

Technical Support Line: (952) 985-5675



21730 Hanover Ave. Lakeville, MN 55044

www.QA1.net

ASSEMBLY INSTRUCTIONS

Proma Star® (DD, DS) Ultra Ride® (US)
Aluma Matic® (ALN) Stocker Star® (TD, TS, TR, TN)

READ ALL INSTRUCTIONS THOROUGHLY BEFORE STARTING THIS PROJECT. PRODUCTS THAT HAVE BEEN INSTALLED ARE NOT ELIGIBLE FOR RETURN. SEE YOUR VEHICLE OWNER'S MANUAL FOR PROPER JACKING LOCATIONS AND SHOCK/SPRING REMOVAL TECHNIQUES. 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.

WARRANTY / DISCLAIMER

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, express 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.

Consequential or incidental damages are not recoverable under this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

In order to be eligible for service under this warranty, you must return the defective part to QA1 together with a R.G.A. number issued from QA1. Tag each item with the part number and the specific explanation of defect. We will inspect the part and determine: a) if it is eligible for repair or replacement; and, b) if so, whether to repair or replace it. All returns must be shipped prepaid to:

QA1 Precision Products, Inc.
RGA # _____
21730 Hanover Avenue
Lakeville, MN 55044

THE BUYER UNDERSTANDS AND EXPRESSLY RECOGNIZES that racing parts, specialized street rod equipment, rod end bearings, 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. BUYER ACKNOWLEDGES that QA1 does not have full knowledge of the intended use of the goods, and BUYER WILL DEFEND AND INDEMNIFY QA1 upon demand against all claims, actions, liability, loss and expense (including investigating expense and attorney fees incurred in litigation or because of threatened litigation) for any loss, damage or injury, either to a person or to property, resulting from the 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.

DO NOT VOID YOUR WARRANTY!

Failure to lubricate the coil-over threads with anti-seize or equivalent prior to making any ride height adjustments will cause damage to your shock absorber and voids the warranty. All ride height adjustments must be made with the vehicle weight completely unloaded from the suspension. If there have been any alterations from the factory equipment, weight or ride height, call the QA1 Tech Hotline before assembling and/or installing any part of this kit. Failure to do so will void all warranties.

- Before starting the installation of your QA1 shocks, read the instructions carefully and thoroughly. Check to make sure you have all of the parts and hand tools needed to complete the installation.
- Start by inspecting your chassis. Look for worn out bushings, ball joints, etc. If anything looks suspicious, replace it before continuing. For Stocker Stars[®], make sure that the original compression bumpers (control arm & frame) are in place and in good condition. If they have been removed or damaged they **must** be replaced before you continue with this installation. **If the shocks are installed without the factory bumpers or equivalent, damage to the shocks may result and the shocks will not be covered under warranty.**
- **For Stocker Star[®] shocks only:** check to see if the shocks will fit through the lower control arm without modification. QA1 recommends dropping the control arm to install the shock to avoid modifying the control arm. This requires separating the ball joint stud from the spindle.
- **For Proma Star[®], Ultra Ride[®] and Aluma Matic[®] shocks only:** Get started by taking a ride height (RH) measurement on both sides of the car. This ride height measurement should be taken from the top of the wheel well opening down to the ground. It is recommended to mark the wheel well opening as a reference point for later measurements. See page 4 for more information on measuring ride height.
- Jack the vehicle up so that the vehicle sets securely on the stand. **SEE YOUR VEHICLE OWNER'S MANUAL FOR PROPER JACKING LOCATIONS AND SHOCK/SPRING REMOVAL TECHNIQUES. DEATH OR SERIOUS INJURY CAN RESULT IF INSTRUCTIONS ARE NOT CORRECTLY FOLLOWED.**
- Remove the existing shocks and, if applicable, springs. Removing the wheels will provide easier access during the assembly process, but may not be necessary for all applications. Retain all hardware as it may be used later.
- **Go to page 4 for the Stocker Star[®] Instructions.**

ASSEMBLY INSTRUCTIONS <i>Proma Star[®] (DD, DS) Ultra Ride[®] (US) Aluma Matic[®] (ALN)</i>
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To maintain the integrity of the product, it is recommended that the shock be installed at the specific ride height for each model size to protect the piston and valve assembly from possibly topping or bottoming out.

SHOCK PART #	RECOMMENDED RIDE HEIGHT	RECOMMENDED SPRING LENGTH	RECOMMENDED APPLICATION
ALN-3855	9 ¾" – 10 ¼"	7"	FRONT
ALN-4855	12" – 12 ½"	9", 10"	FRONT / REAR
ALN-5855	13 ½" – 14"	12"	REAR
DD / DS-301, 302	9 ½" – 10"	7"	FRONT
DD / DS-303, 304	10 ¾" – 11 ¼"	7", 8", 9"	FRONT
DD / DS-401, 402	11 ½" - 12 ½"	9", 10"	FRONT / REAR
DD / DS-403, 404	12 ½" – 13 ¼"	10"	FRONT / REAR
DD / DS-501, 502	13 ¼" - 14 ½"	12"	REAR
DD / DS-701, 702	15 ¼" – 15 ¾"	14"	REAR
DD / DS-801, 802	16" – 16 ¾"	14"	REAR
DD / DS-901, 902	18 ½" – 19 ½"	14"	REAR
US301, US302	9 ¾" – 10 ¼"	7"	FRONT
US303, US304	10 ¾" – 11 ¼"	7", 8", 9"	FRONT
US401, US402	11 ¾" – 12 ½"	9", 10"	FRONT / REAR
US403, US404	12 ¾" – 13 ½"	10"	FRONT / REAR
US501, US502	13 ¾" – 14 ¼"	12"	REAR
US701, US702	15 ¼" – 15 ¾"	14"	REAR

- Clamp the lower mounting loop in a large vise. Use of soft jaws is recommended to protect the aluminum housing from scratches, etc.
- Screw the aluminum lock nut (shoulder up) and the spring seat adjuster nut (shoulder up) down to the last thread - NO FURTHER. Now is a good time to lubricate the threads of the shock body with an anti-seize lubricant. Pull the piston rod all the way out. Check the jam nut under the upper bearing housing and make certain that it is secure.
- QA1 highly recommends using the QA1 thrust bearing kit (part #7888-110) for ease of adjustment. **If the thrust bearing kit is used**, coat both washers with anti-seize lubricant. Install the stainless steel spring seat washer, then the bearing, then the second washer. **If the thrust bearing kit is not used**, coat one side of the stainless steel spring seat washer with anti-seize lubricant.
- Place the lubricated side of the washer down on the spring seat. Slide the spring over the shock body and down onto the spring seat. Slip the spring cap in place, making sure that it is set in the spring squarely. The spring rate and length selected for your application will determine how difficult they will be to install.
- Adjust the spring seat up until the spring is slightly compressed. This ensures that the spring cap, spring and spring seat washer remain in place and aligned. Make sure that the spring cap is aligned properly under the upper bearing mount.
- For poly bushing mounted shocks, insert the proper bushings into your poly mount and repeat for the other assembly.
- For bearing mounted shocks, test fit the bearings in both ends of the shock. Assemble by inserting the bearing in a twisting motion. Install snap rings on both sides of the bearing. In some cases it may be necessary to press the bearings into the mount. Be sure to only press on the race of the bearing – do NOT press on the ball. Repeat for the other assembly.
- Bolt both assemblies onto the car. Place the car on the ground and check the shock ride height measurements. Shock ride height is the distance from the center of the top mounting loop to the center of the bottom mounting loop. Make sure that the measurement is taken with the car weighted as it would be race ready. Compare this measurement to the recommended ride height listed for your part number in the chart above. Raise or lower the spring seat to obtain the required ride height while the weight of the vehicle is off the tires. If you have selected the proper spring rate, your spring seat should be approximately in the center to 1/3 from the bottom of the threaded area of the shock. If the spring seat is at either the extreme top or bottom of the threads, the purchase of a softer or stiffer spring may be required. Now spin the jam nut up to the bottom of the spring seat and lock them together.
- ***Go to Page 4 for valving adjustment instructions.***

<p>ASSEMBLY INSTRUCTIONS Stocker Star® (TD, TS, TR, TN)</p>
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FRONT SHOCKS:

Continued from page 2...

- With the floor jack under the control arm, remove the cotter pin from the lower ball joint, then loosen the nut on the ball joint.
- The floor jack should be positioned so it will not slip off the control arm. Split the ball joint with a tie rod wedge and slowly lower the jack. Slowly, **CAREFULLY**, let the A-arm assembly down until the spring is free and can be removed.
- To install the Stocker Star®, put the t-bar end of the shock through the hole in the control arm and install the 2 bolts on the t-bar – do not tighten fully at this point. Slide the coil spring over the shock and align the bottom properly in the control arm. Move assembly up into the spring pocket in the frame. Align the spring in the spring bucket and align the upper shock mount. Slowly jack the control arm up making sure not to bind the shock as the spring is compressed. Insert ball joint stud into spindle and reinstall the nut. Torque the ball joint stud to the factory specifications and reinsert the cotter pin. Next, tighten the two shock bolts in the control arm to factory specifications.

- Check the ride height of the shocks and make sure there is adequate travel in both directions. Repeat the complete procedure for the other side. A good rule of thumb is that about 60% of the stroke should be used for compression. If the ride height is not correct, damage may result and will not be covered under warranty.

REAR SHOCKS:

Continued from page 2...

- Start the reinstallation by mounting the upper portion first. Next, mount the lower portion of the shock to the rear end housing. There should be little or no modifications necessary.
- After a quick double check of the mounting hardware to ensure everything is secure, jack the rear end housing back up into the chassis. If the rear end housing has been lowered far enough to release the springs, make sure they are realigned as the housing is jacked back into place.
- Set car back on the ground.
- Check the ride height of the shocks and make sure there is adequate travel in both directions. A good rule of thumb is that about 60% of the stroke should be used for compression. If the ride height is not correct, damage may result and will not be covered under warranty.

Valving Adjustment Instructions For All QAI Adjustable Shocks

QAI shocks have 18 damping settings per knob. There are 6 clicks per revolution of each knob, and each knob has 3 complete revolutions. The knob set fully counter clockwise is the softest setting - start your adjusting from that point. Recommended base settings to begin testing with are as follows:

Shocks with one adjuster knob:

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|---------------------|---|
| Drag Racing: | 0-6 clicks |
| Other Applications: | 2-8 clicks for nice ride and handling;
8-12 clicks for firm ride and improved handling;
13+ clicks for more aggressive handling |

Shocks with two adjuster knobs:

- | | |
|---------------------|--|
| Drag Racing: | 12-16 clicks compression and 0-4 clicks rebound |
| Other Applications: | 2-8 clicks compression and rebound for nice ride and handling; 8-12 clicks for firm ride and improved handling;
13+ clicks for more aggressive handling |

NOTE: DO NOT FORCE THE ADJUSTER KNOB. DO NOT USE PLIERS OR ANY OTHER TOOLS ON THE PISTON ROD OR THE ADJUSTER KNOB. DO NOT EXCEED 18 CLICKS UNDER ANY CIRCUMSTANCES. THIS COULD DAMAGE THE SHOCK AND CAUSE IT NOT TO ADJUST. THIS WILL VOID ALL WARRANTIES. DO NOT USE THE SHOCK ABSORBER AS A SUSPENSION/ TRAVEL LIMITER. SEVERE DAMAGE TO THE SHOCK WILL OCCUR AND DOING SO WILL VOID ALL WARRANTIES.

TECHNICAL ASSISTANCE DIAGRAMS & CHARTS

