



# INSTALLATION INSTRUCTIONS

152510BK/152510TP/152510TPS

5-7" LIFT KIT

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## 2021+ FORD F150 4WD (Except Hybrid Models) 5-7" LIFT KIT

Thank you for being selective enough to choose our high quality BELLTECH PRODUCT. We have spent many hours developing our line of products so that you will receive maximum performance with minimum difficulty during installation

Note: Confirm that all of the hardware listed in the parts list is in the kit. **Do not** begin installation if any part is missing. Read the instructions thoroughly before beginning this installation.

**Warning: DO NOT** work under a vehicle supported by only a jack. Place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

**Warning: DO NOT** drive vehicle until all work has been completed and checked. Torque all hardware to specified values.

Reminder: Proper use of safety equipment and eye/face/hand protection is absolutely necessary when using these tools to perform procedures!

Note: It is very helpful to have an assistant available during installation.

**Warning: Not all possible wheel sizes and backspacing can be tested. Cautiously check wheel assembly to spindle, suspension component, and fender/body clearance before tightening lug nuts and rotating the wheel assembly. Belltech is not responsible for any wheel, tire, suspension component, and/or body damage caused by failure to check for interference.**

### Exceptional Customer Experience Guarantee:

**STOP!** We strive for an exceptional experience for all of our valued customers. If, for any reason, you need assistance with your Belltech products, please do not return the products to the store or website you purchased from. Please call our dedicated experts at

(1-800-445-3767) from 7am to 5pm PST.

### RECOMMENDED TOOLS

- Properly rated floor jack and support stands
- Wheel chocks
- Torque wrench up to 200 ft-lb
- Metric socket wrench set
- Metric wrench set
- Metric hex key set
- Tape measure
- Dead blow hammer
- Marking pen
- Safety Glasses
- Reciprocating saw and/or angle grinder with metal cutting blades



DIFFICULTY:



INSTALLATION TIME: 6-8hrs

**KIT INSTALLATION**

**WE RECOMMEND** that a qualified mechanic, at a properly equipped facility, perform this installation.

**WE RECOMMEND** that the installation be performed on a firm, flat, and level surface such as seasoned asphalt or concrete.

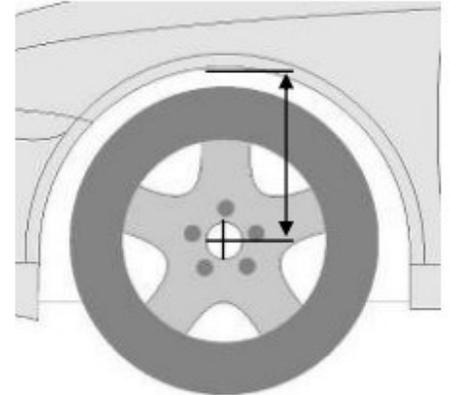
**The use of safe and proper equipment is very important!**

**KIT PRERPERATION**

- a) Before beginning the install process, measure the hub to fender heights for your vehicle so you can compare the resulting height to the original. Measure vertically from the center of the wheel to the inner edge of the fender. Record results here.

LF: \_\_\_\_\_ RF: \_\_\_\_\_

LR: \_\_\_\_\_ RR: \_\_\_\_\_

**1) JACKING, SUPPORTING AND PREPARING THE VEHICLE**

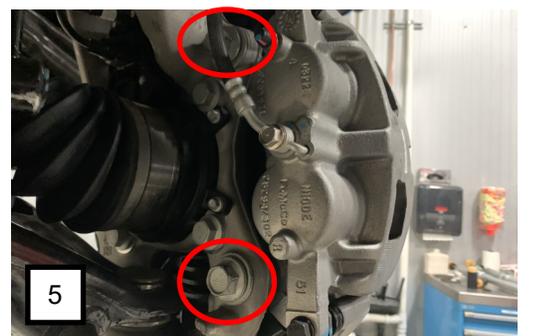
- a) Block the rear wheels of the vehicle with appropriate wheel chocks. Make sure the vehicle's transmission is in "PARK" (automatic) or 1st gear (manual). Activate the parking brake.
- b) Loosen, but **DO NOT REMOVE** the front wheel lug nuts.
- c) Lift the front of the vehicle off the ground using properly rated floor jack. Lift the vehicle so that the front tires are approximately 6-8 inches off the ground surface.
- d) Place support stands rated for the vehicles weight. The stands should be positioned in the factory specified locations. (Refer to owners manual). Prior to lowering the vehicle onto stands, make sure the support stands will contact the chassis. It is very important that the vehicle is properly supported to prevent any harm to ones self or to the vehicle.
- e) Lower the vehicle slowly onto the stands, checking that they properly and securely contacting the frame rails as described above before placing the vehicles weight completely on them.
- f) Remove the front wheels.

**!SAFETY REMINDER!**

**Check for safe vehicle stability before proceeding under the vehicle to begin the following procedures. Never work under a vehicle supported by ONLY a jack. Always use properly rated support stands to support the vehicle.**

## 2) Front Removal

- a) Remove the factory splash guards under the engine and transmission. **(Photo 1)**
- b) Remove the front sway bar with the end links from the vehicle. **(Photo 2)**
- c) Remove the tie-rod nut. Strike the side of the mount with a dead blow hammer or use a puller tool to dislodge the tie rod end. **(Photo 3)**
- d) Remove all mounting points for the brake lines and ABS sensor wire from the control arm and spindle. **(Photo 4)**
- e) Undo the brake caliper mounting bolts. Hang the caliper to prevent stretching of the lines using large zip ties or hangers. Remove the rotors **(Photo 5)**



- f) Remove the brake backing plate (**Photo 6**) and the ABS sensor from the spindle (**Photo 7**)
- g) Remove the cap in the center of the hub assembly with a pair of wide jaw pliers or pry tool to expose the axle nut. Remove the nut using a 13mm socket. (**Photo 8**)
- h) Carefully detach the actuator lines from the frame near the upper control arm. (**Photo 9**)
- i) Remove actuator lines by unclipping them from the main harness under the hood. There will be one behind the battery on the passenger side and one by the air box on the driver side (**Photo 10**)
- j) Loosen but do not remove the nuts from the upper and lower ball joints. Use a dead blow hammer or puller tool to dislodge the spindle from the ball joints.
- k) Once the upper and lower ball joints are dislodged, remove the nuts from the upper and lower ball joints and remove the spindle from the vehicle.

**Note:** Pay close attention to how the lines are routed through the fender. Ensure that the lines are completely free from the chassis and only attached to the actuator

**Note:** Be careful not to damage the actuator or grease seals with the axle shaft while removing or installing spindles.



- k) Using a 18mm socket, remove the lower strut nuts from the lower control arms **(Photo 11)**
- l) Using a 21mm and 27mm wrench, remove both lower control arms. **(Photo 12)**
- m) Remove top mount nuts and remove both front struts from the vehicle. **(Photo 13)**
- n) Unplug the electrical wires for the power steering rack. Pull back red lock tabs and squeeze the release buttons to remove connectors. **(Photo 14)**
- o) Use the driver's seatbelt, or a steering wheel holder tool to hold the steering wheel from rotating. Remove the pinch bolt from the steering input shaft and separate the shaft from the steering rack. **(Photo 15)**



- p) Using a 21mm and 24mm wrench, remove the two bolts holding the steering rack to the frame and carefully remove the power steering rack. Do not turn the input shaft, so it can be reinstalled in the same orientation.

**(Photo 16)**



- q) Using a 10mm socket, disconnect the driveline **(Photo 17)** and rubber vent hose **(Photo 18)** from the front differential. Support the front driveline by hanging it to prevent damage.



- r) Using a 15mm and 18mm wrench, remove the center section of rear crossmember located near the rear of the front differential.
- s) Use a floor jack to support the differential. Using a 18mm and 21mm wrench, remove the front differential from the vehicle.
- t) Once the differential is out, reinstall the power steering rack in reverse order of removal. Once installed, you may remove the steering wheel holder.

- u) Using the templates included in the kit, **(152510-887)** mark a guide line on both sides of the drivers rear crossmember mount. Cut on the marked line to create room for the re-located differential. Grind any rough edges and apply paint to prevent rust **(Photo 19)**

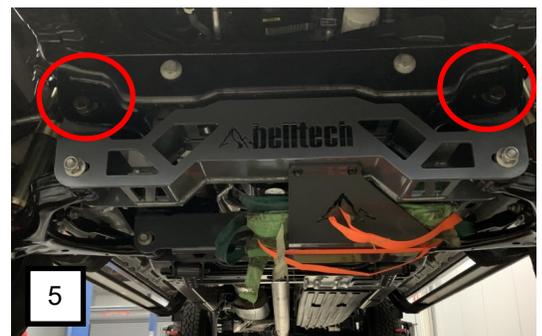


- v) Remove factory hubs and actuators from the front spindles. Take note of the orientation of the ABS port. **(Photo 20)**



### 3) Front Install Instructions

- a) Install the front differential drop bracket to the OE mounting locations using the OE mounting hardware. Do not tighten fully until the differential is fully installed. **(Photo 1)**
- b) Supporting the front differential with a floor jack, lift the differential into the Belltech drop bracket and secure using the supplied M14 x 100mm bolts, M14 washers, and M14 nylock nuts.
- c) Install the rear crossmember into the frame using the supplied M18 hardware **(Photo 2)** and use the supplied M14 hardware for the bushing **(Photo 3)**. Using a floor jack, support the rear differential. Insert all 3 bolts from the front but do not install nuts yet.
- d) Install both sway bar drop brackets onto M18 bolts and loosely secure with the supplied nylock nut. **(Photo 4)**
- e) Torque all rear crossmember bolts to 180 ft-lbs. Torque all differential/bracket bolts and sway bar drop bracket nuts to OE specifications.  
**Note: Ensure swaybar drops are fully seated against the frame.**
- f) Attach the new extended differential vent hose to the factory plastic hose and differential.
- g) Attach the drive line to the differential using OE hardware. Torque to OE specifications.
- h) Install the front crossmember with supplied hardware. Torque bolts to 180 ft-lb. **(Photo 5)**



- i) Loosely install lower control arms into the new cross-members with OE hardware **(Photo 6)**



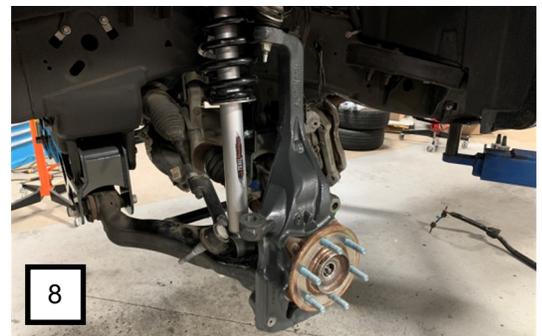
**For Strut Spacer Installation:**

Please refer to the included instructions for strut spacer kit LK2003.

**For Trail Performance Strut or Coilover Installation:**

Please refer to the instructions within the strut kit 28027 or coilover kits 15307 and 16307.

- j) Reinstall factory hubs and actuators into the new lift spindles. Ensure to keep proper alignment of the ABS sensor port and actuator. Tighten the hardware to OE specifications. **(Photo 7)**
- k) Install the new lift spindles onto the vehicle. Take proper care to ensure the front axle is fully seated into the hub. Tighten upper ball joint, lower ball joint, and axle using the OE nuts and torque all nuts to OE specification and reinstall dust caps over the spindle nuts. **(Photo 8)**
- l) Unbolt front brake line brackets from the frame. **(Photo 9)**
- m) Unclip the brake and ABS lines from any remaining attachments to the frame near the control arm mount. **(Photo 10)**



- n) Install the new brake line drop brackets to the frame with the OE hardware **(Photo 11)**

**Note:** They are side specific

- o) Route and plug in the actuator lines to the connectors under the hood.
- p) Install the OE brake line to the new bracket with the supplied hardware. Remove any retaining clips necessary to allow hard lines to flex downward toward the new bracket.

- q) Attach ABS sensor to the new Belltech spindle.
- r) Reinstall the brake backing plate onto the Belltech spindle **(Photo 12)**

- s) Install brake rotor and caliper onto the Belltech spindle and torque to factory specifications. **(Photo 13)**

- t) Attach ABS and brake lines to the new brake line drop brackets. Double check to confirm they will not interfere with moving parts or be pulled on while steering.

- u) Install OE sway bar onto the new drop brackets using the supplied hardware in reverse order as when taken off.

**Note: If you purchased a 152510TPS kit please refer to the instructions found in the sway bar kit 9939 to install the front sway bar.**

- v) Remove nuts **(DO NOT REMOVE THE BOLTS)** from the center crossmember near the transmission. **(Photo 14)**

**Note: Some models may have a wire harness on the passenger side. Temporarily remove the bolts holding the harness to the crossmember to access the crossmember bolts. (Photo 15)**



- w) Install the compression arm rear mounting brackets using OE nuts and bolts. Reattach wire harness if removed. **(Photo 16)**
- x) Press the supplied compression arm bushings and sleeves into the compression arms. Using the supplied hardware, install the compression arms into the tabs on the rear crossmember and the previously installed brackets. **(Photo 17)**
- y) Mount the skid plate across both crossmembers using the supplied hardware. **(Photo 18)**
- z) Reinstall wheels and lower the vehicle back onto the ground.
- aa) Torque the wheels and all fasteners to factory specifications and check for interference of all brake lines and moving parts.



#### 4) REAR REMOVAL INSTRUCTIONS

- a) Jack up the rear of the vehicle. Place jack stands under the frame rails and lower onto jack stands letting the rear suspension hang.  
**Note: Please reference step 1 for more in-depth instructions on lifting and supporting your vehicle properly.**
- b) Supporting the differential with a floor jack, remove the rear shocks. **(Photo 1)**
- c) Disconnect the brake line bracket from the inside of the driver frame rail above the axle. **(Photo 2)**



- d) Using a pry tool, release the rear 2 brake line retention clips from the frame rail. This will allow the brake line bracket to be lowered without kinking the hard lines. **(Photo 3)**
- e) Using a 13mm socket on an extension, remove the factory bump stop cup from the frame. **(Photo 4)**
- f) Keeping the axle fully supported, lower the axle until the leaf springs are fully decompressed.
- g) Remove all 8 U-bolt nuts and U bolts. The lower U bolt plates will be reused. **(Photo 5)**
- h) Lower the axle to make room to install the new lift blocks. Remove OE blocks if equipped.



**5) REAR INSTALL INSTRUCTIONS**

- a) Install rear lift blocks with the taller end in the back to aim the pinion up toward the transmission. **(Photo 1)**
- b) Making sure all pins and holes are aligned and seated. Raise the axle against the leaf springs to close all gaps.
- c) Install new U bolts using the supplied hardware and OE lower U bolt plates. Torque to 90 ft-lb.
- d) Install the new Belltech rear shocks with OE hardware in reverse order of removal.
- e) Install the break line drop bracket onto frame using the OE bolt. **(Photo 2)**



- f) Install brake lines to the drop bracket using the provided M8 hardware. **(Photo 3)**
- g) Flatten or cut off the locating tabs on OE bump stop cups. **(Photo 4)**
- h) Reinstall bump stops with provided composite spacer and extended hardware, making sure it's rotated in the correct orientation. **(Photo 5)**
- i) Reinstall wheels if removed, and lower the truck back onto the ground.
- j) Verify that all hardware and its components are torqued to factory specifications.



## 5) Post Install

- a) Check that all components and fasteners have been properly installed, tightened and torqued.
- b) Check brake hoses, and other components for any possible interference.
- c) Torque all lug nuts to OEM (factory) specifications.
- d) Test drive the vehicle in a remote location so that you can become accustomed to the altered driving characteristics and handling. Be aware that the vehicle will handle substantially different now that it has been modified.
- e) We recommend the vehicle be taken to a qualified wheel alignment facility to be realigned to factory specifications after completing the install.
- f) Installation is complete. Check ALL of the hardware and re-torque at intervals for the first 10, 100, 1000 miles.

**NOTE: A complete vehicle alignment is required immediately following the installation.**

<b>Kit Contents (152510BK)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
LK20001	21+ Ford F150 Component Kit	1
LK20002	21+ Ford F150 Component Kit	1
LK2353	21+ Ford F150 7" Base Lift Kit	1
LK2003	Ford F150 BK Strut Spacer Kit	1
LK9705R	LK Shock Set	1

<b>Kit Contents (152510TP)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
LK20001	21+ Ford F150 Component Kit	1
LK20002	21+ Ford F150 Component Kit	1
LK2353	21+ Ford F150 7" Base Lift Kit	1
LK9706F	LK Shock Set	1
LK9705R	LK Shock Set	1

<b>Kit Contents (152510TPS)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
LK20001	21+ Ford F150 Component Kit	1
LK20002	21+ Ford F150 Component Kit	1
LK2353	21+ Ford F150 7" Base Lift Kit	1
LK9706F	LK Shock Set	1
LK9705R	LK Shock Set	1
9939	21+ Ford F150 Anti-Swaybar Set	1

<b>Component Kit (LK20001)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
152501-101	Front Crossmember	1
152501-113R	Passenger Side Swaybar Drop Down	1
152501-107L	Driver Side Compression Arm Braker	1
152501-107R	Passenger Side Compression Arm Bracket	1
152501-201	Lift Block	2
152510-102	Rear Crossmember	1
152510-113L	Driver Side Swaybar Drop Bracket	1

<b>Component Kit (LK20002)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
152501-106	Compression Arm	2
LK20002A	Sub Kit - A	1
152510-108	Skid Plate	1
152510-104	Differential Drop Down Bracket	1
152510-202	Round U-Bolt	4

<b>Sub Kit - A (LK20002A)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
152501-141	Vent Tube Extension	1
152501A-777	Front/Rear Crossmember Hardware Kit	1
152510B-777	Differential Drop Down Hardware Kit	1
152501C-777	Compression Arms Hardware Kit	1
152501D-777	U-Bolt/Bump Stop Hardware Kit	1
152501F-777	Skid Plate Hardware Kit	1
152501G-777	Brake Line Bracket Hardware Kit	1
152501J-777	Front Swaybar Hardware Kit	1
150210-203	Rear Bump Stop Extender	2
152510-111L	Driver Brake Line Bracket	1
152510-111R	Passenger Brake Line Bracket	1
152501-225	Rear Brake Line Bracket	1

<b>Front/Rear Crossmember Hardware Kit (152501A-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
112131	Hex Head M18x2.5 - 140	4
112132	M18x2.5 Nylock Nut	4
112133	M18 Washer	8

<b>Differential Drop Down Hardware Kit (152510B-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
110220	M14x2.0 - 100 Bolt	3
110222	M14x2.0 Nylock Nut	3
110223	M14 Washer	6

<b>Compression Arms Hardware Kit (152510C-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
150210-100-HW	Hardware Kit	1
110227	M12x1.75 - 110 Bolt	4
110243	M12x1.75 Nylock Nut	4
110228	M12 Washer	8

<b>Hardware Kit (150201-100-HW)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
113251	Flanged Bushing	8
8615-003	Spacer Tube	4

<b>U-Bolt/Bump Stop Hardware Kit (152501D-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
110287	SHCS M10x1.5 - 130	2
110223	M14 Washer	8
110222	M14x2.0 Nylock Nut	8

<b>Skid Plate Hardware Kit (152501F-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
112142	M10x1.5 - 25 Serrated Flanged Bolt	4

<b>Brake Line Bracket Hardware Kit (152501G-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
110232	M8x1 - 16 Bolt	4
110233	M8x1 Nylock Nut	4
110245	M8 Washer	8

<b>Front Sway Bar Hardware Kit (152501J-777)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
110230	M10x1.25 - 25 Bolt	4
110244	M10 Nylock Nut	4
110239	M10 Washer	8

<b>Base Kit (LK2353)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
152510-103R	Passenger Side Spindle	1
152510-103L	Driver Side Spindle	1

<b>BK Strut Spacer Kit (LK2003)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
152501-120	Strut Spacer	2

<b>LK Shock Set (LK9705R)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
TP2722EE	Trail Performance Shock	2

<b>LK Shock Set (LK9706F)</b>		
<b>P/N</b>	<b>Item Description</b>	<b>QTY</b>
28027	Trail Performance Shock	2

