**QA1 DS403**

# QA1 DS403 Proma Star Twintube Shock Absorber Instruction Manual

Model: DS403

## 1. Introduction

This manual provides essential information for the proper installation, adjustment, and maintenance of your QA1 DS403 Proma Star Twintube Shock Absorber. Adhering to these instructions will ensure optimal performance and longevity of the product. Please read this manual thoroughly before proceeding with any installation or adjustment.

## 2. Product Overview

The QA1 DS403 is a Proma Star Twintube Shock Absorber designed for vehicle-specific applications. It features a single adjustable design, allowing for precise tuning of damping characteristics. Constructed from threaded aluminum with an anodized exterior finish, this shock absorber offers durability and performance.

- **Type:** Proma Star Twintube Shock
- **Adjustability:** Single Adjustable
- **Material:** Threaded Aluminum
- **Finish:** Anodized
- **Compressed Length:** 11.125 inches
- **Extended Length:** 15.00 inches
- **Outer Diameter:** 2.00 inches

Figure 2.1: QA1 DS403 Proma Star Twintube Shock Absorber and associated mounting hardware. This image displays the main shock body, two threaded collars, a spring seat, and various bushings and washers, illustrating the complete assembly.

## 3. Specifications

| Feature | Detail |
|---|---|
| Brand | QA1 |
| Model Number | DS403 |
| Style | Modern |
| Vehicle Service Type | Car, Truck |
| Exterior Finish | Anodized |
| Item Weight | 3.19 pounds (1.45 kg) |
| Product Dimensions | 19.1 x 4 x 3.6 inches (48.5 x 10.2 x 9.1 cm) |
| OEM Part Number | DS403 |
| UPC | 806990059758 |


Figure 3.1: Visual representation of the QA1 DS403 Shock Absorber with approximate length measurements indicated. The image shows the shock absorber held vertically, with a ruler graphic indicating a length of approximately 13 inches (33 cm).

## 4. Setup and Installation

**Important:** Professional installation is recommended. Improper installation can lead to vehicle damage or personal injury. Always refer to your vehicle's service manual for specific removal and installation procedures.

1. **Safety First:** Ensure the vehicle is securely supported on jack stands on a level surface. Disconnect the battery if working near electrical components.
2. **Remove Old Shock:** Carefully remove the existing shock absorber according to your vehicle manufacturer's instructions. This typically involves unbolting the upper and lower mounting points.
3. **Inspect Mounting Points:** Clean and inspect all mounting points for damage, wear, or corrosion. Replace any worn components.
4. **Prepare New Shock:** If applicable, install any necessary bushings or sleeves onto the QA1 DS403 shock absorber. Ensure all components are correctly oriented.
5. **Install New Shock:** Position the QA1 DS403 shock absorber into the mounting locations. Secure the upper and lower mounting bolts, but do not fully tighten them until the vehicle is at ride height.
6. **Final Tightening:** Once the vehicle is on the ground and at its normal ride height, fully tighten all mounting bolts to the vehicle manufacturer's specified torque values.
7. **Check Clearance:** Verify that the shock absorber has adequate clearance from all suspension and chassis components throughout its full range of motion.

Figure 4.1: Detailed view of the QA1 DS403 Shock Absorber, highlighting the threaded body and mounting eyelets. This image provides a clear look at the construction and finish of the shock absorber, which is crucial for proper installation and inspection.

## 5. Operating and Adjustment

The QA1 DS403 is a single adjustable shock absorber, meaning it allows for adjustment of both compression and rebound damping simultaneously with a single knob or dial. This adjustment affects the overall stiffness of the shock's resistance to movement.

### 5.1 Adjustment Procedure

1. **Locate Adjustment Knob:** The adjustment knob is typically located at the bottom or top of the shock body.
2. **Understand Clicks:** The adjustment mechanism usually operates in "clicks." Turning the knob will increase or decrease damping. Refer to QA1's specific documentation for the total number of clicks and their effect.
3. **Initial Setting:** Start with a recommended baseline setting (often provided by QA1 or found in performance guides). A common starting point might be midway through the adjustment range.
4. **Adjusting Damping:**
    - Turning the knob clockwise generally increases damping (firmer ride).
    - Turning the knob counter-clockwise generally decreases damping (softer ride).
5. **Test and Refine:** After making adjustments, test the vehicle in a safe environment. Make small, incremental changes and note the effect on ride quality and handling. Adjust all shocks equally for balanced performance.

**Note:** Always adjust shocks in pairs (front or rear) to maintain vehicle balance. Consult QA1's official resources for detailed adjustment guidelines specific to your application.

## 6. Maintenance

Regular maintenance ensures the longevity and consistent performance of your QA1 DS403 shock absorbers.

- **Regular Inspection:** Periodically inspect the shocks for signs of leaks, damage to the body or shaft, worn bushings, or loose mounting hardware.
- **Cleaning:** Keep the shock bodies clean, especially the threaded sections and adjustment mechanisms, to prevent dirt and debris from affecting performance or causing wear. Use mild soap and water, then rinse thoroughly.
- **Bushings:** Check rubber or polyurethane bushings for cracks, hardening, or excessive wear. Replace them if necessary to prevent noise and maintain proper articulation.
- **Mounting Hardware:** Verify that all mounting bolts are torqued to specification. Loose hardware can lead to noise, premature wear, and unsafe conditions.
- **Shaft Protection:** Ensure the shock shaft is free from nicks, scratches, or corrosion, as these can damage the internal seals and lead to fluid leaks.

## 7. Troubleshooting

This section addresses common issues you might encounter with your shock absorbers.

### 7.1 Common Issues and Solutions

- **Excessive Bouncing or Poor Ride Quality:**
  - **Cause:** Damping set too soft, worn internal components, or incorrect spring rate.
  - **Solution:** Increase damping (turn adjustment knob clockwise). Inspect for leaks or damage. Ensure correct spring rate for vehicle weight.
- **Harsh Ride or Lack of Suspension Travel:**
  - **Cause:** Damping set too stiff, incorrect spring rate, or shock bottoming out.
  - **Solution:** Decrease damping (turn adjustment knob counter-clockwise). Verify correct spring rate. Check for proper shock length for application.
- **Noise (Clunking, Squeaking):**
  - **Cause:** Loose mounting hardware, worn bushings, or internal shock damage.
  - **Solution:** Tighten all mounting bolts to specification. Inspect and replace worn bushings. If noise persists and no external cause is found, the shock may require professional inspection or replacement.
- **Fluid Leaks:**
  - **Cause:** Damaged seals, bent shaft, or manufacturing defect.
  - **Solution:** A leaking shock absorber indicates internal damage and requires replacement. Do not attempt to repair.

If troubleshooting steps do not resolve the issue, contact QA1 customer support or a qualified automotive technician.

## 8. Warranty and Support

For specific warranty information regarding your QA1 DS403 Proma Star Twintube Shock Absorber, please refer to the official QA1 website or the documentation provided at the time of purchase. QA1 products are designed for performance and durability, and the company stands behind its products with a commitment to quality.
For technical assistance, product inquiries, or warranty claims, please contact QA1 directly:

- **QA1 Official Website:** www.qa1.net
- **Customer Support:** Refer to the "Contact Us" section on the official QA1 website for phone numbers, email addresses, or online support forms.

Always provide your product model number (DS403) and purchase details when contacting support to expedite assistance.

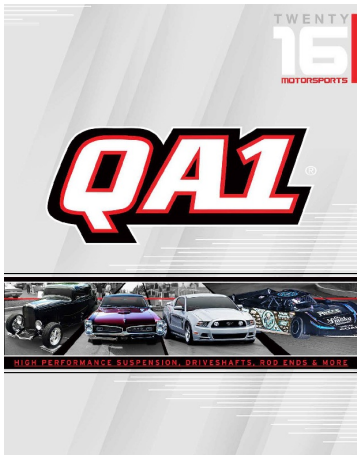


## Related Documents - DS403

| | |
|---|---|
|  | QA1 Universal HD Pro Rear Drag 4-Link Installation Instructions<br>Comprehensive installation guide for the QA1 Universal HD Pro Rear Drag 4-Link suspension kit (P/N Rx70-000, Rx70-110, Rx70-150, 7838-1067). Includes required tools, pre-installation notes, parts list, hardware details, vehicle preparation steps, and assembly instructions. |
|  | QA1 BAX120 Bump Steer Kit Installation Guide for 1999-2007 Silverado & Sierra<br>Comprehensive installation instructions for the QA1 BAX120 Bump Steer Kit, designed for 1999-2006 Chevrolet Silverado 1500, GMC Sierra 1500, and 2007 Classic models. Includes parts list, required tools, disassembly, installation steps, and warranty information. |
|  | QA1 Front Sway Bar Installation Instructions for Mopar A, B, and E-Body Vehicles<br>Detailed installation guide for QA1's 52861 & 52860 Front Sway Bars on Mopar '67-'72 A-Body, '66-'72 B-Body, and '70-'74 E-Body vehicles equipped with a QA1 K-member. Includes tools required, step-by-step instructions, torque specifications, and important safety notes. |
|  | QA1 Front Sway Bar Installation Instructions for GM Vehicles<br>Comprehensive installation guide for QA1 front sway bars on GM A, F, G-Body, and S-Series vehicles. Includes tools required, step-by-step instructions, and warranty information. |

| | |
|---|---|
|  | QA1 '07-'18 Silverado Rear Coil-over System Installation Guide (RDK52625, RDK52626, RDK52627)<br>Detailed installation instructions for the QA1 '07-'18 Silverado Rear Coil-over System (4-6 inch drop). Includes tools required, disassembly, assembly steps, hardware list, shock valving adjustments, and warranty information. |
|  | 26th Summit Racing Nationals Presented by PPG - Exhibitor List<br>Official exhibitor list for the 26th Summit Racing Nationals Presented by PPG, held July 12-14, 2024, at the Ohio Expo Center. Find participating companies and their booth locations. |

Documents - QA1 – DS403

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QA1 Suspension Parts Catalog performance suspension struts shocks coil springs leaf lift kits lowering sway bars bushings air CARiD GD601 f GS601 Chevelle Malibu 64 67 Double Single Drag R Series Non Adj Steel TD507 TS507 TR507 TN507 EC1956P TD801 l TS801 qa1 2016 motorsports catalog images carid info |||

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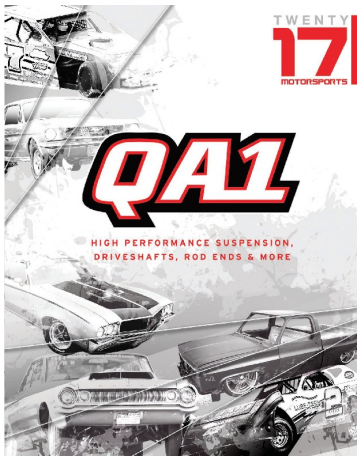


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QA1 Performance Suspension Parts Catalog performance suspension shocks struts coilovers lift kits lowering handling leveling alignment conversion air coil springs leaf helper torsion bars sway bushings braces traction panhard torque arms 4 link frames ball joints steering dampers bump stops skid plates car truck suv CARiD Available in 2 25 and 3 Diameters s driveshafts that utilize 1310 1330 1350 or 3R Series U are for vehicles with up to 750 HP qa1 catalog images carid info

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