

# Anchounter Brasil

September 2011



## Vryhof intensifies Brazilian activities

The first OTC in Brazil will be the official start for Vryhof Anchors to roll out its plans for a closer market approach in Brazil. The plans were defined after renewing the agreement with Brastech, Vryhof's business partner in Brazil. The companies have worked together for over 30 years under the inspiring leadership of Roberto Chedid who feels it is the time for Vryhof to have a permanent presence in Brazil to be closer to the market and have face time with the customer more frequently.



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OTC Brasil 2011  
Booth 305.**



*Vryhof's Øyvind Wathne and Brastech's Roberto Chedid laying out the outline for a step up in Brazilian activities.*

"We have been successfully working side by side with Petrobras for all these years and it has always been a win-win relationship" says Roberto, "now so much is happening, Vryhof needs to be here to support the market, not only with Petrobras, but also for other Operators and the Drilling and FPSO Contractors".

Thomas Agnevall, who is responsible for Vryhof's Brazilian activities, supports Roberto's vision: "This is the time to expand our operational scale, liaise with customers, recognize their requirements and pro-actively support the market".

Vryhof is putting a dedicated team in place that operates from offices in Rio to make this happen. The team brings together knowhow and experience from Vryhof activities around the world: Khalid Errabih from Holland, Leo Bello from Houston and Jonas Jesus from Rio.

"They are proving to be a great team that dares to depend on each other's different fields of experience", continues Thomas, "we have every confidence they will serve our Brazilian activities the way customers expect from us".

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# Superior anchors and mooring technology to match

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*“The step up in Brazilian activities falls directly within our philosophy of having 3 activity-hubs around the world:*

*Holland, Singapore and now also in Brazil”, says Øyvind Wathne, Managing Director of Vryhof.*

*“Being in touch with the local market will enable us to be pro-active and truly be a ‘step ahead’ on customer requirements in the region.*

*We will look for increased flexibility in manufacturing, choosing well located and positioned plants, who can secure our quality and delivery schedules under our management and with our ABS and DnV type approvals”.*

*The full hub status for Vryhof Brazil means the local team will be responsible for all activities: Business Development, Engineering, Manufacturing and Project Management. This applies to Vryhof projects as well as those managed on behalf of Vryhof principals for Polyester Ropes, Chain and Connectors.*

*“From a customer’s point of view”, Øyvind continues, “this makes it attractive to outsource the full mooring line to Vryhof Brasil. Let’s not forget we have frame agreements with some of the FPSO and Drilling Contractors out here and we will work hard to extend those to this region as well. They can then leave their interests to the very capable team we have here”.*

## History of Vryhof Anchors

Vryhof is a worldwide leading supplier of mooring technology. It has dedicated 40 years to the continuous development, manufacturing and supply of ultra high holding power anchors and contributed significantly to the development and application of mooring systems for the offshore drilling and production industry.

The ISO9001-2008 certified company is renowned amongst their customers and mooring experts for their technology, professionalism and after sales services. Vryhof is headquartered in the Netherlands (Rotterdam) with offices in Singapore, Houston, Moscow, Rio and Macae/Rio das Ostras.



## Role in the Industry

The role of Vryhof is not limited to providing anchors, it works with authorities such as API and in JIPs to develop regulations and techniques with a view to overall improve the mooring industry. Likewise it works with component manufacturers to develop their products to create more efficient and safer moorings. Good examples are development of torque compensating connectors, H-swivels, synthetic mooring lines etc. Vryhof Anchors as a result became a valued representative for some of the finest mooring component manufacturers.

## Vryhof in Brazil

Vryhof has been active in Brazil since the late 80's when the first floaters were moored on Vryhof's anchors. Vryhof has partnered with Petrobras on many challenging, novel mooring systems, often in cooperation with their mooring experts from Macae and R&D engineers.

Vryhof is a regular supplier of the Brazilian market. Not only for the various anchor types, but also polyester mooring lines and a variety of chain and mooring connectors.

## Soil data and technical evaluation

Vryhof's role in a project starts as soon as a location for a floater has been determined. The company maintains one of the world's most extensive Google based soil databases serving cross-referencing data provided by the customer or as a source to base anchor advise on.

The Vryhof anchor range covers all possible mooring applications, mobile such as drilling units or semi-permanent moorings such as for FPSOs.

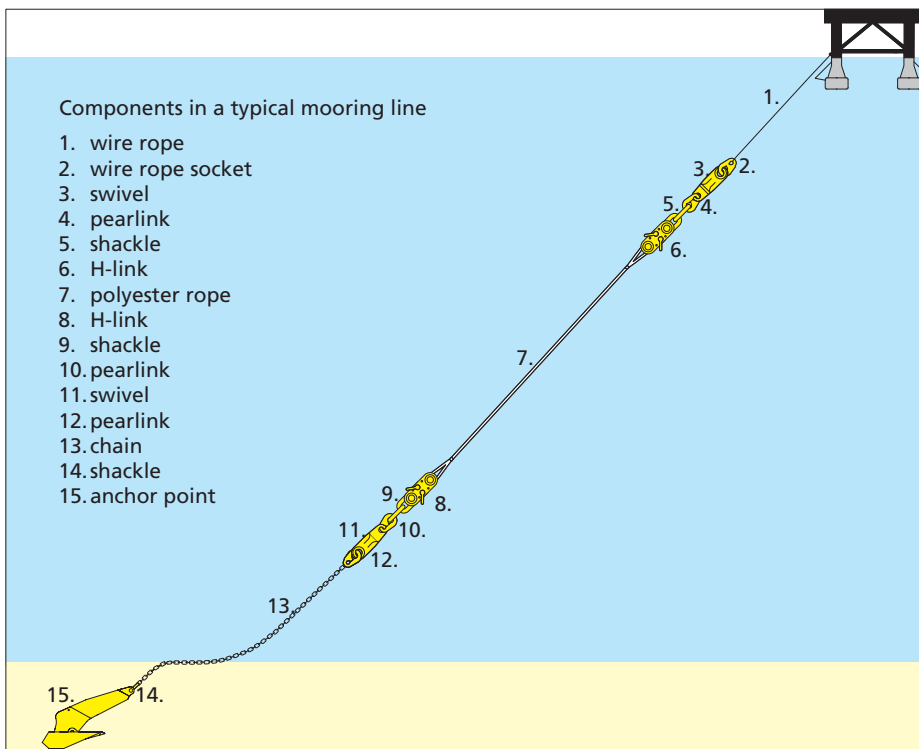
An anchor or mooring design is based on a set of parameters that includes the function, soil condition, sea state, waterdepth and the required holding power. The first two determine the type of anchor, the latter its size.

Technical evaluation of the mooring system design criteria may also lead to a specific custom design, either for technical or economic reasons. Production will take place at one of the manufacturing hubs who can produce the anchors under type approval from the certifying authorities.

Vryhof anchors are provided on a purchase or on a lease/purchase basis. Within a strategic alliance with top-end mooring component manufacturers, Vryhof can design and supply the complete mooring system, expertly selecting and supplying the required components that complete the system.

## Installation assistance

The company may also be involved in the installation stages of the project, providing tensioning services, supervising installation with their Stevtrack monitoring system or manage the installation of a complete pre-laid mooring system.



## Team Brasil



*Khalid Errabih, Jonas David Jesus and Leopoldo Bello.*

**Khalid Errabih's** experience covers purchasing, work preparation, installation supervision, sales engineer (components) and business development. He's fit for the job. Says he: "Vryhof is a mature market player. Our presence in Brazil means we can support our customers better, more actively and assure the timely delivery on their projects".

**Leopoldo Bello** has an impressive career in Business Development and started a year ago with Vryhof in the U.S.A.

Leo: "Vryhof has an excellent track record in Brazil and I feel we can build on that with intensifying existing relationships and building new ones to mutual benefit. I am excited about all the opportunities ahead".

**Jonas David Jesus** is Brastech's Commercial Manager and the 'center piece' of activity. Says Jonas: "Vryhof has impressed me to easily adjust to the culture and local market in Brazil. I am happy I can now work with my friends over here, rather than through the phone and email. I agree with my mentor Roberto that our working together will be quite a step up for all of us".



# Industry benchmark for any type of job

The Vryhof anchors and auxiliary equipment are the benchmark in the mooring industry. Each anchor type outperforms any other available in the industry for holding power, handling and performance. Moreover, the companies installation tools put drag embedment anchors ahead of any other mooring point, both technically and economically.

## Stevpris Mk6 - the industry standard

The Stevpris Mk6 combines the feed back from 35 years of anchoring operations with the latest generation fluke designs and its characteristics are so superior that it soon became the standard in the industry.

- Its geometry provides an extreme high weight/strength ratio and the fluke shape minimizes soil disturbance in all providing a holding power in excess of 30% higher than that of any other existing drag anchor.
- It accommodates the widest range of soils and has extreme uplift capability increasing the waterdepth in which units can operate on the same anchor spread.
- It is extremely stable, easy and safe to handle, making it ideal for mobile units.
- The design is type-approved by major Classification Authorities.

## Versatile application

Due to this versatility Stevpris Mk6 anchors serve the widest range of applications. Although the large majority serves the mooring of offshore units such as drilling rigs, FPSOs and SPM buoys they are also widely used for various dredging, crane and pipelay vessels.

## Stevshark - the tough soil anchor

The Stevshark derives from the Stevpris, be it a previous design. Due to structural inforcements and jagged teeth in the shank it cuts through the hardest soils imaginable. The hollow fluke allows to add ballast in order to improve its penetration. A new generation Stevshark is currently under development.

## Stevmanta – the deepwater anchor

The Stevmanta was specifically designed to take up vertical loads and the first to moor a Petrobras deepwater FPSO offshore Brazil. It has a 'wire shank' to ease penetration and for mobile applications chain replaces the wire ropes as to better withstand wear. The Stevmanta can be retrieved by pulling the anchor with only a fraction of the installation load. Once the chains have been connected again, the anchor is ready for re-installation.



## The lightest deepwater anchor

Stevmanta is the lightest and smallest deep water anchor available. It is installed like any drag anchor and at final penetration unlocks to make the anchor change from install to mooring mode, resulting in an immediate increase of holding capacity of 3.5 times the installation load. A double line installation method is available to facilitate the installation of synthetic mooring lines. VLA mooring systems can be installed by a single anchor handling vessel in a fraction of the time required for the installation of other anchored systems.

A true unique feature of this anchor is its omni-directional loading capacity, useful in shallow water moorings to meet restrictive requirements such as in proximity of subsea infrastructure.



*Stevpris Mk6 is the most versatile anchor today and superior to any anchor available.*

## Stevensioner – the installation tool

The Vryhof Stevensioner is a unique tool to assist installation of the mooring system. Its design reduces the required installation load of a mooring system up to 60%. It does reduce the size and power of the anchor handler needed for the job. Stevensioner suits all types of anchors, be it drag, suction or pile. Current models handle loads of up to 1000 mTons, while larger sizes are being developed. The Stevensioner can also be used for tensioning of mooring systems with wire ropes or fiber rope mooring lines.

## Cross tensioning

The Stevensioner allows to cross tension two anchor legs opposite in the mooring spread. It reduces the number of tensioning operations by 50% and may save as much as 30 to 40% on the total installation time originally required for the operation. Stevensioner is available as a rent package that may include installation supervision by a Vryhof engineer.



## Stevtrack. Monitoring installation and penetration

### Real-time installation monitor

Vryhof has solved the vacuum on factual installed anchor position. Normally a proved calculation method serves to determine the drag anchor's final mooring position but the increasing requirement for actual data inspired the development of a monitoring system: Stevtrack.

The system comprises a transponder on each of the anchors, signal transmission equipment and a surface read-out computer with dedicated software.



### Live image, factual data

From the moment the anchor touches the seabed the anchor transponder transmits its orientation. The system provides a reliable representation of the installation process at hand in the seabed, in real-time. It accurately reports load on the anchor, pitch and roll, its depth and the drag length until final penetration. Stevtrack prevents loss of costly time on resetting of anchors.

### Post installation

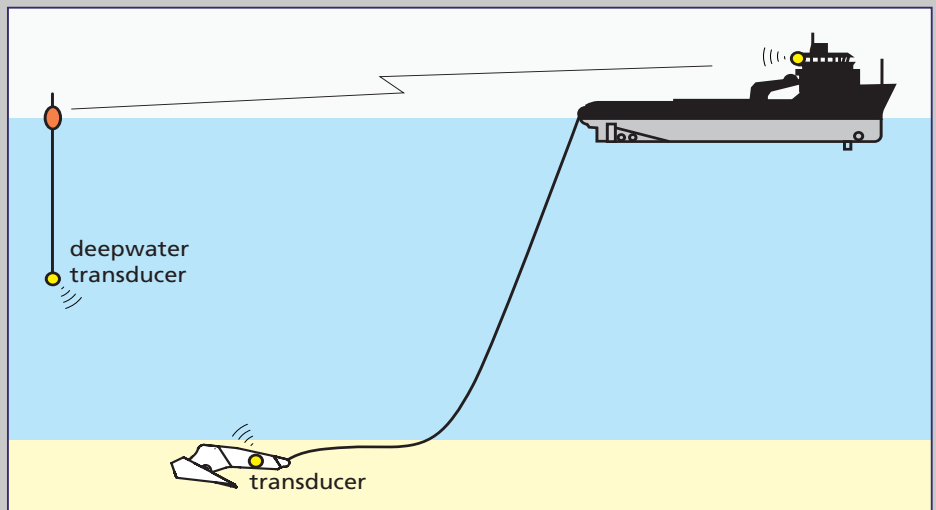
Stevtrack allows monitoring of post-installed behaviour of the mooring system, measured at intervals depending on battery capacities. It stores all data in a file, allowing to retrieve historical data for a certain location or specific soil type.

Stevtrack is a unique tool for those who recognise the superiority of drag anchors and wish to satisfy the requirement of their project engineers with actually measured installation data.

### Stevtrack inside

The pulling force measured at the anchor is far more accurate than that read on the AHV winch. Stevtrack may therefore also serve to justify the proof loading otherwise required by the Qualification Authorities.

Stevtrack is fully operational and available as an option on newly supplied Stevpris Mk6 anchors. A Stevmanta version is currently in its final development.



## Quite a foothold

Vryhof has been active in Brazil since the early 80's when the first floaters were moored on Vryhof's anchors and the company has been active in Brazil ever since.

When Petrobras moved into deep water Vryhof worked with them side by side on development of the world's first vertical load anchor, the Stevmanta VLA.

Petrobras also keeps stock of anchors and polyester mooring rope, supplied by Vryhof as agent of Bexco Ropes. Vryhof also supplies connectors and other mooring hardware to Petrobras as well as the operators of FPSO and Drilling Units active in the area.

At the day of writing some 500 Vryhof anchors of different type are mooring units Offshore Brazil.

## Um ponto de apoio

Vryhof tem estado presente no Brasil desde o começo dos anos 80, quando as primeiras unidades flutuantes foram amarrados em âncoras Vryhof e a empresa tem sido ativa no Brasil desde então.

Quando a Petrobras passou a trabalhar em águas profundas Vryhof trabalhou lado a lado no desenvolvimento da primeira âncora vertical do mundo, a VLA Stevmanta.

A Petrobras também mantém estoque de âncoras e cabos de ancoragem de poliéster, fornecidos pela Vryhof através da Bexco Ropes.

Vryhof também fornece outros conectores e acessórios de ancoragem para a Petrobras, bem como os operadores de FPSO e Unidades de perfuração em atividade na área.

Até a data que este foi escrito cerca de 500 âncoras Vryhof de diferentes tipos estavam ancorando unidades Offshore no Brasil.

Âncoras Vryhof são implantadas em unidades móveis de perfuração e unidades flutuantes na indústria de produção Offshore no Brasil.

