



CASE STUDY: MEDSERV

How SIVAM's Super Spooler Mastered 22-Ton Wire Ropes for the Castoro 10



SIVAM SPA

Your partner in advanced well engineering



Introduction to SIVAM's Engineering

At the core of demanding offshore and well operations lies the crucial need for **stability, precise control, and absolute safety.**

SIVAM meets these industry demands by fully designing, manufacturing, and assembling its highly specialized Spooling Units in-house at its headquarters in Italy. Originally essential for precisely guiding control lines and mono-conductor cables straight into the well without damage, SIVAM's technology has evolved to tackle much larger challenges.

Built to deliver unmatched performance, these units are available in pneumatic, hydraulic, or electric configurations, consistently keeping cables under tension to enhance safety and operational precision. Through advanced engineering, SIVAM's machinery is built to withstand the toughest environments, **offering solutions tailored to every specific application.**

Continuous engineering has led to brilliant mechanical simplifications in SIVAM's new Hydraulic Units. For instance, the newly developed "**Savini joint**" uses two stainless steel blocks that simply slide inside one another, making the removal of the shaft to change reels incredibly easy.

#1

CASTORO 10 CHALLENGE

When major offshore operations require maintenance, the sheer scale of the equipment presents massive logistical hurdles. This was exactly the case at the Malta Freeport, where **Medserv Operations Ltd** required support for their end-user, **the Saipem Castoro 10 pipe-laying vessel**, part of the Bouri Field project.

The primary objective was the transshipment and replacement of the massive steel wire ropes used for the Castoro 10's anchors. The technical challenge was enormous: the team had to handle steel reels weighing a staggering **22 tons**, each containing **1,000 meters of 70mm steel wire rope under high tension**.



When handling extreme loads like 22-ton reels, absolute equipment **stability during rotation and high torque** are non-negotiable. Without them, managing the massive inertia during the unspooling and rewinding phases can lead to a dangerous loss of control.



#2

OPERATIONAL EXECUTION AND RESULTS

To overcome these massive logistical and mechanical challenges, SIVAM deployed a complete "turnkey" package. The operational phase was executed with remarkable **efficiency and safety**, characterized by the following key steps and results:



Rapid Deployment: The entire unit was installed in just 2 hours, requiring the use of only one operator



Extreme Stabilization: To prevent overturning, the setup utilized dedicated lateral platforms heavily weighed down with concrete ballasts exceeding 4,000 kg per side.



Total Logistical Autonomy: The team achieved full energy autonomy to operate directly on the quay by using a dedicated 150KVA power generator.



Precision Control: Thanks to a hydraulic control system paired with a monoblock valve, the operator precisely regulated the speed while maintaining the exact correct tension on the rope during all operations.



Maximum Safety: The hydraulic braking system ensured maximum safety, allowing for smooth, controlled stops even under the high 22-ton load..



Unmatched Versatility: Using specific "adapters," the machine's shaft was easily adjusted to fit various reel bore holes, accommodating large-sized reels up to 2,400 mm in diameter

Under the supervision of an on-site SIVAM Senior Operator, the transshipment was successfully completed within Saipem's strict timeframe, proving the equipment's suitability for the broader heavy marine industry.

THE SIVAM SUPER SPOOLER

The Super Spooler unit was explicitly designed to face **critical operations where it is demanded to have a heavy-duty structure, precise tension control, and a very high torque**. It is the ultimate tool for both the marine and geothermal sectors: its key applications include the **retrieving of an ESP cable loose in a geothermal well** and the **transshipment of a heavy-duty line from the quay to a supply vessel** or pipe-laying ships like the Saipem Castoro 10.

Like all other spooling units from SIVAM, the Super Spooler is **designed and manufactured entirely in Spoltore, Italy**. In-house manufacturing provides a massive operational advantage: it ensures **direct engineering solutions, faster modifications for customization, and the full availability of spare parts**.

Our entire range, including the Super Spooler, **is available for rental**, providing a flexible and cost-effective solution for temporary projects. Clients can easily get in touch with SIVAM to explore the fleet and request more information.

THE SIVAM SUPER SPOOLER

ENGINEERING AND KEY TECHNICAL SPECIFICATIONS

- **Torque and Power:** The unit can reach an impressive 25,000 Nm torque, neutralizing the dangerous inertia of monumental loads.
- **Dimensional Capacity:** Easily accommodates giant reels up to 2,400 mm in diameter and 1,530 mm in length.
- **Safety and Control:** Equipped with a dual overcenter valve, emergency stop, and an optional Ø1500 mm negative hydraulic disc brake for smooth stops.

Besides the heavy-duty Super Spooler, SIVAM also provides a comprehensive fleet of standard pneumatic and hydraulic spoolers. To meet specific project needs, these standard units can be specifically customized. They can be equipped with a **close frame for offshore operations, a little pump skid for pressure pumping on the field, and an electrical slip ring for continuity tests.**



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