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PART #	DESCRIPTION
216523R	03-12 RAM HD 4.5" FRONT 2.0 ALUMINUM SERIES SHOCK

COMPONENTS INCLUDED	
(1) 250000 6" UNIVERSAL RESI MOUNT PLATE (1) 214913R 03-12 RAM HD 4.5" FRT 2.0	(1) 611006 9/16 HEAVY DUTY STEM BUSHING KIT (2) 605928 1/2 X 1-5/16 — 2-1/4 ID #28 HOSE CLAMP
HARDWARE INCLUDED	
N/A	
TOOLS REQUIRED	
FLOOR JACK JACK STANDS TORQUE WRENCH 8MM SOCKET / WRENCH 13MM SOCKET / WRENCH 15MM SOCKET / WRENCH	18MM SOCKET / WRENCH 21MM SOCKET / WRENCH 24MM SOCKET / WRENCH 27MM SOCKET / WRENCH 3/4 SOCKET / WRENCH
TECH NOTES	
1. 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.	



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.

INSTALLATION

1. Remove the sway bar links from the sway bar. (Set bushings, washers, and nuts aside.) Leave them connected to the differential. (15mm)
2. Open the hood and disconnect both negative battery terminals. (8mm)
3. Lift the front end of the truck and support the frame at the front frame rails with jack stands. NEVER WORK UNDER AN UNSUPPORTED VEHICLE.
4. Remove tires.
5. Support the axle with a heavy duty floor jack. With the housing supported, remove the lower shock mount bolts going through the axle housing. THE AXLE HOUSING IS EXTREMELY HEAVY AND IS LIMITED BY THE SHOCKS; MAKE SURE THE HOUSING IS SECURELY SUPPORTED BY THE JACK.
6. Remove the track bar from the frame using a 24mm and a 27mm.
7. Remove upper shock bushing and nut. Then remove the 3 shock tower nuts using a 15mm. Lift the shock tower off of the studs and slide off out of the way.
8. Disconnect the brake line brackets located on each the side of the axle housing in between the control arms. (13mm) (Powerwagon models: disconnect wiring to front differential locker.)
9. Slowly lowering the differential will begin to unload the coil springs.
10. The factory upper control arms may bind on the frame before the suspension becomes completely unloaded. Remove the front bolt on both of the upper control arms to allow suspension to droop far enough to remove the coil spring. This may require some effort as the links might still be under a small amount of load. REMOVING THE UPPER ARMS WILL ALLOW THE HOUSING TO ROTATE FORWARD AND BACK, PROPERLY SUPPORT THE HOUSING USING (2) JACKS AS NEEDED. (18mm, 21mm)
11. The axle will now only be supported by the lower control arms and jack, the axle is extremely heavy and extreme care must be taken when positioning the differential.
12. Continue to slowly lower the differential, the coils will become fully unloaded from the mount, slowly lower the jack until the coil springs become loose enough to slip them out. Remove the coil isolator and stud ring.
13. Remove the factory shock.

- 14.** Slide the shock reservoir up through the coil bucket and continue up into the engine bay. Then rotate the reservoir and feed it down into the wheel well.
- 15.** Set the factory shock towers on the coil bucket over the shock. Make sure the hose is coming out of the inner opening in the shock tower (towards the engine).
- 16.** The factory stud ring can now be installed and tightened onto the shock tower. Set the reservoir mount on top of the outer shock tower hole and tighten the factory nut onto the stud ring. (15mm) [Torque to factory spec]
- 17.** Slide the coil isolator up over the shock under the coil bucket. Then slide the coil over the shock and set it in position on the lower mount. Line up the coil isolator with the coil on the top.
- 18.** Install the lower shock bolt. (21mm) [Torque to factory spec]
- 19.** Lift the differential slowly while guiding the shock into position.
- 20.** With stem bushings and bushing retainers on both above and below the shock mount, tighten the stem of the shock onto the shock tower until enough threads are exposed to fit the jam nut on top. Keep the first nut stationary. [Torque the jam nut to 35 ft-lbs]
- 21.** Reconnect the upper links and tighten to factory specs. (18mm, 21mm)
- 22.** Reconnect the track bar. (24mm & 27mm) [Torque to factory spec]
- 23.** Install the sway bar. (15mm) [Torque to factory spec]
- 24.** Connect the sway bar to the sway bar links using the stock bushings and washers. (15mm)
- 25.** Go back through and torque all the partially installed hardware to factory specs.
- 26.** Reconnect the brake lines in the stock location. (13mm) [Torque to factory spec] (Powerwagon models: Reconnect the wiring to the front differential locker)
- 27.** Route the hose around the front of the shock tower and mount the reservoir using the supplied hose clamps. (8mm) [FIGURE 1].



FIG.1

- 28.** Reconnect both negative battery terminals. (8mm)
- 29.** Re-install the tires and lower vehicle to the ground. [Torque lugs nuts to factory spec]
- 30.** Check the torque on all hardware. Drive the truck 1-2 miles and re-torque all nuts, bolts and lugs. Re-center the steering wheel if necessary.

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

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

2.0 ALUMINUM SERIES 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.

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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