Seatbelt ~More user-friendliness~

シートベルト ~使い易さの向上~



Background

With improvements in the traffic environment, increase in the seatbelt wearing rate, and advancements in automotive technology, traffic deaths are decreasing. However, 2,663 deaths are still reported.

37% (321 people) of the automobile fatalities did not wear a seatbelt. If they had worn a seatbelt, half of them would have been saved.





Offer user-friendly seatbelts for more seatbelt wearing

Content and overview

The improved webbing structure and shoulder anchor design provide better seatbelt texture and effortless pulling.

The installed motor can minimize the stress experienced by users when wearing a seatbelt.



- The thin thread softens webbing.
- The thinner thread used in the edges makes the webbing further softer.

- The shoulder anchor is made from smooth material POM.
- The redesigned anchor shape reduces the sliding resistance of webbing.

- The motor assists seatbelt retraction.
- A seatbelt is retracted at low load to ease the oppressive feeling.

Technology

Webbing improvements

- Thinner thread is used to improve texture.
- Low-friction coating is applied to the webbing surface to enhance smooth pulling.





Shoulder anchor improvements

• Low-friction material is used for producing the anchor slide for webbing to enhance smooth pulling.

Smooth pulling ↑

Anchor slide for webbing: Polyacetal (POM)

- · The low-friction material reduces the sliding resistance of webbing.
- The directions of pulling were considered in the design of the slide.





Conventional product

- Nylon only
- A seatbelt is pulled with difficulty because of high sliding resistance.



Motor-assisted seatbelt retraction

 The motor <u>assists the retraction of a seatbelt</u> after it is released. The retraction force of the spring can be reduced to <u>minimize</u> <u>the sensation of tightness</u> of a seatbelt worn.



 If a seatbelt catches on the user's arm while retracting, the slip clutch mechanism can <u>ease a feeling of discomfort</u>.

It is not painful even if a seatbelt catches on the arm. A seatbelt can be pulled out while the motor is operating.







Technology Other functions of the motorized retractor

Application ① Rapid retraction in emergencies

A seatbelt is retracted at high load during emergences, such as hard braking to <u>maintain the user's posture</u> (in preparation for collision).



Application 2 Haptic warning

When fatigue or drowsiness in the driver is detected, the seatbelt vibrates to alert the driver.





