SAFE BRAKING WITH MOTORCYCLE ABS

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A part of: MANUFACTURING EXPO 2016

In collaboration with: IENTech 2016

Co-organized by: THAILAND AUTOMOTIVE INSTITUTE

Reed Tradex
Action for world wide road traffic fatalities

Worldwide road traffic fatalities are forecast to rise

- UN target: 50% reduction
- 5 million fatalities
- 50 million serious injuries

*United Nations estimate*
Status of road safety worldwide

Every 4th fatality used motorized two- or three-wheeler

1.24 million people die per a year, thereof 285,200 users of motorized two- or three-wheeler

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**Sources:**
1. WHO Report 2013
2. INDIA MORTH 2013 Road Accident Report
4. CHINA Traffic Accident Annual yearbook 2013

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**Legend:**
- **Black**: killed pedestrians
- **Light blue**: killed bicyclists
- **Dark blue**: killed motorcyclists

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**Note:**
[1] Calculated based on the given data.
Fatalities by road user category in Thailand

Third-quarter of road traffic fatalities used two- or three-wheelers

- Motorized two- or three-wheelers (73%)
- Pedestrians (8%)
- Four-wheeled cars & light vehicles (13%)
- Buses (1%)
- Other (2%)
- Cyclists (2%)
- Heavy trucks (2%)

Sources: Global Status Report on Road Safety, WHO (2015)
Our goal is to make riding safer. Safe braking with motorcycle ABS.
Motorcycle ABS
System component

ABS systems for two-wheelers

ABS Unit + Wheel-speed sensors + Tone wheels

Master cylinders
Calipers
Motorcycle ABS
How does it work?

Function:

- Rider applies full brake
- Wheels lock
- Detection (wheel-speed sensor)

ABS reduces brake pressure
Wheel-lock and falldown are prevented

A part of: [Manufacturing Expo 2016]
In collaboration with: [iEVTech 2016]
Co-organized by: [Thailand Automotive Institute, Reed Tradex]
Motorcycle ABS benefits
Safe braking with motorcycle ABS

Benefits
- Increased riding stability
- Shortened stopping distance
- Reduced danger of fall down

Source: Austrian Road Safety Board, 2002
Average rider, starting speed 100kph
Motorcycle ABS benefits worldwide
ABS can avoid more than 1/4th of motorcycle accidents

[1] Source: GIDAS database (2001-2009) weighted data according to location, severity and accident type

Bosch motorcycle ABS
Technical evolution of motorcycle ABS
New Bosch motorcycle ABS 10
Smaller and lighter for emerging market

Up to 30 percent lighter
and
up to 45 percent smaller
than current ABS 9
Motorcycle ABS installation rates: Increasing rapidly in the last 10 years

In the year 2020 ABS will be standard equipment on two-wheelers in many markets world-wide.
Motorcycle ABS legislation in 2016
ABS will become standard in many markets by 2020

- **EU**
  - ABS for all new vehicle types > 125 cc as of 01/2016*
  - ABS for all existing vehicle types > 125 cc as of 01/2017*
  - * > 50 cc: ABS or CBS

- **Japan**
  - ABS for all new vehicle types > 125 cc as of 10/2018*
  - ABS for all existing vehicle types > 125 cc as of 10/2021*
  - * > 50 cc: ABS or CBS

- **U.S.**
  - Motorcycle ABS on political agenda

- **Brazil**
  - ABS for all existing vehicle types ≥ 300 cc ramp up from 2016-2019*
  - * < 300 cc: ABS or CBS

- **India**
  - ABS for all new vehicle types > 125 cc as of 04/2018*
  - ABS for all existing vehicle types > 125 cc as of 04/2019*
  - * < 125 cc: ABS or CBS

- **Australia**
  - Motorcycle ABS on political agenda

- **Taiwan**
  - ABS for all new vehicle types > 125 cc as of 01/2019*
  - ABS for all existing vehicle types > 125 cc as of 01/2021*
  - * > 50 cc: ABS or CBS

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1) CBS: Combined braking system
For further safety, we are developing the innovative technologies to open the new era of assistance systems for two-wheelers.
Bosch vision for two-wheeler safety:
Technological innovations beyond ABS

Motorcycle stability control (MSC) for safe riding in all situations

Connectivity systems for greater safety and comfort

Motorcycle ABS: Safe braking instead of locking

Side view assist: World’s first ARAS (Advanced rider assistance systems)
SAFE RIDING. MORE FUN.