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Technical Support Line: (952) 985-5675 Email: sales@QA1.net

INSTALLATION INSTRUCTIONS

*'67-'86 Chevy/GMC C20/C30, '87-'91 Chevy/GMC R20/R30 Front Coil-Over Conversion
QA1 P/N 52619-x650, 52619-x750, 52619-x850*

TOOLS AND SUPPLIES REQUIRED

- Floor Jack
- Jack Stands
- SAE Wrench Set
- Ratchet & SAE Socket Set
- 1891-106 Ball Joint Tool Kit
- Torque Wrench
- Grinder or Air Chisel
- Drill & Drill Bit Set

Pre-Installation Note

QA1 C20/C30/R20/R30 suspension is designed to be used with '71-'91 C20/R20 disc brake spindles.

This suspension can be used to convert '67-'70 C20 from drum brakes to disc brakes using QA1 5256 tie rod sleeves.

C20 and C30 trucks use the same ball joints but do use different spindles and brake calipers. C20 spindles must use C20 calipers, C30 spindles must use C30 calipers.

QA1 52896 front sway bar is recommended as the factory front sway bar is not compatible with this suspension.

This suspension is not recommended on trucks with a front-end weight exceeding 3,000 lbs. or crew cab models.

A complete exploded diagram is shown on page 7 and bill of materials on page 8.



Figure 1

DISASSEMBLY INSTRUCTIONS

1. Raise and support the vehicle by the frame rails with jack stands on a stable surface.
2. Remove the front wheels and brake calipers. Brake hoses may need to be unbolted from the upper control arms.

Caution: Do not allow the brake caliper to hang by the brake hose as this can damage the brake hose.

3. Unbolt the sway bar from the lower control arms if equipped.
4. Remove the shocks from the vehicle.

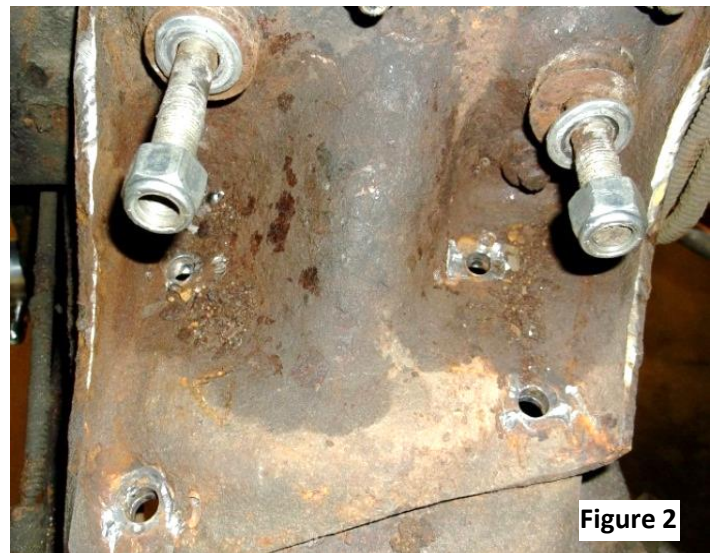
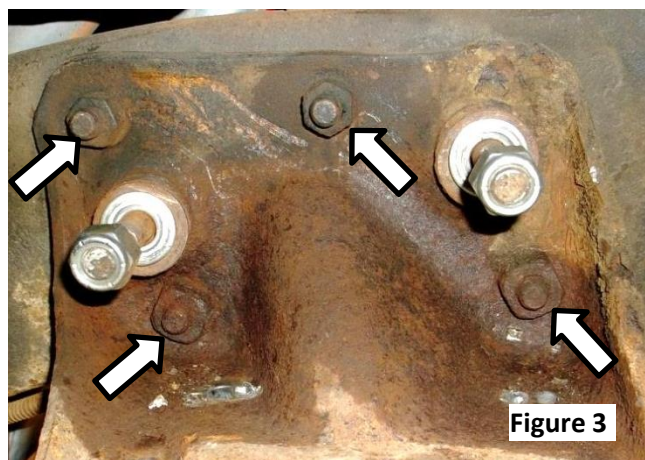


Figure 2

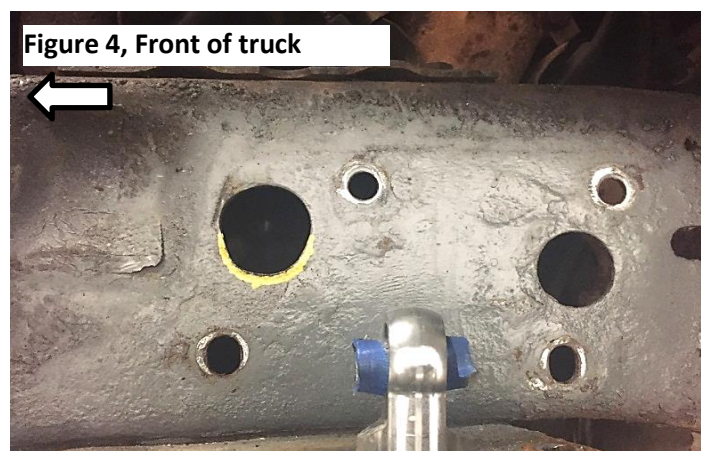
5. Remove the cotter pins from the ball joints and loosen the castle nuts. Do not remove the castle nuts at this time. Only loosen the castle nut on the control arms being replaced if both the upper and lower control arms are not being replaced.
6. Strike the flat surface on the spindle near the ball joint with a hammer to separate the ball joints from the spindle. A ball joint separating tool (pickle fork) may be required. See **Figure 1**.
7. Using a spring compressor, compress the front springs to take pressure off the lower control arm.
8. Place a floor jack under the lower control arm and remove the ball joint castle nuts. Lower the control arm out of the way. The spindle and spring can now be removed from the vehicle.
9. Remove the U-bolts retaining the lower control arm to the cross member and remove the lower control arms from the vehicle.
10. For '73-'91 models, the brake hose must be removed from the upper control arm before the control arms can be removed from the vehicle. The hose will need to be relocated to the cross member during reassembly if QA1 upper control arms are used.
11. Remove the nuts from the upper control arm cross shaft and remove the upper control arm and shims from the vehicle.
12. Using an air chisel or a grinder, remove the rivets holding the upper control arm mount to the top of the cross member. See **Figure 2**.
13. Remove the four bolts holding the upper control arm mount to the frame rail and discard. It may be easier to remove the passenger side exhaust header to access the bolts. Factory manifolds should allow sufficient access. See **Figure 3**.



INSTALLATION INSTRUCTIONS

1. The 1 ¼" hole towards the front of the truck will need to be elongated downwards about 1/8" for bolt head clearance on the QA1 upper coil-over mount. See **Figure 4**.
2. Set the QA1 upper control arm bracket in place and line up the mounting holes to use as a template. Mark the center opening on the cross member with a marker or scribe.

Note: The upper control arm brackets are right/left hand specific.



3. Remove the control arm bracket and begin cutting the opening to match the bracket opening. Along the cut line.

Note: It is best to cut small and enlarge the opening as needed. See **Figure 5 and 6**.

4. After the cross member is cut and the bracket sits flat, loosely install all four 3/8" x 1 ¼" bolts, washers and nuts into the cross member and four 7/16" x 1 ¼" bolts, washers and nuts into the frame holes. Snug the frame bolts first followed by the cross member bolts, then torque the frame bolts followed by the cross member bolts. Torque the 3/8" bolts to 31 lb. ft. and the 7/16" bolts to 45 lb. ft.

Note: Minor variations have been found in the chassis and/or the frame when the factory upper control arm mount is removed. It may be necessary to pull the frame rails together slightly or run a 3/8" drill bit through the cross-member bolt holes during installation of the QA1 mount.

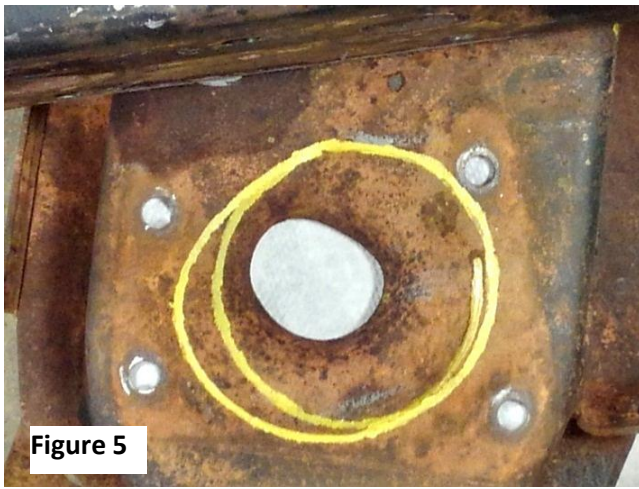


Figure 5

5. Install the assembled shocks up through the **spring** pocket and install the $\frac{1}{2}$ " x $2\frac{1}{2}$ " bolts, two washers and nyloc nuts. P/N 9033-430 spacer will need to be installed on each side of the spherical bearing as the shock is bolted into place. Torque to 50 lb. ft. See **Figure 7**

INSTALLATION TIP: The upper eyelet of the shock can be unscrewed from the piston rod and removed to install the spring and spring cap. Once reassembled, retighten the jam nut against the bottom of the loop.

6. Install the provided concave spacers, then the QA1 upper control arm. (**Figure 8 & 9**). Torque the nuts to 70 lb. ft. See **Figure 16** for control arm identification.
7. The lower control arm U-bolt holes on the cross member will need to be enlarged to $\frac{9}{16}$ " for '72 and earlier trucks to accept the supplied $\frac{9}{16}$ " U-bolts.

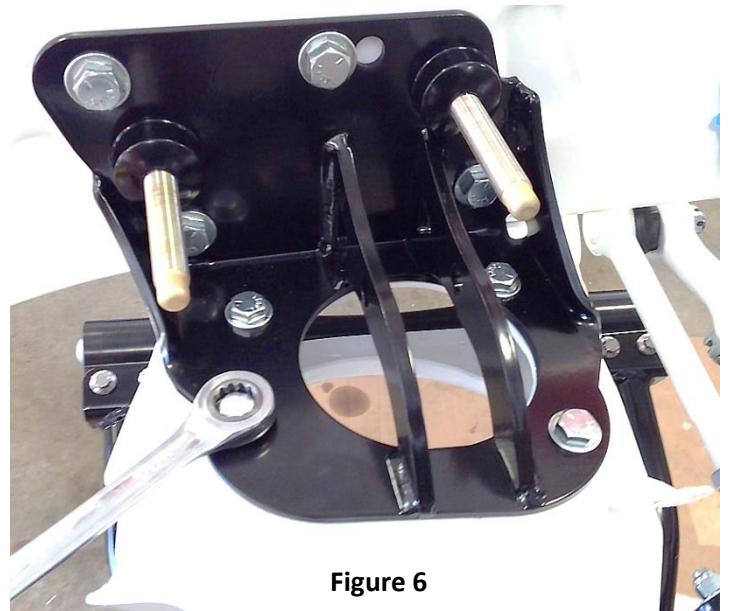


Figure 6



Figure 7

Figure 9



Figure 8

8. Install the bump stop on the bump stop mount using a 3/8" nut and washer. Install the bump stop mount on the lower control arm with the supplied 3/8" x 1" bolts, washers and nuts. Torque to 31 lb. ft. **Figure 10.**
9. Bolt the lower shock mount brackets to the lower control arms using a 1/2" x 1 3/4" bolt, washers and nut near the ball joint and a 1/2" x 3" bolt, washers and nut towards the control arm pivot point. Spacer p/n 9033-101 will need to be installed between the mounting brackets near the pivot point. See **Figure 11.** Torque the bolts to 50 lb. ft.
10. Inspect the lower control arm mounts on the cross member for burrs or sharp edges that could dig into the cross shaft and clean up as necessary. See **Figure 12.**

ITEM#	PART #	DESCRIPTION
1		LOWER C-O CONTROL ARM ASM.
8	9037-615 RH 9037-616 LH	BRACKET, STEERING STOP C-0
9	*	NUT, HEX 3/8-16
10	*	WASHER, FLAT 3/8" SAE
11	*	BOLT, HEX 3/8-16 X 1"
19	*9047-113	BUMP STOP, BULLET 1.5" OD X 1.56" TALL

*INCLUDED IN HARDWARE KIT 7039-215

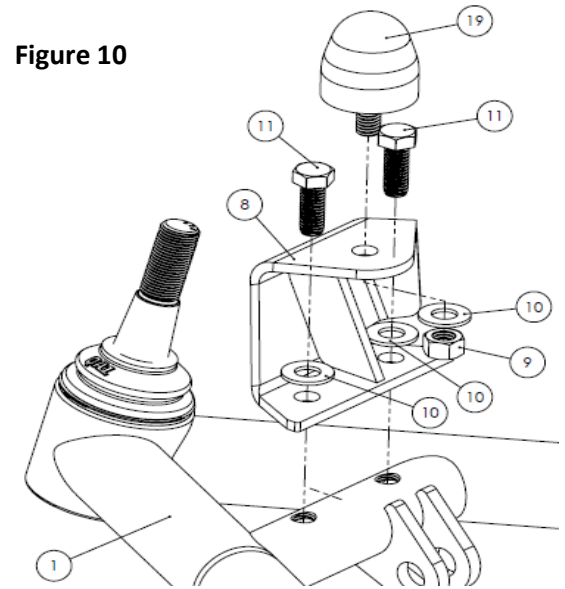


Figure 10

11. Install the QA1 lower control arm with the supplied U-bolts. The **front (only)** alignment dowel on the cross member must be seated into the FRONT cross shaft. The rear alignment dowel does not need to line up with the indent in the cross shaft. Torque the nuts evenly to 70 lb. ft. See **Figure 13.**
12. Install the lower shock mount brackets on the lower shock eyelet using a 1/2" x 2 1/2" bolt, washers, 9033-430 spacers and 1/2" nuts like on the upper mount.
13. Install the spindle onto the upper ball joint.



Figure 11



Figure 12

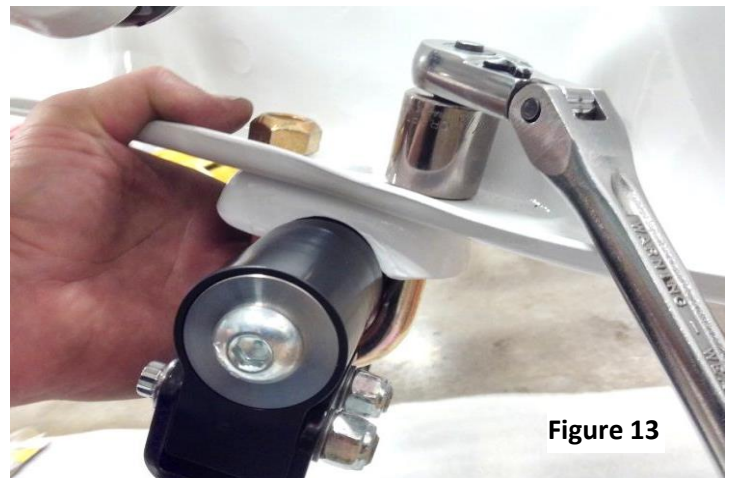


Figure 13

14. Raise the lower control arm up to the spindle and connect the lower ball joint.
15. Tighten the upper ball joint castle nuts and the lower ball joint castle nuts to 90 lb. ft. Once torqued, tighten the nuts until the cotter pin is able to be installed. **Never loosen a castle nut to align cotter pin.**



16. When using QA1 upper control arms, 1973 and later trucks will need the brake hose rerouted to the front side of the spring pocket on the cross member and attached there using the factory bolt and nut as shown in **Figure 14 & 15**.
 - a. Drill a 3/8" hole just above the flange on the cross member.
 - b. Insert the locating tab for the brake hose mount and mark the location for the bolt.
 - c. Drill a 5/16" hole and mount the brake hose using the OE mounting bolt and nut.
 - d. To help ensure the steering does not contact the brake hose, rotate the clamps and bolts for the tie rod adjusters towards the front of the truck. Bend the mounting bracket to reposition the hose as needed.
17. QA1 Sway bar P/N 52896 can now be installed. Refer to the instructions included with the sway bar for this step.
18. Reinstall the brake calipers and wheels.
19. Pump the brake pedal to seat the brake pads against the rotor. Bleed the brakes before driving if the brake hydraulic system has been opened.

Caution: QA1 does not recommend driving the vehicle until it has been properly aligned due to major changes in suspension geometry that will affect the handling characteristics of the vehicle. A front end alignment should be performed by a qualified alignment shop after any changes to the suspension system.

Alignment Information

These components are designed to add more caster and negative camber. It is a good idea to make the alignment shop aware of this, as the alignment shop may only try to align the vehicle to factory specs. These alignment specifications are for vehicles equipped with both QA1 upper and lower control arms. Vehicles with other configurations may not be able to achieve these alignment specifications.

Camber: $-0.5^{\circ} \pm 0.5^{\circ}$
 Caster: $+8.0^{\circ} \pm 0.5^{\circ}$
 Toe: $+0.2^{\circ} \pm 0.1^{\circ}$

Maintenance of QA1 Ultimate Ball Joints

Grease using high quality NLGI #2 GC-LB Lithium based grease and check preload on a regular basis. Check and set ball joint preload at least annually or every 3,000 miles, whichever comes first. NOTE: Preload on the ball stud can be set with the ball joint attached to the control arm if the spring is unloaded and the ball joint taper is free from the spindle.

1. Using the QA1 spanner socket from Ball Joint Tool Kit (p/n 1891-106) loosen the lock nut by turning counter clockwise.
2. Using the QA1 hex key, torque the torque nut to 25-30 in. lbs. and then back off 90°.
3. Using the QA1 hex key, a ½" open-ended wrench or socket, and the QA1 spanner wrench, tighten the lock nut while holding the torque nut, locking them together to 25 ft. lbs.
4. Re-check the lash on the ball stud and adjust as needed. The ball stud should not have any axial lash.

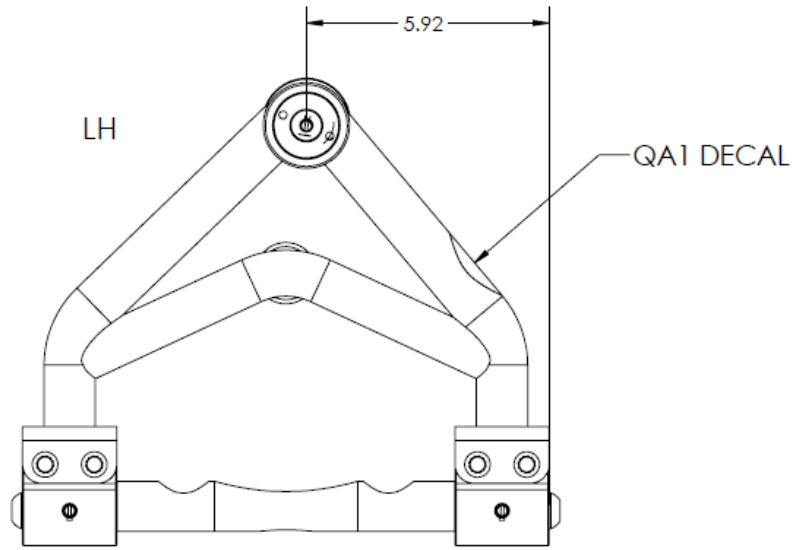
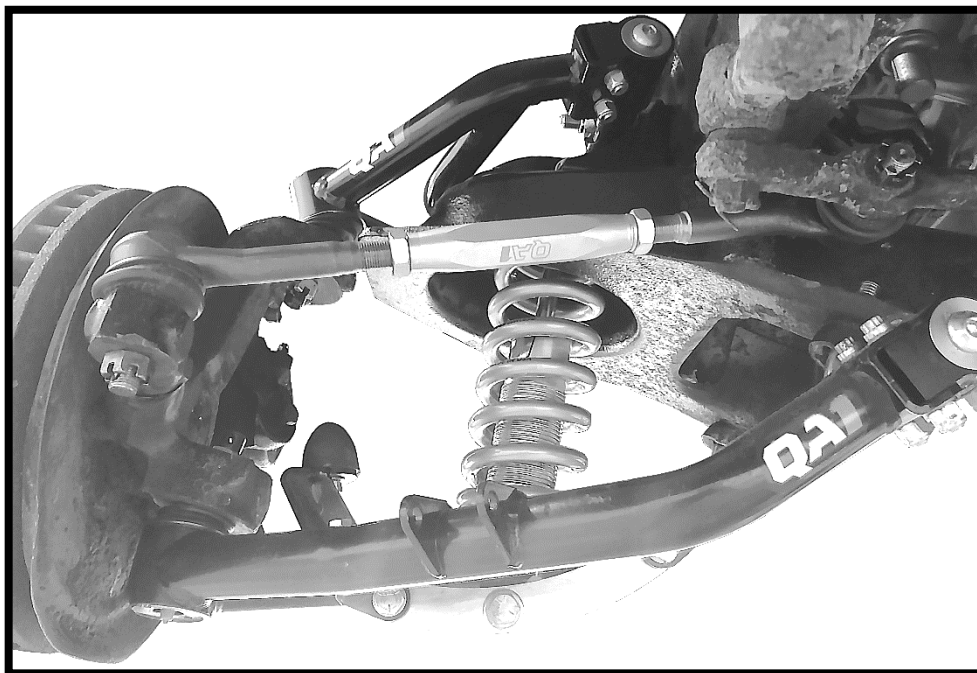
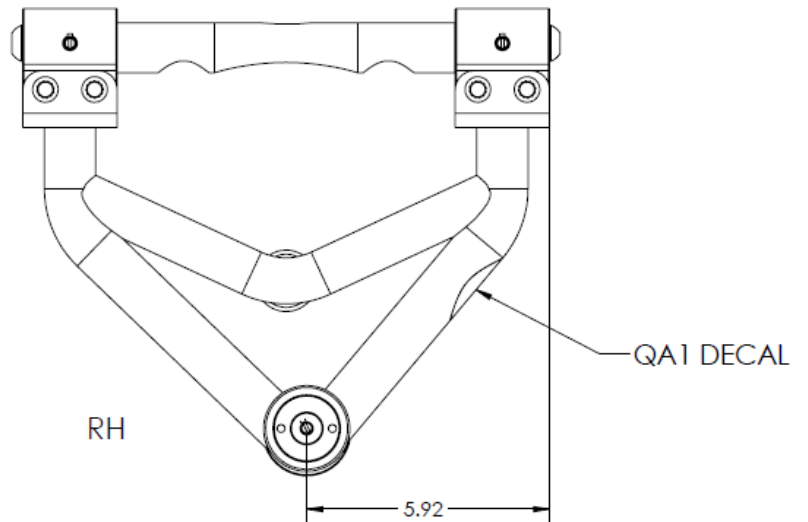
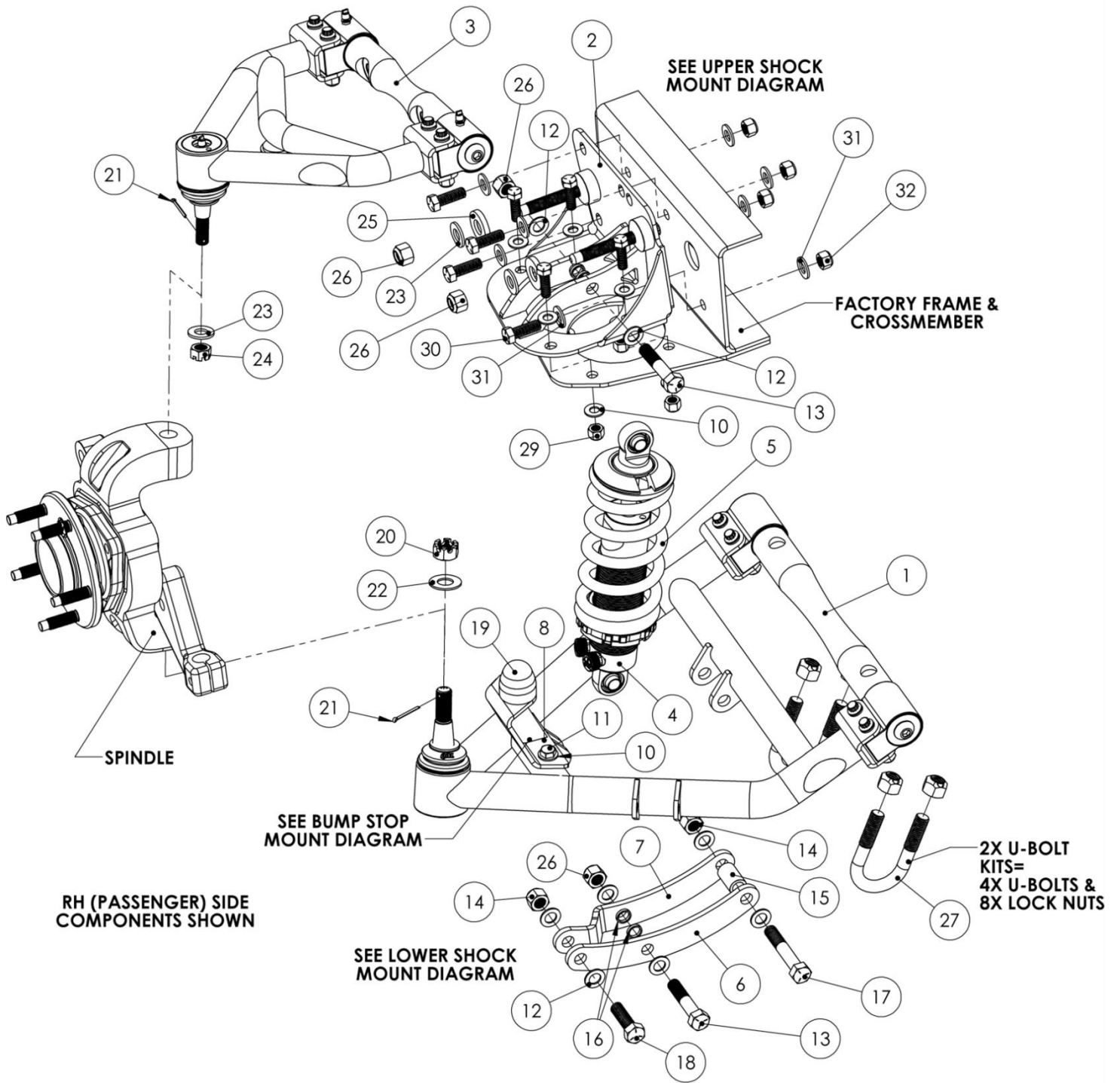


Figure 16; Upper Control Arms

Front of Vehicle





ITEM #	PART #	DESCRIPTION	QTY.
1	7720-253 7720-252	LH CONTROL ARM RH CONTROL ARM	1 1
2	9037-626 RH 9037-627 LH	MOUNT ASM., UPPER C-O SHOCK	2
3	52617 LH & RH	UPPER CONTROL ARM ASM.	2
4	Dx401	SHOCK, PROMA C-O	2
5	10HTxxx	SPRING, 10" HIGH TRAVEL 2-1/2" ID	2
6	9037-625	BRACKET, LOWER SHOCK MOUNT	2
7	9037-626 RH 9037-627 LH	BRACKET, LOWER SHOCK MOUNT	2
8	9037-615 RH 9037-616 LH	BRACKET, STEERING STOP C-O	2
9	*	NUT, HEX 3/8-16	2
10	*	WASHER, FLAT 3/8-16	22
11	*	BOLT, HEX 3/8-16 X 1"	4
12	*	WASHER, FLAT 1/2" AN960-816 CLEAR-ZINC	16
13	*	BOLT, HEX 1/2-20 X 2.5"	4
14	*	NUT, NYLOCK 1/2-13	4
15	*	SLEEVE, .500" ID X .75 OD X 1.25"	2
16	*	SLEEVE, .5" ID X .625" OD X .125"	8
17	*	BOLT, HEX 1/2-13 X 3"	2
18	*	BOLT, HEX 1/2-13 X 1.75"	2
19	9047-113	BUMP STOP, BULLET 1.5" OD X 1.56" TALL	2
20	9014-537	NUT, SLOTTED (CASTLE) 18mm	2
21	9035-172	COTTER PIN 7/64" X 1.25"	4
22	9005-307	WASHER, FLAT 18mm	2
23	9005-228	WASHER, FLAT 1/2" SAE	6
24	9014-479	NUT, SLOTTED (CASTLE) 5/8"-18	2
25	*9005-287	WASHER, SPHERICAL .650" ID	4
26	*	1/2-20 NYLOCK NUT	8
27	9012-301	U-BOLT KIT, 9/16-12 X 1.625" X 3.25"	2
28	*	BOLT, HEX 3/8-16 X 1.25"	8
29	*	NUT, NYLOCK 3/8-16	8
30	*	BOLT, HEX 7/16-14 X 1.25"	8
31	*	WASHER, FLAT 7/16" SAE	16
32	*	NUT, NYLOCK 7/16-14	8



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