

Gabriel®

TRUCK, TRAILER & BUS SHOCKS

Evolution to Higher Performing Shocks

The higher performance demands of today's vehicles require shocks that stand up to the challenge.

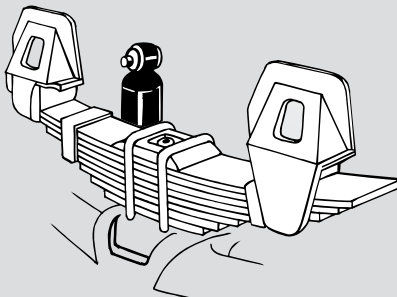
Heavy multi-leaf suspensions have very limited travel and a high level of inherent friction. The multi-leaf quickly dampens suspension oscillation and therefore limits the amount of work shock absorbers need to perform.

Today's low friction suspensions, such as Air Spring and Taper Leaf, are engineered to have very little suspension damping friction and a great deal of vertical travel. These characteristics enhance the operational control and performance of today's vehicles. Plus, they help reduce physical strain on the driver by isolating equipment and its cargo from highway vibration damage.

Overall, low friction suspensions have increased the need for control of suspension oscillation increasing the importance of peak performance by the shock absorber.

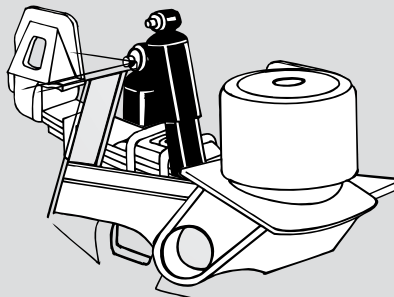


Multi-Leaf Suspension



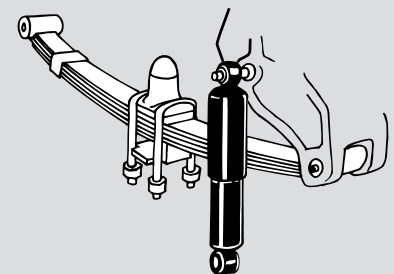
The inherent damping friction limits suspension travel to 2-3".

Air Spring Suspension



The damping responsibility has been shifted over to shocks. These suspensions can travel in excess of 9".

Taper-Leaf Suspension



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TRUCK, TRAILER & BUS SHOCKS

GasSLX (Heavy Truck Gas Shocks/Adjustable)

89000 Series

Our premium adjustable Heavy Truck gas shock.

- Unique Gas Cell double seals for superior gas retention
- Three position adjustable offers personal ride selection
- 1-5/8" bore, 360° arc welded end mounts provides improved durability
- Specially formulated High Temperature fluid reduces friction and wear in extreme operating conditions
- Many more premium component upgrades combine to provide the ultimate in performance and durability



FleetLine (Heavy-Duty Truck Shocks)

83000 Series*

A heavy duty product, best suited for light trucks or heavy truck suspensions where clearance is an issue.

- 1-3/8" bore
- 10 stage valving

85000/85300 Series*

Added durability makes these two series the standard heavy duty product for today's low friction suspensions.

- 1-5/8" bore provides improved durability
- 360° arc welded end mounts protect against end mount breakage
- Hydraulic rebound stop¹ prevents impact damage to the shock and vehicle mounting components
- Multi-lip piston rod seal provides backup seal protection
- Welded closure for maximum tensile strength



85700 Series*

Designed for unique truck applications and for severe duty bus applications. The specialty features of this series ensure a long consistent operating life.

- 1-5/8" bore with a bulged design provides increased fluid capacity for cooler operation
- Patented rod seal material significantly increases the life of the seal
- Custom blended HT Fluid reduces friction and wear in extreme operating conditions
- Plus all of the specialty features contained in the 85000 & 85300 Series

* Self compensating piston seal provides consistent damping throughout shock life

¹ Where required.

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FleetLine Cab Shocks

Cab Shocks

Designed specifically to eliminate cab vibration.

- 1", 1-3/16", 1-3/8", 1-5/8" bore sizes provide customized suspension for different cab designs
- Unique Gas Cell³ design reduces fade as result of fluid aeration
- Exclusive 10 stage valving provides a consistent ride at all speeds
- Premium chrome plated piston rod designed for corrosion resistance and reduced rod seal wear
- Multi-lip piston rod seal provides backup seal protection and increased durability



Gas Light Truck

G6000 Series

For consistent performance you can count on.

Targeted at standard light truck and van applications.

- 1-3/8" bore
- Gas charged
- Piston rod and radial lip seal
- Non-commercial applications only



Steering Stabilizers

- Reinforced arc welded end mounts protect against end mount breakage and provide improved durability
- Unique Gas Cell design separates air and oil so shock functions properly while in the horizontal position
- Custom designed (OE styled) mounts for improved fit and increased durability

Shock absorbers engineered with the same focus on quality, design, longevity and endurance that has come to characterize our world renowned Original Equipment shock absorbers.

³ Where design permits.

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TRUCK, TRAILER & BUS SHOCKS

FleetLine Cab Shocks¹

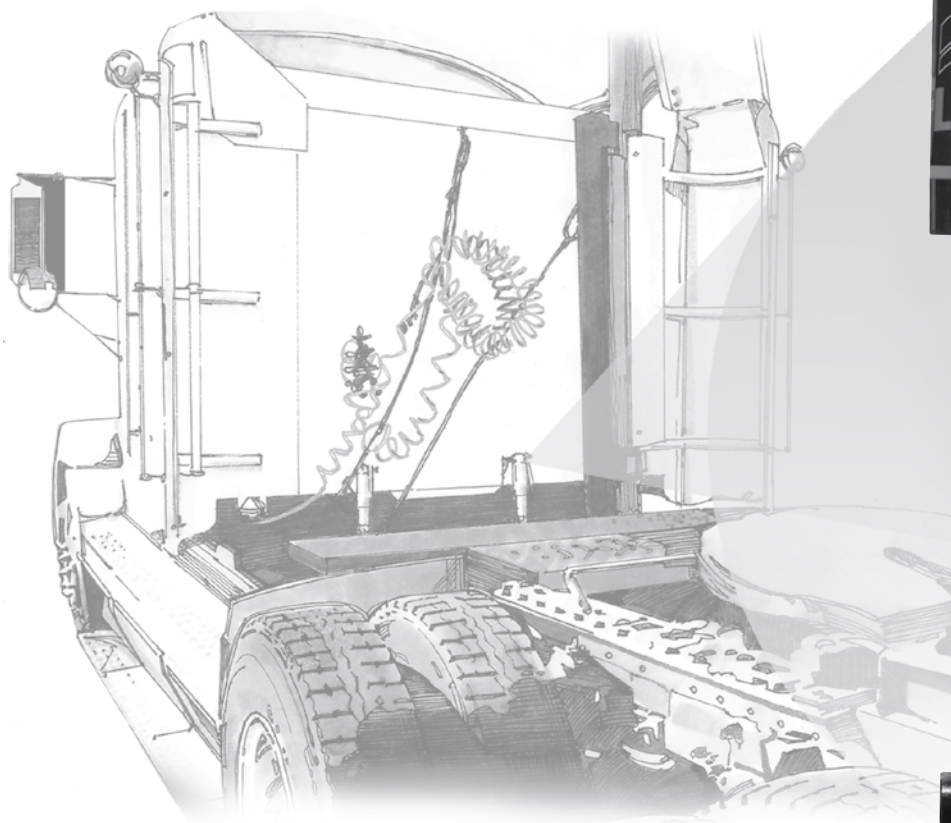
Designed specifically to eliminate cab vibration!

“See pages 14 - 18 for specific applications listing.”

- Unique GAS CELL² design reduces fade
- Exclusive 10 stage valving provides consistent control at all speeds
- Premium chrome plated piston rod designed for corrosion resistance and reduced rod seal wear
- Multi-lip nitrile piston rod seal for increased durability
- All weather shock fluid keeps shock functioning normally in extreme temperatures

¹ For truck applications only

² Where design permits

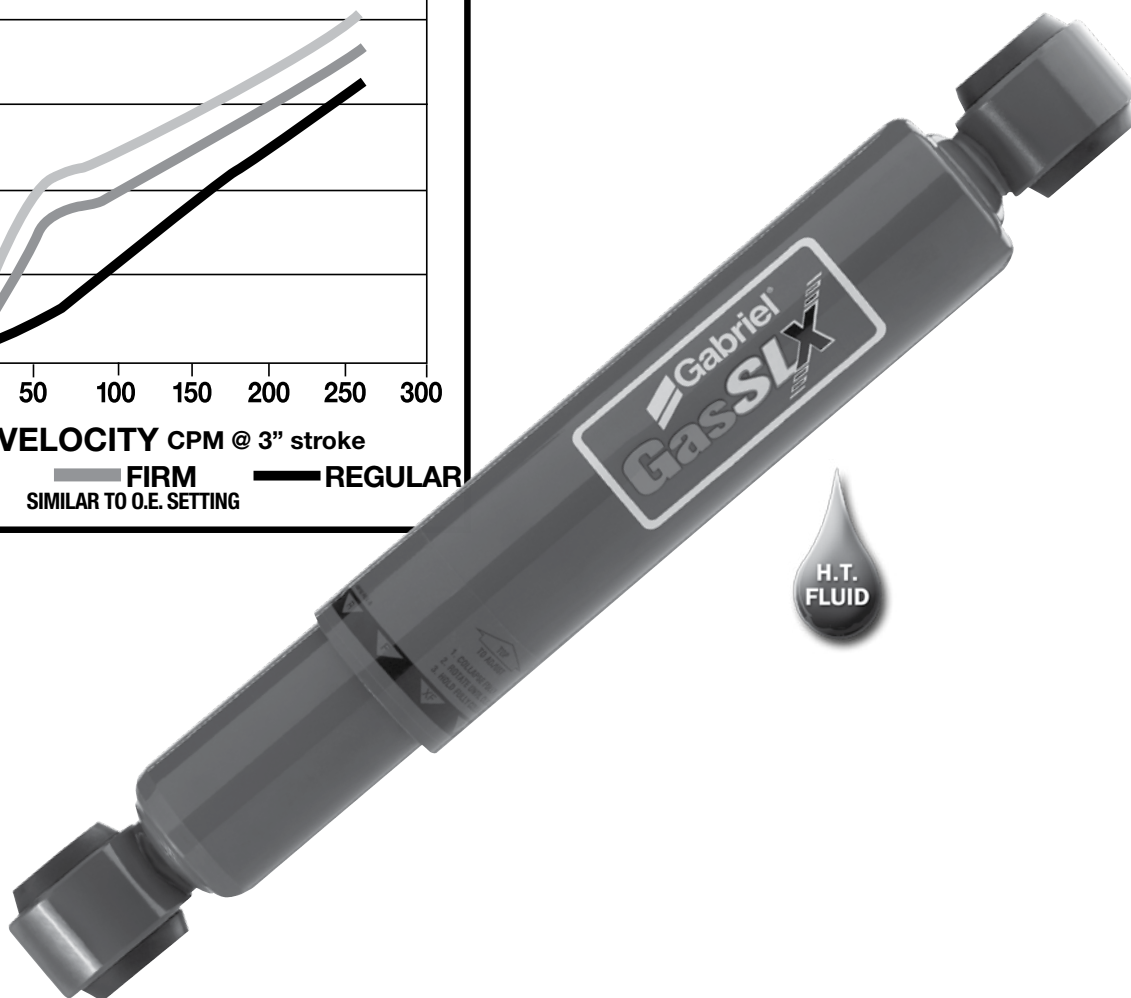
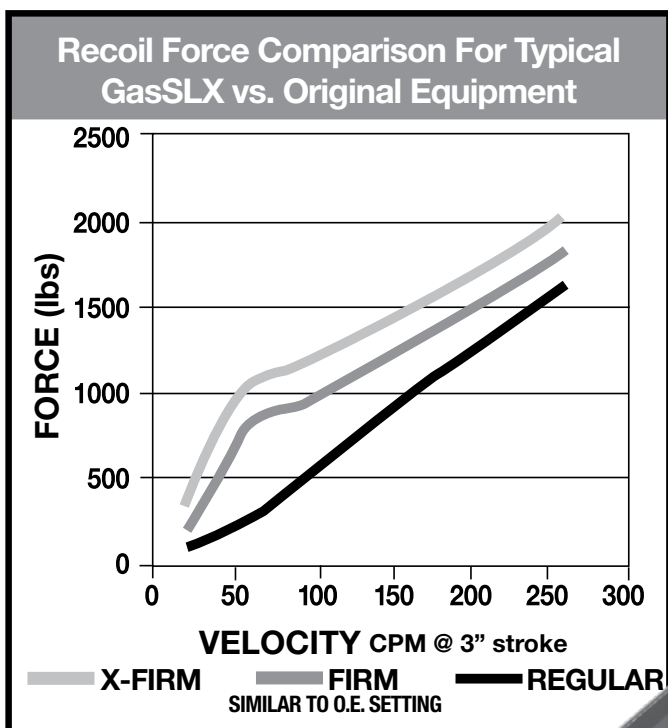


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GasSLX – The ultimate "SLXtion" in ride!

- The three position GasSLX adjustable shock allows you to choose from one of 3 settings; "Firm", "Regular" and "Extra Firm."
- Firm - closest to OE ride performance
- Regular - a softer ride than that of the OE shock
- Extra firm - more controlled ride

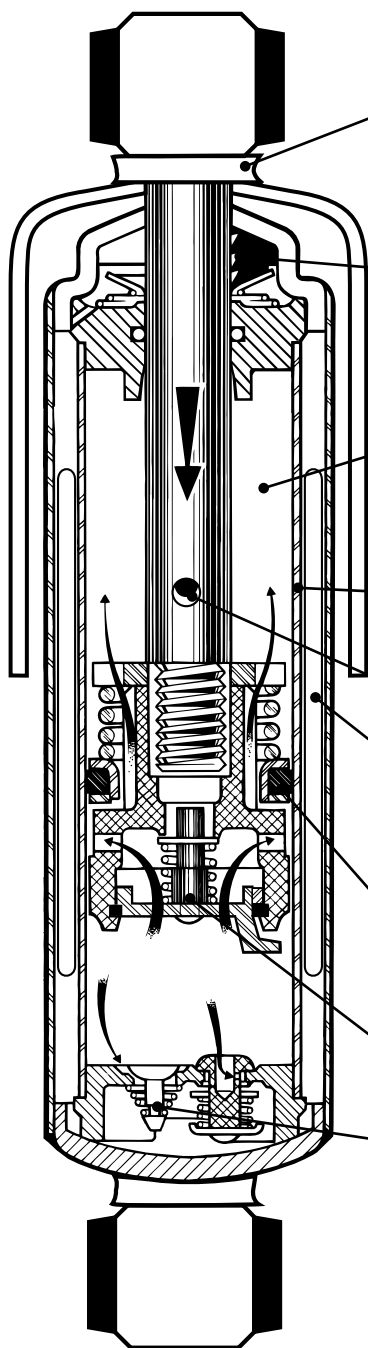


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GasSLX – This shock provides reliability, control, comfort and ride selection

We believe a premium upgrade is more than just a promise, it's a commitment to deliver. The Gabriel GasSLX was engineered using proven premium components that deliver distinguishable benefits.



360° ARC WELDED END MOUNTS

Protects Against End Mount Breakage.

Today's suspensions require shocks to withstand multi-directional flexing. Reinforcing the weld 360°, ensures structural superiority.

Improved Tensile Strength.

Gives the added strength required to limit travel on air suspensions.

MULTI-LIP VITON SEAL

A More Robust Seal Design for Greater Fluid Retention and High Temperature Performance.

Multi-sealing lips act as backup to keep fluid in.

HIGH TEMPERATURE (HT) FLUID

Reduces Friction and Wear in Extreme Operating Conditions.

Extreme pressures and temperatures can break down standard shock absorber fluids. The Gabriel HT Fluid is uniquely formulated to maintain its lubricating properties at pressures and temperatures 2 to 3 times greater than standard shock fluids.

H.T.
FLUID

LARGE BORE DESIGN

1-5/8" Bore. Proven OEM Design.

The optimum working area when combined with our HT fluid, provides performance and durability you can count on.

HYDRAULIC REBOUND STOP¹

Prevents Impact Damage to the Shock and Vehicle Mounting Components.

At full extension, the restriction hole in the rod is closed off and traps fluid between the piston and upper cylinder head, creating a hydraulic cushion.

GAS CELL

Double Seals Sulfur Hexafluoride (SF₆) Gas to Ensure that it Remains Within the Shock.

The gas cell separates the gas from the fluid so they cannot mix, keeping the fluid free of the bubbles that can cause fade.

PRESSURIZED METAL PISTON RING

Hydraulically Energized to Maintain the Required Damping Characteristics.

As the ring wears, the hydraulic pressure forces the ring out to the tube to maintain the seal and damping characteristics.

10 STAGE VALVING

Improves Handling While Maintaining Ride Comfort.

Allows for the independent adjustment of damping.

¹ Where required by design

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FleetLine

Top quality components ensure top performance throughout the life of the shock absorber, meaning less wear and tear on other costly suspension parts.



Cold Formed, 360° Arc Welded Mounts*

- Greater tensile strength
- Greatly reduces end mount failures

Multi Lip Seal

- Extra seal protection = Improved fluid retention
- Improved fluid retention = Longer shock life

1-5/8", Large Bore Design*

- Increased tensile strength
- Designed for more control
- Proven design for low friction suspensions

Bulged Design**

- Increased fluid capacity
- Lower operating temperatures
- Less internal wear due to heat dissipation

Hydraulic Extension Stop¹

- Prevents shocks from topping out and suspensions from over-extending
- Designed for low friction suspensions such as Air Spring Suspensions, etc.

Floating Piston Seal Design

- Reduces force-velocity variabilities
- Increase control capabilities at low velocities
- Self-compensates for wear
- Reduced wear between the cylinder and the piston seal means reduced clearance which means less fade
- Less fade means more consistent performance over the full range

10 Stage All Coil Spring Valving

- For comfort and control
- Enhanced durability
- Self cleaning

¹ Where required by design

* Excluding 83000 Series

** Including 85300 and 85700 Series

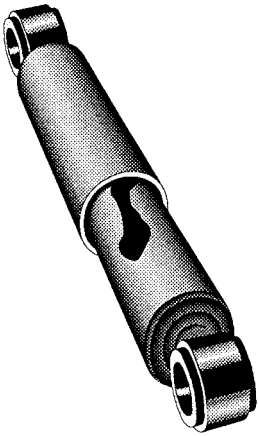
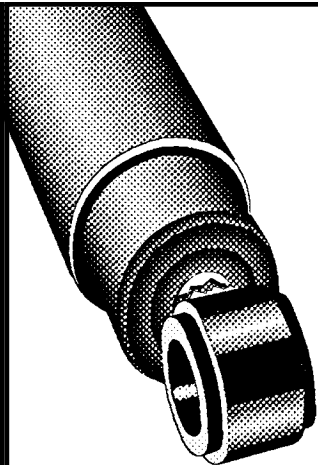
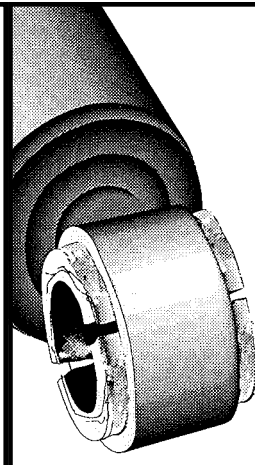
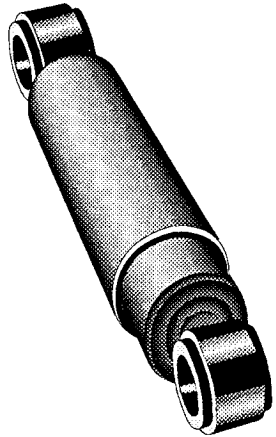
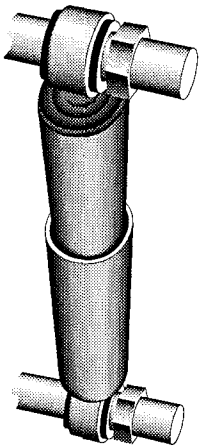

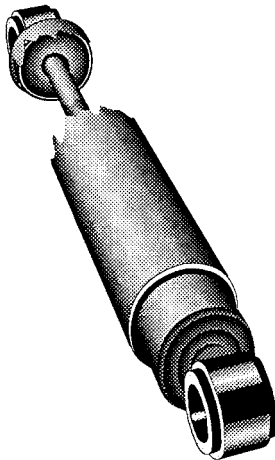
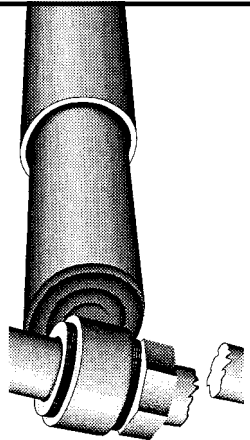
Note: Features may vary by part number.

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When Should Shock Absorbers Be Changed?

All of the following conditions indicate that it is time to replace your shock absorbers. Remember worn shock absorbers can cause vibration that leads to electrical, frame, and/or engine damage. Regular inspection of shock absorbers can prolong the life of your vehicle.

			
<p>L Leaking (Be sure to wipe shock of road grime)</p>	<p>UMB/LMB Upper or lower mount broken</p>	<p>UBB/LBB Upper or lower bushing broken</p>	<p>BI/S Broken internally Seized (Jammed in collapsed position)</p>
	 <ul style="list-style-type: none"> • Soft undulating ride • Nose diving • Too rough 		
<p>II Improper Installation (for example: this shock is upside down)</p>	<p>RC Ride Complaint</p>	<p>DT Dust Tube Broken</p>	<p>TMF Truck Mount Failure</p>

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Guide to Inspecting Truck Shocks

Regularly scheduled shock maintenance doesn't cost in the long run - it saves.

Like most other chassis components, a program of regular scheduled maintenance for shock absorbers will help to avoid unscheduled down time and reduce overall maintenance costs.

The role of a shock has changed dramatically. Previously, suspensions had heavy multi-leaf springs with limited travel and a great deal of inherent friction. These suspensions quickly self dampened and therefore limited the amount of work the shock needed to perform.

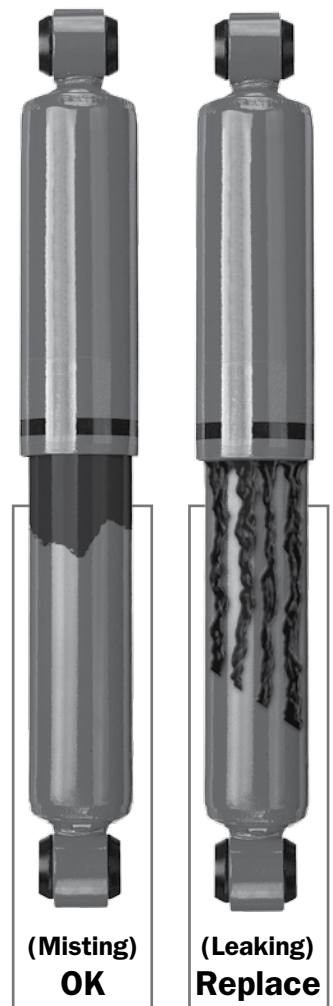
Low friction suspensions such as Air and Taper Leaf have dramatically changed the shock's role. Shocks now play a critical role in dampening suspension oscillation. Properly functioning shocks can help reduce the wear of more expensive suspension components such as air bags, while assisting in the reduction of tire wear and vibration damage to the cab and chassis. They also aid in reducing driver fatigue. Worn shocks simply cannot assist in providing control over today's sophisticated suspension systems.

Leaking vs. Misting Shocks

Misting shocks are often mis-diagnosed as failures. Misting is the process whereby very small amounts of shock fluid evaporate at high operating temperatures through the upper seal of the shock. When the "mist" reaches the cooler outside air, it condenses and forms a film on the outside of the shock body. When mixed with road debris and dust, a grime will often coat the entire body of the shock. Misting is a perfectly normal and necessary function of the shock. The fluid which evaporates through the seal area helps to lubricate & prolong the life of the seal.

Many technicians find it difficult to differentiate between a misting shock and a true leaker which needs to be replaced. A leaker will show clear signs of fluid leaking in streams from the upper seal. These streams can most easily be seen when the shock is fully extended, and one inspects as far up the main body of the shock (underneath the dust cover or tube) as possible.

Inspect with shocks fully extended



When should shocks be replaced?

There are many tell tale signs that indicate it may be time to replace shocks. Inspect for:

- **Uneven Tire Wear** - Balance should be checked first
- **Ride Deterioration**
- **Excess Vibration**
- **Sagging Taper Leaf Springs** - This is not caused by weak shocks
- **Premature wear** on cab, electrical, and cooling system components
- **Broken or Torn Air Springs** - Shocks will only affect this if they are broken or are missing

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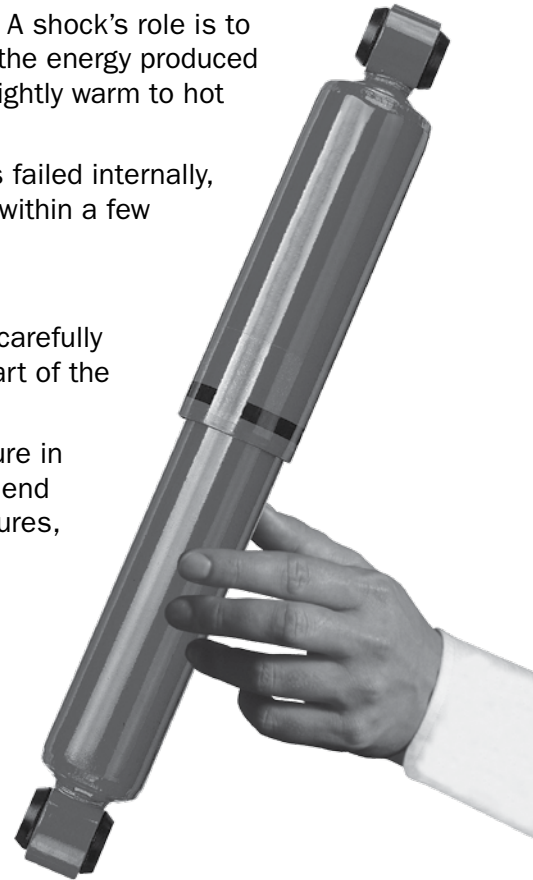
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Take the Heat Test

Shock absorbers function at temperatures ranging from ambient to 350°F. A shock's role is to dampen the oscillation of the truck's springs. It does this by transforming the energy produced by the spring to heat and dissipating it. As a result the shock should be slightly warm to hot to the touch after normal use.

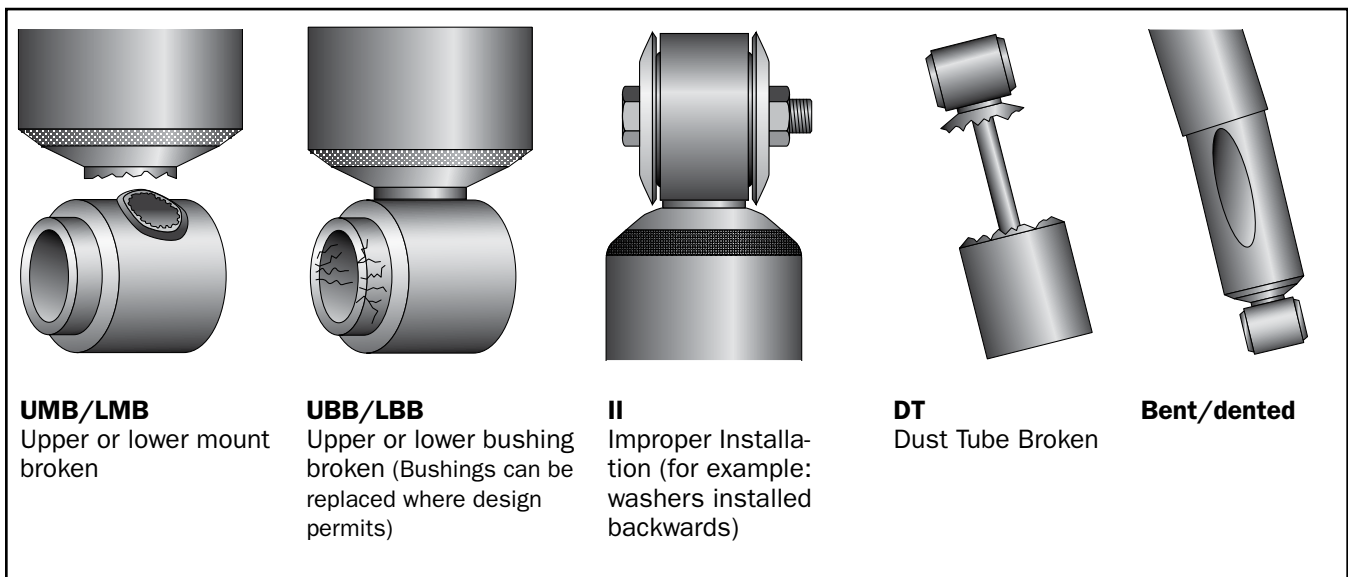
If ride deterioration is experienced and there is suspicion that a shock has failed internally, which is visually undetectable, perform the following "SHOCK HEAT TEST" within a few minutes of operating the equipment:

1. Drive the vehicle at moderate speeds for at least 15 minutes.
2. Within a few minutes of driving the vehicle, touch each shock absorber carefully on its body below the dust cover or tube, after first touching a nearby part of the chassis to establish a reference ambient temperature of the metal.
3. All shock absorbers should be warmer than the chassis. Suspect a failure in any shock absorber that is noticeably cooler than its mate on the other end of the axle. Different temperatures from axle to axle do not indicate failures, but cooler temperatures on any one axle does warrant removal and examination of the cooler shock absorber.
4. To inspect for an internal failure, remove and shake the suspected shock. Listen for the sound of metal parts rattling inside. Rattling of metal parts can indicate that the shock has an internal failure.



Shock Visual Checks

Look for these potential problems



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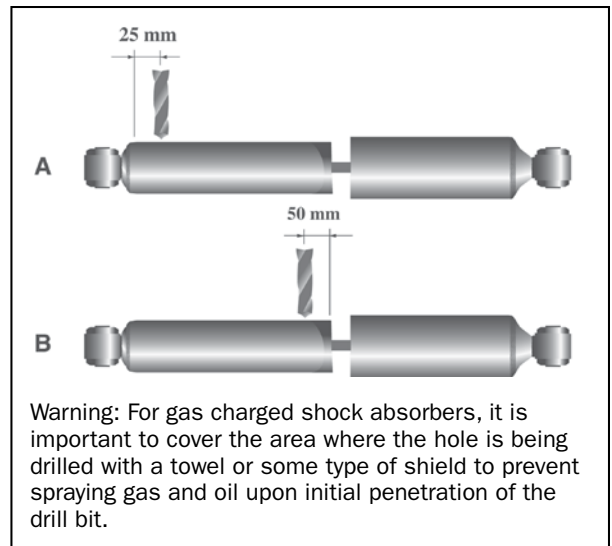
Disposal Instruction

General Remark

Appropriate protective measures, such as wearing safety glasses and protective gloves, should be taken when removing oil and gas from discarded and defective shock absorbers.

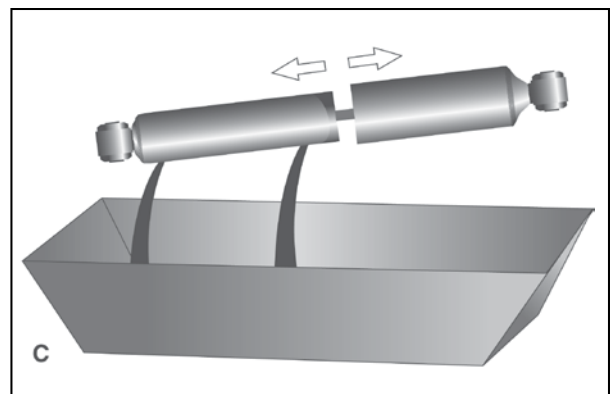
Procedure

1. Secure the shock absorber in a horizontal position.
2. Fully extend the piston rod prior to drilling the unit.
3. Using a 1/8" (3mm) drill bit, drill a hole in a downward direction approximately 1.0" (25 mm) from the bottom of the shock absorber to a depth of about 1.0" (25 mm) (see fig. A).
4. Drill a second hole of about 1/8" (3 mm) at 2.0" (50 mm) from the top of the shock absorber to depth of about 1.0" (25 mm), in order to allow all of the oil to flow out (see fig. B).
5. By moving the piston rod in and out, begin stroking the unit to completely purge the oil from the cylinder of the unit (see fig. C).



Environmental Information

6. Collect all used oil, **being careful not to mix oil with any other waste or refuse**. Store the used oil in an approved container clearly marked "Used Oil".
7. Dispose of the remaining shock body and internal parts in accordance with your local State or Provincial legislation concerning waste oil and other wastes.
8. Store, dispose, and/or transport used oil in accordance with environmental regulations and used oil program regulations in your state or province.



Used shock oil may be disposed in the container used for recycling engine oils. Information on where to dispose of the oil and other parts can be obtained from environmental authorities or oil suppliers.