Q: WHAT DO SHOCK ABSORBERS DO?
A: Commercial vehicle shock absorbers control spring movement to help keep your tires in contact with the road.

Shock absorbers are critical safety components that can affect tire wear, stability, braking, vibration, driver comfort, and the life of other steering and suspension parts.

THE VITAL FUNCTIONS THAT SHOCKS PERFORM:

- **Control spring movement**
  Shocks work with a commercial truck’s suspension system to maintain tire-to-road contact by controlling spring movement.

- **Protects spring and air bags**
  Shocks work with a commercial truck’s springs - if one is weak, it will wear the other out quickly.

- **Help keep tires in contact with the road surface**
  Maintaining firm tire-to-road contact is critical for safe steering, handling and load control.

- **Provides extension stop for air suspensions**
  If extension limits are exceeded, damage to the air spring - and the truck - may result.

- **Transform movement to heat**
  These velocity-sensitive dampers transform the kinetic energy produced by suspension movement into thermal energy, which is dissipated via hydraulic fluid.

- **Reduced cost per mile**
  Properly functioning shocks can help reduce operating expenses by extending tire life, reducing wear and tear to other components and protecting your truck’s investment.

- **When replacing worn air bags, remember to replace worn shocks**
WHY SHOCK ABSORBERS WEAR OUT

Commercial vehicle shock absorbers wear out gradually over time from normal truck operation, and often present no visible or audible cues.

The commercial vehicle operation may be unaware of shock wear. That’s why shocks should be routinely inspected and tested by a repair technician as part of scheduled truck maintenance.

Reasons for commercial vehicle shock wear:

• **Deterioration through normal operation**
  Each mile of operation averages 1750 stabilizing actions
  - 22 million cycles occur - on average - at 12,425 miles / 20,000 km
  - 88 million cycles occur - on average - at 49,700 miles / 80,000 km
  - 132 million cycles occur - on average - at 74,550 miles / 120,000 km

• **Hydraulic fluid deterioration**
  Since you don’t change the oil in your shocks, over time, the internal hydraulic fluid loses viscosity and elasticity, impairing the unit’s ability to dissipate road impacts

• **Deterioration of shock components**
  The components within a shock absorber are made of metal, rubber and plastic, all of which eventually degrade through extended use, extreme heat, and adverse road and weather conditions

• **Determination of a qualified repair technician**
  Not all symptoms of shock deterioration are readily discernible; after a thorough inspection, a qualified repair technician may determine your truck’s shocks have worn to the extent that those units legitimately require replacement
SIGNS YOUR VEHICLE NEEDS NEW SHOCKS

Technicians follow strict guidelines to determine the condition of commercial vehicle shock absorbers.

Shock absorbers, along with suspension and brake components, should be routinely inspected and tested by a qualified repair technician as part of a scheduled maintenance program.

Symptoms of worn shocks necessitating replacement:
1. Leaking from the unit, including leakage on the shock body
2. The unit has sustained physical damage, including dents and worn or broken mounts
3. Cupped or uneven tire wear
4. Whenever any spring is replaced
5. When a truck nears a shock’s specified warranted mileage, or if the unit carries a mileage-related replacement recommendation
6. Check shock temperature:
   “If it’s cold, it’s old. If it’s hot, it’s not.”
   The unit should be extremely warm or hot after extended truck movement or travel during usage.

Replacement recommendations:
• When replacing worn air bags, remember to replace worn shocks
• Shocks should be a part of any and all truck inspections
  Since shocks are an interconnected part of a truck’s suspension and braking systems, any worn parts could be an indication of difficult to discern wear
• Shocks should always be installed in pairs
  Since all ride control components are exposed to roughly the same level of wear, replacement of all shocks makes even more sense when one unit is worn
• Have your suspension checked before and after installing new shocks
  Since the shock also absorbs excessive movement caused by worn suspension components, make sure your shocks are not handling more impacts than necessary
UNDERSTANDING THE SAFETY TRIANGLE
Critical interconnected commercial vehicle steering, stopping and stability components

Just one worn component could effect a driver’s ability to avoid accidents, and compromise safety

Steering
Shocks help distribute your truck’s weight over the tires, improving handling and steering during turns.

Stopping
Shocks and brakes work together to help your truck stop sooner under certain driving conditions by minimizing weight transfer.

Stability
Shocks and tires work together to help maximize tire-to-road contact, improving truck stability

What is the Safety Triangle Inspection?
The Safety Triangle Inspection checks critical interconnected system components that control steering, stopping and stability. Going beyond tires and brakes to include shocks, torque rods, springs, tie rod ends, king pins and a host of other suspension and chassis parts, the Safety Triangle is vital to a driver’s ability to avoid accidents. Just one worn part could diminish truck control and compromise safety.

For your safety, have a complete Safety Triangle Inspection every time your commercial vehicle is brought in for tire, brake or alignment service.