



Made for riders, by riders



*Real World Protection*

*Rounder, Smoother & Stronger Shell*

**R75**  
**SHAPE**



# ARAI'S BASIC PRINCIPLE



## Emphasizing helmet protection above all else.

### THE ARAI DIFFERENCE:

Our Basic Principle: Protection above all else

Since the day we were founded three generations ago, the same basic principle has driven us: Protection above all. Proper protection devoted to helping you, the rider, in that unpredictable, unforgiving world out there.

And no helmet fad or fashion has ever changed that principle.

Test standards are a good thing. They provide a base by which all manufacturers must comply. However, Arai believes that simply passing the lab tests is not enough. We must consider more than just the required lab test – we must consider the outside world.

### HERE SINCE THE BEGINNING:

Back in the late 1920s and early 1930s when Arai founder Hirotake Arai began his passion with motorcycle riding, there were no motorcycle helmet companies in Japan. Eventually his passion for riding inspired him to design and build a helmet with his own hands. Not to sell, but to wear. He knew a little bit about how to make a good hat – he was a custom hat maker in an era when men wore hats all day. (Think Humphrey Bogart, Clark Gable, Mickey Spillane).

But Mr. Arai not only had to build his own helmet, he had to learn how to make a good helmet, to make sure his helmet could protect him the best way possible. After all, this was his helmet.

Two things happened as a result. One, in that small way Hirotake Arai pretty much created the motorcycle helmet industry in Japan. Two, he set the down the basic principle that would guide his future helmet company from that point on: Protection above all else.

And that basic principle, more than profit and money, has guided Arai ever since.

### PROTECTION ABOVE ALL MEANS

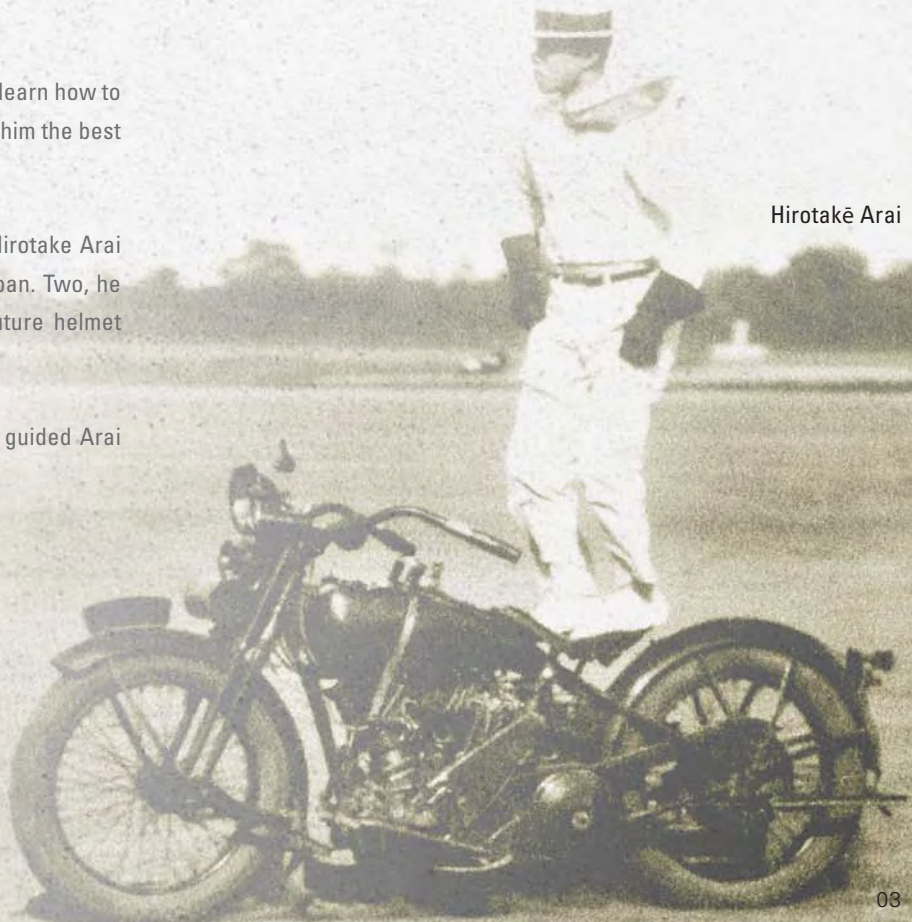
#### COMPREHENSIVE ENERGY MANAGEMENT

To Arai, our guiding principle of “Protection Above All” is simple common sense. A helmet must be able to deal with a wide range of issues during an impact on the street or race track. Such potential must be considered when designing and producing a helmet. Protection is king. Not features or gimmicks or colors or style. You can change or improve whatever you want - as long as you never affect job one: protection.

Arai's idea of protection is different than some others in the industry. To us it means comprehensive energy management: attempting to deal with the dynamics of an impact on the street or race track where nothing is controlled - in addition to those specified by the standards in the test lab. The world is not a test lab, so we try to think about how impacts occur in the outside world.

Michio Arai was raised in this environment of comprehensive energy management by his father. It's the same concept he's passing down. Our commitment to this concept is unique to Arai. It's what our customers expect. It's what they get.

Hirotakē Arai





# THE R75 SHAPE

## The Ability to Slide Over & Glance Off Objects to Divert Energies, is a Crucial Helmet Function.

It is important to know that kinetic energy of a moving object increases in proportion to the square of the speed.

Therefore, a street rider, traveling at the legal limit, can carry up to 12 times the amount of kinetic energy than even the world's most strict standard requires. Considering this fact, no helmet, regardless of brand, can be expected to manage such energies.

Nevertheless, history has shown that some helmets have worked well in such extremes, and in fact have performed well at higher race speeds. Such performance suggests another fundamental role of a helmet, beyond test requirements, that works in conjunction with impact absorption, though few acknowledge this fact.

## ARAI has been observing this throughout our long history.

Experience, throughout decades of lessons learned on both the street and track, continue to reinforce a simple truth that a Rounder, Smoother and Stronger Shell is better able to slide across uneven surfaces and glance off obstacles more easily, helping to minimize excess rotational forces. Arai believes in a continuous, convex curve of a minimum radius 75mm - defined by the R75 SHAPE.

Rounder, Smoother & Stronger Shell  
**R75**  
SHAPE

## HISTORY

### By Riders for Riders.

Created by an enthusiast and still owned and run by enthusiasts. Three generations of the Arai family. All riders. All demand performance and protection for themselves first, and only then will the family name be put on a helmet made available to other riders who also expect more for themselves.



## COMFORT

### Better Fit, Better Ride.

Knowing how to fit the organic, and seemingly infinite, shapes of the human head might seem impossible at best, but Arai's more than 6 decades of experience provides insight and know-how that defies expectations. You have to experience an Arai fit to fully understand the meaning of true comfort.

Fitting the head shape more closely allows for a better fit in a smaller helmet. A smaller helmet is lighter and quieter (therefore less fatiguing), lasts longer and will perform better in an impact.

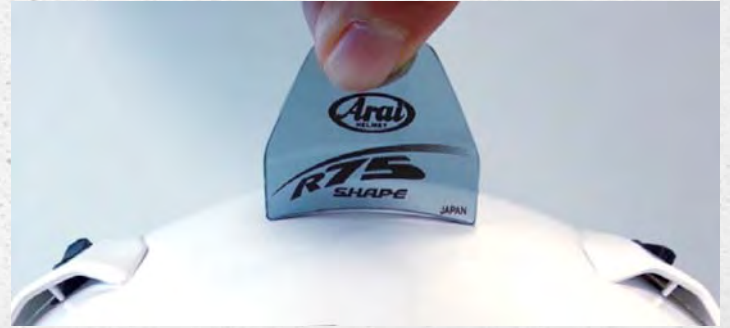


## The R75 Concept

R75 may sound complex, but it is very basic at its roots. A simple tool allows everyone to visual and easily understand it for themselves. The R75 gauge demonstrates how Arai strives to maintain the R75 radius whenever possible. Move the gauge around the shell surface, as long as the two ends of the gauge are touching the surface of the shell conforms to the R75 shape concept.

## The roundness of the shell can be checked with the R75 SHAPE template

R75 SHAPE is one of the most important in-house standards ARAI enforces. ARAI does so to offer protection to wearers. It's not something most standards demand. It's something ARAI demands.



A helmet should be designed to handle the unexpected. It should be able to manage impact energy, but no helmet can be expected to handle all potential impact energy, so avoiding or diverting potential impact energy should also be a key function of a helmet.

\* Arai R75 SHAPE Concept does not apply to area below the test line, attachment area of visor, ventilation ducts and previous open face Classic/m based models.

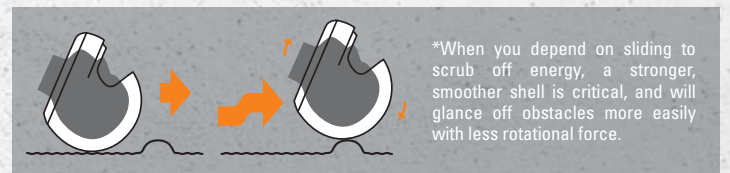
# PROTECTION

## Rounder, Smoother, Stronger Shell.

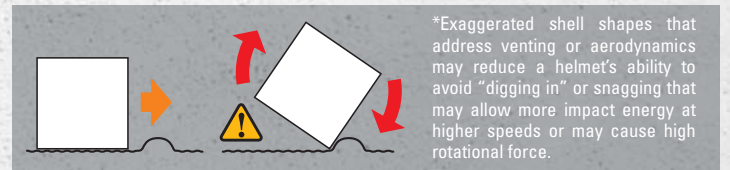
A **ROUNDER SHELL** provides strength in it's shape, allowing for the use of less material, making the helmet smaller and lighter.

A **SMOOTHER SHELL** slides more easily over uneven ground and glances off obstacles with less potential rotational force.

A **STRONGER SHELL** resists penetration of sharp objects and resists deformation, which could concentrate energy in too small an area. Shell deformation may also allow excessive rotational force.



\*When you depend on sliding to scrub off energy, a stronger, smoother shell is critical, and will glance off obstacles more easily with less rotational force.



\*Exaggerated shell shapes that address venting or aerodynamics may reduce a helmet's ability to avoid "digging in" or snagging that may allow more impact energy at higher speeds or may cause high rotational force.



\*A smoother shell can slide over uneven surfaces more easily and a stronger shell resists deforming and catching on obstacles, thereby minimizing potential rotational forces.



# FCS® FACIAL CONTOUR SYSTEM

At Arai, even a simple cheek pad is anything but simple.



Mr. Arai is fond of saying, “There are no minor parts of an Arai helmet. Each part contributes to the whole, to try to improve the benefits and the experience of wearing an Arai. It is one of the things that make us different.”

The revolutionary, patented FCS® cheekpad system is a prime example of this philosophy of maximizing the contribution of every part of an Arai helmet.

The FCS® design cannot be overemphasized. Its contoured shape, combined with multiple layers of varying foam densities, supported by a patented foam “spring,” cradles the face like nothing that has ever come before - even from Arai.

The FCS® pads’ patented design simultaneously holds the cheek and jawbone firmly for a secure fit, while making gentle contact with the soft areas of the cheek for incredible all-day comfort without excess pressure. And the contoured padding moves out of the way so the helmet can be put on and taken off without the cheekpads hindering it.

5mm peel-away pads add another level of micro-fit customization without the need to purchase extra interior components, underscoring Arai’s attention to all aspects of comfort and fit. (To complete the effort, 5mm peel-away Temple pads - being phased into future models when possible - in the comfort liner do the same thing for micro-fitting the head-shape for the individual rider.)

Another major bonus of the new design is the effect it has on lowering interior noise levels by blocking more wind noise from entering the bottom of the helmet from the turbulent airflow above the shoulders - the main source of wind noise on low-windshield or un-faired bikes.

And of course, the FCS® system also has Arai’s Emergency Cheekpad Release System - yet another Arai innovation now copied by other companies. This groundbreaking Arai advancement was specifically developed to allow easier access to an injured rider by making the cheekpads easier to slide out, making helmet removal easier for trained medical personnel. (Another example of where Arai’s priorities are.)

**The result: In the hands of Arai’s engineers and artisans, a simple cheekpad - a small and common part of every motorcycle helmet - is transformed, combining the multiple benefits of unrivaled comfort and support, reduced wind noise, reduced distraction, easier helmet on/off, and micro-tuned fit ability.**

FCS® is currently available on the Corsair-V, RX-Q, Signet-Q, Defiant, CT-Z, XC, XD4 and VX-PRO3 models.



## 1) 5mm Peel-Away Cheekpad

The 5mm Peel-Away cheekpad layer allows you to micro-tune the fit to your head by giving you 5mm of extra padding that can be removed without the need to buy an optional cheekpad set.

## 2) FCS® Spring Support

Innovative and exclusive spring support adds just the right amount of pressure when needed while being worn, but seamlessly “gets out of the way” when putting on and taking the helmet off.

## 2) Emergency Cheekpad Removal System

Arai’s groundbreaking Emergency Cheekpad Removal System was specifically developed to allow easier helmet removal from an injured rider by trained emergency medical personnel.



# MULTI-DENSITY ONE-PIECE EPS LINERS

## Multi-Density One-Piece EPS Liners: One of Arai's Foundational Features

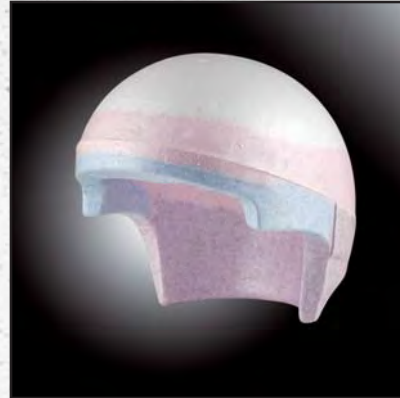
A helmet is, first and foremost, an Energy Management System. Everything else - from ventilation, aerodynamics, and shield systems to radios, Bluetooth, and cool graphics - is secondary. So none of them should ever interfere with the helmet's number one job of impact energy management.

One of the main ingredients in this complex network of integrated components charged with energy management, is the EPS liner.

Given Arai's obsession with rider protection above all else, our EPS liners are one piece, not multiple pieces fitted together with the potential for gaps or poor bonding. One piece. An extremely complex and singular achievement that took years for Arai to develop and perfect. And if that was all that distinguished an Arai liner, it would be major. But it doesn't stop there.

Each Arai EPS liner is multi-density. Various densities throughout the entire liner address specific impact needs. That's one of factors in Arai's unparalleled comfort. In fact, depending on the model, Arai street helmets can have up to four different densities in a single liner. (Our Formula-1 auto racing helmet liners have five.)

The result of Arai's multi-density one-piece EPS liners is an exceptional degree of impact energy management, while keeping the overall size and weight of the helmet to a minimum.



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## THE ARAI FIT: WHY IT'S LIKE NO OTHER

**Arai is the only company offering multiple interior-fit shapes to better address the infinite variety of riders' head shapes and sizes.**

**Head shape is as important as head size in getting "the perfect fit."**

That's why no one pays more attention to the subtle variations and infinite possibilities of the human head shape than Arai. Why? Because it's the secret to getting the best comfort and fit.

### Finding the Right Size and Fit

The first step is understanding how a helmet is supposed to fit. A helmet is an ENERGY MANAGEMENT SYSTEM whose number-one job is to manage the energy of an impact it can't predict. (Pretty paint and graphics are just there to make it look good.)



**Start:** Get your head measured to get an idea of where to start. The image here shows the proper placement of a measuring tape to get the most accurate measurement.



# THE ARAI FIT: WHY IT'S LIKE NO OTHER

## Finding the Right Size and Fit (Continued)

**"Facing" A Potential Problem:** Some riders get concerned about getting the helmet to fit over their faces. Facial-fit problems mostly occur in riders with a broader facial structure. We find many such riders wearing helmets up to two sizes too big. That's because, when you can't get the helmet past your cheeks or jaw, you think it's too small, and you reach for a bigger size. But your brain's not in your face. The helmet must fit your head. That's why it's important to focus on your head size (crown fit) measurement first. How? The trick is to first remove the cheekpads to keep them from interfering with getting the helmet on. Then try on helmet sizes until you get the proper crown fit.

**The Proper Crown Fit And Cheekpads:** Remember, snug is good. For the most comfort, the interior must fit snugly all around the crown of your head. (The crown is the area contacted by a baseball cap's band, for example.) You should feel a firm, even pressure at all the contact points around the interior perimeter, with no tight pressure points that could become uncomfortable in the future. The perimeter pads should be supporting most of the helmet weight, with the top crown pad touching the top of your head and supporting only some of the helmet weight.

Try on different sizes and interior fit shapes until you get the desired crown fit. Then, if necessary, Arai's optional cheekpad thicknesses - and our exclusive new 5mm peel-away micro-fit cheekpad layers - can fine tune your personal fit to a degree you never thought possible - as only Arai can do it.

**Don't guess size:** Try the helmet on for awhile before you buy it. Don't think you know your shape or size - make sure. Measuring gets you halfway there; a test fit confirms it. Shape and fit can change as helmet models evolve - even from the same brand.

## Determining Your Arai Interior-Shape Fit

Most North American heads tend to be more oval than round (somewhat longer front-to-back, narrower side to side). Our different Arai models vary slightly based on that general Oval shape to accommodate a much wider fit range.

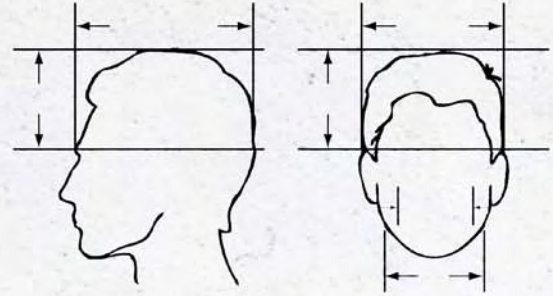
Lastly, we want to mention the role of Measured fit, even though head shape is equally (if not more) important to the best fit. You'll find an excellent video on getting the right fit on our website at [www.araiamericas.com/thefit](http://www.araiamericas.com/thefit).

## Helmet Fit: How Hard Can It Be

If helmet companies made helmets individually for every rider, fit would be much less of a problem. They take the measurements for each head and that's it. Perfect.

The problem is that helmet manufacturers are making helmets to fit a world of people - literally. A world of shapes, angles, widths, bulges, recesses, etc. (Snowflakes aren't the only things where no two are alike.)

**The difference in how helmets are made to fit the world of people is what separates Arai from every other manufacturer.**



Helmet making is mostly a function of economics. (Isn't everything?) If you're a high volume manufacturer some things just aren't economically feasible - like dealing with all those head-shape variables. So you cut costs by making just one interior shape for all your models. It doesn't do much for the comfort and fit of the world of head shapes, but you're selling a price-point product, so it's good enough.

**Good enough isn't what drives Arai.**

Arai believes there are discerning enthusiasts with the riding experience and awareness to appreciate the countless benefits of a better-made, better-fitting helmet. (Arai riders typically ride further than road house to road house.) And while it was accepted that we could never build the perfect-fitting helmet for everyone, that doesn't mean we can't try. No matter how time and effort-intensive, and costly. It's our mission.

**So for more than three decades, Arai has pioneered different shapes - and even different proportions within those shapes - in our various helmet models, working to offer a better fit for more people.**

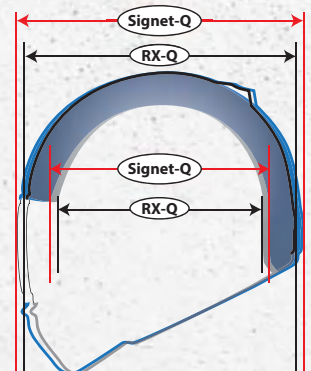
## Case in Point: The Arai RX-Q and Signet-Q models:

A longstanding successful Arai shape has been the Intermediate Oval (I/O), currently found in our RX-Q model.

Then, because we constantly measure heads to learn where we can improve, we recently measured the head shapes of nearly 750 consumers across the U.S. providing us with the firsthand information that led to the development of our latest Long Oval (L/O) helmet, the Signet-Q. We again used the Signet model name, which was used years ago and was well known for its very long narrow interior shape, but updated the shape and fit to make sure that this new Signet comes with a new L/O shape that we feel addresses a larger segment of the U.S. market.

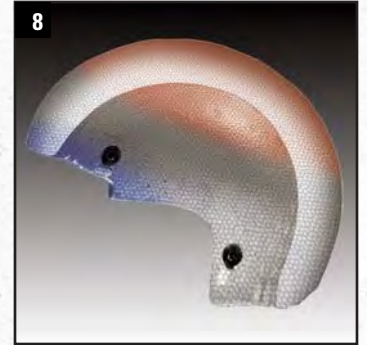
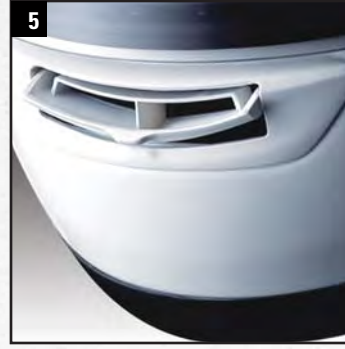
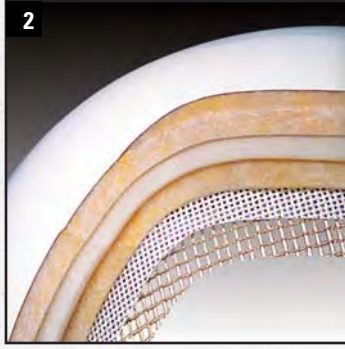
**Because we have more than one interior shape/fit**, riders often ask us to define those shapes and proportions so that they can more easily determine the best helmet for them. And while we have to define these parameters in order to produce our helmets, we don't provide those details because the decision isn't based solely on dimensions.

**A helmet needs to be tried on in order to determine a proper fit.** With an Arai helmet, regardless of your presumed head shape, a side-by-side test fit, like an RX-Q against a Signet-Q, will give an apples-to-apples comparison to find your best fit. And, not surprisingly, in some cases your "perfect" fit isn't the interior shape you thought, or were told you were.





# SHARED FEATURES



## 1) Brow Vent Channeling

Brow-vent inner ducts redirect incoming air to the temples instead of the forehead, and around the ear area (missed by many helmet ventilation systems). The stale air is then extracted out the side exhaust cowls. The airflow over the temporal artery reportedly also helps cool the blood flow to the brain area. This simple re-purposing of two existing vent features greatly improves helmet performance and rider comfort.

## 2) Shell Construction

Arai's decades of experience, research, testing, comparison and evaluation has concluded that fiberglass-based construction is ideal for performing a helmet shell's main job - dispersing impact energy over the widest area through strength, structural integrity and impact flexibility (although Arai's R&D study and testing of alternative shell technologies is always ongoing). The shell utilizes our proprietary aerospace fiberglass to achieve an exceptionally strong, flexible, yet lightweight shell.

## 3) Removable, Washable Liner

Another Arai innovation first introduced in the late '80s, our fully removable, washable, and replaceable interior comfort-liner components also permit micro-fitting of a helmet in between size scenarios.

## 4) LRS Shield Removal

Watch racers Nicky Hayden and Kenny Roberts, Jr. swap Arai faceshields on video while wearing their helmets and you'll see for yourself how easy Arai's LRS tool-less system really is. And if you go to [www.AraiAmericas.com](http://www.AraiAmericas.com) to **The Arai Difference** page you'll read why we continue to use side pods when others have gone to easier-to-make pod-less systems.

## 5) Patented Dual-Pivot Chin Vent

This easy-to-operate, two-position dual-pivot hinge mechanism allows for increased chinvent airflow capacity to two areas: the first position directs air to the face through an activated carbon-coated foam filter; the second sends the air to the faceshield to aid de-fogging.

## 6) FCS® System

Arai's peel-away FCS® cheekpad design delivers comfort, support and it features our 5mm peel-away custom-fit layer and Emergency Release System.

## 7) Side Vent Cowl

Sculpted to enhance stability while increasing exhaust efficiency, the side vent cowls are tailored to the needs and speeds of the street.

## 8) EPS Liner

Arai's EPS liner is like no other, comprised of several material densities molded into a single piece. Arai pioneered this technology more than 20 years ago and is still, to our knowledge, the only helmet offering this liner and its unique benefit: the directly fused contact area that each EPS cell shares with its neighboring cells create mutual support. As one is crushed under impact, the surrounding cells assist with the energy absorption. (Liner pieces that are simply fitted or glued together cannot rely on such a high-level support bond).