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A closer look at diving fins

Our cut-out-and-keep series to assist retailers with product knowledge

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Although Leonardo da Vinci is said to have scribbled down some ideas for artificial flippers, it was a French Navy lieutenant commander, Louis De Corlieu, who is credited with inventing the first diving fins, back in 1914. From these early crude "swimming and rescue impulse devices", as they were called then, the design and materials have been steadily developed to give us the wide selection of specialist swimfins available today.

While variety is good news for the customer, since there's a greater chance of finding the right fin for their needs, it does put more pressure on retail staff.

Clearly, a high level of product knowledge is essential to ensure that they don't make the mistake of recommending something that's unsuitable. The trick, as with selling any piece of sporting or outdoor equipment, is to have a solid understanding of the key design features, and be able to match these with the customer's specific needs.

Let's take a closer look.

Heel: open or closed?

Manufacturers categorise dive fins as either *open* or *closed* heel, so it's logical to make this your starting point when helping a customer choose a pair of fins.

Which type you recommend to the customer will depend largely on where they plan to go diving.

Open heel fins are just that – open at the back – with an adjustable strap to keep your foot in place, much like a sandal. They are designed to be worn in conjunction with neoprene booties.

- The big advantage of wearing booties is that they protect your feet, so they're the number-one choice for dive sites where people have to first walk across sharp rocks or hot sand to get to the water.
- Booties also provide much needed insulation in cold water sites (think Cape Peninsula or the West Coast).

Closed heel, or *full foot* fins, are more like regular shoes. They're non-adjustable – i.e. are a fixed size – and are designed to slip snugly over the whole foot. Most divers wear them on bare feet.

- Many divers prefer the snug fit and more streamlined design of closed-heel fins, so don't automatically recommend an open-heel model without first finding out what the customer's preference is.

"There's no right or wrong here," says Dion Sarrimanolis of AJF Agencies, the local agent for Cressi. "It's very much a personal choice."

Blade: short or long?

Is bigger better when it comes to buying fins? It depends.

- While it's true that longer blades will generate more thrust, this doesn't mean they're automatically a ticket to better diving performance. For one, longer fins are more cumbersome – a boatload of divers all trying to don long fins can get interesting! But the main factor is power. Or lack thereof.
- "Bigger fins are like riding a bike in the highest gear – you go further on each pedal stroke, but it's much harder on your legs," explains Rhys Couzyn of Scuba Equipment Africa, importers of Scubapro dive equipment.
- For this reason they're only really popular with free divers and spear fisherman, who need to build up momentum with just a few kicks so they can descend quickly.

Paddle fin or split fin?

Forget what you've seen in 007 movies. Recreational diving isn't about chasing after speargun-wielding frogmen; it's about taking it easy! The slower you move through the water, the less energy you expend, which in turn means you suck less air. This is pretty much the Holy Grail in diving: using less air means your tanks last longer and you can spend more time trying to find Nemo. While diving style plays a huge role here, the design of the fins is also important.

Significantly, it's essential to match the right fin with the customer's ability, allowing them to get the best performance with the least amount of effort.

Paddle fins: With traditional paddle fins, the stiffness of the blade is the key factor.

- Stiffer fins provide more thrust in the water, giving you a better return on your kick. But the payoff is that you need strong legs;
- A weaker diver paired with fins that are too rigid will soon become tired, using more energy and also running the risk of cramping.
- So for decades the sales pitch worked like this: beginner divers were sold fins with softer blades, while more experienced divers bought ones that were stiffer.
- The problem with this is that flexible fins have very little power, so if the diver needs to move quickly (say in an emergency, or when swimming against a strong current) they end up *running on the spot* like a Looney Tunes cartoon character.

Split fins: About ten years ago a completely new design arrived on the scene: the split fin.

- As the name suggests, the blade is literally sliced in two, allowing each side to flex independently. It's this *propeller* like action that is supposed to give split fins the edge, providing more thrust with less energy expenditure.

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- The market responded positively, with split fins coming out tops in numerous tests and competitions.
- But while they've proved a boon for recreational divers, especially weaker ones who benefited from the increased performance, not everybody is convinced. More experienced divers, in particular, complain that manoeuvrability and acceleration are still not on par with that of a good pair of paddle fins.

Alternative solutions

So while split fins still have their place, they're definitely not the answer for everybody. With this in mind, manufacturers have looked at alternative designs to provide divers with the right mix of performance and comfort.

Dual-density construction: One approach that has proved highly successful is a dual-density construction, as used on models such as the Cressi Frog Plus and Mares X-Stream.

- "Instead of building a blade of uniform stiffness, manufacturers use a composite construction, with harder ridges running along the edges and a softer, more flexible material in the centre," explains Chris Serfontein of Aqua Divers International, the local agent for Mares. The result is a fin that is more forgiving on your legs when you're cruising along, but delivers more power when you kick hard.

Hinged fin: Another new design that has turned a lot of heads is the so-called hinged, or pivoting, fin. Here the blade moves independently from the foot, thanks to a hinge or flexible section at the end of the foot pocket.

- The big advantage of this system, explains Couzyn (who developed Scubapro's pivoting model, the Seawing Nova), is that a bigger portion of the blade flexes to the correct angle of attack. "Regular paddle fins take on a gradually curved profile, with the initial portion of blade after the footpocket not sitting at an optimal angle to generate thrust. By condensing this curved section into an actual hinge or short flex-zone, a larger portion of the blade achieves the optimum angle of attack (45°)." This generates more thrust per kick and reduces drag.
- As yet this technology is still relatively new. And expensive! But with pivoting fins from three different manufacturers taking the top three spots in a recent ScubaLab shootout, they're definitely something to watch.

New snorkel and diving ranges

JUST IN time for retailers to stock up in order to meet the high demand for snorkel and diving equipment during the December-January holidays, suppliers are offering several interesting new products that should appeal to holidaymakers cooling off in the water.

Aqua Divers International

From serious divers to snorkelers, swimmers to kayakers or surfers wanting to keep their gear dry – Aqua Divers International has a good selection of products for all watersport enthusiasts.

Mares is one of the best known brands among serious scuba divers and they have applied their 60 years of experience in developing underwater equipment to produce a the extensive Aquazone snorkeling range.

The products are all designed in Italy by the Mares engineers who have over the years developed comfortable technical solutions like soft-touch silicone buckles, broad field of vision in the masks, easy-purge and anti-splash top-dry system in the snorkels and optimised pivoting in the blade. The siliter used in the more affordable recreational mask skirts and mouthpieces are non-toxic and **To p56**