

SHOEI®



 **NEOTECH**
when hightec feels natural

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Concept



First design drawing.

Since introduction of "DUOTEC", our first flip-up helmet, in 1993, we have been pursuing improvement of convenience required for flip-up helmet. New model, "**NEOTEC**", is born at end of 2011.

SHOEI's innovative technologies are adopted to **NEOTEC** corresponding to various practical requirements expected to flip-up helmet. Its combination with radical shape created by SHOEI's high level of design leading the industry in helmets of all categories realizes a joy to own in addition to improvement of performances. Wearing **NEOTEC** changes daily riding from a simple transportation to luxurious time. We developed **NEOTEC** to realize such a concept.

Current flip-up helmet market is in a matured level along with heated competitions. What are characteristics of helmet selected by users in such a situation? In our development stage, we questioned to ourselves what high added values provided by SHOEI only are considering improvement of users' satisfaction. Quality, performance and design in high level are realized by SHOEI's own spirit.

Design



Compact shape.



Sporty aero-form.

Can a helmet without spiritual elevation in outlook design create a passion in riding? We pursued an impressive and emotional design not realized in other flip-up helmet in development of **NEOTEC**. We targeted further refined smart and compact shape maintaining sporty image realized by aero-form of MULTITEC.

Refined Smart and Compact Shape

In order to realize a pretty and streaming aero-form, line from a face cover to a shell is integrated and appeals free and energetic existence. In addition to smart and compact finish realized by detailed design, a shell size is minimized maintaining safety fully instead of enlarging a shell by equipping a sun visor and its opening/closing mechanism. Ventilation parts are also designed and positioned for effective absorption and exhaust of air in addition to their design not to disturb air stream of a shell.

Sporty Aero-form

In high speed riding, a stable posture restraining a load to neck by wind is an important factor of rider's safety and comfort. A load to neck, especially in long touring, influences physical and spiritual fatigue. Restraining wind pressure further during ride, therefore, was one of themes in design concepts of **NEOTEC**. In designing process, wind tunnel experiments were repeated to realize proper aerodynamics. Checking height and positions of aero spoiler integrated with a shell, we improved balance of practical performance and refined design.



Smart flipup mechanism.

Face Cover

Variable axis is eccentric same as a shield. Axis for a face cover is used as an axis for a shield. In such a manner, the number of parts is decreased maintaining strength fully and light weight is realized.

Use of low head screw to hold a face cover realizes compact mechanism and maintenance free. Enlarged lock release button makes handling with thick glove for winter easy. When a face cover is opened with an open shield, a shield is closed automatically.

Newly attached “Vortex Generator” is precisely controlling the airflow around the helmet shell, and reducing the noise which is created by wind.

Attentions paid to a face cover itself and a shape of inside secure space large enough around mouth compared with MULTITEC (max. about +8mm as per drawing below) and realize smart and light design.

Also, to ensure the secure fasten of the face cover, **NEOTECH** adopted “360 Pivot Locking System”, well established in the market since the launch of MULTITEC. Fully metallic component provides firm and reliable closure.



Vortex generator for active noise reduction.

Newly designed shield & sun visor



Shoei CNS-1 visor system.



Shoei QR-N system base plate.

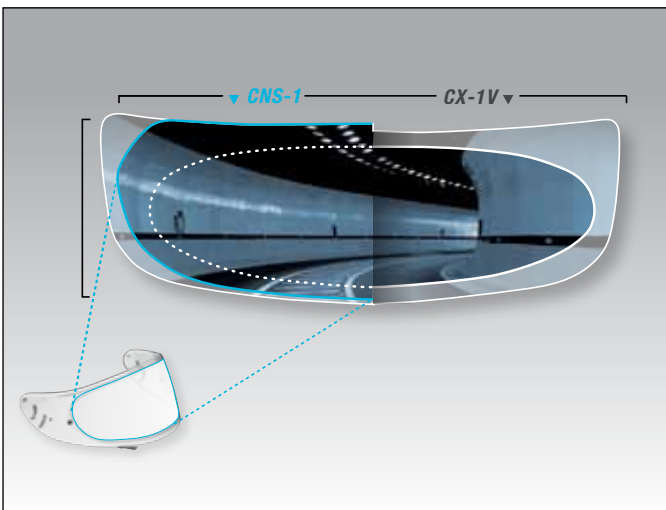
Clear and safe vision secured always irrespective of changes of circumstances such as weather and time and quietness inside of a helmet in a high level enable a rider to concentrate on riding. New shield mechanism based upon SHOEI's new technologies and sun visor developed through precise designing are adopted to **NEOTEC** to contribute to safe and comfort riding.

Newly Designed CNS-1 Shield + QR-N Shield Base CNS-1 Shield developed newly for **NEOTEC** is used.

SHOEI's traditional injection molded shield was adopted initially in 1983 and has been continuously improved. It is adopted to **NEOTEC** also to secure vision minimizing distortion and restrains wind noise.

Pinlock sheet covers most of vision same as CW-1. As for shield base, based upon QRSA system which contacts closely to window beading by 2 actions of "Down & Press" to avoid invasion of rainwater, wind and noise, "QR-N" is developed exclusively for **NEOTEC**. Shield itself can be fixed and removed easily same as former models.

Newly designed shield lock system is helping secure closing of the shield and easy operation of the shield. Also it allows the rider to open the shield slightly (just put the shield between lock position and first click) to keep the airflow around face area.



Shoei CNS-1 compared to CX-1V visor.

Pinlock Fog-free System

Pinlock sheet is standardized. It prevents fogging of a shield and contributes to comfortable and safe riding even in such a bad circumstances as unexpected sudden rainfall during touring and low temperature in winter. Newly designed Pinlock sheet together with CNS-1 shield and QR-N secures a larger vision than Pinlock sheet used with CX-1V for MULTITEC for more comfortable riding.

Removable breath guard larger than that of MULTITEC is standardized. It helps Pinlock sheet prevent fogging*.



Double lipped beading for less wind intrusion.

Device for Quietness

Although reducing gaps is difficult in flip-up model due to many movable portions, gaps which allow invasion of wind are reduced substantially in **NEOTECH**. Double lipped lower end of window beading makes contact with shield larger. And also, combination with QR-N system in “Down & Press” structure secures further airtight.

Device for Comfort

As for division of window beading which is inevitable as far as face cover is movable, an idea is applied to a shape of each part so that invasion of rainwater is avoided and it goes out of vision not to disturb vision of a rider as much as possible in riding under rain where concentration is required further.

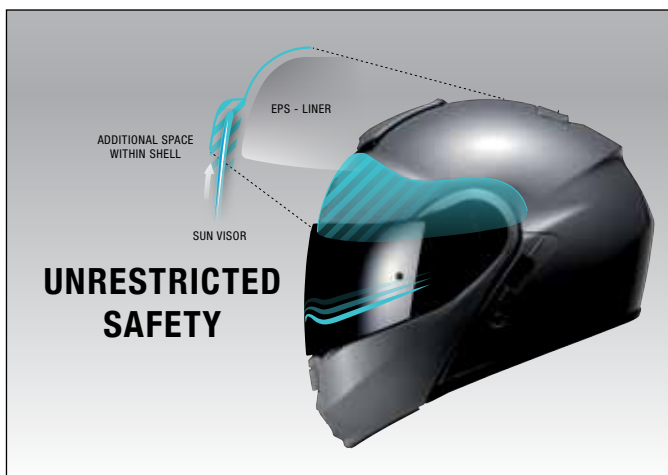


Shoei QSV-1 sunvisor system.

Newly Adopted QSV-1 Sun Visor

Built-in sun visor which has been required by many riders is equipped for the first time in history of SHOEI. It corresponds promptly to a change of weather and other circumstances and contributes to further improvement of active safety.

Instead of placing an impact absorption liner further inside, a shell is placed further outside to secure thickness of a liner fully. A helmet, however, does not look large.



Impact liner not sacrificed by sun visor.

Handling system positioned in the light side in a shape for easy handling with gloved hand. Click is applied to a slider to avoid a visor to come down unexpectedly.

An inner visor is injection molded to minimize a distortion same as a shield. Anti-fogging and anti-scratch processes are applied and 99% of UV is cut. Edge is not sharp for safety. Fixing, removing and replacing of an inner visor is possible.

Ventilation performance

Hot air and humidity inside a helmet disturbs a rider's concentration. In **NEOTECH**, a ventilation system which creates comfortable circumstance in a superior balance is adopted, and also, full attention is paid to minimize a noise caused by air stream inside a helmet.

Upper Air Intake

A whole cover of intake is designed to work as a shutter for easy handling same as MULTITEC. Compatibility of easy handling and performance is realized. Fresh air is absorbed to inside of a helmet from 2 intake holes. 276% amount of airflow has been recorded in the wind tunnel experiment, compare to MULTITEC. This upper air intake also allows the rider to control the amount of airflow by choosing easy-to-operate ventilation shutter from 3 positions. At the same time, 1 outlet is placed in a rear portion to exhaust hot air around a shield.

Top Air Outlet

Top outlet is newly adopted to exhaust hot air inside a helmet effectively. Experience of more than 20 years in wind tunnel experiment enables us to position best shaped parts in the best locations for exhaustion. Hot air is exhausted effectively from 2 outlet holes.



New upper air intake.



New lower air intake.



New top air outlet.

Lower Air Intake

Lower air intake leads air effectively to mouth area and provides comfortable riding circumstance together with a large space inside a face cover. Furthermore, protruding structure of shutter corresponds to a posture of a rider for further effective air absorption.

Same as upper intake, a whole shutter moves in opening and closing for easy handling.

Dual Liner

Dual liner makes it possible to locate the best density in the best position and to place air route properly. Entrances of air routes are dispersed for even ventilation inside a helmet to secure compatibility of safety and comfort. Full attention is paid to air route not only for improvement of air stream but also to block a noise from outside.



Highly sophisticated ventilation system.

Newly designed interiors



View of the material composition of the interior.

Interiors of SHOEI helmet have various characteristics depending upon models. In development of **NEOTECH**, detailed devices are applied to realize an ideal fit and performance required to a premium flip-up helmet. Attention to a real use situation realized a device for fixing and removing of glasses and comfortable hold in long time wearing in long touring.

Newly Designed Interiors

All interiors are newly designed. Center pad is removable to make interiors fully removable. Due to this, maintenance is easy and fine adjustment of fitting is possible. Furthermore, adopting different fabrics to different portions rea-

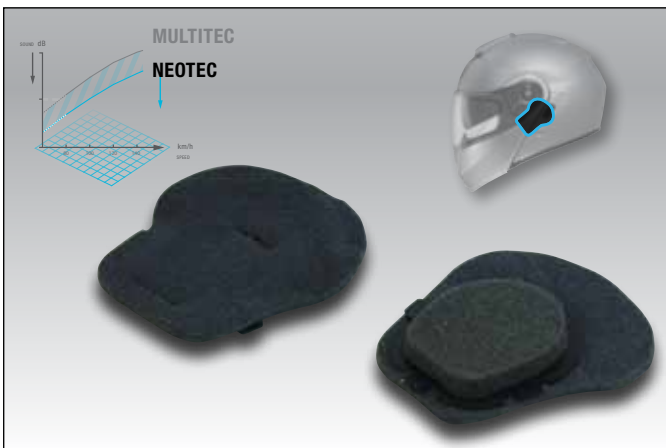
lizes compatibility of comfortable wrap around the head and sweat absorption performance. Layers of polyurethane foams in different hardness are applied to proper areas to provide a firm hold and even fit. The spaces for speakers are secured to equip intercom.

Hold realized by Shell Size

Sizes of a shell are increased from former 2 sizes of L and XL to 3 sizes of M, L and XL to realize a proper hold in each size.

Fitting and Removing of Glasses

As experienced before, slits for strings made simply in interiors did not match strings of cer-



Ear pads to reduce disturbing frequencies inside the helmet.

tain glasses and caused trouble in fitting of glasses. And gaps of slits allowed invasion of noise from outside. In order to eliminate these problems, attention was paid to a shape of cheek pad and hardness of polyurethane foam is adjusted properly in each position. Unnecessary gaps are minimized to improve quietness in a structure corresponding to various shaped glasses.

Design for Quietness

Reduction of the noise during the ride is the one of our important priority. All of the interiors of Neotec have been designed to reduce the noise, while keeping its outstanding fitment to the head. Additionally, with exclusive developed chin curtain integrated to NEOTECH shell and interiors, noise caused by roll-in of wind and noise from bottom of a helmet is restrained effectively. Chin curtain is removable for easy maintenance. And additionally, as it was mentioned above section “face cover”, the newly designed vortex generator on the facecover managing the airflow around the shell and working effectively to reduce the creation of noise itself. These total management of noise inside of the helmet will provide the rider comfortable environment to enjoy the motorcycle riding.

| Speed | Sound level Neotec compared to Multitec |
|----------|---|
| 100 km/h | -1.1 db (spl) |
| 120 km/h | -1.3 db (spl) |

Test date: 14th Sept. 2011
 Test location: Wind tunnel facility at Shoei Co., Ltd. Ibaraki factory (Japan)
 Test condition: Put the helmet onto dummy-head microphone set in the wind tunnel with 15 degrees lean to forward, and measure the noise level at left ear point.
 Microphone: HEAD Acoustics HMS III
 Note: the experiment had been done under one specific condition and the result may be different with actual riding on motorcycle, due to the difference of external conditions such as the type of motorcycle, riding positions, etc.

Safety

Chinstrap in Micro Ratchet Type

Chinstrap in micro ratchet type is newly adopted for easy fixing and removing. Newly developed high-grade stainless steel buckle secures enough strength, instead of plastic buckle.

SHOEI pursues high quality always and reflect it to all product developments. Safety performance supported by the quality provides easiness in an unexpected accident.



Micro ratchet system with steel interlocking mechanism.

AIM Shell + 2 Layered Liner

AIM(Advanced Integrated Matrix)is SHOEI's own shell structure, lightweight but in superior rigidity and elasticity based upon complex layers of strong glass fiber and organic fibers. Combining 2 kinds of liners in different rigidity and softness in proper balance secures superior safety performance and satisfies requirements of strict standards of various countries and areas easily.



AIM shell construction.

Available colors



Black



White



Matt black



Light silver



Anthracite
Metallic



Wine red

Specifications

SAFETY

- Shell in AIM
Organic fibre and multi-composite fibre in various layers for a shock-absorbent shell with optimum rigidity
- EPS-liner system with two densities
Optimized protection trough EPS elements with different shock absorbing levels
- Mist-retardant CNS-1 Pinlock system
Fast and easy to change
- Micro ratchet system
Easy to handle, always perfect adjusted
- 360° Pivot Locking System
Made from stainless steal

WEARING COMFORT

- 3 different outer shell constructions
For perfect fit and compact dimensions
1) XS-M, 2) L, 3) XL-XXL
- 3d-centerpad, detachable, washable
For pleasant wearing comfort
- Cheek pads detachable, washable
For better care and individual adjustment
- Chinstrap cover detachable, washable
Easy to maintain and clean
- Ear pads
To reduce noise
- Prepared for Intercom installation

VENTILATION

- Multiple venting and extraction
For optimum ventilation performance
- Inlets on brow and chin
Fresh air supply guaranteed
- Two outlets at the rear
To exhaust warm air

AERODYNAMIC

- Integrated spoiler
For optimised aero dynamical performance
- Integrated "Vortex Generator"
Active noise cancelling