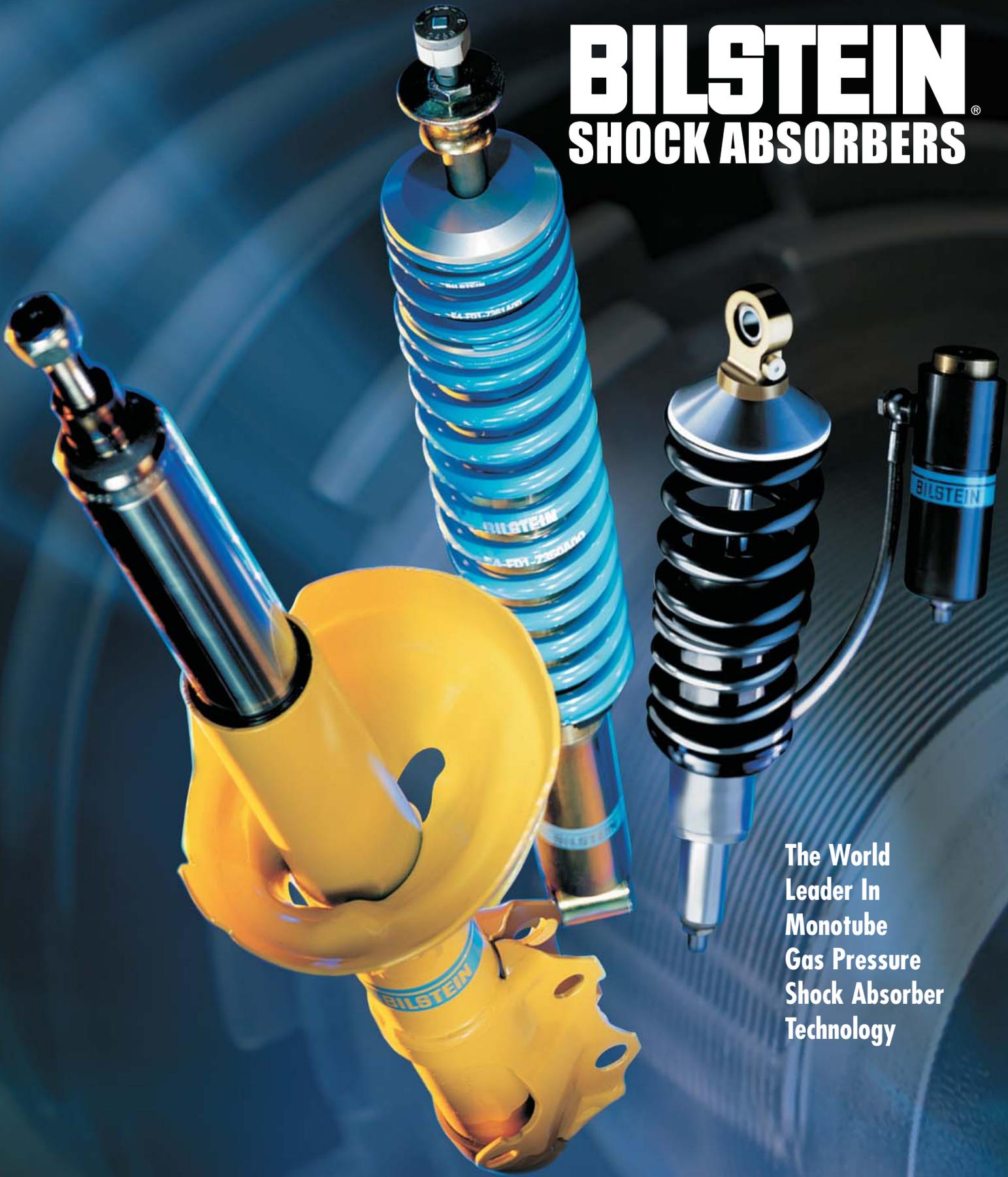


BILSTEIN[®] SHOCK ABSORBERS



The World
Leader In
Monotube
Gas Pressure
Shock Absorber
Technology

Bilstein Gas Pressure Shock Absorbers
ThyssenKrupp Bilstein of America





Superior Performance from Advanced Technology

Since our inception, Bilstein has been a unique and driving force in the automotive suspension industry. Bilstein was first to apply the gas pressure principle to controlling ride characteristics on automobiles and introduced the world's first monotube gas pressure shock absorber. While many shock manufacturers are just discovering the monotube design and calling it "new", the fact remains, Bilstein produced the first monotube gas pressure shock and continues to lead the industry in its technology. The Bilstein name graces not only monotube gas pressure shock absorbers, but also single and twin tube Macpherson strut style suspensions.

Bilstein shock absorbers and struts provide a level of vehicle control, handling performance, comfort and safety that is without equal. That's because our engineers and shock technicians spend endless hours designing and developing

the proper valving. They then conduct extensive ride tests to ensure the vehicle handling characteristics are tuned exactly for the specific application. On road or off road, luxury sedans to hot rods, lifted trucks to rock crawlers, sprint cars to Baja race trucks...regardless of vehicle type, when it comes to overall ride quality, no other shock manufacturer has been able to equal the performance and enhanced ride characteristics or broad range of applications that Bilstein has to offer.

From worldwide motorsports competition, to original equipment on the world's finest sedans, trucks, SUVs and motorhomes; Bilstein Gas Pressure Shock Absorbers have proven to be the best...unbelievable control, precise handling, incredible comfort and durable performance.

"Of all a vehicle's suspension components, nothing works harder than the shock absorbers, making it critical to pick the right ones."





Of all a vehicle's suspension components, nothing works harder than the shock absorbers, making it critical to pick the right ones. Bilstein monotube gas pressure shocks and struts are the least expensive, fastest way, to dramatically improve the ride, handling and control of a vehicle. Plus, with Bilstein's aftermarket lifetime warranty, you can be assured they're built to last (refer to back cover for full warranty details).



Conventional shocks slowly lose efficiency and eventually fail over a period of time causing excessive tire, steering and suspension component wear. Bilstein shocks continue to perform well beyond when other manufacturers' recommend replacement, and deliver optimum performance for life.





The Advantage of Bilstein's Monotube Design

Heat is one of the major detractors to the performance and longevity of any shock absorber. Conventional twin tube designed shocks trap the heat within the shock body and do not let it adequately dissipate, making them prone to heat build up, fade and eventual failure.

By contrast, Bilstein's technically superior, monotube high gas pressure charged design allows the excessive heat from the oil to transfer to the outer surface of

the shock body and dissipate more efficiently. The dividing piston also permits the oil to expand as heat builds, preventing aeration (foaming) and viscosity loss. This allows the shock to maintain full damping characteristics as temperatures rise.



Non-pressurized shock, foaming



Gas pressure shock, no foaming

Pressure differentials...

Shock oils contain roughly 10% gas molecules. The compression and rebound strokes of the shock piston in the oil column cause pressure differentials. When the piston rod is forced quickly into the shock tube, the pressure increases in front of the piston and decreases behind it.

These pressure differentials release gas molecules from the oil column which forms small bubbles (foaming). The foaming can become so excessive that damping force is severely reduced. The shock becomes unresponsive with a corresponding loss of vehicle control

In a monotube gas pressure shock absorber, the nitrogen separated from the oil by a dividing piston keeps the oil column under pressure at all times to prevent the release of gas molecules. This enables the shock to deliver consistent performance under all driving conditions.

Hard Chrome Piston Rod
Features a super finished hard chrome plated surface with a maximum peak-to-valley measurement of .0002mm

One Piece Aluminum Rod Guide & Seal
Keeps dirt out and maintains a nearly friction-free surface for longer life.

Massive Self-Adjusting Digressive Piston
Instantly reacts and adjusts for any condition...smooth road, rough road or no road. Provides maximum vehicle body motion control while maintaining superior comfort.

High Pressure Nitrogen Gas & "Floating" Dividing Piston
Nitrogen gas maintains constant pressure against the low mass "floating" dividing piston and column of hydraulic oil, eliminating the possibility of oil foaming and performance loss.

Bilstein's Industry Leading Monotube Design
Provides superior tube strength while maximizing heat dissipation and shock life.



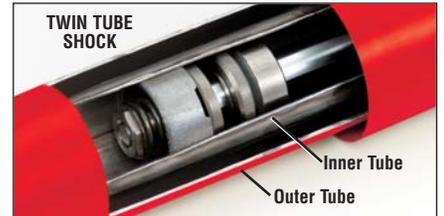
BILSTEIN
www.techart.de



Monotube VS. Twin Tube Shock Design

The photo on the left dramatically illustrates the size difference between the working piston inside a Bilstein monotube shock and one found in a typical "twin tube" shock.

The Bilstein piston has 228% larger surface area than the average conventional twin tube piston offering greater sensitivity and superior vehicle control.



Conventional twin tube shocks trap heat between the inner and outer tube leading to reduced damping performance and premature shock failure

Bilstein's Digressive Working Piston Assembly

The piston head design allows independent tuning of the compression and rebound damping forces to provide optimum ride comfort and performance without compromise. It features fewer parts than most conventional twin tube and so called "road sensing" shock designs. This simple, yet exceptionally functional digressive design contributes to the extreme durability and long life of Bilstein shocks and struts.



"The Bilstein piston has 228% larger surface area than the average conventional twin tube piston offering greater sensitivity and superior vehicle control."





Passenger Cars

Exotic sports cars, ultra luxurious automobiles, family sedans and compacts, every passenger car has its own unique ride and handling characteristics. However, when it comes to delivering a premium ride and superior performance, there can be only one choice, Bilstein.

Ride, handling and control are what a shock or strut provides. Compromise in one area may create a problem in another. Bilstein's unique design eliminates any compromise. The rising rate valving of the Bilstein shock absorber provides the necessary damping to react quicker to road conditions without sacrificing

ride comfort. This combination of valving and high pressure nitrogen gas keeps the tires in constant contact with the road helping to ensure the highest level of vehicle control.

Unlike other manufacturers who provide a minimum selection of shocks to cover a broad range of applications, Bilstein shocks and struts are built for each specific application. Our engineers take into account everything from external dimensions, internal valving, mounting hardware to the weight and type of vehicle and its intended use.

Original equipment replacement to track ready, Bilstein offers a selection of shocks and suspension systems to fully satisfy any level of performance desired.

BILSTEIN B4

Touring class quality original equipment replacement twin tube gas shocks and struts.

BILSTEIN B6 (Heavy Duty Valving) B8 (Sport Valving)

High performance original equipment replacement monotube gas pressure shocks and struts for drivers seeking the very best.

BILSTEIN B12 – BTS Suspension System

A high performance system with *sport tuned* monotube gas shocks and/or struts and lowering springs.

BILSTEIN B14 – PSS Suspension System

An ultra high performance ride height adjustable suspension system featuring performance valved monotube gas shocks and/or struts with matched springs.

BILSTEIN B16 – PSS9/PSS10 Suspension System

From road to track, this is the "race inspired" fully adjustable damping and ride height system consisting of monotube gas shocks and/or struts with matched springs. These systems feature either nine (PSS9) or new ten-way (PSS10) precision damping adjustments.

B4
Touring Class
Twin Tube Gas



B6, B8
Monotube High
Gas Pressure



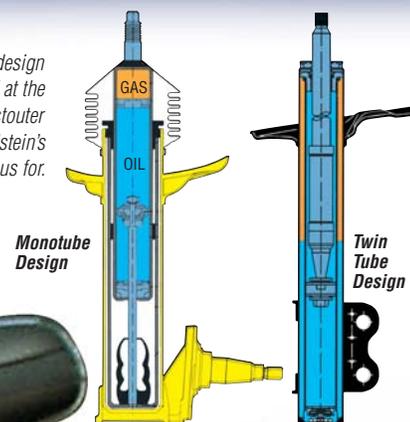
B16
PSS9/PSS10 Suspension Kit
Monotube Adjustable
Damping & Ride Height



Bilstein's unique Triple C-Technology® on the B16 features a three step process that provides a perfect shock body finish that is unparalleled in corrosion resistance and durability.



Bilstein manufactures an extensive line of performance gas pressure struts. Utilizing the same technological design advantages as our gas pressure shock absorbers, the Bilstein monotube strut insert is installed with the piston rod at the base of the strut tube. Here the rod is completely protected from road contamination of any kind. Plus, the thicker, stouter steel body of the shock above provides superior strength for dissipation of side loads and exceptional stability. Bilstein's twin tube strut assemblies are manufactured with the extreme attention to precision and detail that Bilstein is famous for.



“Unlike other manufacturers who provide a minimum selection of shocks to cover a broad range of applications, Bilstein shocks and struts are built for each specific application.”

Pickups and Sport Utility Vehicles

Trucks and SUVs place extra demands on suspension components and a shock absorber's damping ability because of their larger tires, higher unsprung weight, greater overall weight and increased load carrying capability. Bilstein's monotube design and patented deflective disc split valving is uniquely suited to confront these demands. On road or off, loaded or unloaded, Bilstein shocks instantly react to road inputs and dampens them to maintain a stable, controlled and comfortable ride.

Bilstein and trucks have always been a winning combination. We were first to introduce the incredible performance advantage of monotube gas pressure shocks over 50 years ago and still lead the way today. From the famous Dakar rally to the incredibly punishing Baja 1000, our off-road racing performance is legendary. And every shock we build is filled with the knowledge we've gained from decades of crossing the finish line first. From O.E. replacement to lifted or custom applications, Bilstein has the right shock for it.



5100 Series

5150 Series

4600 Series





Whether it's towing the boat to the lake, hauling materials to the job site or loading up the toys and heading out to the desert for the weekend, Bilstein has the right shock to handle it.

BILSTEIN 4600 Series

High performance original equipment replacement monotube gas pressure shocks for optimum handling characteristics.

BILSTEIN 5100 Series

Superior on and off-road performance designed specifically for lifted pickups and SUVs. Available for vehicles with 2" to 6" lifts.

BILSTEIN 5150 Series with CrossFlow Reservoir

The first affordably priced production monotube high gas pressure, fixed CrossFlow reservoir shock absorber designed for lifted and custom trucks. Maintenance free design with valvings available for single or multiple shock applications.



Fixed CrossFlow Reservoir

Increases oil capacity for greater cooling and allows for additional shaft travel



Adjustable Shock Mount

Allows unlimited reservoir position options



"Bilstein and trucks have always been a winning combination."



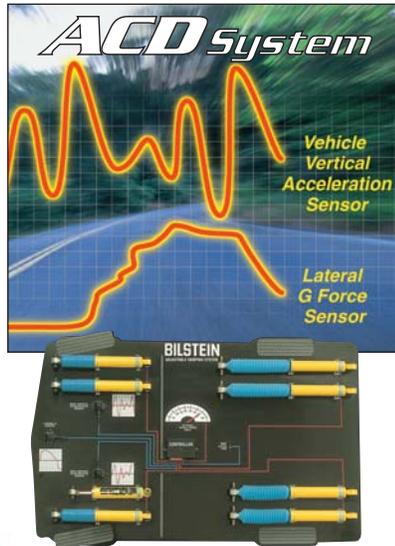


Recreational Vehicles

Motorhomes are a great form of recreation, but often their suspensions are designed around old twin tube shock technology causing them to be a real handful to drive. That can be dramatically changed by upgrading to Bilstein shocks. Bilstein's technology leading monotube gas pressure design delivers superior performance and control. Plus, with Bilstein, you don't get a generic "heavy duty" shock, but rather a shock designed for each specific motorhome application providing you with a precise and compliant ride.

Bilstein shock absorbers virtually eliminate the excessive sway, bouncing, and general wallowing down the road associated with conventional shocks. With Bilstein shock absorbers, RVs are more stable, easier to handle and ride better than ever before. This is why many of the top RV manufacturers have chosen Bilstein as their original equipment shock absorber.

For any class of motorhome or fifth wheel tow vehicle, Bilstein shocks are simply the best choice.



Technological Leadership...

The revolutionary ACD System was developed by Bilstein engineers in cooperation with both Ferrari and Jaguar. This is a true computer controlled active damping system that until now, was unavailable to the motorhome industry. Bilstein's ACD System instantly responds to changing coach motion along with shock cycle speed input and automatically adjusts damping to deliver optimum ride comfort and handling. With the ACD System you get the ride of a luxury coach and the handling of a European performance sedan. This highly sophisticated system further illustrates Bilstein's world wide leadership in gas pressure shock absorber and suspension technology.

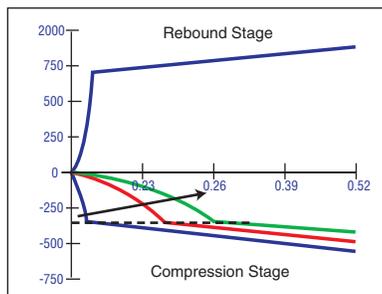
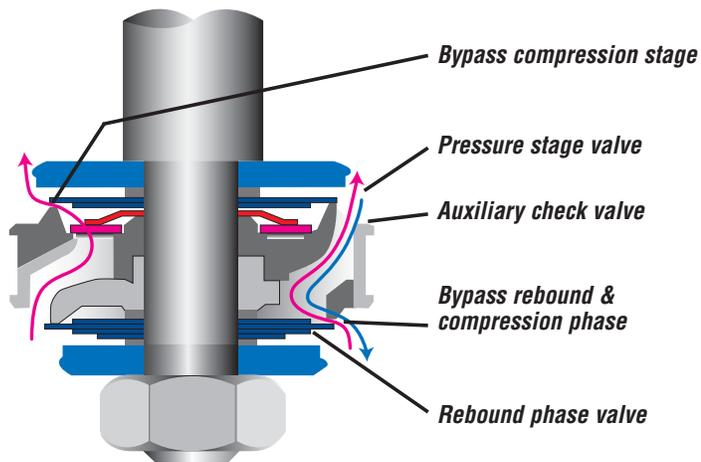
While currently offered at the O.E. level only, look for this dynamic system to be available to the aftermarket in the near future.



"Bilstein shock absorbers virtually eliminate the excessive sway, bouncing, and general wallowing down the road associated with conventional shocks."

Bilstein Shocks with COMFITRAC™ Piston

As America's roads have gotten worse, drivers' preferences have changed and engineering has evolved. As a result, Bilstein engineers developed a new shock featuring our unique COMFITRAC™ working piston. This piston is based on Bilstein's High Frequency Bypass valving technology. The COMFITRAC™ piston works on sudden, high frequency road input to reduce the harshness associated with conditions like expansion joints and pot holes resulting in overall improved ride comfort and handling characteristics.



The Bilstein COMFITRAC™ piston allows for different valving curves with different approach gradients for both the compression and rebound phases.





Street Rods to Muscle Cars

Now that you've set your goals on the ultimate ride, with more horsepower and the best paint job, don't short change yourself when it comes to the suspension. As an original equipment supplier to BMW, Ferrari, Jaguar, Mercedes-Benz, and Porsche...we know what it takes to tune a vehicle's suspension for superior comfort and performance.

Many shock manufacturers are just discovering the monotube design and calling it "new technology". However, we produced the first monotube gas pressure shock absorber and continue to lead in its technology. Bilstein rod shocks feature a working piston that is 2 to 3

times larger diameter for greater sensitivity and superior handling characteristics. The patented digressive valving responds with full damping capability within as little as 2mm of shaft movement, instantly reacting to changing suspension input. The independent compression and rebound is custom tuned for each application, plus each shock is fully dyno tested to insure the best ride possible

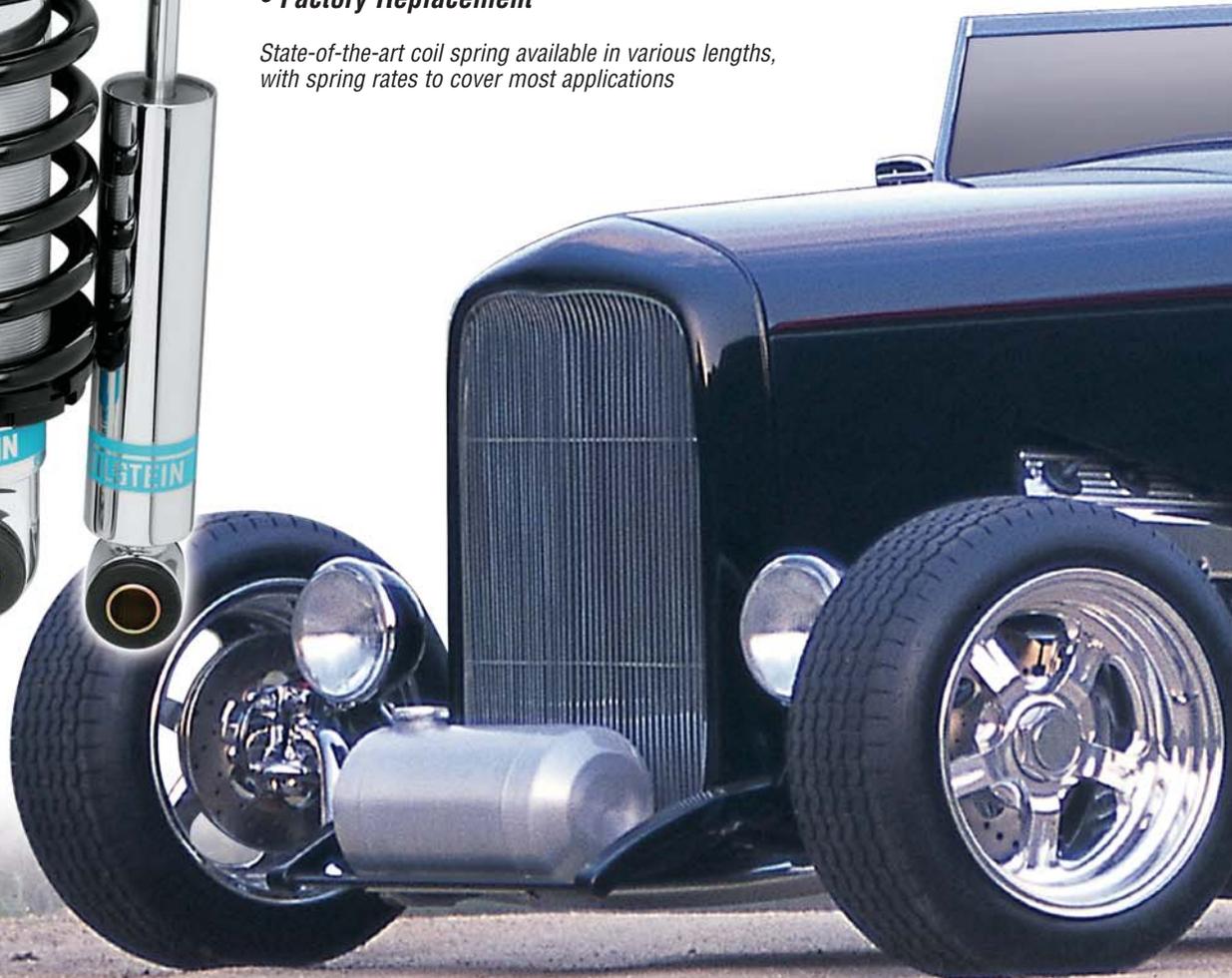
We invite you to compare our shocks to those of our competitors. You'll see for yourself that Bilstein is the best shock available for the car and its passengers. When it comes to a street machine's suspension, there's no need to compromise or sacrifice ride quality for performance. Just bolt on a set of Bilstein shocks and have it all.



Coilover or smooth body aluminum and steel body models for stock to fully custom applications, including:

- *Tri 5's*
- *Mustang II*
- *Parallel Leaf*
- *Factory Replacement*

State-of-the-art coil spring available in various lengths, with spring rates to cover most applications



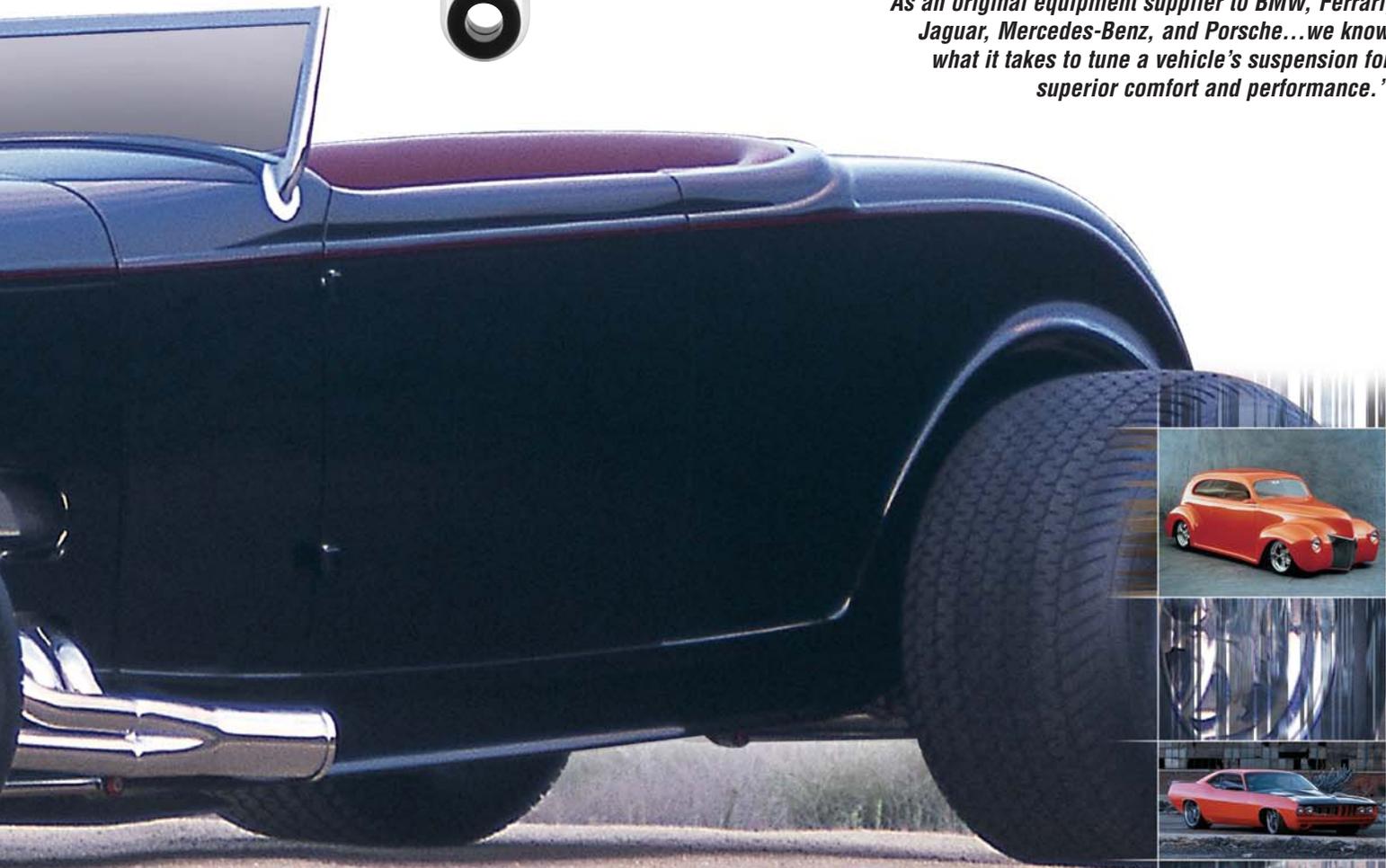
Unique Chrome-Look Coated Coil Springs

Bilstein coilover springs are also available with a PermaStar® coating that provides a “chrome” appearance without the drawbacks of traditional chroming. This revolutionary coating process won’t damage the spring rate or reduce spring life and will never rust. And it requires virtually no maintenance to keep its bright, shiny appearance.



Bilstein Rod Shocks provide superior comfort, control AND appearance

“As an original equipment supplier to BMW, Ferrari, Jaguar, Mercedes-Benz, and Porsche...we know what it takes to tune a vehicle’s suspension for superior comfort and performance.”



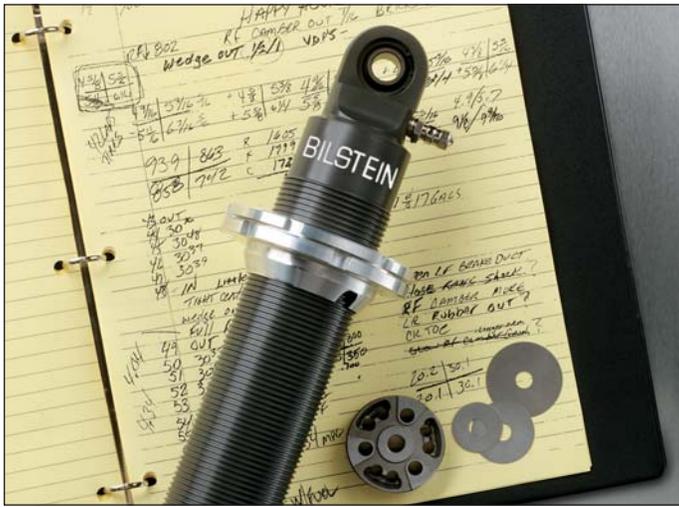


Motorsports

BILSTEIN Motorsports Shocks...Leading Technology, Winning Performance, Superior Selection

From the famous Nürburgring race circuit in Germany to the local asphalt and dirt short tracks across America, Bilstein's worldwide racing dominance is legendary. Racing is the ultimate proving ground, making success in motorsports imperative.

As racing suspension technology pushes the limits, it takes a superior shock absorber to provide the higher degree of control necessary for the vehicle to remain predictable and stable at ever increasing higher speeds and G-forces. Bilstein has met this challenge. From lightweight steel body race shocks to fully adjustable and rebuildable aluminum body race shocks, Bilstein offers a full line of race winning shock absorbers, service components and industry leading technical support. For complete details, please refer to the Bilstein Motorsports Catalog.



Countless hours of testing, all the tracks on the circuit, every set up in the book. Don't let it all fade away on a shock that can't deliver consistent performance all the way to the finish.

From start to finish, Bilstein's superior monotube gas pressure design delivers consistent, fade-free performance, lap after lap after lap. Every shock is precision assembled utilizing components of exacting tolerances and individually dyno tested. That means when you order shocks with the same valving, you get shocks with the same valving, not just close. Bank on it!

"From the famous Nürburgring race circuit in Germany to the local asphalt and dirt short tracks across America, Bilstein's worldwide racing dominance is legendary."

AK Series



SG Series



SL / SZ Series



Bilstein shocks are available for, but is not limited to the following applications:

- | | | |
|---------------|----------------|---------------------|
| Pure stock | Midgets | Dirt Late Models |
| Enduro | Dwarf Cars | Super Late Models |
| Street Stock | Mini-Sprints | Big Block Modifieds |
| Mini-Stock | Sprint Cars | IMCA/UMP Modifieds |
| Stock Cars | Modified Lites | Formula Cars |
| Micro-Midgets | Modifieds | NASCAR Classes |
| TQ Midgets | Late Models | |

A separate Motorsports Shocks catalog is offered which includes additional specialized products not shown here. Available upon request.



SN Series



ASB Series



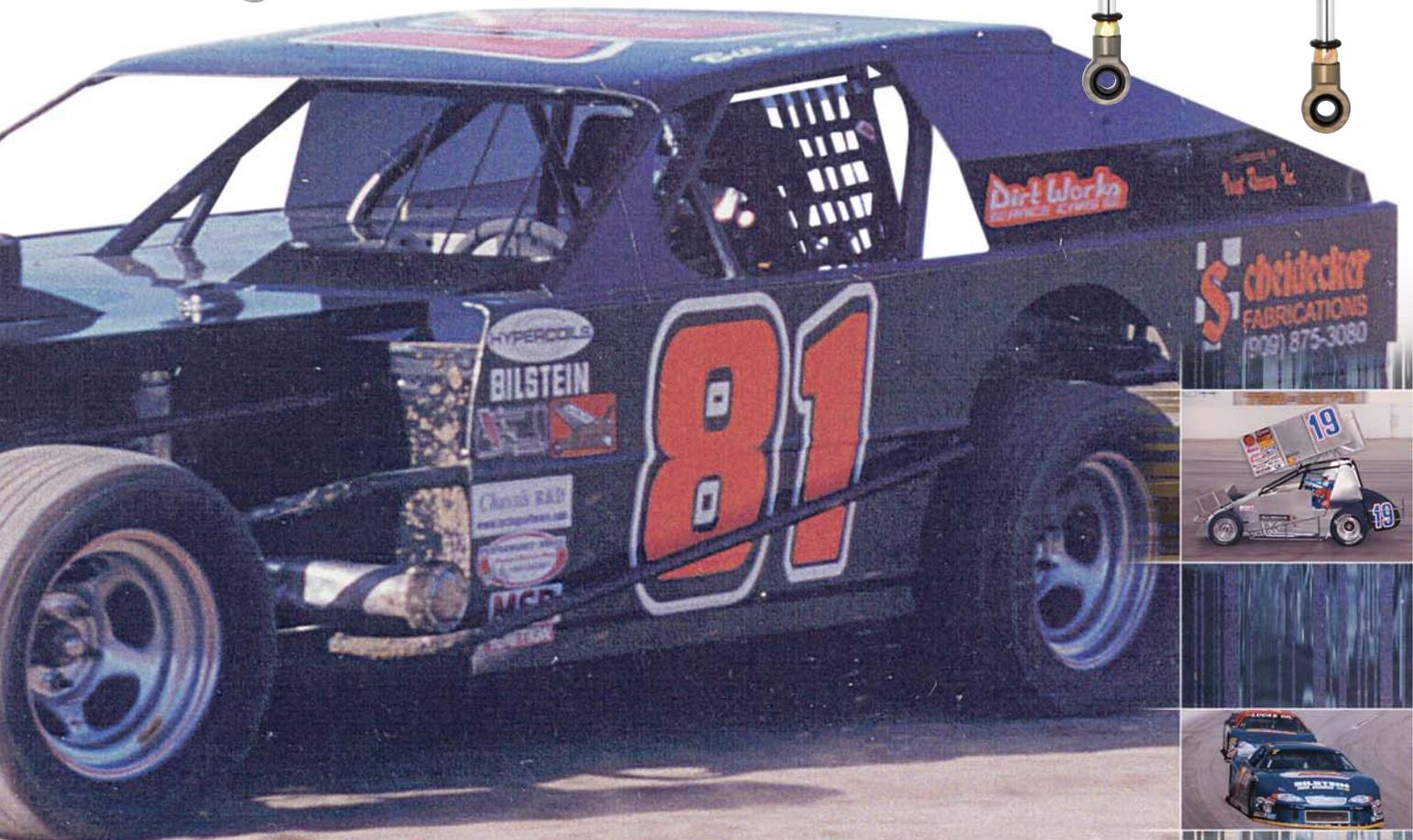
ASN Series



BGT Series



Big Track Series





Specialty Off-Road

Just think of Bilstein as one of the founding fathers of the dirt nation. Bilstein was the first to introduce the monotube gas pressure shock absorber to the rugged sport of off-road racing and has been a major force ever since.

The latest example of Bilstein's engineering leadership was the introduction of the Black Hawk® 9300 Series. The next evolution in off-road race shocks...big and bold with its Radial Bypass Damping technology and all aluminum body with hard anodized finish, the Black Hawk® is like nothing you've ever seen, *or experienced* before. Once again, Bilstein has set the performance bar higher.

Every Bilstein off-road shock is a true monotube high pressure gas shock, no emulsion, no foam cells, just performance. Custom trucks, rock crawling, recreational buggies or professional off-road racing, Bilstein has the right shock to tame the terrain. Please refer to the Bilstein Off-Road Racing Catalog for complete details on the entire line of shocks and replacement components.



**Black Hawk®
9300 Series**
The ultimate
professional
off-road racing
shock





7100 Series
Schrader valve
& remote
reservoir models
for custom
applications



**Rock Crawler
9100 Series**
Exclusive
digressive valving
for extreme control
and articulation



9100 Series
Coilover, external adjustable bypass
& smooth body models for off-road
racing applications



A separate Off-Road Shocks catalog is offered which includes additional specialized products not shown here. Available upon request.

"Bilstein was the first to introduce the monotube gas pressure shock absorber to the rugged sport of off-road racing and has been a major force ever since."

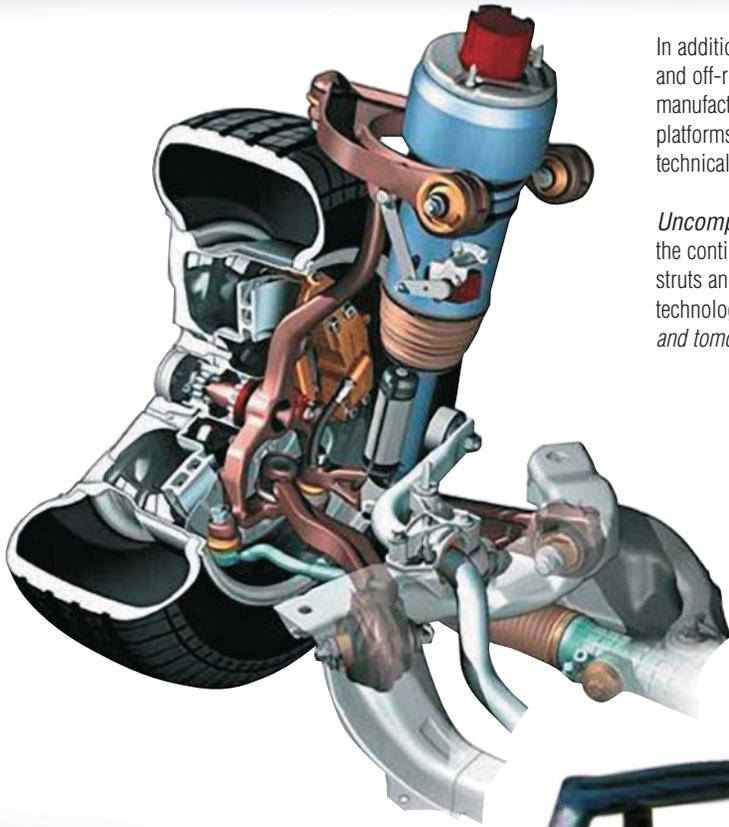




Advanced Technology for Today and Beyond

In addition to passenger car, light truck, sport utility, recreational vehicle, motorsports and off-road applications, Bilstein engineers work hand in hand with automotive manufacturers worldwide in the development of ride control systems for new vehicle platforms of the future. For this purpose, Bilstein maintains the ability to supply on-site technical support with full testing, diagnostic and rebuild capabilities.

Uncompromising Solutions. This is the goal by which Bilstein engineers set forth in the continued technological evolution of monotube gas pressure shock absorbers, struts and suspension systems. Regardless of which automotive application, for leading technology and unmatched performance, you can depend on Bilstein...*today and tomorrow!*





World-wide Mobile Tech Support

A complete shock dynamometer facility on wheels. Provides full field testing support to O.E. automotive manufacturers.



“Regardless of which automotive application, for leading technology and unmatched performance, you can depend on Bilstein to deliver... today and tomorrow!”





BILSTEIN® Limited Lifetime Warranty

ThyssenKrupp Bilstein of America warrants its gas pressure shock absorbers against defects in workmanship and materials for as long as you, the original purchaser, own your car.

If at any time after purchase or installation, the shock malfunctions and Bilstein determines it to be defective, we will either replace it or repair it.

There are only a few specific exceptions to this warranty. They include:

1) original equipment shock absorbers – which are warranted by the original equipment manufacturer, 2) improper installation, 3) racing, driving competition or off-road use, 4) use on modified or other than Bilstein-recommended vehicles.

Bilstein's liability for a defective shock absorber is limited to replacement of the shock with a new or reconditioned Bilstein shock absorber. Rubber mounting hardware and labor charges are not covered by the warranty. Note: Other exclusions may or may not apply in certain states or rare circumstances. **Proof of purchase is required to process warranty.**

For additional information about our warranty, please contact our Warranty Service Department: 1-800-370-9522.

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