

# JRA Horse Racing and Equestrian Helmet Explanatory Diagrams

## ① Helmet Shell and Puncture-Resistant Mesh

Aramid fibers, known for their excellent puncture resistance, are integrated between the helmet shell and the outer cover. This structure helps reduce impact from hard objects while maintaining a lightweight design and enhancing overall shock absorption.

## ② Goggle Fit Enhancement

A diagonal cut is incorporated along the edge of the helmet shell where the goggle strap passes. This design improves the fit between the helmet and goggles, providing enhanced stability during use.

## ③ Chin Strap Usability and Strength

The helmet features a one-touch buckle that can be easily operated with one hand. The chin strap has been reinforced compared to previous models, while lightweight plastic materials help reduce overall weight.



## ④ Interior Size Adjustment and Hygiene

The interior includes four separate head cushions (front, rear, left, and right), along with removable top and chin pads. The head cushions are adjustable for a customized fit, while the lining is treated with antibacterial and deodorizing properties for improved hygiene.

## ⑤ Improved Ear Covers

The ear covers are made of synthetic leather with enhanced texture and durability. In addition, the exposed portion of the chin strap has been reduced to help protect it from rain and dust.

## ⑥ Shock Absorption Performance

The helmet was tested using a 4.1 kg headform, dropped from a height of 3 meters onto a simulated anvil. Impacts were applied to points 5 cm above the edges of the forehead, back, and sides. Measurements from an internal accelerometer recorded an average impact acceleration of 190G—well below the 300G threshold commonly associated with brain injury.