



A Chris Alston's Chassisworks, Inc. Brand

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## VariShock Smooth-Body Shock Absorbers Poly-Stem, Poly-Eye, and Bearing-Eye Mounts



### Features

- Available in 8 travel lengths (2.8 to 9.75 in.)
- All aluminum design for minimum weight
- Made in America
- Urethane bushing or Teflon®-lined spherical-bearing mounting eyes; urethane top stem also available
- Individually dyno-tested and calibrated to assure uniform performance
- Revolutionary adjuster mechanism provides shorter body at any travel length
- Urethane mounting-eye contains 3.5 times the amount of urethane material for longer life
- Rebuildable

### Adjustment

- **QuickSet 1** - Single-adjustable, 16-position knob adjusts bumps and rebound simultaneously
- **QuickSet 2** - Double-adjustable, dual 16-position knobs adjust bump and rebound independently

Smooth body shocks are most popular with our street rod and custom car builders for their versatile range of travel lengths and ease of use when retrofitting existing suspensions or working within OEM chassis features. These features also make them an excellent solution for adding a performance adjustment feature to nearly any suspension regardless of performance application.

Choose from single- or double-adjustable valve adjustment with ride-height length ranges of 9.11" to 23.34", and travel lengths of 2.8" to 9.75" respectively. Street-friendly urethane bushing mounts are available in both stem- (top only) or eye-styles. For more positive suspension control COM-8 spherical bearings can be selected.

## Mounting Eyes (Top Mount or Base)

We built two separate eyes to maximize the benefits of each mounting-eye style. The spherical-bearing eyes use a COM-8 1/2" bore x 1" wide high-misalignment bearing with a Teflon liner as standard. The eye has more clearance around the mounting brackets than any other design. The urethane end has up to 350% more urethane material than other brands, for superior load distribution, yet no less clearance around the eye. We also chose a premium urethane that has much higher load capacity for improved life than the poly bushings from other manufacturers. Urethane ends are 1-1/4" wide and accept 1/2" or 5/8" bolts.

### Poly Spool Bushing Eye



Urethane Spool Bushing Eye  
(1/2" or 5/8" Bore, 1-1/4" wide)



### COM-8 Bearing Eye



Spherical Bearing Eye  
(COM-8, 1" wide)



### Poly Bushing Stem (Top Mount Only)

The stem style top mount is extremely useful when retrofitting OEM suspensions or fabricating a simple mounting bracket. In either case a .70" mounting hole is required to correctly fit the urethane bushing pair, a common size in OEM applications.



Urethane Stem Bushings (.70" Nipple)



3/8"-24 Stem



## QuickSet Valve System

The VariShock QuickSet series allows you to easily tune your suspension for improved cornering and acceleration traction, or to quickly adapt to current track conditions. Adjustment takes only a few seconds and is made with the VariShock installed on the vehicle. Readily accessible, 16-position adjustment knobs can be operated by hand or with the aid of a common allen wrench.



**QuickSet 1** features a single adjustment knob that controls overall damping stiffness of the shock. Knobs are clearly etched indicating the correct direction of rotation to decrease (-), or increase (+) damping stiffness. There are a total of 16 specific adjustment positions.



**QuickSet 2** features dual adjustment knobs that independently control bump- and rebound-damping stiffness of the shock. Dual-arrow symbols engraved into the shock body demonstrate the function of each knob. Arrows pointing toward each other designate bump (compression)

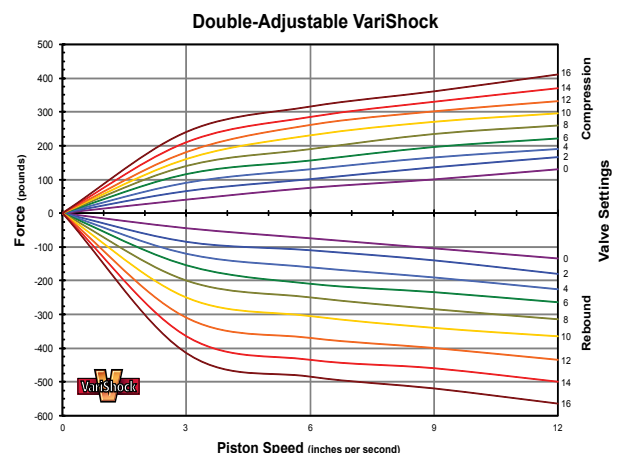
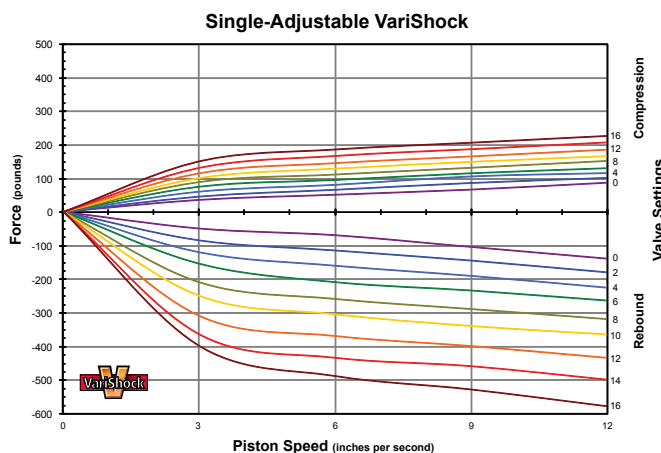
adjustment; the shock collapsing. Arrows pointing away from each other represent rebound (extension) adjustment; the shock extending. There are 16 specific adjustment positions for each knob, with a total of 256 unique combinations possible. Each adjustment position is indicated by a detent that can be felt when turning the knob, and an audible click (as the knob gently locks into position). Only very light force is necessary to rotate the knob past each detent.

## The Truth About 16- vs. 24-Clicks

Don't be fooled by shocks offering more adjustment clicks. They are actually 1/2-click adjustments. The manufacturer merely added more detents to the mechanism without increasing the range of adjustment. This practice gives more clicks, but the adjustment is so slight that your vehicle will not respond to the change. A 16-position VariShock actually has a broader range of adjustable force with the added benefit of a more manageable number of adjustments to try.

## VariShock Dyno Graphs

A shock dyno graph displays how much force is required to compress or extend the shock over a range of piston speeds (Force vs. Absolute Velocity). For readability purposes, the following graph only plots response curves for every other adjustment setting of the Bolt-In QuickSet 2 VariShock. The shock's digressive valving curve can be easily identified by the steeper incline in the slowest piston speeds and more level response as piston speed increases. Each setting provides an even increase of stiffness in relatively even increments across the entire range without deviation from the general response curve. This consistency can be found throughout the VariShock product line and makes suspension tuning simple and intuitive. VariShock compression and rebound adjustments are completely independent from each other. Adjustment of one direction of shock travel does not inadvertently affect the other, enabling you to find the correct settings for your vehicle in less time.

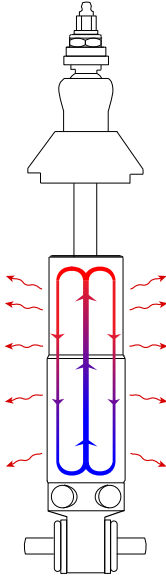


## VariShock Design

The VariShock product line offers an affordable and versatile, high-end performance improvement over OEM replacements and traditional twin-tube shock absorbers. Our updated design overcomes the major shortcomings of traditional gas shocks and low-end twin-tube shocks. VariShocks provide a more usable adjustment range and response curve, improved heat dissipation, and lightweight billet-aluminum construction.

## Improved Heat Dissipation

Traditional twin-tube shocks provide damping force by moving fluid back and forth between the inner compression tube and the surrounding reservoir. This rapidly heats the fluid that remains trapped inside the compression tube, causing outgassing and shock fade. VariShock's system of internal valves circulates fluid in a single direction through the shock absorber body, utilizing the entire volume of fluid to absorb heat. Thermally conductive materials are used internally to further help equalize fluid temperature. Heat energy is then dissipated through the shock base and body. Coil-over threaded bodies provide additional surface area for more rapid cooling.



## Fluid Control

A shock's purpose is to limit the rate at which the suspension moves, whether induced by road irregularities or by chassis movement. By carefully controlling the rate of fluid flow into the different areas of the shock we can better manage the suspension's ability to keep the tire in contact with the road. VariShocks operate with zero bleed, meaning that absolutely all fluid flow is purposely directed and metered. By contrast, many manufacturers skimp on sealing the shocks internally to lower manufacturing costs. The allowed internal leakage makes valving adjustments less effective and lacking in precision. The VariShock total-seal design gives you improved control over the entire range of damping and enhances adjustment effectiveness at the slower range of piston speeds (0-4 in/sec) that control small chassis movement and vehicle ride quality.

A combination of fatigue-resistant deflective-

disk and adjustable poppet valves focus damping forces at a range useful to the widest variety of vehicle types and performance applications. Damping-force ranges differ depending upon the adjustment features and mounting configuration of the shock. Custom valve sets are also available to alter the adjustment range of compression or rebound independently. VariShocks provide digressive damping to permit finer adjustment at the higher range of piston speeds (6-12 in/sec) that control rapid suspension movement and ride harshness. To give better control of vehicle-handling without rapidly increasing ride harshness, rebound (extension) valving is purposely stiffer with a broader adjustment range.

## VariShock Quality

Delivering a finished product that is of excellent quality and value is the primary focus throughout the VariShock product line. Unlike other brands in this price range, VariShocks are engineered, manufactured, and assembled in America using state-of-the-art engineering workstations and computer-numeric-controlled (CNC) manufacturing equipment. Each component, including valves, adjusters, and internal shaft seals is designed and manufactured specifically for use in VariShock products. This level of clean-sheet engineering is the first step to producing longer lasting seals that keep dirt out of the shock absorber and extend service life between rebuilds.

Assembly of the components is equally important to delivering a quality product. To avoid the possibility of manufacturing debris contaminating the shock fluid and seals, the VariShock-assembly clean room is housed in a completely separate facility. After assembly, each shock is thoroughly dyno-tested and calibrated to meet VariShock's strict performance goals. This ensures virtually identical performance from every pair throughout their entire range of travel. By carefully controlling engineering, manufacturing, assembly, and final testing, VariShock can confidently deliver the highest-quality product with the most value for our customers.



## Choosing Correct Shock Length

Selecting the correct length shock for your application requires measuring between the chassis mounting points with the suspension at the normal ride height position. That measurement must fall between the minimum and maximum ride height length for a given shock travel length. When a shock is at ride height a certain amount of travel is available in either direction. Depending upon performance application, shock travel will be reserved in different percentages for compression or extension.



### ■ Eye-Style Top Mount and Base

MINIMUM RIDE HEIGHT (STREET)			MAXIMUM RIDE HEIGHT (DRAG)			SHOCK LENGTH		
RIDE <sup>1</sup>	BUMP <sup>2</sup>	REBOUND <sup>2</sup>	RIDE <sup>1</sup>	BUMP <sup>2</sup>	REBOUND <sup>2</sup>	TRAVEL	EXTENDED <sup>1</sup>	COMPRESSED <sup>1</sup>
9.67"	1.12"	1.68"	10.23"	1.68"	1.12"	2.80"	11.35"	8.55"
10.70"	1.40"	2.10"	11.40"	2.10"	1.40"	3.50"	12.80"	9.30"
11.75"	1.70"	2.55"	12.60"	2.55"	1.70"	4.25"	14.30"	10.05"
13.01"	2.06"	3.09"	14.04"	3.09"	2.06"	5.15"	16.10"	10.95"
14.41"	2.46"	3.69"	15.64"	3.69"	2.46"	6.15"	18.10"	11.95"
15.81"	2.86"	4.29"	17.24"	4.29"	2.86"	7.15"	20.10"	12.95"
17.34"	3.30"	4.95"	18.99"	4.95"	3.30"	8.25"	22.29"	14.04"
19.44"	3.90"	5.85"	21.39"	5.85"	3.90"	9.75"	25.29"	15.54"



### ■ Stem-Style Top Mount and Eye-Mount Base

MINIMUM RIDE HEIGHT (STREET)			MAXIMUM RIDE HEIGHT (DRAG)			SHOCK LENGTH		
RIDE <sup>1</sup>	BUMP <sup>2</sup>	REBOUND <sup>2</sup>	RIDE <sup>1</sup>	BUMP <sup>2</sup>	REBOUND <sup>2</sup>	TRAVEL	EXTENDED <sup>1</sup>	COMPRESSED <sup>1</sup>
9.15"	1.70"	2.55"	11.70"	2.55"	1.70"	4.25"	12.55"	8.30"
10.23"	2.06"	3.09"	13.32"	3.09"	2.06"	5.15"	14.35"	9.20"
11.43"	2.46"	3.69"	15.12"	3.69"	2.46"	6.15"	16.35"	10.20"
12.63"	2.86"	4.29"	16.92"	4.29"	2.86"	7.15"	18.35"	11.20"
13.95"	3.30"	4.95"	18.90"	4.95"	3.30"	8.25"	20.55"	12.30"

### Street Baseline: 60-percent Bump, 40-percent Rebound

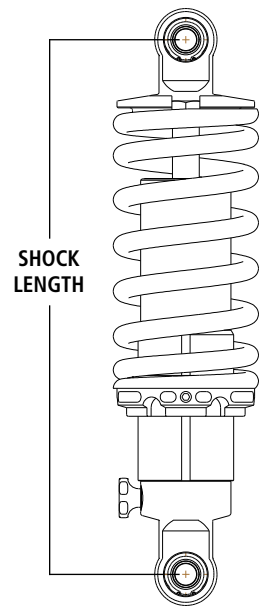
Street vehicles require more available compression (bump) travel for improved ride quality and unexpected road hazards. At baseline ride height, the shock and spring should collapse 40-percent from their installed heights. This results in 40-percent of travel available for extension and 60-percent for compression travel.

### Handling Baseline: 50-percent Bump, 50-percent Rebound

Handling performance applications are usually limited to smooth prepared road-course- or autocross-tracks, therefore less compression travel is required. Suspension geometry or track conditions may require the travel percentages to be shifted to prevent topping- or bottoming-out the shock.

### Drag Race Baseline: 40-percent Bump, 60-percent Rebound

Drag race vehicles generally require more extension (rebound) travel to help weight transfer, and because the drag strip is very flat, less compression travel is needed. The amount of extension travel available in the shock will drastically affect how the car works. At baseline ride height, the shock and spring should collapse 60-percent from their installed heights. This results in 60-percent of travel available for extension and 40-percent of compression travel.



Shock length is measured from the center of each mounting eye.

# QuickSet 1 Single-Adjustable Smooth-Body Shocks



## ■ Upper Poly-Bushing Stem & Lower Poly-Bushing Mounting Eye

- **Upper Mount:** Poly-urethane bushing, 3/8" stem for .70" mounting hole
- **Lower Mount:** Poly-urethane bushing eye for 1/2" or 5/8" hardware and 1-1/4" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12142-425	BOTH	4.25"	8.30"	12.55"	9.15"	11.70"
VAS 12142-515	BOTH	5.15"	9.20"	14.35"	10.23"	13.32"
VAS 12142-615	REAR	6.15"	10.20"	16.35"	11.43"	15.12"
VAS 12142-715	REAR	7.15"	11.20"	18.35"	12.63"	16.92"
VAS 12142-825	REAR	8.25"	12.30"	20.55"	13.95"	18.90"

NOTES - LENGTH MEASURED FROM CENTER OF LOWER EYE TO WASHER SHOULDER OF PISTON ROD; SOLD ONLY IN PAIRS



## ■ Dual Poly-Bushing Mounting Eyes

- **Upper Mount:** Poly-urethane bushing eye for 1/2" hardware and 1-1/4" clevis
- **Lower Mount:** Poly-urethane bushing eye for 1/2" hardware and 1-1/4" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12122-280	FRONT	2.80"	8.55"	11.35"	9.11"	10.79"
VAS 12122-350	FRONT	3.50"	9.30"	12.80"	10.00"	12.10"
VAS 12122-425	BOTH	4.25"	10.05"	14.30"	10.90"	13.45"
VAS 12122-515	BOTH	5.15"	10.95"	16.10"	11.98"	15.07"
VAS 12122-615	REAR	6.15"	11.95"	18.10"	13.18"	16.87"
VAS 12122-715	REAR	7.15"	12.95"	20.10"	14.38"	18.67"
VAS 12122-825	REAR	8.25"	14.04"	22.29"	15.69"	20.64"
VAS 12122-975	REAR	9.75"	15.54"	25.29"	17.49"	23.34"

NOTES - LENGTH MEASURED FROM CENTERS OF EACH MOUNTING EYE; SOLD ONLY IN PAIRS



## ■ Dual Spherical-Bearing Mounting Eyes

- **Upper Mount:** COM-8 bearing eye for 1/2" hardware and 1" clevis
- **Lower Mount:** COM-8 bearing eye for 1/2" hardware and 1" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12111-280	FRONT	2.80"	8.55"	11.35"	9.11"	10.79"
VAS 12111-350	FRONT	3.50"	9.30"	12.80"	10.00"	12.10"
VAS 12111-425	BOTH	4.25"	10.05"	14.30"	10.90"	13.45"
VAS 12111-515	BOTH	5.15"	10.95"	16.10"	11.98"	15.07"
VAS 12111-615	REAR	6.15"	11.95"	18.10"	13.18"	16.87"
VAS 12111-715	REAR	7.15"	12.95"	20.10"	14.38"	18.67"
VAS 12111-825	REAR	8.25"	14.04"	22.29"	15.69"	20.64"
VAS 12111-975	REAR	9.75"	15.54"	25.29"	17.49"	23.34"

NOTES - LENGTH MEASURED FROM CENTERS OF EACH MOUNTING EYE; SOLD ONLY IN PAIRS

## QuickSet 2 Double-Adjustable Smooth-Body Shocks



### ■ Upper Poly-Bushing Stem & Lower Poly-Bushing Mounting Eye

- **Upper Mount:** Poly-urethane bushing, 3/8" stem for .70" mounting hole
- **Lower Mount:** Poly-urethane bushing eye for 1/2" or 5/8" hardware and 1-1/4" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12242-425	BOTH	4.25"	8.30"	12.55"	9.15"	11.70"
VAS 12242-515	BOTH	5.15"	9.20"	14.35"	10.23"	13.32"
VAS 12242-615	REAR	6.15"	10.20"	16.35"	11.43"	15.12"
VAS 12242-715	REAR	7.15"	11.20"	18.35"	12.63"	16.92"
VAS 12242-825	REAR	8.25"	12.30"	20.55"	13.95"	18.90"

NOTES - LENGTH MEASURED FROM CENTER OF LOWER EYE TO WASHER SHOULDER OF PISTON ROD; SOLD ONLY IN PAIRS



### ■ Dual Poly-Bushing Mounting Eyes

- **Upper Mount:** Poly-urethane bushing eye for 1/2" hardware and 1-1/4" clevis
- **Lower Mount:** Poly-urethane bushing eye for 1/2" hardware and 1-1/4" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12222-280	FRONT	2.80"	8.55"	11.35"	9.11"	10.79"
VAS 12222-350	FRONT	3.50"	9.30"	12.80"	10.00"	12.10"
VAS 12222-425	BOTH	4.25"	10.05"	14.30"	10.90"	13.45"
VAS 12222-515	BOTH	5.15"	10.95"	16.10"	11.98"	15.07"
VAS 12222-615	REAR	6.15"	11.95"	18.10"	13.18"	16.87"
VAS 12222-715	REAR	7.15"	12.95"	20.10"	14.38"	18.67"
VAS 12222-825	REAR	8.25"	14.04"	22.29"	15.69"	20.64"
VAS 12222-975	REAR	9.75"	15.54"	25.29"	17.49"	23.34"

NOTES - LENGTH MEASURED FROM CENTERS OF EACH MOUNTING EYE; SOLD ONLY IN PAIRS



### ■ Dual Spherical-Bearing Mounting Eyes

- **Upper Mount:** COM-8 bearing eye for 1/2" hardware and 1" clevis
- **Lower Mount:** COM-8 bearing eye for 1/2" hardware and 1" clevis

PART NUMBER	USAGE	TRAVEL	COLLAPSED LENGTH	EXTENDED LENGTH	RIDE-HEIGHT MINIMUM	RIDE-HEIGHT MAXIMUM
VAS 12211-280	FRONT	2.80"	8.55"	11.35"	9.11"	10.79"
VAS 12211-350	FRONT	3.50"	9.30"	12.80"	10.00"	12.10"
VAS 12211-425	BOTH	4.25"	10.05"	14.30"	10.90"	13.45"
VAS 12211-515	BOTH	5.15"	10.95"	16.10"	11.98"	15.07"
VAS 12211-615	REAR	6.15"	11.95"	18.10"	13.18"	16.87"
VAS 12211-715	REAR	7.15"	12.95"	20.10"	14.38"	18.67"
VAS 12211-825	REAR	8.25"	14.04"	22.29"	15.69"	20.64"
VAS 12211-975	REAR	9.75"	15.54"	25.29"	17.49"	23.34"

NOTES - LENGTH MEASURED FROM CENTERS OF EACH MOUNTING EYE; SOLD ONLY IN PAIRS

## Smooth-Body Shock Accessories

### ■ Shock Extended Eye

Increasing vehicle ride height without disrupting the correct balance of shock travel has never been simpler. Our direct-replacement, billet-aluminum shock mounts feature a 1" extended body, and reuse your existing VariShock polyurethane bushings. Mounts simply screw onto the top of the shock's piston rod and are secured by a jam nut. Extended eyes can be used with any VariShock coil-over shock to raise ride height. Proper suspension travel and clearance must be verified prior to installation. Poly bushings and sleeves not included.



VAS 512-1-2	1" -EXTENDED TOP SHOCK EYE, COM-8 (PAIR)
VAS 512-2-2	1" -EXTENDED TOP SHOCK EYE, POLY (PAIR)

### ■ Custom Built Shock Program

Having issues finding just the right shock? VariShock's Builder Shock Program could be the answer. Choose from coil-over, smooth-body, or air-spring shocks, with dozens of mounting styles, and a broad range of travel lengths.

**Download the full program guide [HERE](#).**



All prices subject to change. Current pricing available at [www.VariShock.com](http://www.VariShock.com).



A Chris Alston's Chassisworks, Inc. Brand

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