

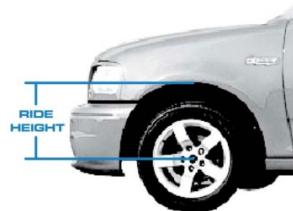


STIFFLERS
CHASSIS & SUSPENSION

1511 Hancel Parkway, Mooresville, IN 46158 317-837-2444

**L² Technology = Lowered & Lifted
One Control Arm Set, Two Applications**

- These control arms can be flipped Driver's to Passenger's side, allowing them to work on both Lowered and Lifted trucks. This is made possible by using a mono-ball and ball stud design in place of a traditional ball joint. Choose your application, assemble the component parts accordingly and install the control arm. Just that easy!
- Decal on the bearing cup shows the proper orientation for either application.
- Maximum Allowable Lift = 3"
- Application Ranges
 - o **Lowered** - Ride Height from **14.5"** to **18"**
 - o **Lifted** - Ride Height from **18"** to **21"**



**INSTALL SHEETS FOR BOTH LIFTED AND LOWERED ARE INCLUDED
FOLLOW THE ONE FOR YOUR APPLICATION!**





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FOR LOWERED 2WD
TRUCKS ONLY



Cancer and Reproductive Harm
www.P65Warnings.ca.gov

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Adjustable Front Upper Control Arms

L² Technology

LOWERED 2WD Trucks

**1997-2004 F-150 (2WD)/1999-2004 Lightning & Harley Davidson
(AFUCA-FT02)**

Kit Includes:

(1) Driver Side Control Arm	(2) O-Rings
(1) Passenger Side Control Arm	(2) Dust Boots
(2) Ball Studs	(4) 3/4"-16 RH Rod Ends
(2) Stud Retainers	(4) 3/4"-16 Jam Nuts
(2) 1/2"-20x1" 12-Point Bolt	(8) Misalignment Spacers
(2) 1/2"-20 SS Nyloc Nuts	(6) Tie-Wraps
(2) 1/2" SS AN Washers	(1) Tube Copper Anti-Seize
(2) Bearing Covers	

Required Tools:

Jack Stands
Floor Jack
Standard & Metric Socket Sets
Basic Hand Tools
Torque Wrench

Install Time: 2.5hrs.

Pre-Install Note:

- Before beginning, measure & **RECORD** the current ride height of the truck as shown below, this will be needed when setting up the new control arms for installation.



Ride Height = _____

Installation:

- 1) Loosen lug nuts on both front tires
- 2) Raise front of truck until tires are off the ground; support with jackstands under frame.
- 3) Remove driver's side tire.
- 4) Support lower control arm by securely positioning floor jack under it. Raise jack 3"-4", this will take the load off the upper ball joint and keep the spring securely in place when the ball joint is loosened.
[NOTE: Be sure to position jack out of the way as much as possible.]
- 5) Remove wheel-speed sensor clamp from upper control arm using a flat blade screwdriver.



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- 6) Remove wheel-speed sensor retaining bolt and place sensor out of the way. (Fig.1)
- 7) Remove cotter pin from upper ball joint, loosen castle nut but DO NOT remove.
- 8) Separate upper ball joint by sharply striking the side of the knuckle with a hammer or by driving a pickle fork between the ball joint and knuckle.
- 9) **IMPORTANT REMINDER:** Once the ball joint has been removed the spindle assembly will be unsupported and freely move around. Remove the castle nut; support the spindle assembly with one hand and use the other to push up on the control arm to disengage the ball joint. Allow spindle assembly to lay over being careful not to damage the brake hose.
- 10) Loosen control arm mounting bolts and remove control arm. (NOTE: Retain all hardware.)
- 11) Thread jam nuts completely onto rod ends and apply anti-seize to threads. (Fig.2)
- 12) Install rod ends into control arm until no thread is showing.
- 13) Use table below and find the suggested initial rod end setting that matches your ride height measurement. Unscrew rod end the number of turns shown in table, **DO NOT TIGHTEN JAM NUTS.**

Table 1

Ride Height	Rod End # Turns	Thread Showing
18"	0	0
17.5"	0.5	1/16"
17"	1	1/8"
16.5"	3	3/16"
16"	4.5	5/16"
15.5"	6	3/8"
15"	8.5	9/16"
14.5"	10	5/8"

Example: If the ride height is 16", unscrew the rod end 4.5 turns (5/16" of thread will be showing). (Fig.3)

- 14) Insert misalignment spacers into rod ends.
- 15) Lift control arm into place and loosely install the existing cam-bolts. [NOTE: It may be easier to install the front mounting bolt first, then position rear mount into place.]
- 16) **Rotate cam-bolts completely inboard** and torque to 100 ft-lbs. (Fig.4)
- 17) Put a small amount of anti-seize under head of 12-pt bolt and on threads.
- 18) Install ball stud and retainer in bearing and loosely fasten with 12-pt bolt. **DO NOT TIGHTEN.** (Fig.5)
- 19) Place dust boot over ball stud and firmly press boot into bottom of control arm. (Fig.6)
- 20) Angle ball stud slightly to ease installation in knuckle. (NOTE: New bearing will be tight, tap stud with a soft hammer to position if necessary.)
- 21) Lift control arm and insert ball stud into knuckle. **APPLY ANTI-SEIZE ON THREADS** and secure with supplied washer and nyloc nut, torque to 65 ft-lbs. (Fig.7)
- 22) Torque 12-pt bolt to 65 ft-lbs. (Fig.8)
- 23) Insert O-ring into groove as shown. (Fig.9)
- 24) Firmly push bearing cover into place





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- 25) Re-install wheel-speed sensor and retaining bolt. (Fig.1)
- 26) Secure wheel-speed sensor wire with tie-wraps as shown. (Fig.10)
- 27) Lower jack and repeat Steps 4~26 for passenger side.
- 28) Install tires, lower truck, torque lug nuts to manufacturer's specs
- 29) Make appointment for alignment check, see Table#2 for suggested setting.
- 30) **Check torque on all control arm bolts/nuts after initial 50 miles, then periodically re-check.**

SUGGESTED ALIGNMENT SPECS:

The rod end settings from Table#1 will help ensure both caster and camber angles are sufficiently close to the factory settings, **HOWEVER, an alignment check is still required.** Table#2 below has suggested settings for all street driven trucks.

Table 2

SUGGESTED SETTINGS	FRONT LEFT	FRONT RIGHT
CAMBER	-0.5 deg. (Factory Spec -1.2~0.2)	-0.5 deg. (Factory Spec -1.2~0.2)
CASTER	+6.7 deg. (Factory Spec 5.7~7.7)	+7.2 deg. (Factory Spec 6.2~8.2)

Fig.1



Fig.2



Fig.3



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Fig.4



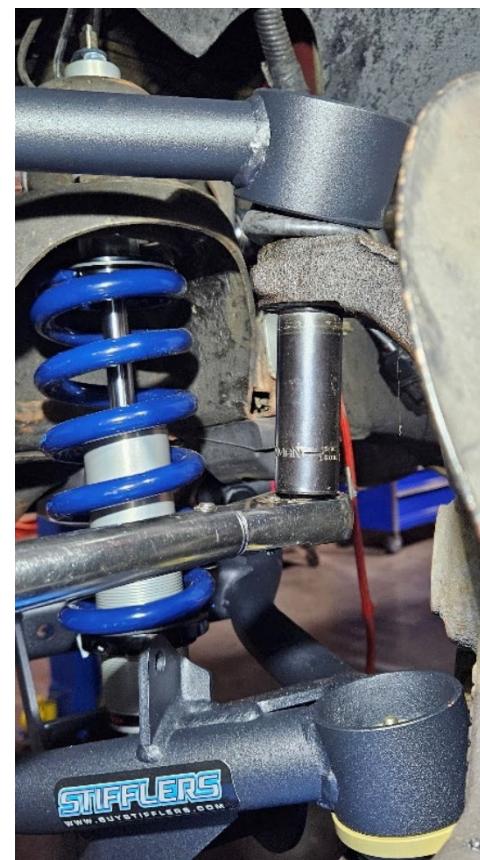
Fig.5



Fig.6



Fig.7



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Fig.8
Fig.9



Fig.10



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Pages 9 -13

FOR LIFTED 2WD
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Adjustable Front Upper Control Arms



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L² Technology

LIFTED 2WD Trucks

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(2) Stud Retainers	(4) 3/4"-16 Jam Nuts
(2) 1/2"-20x1" 12-Point Bolt	(8) Misalignment Spacers
(2) 1/2"-20 SS Nyloc Nuts	(6) Tie-Wraps
(2) 1/2" SS AN Washers	(1) Tube Copper Anti-Seize
(2) Bearing Covers	

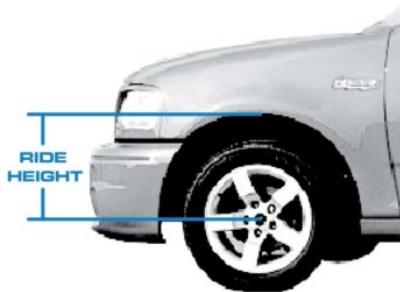
Required Tools:

Jack Stands
Floor Jack
Standard & Metric Socket Sets
Basic Hand Tools
Torque Wrench

Install Time: 2.5hrs.

Pre-Install Note:

- Before beginning, measure & **RECORD** the current ride height of the truck as shown below, this will be needed when setting up the new control arms for installation.



Ride Height = _____

Installation:

- 31) Loosen lug nuts on both front tires
- 32) Raise front of truck until tires are off the ground; support with jackstands under frame.
- 33) Remove driver's side tire.
- 34) Support lower control arm by securely positioning floor jack under it. Raise jack 3"-4", this will take the load off the upper ball joint and keep the spring securely in place when the ball joint is loosened.
[NOTE: Be sure to position jack out of the way as much as possible.]
- 35) Remove wheel-speed sensor clamp from upper control arm using a flat blade screwdriver.
- 36) Remove wheel-speed sensor retaining bolt and place sensor out of the way. (Fig.1)
- 37) Remove cotter pin from upper ball joint, loosen castle nut but DO NOT remove.



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- 38) Separate upper ball joint by sharply striking the side of the knuckle with a hammer or by driving a pickle fork between the ball joint and knuckle.
- 39) **IMPORTANT REMINDER:** Once the ball joint has been removed the spindle assembly will be unsupported and freely move around. Remove the castle nut; support the spindle assembly with one hand and use the other to push up on the control arm to disengage the ball joint. Allow spindle assembly to lay over being careful not to damage the brake hose.
- 40) Loosen control arm mounting bolts and remove control arm. (NOTE: Retain all hardware.)
- 41) Thread jam nuts completely onto rod ends and apply anti-seize to threads. (Fig.2)
- 42) Install rod ends into control arm until no thread is showing.
- 43) Use table below and find the suggested initial rod end setting that matches your ride height measurement. Unscrew rod end the number of turns shown in table, **DO NOT TIGHTEN JAM NUTS.**

Table 1

Ride Height	Rod End # Turns	Thread Showing
18"	0	0
19"	1	1/16"
20"	2	1/8"
21"	3	3/16"

Example: If the ride height is 21", unscrew the rod end 3 turns (3/16" of thread will be showing). (Fig.3)

- 44) Insert misalignment spacers into rod ends.
- 45) Lift control arm into place and loosely install the existing cam-bolts. [NOTE: It may be easier to install the front mounting bolt first, then position rear mount into place.]
- 46) **ROTATE CAM-BOLTS COMPLETELY INBOARD** and torque to 100 ft-lbs. (Fig.4)
- 47) Position rod ends straight up and tighten jam nuts. (Fig.10)
- 48) Put a small amount of anti-seize on threads of 12-pt bolt and under the head.
- 49) Install ball stud and retainer in bearing and loosely fasten with 12-pt bolt. **DO NOT TIGHTEN.** (Fig.5)
- 50) Place dust boot over ball stud and firmly press boot into bottom of control arm. (Fig.6)
- 51) Angle ball stud slightly to ease installation in to knuckle. (NOTE: New bearing will be tight, tap stud with a soft hammer to position if necessary.)
- 52) Lift control arm and insert ball stud into knuckle. **APPLY ANTI-SEIZE ON THREADS** and secure with supplied washer and nyloc nut, torque to 65 ft-lbs. (Fig.7)
- 53) Torque 12-pt bolt to 65 ft-lbs. (Fig.8)
- 54) Insert O-ring into groove as shown. (Fig.9)
- 55) Firmly push bearing cover into place
- 56) Re-install wheel-speed sensor and retaining bolt. (Fig.1)
- 57) Secure wheel-speed sensor wire with tie-wraps as shown. (Fig.10)
- 58) Lower jack and repeat Steps 4~26 for passenger side.
- 59) Install tires, lower truck, torque lug nuts to manufacture's specs
- 60) Make appointment for alignment check, see Table#2 for suggested setting.
- 61) **Check torque on all control arm bolts/nuts after initial 50 miles, then periodically re-check.**





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SUGGESTED ALIGNMENT SPECS:

The rod end settings from Table#1 will help ensure both caster and camber angles are sufficiently close to the factory settings, **HOWEVER, an alignment check is still required.** Table#2 below has suggested settings for all street driven trucks.

Table 2

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CASTER	+6.7 deg. (Factory Spec 5.7~7.7)	+7.2 deg. (Factory Spec 6.2~8.2)

Fig.1



Fig.2



Fig.3





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Fig.4



Fig.5



Fig.6



Fig.7



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Fig.8



Fig.9



Fig.10 (Passenger Side Shown)



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