# INSTALLATION MANUAL:

## Jeep Coil Spring Guide
## All Vehicles and All Heights

CLAYTON
OFF ROAD

# DISCLAIMER

**Warning:**

**Suspension systems and their components are designed to enhance your vehicle's off-road performance. This may cause your vehicle to handle differently, on and off road. Always wear your seatbelt and take extra care when driving a modified vehicle. Failure to do so can result in loss of control which may result in a rollover causing serious injury, or even death to the driver and/or passengers of the vehicle. Regular maintenance and consistent inspections are required to keep your modified vehicle safe and functioning properly. These suspension systems and any components should be installed by certified technicians only. Attempts to install these products without proper knowledge can lead to poor performance, or possible failure, which may jeopardize the safety of the vehicle and its passengers. The installer is responsible for proper installation ensuring a safe and properly functioning vehicle. Take extra care when operating a modified vehicle and thoroughly inspect your vehicle before and after every off-road use.**

# COIL MAINTENANCE

**Re-Powder Coating Coils:**

- While powder coating coils may be possible, Clayton Off Road does not recommend doing so.
- The heat involved in the powder coating process can alter the properties of the spring steel and potentially shorten the lifespan of the coil.

**Rust Protection:**

- All our coils are finished in black; using a SealKor zinc-rich powder coat to help in the prevention of rust and corrosion.
- For Jeeps that experience road salts and harsh conditions, regularly washing your vehicle is considered a necessary maintenance of your components.
- Utilizing coil isolators per instruction documents also prevents chattering of coils, preventing excessive wear.

**Proper Bump Stops:**

- To prevent the over compression of your coils, running the correct length bump stops is extremely important.
- Repeated over compression can lead to possible premature failure of coil springs as well as other components.

# SPRING SOLID HEIGHT

**The length of a coil spring when fully compressed with no gaps, is called the SPRING SOLID HEIGHT.**

Having the correct bump stop modifications is necessary to prevent reaching this collapsed height and over compressing the springs.

## JL

| SKU | Solid Height (in) |
|---|---|
| 1509156 | 5.8 |
| 1509256 | 6 |
| 1509356 | 7 |
| 1509456 | 6.625 |
| 1509151 | 5.8L / 5.8R |
| 1509251 | 6L / 6R |
| 1509351 | 6.25L / 6.25R |
| 1509150 | 5.7 |
| 1508250 | 6.5 |
| 1508350 | 6.6 |
| 1508450 | 6.6 |
| 1508550 | 7.125 |

## JT

| SKU | Solid Height (in) |
|---|---|
| 1510256 | 8.35 |
| 1510356 | 8.35 |
| 1510151 | 8 |
| 1510251 | 8 |
| 1510351 | 9.27 |
| 1510451 | 9.313 |
| 1509150 | 5.7 |
| 1508250 | 6.5 |
| 1508350 | 6.6 |
| 1508450 | 6.6 |
| 1508550 | 7.125 |
| 1510255 | 6.9 |
| 1510355 | 6.9 |
| 1510455 | 6.875 |

## JK

| SKU | Solid Height (in) |
|---|---|
| 1508151 | 6.5 |
| 1508251 | 6.3 |
| 1508351 | 6.7 |
| 1508451 | 6.7 |
| 1509150 | 5.7 |
| 1508250 | 6.5 |
| 1508350 | 6.6 |
| 1508450 | 6.6 |
| 1508550 | 7.125 |

# LINEAR RATE, DUAL RATE, TRIPLE RATE, WHAT DO YOU REALLY NEED?

We use all 3 variants depending on the vehicle, height and capacity requirements.

**Linear coils** have a single spring rate and are evenly spaced top to bottom which makes them a great option for most applications. The main advantage being that the coils don't touch each other, which can lead to wear and tear and possible coil failure.

Linear Rate

The **dual rate coil** has a tight set of coils usually around the top, and then a second set of coils with more traditional spacing below. Dual rate coils do not ride any better than single rate coils despite popular belief. The first rate is usually completely compressed and acts only as a spacer; its purpose is to provide a longer free length coil so at maximum articulation the coil does not unseat.

Dual Rate

In the JT's case a **triple rate coil** is better suited due to the additional cargo area and weight. The same benefits apply as the dual rate but can be even more versatile for all situations. Since there are no coil posts or lower internal retainer in the rear of the JT, a dual or triple rate coil is necessary.

Triple Rate

# TIRE SIZE GUIDE

## Understanding Lift Heights

- Estimated height gain on the following pages can vary based on vehicle setup.
- **Use Tire Size Guides to most accurately determine what size lift is needed.**
- Most Clayton Off Road Lift Kits leave about 1” of rake in the rear. Rake refers to the height difference from the front to the rear of the Jeep. So, 1” of rake in the rear means the rear will sit 1” taller than the front.

## Numbers below are based on factory fenders with little to no modification

| Model | Lift Height | Recommended Tire Size |
|---|---|---|
| JL/JT | 1.5” | 35” tires on a Rubicon (OEM Raised Fender) or 33” tires on a Sport (OEM Low Fender) |
| | 2.5” | 37” tires on a Rubicon (OEM Raised Fender) or 35” tires on a Sport (OEM Low Fender) |
| | 3.5” | 39” tires on a Rubicon (OEM Raised Fender) or 37” tires on a Sport (OEM Low Fender) |
| | 4.5” | 40” tires on a Rubicon (OEM Raised Fender) or 38” tires on a Sport (OEM Low Fender) |
| JK | 1.5” | Ideal for fitting 31-33” tires |
| | 2.5” | Ideal for fitting 33-35” tires. |
| | 3.5” | Ideal for fitting 35-36” tires. |
| | 4.5” | Ideal for fitting 37" tires |
| TJ/LJ | 4” | Ideal for fitting 33” tires |
| | 5.5” | Ideal for fitting 35” tires |

Figure 1: JL/JT, JK, TJ/LJ lift height recommendations for desired tire size

# TIRE SIZE GUIDE

## Understanding Lift Heights

- Estimated height gain on the following pages can vary based on vehicle setup.
- **Use Tire Size Guides to most accurately determine what size lift is needed.**
- Most Clayton Off Road Lift Kits leave about 1” of rake in the rear. Rake refers to the height difference from the front to the rear of the Jeep. So, 1” of rake in the rear means the rear will sit 1” taller than the front.

## Numbers below are based on factory fenders with little to no modification

| Model | Lift Height | Recommended Tire Size |
|---|---|---|
| WJ | 4.5” | Ideal for fitting 30-31” tires |
| | 6” | Ideal for fitting 32-33” tires |
| ZJ | 5.5” | Ideal for fitting 31-32” tires |
| | 7” | Ideal for fitting 33” tires |
| XJ | 4.5” | Ideal for fitting 31” tires |
| | 6.5” | Ideal for fitting 33” tires |
| | 8.0” | Ideal for fitting 35” tires |

Figure 2: WJ, ZJ, XJ lift height recommendations for desired tire size

# JL/JT COIL INFO

**Always confirm part numbers found printed on each coil prior to install**

## JL/JT Front Coils

- Not all models use the same front coils to net the same lift height
- Diesel and V8 models use different front coils to better handle the weight of the engine.
- All front coils are designed to handle the weight of most metal bumpers along with a winch.

## HD Rear Coils

- Designed for those carrying large amounts of weight consistently in/on their Jeep
- Are **NOT** side specific.
- For JL – Recommended for anybody running **over 300-400 lbs** of weight from gear and accessories.
  - *4XE Kits come with HD rear springs as standard - Select the next size taller if the above applies.*
- For JT – Recommended for anybody running **over 500 lbs** of weight from gear and accessories.

Figure 3: JT rear HD triple rate coils

Figure 4: JT with rear HD triple rate coils

# JT REAR COIL ISOLATORS

**<u>Always confirm part numbers found printed on each coil prior to install</u>**

Clayton Off Road recommends installing your factory isolators on to our springs before installing them on your Jeep Gladiator. Reusing the isolators on your new springs will help eliminate spring chatter and avoid premature wear on the paint and finish.

1. Removing the OEM isolators:
    - Remove the three outside spring isolators from the factory springs.
2. Install the Top Isolator
3. Install the Middle Isolator
4. Install the Bottom Isolator

*Find more in-depth instructions on the JT rear coils product page to help locate each isolator.*

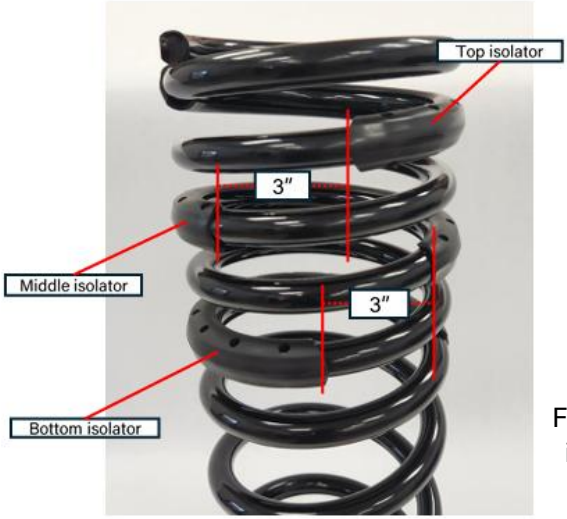


Figure 5: JT rear coil isolator locations

# JL SIDE SPECIFIC COIL INFO

**Always confirm part numbers found printed on each coil prior to install**

## JL Rear Side Specific Coils

- Our JL Wrangler rear coils **ARE** side specific.
- This reduces side to side lean due to the extra weight from the fuel tank.
- Gas VS Diesel models swap side specific springs
  (check the instructions of your exact kit)
- If upgrading to HD Rear Springs, they will no longer be side specific.

**The part numbers printed on the rear coils with end an "L" or "R".**
**As these springs are side specific the taller spring (labeled with "R") must be used on the gas tank side.**
**(On a gas model "R" gets installed on the Passenger Side,**
**On a diesel model "R" gets installed on the Driver Side)**


Figure 6: JL side specific coil height difference

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take the weight from metal bumpers, a winch and a full-size spare into consideration.**
**Heavy Duty Rear Springs are available for those running a consistent load over 300 lbs.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JL 2 Door | 3.6/2.0 | 1509150/1509151 | ~ 3” |
| JL 2 Door | 3.6/2.0 | 1508250/1509251 | ~ 4” |
| JL 2 Door | 3.6/2.0 | 1508350/1509351 | ~ 5” |

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JL 4 Door | 3.6/2.0 | 1509150/1509151 | ~ 2” |
| JL 4 Door | 3.6/2.0 | 1508250/1509251 | ~ 3” |
| JL 4 Door | 3.6/2.0 | 1508350/1509351 | ~ 4” |
| JL 4 Door | 3.6/2.0 | 1508450/1509456 | ~ 5” |

Figure 7: JL 2-door and 4-door expected lift height

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take the weight from metal bumpers, a winch and a full-size spare into consideration.**

**Heavy Duty Rear Springs are available for those running a consistent load over 300 lbs.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JL 4 Door | 6.4/3.0D | 1508250/1509151 | ~ 2” |
| JL 4 Door | 6.4/3.0D | 1508350/1509251 | ~ 3” |
| JL 4 Door | 6.4/3.0D | 1508450/1509351 | ~ 4” |
| JL 4 Door | 6.4/3.0D | 1508550/1509456 | ~ 5” |

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JL 4 Door | 2.0 4XE | 1509150/1509156 | ~ 2” |
| JL 4 Door | 2.0 4XE | 1508250/1509256 | ~ 3” |
| JL 4 Door | 2.0 4XE | 1508350/1509356 | ~ 4” |
| JL 4 Door | 2.0 4XE | 1508450/1509456 | ~ 5” |

Figure 8: JL 4-door expected lift height

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take the weight from metal bumpers, a winch and a full-size spare into consideration.**

**Heavy Duty Rear Springs are available for those running a consistent load over 400 lbs.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JT | 3.6 | 1508250/1510151 | ~ 2” |
| JT | 3.6 | 1508350/1510251 | ~ 3” |
| JT | 3.6 | 1508450/1510351 | ~ 4” |
| JT | 3.6 | 1508550/1510451 | ~ 4” |
| **Vehicle** | **Engine** | **Spring Part # Front/Rear** | **Expected Lift** |
| JT | 3.0D | 1509150 (FRONT ONLY) | ~ 0.5” |
| JT | 3.0D | 1508250/1510151 | ~ 2” |
| JT | 3.0D | 1510255/1510251 | ~ 3” |
| JT | 3.0D | 1510355/1510351 | ~ 4” |
| JT | 3.0D | 1510455/1510451 | ~ 5” |

Figure 9: JT expected lift height

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take weight from metal bumpers, a winch and a full-size spare into consideration.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JK 2 Door | 3.6/3.8 | 1509150/1508151 | ~ 3” |
| JK 2 Door | 3.6/3.8 | 1508250/1508251 | ~ 4” |
| JK 2 Door | 3.6/3.8 | 1508350/1508351 | ~ 5” |
| JK 2 Door | 3.6/3.8 | 1508450/1508451 | ~ 6” |

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| JK 4 Door | 3.6/3.8 | 1509150/1508151 | ~ 2” |
| JK 4 Door | 3.6/3.8 | 1508250/1508251 | ~ 3” |
| JK 4 Door | 3.6/3.8 | 1508350/1508351 | ~ 4” |
| JK 4 Door | 3.6/3.8 | 1508450/1508451 | ~ 5” |

Figure 10: JK expected lift height

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take the weight from metal bumpers, a winch and a full-size spare into consideration.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| TJ/LJ | 2.5/4.0 | 1505400/1505401 | ~ 4” |
| TJ/LJ | 2.5/4.0 | 1505500/1505501 | ~ 5.5” |

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| XJ | 2.5/4.0 | 1505500/1601450 | ~ 4.5” |
| XJ | 2.5/4.0 | 1501650/1601650 | ~ 6.5” |
| XJ | 2.5/4.0 | 1501650/1504501* | ~ 6.5” |
| XJ | 2.5/4.0 | 1504700/1601650 | ~ 8” |
| XJ | 2.5/4.0 | 1504700/1504701* | ~ 8” |

**Coil Conversion Required**

Figure 11: TJ/LJ, XJ expected lift height

# COIL SPRING HEIGHTS

**All lift heights are approximate. Many variables in vehicle weight can affect these numbers.**

**Our Standard Springs already take the weight from metal bumpers, a winch and a full-size spare into consideration.**

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| WJ | 4.0/4.7 | 1506450/1505501 | ~ 4.5” |
| WJ | 4.0/4.7 | 1506610/1506601 | ~ 6” |

| Vehicle | Engine | Spring Part # Front/Rear | Expected Lift |
|---|---|---|---|
| ZJ | 4.0/4.7/5.9 | 1501650/1504501 | ~ 5” |
| ZJ | 4.0/4.7/5.9 | 1504700/1504701 | ~ 7” |

Figure 12: WJ, ZJ expected lift height

# COIL SPRING INFORMATION

With the information provided you can now make an accurate choice when selecting your ideal lift height for your vehicle.

The provided heights are **close estimates** that can vary due to many factors on each vehicle.

It is important to confirm part numbers on your spring prior to install.

Ensure that if your JL springs are side specific you use the correct placement.

Refer to full kit instructions for a step-by-step procedure for an entire lift kit.

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