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### INSTRUCTIONS

#### *QA1 ULTIMATE BALL JOINT*

READ ALL INSTRUCTIONS CAREFULLY AND THOROUGHLY PRIOR TO STARTING INSTALLATION. PRODUCTS THAT HAVE BEEN INSTALLED ARE NOT ELIGIBLE FOR RETURN. USE THE PROPER JACKING LOCATIONS. DEATH OR SERIOUS INJURY CAN RESULT IF INSTRUCTIONS ARE NOT CORRECTLY FOLLOWED. A GOOD CHASSIS MANUAL, AVAILABLE AT YOUR LOCAL PARTS STORE, MAY ALSO AID IN YOUR INSTALLATION.

#### • DISCLAIMER / WARRANTY •

QA1 WARRANTS THAT THE PRODUCTS WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF SALE TO THE ORIGINAL PURCHASER. QA1 MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. QA1 SHALL HAVE NO OBLIGATION UNDER THE FOREGOING WARRANTY WHERE THE DEFECT IS THE RESULT OF IMPROPER OR ABNORMAL USE, YOUR NEGLIGENCE, VEHICLE ACCIDENT, IMPROPER OR INCORRECT INSTALLATION OR MAINTENANCE, NOR WHEN THE PRODUCT HAS BEEN REPAIRED OR ALTERED IN ANY WAY. QA1'S LIABILITY IN THE CASE OF DEFECTIVE PRODUCTS SUBJECT TO THE FOREGOING WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT, AT QA1'S OPTION, OF THE DEFECTIVE PRODUCTS.

THE USER UNDERSTANDS AND RECOGNIZES THAT RACING PARTS, SPECIALIZED STREET ROD EQUIPMENT, AND ALL PARTS AND SERVICES SOLD BY QA1 ARE EXPOSED TO MANY AND VARIED CONDITIONS DUE TO THE MANNER IN WHICH THEY ARE INSTALLED AND USED. QA1 SHALL BEAR NO LIABILITY FOR ANY LOSS, DAMAGE OR INJURY, EITHER TO A PERSON OR TO PROPERTY, RESULTING FROM THE INSTALLATION, DIRECT OR INDIRECT USE OF ANY QA1 PRODUCTS OR INABILITY BY THE BUYER TO DETERMINE PROPER USE OR APPLICATION OF QA1 PRODUCTS. WITH THE EXCEPTION OF THE LIMITED LIABILITY WARRANTY SET FORTH ABOVE, QA1 SHALL NOT BE LIABLE FOR ANY CLAIMS, DEMANDS, INJURIES, DAMAGES, ACTIONS, OR CAUSES OF ACTION WHATSOEVER TO BUYER ARISING OUT OF OR CONNECTED WITH THE USE OF ANY QA1 PRODUCTS. MOTORSPORTS ARE DANGEROUS; AS SUCH, NO WARRANTY OR REPRESENTATION IS MADE AS TO THE PRODUCT'S ABILITY TO PROTECT THE USER FROM INJURY OR DEATH. THE USER ASSUMES THAT RISK!

#### TOOLS AND SUPPLIES REQUIRED

- QA1 Ball Joint Tool Kit p/n 1891-106
- 1" Wrench
- 1/2" Wrench
- High Quality Lithium Grease

#### ADJUSTING PRELOAD ON THE BALL STUD

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. Preload can also be set prior to installing the ball joint and can be done one of two ways.

1. Using the QA1 spanner wrench, loosen the lock nut by turning counter clockwise. Turn the torque nut to adjust ball stud preload for your desired setting. The setting must allow for the lock nut to be fully seated in the housing.
2. Manually install the lock nut and spin clockwise until tight against the torque nut.
3. Using the QA1 hex key, a 1/2" open-ended wrench or socket, and the QA1 spanner socket, turn the lock nut clockwise while holding the torque nut, locking them together to 25 ft. lbs.
4. Re-check the preload on the ball stud and adjust as needed.
5. Using a grease gun, lubricate and rotate the ball stud by hand until the grease is visible on the bottom of the ball. If the ball joint is on the car, move the suspension up and down to get the same effect. **Note: Excessive grease may result in hydraulic lock. If this occurs, move the ball stud until pressure is relieved and the ball stud freely rotates.**

#### ALTERNATIVE INSTRUCTIONS

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 1/2" open-ended wrench or socket, and the QA1 spanner socket, 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.
5. Using a grease gun, lubricate and rotate the ball stud by hand until the grease is visible on the bottom of the ball. If the ball joint is on the car, move the suspension up and down to get the same effect. **Note: Excessive grease may result in hydraulic lock. If this occurs, move the ball stud until pressure is relieved and the ball stud freely rotates.**

## MAINTENANCE / REBUILDING OF BALL JOINTS

Grease using high quality lithium grease and check preload on a regular basis. Disassemble (follow instructions below) at least annually or every 2000-2500 laps or 3,000 miles, whichever comes first, to inspect all parts, clean, and re-adjust preload on the ball stud. Ball joint must be regularly checked for wear, and replaced accordingly.

### **Disconnect from the spindle:**

1. Remove the spring and shock.
2. Place a jack stand under the lower control arm for support.
3. Make sure the control arm is near level and the taper of the ball joint is centered in the ball joint housing.
4. Use a pickle fork to push evenly on both sides of the ball joint housing until the taper is free from the spindle.

**NEVER POUND THE BALL JOINT OUT BY THE BALL STUD!**

**Do NOT press on the ball stud to remove the ball joint from the control arm! Press on the housing only.**

### **Ball Joint Disassembly:**

1. Use the QA1 spanner wrench to remove the lock nut by turning counter-clockwise.
2. Use the QA1 hex key with a ½" open-ended wrench to remove the torque nut by turning counter-clockwise.
3. Remove the self-lubricating cup, steel spider, ball stud, and bearing race.
4. Clean all parts and inspect for excessive wear. Replace any parts that may be worn or damaged. The ball stud is concentric and should be checked for straightness. Place ball stud on a flat, clean surface and roll gently back and forth observing the stud. If there is a wobble in the stud, it is bent and must be replaced.

### **Ball Joint Assembly:**

1. Install the ball joint housing into the control arm or gently clamp the ball joint housing into a vise.
2. Install the precision ground bearing race, followed by the ball stud. The race is a precision fit that must be completely aligned. Do **NOT** force the race into the housing. Pre-assemble the self-lubricating cup and the steel spider, then install into the housing. Make sure the steel spider and the self-lubricating cup are fully seated on the ball stud.
3. Adjust preload. Refer to instructions listed above.

## INSTALLATION

**\*IMPORTANT\*** - QA1 does **NOT** recommend welding the ball joints to the control arm. However, if you choose to weld the housing to the control arm, you must disassemble and remove the self-lubricating cup and the steel spider. The bearing race should be left in the ball joint housing if you choose to weld. If the ball joint housing distorts due to welding, the race will not fit back inside. Be sure to minimize any welding procedure to prevent distortion of the ball joint housing. Welding is done at your own risk; QA1 does not warranty parts that have been welded.

### **Screw In**

Apply anti-seize to the threads of the housing. Install the ball joint in the upper or lower control arm and tighten to 100 ft. lbs. Do **NOT** use the QA1 hex key, the QA1 spanner wrench or an air gun to screw the ball joint into the arm.

### **Bolt In**

Install the ball joint on the correct side of the control arm and torque the mounting bolts per the recommended bolt specifications.

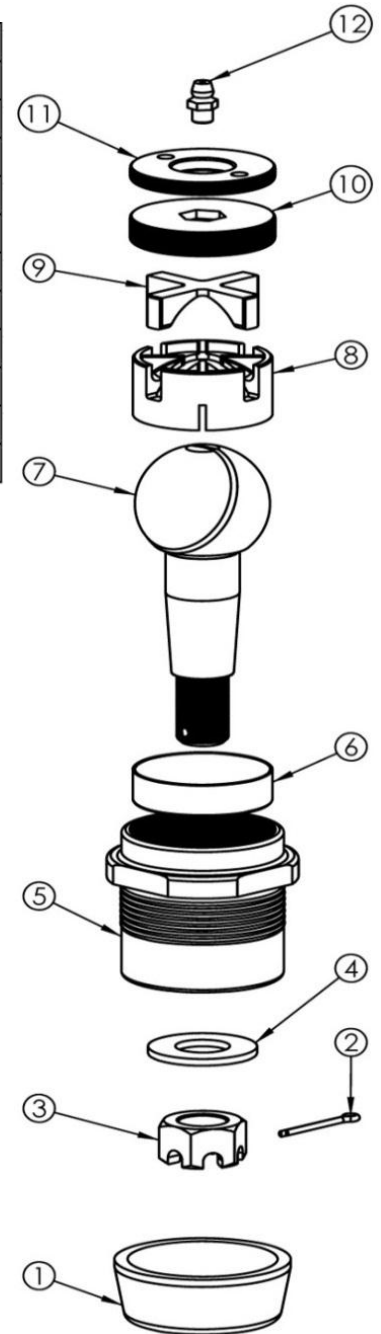
### **Press In**

Install the ball joint on the correct side of the control arm, **ensuring you are pressing squarely only on the ball joint housing**. When pressing in the ball joint, do **NOT** press on the lock nut or you will damage it. Press in using only the appropriate tool(s). Do **NOT** pound into place.

### **Connecting to the spindle:**

The ball stud **must** be in full contact with the spindle taper from the top to the bottom. If the taper in the spindle does not fit the taper of the ball stud, it will appear to be tight at one end, but will have a gap at the other end, and will lead to failure of the ball joint.

1	DUST BOOT
2	COTTER PIN
3	CASTLE NUT
4	WASHER
5	HOUSING
6	BEARING RACE
7	BALL STUD
8	SELF-LUBRICATING CUP
9	STEEL SPIDER
10	TORQUE NUT
11	LOCK NUT
12	ZERK



**To further upgrade your suspension, use other QA1 suspension products such as coil-overs, shocks, struts, springs, K-members, torque arms, panhard rods, sub-frame connectors, strut tower braces, rod ends, sway bars, tubular control arms, spherical bearings, carbon fiber driveshafts and more. For more information, please visit [www.QA1.net](http://www.QA1.net).**