



fluidity. nonstop

IT'S ABOUT KEEPING YOUR PROCESSES RUNNING

**Compact vacuum cleaner
for rig cleaning**



 **AXFLOW**



Compact and high capacity rig cleaning systems



The Moivac unit was developed to satisfy the growing market in offshore installations cleaning decks and pits.

Moivac was developed with the background of high demands from the North Sea offshore industry to have a vacuum carriage to vacuum mud from the deck of a drilling rig. After more than a decade later of the launch the Moivac has become a term and is now part of the world of oil and rig cleaning.

Rugged and durable

It's built to withstand the various oils and chemicals that should be treated. Gradually it's been built into a totally automated controlled unit. Resulting in a minimum of operating crew.

Engineered for high capacity

The Moivac unit is developed in standard mechanical equipment e.g compressors, internal lifting, painted and equipped according to Zone 1 and 2. It can be extra equipped and designed with extra special features for better performance.

Key features

The Moivac is developed as a compact unit and is easy to move and install. It has high capacity, rig can be 60 meters horizontal and 15 meters vertical which can be increased if using air-techniques. The unit is multiple utility such as cleaning deck spillage, pits, shaker room sack-store etc.

AxFlow is the leading pan-European supplier of safe and cost-effective fluid handling solutions and services to complex process and offshore industries. Whether it's a 'pump-in-a-box' or the design and manufacture of a complex custom built system, AxFlow engineers provide a complete product and service package.

Standard skid design WPT480

Dimensions:

Weight:	2.200 kg
Length:	1.900 mm
Width:	1.400 mm
Height:	2.100 mm
Tank:	1.100 liter

Technical specifications:

Engine:	ABB 22-25 kW, ExnA, IP56, Multivoltage
Pump, max pressure:	1.5 Bar
Pump, max vacuum:	0.9 Atm
Pump capacity max:	9.700 liter
Air capacity max:	9.700 liter/min

Standard skid design WPT720

Dimensions:

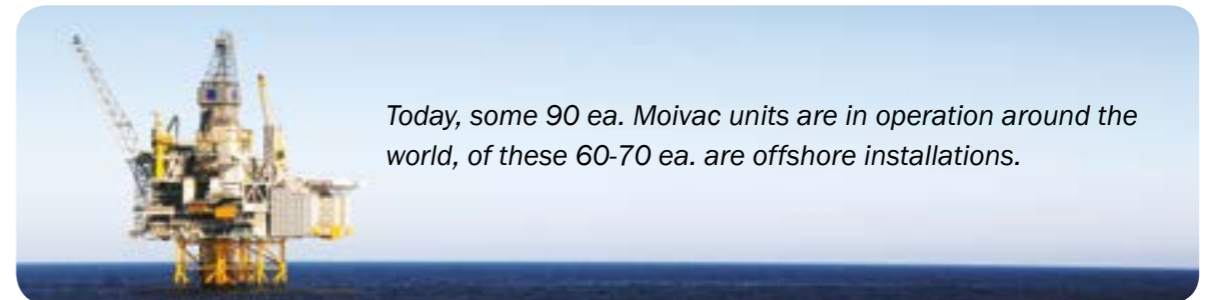
Weight:	2.400 kg
Length:	1.900 mm
Width:	1.400 mm
Height:	2.200 mm
Tank:	1.100 liter

Technical specifications:

Engine:	ABB 30-35 kW, ExnA, IP56, Multivoltage
Pump, max pressure:	1.5 Bar
Pump, max vacuum:	0.9 Atm
Pump capacity max:	14.200 liter
Air capacity max:	14.200 liter/min

Features:

- Compact unit, easy to move and install
- High capacity; 60 meters horizontal and 15 meters vertical
- Multiple utility unit; cleaning of deck spillage, pits, shaker room, sack-store
- Low maintenance cost
- Easy to "manage"
- Frame available with wheel suspension, truck pockets and pallet trolley
- Easy to empty
- Suction power vacuum 0.8-0.9 atmosphere



Today, some 90 ea. Moivac units are in operation around the world, of these 60-70 ea. are offshore installations.

Moivac- it's about the environment!

The removal of drilling mud and slurry containing cuttings on offshore oil and gas rigs, along with wastewater has always been a problem for rig operators. At one time it was common practice within the global offshore oil and gas industry to dispose of the dirty water, mud and slurries that collected on platform decks by flushing them directly into the sea. With greater awareness of the environmental impact that this can have on seawater quality and contamination of the seabed, it is no longer permissible to dispose of waste in this manner.

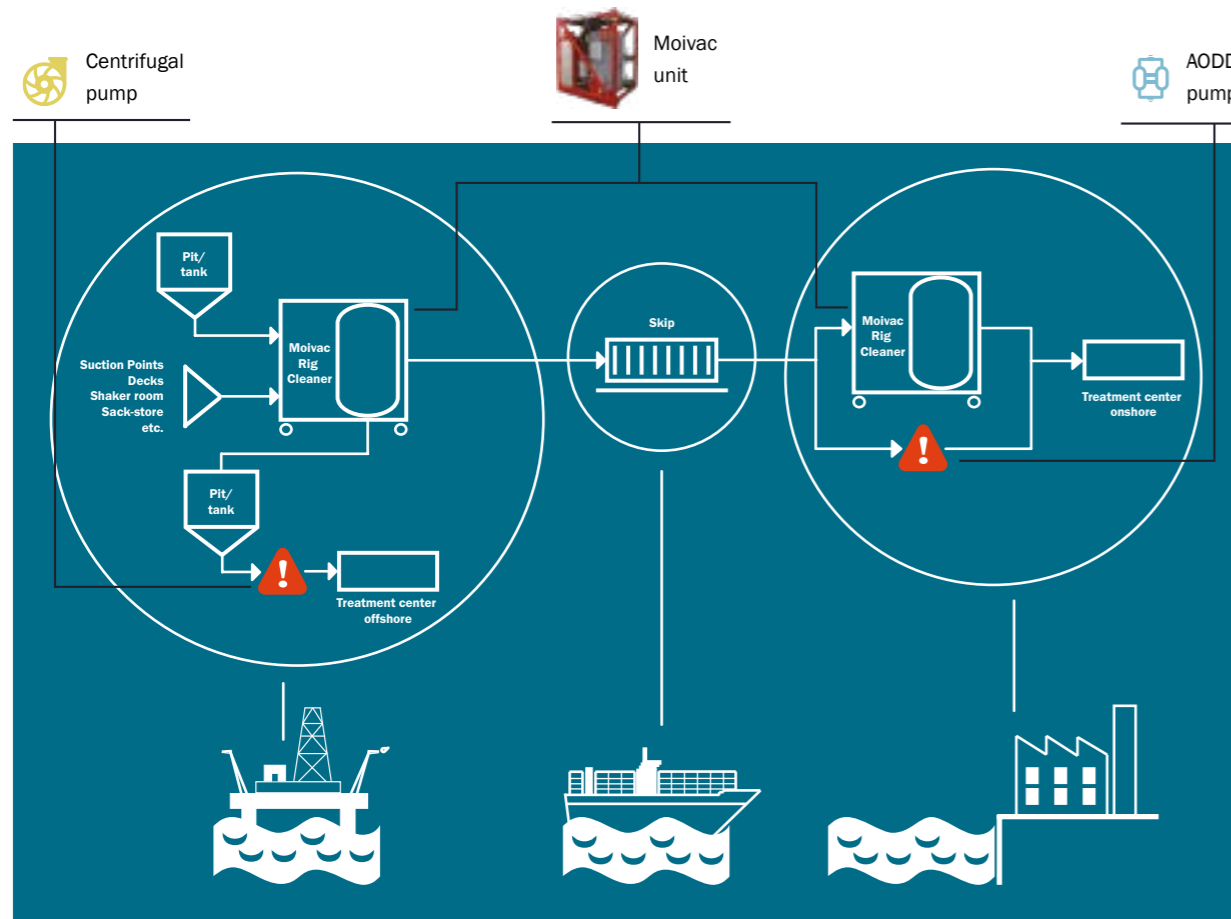
A direct consequence of changes in environmental considerations and legislation has been the development of technologies that safely and economically clean decks and handle the removal of drilling slurries containing cuttings. The build up of such fluids

on decks can pose a hazard for operatives, whilst their make-up poses an environmental problem when it comes to disposal. The original answer to the challenge of rig cleaning was to remove the waste materials from the rig and clean them onshore for eventual disposal. However, the costs involved with this have always been high as the process has involved transferring large volumes of water-borne waste in tankers to onshore facilities.

Developing systems that suck up mud, slurries and associated waste from decks has been the focus of many engineering companies servicing the offshore industry and over the past 25 years several solutions have evolved. The development of rig cleaning systems was pioneered back in the early 1990's by OE Solutions, which was acquired by AxFlow AS Norway in 2013, with the introduction of its Moivac unit. The



Flowchart - Rig Cleaning



first generation provided the capability to vacuum up to 3,000 litres using a water-cooled compressor into a holding tank for eventual onshore disposal.

Whilst proving to be a success, the pressing requirement to minimise floor space led to a second generation, compact skid-mounted modular unit and since then further models have been introduced using larger motors and large capacity vacuum pumps. Significantly, the tank capacity of the latest Moivac WPT480 and WPT720 units has been reduced to 1,100 litres and pump capacities increased to 9.700 and 14.200 litres per minute respectively. This reflects the move towards recycling mud and cuttings offshore, which reduces significantly the volume of wastewater for disposal and the associated costs.

Reducing costs

Mud, being a basic requirement for drilling has to be transported to rigs and once it has been used it becomes waste, containing cuttings and other debris. Given the economic pressures on the offshore sector in recent times, the costs of transporting mud to and from rigs have come under the microscope. Looking at ways of reducing the volume of mud that needed to be transported from shore to rigs and how the volume of waste that had to be removed could also be reduced was recognised as being the way to cutting costs.

The solution was to develop a technology that would mix quantities of mud offshore and recycle it once it had been used in drilling, thereby reducing the volume of mud required and the volume of waste

created. One key element of this solution was the Moivac rig cleaner which sucks up mud and other liquid waste off the decks for recycling. This process reduces the volume of mud required for drilling and also reduces the volume of wastewater to be returned to shore.

The Moivac system

Compared to other systems, the Moivac is a compact modular framed unit comprising, electric motor, collecting tank, compressor, vacuum pump, suction hose and control panel. A “low level switch” in the oil tank automatically stops the unit when the oil level falls below the minimum level. It is also equipped with a temperature sensor in the cooling tank that stops unit from overheating. Gravity provides a maximum suction height and pumping distance/ height of 9m suction and a vertical delivery suction of 15m. For greater discharge heads a purpose-made pumping unit can be mounted to in create the vertical pressure to 65m.

Customers are advised by AxFlow that by “injection/ leaking” the right amount of air in the suction hose, it is possible to create sufficient suction for much longer distances. All seals, bearings and rubber gaskets are mud-resistant and are suitable for handling chemicals, enabling the Moivac to accommodate a wide range of waste liquids and materials.

When starting-up the Moivac, the inlet valve has to be open for suction (vacuum) from deck or pit-tanks on the rig into the collecting tank. Suction is delivered by the compressor which is driven by a 30/35kW electric motor. When the tank is full a ball valve floats to the surface and stops the suction from compressor. The inlet valve is then closed and the compressor is switched to discharge pressure and the discharge valve is opened to empty the tank. In order to prevent solids and cuttings from settling in the tank, it is advised that the tank is emptied at the end of each shift.

The modular structure of the Moivac unit makes it suitable for easy lifting and positioning on the rig so that it can be moved around as circumstances require. All units can be customised to meet end-user requirements and are fully tested within the company’s manufacturing plant in Stavanger in accordance with all relevant international standards.

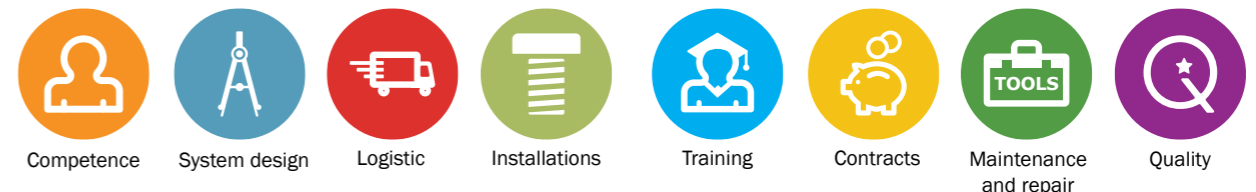
With even greater emphasis now being placed on reducing operating costs and satisfying environmental regulations, AxFlow reports that there is a growing demand for the Moivac rig cleaning system not just from within the North Sea, but in offshore fields around the world.

By: Bryan Orchard



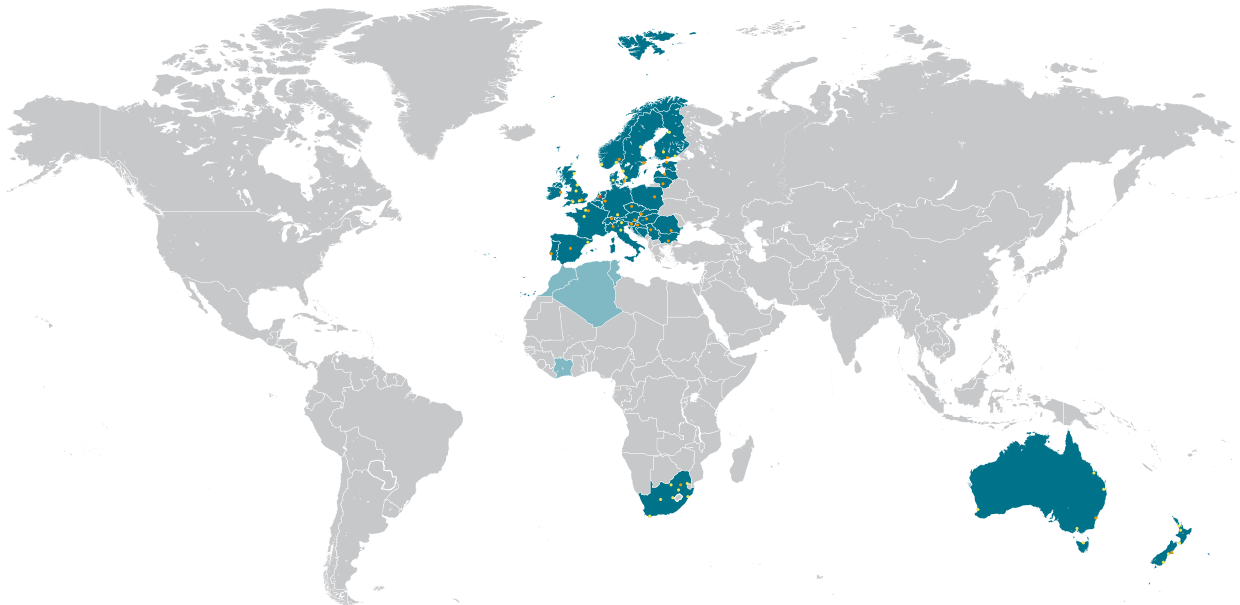
We know the importance of choosing the right equipment to match your process. But it doesn’t stop there. Our commitment extends to a range of services designed to bring you additional peace of mind.

Whatever your pump requirements are e.g., a simple pump-set or complete pump-systems our engineers are highly skilled to help you in achieving the best pumping solution.





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"fluidity.nonstop" is our promise and our commitment to a level of service and a quality of product, performance and expertise the like of which has not been seen before. We are Europe's leading source of pumps and pump expertise for the process industry and we intend to maintain that position by working fluidly, and ceaselessly, to bring you the best.

