

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

PART #	DESCRIPTION
95000	10-14 RAPTOR FRONT 3.0 VS COILOVER RR CDCV SHOCKS

COMPONENTS INCLUDED	
(2) 194961L 10-14 RAPTOR FRONT 3.0 CO (2) 95000H 10-14 RAPTOR CO HARDWARE KIT	(1) 194507 10-20 RAPTOR RESI MOUNT (DRVR) (1) 194508 10-20 RAPTOR RESI MOUNT (PASS)
HARDWARE INCLUDED	
95000H HARDWARE KIT	
(1) 197011 RAPTOR LCA ADAPTER (1) 197013 RAPTOR LCA ADAPTER (NARROW) (3) 605101 3/8-16 X 1.00 BOLT (3) 605131 3/8 SPLIT LOCK WASHER	(1) 605500 5/8-11 X 5.00 BOLT (1) 605520 5/8-11 NYLOCK NUT (2) 605530 5/8" FLAT WASHER (2) 605931 STAINLESS STEEL HOSE CLAMPS
TOOLS REQUIRED	
JACK JACK STANDS GRINDER W/ BARREL SANDER TORQUE WRENCH HAMMER	5/16" NUT DRIVER 9/16" SOCKET / WRENCH 15/16" SOCKET / WRENCH 15MM SOCKET / WRENCH 21MM SOCKET / WRENCH 30MM SOCKET / WRENCH
TECH NOTES	
<p>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.</p> <p>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 1.375" OF EXPOSED THREADS BETWEEN THE BOTTOM OF THE TOP CAP AND THE TOP OF THE COIL ADJUSTER NUT. ADJUSTING PRELOAD BEYOND THIS SETTING WILL CAUSE THE COIL TO BIND AND DAMAGE WILL OCCUR TO COILOVER AND/OR VEHICLE.</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>

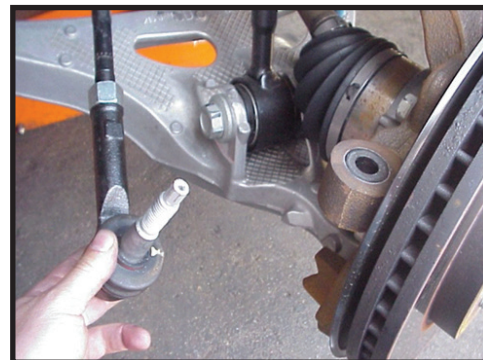
INSTALLATION

1. Ensure truck is in gear or in park, set parking brake, turn off engine, and chock tires.
2. With the vehicle sitting on level ground, measure from the center of the wheel hub to the top of the fender opening. Record this measurement, you will refer to it later to set the ride height.
3. 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.
4. Disconnect the outer tie rod end on both sides: Loosen the nut a few turns, strike the end of the steering knuckle with a large hammer to dislodge the taper. Remove the nut and swing the tie rod out of the way. Take care to not damage the threads on the tie rod end. [FIGURE 1 & 2]

FIG.1



FIG.2



5. Remove the (3) nuts securing the upper coil seat to the frame perch. Do not loosen or remove the larger center nut securing the spring seat to the shock shaft. This will result in the stock coil assembly coming apart violently, causing damage to components and possible injury.
6. Remove the bolt holding the lower shock eyelet to the lower control arm.

7. Remove the stock coilover assembly. Due to rubber bushing stiffness you may need to pull down on the suspension. To make this easier, remove the upper control arm by loosening the UCA nut from the spindle and breaking the taper loose, freeing the upper control arm from the knuckle. Be careful not to damage any brake lines or wires that may be routed down the arm. [FIGURE 3 & 4]

FIG.3

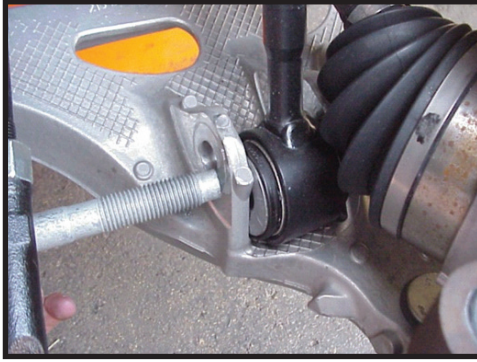
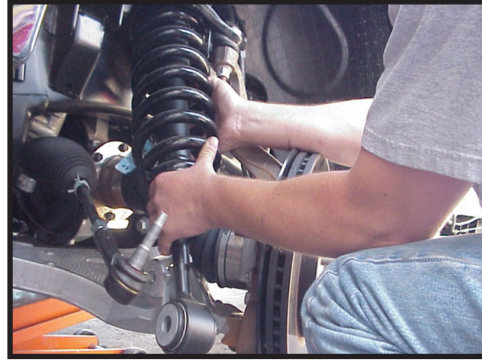


FIG.4



8. Before installing the new ICON coilover, the stock coil bucket will need to be trimmed to allow for clearance of the large hose attaching the remote reservoir and compression adjuster. Use the examples to lightly trim the edge to allow the fittings to pass through the bucket. [FIGURE 5 & 6]

FIG.5

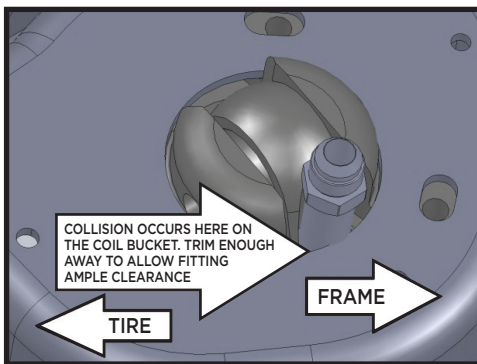
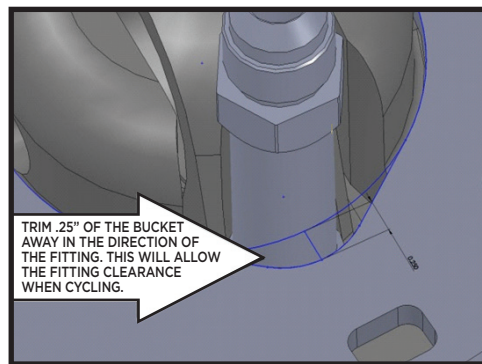


FIG.6



9. Once the shock bucket has been trimmed, install the coilover assembly by guiding the remote reservoir through the hole in the bucket and route the reservoir towards the front of the chassis.

10. Install the upper mount using (3) 3/8" x 1.00" bolts and (3) lock washers. Do not reuse old coilover hat.

11. Install lower shock mount to the lower control arm: First, install the adapter slugs into the lower mount from the inside out. The spacers are designed to space the shock as far forward as possible (away from the axle). Cut the zip tie off of the lower shock eye and make sure that the spacers do not fall out. Slide the lower end of the shock between the adapter slugs and install the supplied lower 5/8" bolt with washers. [Torque to 120 ft-lbs] [FIGURE 7 & 8]

FIG.7

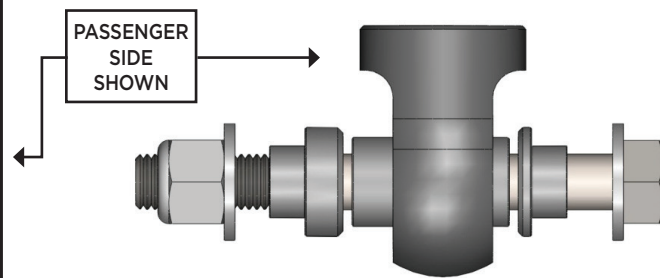


FIG.8

12. Reinstall the outer tie rod end. [Torque to 54 ft-lbs] Install cotter pin.

13. Route the reservoir hose in a safe manner putting the reservoir at the front of the coil bucket. Using the upper control arm bolt, slide the reservoir mounting bracket onto the chassis. The reservoir bracket is mounted underneath the nut of the front upper control arm bolt. Remove the nut from the control arm bolt, slide the bracket over the bolt and up against the coil bucket. The passenger side also requires that you remove the ground strap and reinstall it through the reservoir bracket. [Torque control arm nut to factory spec] Use hose clamps to attach the reservoir to the bracket. Do not overtighten hose clamps. [FIGURE 9 & 10]

FIG.9

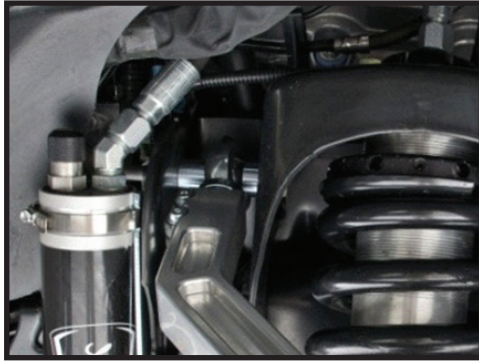
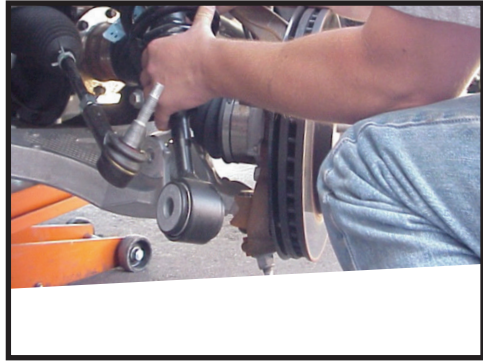


FIG.10



14. Reinstall the wheels and lower the vehicle back to the ground. Roll the vehicle back and forth a couple of feet and bounce the front end to allow the suspension to settle to its new ride height. Remeasure from the wheel hub center to top of fender opening, compare to measurements in step 2 to see the actual lift height gained. Adjust coilover preload as necessary then have the vehicle professionally aligned.

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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

3.0 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®
PERFORMANCE SUSPENSION SYSTEMS AND SHOCK ABSORBERS

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PART #	DESCRIPTION
95120	2010-2014 RAPTOR HYDRAULIC REAR BUMP STOP SYSTEM

COMPONENTS INCLUDED	
(2) 204907 BUMPSTOP ASSEMBLY (1) 194005 BUMPSTOP MOUNT (DRVR) (1) 194006 BUMPSTOP MOUNT (PASS) (1) 194008 INSIDE BUMPSTOP MOUNT (DRVR) (1) 194009 INSIDE BUMPSTOP MOUNT (PASS) (1) 197015 BILLET CROSSMEMBER	(2) 194010 STRIKER PLATE (2) 194011 NUT PLATE (2) 190006 CROSSMEMBER MID PLATE (2) 197016 TENSION ROD (2) 190005 TENSION ROD STRUT TAB (1) 95120H HARDWARE KIT
HARDWARE INCLUDED	
95120H HARDWARE KIT	
BAG 1	
(1) 605108 3/8-16 X 1.250 BOLT (1) 605133 3/8 FLAT WASHER (12) 605302 1/2-13 X 1.500 BOLT (4) 605322 1/2-13 C-LOCK NUT (26) 605330 1/2 FLAT WASHER	(1) 605125S 3/8-16 U-NUT (4) 605301 1/2-13 X 1.250 BOLT (6) 605321 1/2-13 NYLOCK NUT (2) 605333 1/2-130 FLANGED NYLOCK NUT
BAG 2	
(2) 295523 LEFT-HAND ROD END (2) 295524 1/2-20 CLEVIS (2) 605108 3/8-16 X 1.250 BOLT (2) 605121 3/8-16 NYLOCK NUT (4) 605133 3/8 FLAT WASHER	(7) 605307 1/2-13 X 2.750 BOLT (7) 605321 1/2-13 NYLOCK NUT (17) 605330 1/2 FLAT WASHER (2) 605355 1/2-20 JAM NUT (2) 605356 1/2-20 LEFT HAND JAM NUT
BAG 3	
(2) 209003 SLEEVE 2.25 X 2.010 X 1.00 (4) 605052 1/4-20 NYLOCK NUT (4) 605057 1/4-20 X 2.000 BOLT	(4) 605121 3/8-16 NYLOCK NUT (4) 605133 3/8 FLAT WASHER (2) 605149 3/8-16 U-BOLT (2) 605970 VIBRATITE ANTISEIZE TUBE
TOOLS REQUIRED	
FLOOR JACK JACK STANDS LARGE FLAT BLADE SCREWDRIVER 9/16" SOCKET / WRENCH 3/4" SOCKET / WRENCH	7/16" SOCKET / WRENCH 10MM SOCKET / WRENCH 13MM SOCKET / WRENCH 21MM SOCKET / WRENCH PANEL POPPER (OPTIONAL)
TECH NOTES	
1. YOUR ICON BUMP STOP ASSEMBLIES COME FACTORY CHARGED TO 150 PSI. PLEASE CONSULT ICON PRIOR TO MAKING ANY NITROGEN PRESSURE CHANGES.	



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. Remove the spare tire from underneath bed per owner's manual instructions. This is best done on the ground before jacking up the vehicle.
2. Using a properly rated jack, raise the rear of the vehicle and support on jack stands under the frame rail. Remove tires and slowly droop the suspension.
3. Remove the factory bump stops. The rubber bumpstop snaps in, to remove it twist and firmly pull out. Remove the bolt and bump cup. Save the bolt as it will be reused later. [FIGURE 1]

FIG.1



FIG.2



4. Move brake line bracket and wire harness on driver's side. Remove the bolt holding the brake line bracket to the inside of the frame and set aside for reinstallation later. Using a panel clip tool (or a large flat screwdriver) pop the plastic retaining clips out of the inside frame rail. Remove all clips 10" forward and 20" rearward of the bump stop on the driver's side frame rail. You can now flex the lines and harness away from the inside of the frame. [FIGURE 2]

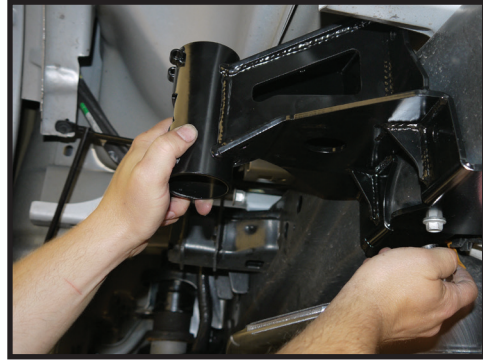
5. Move the exhaust on the passenger's side. Remove the (2) bolts from the rear exhaust hanger and (1) bolt from the hanger on the crossmember just forward of the axle. Slide the hangers off the support rod of the exhaust. Set aside for reinstallation later.

6. Insert the supplied retainer nut clip in passenger side frame rail (Hardware Bag 1). [FIGURE 3]

FIG.3



FIG.4



7. Inspect the frame, some factory welds may protrude above the frame surface. For ideal fitment, sand the welds so the surfaces mate well. When installing the bracketry system, it is best to leave the hardware loose until all of hardware is started to assist in alignment. Raptors that have been driven hard off-road often experience some degree of frame damage just above the factory bump stop. This bump system can tolerate some frame distortion and still install well and align correctly, but it may be necessary to leave some hardware very loose or slowly tighten hardware to pull the bracketry into place.

NOTE: If significant sanding is required, spray paint is recommended to prevent frame corrosion.

8. Refer to Diagram 1 for correct bolt location and direction. [DIA.1]

9. Position the outer bumpstop brackets (See DIA.2, #2, #3 & #4) on the frame. Install the factory bump stop bolt through the center bottom hole of the bracket into the frame. Do not tighten. [FIGURE 4]

FIG.4

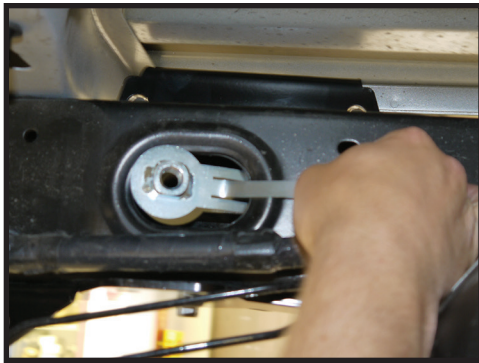


FIG.5



10. Position the nut plate (See DIA.2, #2 & #8) on the inside of the frame. With the arrow pointing toward the front of the truck, pass the long end of the nut plate through pocket on the inside of the frame. Holding the handle, rotate the rest of the nut plate into the frame and position behind the oval holes in the frame. Install (2) 1/2" x 1.5" bolts with washers through bracket into nut plate. Do not tighten yet. [FIGURE 5]

11. Install driver side inner bracket (SEE DIA.2, #2 & #5). Starting rearward of the bed crossmember behind the axle, pass the crossmember portion of the bracket up behind and rotate over the top of the wire and brake line harness. Move the bracket forward and into position. Install (2) 1/2" x 1.5" bolts and washers in the upper holes joining the inner and outer brackets. The front upper uses a washer and a nylock nut. The rearward upper nut is more difficult to get to. Using the flanged nylock nut, place the nut in the socket with an extension to reach in-between the bracket and bed. Install (2) 1/2" x 1.25" bolts, washers, and C-lock nuts in the lower front and lower rear holes with the nuts facing toward the outside of the vehicle. [FIGURE 6 & 7]

FIG.6



FIG.7



12. Install passenger side inner bracket (SEE DIA.2, #2 & #6). Before positioning bracket install the U-nut plate into the frame rail directly across from the factory brake line bracket hole. It may be helpful to hold the exhaust out of your way with a heavy bungee cord or strap pulling it towards the center of the vehicle. Starting forward of the axle, pass the crossmember portion of the bracket up behind and rotate over the top of the exhaust. Move the bracket backward into place. Install bolts in the same orientation as the other side, including the use of the flanged nylock nut in the upper rearward hole of the bracket. [FIGURE 8 & 9]



FIG.8



FIG.9

13. Install (2) 1/2" x 1.5" bolts with washers down the 2 remaining lower holes through the inner and outer brackets, slide the tension plates up underneath. Retain with nylock nuts. Do not tighten.

14. Install the billet aluminum crossmember (SEE DIA.2, #2 & #9) between the inner brackets using (4) 1/2" x 2.75" bolts, washers and nylock nuts. Do not tighten.

15. Now that all the bolts have been started you can start the tightening procedure. First tighten the outer brackets to the frame with the factory center lower bolt and the (2) outside bolts that go into the nut plate. Go back and forth between the bolts to remove the slack evenly. Tighten the lower bolt to 30 ft-lbs and the side bolts to 54 ft-lbs. Now tighten the (4) lower bolts (2 vertical and 2 horizontal) going back and forth between them to take up the slack evenly. [Torque to 78 ft-lbs]. Tighten the last 2 upper bolts to 78 ft-lbs.

16. The crossmember is mounted with slotted holes. Center it left to right and tighten the (4) bolts to 78 ft-lbs.

17. Assemble the tension strut bars. The rod ends are left hand thread and the clevis is right hand thread. Spin the jam nuts up the shank, note left and right hand thread. Install into the tension rod, there is a notch on the bar to indicate the left hand threaded end.

18. Install the strut rod center plates to the crossmember with (2) 1/2" x 2.75" bolts, washers, and nylock nuts. Install the rod ends of the tension rods between the center plates with 1/2" x 2.75" bolts, washers, and nylock nuts and three additional washers. One between the rod ends and one between each rod end and the plates. Tighten the two upper bolts to 78 ft-lbs.

19. Reinstall the exhaust hangers. It is common for the rubber in the hangers to fatigue over time so it may be necessary to bend the rods that go through the hangers to position the exhaust higher for adequate clearance of the strut rods. [FIGURE 10]



FIG.10



FIG.11

NOTE: On some trucks it may also be beneficial to position the exhaust rearward a bit. Loosen the clamp rearward of the resonator and flange forward of the resonator. Rotate the resonator slightly to disengage the locking pin [FIGURE 11]. Slide the back half of the exhaust out of the junction to the resonator to optimize exhaust clearance.

NOTE: Use of aftermarket exhaust may require custom fabrication to allow clearance of tension rods.

20. Adjust tension rods to line up the hole in the clevis with the tension plates on the brackets. Install 3/8" bolts, washers, and nuts in the clevis - do not tighten. Adjust the tension rods to take out all of the slack, make sure they are pulling (towards the center of the vehicle), not pushing. With the slack removed from each side tighten each rod an additional 1/2 turn to pretension and stabilize the bracketry system then tighten the jam nuts. Torque the 3/8" bolts to 45 ft-lbs.

21. Install the bump stops. Slide the 1" spacer ring over the bump stop (unless you are using ICON RXT shocks/leaf springs, then do not use the spacer). Slide the bump stop up into the mount, install the 1/4" bolts and nuts in the mount can pinch tubes and tighten. Do not overtighten the pinch bolts or the bump stop could bind, causing it to not fully extend. Installation of spacer ring is mandatory to limit suspension compression, unless using ICON RXT rear shocks/leaf springs. [FIGURE 12]



FIG.12



FIG.13

22. Install the striker pads (See DIA.2, #7) on the axle tube. The lower portion of the striker plate hooks under the leaf spring pad on the axle. Install u-bolt up under the axle and through the pad and secure with 3/8" nylock nuts and washers. Tighten until the pad is in full contact with the axle tube but do not over tighten. [FIGURE 13]

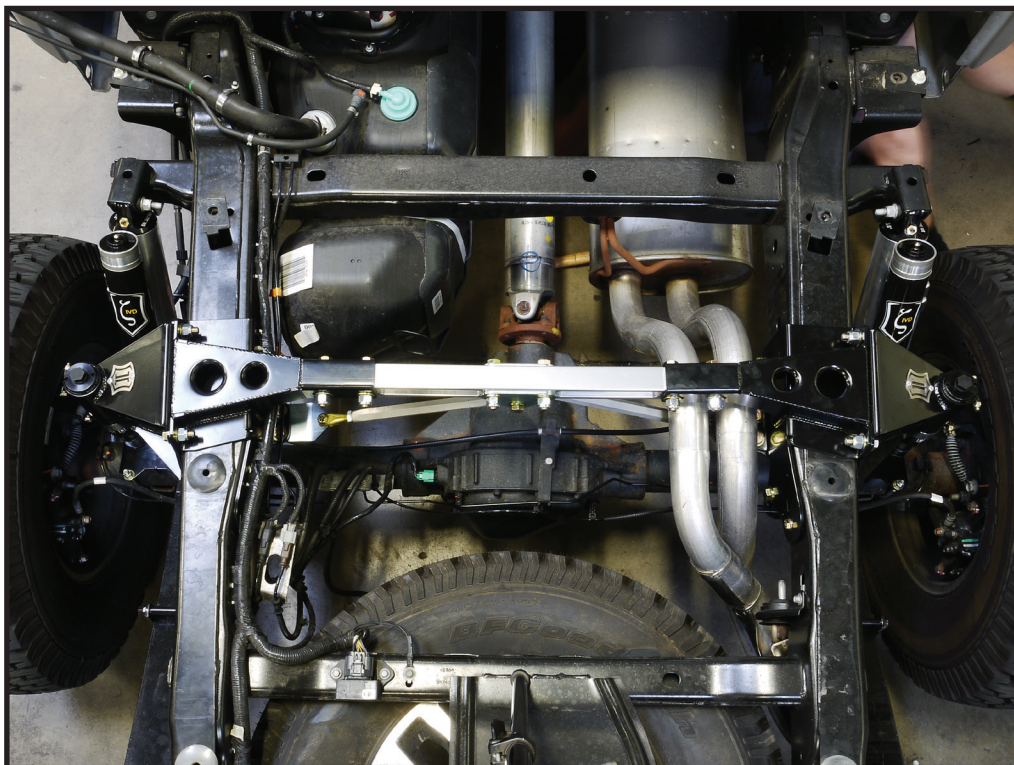
NOTE: Due to slight variances in factory tolerances, OE U-bolts may be too close to axle housing to allow striker plate fitment. If this occurs, factory U-bolts may need to be loosened slightly to allow for installation. Re-torque to factory specifications.

23. Secure brake lines and wires. Re-insert all of the clips on the inside driver's side frame rail. The new bracket has all the same holes as the frame rail to replace everything back to the original position. Secure the brake line bracket using the original 8mm bolt through the inner bracket and into the factory nut plate.

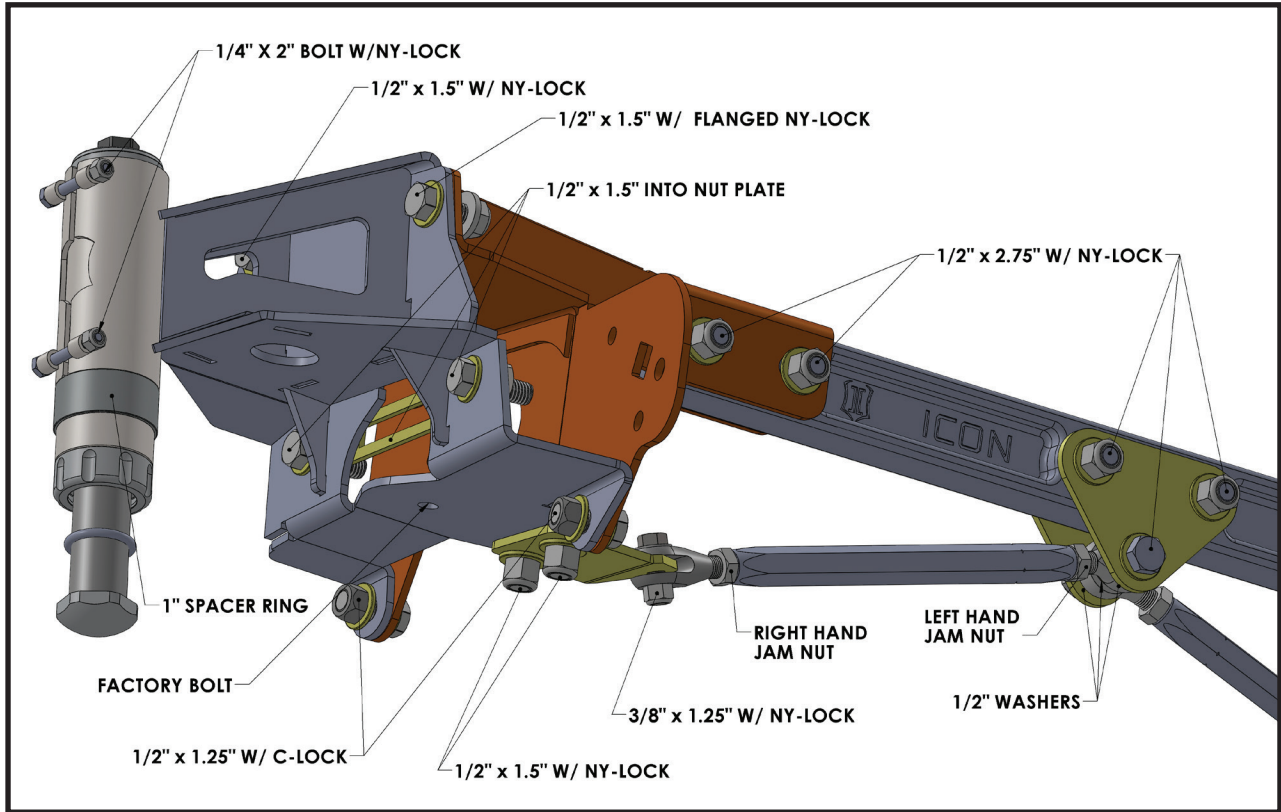
24. Reinstall wheels and lower vehicle back to the ground. [Torque lugs to factory spec] Reinstall spare tire.

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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

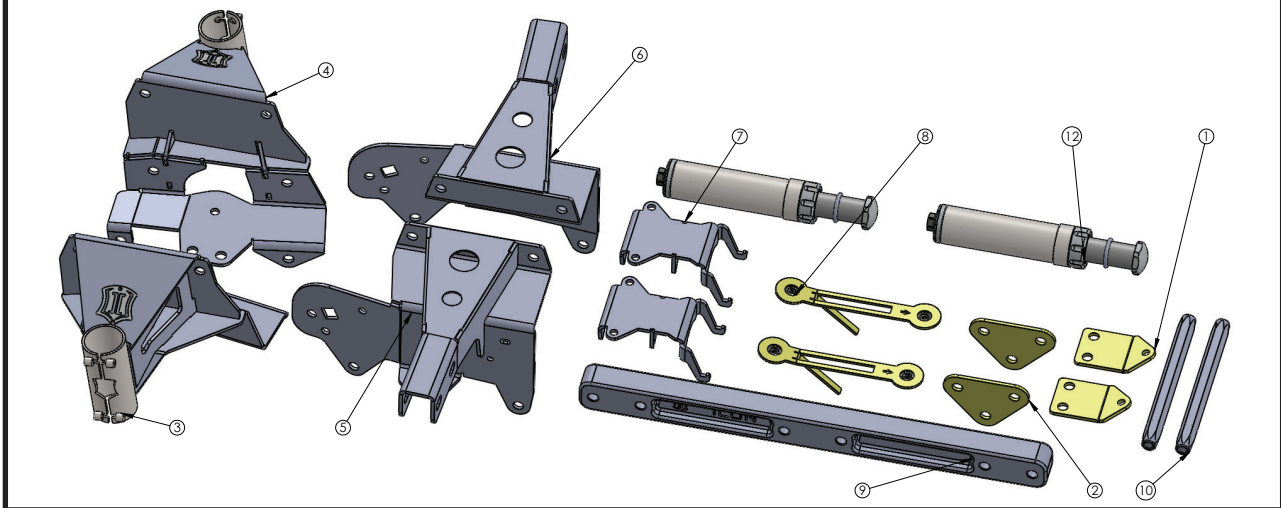


DIA.1



DIA.2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	190005	RAPTOR RR BUMP STRUT TAB	2
2	190006	RAPTOR RR BUMP STRUT MID PLATE	2
3	194005	10+ RAPTOR RR AIR BUMP MNT DRVR	1
4	194006	10+ RAPTOR RR AIR BUMP MNT PASS	1
5	194008	RAPTOR AIR BUMP MNT INSIDE DRVR	1
6	194009	RAPTOR AIR BUMP MNT INSIDE PASS	1
7	194010	RAPTOR RR BUMP STRIKER PLATE	2
8	194011	RAPTOR RR BUMP NUT PLATE	2
9	197015	10+ RAPTOR AIR BUMP CROSS BAR	1
10	197016	10+ RAPTOR AIR BUMP TENSION ROD	2
12	204907	2.0 AIR BUMP 2.5 TRAVEL 1:1 HD	2
13	95120H	10+ RAPTOR AIR BUMP HARDWARE KIT	1



2.0 BUMP STOP 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 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)

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)

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 after every outing.

SELF-SERVICE:

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

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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.

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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 LIMITED LIFETIME WARRANTY

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PART #	DESCRIPTION
95201	2010-2014 FORD RAPTOR RXT 3.0 ZETA REMOTE RESERVOIR BYPASS SHOCKS

COMPONENTS INCLUDED	
194963D - BOX 1 OF 2	
(1) 194963D 10+ RAPTOR REAR RXT 3.0 ZETA RR (DRVR)	(1) 300004 3.0 X 12.5 RESI BRACKET (DRVR)
194963P - BOX 2 OF 2	
(1) 194963P 10+ RAPTOR REAR RXT 3.0 ZETA RR (PASS)	(1) 300005 3.0 X 12.5 RESI BRACKET (PASS)
HARDWARE INCLUDED	
(1) 611051 #40 2-1/16 - 3" HOSE CLAMP KIT (2) 605033 #14-14 X .750 SELF DRILLING/TAPPING SCREW	(6) 605052 1/4-20 NYLOCK NUT (6) 605055 1/4-20 X .750 BHCS SS 18-8 RAW
TOOLS REQUIRED	
FLOOR JACK JACK STANDS TORQUE WRENCH 15MM SOCKET / WRENCH 18MM SOCKET / WRENCH 19MM SOCKET / WRENCH 7/16" SOCKET / WRENCH	3/16" ALLEN WRENCH 5/16" NUT DRIVER 3/8" NUT DRIVER 1/4" DRILL BIT AND DRILL MOTOR CUT-OFF WHEEL OR SANDER C-CLAMP
TECH NOTES	
<p>1. TO GAIN THE FULL TRAVEL POTENTIAL OF THESE SHOCKS THEY MUST BE USED WITH THE ICON REAR LEAF KIT (95220) AND THE ICON BUMP STOP KIT (95120). SEE DETAILS BELOW FOR CONFIGURING BUMP KIT FOR MAX TRAVEL.</p> <p>2. IT IS RECOMMENDED TO INSTALL THE LEAF SPRING KIT FIRST SO THAT THE SUSPENSION CAN DROOP FULLY, AIDING IN THE INSTALLATION OF THE RXT SHOCKS.</p> <p>3. IF INSTALLING THE BUMP STOP KIT AT THE SAME TIME PLEASE SEE BELOW FOR "CONFIGURING BUMP STOP KIT FOR MAX TRAVEL".</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>

INSTALLATION

1. Raise the rear end of the truck. Support the frame at the frame rail with jack stands. NEVER WORK UNDER AN UNSUPPORTED VEHICLE. Remove the rear wheels.
2. Support the axle assembly with a floor jack and drop the suspension. Remove the factory rear shocks.
3. Clearance sheet metal bed rib for the Anti-Wobble Link (Patent Pending): using an abrasive cutting disc or body saw, trim the sheet metal bed rib behind the upper shock mount using the existing square hole in the bottom of the sheet metal as a guide (FIGURE 1). De-bur cut edge and treat with paint or rust inhibitor.

FIG.1



FIG.2



4. Install reservoir mount brackets: position reservoir mount bracket in the rear of the wheel well against the rear bed rib and pinch weld as shown. Note side as the brackets are bent opposite for left/right installation (300004, driver) (300005, passenger). Clamp the bracket to the pinch weld with a C-clamp. Attach to the rear bed rib using the supplied #14 self-drilling screw. Using a 1/4" drill bit and the bracket as a guide drill 3 holes through the bed pinch weld. Secure with the included 1/4" x 3/4" button head screws and nylock nuts. (FIGURE 2)

5. Prep the shock for installation: Remove the bolt that is loosely installed in the upper mount. And remove the zip tie holding the lower bearing spacers. Note side and orientation. Reservoir hoses go towards the rear of the vehicle and bypass tubes go towards the outside of the vehicle.

6. Install the shock with the supplied upper bolt and factory lower bolt. Line up the special nut that the Anti-Wobble Link (Patent Pending) is attached to on the back side of the upper mount and secure with the supplied bolt. The rod end assembly has been preset from ICON. The purpose of the Anti-Wobble Link (Patent Pending) is to keep the shock from flopping side to side and keep the body of the shock from contacting the leaf spring; subsequently you can rock the shock back and forth to line up the special back nut with the bolt for proper alignment. [Torque to 78 ft-lbs] (FIGURE 3)

FIG.3



7. If you have NOT already installed the ICON leaf pack the suspension will likely not droop far enough to line up the lower eyelet and you will need to compress the shock to get the lower eyelet in place, this will take some muscle. [Torque to 78 ft-lbs]

8. Mount the reservoir to the bracket: route the supplied hose clamps through the slots in the bracket. Position the Dual Hose Recirculating Reservoir (Patent Pending) and tighten the clamps. Make sure the clamps are positioned in the grooves of the reservoir. (FIGURE 4)

FIG.4



CONFIGURING BUMP STOP KIT FOR MAX TRAVEL

1. The standard configuration of the ICON bump stop kit (95120) incorporates a spacer ring between the bump stop and the clamp sleeve in which it mounts. With this ring installed in its standard configuration the suspension stops at the same position as factory and is compatible with stock OEM shocks and standard Icon bypass rear shocks (95200).

2. The new RXT rear shocks have a shorter compressed length allowing the suspension to compress further than stock for increased wheel travel. This allows us to remove the spacer ring to position the bump stop higher in the chassis.

3. Droop the suspension to allow room for the bump stop to come out. Loosen the (2) 1/4" bolts that clamp the bump stop cylinder in the mount. Slide the bump stop down and out.

4. Remove the spacer ring and reinstall the bump stop. The top of the bump stop cylinder should now be sticking out of the top of the mount 1". (FIGURE 5)

FIG.5



5. Retighten the pinch bolt to retain the bump stop. Do not over tighten.
6. Remount the front wheels and lower the vehicle to the ground. [Torque to factory spec]

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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

FIELD TUNING GUIDE

COMPRESSION TUBE 1	VALVE ON BOTTOM, THE SHORTER OF THE 2 TUBES. THIS VALVE HAS THE MOST FLOW AND WHEN OPEN ATTRIBUTES TO A SOFT RIDE. CAN BE LEFT MOSTLY OPEN UNLESS CARRYING A HEAVY LOAD. THE MORE ITS OPEN THE FASTER THE WHEEL CAN GO OVER AN OBSTACLE WITHOUT UPSETTING THE VEHICLE WHEN HIT AT SPEED. EFFECTIVE TO 65% OF TRAVEL
COMPRESSION TUBE 2	VALVE ON BOTTOM, THE LONGER OF THE 2 TUBES. THIS VALVE SLOWS DOWN THE WHEEL AS IT GETS CLOSER TO THE BUMP ZONE. WHEN DRIVING AGGRESSIVELY THIS VALVE KEEPS THE WHEEL FROM BLOWING THROUGH THE TRAVEL THE MORE IT IS CLOSED. EFFECTIVE TO 85% OF TRAVEL
REBOUND 2	VALVE ON TOP, INDEPENDENT TUBE. THIS VALVE CONTRIBUTES MOST TO THE OVERALL FEELING OF STABILITY. THE MORE ITS OPEN THE FASTER THE WHEEL CAN FOLLOW THE GROUND WHEN CYCLING QUICKLY. THE MORE ITS CLOSED THE MORE IT HOLDS THE CHASSIS DOWN. GENERALLY HAVING IT OPEN AS MUCH AS POSSIBLE WITHOUT MAKING IT TOO "FLOATY" IS BEST FOR OFF ROAD.

RECOMMENDED SETTINGS

	GENERAL OFFROAD	HIGH SPEED WHOOPS	UNLOADED STREET	LOADED	TOWING
COMP 1	7 (OPEN)*	7 (OPEN)*	7 (OPEN)*	5	4
COMP 2	4	2 - 3	4	3	2
REBOUND	5	5.5 - 7.5	4	3	1.5 - 2

SETTINGS REFERENCE FULL TURNS OUT (COUNTERCLOCKWISE) FROM FULLY CLOSED (CLOCKWISE). (4 CLICKS PER TURN)

*BYPASS VALVE WILL STOP CLICKING AT 6 FULL TURNS OUT, BUT WILL CONTINUE TO TURN ONE MORE REVOLUTION TO FULLY OPEN POSITION.

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PERFORMANCE SUSPENSION SYSTEMS AND SHOCK ABSORBERS

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PART #	DESCRIPTION
95220	2010-2014 FORD RAPTOR MULTI RATE LEAF SPRING KIT

COMPONENTS INCLUDED	
(2) 10+ RAPTOR LEAF PACK W/ADD IN (2) ADD-A-LEAF	(1) 95220H HARDWARE KIT
HARDWARE INCLUDED	
95220H HARDWARE KIT	
(2) 190007 10+ RAPTOR LEAF PACK CLAMP PLATE (4) 195010 9 X 3.125 SQUARE U-BOLT 5/8-18 THREAD W/NUTS & WASHERS	(2) 197019 RAPTOR REAR BUMP STOP SPACER (2) 605826 M8-1.25 X 80MM HHCS GR10.9 (2) 605831 M18 X 139.3 OAL OEM FORD BOLT
TOOLS REQUIRED	
FLOOR JACK JACK STANDS TORQUE WRENCH 15MM SOCKET / WRENCH 18MM SOCKET / WRENCH 21MM SOCKET / WRENCH 24MM SOCKET / WRENCH	27MM SOCKET / WRENCH 9/16" SOCKET / WRENCH 3/4" SOCKET / WRENCH 15/16" SOCKET / WRENCH CUT-OFF WHEEL OR RECIPROCATING SAW VICE GRIP (3) C-CLAMPS
TECH NOTES	
1. REVIEW RATE CHANGE NOTES ON PAGE 3 PRIOR TO INSTALLATION!	
2. REAR SPRING SHIPPED WITHOUT A CROSS BOLT INTENTIONALLY FOR SPRING ORIENTATION PURPOSES, SEE STEP 15 OF INSTALLATION INSTRUCTIONS FOR MORE INFORMATION.	



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.

INSTALLATION

1. ENSURE TRUCK IS IN GEAR OR IN PARK, SET PARKING BRAKE, TURN OFF ENGINE AND CHOCK REAR TIRES!
2. Jack up the rear of the truck and support with jack stands under the frame rail. Remove tires and wheels.
3. With a floor jack under the rear end, slightly raise the rear axle housing from full droop to remove tension from the shock, loosen and remove the shocks. Make sure the axle is well supported. Keep all of the hardware, it will be reused.
4. Remove the vent line from the axle and remove the vent fitting which also holds the brake line bracket to the axle tube. This will allow for additional flex in the lines so the axle may be drooped further.
5. Slowly lower the axle to unload the tension in the leaf spring. When the axle reaches full droop on the leaf springs jack the rear end back up about 1" to relieve any negative pressure in the spring and to insure that the axle weight is being supported by the jack.
6. Replace one side at a time so that the other side helps maintain pinion angle and prevents the drive shaft from pulling out. However loosening the u-bolts slightly on both sides during the installation process reduces bind and aids in the installation.
7. Starting on the driver's side, remove the u-bolts and lower u-bolt plate. Lower the axle slightly to disengage the center pins from the block and axle pad. Remove the factory block
8. Loosen the upper shackle bolt and remove the nut from the lower shackle bolt.
9. The front spring bolt cannot be removed because of interference with the gas tank and exhaust so it must be cut out. New bolts are supplied in the kit. Remove the nut from the front spring bolt, it will be reused (27mm nut, 24mm head). Push the bolt back through the hole so that there is adequate shank exposed under the head of the bolt to cut the head off. This can be done with either an abrasive cutting disc or reciprocating saw. Clamping a vise grip on the nut end of the bolt helps hold the bolt while cutting. Cut the head off the bolt. (FIGURE 1)

FIG.1



10. The spring is now only being held in by the shank of the front bolt and the lower rear shackle bolt. This is a heavy assembly so use caution when removing the bolts, use a helper if possible. Remove the bolts and remove the spring from the vehicle.

11. Remove the shackle from the stock spring noting the orientation of the shackle and the direction of the bolt, the open part of the formed metal shackle should be toward the spring. If the shackle is put on backward it can bind against the leaf pack under compression of the suspension. Install the shackle on the new spring, start the nut but **DO NOT TIGHTEN**. (FIGURE 2)



FIG.2

12. Install the spring in the vehicle, again, it's heavy so use a helper. Install the new front bolt in the opposite direction from factory, from the outside inward and start the nut but **DO NOT TIGHTEN**. Install the lower shackle bolt, start the nut but **DO NOT TIGHTEN**.

13. Trim the center pins: Cut off the excess thread 2-3 threads above the nut on the center pins (FIGURE 3). The center pins are left long for ease of assembly if changing to an alternative spring rate. **NOTE: FAILURE TO TRIM CENTER PINS WILL CAUSE COLLISION WITH AIR BUMP KIT.**



FIG.3



FIG.4

14. Raise the axle up to the spring and align the center pins in the spring pad. Place the supplied clamp plate (Part #190007) on top of the leaf pack. Install the new u-bolts using the openings in the spring plate to locate them correctly. Install the factory lower spring plate, washers and nuts. Take up the slack in the u-bolts but **DO NOT TIGHTEN**. (FIGURE 4)

15. The supplied spring clip sleeve and bolt in the hardware kit should be installed with the exposed threads facing away from the frame. Installing it backwards will cause contact. This cross bolt and sleeve is not required, but has been included for those who feel it necessary.

16. Repeat steps 7-13 on passenger side.

17. Raise the axle enough to reinstall the shocks. Tighten the u-bolts to approximately 40 ft-lbs. Final torquing will be done on the ground.

18. Reattach the lower brake line bracket and vent line.

19. Reinstall the tires and lower the vehicle to the ground. Bounce the back of the truck a couple of times to let the bushings center at ride height.

20. Torque the front spring eye and shackle bolts [Torque front bolt to 181 ft-lbs, Shackle bolts to 89 ft-lbs].

21. Tighten the u-bolts. [Torque to 145 ft-lbs]

RATE CHANGE INSTRUCTIONS:

1. ENSURE TRUCK IS IN GEAR OR IN PARK, SET PARKING BRAKE, TURN OFF ENGINE AND CHOCK REAR TIRES!

2. Jack up the rear of the truck and support with jack stands under the frame rail. Remove tires and wheels.

3. With a floor jack under the rear end, slightly raise the rear axle housing from full droop to remove tension from the shock, loosen and remove the shocks. Make sure the axle is well supported. Keep all of the hardware, it will be reused.
4. Remove the vent line from the axle and remove the vent fitting which also holds the brake line bracket to the axle tube. This will allow for additional flex in the lines so the axle may be drooped further.
5. Slowly lower the axle to unload the tension in the leaf spring. When the axle reaches full droop on the leaf springs jack the rear end back up about 1" to relieve any negative pressure in the spring and to insure that the axle weight is being supported by the jack.
6. Replace one side at a time so that the other side helps maintain pinion angle and prevents the drive shaft from pulling out. However loosening the u-bolts slightly on both sides during the installation process reduces bind and aids in the installation.
7. Lower the axle so there is a couple of inches clearance between the leaf pack and the spring pad.
8. Use a C-clamp to clamp the first 3 leaves at the front eyelet and the first 2 leaves at the rear eyelet together to help hold them in the vehicle and maintain their alignment. (FIGURE 5, FIGURE 6)



FIG.5



FIG.6

9. Remove the cross bolts and sleeves from the spring retainers. Carefully loosen the center pins, it may be necessary to hold the head of the pins with a vise-grip. There may be some residual force left in the spring before the nuts are fully off the center pin so it helps to use a C-clamp near the middle of the pack also to slowly release the pressure.
10. Remove the bottom 5 leaves of the pack.

RATE CHANGE OPTIONS:

Counting from the bottom the longest of the leaves that were removed would be the #5 leaf. You can either replace #5 with the add-a-leaf or leave #5 and make the add-a-leaf #6.

Add-a-leaf replaces #5 = .5" higher ride height and 10 % higher spring rate
 Add-a-leaf becomes #6 = 1.0" higher ride height and 20 % higher spring rate

11. Add or replace the additional leaf and additional separator plate to the pack. Line up all the holes and put the new center pins through the pack. The center pins are fine thread, use care not to damage the threads during assembly. (FIGURE 7)



FIG.7

12. Put the bottom half of the pack back in the vehicle guiding the center pins up through the upper 3 leaves. A long drift punch helps to align the holes. It may be helpful to loosen the 2 c-clamps slightly on the front and rear to help shift all leaves into position. Use a large c-clamp near the middle to pull everything together until you can get the nuts started on the center pin.

13. Tighten the center pins [Torque to 54 ft-lbs]. Reinstall the cross bolts and sleeves in the retainer clips. Make sure the bolt go from the inside out with the head toward the frame for clearance. Trim the center pins: Cut off the excess thread 2-3 threads above the nut on the center pins

14. Raise the axle up to the spring and align the center pins in the spring pad. Place the clamp plate on top of the leaf pack. Install the u-bolts using the openings in the spring plate to locate them correctly. Install the factory lower spring plate, washers and nuts. Take up the slack in the u-bolts but **DO NOT TIGHTEN**.

15. Repeat process on other side.

16. Raise the axle enough to reinstall the shocks. Tighten the u-bolts to approximately 40 ft-lbs. Final torquing will be done on the ground. Reattach the lower brake line bracket and vent line

17. Reinstall the tires and lower the vehicle to the ground. [Torque u-bolts to 145 ft-lbs]

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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

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FOR TECHNICAL ASSISTANCE OR SUGGESTIONS ON HOW TO MAKE OUR PRODUCT BETTER CALL (951) 689-ICON MONDAY-FRIDAY BETWEEN THE HOURS OF 8AM-5PM PACIFIC-STANDARD TIME, CERTAIN HOLIDAYS EXCLUDED.

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PART #	DESCRIPTION
98562DJ	10-20 RAPTOR BILLET UCA DJ KIT

COMPONENTS INCLUDED

- | | |
|-------------------------------------|--|
| (1) 197510 RAPTOR BILLET UCA (DRVR) | (2) 190012 19-20 RAPTOR SENSOR BRACKET |
| (1) 197511 RAPTOR BILLET UCA (PASS) | |

HARDWARE INCLUDED

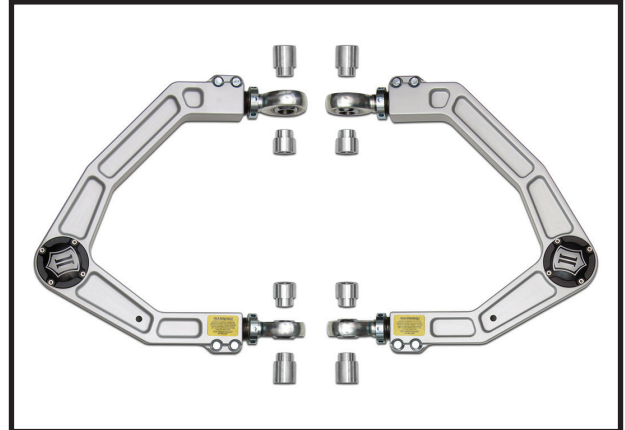
- | | |
|--|--|
| (2) 155110 -032 O-RING NITRILE | (4) 295514 RSMX12T ROD END |
| (2) 157507 BILLET UCA DUST COVER | (8) 605002 6-32 X .500 SHCS 18-8 |
| (2) 197200BJ DELTA JOINT | (2) 605053 1/4 FLAT WASHER |
| (4) 197502 HEIM SPACER .625 WIDE | (2) 605069 1/4-20 X 1.25 BOLT |
| (4) 197503 HEIM SPACER .950 WIDE | (8) 605145 3/8-16 X 1.000 12PT |
| (4) 217520 L-R ADJ SLEEVE 1 1/8-12L 7/8-14 | (1) 605968 BLUE THREAD LOCKER 2ML BULLET |

TOOLS REQUIRED

- | | |
|-----------------------|------------------------|
| JACK | 15/16" SOCKET / WRENCH |
| JACK STANDS | 15MM SOCKET / WRENCH |
| SMALL SLEDGE HAMMER | 21MM SOCKET / WRENCH |
| TORQUE WRENCH | 27MM SOCKET / WRENCH |
| 9/16" SOCKET / WRENCH | 30MM SOCKET / WRENCH |

TECH NOTES

1. 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.
2. DO NOT EXCEED 2.375" ADJUSTMENT FROM THE CENTER OF THE ROD END TO THE EDGE OF THE BILLET UPPER CONTROL ARM. FAILURE CAUSED BY EXCESSIVE ADJUSTMENT WILL NOT BE COVERED UNDER ICON'S WARRANTY POLICY. REFER TO TECH NOTE PHOTO #2.
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.



WARNING!

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** 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 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.

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.

LIVE VALVE ONLY: Measure the position of the height sensor. With the suspension at full droop, measure the position of the sensor arm to the lower tang of the sensor bracket as shown on each side and record. DRIVER: _____, PASSENGER: _____. The measurement should be around 0.2" - 0.3". Unbolt the sensor link bracket from the bottom of the stock arm. Unbolt the link ball joint from the bracket and keep the nut for reattachment later. The sheet metal bracket from the stock arm will not be used. [FIGURE 1 & 2]

FIG.1



FIG.2



2. Remove the coilover/strut 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 swaybar links and/or the top of the other shock to relieve some of the tension.

3. Loosen the taper on the upper ball joint and the tie rod end using an 18mm socket/wrench. Use a hammer to separate the upper ball joint taper and tie rod end. Take care not to damage the threads. Support the spindle so that it does not over extend the CV joints when detached.

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

- 5. 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.
- 6. 6.** Before installing the new ICON upper control arms, make sure that the heim spacers are pointing in the right direction. The shorter one goes on the inside and the long one goes on the outside.
- 7. 7.** Place the driver side upper control arm into the mounts on the chassis and loosely fasten the OEM hardware.
- 8. 8.** Reinstall the factory shock assembly or refer to the ICON coilover installation instructions now.

LIVE VALVE ONLY: Attach the supplied sensor link bracket to the link ball stud and attach the bracket to the bottom side of the ICON arm with the supplied 1/4" x 1.25 bolt and washer through the slotted hole. As you lower the arm to reconnect to the spindle check the clearance to the brake line and ABS bracket. Bend away from arm slightly as shown if necessary. [FIGURE 3 & 4]



FIG.3



FIG.4

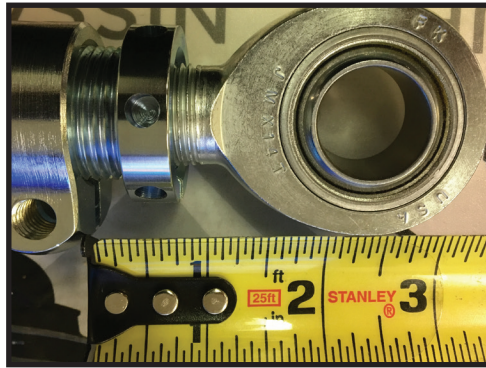
- 9.** Take care when inserting tapered pin into the spindle to not damage the threads. Use a 21mm socket/wrench to fasten the supplied lock nut onto the tapered pin to get it to seat properly. [Torque to 75 ft-lbs]
 - 10.** Tighten the upper control arm bolts using a 21mm socket/wrench. [Torque to factory spec]
 - 11.** ICON billet upper control arms utilize heim joints at each pivot to allow alignment using the adjusters on the upper control arms as well as cam adjusters on the lower control arms. The heims can be extended or contracted by turning the collar. Make sure that the slit in the collar lines up with the slit in the housing and then tighten the pinch bolts in an opposing pattern at least 3 times. [Torque to 35 ft-lbs]
 - 12.** Repeat steps on opposite side.
- LIVE VALVE ONLY:** Reset sensor position. Slide the sensor bracket in its slotted hole until the clearance dimension is the same as you recorded previously. Tighten the bolt, but do not overtighten or else the bracket will be distorted.
- 13.** Reinstall wheels and tighten lug nuts. [Torque to factory spec]
 - 14.** Install the dust cover: Make sure that the o-ring is seated in the groove in the cap and apply anti-seize to the (4) allen head screws. DO NOT over tighten.
 - 15.** Have the vehicle professionally aligned.
 - 16.** Once aligned, apply BLUE thread locker to the outer pinch bolts located on the sides of the arm. Tighten the pinch bolts in an opposing pattern at least 3 times. [Torque to 35 ft-lbs]

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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



[TECH NOTE #2]



ALIGNMENT NOTE

ICON SHIPS THE BILLET UPPER CONTROL ARM AT THE MOST COMMON ALIGNMENT SETTING. ONE OF THE MAJOR PERFORMANCE ADVANTAGES OF AN ICON BILLET ADJUSTABLE UPPER CONTROL ARM IS THE ABILITY TO IMPROVE WHEEL POSITION. IMPROVING WHEEL POSITION IMPROVES FIREWALL CLEARANCE ALLOWING FOR LARGER TIRES AS THE SUSPENSION CYCLES. IN ORDER TO TAKE ADVANTAGE OF THIS FEATURE, DISCUSS WITH YOUR PROFESSIONAL ALIGNMENT SHOP THAT YOU WOULD LIKE TO CAM THE LOWER CONTROL ARM TO MAXIMIZE WHEEL POSITION FORWARD AND THEN ADJUST CAMBER AND CASTER WITH THE UPPER THREADED ADJUSTERS.

A MAJOR PERFORMANCE ADVANTAGE OF ALL ICON UPPER CONTROL ARMS IS INCREASED CASTER OVER STOCK. DISCUSS WITH A PROFESSIONAL ALIGNMENT SHOP THAT YOU WANT THE VEHICLE ALIGNED WITH THE CASTER AT THE MAX OF THE FACTORY RECOMMENDED SETTINGS IF YOU WANT TO TAKE ADVANTAGE OF THE DYNAMIC EFFECTS OF INCREASED CASTER.

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.

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.



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