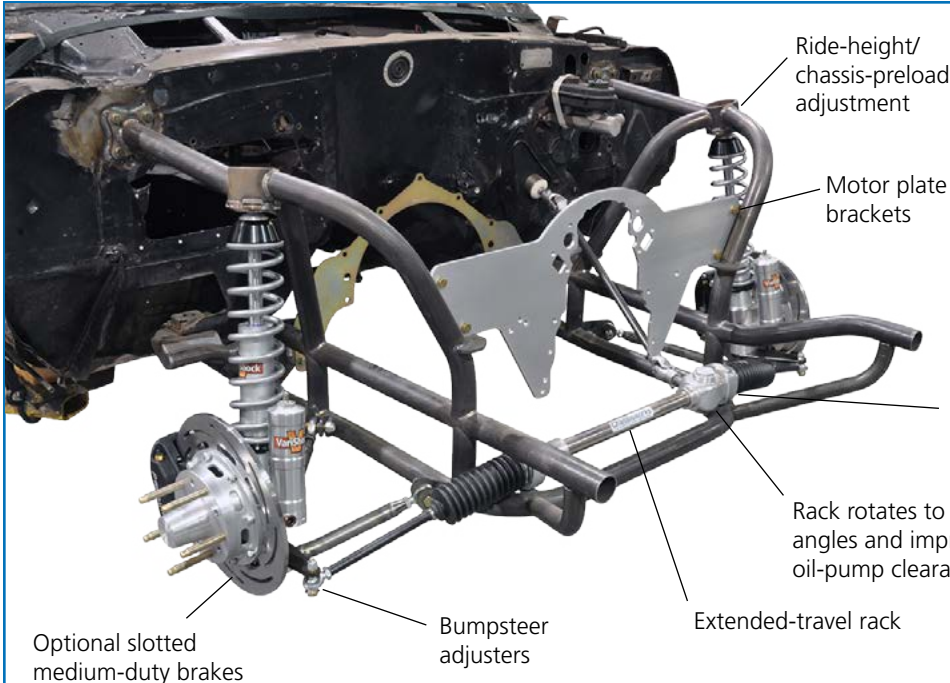


**Professional Grade Bolt-On Drag-Race Strut Clip  
 Fits '67-'69 Camaro and '68-'72 Nova**

*Absolutely the finest no-compromise product available for serious racers*



**Extremely  
 Lightweight  
 System!**

Bare Clip (60 lb.),  
 Complete System (144 lb.)

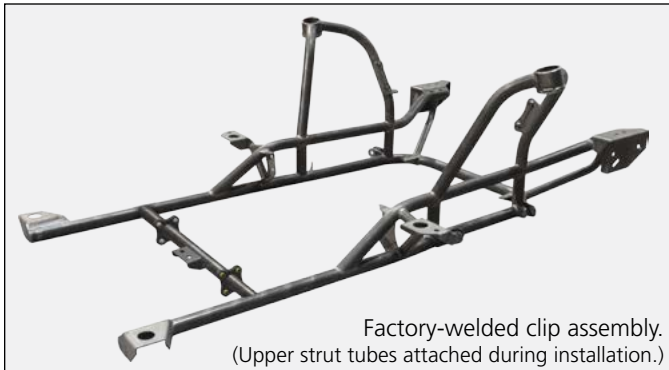
Optional slotted  
 medium-duty brakes

Bumpsteer  
 adjusters

Extended-travel rack

Quick-release rack  
 mounts facilitate  
 engine removal

Rack rotates to minimize u-joint  
 angles and improve exhaust and  
 oil-pump clearance

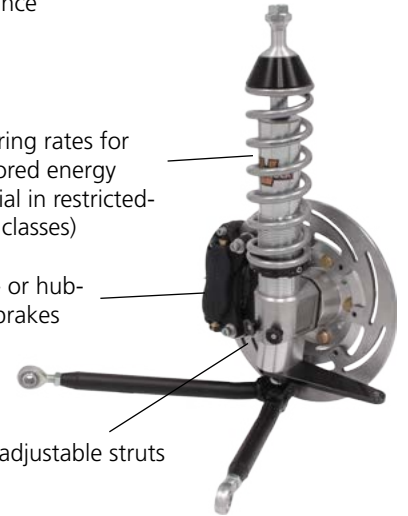


Factory-welded clip assembly.  
 (Upper strut tubes attached during installation.)

Light spring rates for  
 more stored energy  
 (beneficial in restricted-  
 tire-size classes)

Spindle- or hub-  
 mount brakes

Double-adjustable struts



**Bolt-On Drag-Race Camaro Strut Clip**

We continue to raise the bar with our extremely lightweight (144 lb.) direct bolt-on drag race strut suspension system for '67-'69 Camaros and '68-'72 Novas. Clips are factory-welded 1-5/8" 4130 tubing, with mount options for small-block, big-block, and LS-series engines. Installation requires upper strut cups be attached to existing cage sides. The design features space for tall-deck engines with large-diameter headers, easy engine removal and completely accessible oil pan. System includes the frame clip, double-adjustable billet VariStruts, tubular control arms with 4130 rod ends, billet-aluminum drag-race rack with extended-travel for sharper turning radius, billet rack clamps, bumpsteer adjustable tie-rod ends, and complete disc-brake set with billet hubs, lightweight rotors and aluminum calipers. Many additional options also available (see back page).

**Features**

- Lightweight 4130 tubular design
- Double-adjustable strut valving in single-body or piggyback reservoir versions
- Complete bolt-on installation
- 6"-travel billet VariStruts
- Extended-travel billet rack and pinion provides sharper turning radius
- Optional bumper/core-support mounts

## Strut Clip Welded Assembly

State-of-the-art engineering workstations with Pro/ENGINEER software were used to design the strut front-clip welded assembly. Finite element analysis (FEA) aided in finalizing an efficient design, strong enough to exceed the demands of today's high-horsepower OUTLAW drag-race cars without adding unnecessary material to remain a lightweight assembly.

The clip is constructed entirely from 4130 chrome-moly steel, including the main structural tubes, mounting brackets, strut mounts, and billet strut-adjuster bosses. Clips are shipped as a bare-steel factory-welded assembly, ensuring perfect geometry and eliminating the need to weld multiple pieces or make complicated measurements while installing the system. The lower portion of the clip features dual tubes tied together with vertical supports for added strength along the drivetrain path and directly above each lower control arm mount. This structure also has the added benefit of larger weld contact areas and broader footprints at the



lower firewall mounts. A single-piece bottom tube serves as a seamless crossmember, leaving the engine very accessible and avoiding unnecessary welded joints. Rack and pinion brackets are mounted to the crossmember forward of the clip's upright tubes and allow the rack to be simply moved out of the way during engine removal without disturbing the alignment settings. All structural bracing is purposefully placed between the firewall and crossmember to eliminate unnecessary weight forward of the suspension and steering. Only the center tube extends forward and can be equipped with an optional bracket that enables bolt-on installation of the factory bumper mounts and radiator core support. Strut hoops feature multiple bends to accommodate the upper strut mount and motor-plate brackets and continuing downward to tie directly into the two lower structural tubes. An additional forward support strut must be added by the builder, connecting the top strut mount cup and roll cage. The motor-plate brackets are mounted along the most upright portion of the clip to provide the greatest strength and stability for the engine. A folded gusset captures the tube and also provides a bottom stop should the engine fall below the correct alignment level during installation.



## Optional Bumper/Core Support Bracket

Reusing the factory front-bumper mounts or radiator core support has been turned into a simple bolt-on installation. Chassisworks is the only manufacturer to engineer such a complex, yet cost effective, time-saving solution. The boxed portion of the bracket is made from

a single-piece of 4130 steel plate that is laser-cut, folded by CNC bender, and finally welded along its seams. The core support tab utilizes our slot/tab assembly method to ensure it is perfectly positioned before being welded to the boxed portion.

## Motor- and Mid-Plates

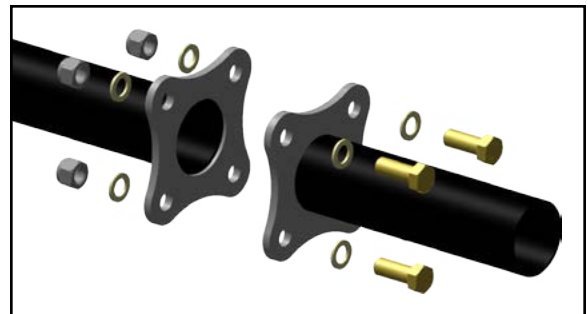
Factory-welded motor-plate mounting tabs make installation of our profile-milled aluminum motor plates easy and extremely clean. Small-block Chevy

motor plates are a direct fit, but big-block and LS Chevy plates require billet adapters. Mid plates bolts directly to the factory lower frame mounts using special adapter brackets and fits V8, LS and other similar bellhousings.



## SFI-Spec Removable Chassis Brace

Removable chassis brace with transmission mount; meets SFI certification requirements.



## Rack-and-Pinion Billet Mounts

To facilitate rack-and-pinion installation and removal for easier engine maintenance, lightweight billet aluminum mounting brackets are used. Our unique clamping installation method and short pinion shaft move the lower U-joint farther below the exhaust and enable the rack to be rotated within its mounts to adjust steering-shaft clearance and universal-joint angles. Mount bases and outer clamps seat into mating grooves at the widest portion of the rack body, forming a broad, deflection free mount assembly that completely prevents the rack from shifting. Mount sets are silver-anodized satin finished and include necessary hardware.

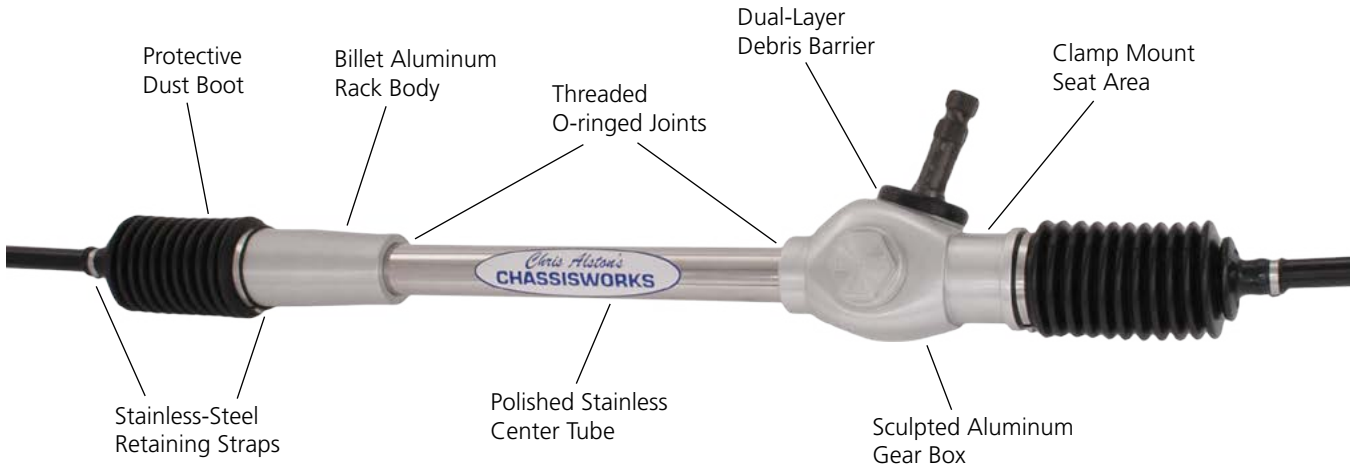




## Drag-Race Billet Rack and Pinion

Our all new drag-race billet rack cures the annoyance of inadequate turning radius when maneuvering around the pits by increasing rack travel to 6-5/8". The additional travel does not disrupt the high-speed stability of the strut's slower steering geometry created by lengthening the steering arms but simply allows you to turn the strut at sharper angles when needed. The rack-and-pinion main body is made up of three

components threaded together at O-ring-sealed joints to create a rigid, lightweight structure. A sturdy, polished, stainless-steel center tube connects the gear box to the outer body and features a smaller diameter for additional harmonic-balancer clearance. The gear box and opposite-end rack body are CNC-machined from aluminum to increase wall thickness for added strength directly under the rack mounting clamps without excessive weight.



## Unique Sculpted Gear Box

A sculpted-surface gear box shape was developed through the use of finite element analysis (FEA) software to eliminate fatigue points, minimize gear box deflection, and provide an attractive modernized appearance. Due to the complexity in engineering and machining this component, most manufacturers are limited to inferior cast or simple geometric designs. To attach the protective rubber boots at each end of the rack assembly, external grooves are present for slip-proof installation and easy replacement if ever necessary.

## Internal Components

The helical-cut pinion gear and rack shaft are supported by a combination of low-friction, polymer bushings and roller bearings for smooth gear engagement and extended service life. A spring-loaded gear-lash mechanism enables precise and predictable "zero-play" steering with no need for future adjustment. Tie-rods are screwed directly into the rack gear and locked using crush tabs to prevent loosening. During final assembly all internal components are thoroughly lubricated and the rack completely sealed to prevent contaminants from entering. To reduce wear, internal stops prevent unnecessarily loading the tie-rod pivots.

## Bumpsteer Tie-Rod Sets

Chassisworks' bumpsteer kit utilizes a high-strength, 4130-body rod end, 3/8" Grade 8 bolt, along with a selection of shims to enable vertical adjustment of the outer pivot point at the steering arm. This lets you correct unwanted toe-in changes during suspension travel to maintain steering predictability.



## Brake Options

Standard brake options include billet aluminum single-piston floating calipers with 10-1/4" rotors for spindle-mounted wheels or dual-piston fixed calipers with 10" rotors for hub-mounted wheels. A four-piston forged-aluminum caliper with 11-3/4" rotor option is also available for heavier vehicles. Slotted rotors further reduce weight.

### Spindle-Mount Brakes ▶

- **Caliper:** Billet aluminum, single-piston, floating caliper (black anodized)
- **Rotor:** 10.25 x .25", solid (slotted rotor standard)
- **Hat:** Billet aluminum, silver-anodized finish
- **Fits:** Weld Racing Wheels - Alumastar 2.0 (788-15001) and Magnum Pro (786-15001 or 786P-15001) and American Racing Wheels - Torq Thrust® Pro (48553S) and TrakStar (48053SBC or 48053S)



### Light-Duty Brakes ▶

- **Caliper:** Billet aluminum, dual-piston, fixed caliper (black anodized)
- **Rotor:** 10.00 x .35", slotted
- **Hub:** Billet aluminum, silver-anodized finish, 4-1/2" and 4-3/4" 5-lug patterns



### ◀ Medium-Duty Brakes

- **Caliper:** Forged aluminum, four-piston, fixed caliper (black anodized or optional polished finish)
- **Rotor:** 11.75 x .35", slotted
- **Hub:** Billet aluminum, silver-anodized finish, 4-1/2" and 4-3/4" 5-lug patterns

## Billet VariStruts

To take full advantage of Chassisworks' advanced manufacturing capabilities, a complete custom bolt-on strut was developed by our sister company, VariShock. Installed height, travel, valving range and mounting configuration are built to our exact specifications, whereas other manufacturers are forced to compromise with "off-the-shelf" products. Billet VariStruts feature double-adjustable valving, an adjustable-height spherical-bearing top mount, and 6" of suspension travel; ideal for restricted tire-size racing classes. The dual 16-position valve-adjustment knobs allow you to precisely tune the rate of weight transfer at launch and how the chassis settles down track.

## Adjustable-Height Stem Mount

The billet VariStrut uses Chassisworks' exclusive threaded spherical-bearing top mount, adding a means to fine tune ride height, chassis preload and balance without sacrificing available suspension travel. Billet aluminum bearing housing adjusters feature high-load-capacity threads with multiple ball-lock grooves, allowing precise incremental adjustment. A hex adjustment wrench is included.

## Lower Control Arm

The tubular lower control arm assembly features spherical bearings at each pivot point to provide free movement, adjustable alignment, and simple component replacement. Each 4130 tube is fitted with a threaded billet tube adapter at one end and a special male tab or bearing housing clevis at the opposite end. Chrome-moly (4130) body rod ends included.

## Double-Adjustable 16-position Knobs

VariShock's QuickSet 2 double-adjustable valve mechanism enables independent bump and rebound adjustment for the ultimate in tuning vehicle launch characteristics. Simply by rotating two fully accessible 16-position knobs 256 different settings are attainable. Adjustments are made in seconds without tools or the need to remove or unbolt the strut. Each knob is laser-etched with directional arrows and "plus/minus" symbols to clearly indicate which direction achieves the desired adjustment. Additional arrows etched into the strut's base reveal which knob sets bump, and which sets rebound.

## High-Rebound - Piggyback Reservoir

VariShock's piggyback-style, 6" travel, drag race strut achieves significantly higher rebound forces than our single-body struts through use of a completely new valve system. The combination of finer control at higher pressures with increased fluid volume greatly improves the struts ability to control the front end's reaction during launches. This is a highly recommended upgrade for extreme horsepower, small-tire vehicles competing at the top rank of professional levels.





## Locking Lower Spring Seat

A new-design, one-piece lower spring seat does not require a lock nut; it's locked in place by two ball locks that press into the grooves on the reservoir body and easily unlock with an Allen wrench for adjustment.

## Revolutionary Strut Body

Our billet alloy-steel strut body features an integrated spindle as opposed to a press-in spindle component. This exclusive manufacturing method frees up valuable space and allows the reservoir to be moved downward, behind the spindle. Within the spindle base is a revolutionary adjustment mechanism that is packaged tighter than any previous design. The net result is 6" of suspension travel without increasing the overall height of the strut. "Deflective Disk Valving" is used to eliminate spring fatigue. Piston rods are made from 7/8" centerless ground hard chrome steel for wear resistance and long service life.

## High Travel VariSprings

The new VariSpring line of springs was designed to complement the VariShock family. Once again we used higher technology to resolve application limitations. These springs are manufactured using a new high tensile wire, which is stronger than the chrome-silicon wire used by other manufacturers. This allows the springs to "set solid." The springs can compress until the coils touch without damaging the spring or causing it to take a set, which ultimately changes the ride height. Since this wire can flex more than conventional chrome-silicon wire, these springs have greater travel than our competitors' springs of the same rate. These springs will allow your shocks to travel their full range of motion without going solid. This gives you greater traction and control at full bump, and additional suspension travel to work with. If you are ready to take advantage of higher technology with greater travel, lighter, stronger springs, then step up to VariSprings.



## Coil-Spring Rate Baseline

Front Vehicle Weight (lb)	Rate (lb/in)	Spring Travel (in)	Part Number
675-775	80	8.63	VAS 21-12080
775-900	95	8.28	VAS 21-12095
900-1025	110	7.91	VAS 21-12110
1025-1175	130	8.43	VAS 21-12130
1175-1350	150	7.61	VAS 21-12150
1350-1500	175	7.60	VAS 21-12175
1500-1825	200	7.45	VAS 21-12200
1825-2200	250	7.00	VAS 21-12250
2200-2600	300	7.07	VAS 21-12300

## VariStrut Accessory

### Spanner Wrench

Also available is an exclusive spanner wrench, incorporating four tangs, which will not slip off the lower spring seat because it engages the seat in four places (not one, like common spanners).



Part Number	Description
899-012-201	VariShock spanner wrench, zinc plated steel

## Pricing and Options

7705	Strut Clip 4130 Bolt-On '67-69 Camaro Includes: 4130 round-tube frame clip, double-adjustable struts, control arms with 4130 rod ends, billet satin-finish drag-race rack with bumpsteer adjustable tie-rod ends, billet rack clamps, and complete disc-brake set with billet hubs, slotted rotors, and aluminum calipers
FRAME OPTIONS	Motor Plate Tabs, without Bumper Mounts
	Motor Plate Tabs, with Bumper Mounts
BRAKE OPTIONS	Spindle Mount Brake for Weld & American Wheels
	L/D Disc Brake Slotted 10" x .35" Rotors and Black Calipers
	M/D Disc Brake Slotted 11.75" x .35" Rotors and Black Calipers
	M/D Disc Brake Slotted 11.75" x .35" Rotors and Polished Calipers
MOTOR-PLATE OPTIONS	Small-Block-Chevy Motor Plate
	Big-Block-Chevy Motor Plate with Billet Adapters
	LS-Series Motor Plate with Billet Adapters
MID-PLATE OPTIONS	SB/BB Automatic Steel Mid Plate
	LS Automatic Steel Mid Plate and Adapters
TRANSMISSION	Crossmember and Urethane Mount
STRUT OPTIONS	Double-Adjustable 6"-Travel Strut
	Double Adjustable 6"-Travel Strut with Piggyback Reservoir (high rebound force)
STEERING COLUMN OPTIONS	Drag Race Column with 3-Bolt Standard Quick Release Hub
	Drag Race Column with 5-Bolt Grant GT Quick Release Hub
	Drag Race Column with 6-Bolt MOMO Quick Release Hub
	Drag Race Column with Blank Flange Quick Release Hub



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



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