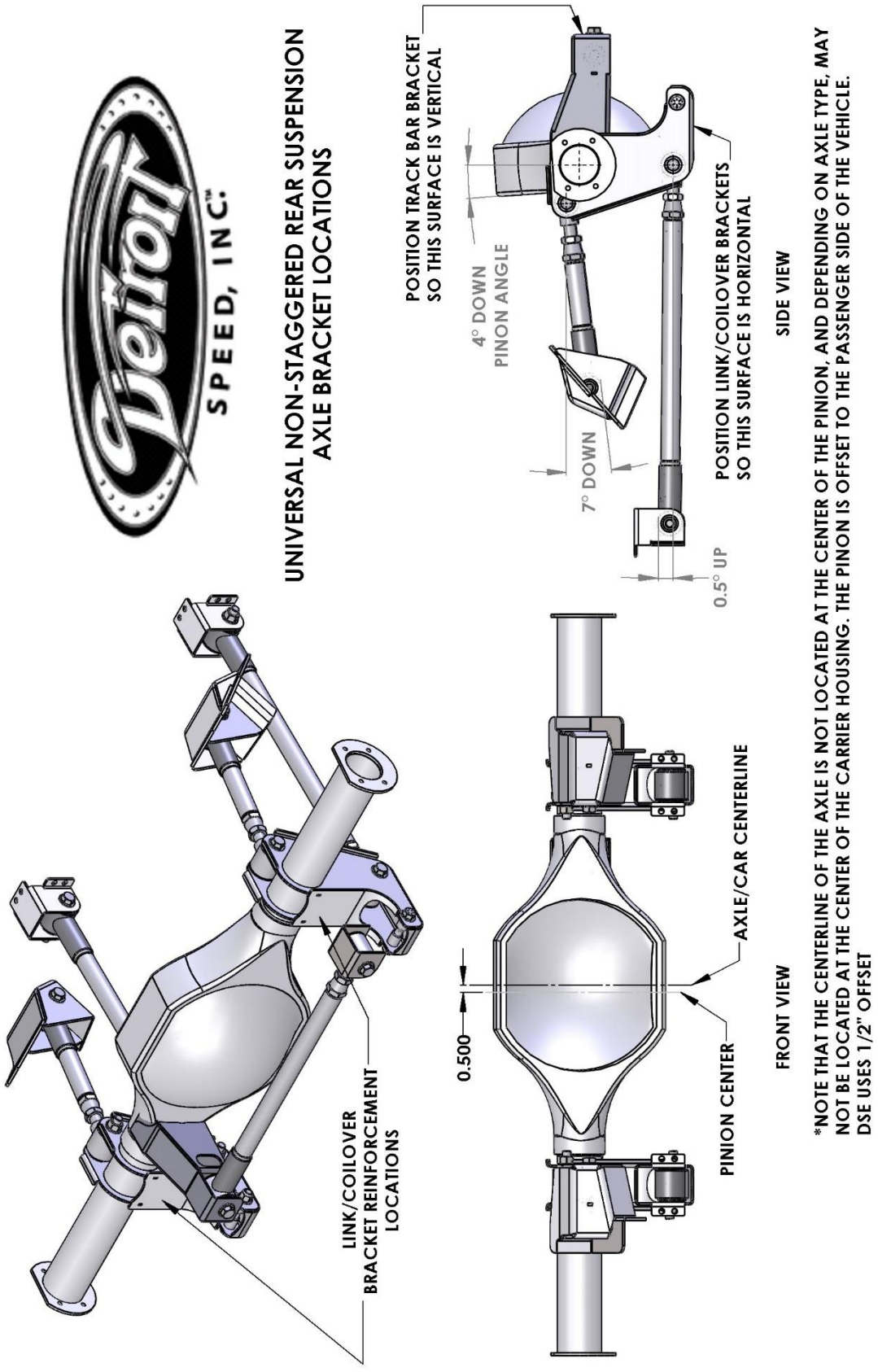


Figure 12 – Axle Bracket Location

Once again, we appreciate your business.
If you have any questions during the installation of this product, call (704) 662-3272.

Detroit Speed, Inc.
Swivel-Links

WARNING:

There can be no more than 2" of exposed threads on the end link (3/4" of thread engagement in the tube). This measurement does include the jam nut (see below).