

## OFF-ROAD RACING



### 9200 SERIES BYPASS

#### Externally adjustable off-road shocks

- Available in 60mm, 70mm, or 83mm monotube designs
- 4-tube bypass with adjustable rebound and compression
- Position sensitive damping
- Piggy back reservoir
- Available in multiple travel lengths from 8-18"
- Case hardened piston rod
- High-temp racing seals
- Red synthetic racing oil
- 5/8" stainless heim uniball mounts with 1/2" step spacers
- Zinc plated
- Billet machined components
- Owner rebuildable

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## LIGHT TRUCK & OFF-ROAD SHOCKS.



## The Technology of BILSTEIN's Monotube Design

Heat is one of the major detractors to the performance and longevity of any shock absorber. Conventional twintube 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 superior monotube high gas pressure 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.

#### BILSTEIN's Industry Leading Monotube Design

Provides superior tube strength while maximizing heat dissipation and shock life.

#### One Piece Aluminum Rod Guide & Seal

Keeps dirt out and maintains a nearly friction-free surface for longer life.

#### Hard Chrome Piston Rod

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

#### Self-Adjusting Digressive Piston

Instantly reacts and adjusts for any condition. 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.

#### 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 is separated from the oil by a dividing piston. This keeps the oil column under pressure at all times to prevent the release of gas molecules while enabling the shock to deliver consistent performance under all driving conditions.



Non-pressurized shock, foaming



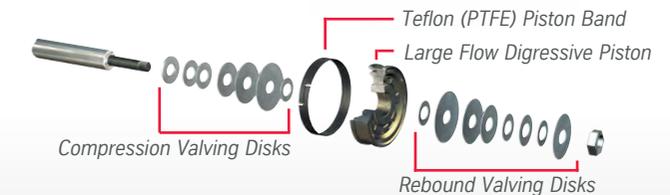
Gas pressure shock, no foaming

#### Monotube vs. Twintube Shock Design

BILSTEIN's piston has 228% larger surface area than the average conventional twintube piston offering greater sensitivity and superior vehicle control.



BILSTEIN PISTON TWINTUBE PISTON



Compression Valving Disks

Rebound Valving Disks

#### 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 twintube 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.

DIRECT FIT

CUSTOM FIT



### 4600 SERIES

Performance upgrade for stock ride-height applications

- 46mm monotube design
- Increased performance and comfort
- Digressive piston
- Application specific tuning
- OE specific hardware
- Limited Lifetime Warranty



### 5100 SERIES

Performance upgrade for lifted applications

- 46mm monotube design
- Digressive piston design offers superior control
- Application specific tuning
- Zinc plated
- OE specific hardware
- Limited Lifetime Warranty

#### 5125 SERIES (CUSTOM FIT):

- Available in various lengths and valvings for use on modified or specialty vehicle applications



### 5100 SERIES RIDE-HEIGHT ADJUSTABLE

Leveling shock for OE coilover applications

- Up to 2.75" lift, depending on application
- Practical alternative to coil spring spacers
- Increases wheel travel
- Maintains proper suspension geometry
- Utilizes OE coil springs and top mount
- 46mm monotube design
- Application specific tuning
- Limited Lifetime Warranty



### 5160 SERIES

5100 Series with added benefits of a remote reservoir

- Improves heat dissipation
- Increases wheel travel
- 46mm monotube design
- Application specific tuning
- Includes reservoir mount kit
- OE specific hardware
- Optional billet clamp (shown)

#### 5165 SERIES (CUSTOM FIT):

- Available in various lengths and valvings for use on modified or specialty vehicle applications



### 6112 SERIES KIT

Leveling kit with large bore shock and integrated spring

- Kit includes 2 shocks and 2 springs
- Adjustable ride-height up to 2.75" lift, depending on application
- 60mm monotube design
- Digressive piston provides ultimate comfort and control
- Increased oil capacity for improved cooling
- 18mm hard chrome piston rod
- Application specific tuning
- Utilizes OE top mount and spring isolator
- Limited Lifetime Warranty



### 7100 SERIES

Rebuildable reservoir shocks for custom applications

- 46mm monotube design
- Self-adjusting deflective disc valving
- High-flow piston reduces harshness
- Available in multiple travel lengths from 5-14"
- 1/2" heim mounts
- Nickel plated with clear coat
- Available in a non-reservoir version



### 8125 SERIES

Custom coilover with remote reservoir

- Available in 46mm and 60mm monotubes
- Threaded body with dual-rate spring hardware
- Remote reservoir for improved resistance to heat
- 22mm case hardened piston rod provides brute tensile strength
- Available in multiple travel lengths from 5-16"
- Zinc plated for resistance to off-road elements
- High temperature seals and hose
- 5/8" heim mounts with 1/2" step spacers
- Billet machined components
- Owner rebuildable



Please scan for more information, videos and application look-up.