

Full-Face Masks

In this edition's diver maintenance column, Ocean Eye, Inc.'s **Chris Gabel** presents an overview of the full-face diving masks available for today's commercial diver



The Poseidon Atmosphere

Full-face masks. Some of us have been using them for years for bridge and tank inspections. Others have just started looking at this option as an alternative to breaking out surface-supply gear for subsurface work. Full-face masks (FFM) have been around for many years, but what makes them different? Where has the technology gone and what do we need to do to maintain them?

They're growing in popularity due to their light weight, compact size, and ability to adapt to high-quality communications gear. They're lighter than a helmet or band mask and can be used in both scuba and surface-supply modes.

So many manufacturers offer FFM models to chose from. Let's go through a few of the choices that are available for you, the diver. Keep in mind, the goal of this listing is to provide you with some information about their benefits, pitfalls, and maintenance. This list is by no means comprehensive. There are new products on the market all the time. Some are better than others. Some masks, from such manufacturers such as Ocean Reef, Cressi Sub, and Scubapro, are marketed to the recreational diving community. Others, like the Interspiro Aga and Poseidon Atmosphere, are aimed more at the public safety and commercial diving marketplaces.

The Aga full-face mask from Interspiro



THE INTERSPIRO AGA

The Interspiro Aga is very popular with public safety divers, military divers, and commercial divers alike. The Aga has been a tried and true mask since its inception. The mask can be adapted for surface -supply or scuba, and can be equipped with wired or wireless communications gear from such manufacturers as OTS. The Aga has been extremely popular with its single-lens design and self-clearing faceplate. The mask is available in two models, the positive pressure model and the demand model.

One issue with the positive pressure model is that if you don't have a good seal between the diver's face and the mask, the Aga will free-flow. This isn't a design flaw, but more of a misunderstanding of the equipment. Some divers who have used this mask in the past in cold water with a neoprene hood. Sorry folks, not a good enough seal. Latex works well, but neoprene doesn't seal well enough.

If, for some reason, there have been issues with the positive pressure mask, you have the choice of changing it over to a demand mask by having a trained technician install the conversion kit for you. Both work well, but I've personally chosen the positive pressure mask in lieu of the demand version due to thermal protection issues. One very important note when shopping for your Aga, make sure that the price you get includes the supply hose. By default, this part doesn't come with the mask. Maintaining the Aga is pretty basic.

The second stage is very user-friendly and requires little in the way of day-to-day operational maintenance. Basically, it's wash the mask in clean water and test before every dive. Cleanliness is the key here.

Like most other pieces of life-support gear, have a trained technician check the mask annually. The rebuild kit can be a bit pricey, but is not always necessary from year to year. As mentioned, a conversion kit is available should you chose to change the second stage from a positive pressure model to a demand one. The conversion doesn't require anything too invasive, just a few part changes in the regulator.

THE POSEIDON ATMOSPHERE

At this point, I'd like to talk about a mask that (at least from what I've seen) hasn't been quickly adopted but is an excellent choice, nonetheless. I'm talking about the Poseidon Atmosphere. Basically, it shares a lot of the same design as the Aga: single lens, self-clearing, and even shares the same communications parts as the Aga.

One big difference is the second stage regulator. The Atmosphere uses a slightly modified Jetstream regulator – a second stage that's been around for a long time. The biggest difference is that the regulator body is significantly shorter and some internal parts had to be modified to allow for the size difference. Other than that, the regulator is simply a Jetstream.

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Most options designed for the Aga will adapt well to the Atmosphere. There is one operational note that I would like to insert here. One feature that can cause some confusion or frustration on this mask is the switch on the side of the regulator. One side is for standing on the surface, the other is for diving. This feature was developed to help make sure that the diver's air supply doesn't free-flow or leak on the surface. The opposing switch position is for in-water operations. Should you dive the Atmosphere mask and find it hard to breathe, feel the switch on the regulator with your left hand and switch it to the opposite position.

Maintaining the Atmosphere is pretty much the same as the Aga. The main difference is the complexity of the Jetstream regulator. The Jetstream uses a small upstream servo valve on the pneumatic second stage rather than using a mechanical design. The servo valve is one of the parts that had to be adapted to the new regulator body, so you can't use the same part from a regular Jetstream in an Atmosphere mask or vice versa.

One other maintenance item to note is that particulate matter can get lodged in the servo valve. This can cause the mask to hiss slightly and leak just a bit of air. This doesn't mean that the servo is bad; it just needs to be cleaned.

Try thoroughly cleaning the mask first in either clean fresh water or a slightly soapy solution (Dawn dishwashing soap would make a fine choice) and try the mask again. If that doesn't work, take it to a reputable technician who has been factory trained on Poseidon gear and have them clean the servo components before simply replacing it.

One other note for those not familiar with Poseidon second stages: Due to their regulator design, they use a pressurization relief valve in their supply line. That means that every time you pressurize the mask, you will hear a quick rush of air. It does this in a matter of two to three seconds.

KIRBY MORGAN'S EXO 26

The Kirby Morgan EXO 26, in both Standard and BR models, has been out for a long time and is widely used throughout the industry. Although the EXO 26 BR comes with the balanced regulator, there have been complaints about one design change. The EXO 26 Standard, (or original, depending on who you talk to) self-cleared the mask's faceplate. The EXO 26 BR lost this feature to gain the newer balanced regulator. The drawback on the first generation of the EXO 26 is that the mask doesn't come with an oral nasal mask or nose block device by default. The second stage regulator in the BR was shared with the Kirby Morgan 47 helmet. As with the AGA, you can install communication modules in the mask.

Like other Kirby Morgan designs, the regulator is uncomplicated and pretty easily maintained. Again, clean or diluted soapy



The EXO 26 from KMDSI

water works best for day-to-day cleaning.

As with many other Kirby Morgan pieces of equipment, there is a checklist for periodic checks. One has been in the works for a while and should be available in the very near future. Your mask should be checked and serviced annually by a trained technician that will thoroughly look over the equipment. Make sure that you check the spider daily. Because of the tension, that is one point of failure that one needs to be particularly diligent in inspecting.

OTHER FFM OPTIONS

Again, these are but a few examples of what is available. These particular masks are, however, focus more on the professional diver than other models. For example, the Desco Pool Mask and Desco Commercial Free Flow Mask weren't covered in this article since they are strictly surface-supply, constant-flow masks rather than the demand masks featured in this article.

Bottom line is that any of the masks listed in this article would do a fine job for shallow water work or inspections. They are tough, reliable, and have many options available that can help the diving company or individual diver set up and work faster and easier without having to break out the surface supply gear. They're great for light work, but keep in mind that these too need to be properly checked and maintained before and after every dive. These masks are much less expensive than diving helmets, but are not designed to withstand the same punishment or necessarily serve in the same capacity (for example, welding). The right tool for the right job, as my grandfather used to say (of course, he also used to use a lineman's pliers for a hammer, but that's a whole other story). Dive safe, dive smart. **uw**

This article is dedicated to the memory of Reynold P. Gabel Sr., Master Electrician who dedicated his adult life to running his own company for over 55 years. His influence and support helped make these articles possible. Email your diving equipment questions to Chris at cgabel@ocean-eye.net.



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