

control suspension oscillation prevent vehicle body roll and pitch maintain optimal wheel contact



Monotube shock absorbers



Rebound

shock absorber.

movement.

Vehicle vibrations cause the shock absorber to extend.

The piston valve exerts pressure against the oil flowing down from the chamber above the piston, which stops the piston's upward movement.

The gas cushion expands by the volume of the retracting piston rod.

SACHS is a brand of ZF

SACHS shock absorbers

Compression

Vehicle vibrations compress the

The piston valve exerts pressure against the oil flowing upward from the chamber below the piston, which stops the piston's downward

The gas cushion compresses by the volume of the piston rod moving in.



Twin-tube shock absorbers



Compression

Vehicle vibrations compress the shock absorber, with the base valve doing the damping.

When the piston rod moves in, the oil it displaces flows into the compensation chamber, while the base valve resists this flow and thus slows down the piston.

The piston valve is open. It functions as a non-return valve during this stage.



Rebound

Vehicle vibrations cause the shock absorber to extend, with the piston valve assuming the damping function.

The piston valve exerts pressure against the oil flowing down from the chamber above the piston, thus slowing the upward movement of the piston.

The oil flows unobstructed out of the compensation chamber through the non-return valve back into the working cylinder where it is needed.

