

7929 Lincoln Ave. Riverside, CA 92504  
 Phone: 951.689.ICON Fax: 951.689.1016

PART #	DESCRIPTION
91816C	15-UP F-150 2WD 1.75-3" 2.5 VS RR CDCV COILOVER KIT

### COMPONENTS INCLUDED

(1) 194955C 15+ F-150 2WD RR VS CDCV COILOVER (DRVR)	(2) 250002 7.50 UNIVERSAL RESI MT PLATE CZINC
(1) 194955C 15+ F-150 2WD RR VS CDCV COILOVER (PASS)	(2) 605144 3/8-12 X .750 FLANGED SELF TAP BOLT
(1) 611019 COILOVER HARDWARE KIT	(1) 611051 #40 1 1/16-3 HOSE CLAMP KIT
	(1) 611052 14-UP F150 CO LOWER HARDWARE KIT

### HARDWARE INCLUDED

611019 COILOVER HARDWARE KIT	
(6) 605101 3/8-16 X 1.000 BOLT	(6) 605131 3/8 SPLIT LOCK WASHER
611051 HOSE CLAMP HARDWARE KIT	
(4) 605931 1/2 X 2 1/16 - 3 ID #40 SS HOSE CLAMP	
611052 LOWER COILOVER HARDWARE KIT	
(4) 605201 7/16-14 X 3.000 BOLT	(4) 605231 WASHER 1.00 X .469 X .125
(4) 605230 7/16 FLAT WASHER	

### TOOLS REQUIRED

JACK JACK STANDS HAMMER TORQUE WRENCH CENTER PUNCH DRILL 11/32" DRILL BIT	15MM SOCKET / WRENCH 18MM SOCKET / WRENCH 21MM SOCKET / WRENCH 5/16" SOCKET / WRENCH 9/16" SOCKET / WRENCH 5/8" SOCKET / WRENCH
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### TECH NOTES

1. YOUR ICON COILOVER ASSEMBLIES COME FACTORY CHARGED TO 150 PSI. RELEASING NITROGEN PRESSURE MAY LEAD TO SHOCK MALFUNCTION AND REDUCED RIDE QUALITY. FAILURE CAUSED BY LOW NITROGEN PRESSURE IS NOT COVERED UNDER ICON'S WARRANTY POLICY.
2. YOUR ICON COILOVER ASSEMBLIES COME SHIPPED AT ICON'S RECOMMENDED RIDE HEIGHT. REDUCING DROOP TRAVEL WILL REDUCE RIDE QUALITY. DO NOT PRELOAD THE COIL BEYOND 1.56" OF EXPOSED THREADS BETWEEN THE BOTTOM OF THE TOP CAP AND THE COIL ADJUSTER NUT. ADJUSTING PRELOAD BEYOND THIS SETTING WILL CAUSE THE COIL TO BIND AND DAMAGE WILL OCCUR TO COILOVER AND/OR VEHICLE.
3. PHOTOS DEPICT 4WD MODEL, BUT INSTALLATION INSTRUCTIONS ARE THE SAME FOR 2WD APPLICATIONS.



### WARNING!

**\*\* READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION! IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED SEVERE FRAME, SUSPENSION AND TIRE DAMAGE MAY RESULT TO THE VEHICLE!**

**\*\* ICON VEHICLE DYNAMICS RECOMMENDS THAT YOU EXERCISE EXTREME CAUTION WHEN WORKING UNDER A VEHICLE THAT IS SUPPORTED WITH JACK STANDS.**

**\*\* ICON VEHICLE DYNAMICS RECOMMENDS ALL INSTALLTION TO BE PERFORMED BY A PROFESSIONAL SHOP/SERVICE TECHNICIAN. PRODUCT FAILURE CAUSED BY IMPROPER INSTALLATION WILL NOT BE COVERED UNDER ICON'S WARRANTY POLICY.**

## INSTALLATION

1. Using a properly rated jack, raise the front of the vehicle and support the frame rails with jack stands. Ensure the jack stands are secure and set properly before lowering the jack. NEVER WORK UNDER AN UNSUPPORTED VEHICLE. Remove the front wheels.
2. Disconnect the sway bar from the links using an 18mm and an 8mm socket/wrench. (FIGURE 1)

FIG.1



FIG.2



3. Remove the nuts from the lower bar pin studs on the factory coilover using an 18mm socket/wrench. (FIGURE 2)

4. Use a hammer to push the studs out of the bar pin. (FIGURE 3)

FIG.3

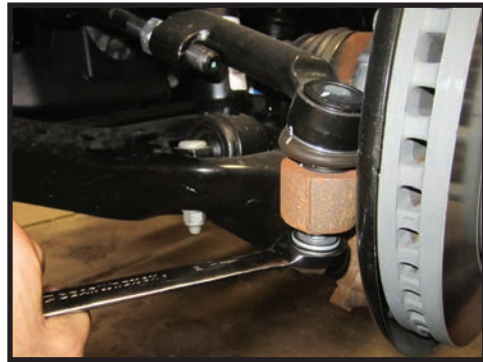


FIG.4

5. Loosen the nut connecting the steering knuckle to the tie rod using a 21mm and a 10mm socket/wrench. (FIGURE 4)

6. Using a hammer or a ball joint separator, separate the taper from the knuckle, remove the nut and disconnect the tie rod.

7. Loosen the nut connecting the steering knuckle to the upper control arm using a 18mm socket/wrench. (FIGURE 5)

FIG.5



8. Using a hammer or a ball joint separator, separate the taper from the knuckle. Remove the nut and disconnect the upper control arm from the knuckle.

9. Using an 18mm socket/wrench, remove the 3 nuts from the upper shock mount and remove the factory coilover. (FIGURE 6)

FIG.6



10. Install the coilover using the supplied 3/8" hardware. Bolt the upper mount to the coil bucket and tighten with a 9/16" socket/wrench [Torque to 30 ft-lbs]. The reservoir hose points forward out of the top cap of the shock with the hose coming down close to the frame rail. (FIGURE 7)

FIG.7



- 11.** Install the 7/16" hardware from the bottom of the lower control arm and connect to the bar pin using a 5/8" socket/wrench [Torque to 50 ft-lbs]. The bar pin is installed to offset the shock forward to increase axle clearance.
- 12.** Connect the upper control arm to the knuckle using a 18mm socket/wrench. [Torque to factory spec]
- 13.** Connect the tie rod to the knuckle using a 21mm and a 10mm socket/wrench. [Torque to factory spec] (FIGURE 8)

FIG.8



- 14.** Connect the sway bar to the sway bar links using an 18mm and an 8mm socket/wrench. [Torque to factory spec]
- 15.** Hold the reservoir bracket in position as shown. Mark and center punch the bolt hole location. Use a 11/32" drill bit and drill the bolt hole. Then use the supplied self-tapping screws to mount the reservoir bracket using a 9/16" socket/wrench. (FIGURE 9)

FIG.9

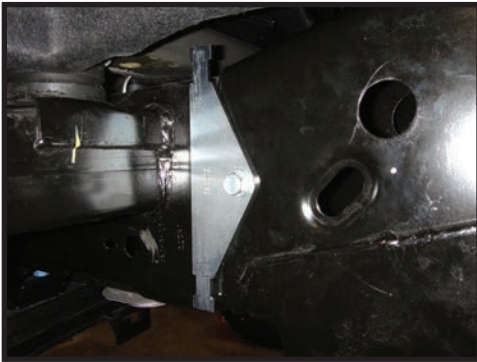


FIG.10



- 16.** Mount the reservoir to the reservoir bracket using the supplied hose clamps and a 5/16" socket/wrench. (FIGURE 10)
- 17.** Repeat steps for passenger side.
- 18.** Install the front wheels and lower the vehicle to the ground. [Torque to factory spec]
- 19.** Have the truck professionally aligned.

***VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.***

***RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 100 MILES AND PERIODICALLY THEREAFTER.***



## 2.5 VS SERIES SHOCK & COILOVER TECHNICAL INFORMATION

### MAINTENANCE

ICON shock absorbers are a high quality rebuildable race style shock absorber designed for optimal performance. With a unit of this caliber on your vehicle, routine maintenance is required to keep them looking and operating in like new condition. Residual oil and assembly lube may be present at all seal paths from the factory out of the box and is considered normal. Pooling of oil however is not acceptable at any time and one should contact the ICON dealer where purchased.

**BELOW ARE GUIDELINES BASED ON HOW YOU USE YOUR VEHICLE BUT YOUR MILEAGE MAY VARY:**

#### **STREET USE:**

- Send in for factory servicing every 40,000 miles or if a leak develops, ride quality decreases, or they begin to make excessive noise.
- Remove any buildup of road salt, mud, or debris from shocks and coil springs anytime accrued
- Clean with mild soap and water with each oil change or anytime you notice build up.
- Wax the cylinders yearly with automotive wax to prevent corrosion.
- Check nitrogen pressure yearly. (252004 charge needle assembly available at any ICON distributor)
- Check bearings for excessive wear yearly.
- **DO NOT** apply any type of lube to the upper and lower bearings.

#### **STREET/DIRT:**

- Send in for factory servicing every 15,000 miles or if a leak develops, ride quality decreases, or they begin to make excessive noise.
- Clean with mild soap and water with each oil change, offroad trip, or anytime you notice build up.
- Wax the cylinders yearly with automotive wax to prevent corrosion.
- Check nitrogen pressure each dirt outing. (252004 charge needle assembly available at any ICON distributor)
- Check bearings for excessive wear yearly.
- **DO NOT** apply any type of lube to the upper and lower bearings.

#### **DIRT USE:**

- Send in for factory servicing every 1,000 miles.
- Check nitrogen pressure each outing. (252004 charge needle assembly available at any ICON distributor)
- Remove any buildup of mud or debris from shocks and coil springs after every outing.

#### **SELF-SERVICE:**

- Contact ICON for service kits & tools at (951) 689-4266.

### PRODUCT REGISTRATION

Please visit: <http://www.iconvehicledynamics.com/tech-support/registration/> to register your product.

### ICON VEHICLE DYNAMICS SHOCK ABSORBER WARRANTY

This shock absorber has a 1 year warranty against any manufacturer's defects. If a shock fails within the initial year of ownership, the shock must be shipped to ICON Vehicle Dynamics for inspection and service. If a shock is inspected and it has been determined the shock failed due to neglect, damage caused by improper installation or any other reason besides "normal wear and tear", the owner of said shock is responsible for all service costs. This includes labor, parts, and shipping.

ICON Vehicle Dynamics warrants to the original retail purchaser who owns the vehicle on which the product was originally installed. ICON Vehicle Dynamics does not warrant the product for finish, alterations, modifications and/or installation contrary to ICON Vehicle Dynamics instructions. ICON Vehicle Dynamics products are not designed, nor are they intended to be installed on vehicles used in race applications, for racing purposes or for similar activities. (A "race" is defined as any contest between two or more vehicles, or a contest of one or more vehicles against the clock, whether or not such contest is for a prize). This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warranty are sales outside of the United States of America and Canada.

ICON Vehicle Dynamics' obligation under this warranty is limited to the repair or replacement, at ICON Vehicle Dynamics' discretion, of the defective product. Any and all costs of removal, installation or re-installation, freight charges and incidental or consequential damages are expressly excluded from this warranty. Items that are subject to wear are not considered defective when worn and are not covered.

ICON Vehicle Dynamics components must be installed as a complete kit as shown in our current application guide. Any substitutions or exemptions of required components will immediately void the warranty. Some finish damage may happen to parts during shipping and is not covered under warranty.

This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been improperly installed, modified or customized subject to accident, negligence, abuse or misuse.

To send a shock in for warranty please visit our website <http://www.iconvehicledynamics.com/tech-support/shock-service/>

## ICON VEHICLE DYNAMICS

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PART #	DESCRIPTION
97720CP	15-UP FORD F150 REAR 0-1" 2.5 VS PB SHOCKS

COMPONENTS INCLUDED	
(2) 194954C 15+ F150 REAR 2.5 PB CDCV SHOCK	(1) 194017 15+ F150 REAR E-BRAKE TAB
HARDWARE INCLUDED	
N/A	
TOOLS REQUIRED	
JACK JACK STANDS PRY BAR TORQUE WRENCH	10MM SOCKET / WRENCH 15MM SOCKET / WRENCH 18MM SOCKET / WRENCH
TECH NOTES	
N/A	



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## INSTALLATION

- Using a properly rated jack, raise the rear of the vehicle and support the frame rails with jack stands. Ensure the jack stands are secure and set properly before lowering the jack. NEVER WORK UNDER AN UNSUPPORTED VEHICLE.
- Remove the factory rear shocks using a 15mm and an 18mm socket/wrench. [FIGURE 1]

FIG.1



- The passenger side upper shock mount needs to be sanded slightly in order for the ICON shock to fit. [FIGURE 2 & 3]

FIG.2



FIG.3



**4.** Paint all exposed metal to prevent rust.

**5.** Install the ICON rear shocks using a 15mm and an 18mm socket/wrench. The reservoir points away from the axle.  
[Torque to factory spec] [FIGURE 4 & 5]

FIG.4



FIG.5



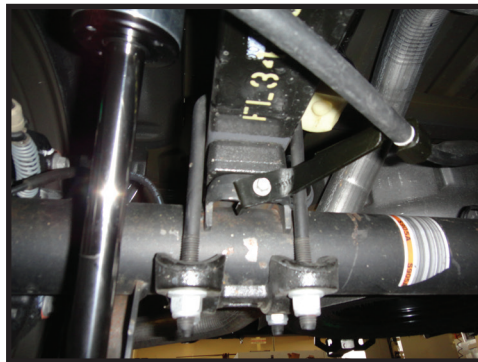
**6.** Remove the factory parking brake cable bracket from the differential using a 10mm socket/wrench. Pry the bracket opened, and remove it from the cable. [FIGURE 6]

FIG.6



**7.** Slide the supplied parking brake cable bracket over the metal sleeve on the cable. Connect it to the differential using the factory screw and a 10mm socket/wrench. [Torque to factory spec] [FIGURE 7]

FIG.7



***VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.  
RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 100 MILES AND PERIODICALLY THEREAFTER.***

## ICON VEHICLE DYNAMICS LIMITED LIFETIME WARRANTY

ICON Vehicle Dynamics warrants to the original retail purchaser who owns the vehicle on which the product was originally installed. ICON Vehicle Dynamics does not warrant the product for finish, alterations, modifications and/or installation contrary to ICON Vehicle Dynamics instructions. ICON Vehicle Dynamics products are not designed, nor are they intended to be installed on vehicles used in race applications, for racing purposes or for similar activities. (A "race" is defined as any contest between two or more vehicles, or a contest of one or more vehicles against the clock, whether or not such contest is for a prize). This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warranty are sales outside of the United States of America and Canada.

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ICON Vehicle Dynamics components must be installed as a complete kit as shown in our current application guide. Any substitutions or exemptions of required components will immediately void the warranty. Some finish damage may happen to parts during shipping and is not covered under warranty.

This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been improperly installed, modified or customized subject to accident, negligence, abuse or misuse.



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PART #	DESCRIPTION
98500DJ	04-UP F150/14-UP EXPEDITION TUBULAR UCA DJ KIT

COMPONENTS INCLUDED	
(1) 194602 04-UP F150 TUBULAR UCA (DRVR)	(1) 194603 04-UP F150 TUBULAR UCA (PASS)
HARDWARE INCLUDED	
(2) 197200BJ DELTA JOINT (4) 199206 SLEEVE 1.000 X .563 X 2.440	(8) 297034 HAT BUSHING 1.625 X 1.000 X .850 (4) 297043 POLY RING 1.590 X 1.005 X .450
TOOLS REQUIRED	
JACK JACK STANDS TORQUE WRENCH	15MM SOCKET / WRENCH 21MM SOCKET / WRENCH 24MM SOCKET / WRENCH
TECH NOTES	
<p>1. ICON RECOMMENDS OPTIONAL BILLET DUST COVER SET (191011) TO PREVENT DEBRIS FROM PACKING UP AROUND THE ZERK FITTING.</p> <p>2. ALL ICON UPPER CONTROL ARMS HAVE BEEN ENGINEERED TO ALLOW FOR THE MOST POSSIBLE CASTER, WHILE STILL ALLOWING THE VEHICLE TO BE PROPERLY ALIGNED. NOTIFY YOUR PROFESSIONAL ALIGNMENT SHOP OF THIS INFORMATION SO THAT MAXIMUM RIDE QUALITY CAN BE ACHIEVED.</p> <p>3. ICON DELTA JOINTS ARE PRE-GREASED FROM THE FACTORY. ICON RECOMMENDS GREASING THE DELTA JOINT EVERY 3,000 MILES (OR EVERY OIL CHANGE). ADD NEW GREASE UNTIL ALL OF THE OLD GREASE IS EXPELLED FROM THE BOTTOM OF THE DELTA JOINT ASSEMBLY, WIPE AWAY EXCESS WITH A RAG OR SHOP TOWEL.</p>	



WARNING!
<p>** READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION! IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED SEVERE FRAME, SUSPENSION AND TIRE DAMAGE MAY RESULT TO THE VEHICLE!</p> <p>** ICON VEHICLE DYNAMICS RECOMMENDS THAT YOU EXERCISE EXTREME CAUTION WHEN WORKING UNDER A VEHICLE THAT IS SUPPORTED WITH JACK STANDS.</p> <p>** ICON VEHICLE DYNAMICS RECOMMENDS ALL INSTALLATION TO BE PERFORMED BY A PROFESSIONAL SHOP/SERVICE TECHNICIAN. PRODUCT FAILURE CAUSED BY IMPROPER INSTALLATION WILL NOT BE COVERED UNDER ICON'S WARRANTY POLICY.</p>

## INSTALLATION

- Using a properly rated jack, raise the front of the vehicle and support the frame rails with jack stands. Ensure the jack stands are secure and set properly before lowering the jack. NEVER WORK UNDER AN UNSUPPORTED VEHICLE. Remove the front wheels.
- Remove the coilover/strut assembly to gain access to the upper control arm bolts. Remove the lower shock bolt and then remove the (3) nuts on top of the coilover (use a 15mm, 27mm & 30mm socket/wrench for stock assembly, 9/16" & 15/16" socket/wrench for ICON assembly). Removing the lower shock end out of the pocket in the arm can be difficult because you are fighting the bushing stiffness from the lower control arm and sway bar tension. Disconnect the sway bar links and/or the top of the other shock to relieve some of this tension. [FIGURE 1 & 2]

FIG.1



FIG.2



**3.** Loosen the taper on the upper ball joint and the tie rod end using a 21mm socket/wrench. Using a hammer, strike the steering knuckle to separate the upper ball joint taper and tie rod end. Take care not to damage the threads. Support the steering knuckle so that it does not overextend the CV joints when detached. [FIGURE 3 & 4]

FIG.3



FIG.4



**4.** Using a jack, slightly lift the lower control arm to prevent the suspension from being at full extension.

**5.** With the upper control arm detached from the spindle, begin to loosen the upper control arm from its mounts in the frame using a 21mm socket/wrench and remove the OEM assembly. [FIGURE 5]

FIG.5

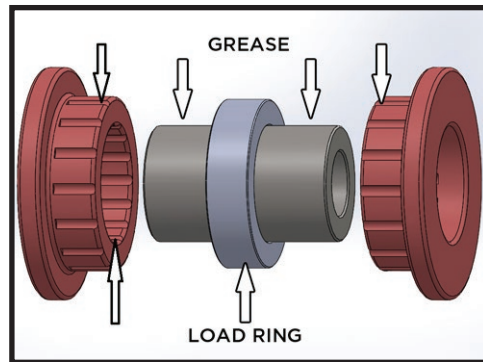


FIG.6

**6.** Before installing the new ICON upper control arms, care must be taken to grease the bushings prior to install assembly. Failure to grease properly will cause premature bushing wear and increased noise. [FIGURE 6]

**7.** With greased bushings installed, place the driver side upper control arm into the mounts on the chassis. Hand tighten using OEM hardware.

**8.** Reinstall the factory shock assembly or refer to the appropriate ICON coilover installation instructions now.

**9.** Take care when inserting tapered pin into the spindle to not damage the threads. Use a 21mm socket/wrench to fasten the supplied nut onto the tapered pin to get it to seat properly. [Torque to 75 ft-lbs]

**10.** Tighten the upper control arm bolts on the chassis using a 21mm socket/wrench. [Torque to factory spec]

**11.** Repeat steps on the opposite side.

**12.** Reinstall wheels and carefully lower the vehicle to the ground. [Torque lugs to factory spec]

**13.** Have the vehicle professionally aligned.

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