

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

PART #	DESCRIPTION
95002	17-20 FORD RAPTOR 3.0 VS RR CDCV COILOVER KIT

COMPONENTS INCLUDED	
(1) 194964RCD 17-20 RAPTOR COILOVER (DRVR) (1) 194964RCP 17-20 RAPTOR COILOVER (PASS)	(1) 194507 10-20 RAPTOR RESI MOUNT (DRVR) (1) 194508 10-20 RAPTOR RESI MOUNT (PASS) (1) 95002H 17-20 RAPTOR COILOVER HARDWARE KIT
HARDWARE INCLUDED	
95002H HARDWARE KIT	
(2) 197011 04-08 F-150 & RAPTOR ADAPTOR LCA (2) 197013 10+ RAPTOR ADAPTOR LCA NARROW (4) 257260 EXTRUDED RESI MOUNT CLAMP (2) 257262M EXTRUDED RESERVOIR MOUNT (4) 605040 10-32 X 1.125 SOCKET HEAD BOLT (4) 605052 1/4-20 NYLOCK NUT	(4) 605053 1/4 FLAT WASHER (4) 605055 1/4-20 X .750 BUTTONHEAD BOLT (2) 605500 5/8-11 X 5.000 BOLT (2) 605520 5/8-11 NYLOCK NUT (4) 605530 5/8 FLAT WASHER (1) 611019 COILOVER PAIR HARDWARE KIT
611019 HARDWARE KIT	
(6) 605101 3/8-16 X 1.00 BOLT	(6) 605131 3/8 SPLIT LOCK WASHER
TOOLS REQUIRED	
JACK JACK STANDS 5/32" ALLEN WRENCH TORQUE WRENCH 7/16" SOCKET / WRENCH 9/16" SOCKET / WRENCH	15/16" SOCKET / WRENCH 15MM SOCKET / WRENCH 18MM SOCKET / WRENCH 21MM SOCKET / WRENCH 27MM SOCKET / WRENCH 30MM SOCKET / WRENCH
TECH NOTES	
<p>1. 2019-UP VEHICLES WITH FACTORY LIVE VALVE SHOCKS WILL NEED AN ICON DAMPER INTERFACE DEVICE (PN: 95199) TO ALLOW THE VEHICLE DRIVE MODES TO OPERATE CORRECTLY WITH THE OE SHOCKS REMOVED.</p> <p>2. YOUR ICON COILOVER ASSEMBLIES ARE PRESET TO ICON'S RECOMMENDED RIDE HEIGHT. REDUCING DROOP TRAVEL WILL REDUCE RIDE QUALITY. DO NOT PRELOAD THE COIL BEYOND 1.65" 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> <p>3. 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>	



WARNING!
<p><b>** 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!</b></p> <p><b>** ICON VEHICLE DYNAMICS RECOMMENDS THAT YOU EXERCISE EXTREME CAUTION WHEN WORKING UNDER A VEHICLE THAT IS SUPPORTED WITH JACK STANDS.</b></p> <p><b>** 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.</b></p>

## 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.

NOTE: If installing on 2019-UP vehicles with factory Live Valve shocks, the Live Valve wire harness will need to be removed. Trace the wire from the shocks all the way to the plug while removing any retaining clips that secure the wire to the frame. Depress the locking tab on the plug to disconnect it and then remove it from the vehicle.

**2.** Remove the front OEM shock assemblies from the vehicle. To gain access to the (3) nuts on the upper mount unclip the wiring harness on the side of the battery as shown. [FIGURE 1 & 2]

FIG.1



FIG.2



**3.** Disconnect the tie rod and upper control arm from the knuckle. Loosen the nuts (18mm and 21mm) and strike the side of the knuckle at the taper to dislodge. Tie or bungee cord the top of the knuckle to prevent it from flopping outward and overextending the CV joints. Disconnect the sway bar link at the sway bar using an 18mm. [FIGURE 3 & 4]

FIG.3



FIG.4



**4.** Remove the lower shock bolt (30mm nut, 27mm head). Remove the (3) upper shock mount bolts. NOTE: Do not loosen the center nut on the top of the shock or the assembly can come apart violently, resulting in damage and serious injury. Remove the shock assembly from the vehicle. You will have to push down on the lower control arm to get the bottom of the shock to come out of its pocket in the arm. If the knuckle is held slightly outward from vertical then the arm will extend downward easier.

NOTE: If you are installing ICON upper control arms, do so now. Refer to upper control arm instructions.

**5.** Assemble and install the reservoir mounts. Loosely install the clamp blocks onto the dovetail clamp base with the supplied #10 x 1-1/8" socket head screws (5/32" allen). Secure the clamp base to the reservoir bracket with the supplied 1/4" button head bolts and nylock nuts (5/32" allen, 7/16" wrench). [FIGURE 5]

FIG.5



**6.** Install the reservoir assembly to the vehicle on the forward upper control arm bolt. Remove the nut (21mm) on the front upper control arm pivot bolt, on the passenger side you must also remove the ground wire located just below the nut, slide the reservoir bracket assembly over the bolt and reinstall the nut. If using ICON upper control arms, torque bolt to factory spec. If using OEM upper control arms, DO NOT TIGHTEN at this time. This must be tightened on the ground to avoid damaging the OEM upper control arm bushings. Reinstall the ground wire through the bracket. [FIGURE 6 & 7]

FIG.6



FIG.7



**7.** Install the ICON coilover assembly. Install the heim spacers in the lower control arm with the shorter one towards the front of the truck. Make sure the spacers in the lower eyelet of the shock are oriented correctly. It helps to get the 3/8" x 1" upper bolts ready with the lock washers on them and placed in a easy to reach spot once you get the coilover up in position, as the coilover assembly is very heavy, an extra set of hands is recommended for this step.

**8.** Lift the coilover assembly up into position and start the (3) upper mount bolts. Push down on the lower control arm and to get the lower eyelet into position in the lower control arm pocket. [FIGURE 8 & 9]

FIG.8

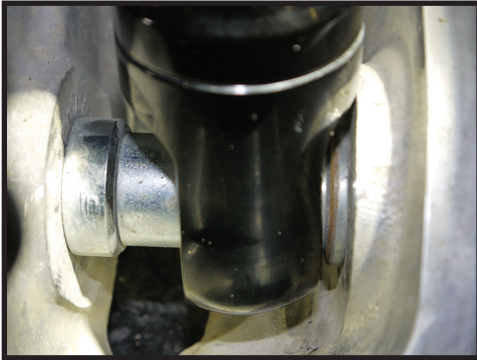


FIG.9

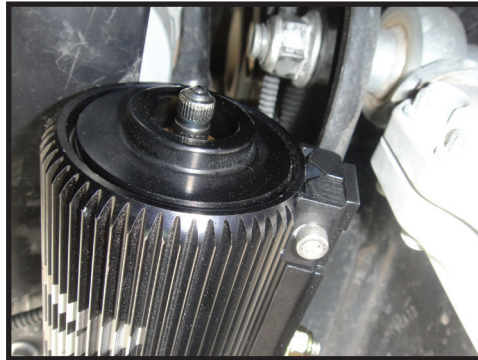


**9.** Install the lower 5/8" x 5" bolt and washer through the lower pivot then install the second washer and nut. [Torque to 120 ft-lbs]

**10.** Reattach the upper ball joint, tie rod, and sway bar link [Torque to factory spec]. Tighten the (3) upper mount bolts. [Torque to 35 ft-lbs]

**11.** Mount the shock reservoir: Insert the back of the reservoir dovetail into the back of the mount and rotate it into the mount. Position the clamp blocks over the front part of the dove tail and secure by tightening the #10 allen head bolts. Do not overtighten. [Torque to 24 in-lbs] [FIGURE 10]

FIG.10



**12.** Reinstall wheels and secure the wire harness clip on the side of the battery. Slowly lower the vehicle to the ground. Scrub out the suspension by rolling forward and backward a couple of feet 2-3 times. [Torque lugs to factory spec]

**13.** With the vehicle sitting on the ground you can now torque the front upper control arm pivot bolts to factory spec.

**14.** 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/>



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PERFORMANCE SUSPENSION SYSTEMS AND SHOCK ABSORBERS

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PART #	DESCRIPTION
95205	17-20 RAPTOR REAR 3.0 PB PAIR

COMPONENTS INCLUDED	
(2) 194965 17-20 RAPTOR REAR ZETA 3.0 SHOCK	(2) 95205H 17-20 RAPTOR REAR HARDWARE KIT
HARDWARE INCLUDED	
95205H HARDWARE KIT	
(1) 295527 NJF4 ROD END FEMALE (1) 295528 NJM4 ROD END MALE (1) 605052 1/4-20 NYLOCK NUT (3) 605053 1/4 FLAT WASHER	(1) 605854M M12-1.75 X 70MM FLANGE BOLT (1) 605063 1/4-20 X 1.25 SET SCREW (1) 605064 1/4-28 JAM NUT
TOOLS REQUIRED	
JACK JACK STANDS TORQUE WRENCH 5/32" ALLEN WRENCH	7/16" SOCKET / WRENCH 15MM SOCKET / WRENCH 16MM SOCKET / WRENCH 18MM SOCKET / WRENCH
TECH NOTES	
<p>1. 2019-UP VEHICLES WITH FACTORY LIVE VALVE SHOCKS WILL NEED AN ICON DAMPER INTERFACE DEVICE (PN: 95199) TO ALLOW THE VEHICLE DRIVE MODES TO OPERATE CORRECTLY WITH THE OE SHOCKS REMOVED.</p> <p>2. YOUR ICON SHOCK ASSEMBLIES COME FACTORY CHARGED TO 250 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>3. ICON RECOMMENDS FIRST INSTALLING OUR MULTI-RATE REAR LEAF SPRING KIT. THE LEAF SPRINGS WILL ALLOW THE REAR SUSPENSION TO EXTEND FURTHER, MAKING INSTALLATION MUCH EASIER.</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.** 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 rear wheels.

NOTE: If installing on 2019-UP vehicles with factory Live Valve shocks, the Live Valve wire harness will need to be removed. Trace the wire from the shocks all the way to the plug while removing any retaining clips that secure the wire to the frame. Depress the locking tab on the plug to disconnect it and then remove it from the vehicle.

**2.** Support the axle assembly with a floor jack and extend the rear suspension. Remove the factory rear shocks using a 15mm and 18mm. Save the factory hardware as it will be reused.

**3.** Both left and right shocks are identical and can be installed on either side. Install shocks with the bypass tubes facing outward and the reservoir toward the axle. Position the axle with the jack to match the extended length of the shock. It may be necessary to push down on the axle to get it to extend enough to install the new shocks. [FIGURE 1]

FIG.1



**4.** Remove the nut and (3) washers from the supplied 12mm bolt and set aside. Secure the lower end of the shock with the factory hardware. Fasten the upper mount with the supplied bolt and factory nut using a 16mm deep socket. [Torque to 78 ft-lbs]

5. Install the anti-wobble link. The purpose of the anti-wobble link is to keep the shock from flopping side to side and to keep the body of the shock from contacting the leaf spring or inner fender well. Subsequently, you can rock the shock back and forth to line up the wobble link. Place the (3) washers previously removed over the stud on the upper mount bolt. Slide the anti-wobble link over both of the studs on the bolt and top of the shock. Secure with the supplied 1/4" nylock nuts and a 7/16" wrench. [Torque to 10 ft-lbs] [FIGURE 2 & 3]

FIG.2



FIG.3



6. Reinstall rear wheels and slowly lower the vehicle back to the ground. [Torque lugs to factory spec]

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

**COMPRESSION TUBE 1 (SHORT)**

ICON SETTINGS: ALL OUT

The short compression tube is designed to tune the "ride zone" specifically. The shocks piston is in this zone while at ride height, so any adjustments on this tube will be felt when street driving. This tube overlaps the long compression tube, therefore the long tube is used to add compression and it will affect the ride zone. The short tube can be used to counter any adjustments made to the long tube.

**COMPRESSION TUBE 2 (LONG)**

ICON SETTINGS: (4) REVOLUTIONS OUT FROM CLOSED

The long compression tube affects the ride zone and the zone leading into the "bump zone". This tube starts wide open; closing this tube off will start to affect the ride zone slightly and will start to stiffen the ride quality in the zone right after ride. If the vehicle is bottoming out easily, this tube will help increase the compression sooner and allow the shock to be slowing down more before it reaches the "bump zone".

**REBOUND TUBE**

ICON SETTINGS: (4) REVOLUTIONS OUT FROM CLOSED

Rebound control will greatly impair handling. Opening the rebound adjustment will cause the vehicle's rear end to feel loose and can cause the vehicle's rear end to "kick" or "buck". Closing off the rebound adjustment can cause the vehicle to feel like the rear wheels are frozen and the vehicle will become harsh and choppy. The rear end will begin to "pack up" when off-roading and may kick/buck due to the shock bottoming out and not being able to return fast enough to catch the next bump.

**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.

## 3.0 VS SERIES SHOCK & COILOVER TECHNICAL INFORMATION

### MAINTENANCE

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**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

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### 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/>



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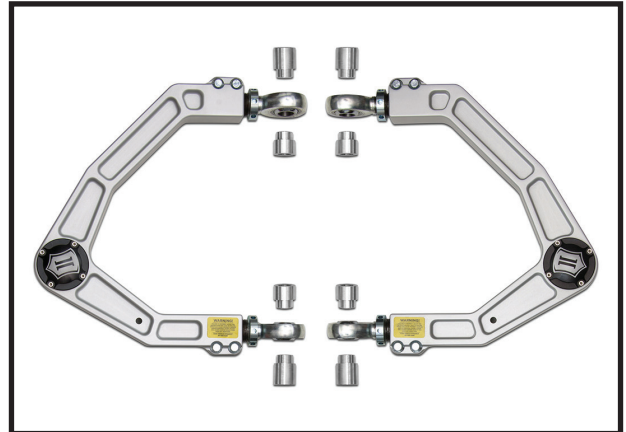
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PART #	DESCRIPTION
98562DJ	10-20 RAPTOR BILLET UCA DJ KIT

COMPONENTS INCLUDED	
(1) 197510 RAPTOR BILLET UCA (DRVR) (1) 197511 RAPTOR BILLET UCA (PASS)	(2) 190012 19-20 RAPTOR SENSOR BRACKET
HARDWARE INCLUDED	
(2) 155110 -.032 O-RING NITRILE (2) 157507 BILLET UCA DUST COVER (2) 197200BJ DELTA JOINT (4) 197502 HEIM SPACER .625 WIDE (4) 197503 HEIM SPACER .950 WIDE (4) 217520 L-R ADJ SLEEVE 1 1/8-12L 7/8-14	(4) 295514 RSMX12T ROD END (8) 605002 6-32 X .500 SHCS 18-8 (2) 605053 1/4 FLAT WASHER (2) 605069 1/4-20 X 1.25 BOLT (8) 605145 3/8-16 X 1.000 12PT (1) 605968 BLUE THREAD LOCKER 2ML BULLET
TOOLS REQUIRED	
JACK JACK STANDS SMALL SLEDGE HAMMER TORQUE WRENCH 9/16" SOCKET / WRENCH	15/16" SOCKET / WRENCH 15MM SOCKET / WRENCH 21MM SOCKET / WRENCH 27MM SOCKET / WRENCH 30MM SOCKET / WRENCH
TECH NOTES	
<p>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.</p> <p>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.</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

**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**

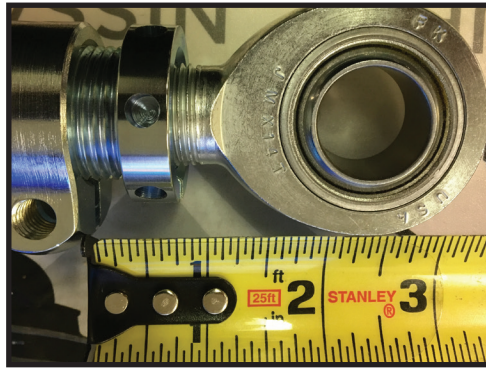
- 9.** Take care when inserting tapered pin into the spindle to not damage the threads. Use a 21mm socket/wrench to fasten the supplied lock nut onto the tapered pin to get it to seat properly. [Torque to 75 ft-lbs]
  - 10.** Tighten the upper control arm bolts using a 21mm socket/wrench. [Torque to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

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