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Effective braking for a good ride with motorcycle ABS from Bosch



**DECADE OF ACTION FOR
ROAD SAFETY 2011-2020**

Supported by **Bosch**

Road traffic crashes take the lives of nearly 1.3 million people every year, and injure millions more. The goal of the Decade of Action for Road Safety is to stabilize and reduce the number of lives lost by 2020, ensuring that the vision of a world in which mobility is safe for all who use the world's roads becomes a reality.

www.decadeofaction.org

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Bosch ABS benefit study based on GIDAS (German In-Depth Accident Study, 2001-2009) powered two-wheelers involved in accidents with injuries

You brake better with experience – especially with ours.

With the antilock braking system (ABS) from Bosch, the motorcyclist can keep calm, even in a dangerous situation, making the fear of locking wheels and falling a thing of the past.

Starting in 2016, ABS will be introduced as standard equipment for an increasing number of motorcycles in the EU. According to the EU legislation, all motorcycles with an engine displacement greater than 125 cc will be required to have ABS.

What Bosch already knew, is now confirmed.

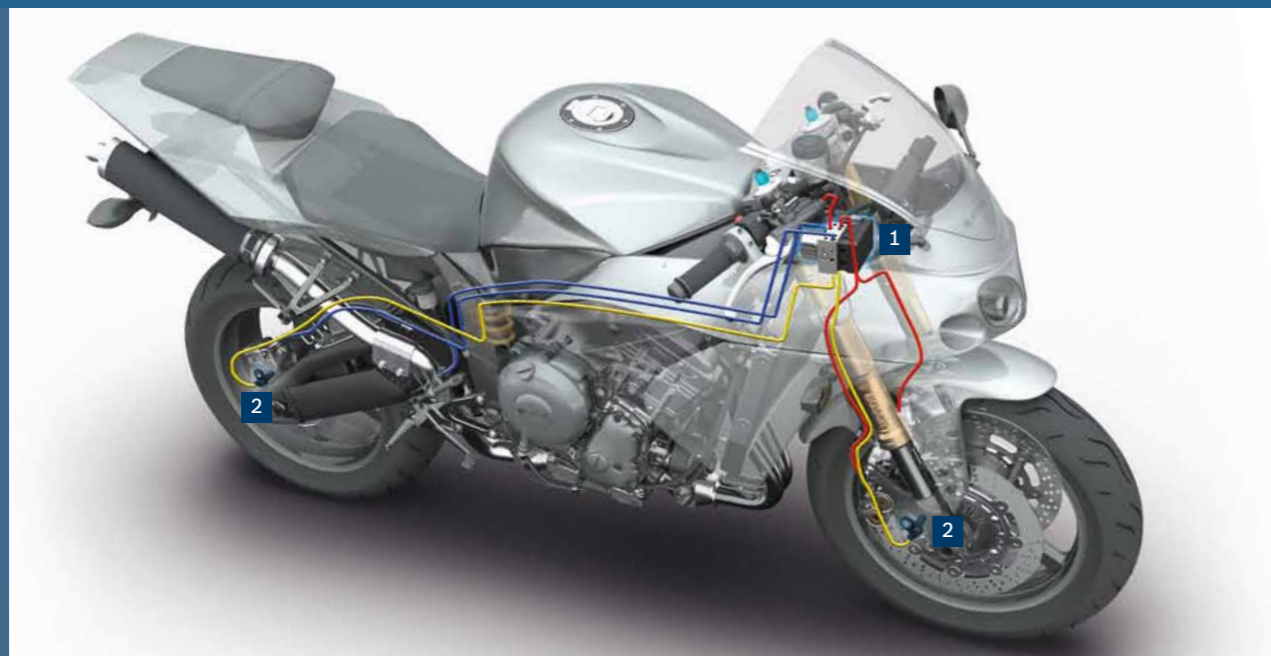
Around one in six deaths that occurs on the road in Europe and Brazil involves a motorcyclist – in India and China, that figure is even higher. What’s more, according to the European Transport Safety Council (ETSC), the risk of a motorcyclist having a fatal accident is 20 times greater than for a car driver traveling the same route. According to the 2011 USDOT/NHTSA Traf-

fic Safety Facts, the fatality rate for motorcyclists per registered vehicle in 2011 was six times the fatality rate for passenger car occupants.

ABS from Bosch can improve safety significantly, as proven in numerous scientific studies. An investigation conducted by Bosch based on the large German accident database, GIDAS, concluded that

a quarter of all accidents could be avoided if ABS was fitted as standard. A further third of these accidents would at the very least have less serious consequences if ABS was used.

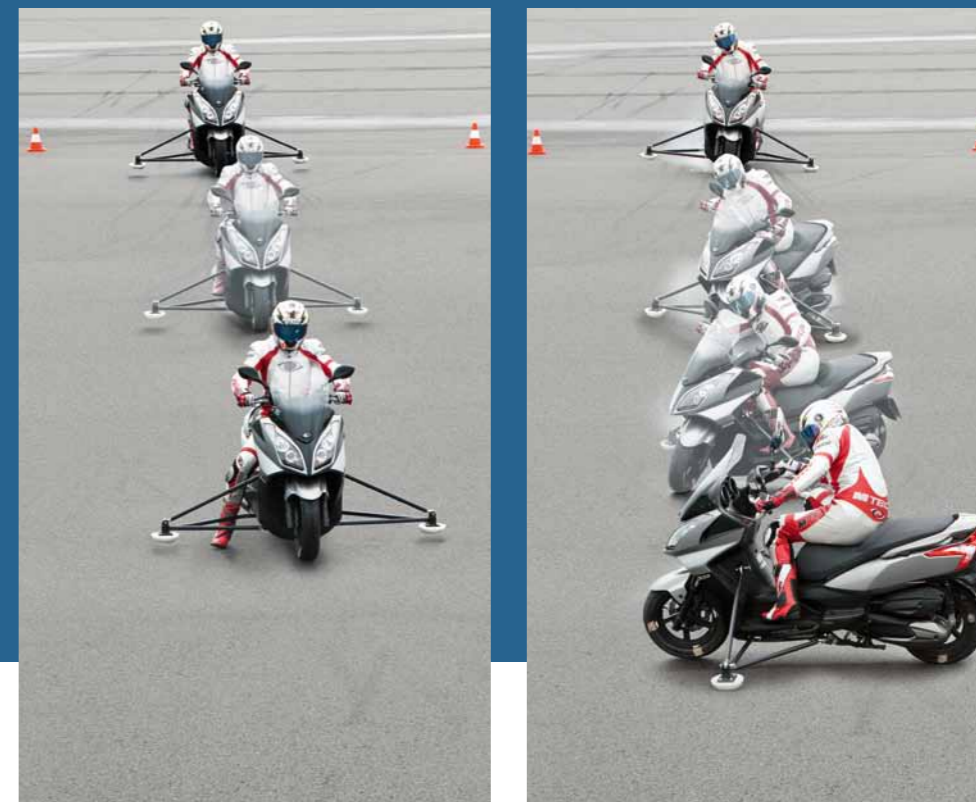
Components of the Bosch motorcycle ABS



- 1 ABS hydraulic unit with attached control unit
 - 2 Wheel-speed sensor
- Sensor signal — Brake circuit front wheel — Brake circuit rear wheel

Safe braking with motorcycle ABS (left).

Without ABS the motorcycle loses stability (right).



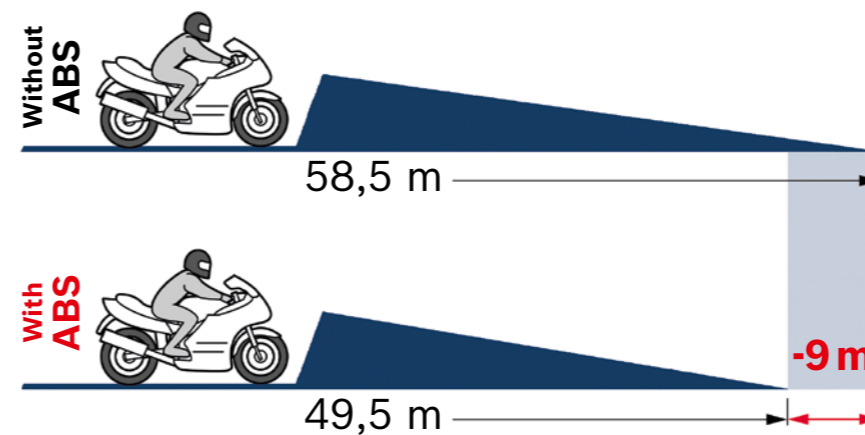
Braking instead of locking.

On a motorcycle fitted with an anti-lock braking system, the ABS control unit constantly monitors the speed of the wheels using wheel-speed sensors. If a wheel threatens to lock during hard braking or on slippery roads, the antilock braking system regulates the braking pressure in a targeted manner, thereby ensuring optimum braking. In this way, the stability and maneuverability of the motorcycle is maintained, even where there are

adverse operating conditions (such as driving on sand, gravel or water). This significantly reduces the risk of a brake-induced fall, and usually shortens the braking distance. Depending on the model, the rider is informed that ABS is engaged through a gentle pulsing on the hand and foot brake levers, as well as a tacking noise.

Typical braking distance of a motorcycle

Average rider, starting speed 100 kph



Source: Austrian Road Safety Board, 2002

Customer benefits:

- ▶ Reduction in the number of serious and fatal accidents
- ▶ Increased vehicle stability and enhanced riding comfort
- ▶ Best possible deceleration, without the wheels locking
- ▶ Shortened braking distance

Traction control



Off-road control



Motorcycle ABS can do so much more

ABS from Bosch not only makes braking safer, but also enhances performance. Value-added functions increase the level of safety, comfort and dynamics.

Traction control: A helping hand for the operator – even when accelerating

Bosch ABS does more than just brake the motorcycle effectively. Combined with the traction control system, it also ensures that the rear wheel does not spin during vigorous acceleration and prevents the front wheel from leaving the ground.

Off-road control: Keep the fun of riding – even off the beaten track

Until now, the fun of riding with ABS ended when venturing off the beaten track; conventional antilock braking systems were not able to cope with the tougher conditions in the open

countryside. In order to achieve optimum braking performance when riding off-road, the ABS control range starts a little later than it would on tarmac. This delay allows the rear wheel to dig into the ground and improve braking performance on off-road terrain. The front wheel control allows a higher level of deceleration without impacting stability.

Rear-wheel lift-up mitigation: Makes the fun of the ride reach new heights, not the rear wheel

When the brakes are strongly applied on two wheels, it is actually only one wheel that decelerates. This is because, on motorcycles, especially on a sporty one, the wheel load shifts in the direction of the front wheel, often causing the rear to lift up. The rear wheel lift-up mitigation adjusts the pressure in the braking circuit of the front wheel with precision to

keep the rear wheel on the ground and avoid rollovers. This technology allows riders to remain more relaxed, whatever awaits them on their trip – be it wet leaves or bumps.

Hill hold control: Making going up-hill a breeze

Starting-up from standstill on a steep incline is no easy task, even for passenger vehicles. For a heavy-duty motorcycle, the task is even more challenging. Hill hold control prevents motorcycles from rolling backwards unintentionally while riding up-hill. Once the rider has released the brake lever and pedal, the function automatically holds the brakes for a second longer. This allows the rider to tackle any incline, without unintentionally rolling backwards, regardless of whether they are a beginner or an experienced operator.

Frequently asked questions about motorcycle ABS



While braking, rear wheel lift-up mitigation keeps the rear wheel on the ground and helps avoid rollovers.



Without rear wheel lift-up mitigation, the rear wheel can lift up while braking.

► Can I have ABS retrofitted in my motorcycle?

No. It is not possible to retrofit ABS. That's why it is important that you make the right decision when purchasing your motorcycle by selecting a model equipped with ABS.

► Do I need to change my driving style when my motorcycle is equipped with ABS?

No. It is not necessary to change your style of riding. ABS helps you in critical situations, though you should always remain alert and drive carefully.

► Do I need to activate ABS when starting the engine?

No. ABS is automatically on and enabled as soon as the engine is started.