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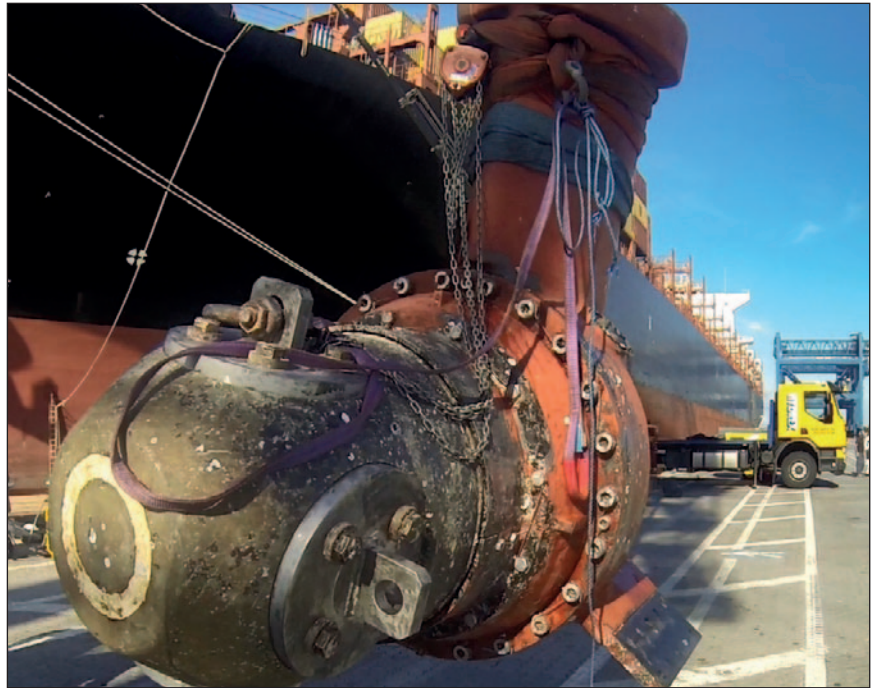
KEEPING SHIPS IN BUSINESS

**ISO 9001
& 45001
certified**

Underwater services and
technology approved by:



In-water bow thruster repairs



Our lightweight flexible mobdocks are designed to be easily transported around the world and are used to close off the thruster tunnel on both sides, allowing divers to perform repairs and other operations in a dry environment around the bow thruster unit.

This technique enables to reinstall the propeller blades of an overhauled thruster inside the thruster tunnel after the unit has been secured or replace the blades or seals and perform repair work on a

specific part without removing the unit.

Since the development of this flexible mobdock technique, numerous thruster repairs have been carried out by Hydrex diver/technicians around the world.

There is no need to send the vessel to drydock as all operations can be carried out in port or while the vessel is stationary at sea. Normal commercial activities can therefore continue without disruption.

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HYDREX
UNDERWATER TECHNOLOGY

Keeping vessels operational: underwater seal repairs

The integrity of a vessel's stern tube seals is very important. They prevent oil leaks and water ingress, ensuring smooth propulsion and environmental compliance. We have revolutionized seal repair methods, offering swift, cost-effective, and environmentally friendly solutions that eliminate the need for drydocking.

Innovative underwater seal repair techniques

One of our hallmark innovations is the development of the flexible mobdock—a mobile mini drydock that creates a dry underwater environment around the stern tube seal assembly. This technology allows for in-situ repairs, minimizing vessel downtime and avoiding the substantial costs associated with drydocking. The mobdock is adaptable to various seal types and sizes, accommodating the diverse configurations



Damaged rope guard prior to being removed and replaced.

found across different vessels. Our diver/technicians are trained to handle complexities such as worn liners and unique stern tube designs, ensuring efficient and reliable repairs.

Global case studies demonstrating expertise

1. Double seal repair on ro-ro vessel in Tasmania

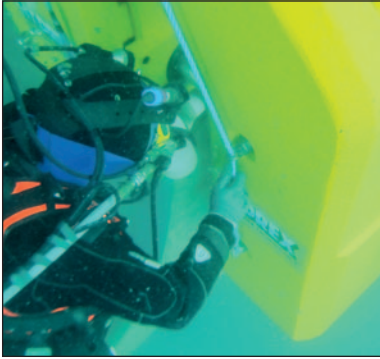
Our teams carried out a dual underwater stern tube seal repair on a ro-ro vessel docked at the Port of Burnie, Tasmania. Despite the vessel's remote location, our technical department rapidly organized logistics and mobilized the necessary equipment.

Upon arrival, the diver/technicians performed a thorough underwater inspection of both stern tube seal assemblies. Using two flexible mobdocks simultaneously, they created dry, drydock-like conditions underwater. The split rings were dismantled, cleaned, and each of the four seals (two per assembly) was removed and replaced in close collaboration with the OEM technician.



Inspection of the seal assembly prior to installation of flexible mobdock.

Fast underwater propeller blade straightening

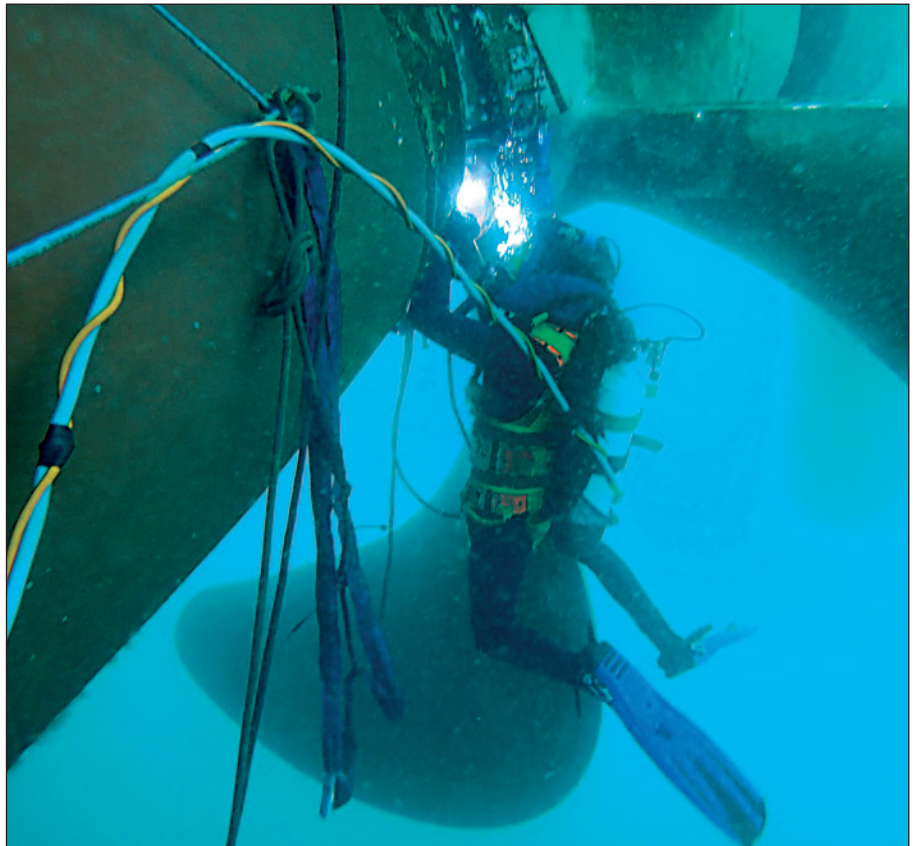


In its quest to provide cost effective services to customers, Hydrex developed procedures to address different kinds of damage to propellers. This research led to the design of the Hydrex cold straightening machines first used in 2002.

By taking advantage of this technique damaged blades can be straightened underwater, allowing the ship to return to commercial operations without the need to drydock. Blades can be brought back close to their original form, restoring the propeller's optimum efficiency.

The cold straightening machines have been in use for quite some time now but the Hydrex research department has been looking into ways to expand the technique even further to improve our services. A new version of the straightening machine was recently put into practice. It is compatible with the existing models and is used to restore more severely bent propeller blades to their original condition.

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One of our divers during reinstallation of the rope guard after seal replacement.



Hydrex diver working inside flexible mobdock in drydocklike conditions.

This repeat customer knew from experience that Hydrex could deliver efficient, safe, and high-quality work—even from afar. Thanks to pre-packed, rapidly deployable equipment and extensive experi-

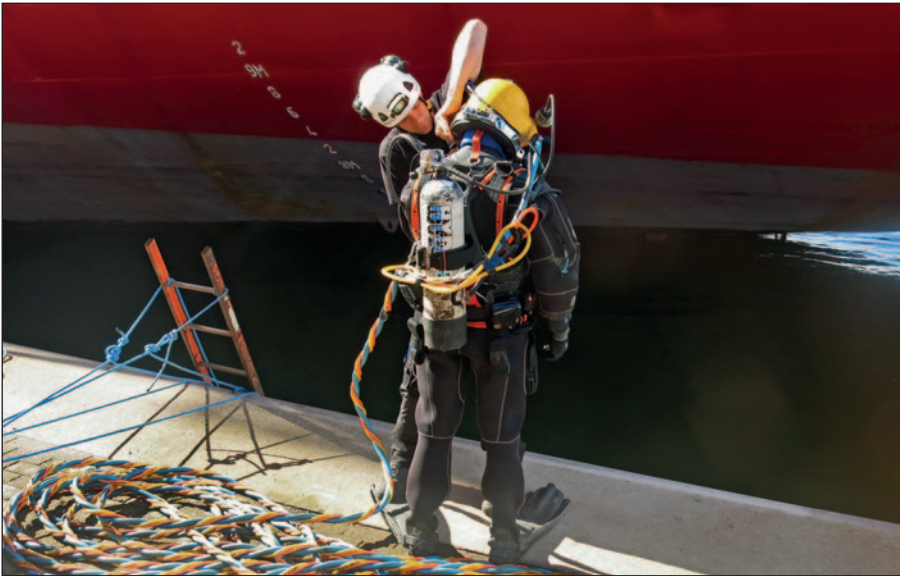
ence, we completed the task without any delays to the ship's schedule.

2. Antwerp container ship repair

In Antwerp, a 300-meter container vessel experienced an oil leak due to



Hydrex truck and containers during night shift.



Diver getting ready for underwater operation.



Hydrex diver installing the new stern tube seals.

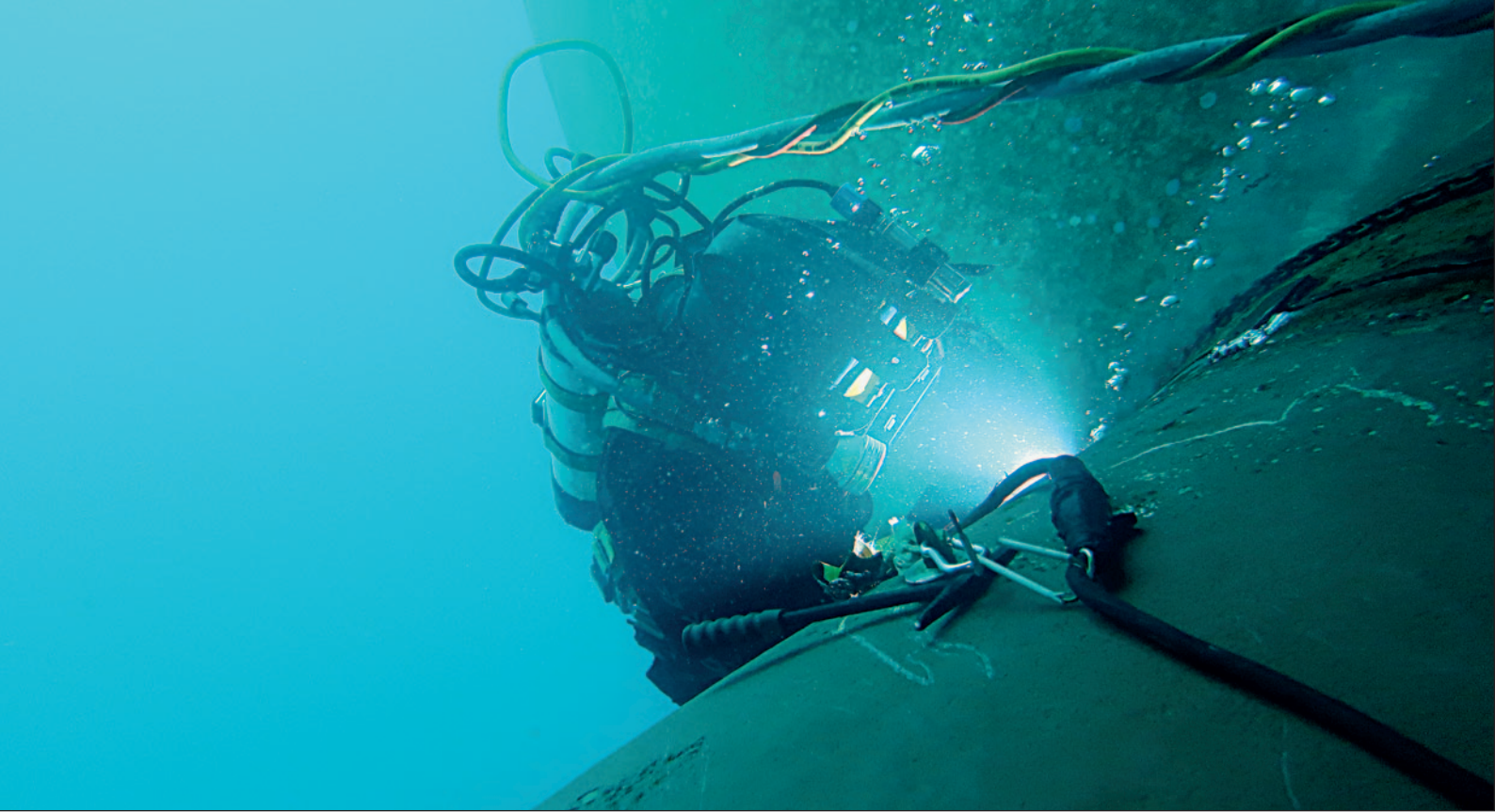
entangled debris around its stern tube seal assembly. Our team swiftly mobilized, performed an underwater inspection, and removed the rope guard. Using the flexible mobdock, they created a dry environment to replace the damaged seals. The operation was conducted during cargo operations, ensuring the vessel remained on schedule.

3. Tenerife tanker operation

A tanker docked in Tenerife required immediate attention after a rope became entangled around its stern tube seal, leading to an oil leak. Our divers removed the rope and, employing the flexible mobdock, replaced the damaged seals underwater. The entire operation was completed efficiently, allowing the tanker to continue its voyage without the need for drydocking.

Advantages of Hydrex's approach

- Cost efficiency: By eliminating the need for drydocking, ship-owners save substantial costs.



Reinstalling the rope guard concludes a seal operation.



Our flexible mobdock allows for underwater work on the seal assembly.

- Time savings: Repairs are conducted swiftly, often during cargo operations, minimizing downtime.
- Environmental compliance: Prompt repairs prevent oil leaks, ensuring adherence to environmental regulations.

- Global reach: With a network of offices and support bases, we can mobilize teams worldwide at short notice.

Commitment to quality and collaboration

Hydrex performs all shaft seal repairs in collaboration with Original Equipment Manufacturers (OEMs), ensuring the use of appropriate materials and following the manufacturer's specifications. Shipowners have the flexibility to supply their own OEM seals, or we can provide them as needed. This cooperative approach guarantees high-quality repairs tailored to each vessel's specific requirements.

Conclusion

If your vessel is experiencing issues with its stern tube seals, prompt action is crucial to prevent further damage and operational delays. We offer 24/7 support and rapid mobilization to address your underwater repair needs efficiently.

Contact us today to learn more about how our innovative solutions can keep your fleet operational.

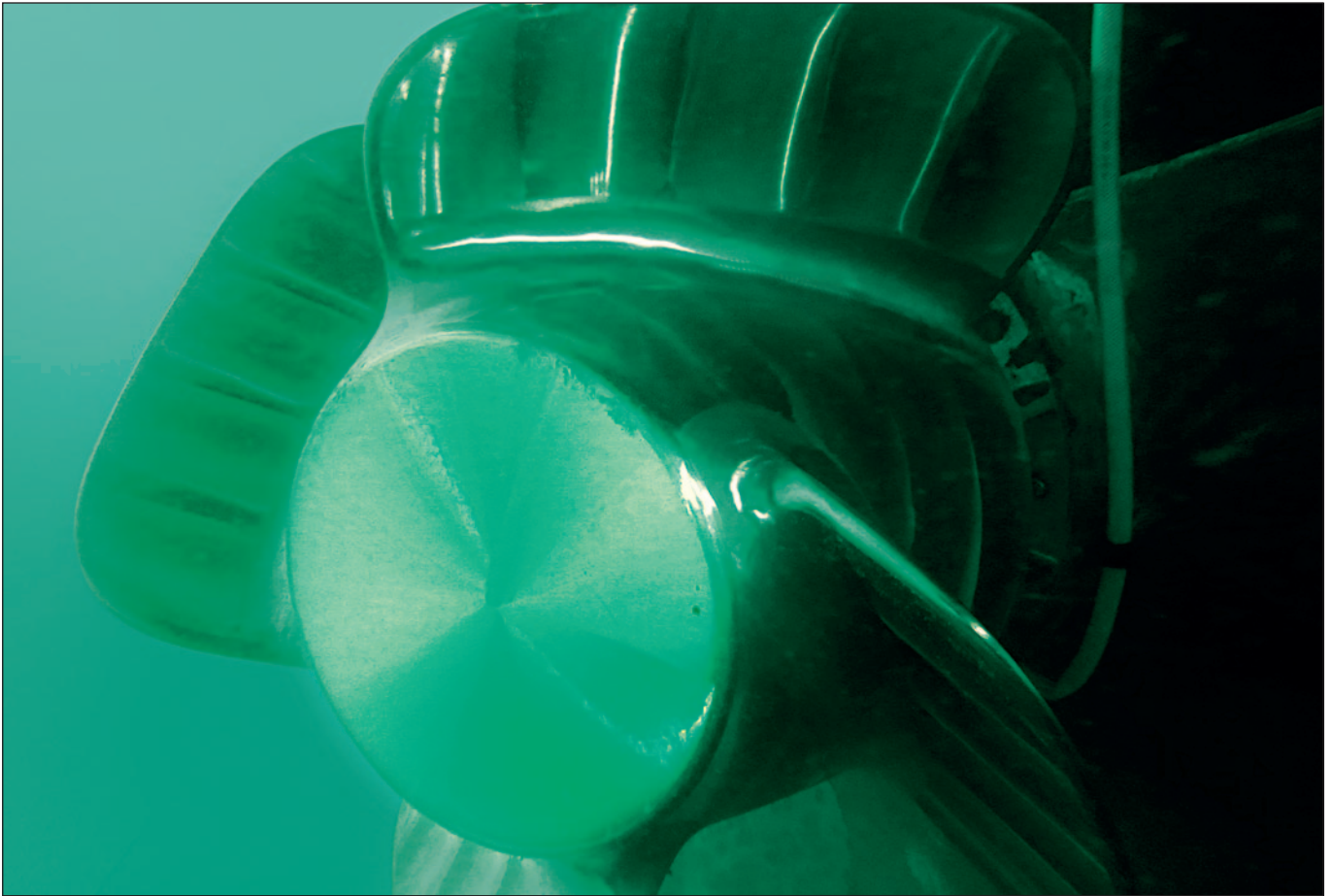
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**KEEPING SHIPS
IN BUSINESS**

Start saving fuel with your propeller cone fin now



We regularly install propeller cone fins on different types of vessels. We can carry out these operations underwater, out of drydock, all over the world without interrupting the ship's schedule.

Propeller cap energy saving devices can recover energy loss of

a propeller hub vortex in the propeller's slipstream. This decreases fuel consumption from 3% up to 5% according to the manufacturers and reduces cavitation on rudders and hulls.

As a result of our underwater installation, the owner of the vessel can start enjoying the fuel savings

right away. Not having to wait for the next scheduled drydocking can win him up to four years of fuel savings. Since he will have earned back the cost of the underwater installation in only a few weeks, the savings are considerable.

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HYDREX
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Hydrex underwater inspections



Underwater inspections are an essential aspect of ship repairs. Building upon conventional technical skills and know-how while also taking advantage of the latest technology, Hydrex offers a unique hull monitoring service to its customers. This gives ship-owners total control of the underwater hull and the underwater gear of their vessels. An informed decision can then be made concerning any required follow-up action. Catching problems early can save you much money in the long run.

Hydrex diver/technicians can carry out inspections underwater and on-site very swiftly without disturbing the vessel's sailing schedule.

With fuel costs amounting to 40% of operational expenses and continuing to rise, reducing fuel consumption is a vital concern of shipowners. This is the reason why hull monitoring pays for itself. Underwater hull roughness, marine fouling, bent propellers and poor paint condition are all factors that will increase fuel usage due to the drag or inefficiency created by the damaged or affected area. The data gathered can then be used to see if actions are required.

Our diver/technicians are trained for a wide range of operations and they can carry out the inspections in port or at anchor anywhere in the world.

HYDREX
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Built for speed – Ready when you need us

In the maritime world, time isn't just money—it's movement, momentum, and mission-critical. That's why at Hydrex, speed isn't an afterthought. It's the first thought.

Since 1974, we've built our entire philosophy around one principle: Ships don't wait. When a vessel is grounded, leaking, or immobilized, every hour matters. We respond immediately, move fast, and execute with precision—because that's what the sea demands.

Rapid response is in our DNA

It started with founder Boud Van Rompay jumping into a Peugeot 304 in the early days with a student assistant and a trailer full of hull cleaning gear, driving through the night to Denmark. One day later, the job was done. That drive—that sense of go now—still fuels everything we do.

Today, our response is global. Whether it's a stern tube seal replacement in Australia, a damaged propeller in Tacoma, or a depth sounder failure in the Mediterranean, we get there fast and finish even faster. One cruise ship that ran aground over a weekend saw our divers on-site and installing a cofferdam before Monday morning. Another ship was fully repaired just 50 hours after we landed—when the competition quoted twice the crew and twice the time to do the job.

Fast, but never rushed

Hydrex doesn't cut corners. We just know how to get the job done right—quickly. That's thanks to expert planning, rigorous training, and a depot in Antwerp that runs with military precision. Flights, equipment, class approvals, local contacts—every detail is handled fast and flawlessly by a team that's done this thousands of times.

Our technical services team, composed of veteran divers turned logistics experts, works hand-in-hand with senior divers to assemble the right people and the right tools for each unique challenge. Communication is constant. Coordination is everything. Delay is never an option.

When every minute counts, count on Hydrex

Hydrex doesn't just offer rapid intervention—we live by it. From the moment we pick up the phone to the final weld, we're moving with urgency and purpose. Our clients trust us not just because we're fast, but because we never compromise on safety, quality, or results.

Because when a ship's in trouble, there's no time to wait. ■



*When a ship needs help,
Hydrex doesn't just answer the call.
We're already on our way.*



Permanent hull repairs out of drydock



Hydrex carries out permanent hull repairs without interruption of operations, approved by all major classification societies.

Hydrex developed and delivers **permanent hull repairs on vessels afloat, fully approved by all the major classification societies. No need to go to drydock. No need to redo later in drydock. Gets your ship back in business fast, saving time and money.**

How is it done?

1. We start off with an inspection to determine extent of defect.
 2. Made-to-measure cofferdam secured on outside of hull to keep water out and create a dry environment during repair.
 3. Crack removal/defective plating cropped.
 4. Insert fitted.
 5. Insert tacked in place.
 6. Class approved full penetration welding from inside the ship and frame renewed as needed.
 7. Independent ultrasonic testing to verify the welding.
 8. The cofferdam is then removed.
- Each step is checked by class before proceeding.



Cofferdam placed over crack.



Removing the damaged area.



Preparing the edge of the opening for the new insert.



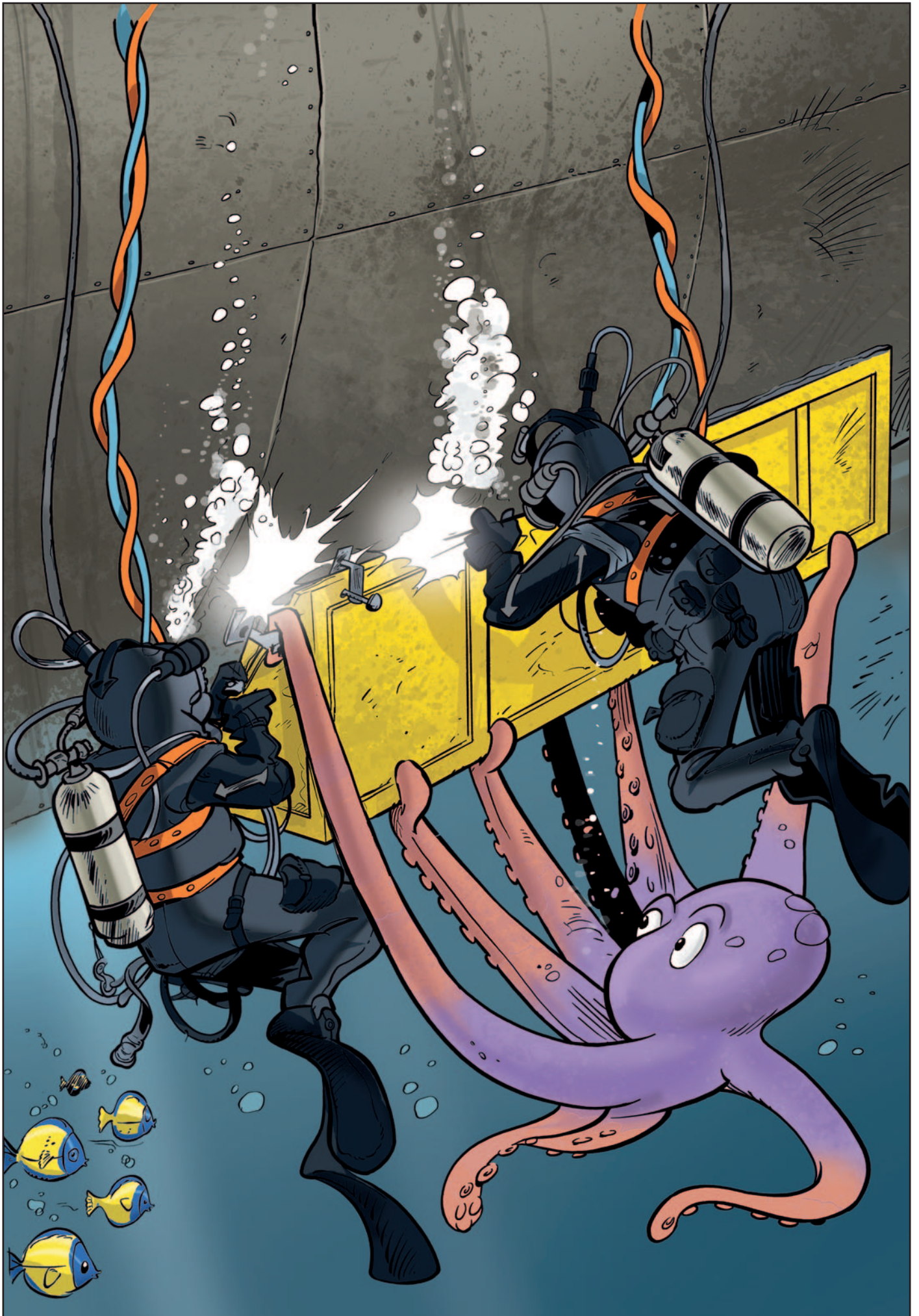
Insert cut and fitted.



Insert tacked in place.



Full penetration weld.



Underwater services in Rotterdam



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