ICON VEHICLE DYNAMICS®
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78735 INSTALLATION INSTRUCTIONS

9-25-2020 REV.A

PART #	DESCRIPTION
78735	20-UP GM HD 0-2" CDCV SHOCK SYSTEM W/ BILLET UCA

COMPONENTS INCLUDED

(2) 150014 LC NUT TAB ASSEMBLY
(2) 155110 -032 O-RING
(2) 157507 BILLET UCA DUST COVER
(1) 170154L 2020 GM HD UCA BRAKE LINE TAB DRVR
(1) 170154R 2020 GM HD UCA BRAKE LINE TAB PASS
(1) 174711 20-UP GM FRONT SWAY BAR RELOCATION KIT
(2) 174941RC-AL 11-UP GM HD 0-1" FRONT 2.5 AL VS RR CDCV
(2) 177058BJ 01-UP GM HD DELTA JOINT
(1) 177520 20-UP GM HD BILLET UCA DRVR
(1) 177521 20-UP GM HD BILLET UCA PASS
(4) 177522 HEIM SPACER JM12 X 16MM X 1.965
(4) 177523 HEIM SPACER JM12 X 16MM X 3.275
(2) 250002 7.50 UNIVERSAL RESI MT PLATE
(4) 295514 RSMX12T ROD END F1 FIT
(8) 605002 6-32 X .5 SOCKET HEAD SCREW
(2) 605066 1/4-20 X .75 FLANGED SELF TAP BOLT
(2) 605101 3/8-16 X 1.000 BOLT GR8
(4) 605740 7/8-14 JAM NUT
(2) 605929 11 X 0.178 NYLON CABLE TIE, BLACK
(2) 605950 SPIRAL RETAINING RING
(1) 605968 VIBRATITE BLUE 2ML BULLET
(2) 611006 9/16 HD STEM BUSHING KIT
(1) 611051 #36 1.188-2.750 STAINLESS HOSE CLAMP KIT (4)
(2) 611055 11+ GM HD STEM ADAPTER KIT

HARDWARE INCLUDED

174711 HARDWARE KIT

(2) 127212 SLEEVE .750 X .510 X .438
(2) 169003 SLEEVE .750 X .510 X .250
(1) 170153 20-UP GM DRVR SIDE LOOM GUARD
(2) 177524 20-UP GM SWAY BAR SPACER
(2) 177525 3/4" HEX BAR END LINK 4.250" LG
(2) 295504 NJML8Y 1/2-20 LEFT HAND SHANK RIGHT HAND STUD
(2) 295512 JM08T ROD END F1 FIT
(2) 299004 SLEEVE .75 X .26 X .75
(2) 605053 1/4 SAE FLAT WASHER GR8
(4) 605100 3/8-16 X .750 BOLT GR8
(4) 605133 3/8 SAE FLAT WASHER GR8
(2) 605307 1/2-13 X 2.750 BOLT GR8
(2) 605322 1/2-13 C-LOCK NUT GRC
(8) 605330 1/2 SAE FLAT WASHER GR5
(2) 605350 1/2-20 C-LOCK NUT GRC
(2) 605355 1/2-20 JAM NUT THIN GR5
(2) 605356 1/2-20 JAM NUT THIN GR5 LEFT HAND
(2) 605873 M6 X 1.0 X 40MM BOLT
(2) 605926-BLK 5-1/2 X 0.14 NYLON CABLE TIE, BLACK

TOOLS REQUIRED

ABRASIVE CUTTING WHEEL
SANDER
PAINT
LARGE ADJUSTABLE WRENCH
TORQUE WRENCH
3/4" SOCKET / WRENCH
3/8" SOCKET / WRENCH
5/8" SOCKET / WRENCH
7/8" SOCKET / WRENCH
9/16" SOCKET / WRENCH
13/16" SOCKET / WRENCH
7/64" ALLEN
10MM SOCKET / WRENCH
13MM SOCKET / WRENCH
18MM SOCKET / WRENCH
21MM SOCKET / WRENCH
24MM 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.

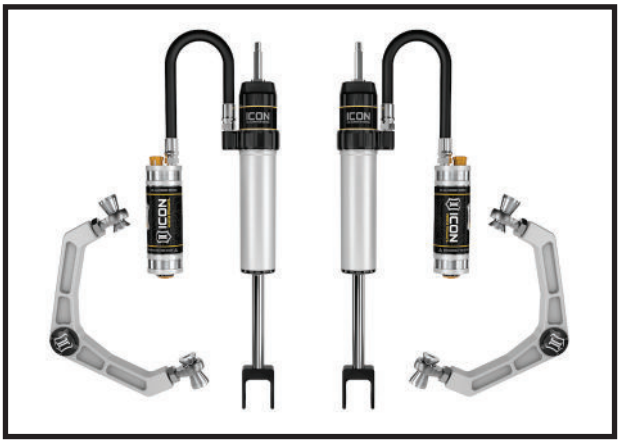
2. ICON DELTA JOINTS ARE PRE-GREASED FROM THE FACTORY. ICON RECOMMENDS GREASING THE DELTA JOINT EVERY 3,000 MILES (OR EVERY OIL CHANGE). ADD NEW GREASE UNTIL ALL OF THE OLD GREASE IS EXPELLED FROM THE BOTTOM OF THE DELTA JOINT ASSEMBLY, WIPE AWAY EXCESS WITH A RAG OR SHOP TOWEL.

3. DO NOT EXCEED 2.5" 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.

4. ICON DOES NOT RECOMMEND AN AFTERMARKET TORSION KEY ON 2011-UP 2500 AND 3500 TRUCKS AS THEY OVER-LIFT THE VEHICLE AND CANNOT BE ADJUSTED PROPERLY. THERE IS MORE THAN ENOUGH RANGE ON THE STOCK TORSION KEY TO ACHIEVE THE MAXIMUM LIFT HEIGHT RECOMMENDED.

5. YOUR ICON SHOCK 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.

6. A LEVEL STANCE IS NOT ACHIEVABLE WITHOUT LOWERING THE REAR OF THE VEHICLE. RAISING THE FRONT BEYOND THE RECOMMENDED LIFT HEIGHT WILL VOID THE ICON WARRANTY.



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 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.*

UPPER CONTROL ARM 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. Using a 21mm socket/wrench, loosen torsion bar preload bolt and release tension. **[FIGURE 1]**

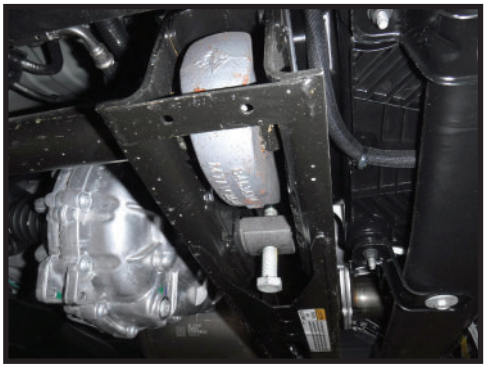


FIG.1

3. Remove the sway bar links using an 18mm. Use a 10mm, to remove the sway bar from the frame. **[FIGURE 2]**

FIG.2

4. Using the factory bolts, connect the sway bar relocation bracket to the frame. Torque to factory spec using a 10mm.

5. Use the supplied 3/8" hardware to connect the sway bar to the relocation bracket. Torque to 35 ft-lbs using a 9/16". **[FIGURE 3]**

FIG.3

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

7. Loosen the ball joint nut using an 18mm. **[FIGURE 4]**

FIG.4

8. Support the spindle so that it does not overextend the CV joints when detached.

9. With the upper control arm disconnected from the spindle, loosen the upper control arm from its mounts in the frame using a 24mm wrench/socket. Remove OEM upper control arm. Be sure to keep the cam bolts in the same orientation. **[FIGURE 5 & 6]**

FIG.5

FIG.6

10. Disconnect the brake line using a 13mm **[FIGURE 7 & 8]**.

FIG.7

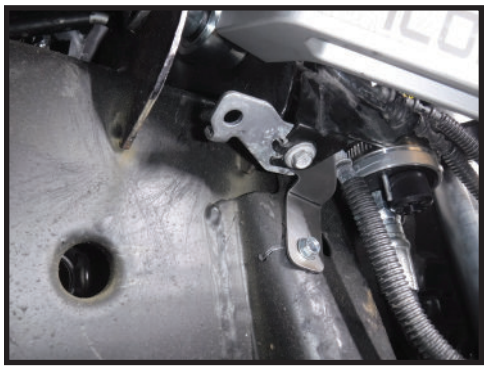
FIG.8

11. With the UCA and brake line out of the way, remove the droop stop from the front UCA frame pocket by cutting the welds. Be careful to cut only enough to free the droop stop. Once removed, clean up and paint the exposed metal. **[FIGURE 9]**

FIG.9

12. Position the supplied brake line mount as shown. Using the supplied self-drilling screws, drill into the frame. Tighten using a 3/8". **[FIGURE 10]**

FIG.10



13. If mounting a remote reservoir, remove the "christmas tree" connectors from the side of the shock bucket. Route them cleanly next to the front UCA mount and ziptie in place. **[FIGURE 11]**

FIG.11

14. Use a 10mm to disconnect the ABS wire bracket from the brake line bracket. Mount the brake line bracket and the ABS bracket as shown. Tighten with a 10mm.

15. Each arm is labeled which side it should be installed on. The supplied short spacers go on the inside of the arm and the supplied long spacers go on the outside of the arm.

16. Adjust the rod ends in the arm to measure 2" from the center of the eyelet to the aluminum arm. Tighten the Jam nut using a large adjustable wrench. Be sure to keep the rod end vertical when tightening the Jam nut. Torque to 180 ft-lbs.

17. With the control arm completely assembled, slide the arm into the upper mounts and insert the OEM hardware loosely. **[FIGURE 12 & 13]**

FIG.12

FIG.13

18. Rotate the upper control arm downward and install the stem through the spindle taper. Install the supplied flanged nut on the taper pin. [Torque to 60 ft-lbs] **[FIGURE 14]**

FIG.14

19. Tighten the upper control arm mounts on the chassis using a 24mm socket/wrench. [Torque to factory spec]

20. Repeat steps on opposite side.

21. Install the dust cover: Make sure that the o-ring is seated in the grove in the cap and apply anti-seize to the (4) allen head screws. Use a 7/64" Allen, DO NOT over tighten.

22. Connect sway bar links using an 5/8" and 3/4". [Torque to 45 ft-lbs] **[FIGURE 15 & 16]**

FIG.15

FIG.16

SHOCK INSTALLATION

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

24. Loosen the OEM bar pin nuts on the top shock mount. The fender well can be folded back for easier access to the top of the bolt heads.

25. Use a 21mm socket/wrench to loosen the lower shock mount.

26. Once the lower shock mount is removed, the shock can carefully be slid out from under the upper control arm.

27. Remove the ABS connector from the front side of the shock bucket as shown. **[FIGURE 17]**

FIG.17

28. The supplied (250002) reservoir bracket will be installed into the large hole where the ABS clip was removed. Use the supplied (150014) nut tab and 3/8" bolt to fasten the reservoir bracket to the bucket as shown. [Torque to 45 ft-lbs] **[FIGURE 18 & 19]**

FIG.18

FIG.19

29. Using the supplied zip tie, fasten the ABS line to the hose clamp of the shock reservoir. Make sure that the ABS line doesn't interfere with any other components as the suspension cycles. **[FIGURE 20 & 21]**

FIG.20

FIG.21

30. On some models, there is a module mounted to the driver side shock bucket. This will need to be raised using the supplied 299004 sleeves, 605053 washers and 605873 screws. This is easiest to access from under the hood using long extensions and a 10mm.

31. Install the supplied (174037) stem top adapter on top of the shock bucket, taking care to note that the middle hole is offset to bring the shock outward for clearance. Using the supplied 9/16" hardware, fasten the adapter mount using a 13/16" wrench and 7/8" socket. **[FIGURE 22 & 23]**

FIG.22

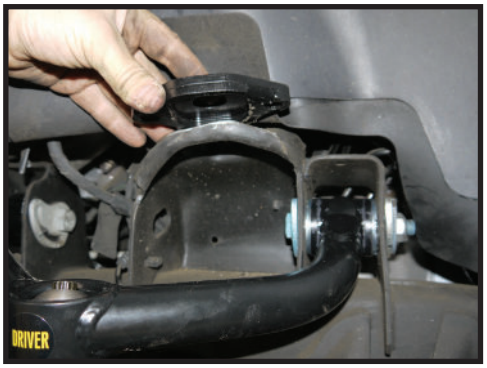


FIG.23

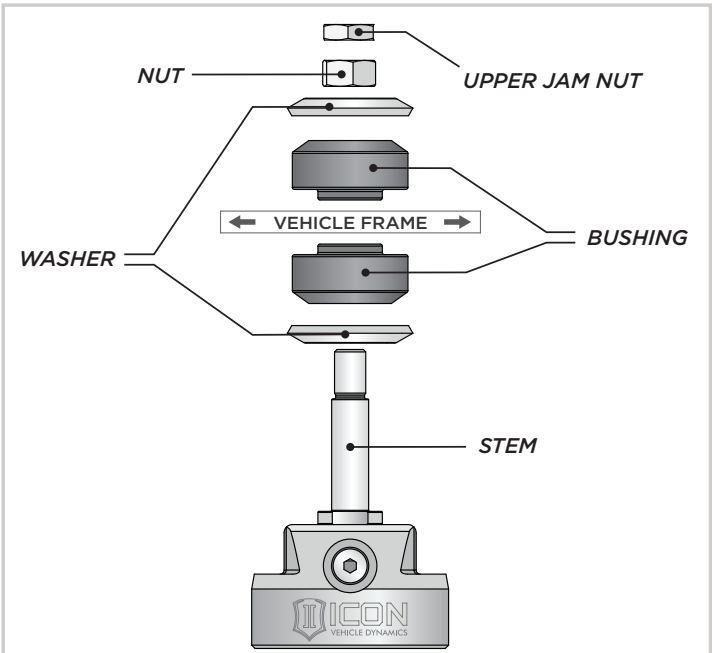
32. Slide the shock into the shock mount making sure to have the bushings on prior to final installation.

33. Attach the shock to the lower shock mount. Fasten using the factory hardware and 21mm socket/wrench. [Torque to factory spec] **[FIGURE 24]**

FIG.24

34. Route the remote reservoir forward by rotating the manifold in the proper direction.

35. Install stem hardware as seen in diagram. Install (605810) tall nut and fasten bushing assembly until 3-4 threads are exposed for the (605809) jam nut. Install (605809) nut and torque to 50 ft-lbs while holding (605810) with a 19mm wrench. Do not overtighten bushing assembly as this can lead to premature bushing wear. Failure caused by incorrect installation of bushings is not covered under ICON's warranty policy.



HD STEM BUSHING DIAGRAM

36. With the shock mounted on the lower control arm, the upper mount tightened to the shock bucket, and the shock stem tightened to the mount, slowly lower the jack to check for any interference with the ABS line.

37. Route the shock reservoir up under the control arm and against the bracket. Fasten using the supplied hose clamps and a 5/16" nut driver. Check that the vacuum line and wire loom do not make contact with the exhaust manifold heat shield. **[FIGURE 25]**

FIG.25

38. Repeat steps 2-15 on the opposite side.

39. Install wheels and lower vehicle to the ground. [Torque to factory spec]

40. 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.

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/

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