



Powerful Diver- and ROV Magnets that Hold Everything in Place





## Why Magnets?

For divers and ROV pilots, underwater magnets may be one of the most versatile and helpful gadgets in their entire toolkit.

The advantage with magnets is obvious; they can be attached instantly, easily removed, and used again and again. The vast majority of marine and off-shore structures are made of ferritic steel, which are suitable for magnets.

### Here are just a few applications:

- Downline anchor points
- Securing Miko Plaster
- Securing oil booms to hullsides
- Diver anchor point to resist recoil from power tools
- Temporary storage of tools
- Mooring lugs for RIB, MOB-boat or other small vessels on hullsides
- Marking key points on steel surfaces



## Most Powerful Magnets in the World

Neodymium is a rare-earth metal which, in combination with iron and boron, forms the strongest permanent magnets in the world. Its magnetic force-to-weight ratio exceeds any other compounds available by far, meaning that a small hand-held magnet can lift several hundreds of kilograms. It possesses extremely high coercivity, meaning that it does not demagnetize over time.

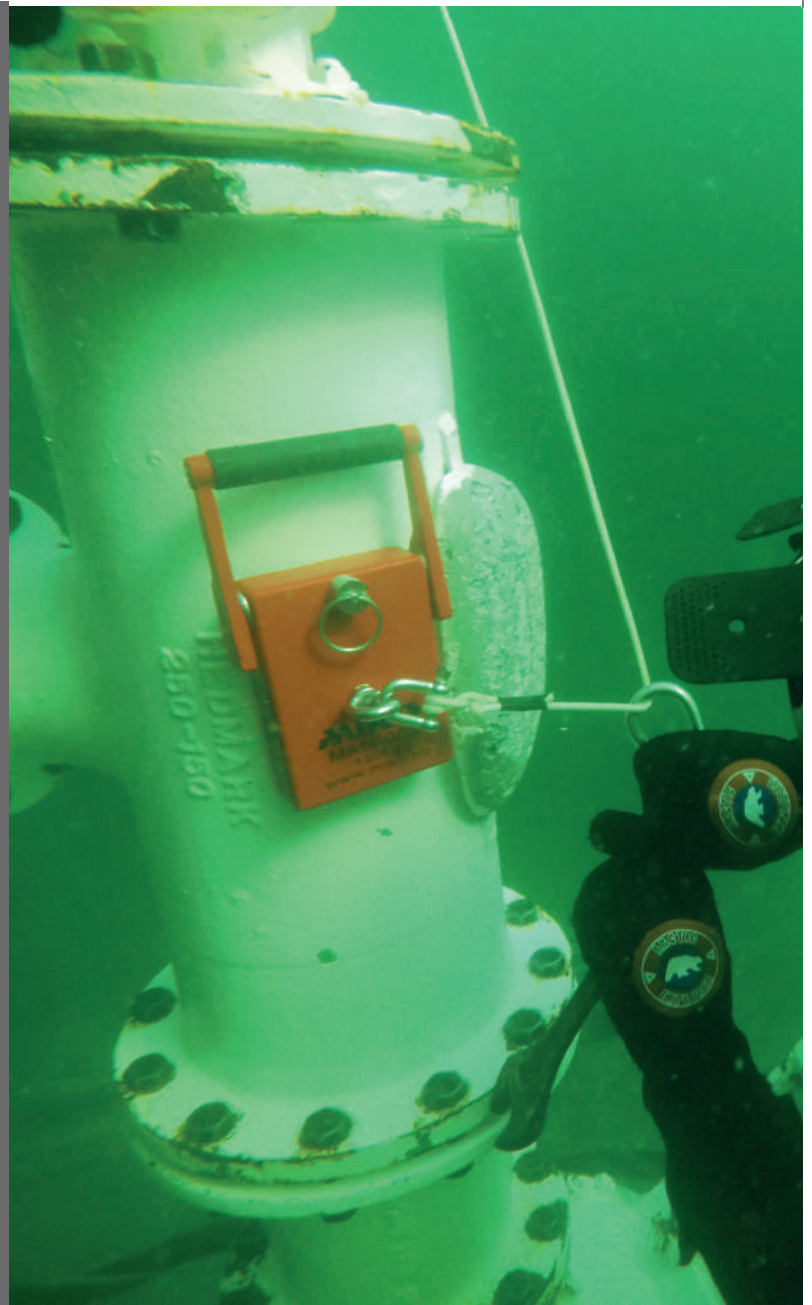
These are not your ordinary fridge magnets.



But with the exceptional magnetic characteristics come other challenges related to the neodymium compounds; they are brittle and extremely corrosive. Which is a problem when using neodymium for the harsh environment that any underwater application imposes.

For this reason, Miko Marine has developed a line of underwater magnets with a strong housing that protects it from shattering when it slams onto the steel plate.

Moreover, the surface is protected from salt water by layers of nickel, zinc and epoxy, which inhibits the devastating corrosion.



## Miko Anchor Magnets

The Miko Anchor Magnets form a series of powerful and robust underwater fixing points. With holding forces ranging from 90 kg to 2 000 kg, these magnets are used worldwide for a wide range of applications. The magnetic component consists of neodymium, which is the world's most powerful magnetic material.

The common denominator of the entire MAM series is a protective housing, eye bolt or lug for attaching a shackle or similar, and an easy-to-use breaking lever to release the magnet from the steel surface.

The smaller magnets are released using a straight-forward breaking lever, which is pulled to a vertical position to force the magnet off the steel surface. The larger magnets (MAM-005 and MAM-00X) are equipped with a rotating lever instead. This ensures an easy and safe handling even with the enormous magnetic forces at hand.



	Holding force	Net weight	Gross weight	Footprint	Corrosion protection
<b>MAM-Light</b>	90 kg	1 kg	4 kg	150 x 50 mm	Good
<b>MAM-001</b>	150 kg	4 kg	7 kg	155 x 115 mm	Good
<b>MAM-003</b>	450 kg	4 kg	7 kg	155 x 115 mm	Good
<b>MAM-003S</b>	500 kg	4 kg	7 kg	155 x 115 mm	Excellent
<b>MAM-005</b>	1 000 kg	8 kg	21 kg	282 x 183 mm	Excellent
<b>MAM-00X</b>	2 000 kg	18 kg	31 kg	319 x 180 mm	Excellent



## Verification of Holding Force

Every magnet is tested at the factory to verify the holding force. This means that, under ideal conditions, your magnet is guaranteed to hold at least its rated holding force, with some margin.

Holding force can be affected on many factors, such as plate thickness, corrosion or curvature of the steel surface. Because of that, Miko Anchor Magnets are not labelled as lifting devices and the rating should not be confused with SWL.



## Air Freight and Magnetic Shielding

Air freight of magnets is governed by IATA Packing Instruction 953. Without special packaging, strong magnets are considered dangerous goods and are complicated to ship by air.

All Miko magnets are therefore packed in a double-layer metallic box that shields the magnetic field. The shielding is so efficient that the magnets are no longer restricted and can be shipped just like any other goods, as long as the box is intact and closed properly.

The optional Miko Magnet Case also provides shock absorption, protection against water ingress and is easy to carry around due to the practical handle.



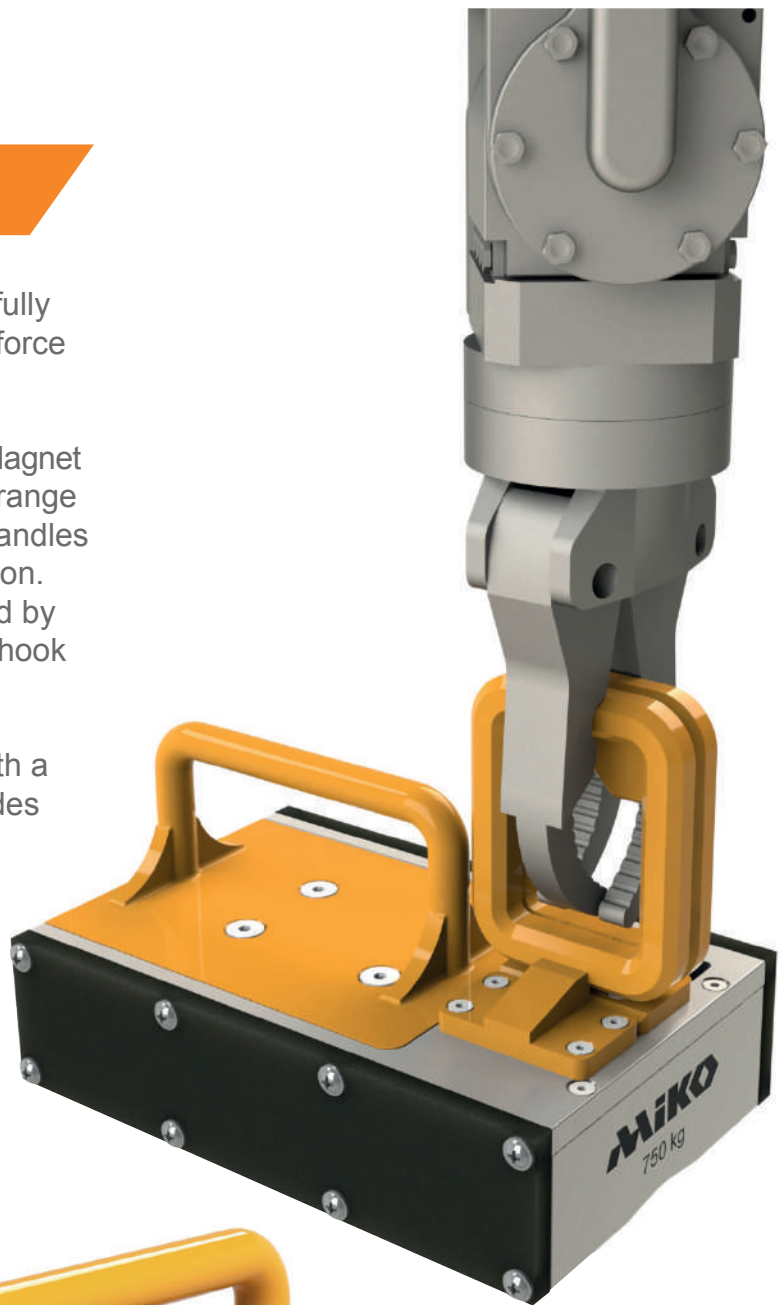
## ROV Magnet

The switchable Miko ROV magnet has a fully mechanical on/off function and a holding force of 750 kg when activated.

By virtue of the modular design, the ROV Magnet can be modified to accommodate a wide range of specific requirements. The activation handles can be of either T-bar or D-bar configuration. The grip bar in the middle can be replaced by any kind of tool such as a torch, camera, hook or whatever the application requires.

The stainless steel housing, combined with a high quality pressure compensator, provides corrosion resistance and full ocean depth rating.

The magnet is deactivated by pushing the handles together - and activated when the ROV releases its grip.



Holding force (on)	750 kg
Holding force (off)	30 - 80 kg
Weight in air	24 kg
Weight in water	19 kg
Footprint	200 x 312 mm
Depth rating	Full ocean depth
Manipulator deactivation force	300 kg





## Time is Money

During an ROV mission, that is an understatement. Miko Marine's ROV Magnet can save valuable hours of time spent subsea, and should become an essential part of any operator's toolkit.

These major clients have already realized the capability our ROV Magnet:



subsea 7



## Customized Solutions

Miko can design and build customized solutions for clients with specific requirements.

For additional holding force, several ROV Magnets can be used in conjunction in a hydraulically operated skid. In this way it can be used to provide stability to a work class ROV.

### A typical skid assembly consists of:

- Single or multiple interface points for activation and deactivation
- Hinged magnet joints
- Robust frame with handle for grabber
- Optional buoyancy elements



**Our magnets  
are found  
everywhere.**

**Here, for  
example.**



**Miko**  
MARINE

**CONTACT US WITH YOUR CHALLENGES**

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