The World of Watermaster

NEWSLETTER • 2014

smart solution for hard work

Prioritize the environment and efficiency

IWOS & IWSS - Integrated advantages - More results

Securing the water supply for two million people

www.watermaster.fi

Contents

Prioritize the environment and efficiency

Restore and protect the environment, build and maintain the infrastructure - this is the goal and purpose of Watermaster dredgers and for nearly three decades Watermasters have been solving these challenges worldwide.

Environmental challenges seem to be escalating all around. An alarming number of water systems globally have been inadequately maintained and left to deteriorate for years.

The outcome are clear: floodings, overgrown vegetation caused by eutrophication, build-up of silt and polluted sediments, poor water quality and failing or missing water infrastructure. Many natural rivers, channels and lakes are not functioning properly, urban canals are clogged-up and industries relying on operational waterways are suffering as well.

All this leads to injuries, health issues, shortage of clean water, damaged properties, harm for animals and plants and overall a lower standard of living for everyone.

Watermaster is the best solution on the market for demanding environmental restoration and construction projects in shallow waters, the dedicated environmental dredger.

Versatility and mobility are the key elements of the Watermaster concept making it very cost effective and minimizing the need for any extra machinery.

Watermaster is truly amphibious, capable of operating in water, wetlands and on dry ground – it is able to reach even the most challenging work sites.

The integrated advantages, IWOS & IWSS provide Watermaster's superior efficiency and reliability. You can read more about this on the following pages.

Prioritize the environment and efficiency. Choose the smart solution for hard work.

Yours faithfully,
AQUAMEC LTD.

Lauri Kalliola
Managing Director

Integrated Watermaster advantages

Thanks to the IWOS and IWSS Watermaster is able to work very efficiently compared to conventional stiff suction pipe dredgers and excavator based choices. The strong tilting stabilizers, flexible heavy duty boom and sturdy hull together with the Integrated Service System allow Watermaster to be mobile and productive like no other machine.

The flexible boom enables Watermaster to cover a large area from each positioning which dramatically reduces the need to reposition the machine. Anchoring is done with four integrated stabilizers making it quick and easy just like repositioning the machine using the boom.

Conventional machines need to reposition all the time. Their mobility is also very limited thus they require assistance and their engine and pump are not suitable for shallow water work.

Bigger pump, bigger engine and bigger machine doesn't necessarily equal more results at a real work site. But it will cause more fuel consumption and difficulties in moving and transporting the machine.

Compact Watermaster does not require assisting vessels, separate anchors, wire-cables and winches. It also has an automatic central pressure greasing system which further reduces non-productive time (manual servicing time). The air-water radiator cooled Caterpillar engine ensures that the machine can operate continuously in very shallow waters or even on dry ground.

The integrated Watermaster advantages IWOS & IWSS maximize productive work time and minimize non-productive repositioning and servicing time. This means more results and more project possibilities.

Watermaster's own submersible Cutter Pump, the fruit of years of development is especially made for demanding shallow water work. It has two cutter crowns for different kinds of soil and the pump is equipped with integrated vegetation cutting knife system (patented). The pump can be quickly turned to Watermaster's own deck for cleaning purposes, when needed.

The unique mobility, heavy duty versatility and field-proven reliability supported by Watermaster service network make Watermaster unbeatably efficient – the smart solution for hard work.

→

Watermaster Cutter Pump

brief info

Watermaster's own state of the art Cutter Pump is **an essential part of the versatile Watermaster Concept.**

It is made **for tough conditions** with changing soil types, roots, trash etc. - it **includes two cutter crowns and integrated vegetation/trash cutting knife system.**

The smart operating principle enables **continuous productive operation (over 96 % of the total operation time)** and the submersible pump allows working in **very shallow waters or even from the dry land side**. The maximum pumping distance is up to 1,5 kilometres.

Watermaster is fully amphibious also when working with the Cutter Pump as the pump can handle the whole weight of the machine.

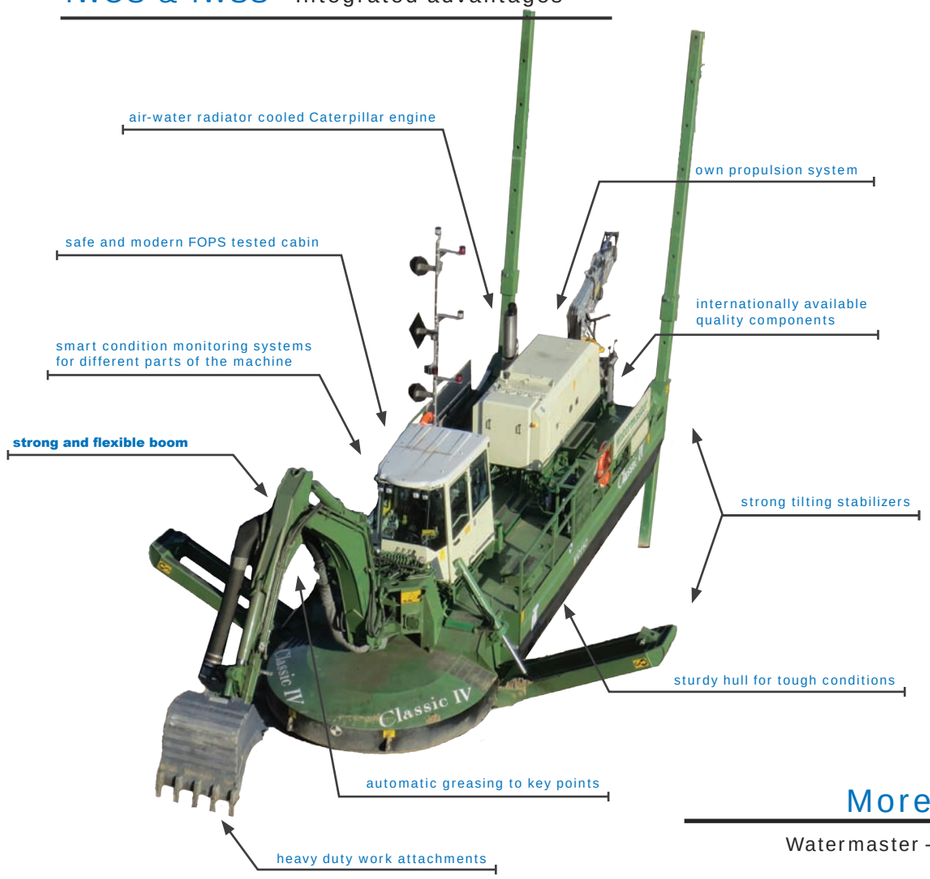
Watermaster Cutter Pump is the perfect (and often the only) choice for demanding environmental dredging projects.

IWSS

Integrated Watermaster Service System

- Maximizes productive work time by minimizing required servicing time
- Maximizes machine's and components' lifespan and prevents damaging the system
- Minimizes operational costs
- Makes Watermaster user-friendly and easy to maintain

IWOS & IWSS - Integrated advantages



suction dredging work process comparison

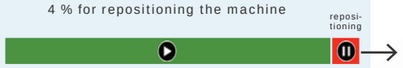
Conventional

stiff suction pipe dredger has much less effective pumping time than Watermaster

A non-flexible stiff suction pipe dredger covers only a narrow area from each position and thus has to reposition constantly. Separate anchors, assisting vessels and extra labour are often also needed.

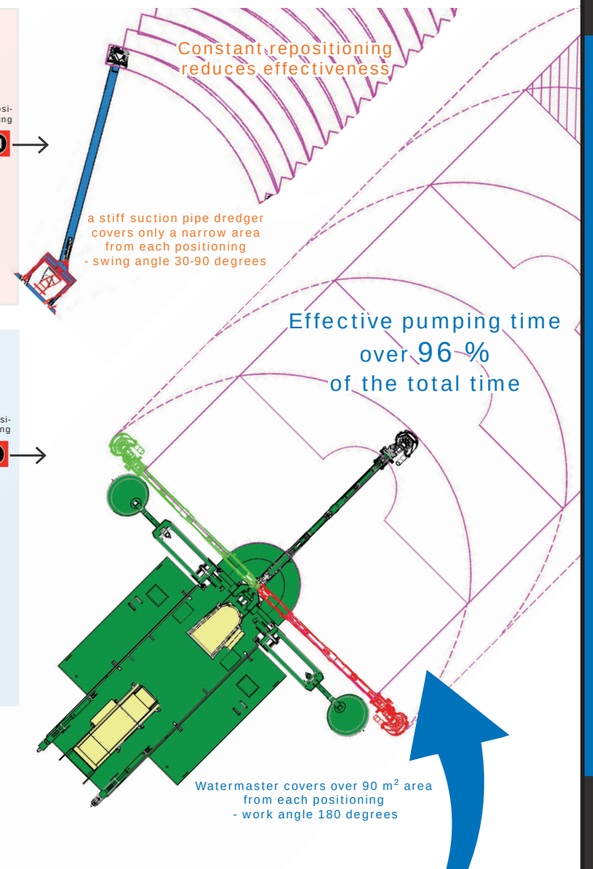
Watermaster

uses over 96 % of the total operation time for productive work and less than 4 % for repositioning the machine



Watermaster Cutter Pump, strong **flexible boom and independent anchoring** with four tilting stabilizers **allow Watermaster to efficiently** cover a large area from each position and to reposition itself quickly.

It is ready to start working immediately after changing the position - no extra anchors, wire-cables and assisting vessels are needed.



IWOS

Integrated Watermaster Operating System

- Maximizes productive work time and results
- Enables quick and easy mobilization
- Enables multipurpose operation with heavy duty work attachments
- Makes Watermaster truly amphibious in all work modes
- Enables steady, safe and accurate anchoring and operation
- Enables environmental dredging - the right amount from the right place

More results

Watermaster - the smart solution

Easy to maintain and user-friendly

smart condition monitoring systems for different parts of the machine

automatic central pressure greasing system

design features that make servicing the machine convenient and easy

internationally available top quality components

Watermaster service network support throughout the whole lifespan of the machine

Minimum downtimes

concept systematically developed since 1986

completely documented and **certified serial product with field-proven performance**

Ecological and Economical work

multipurpose functions and smart operating principle minimize the strain on the environment and keep fuel consumption and other operational costs low

Truly amphibious

in all work modes

Large work area

maximizes productivity

Steady and accurate

anchoring and operation

Heavy duty versatility

with a strong machine

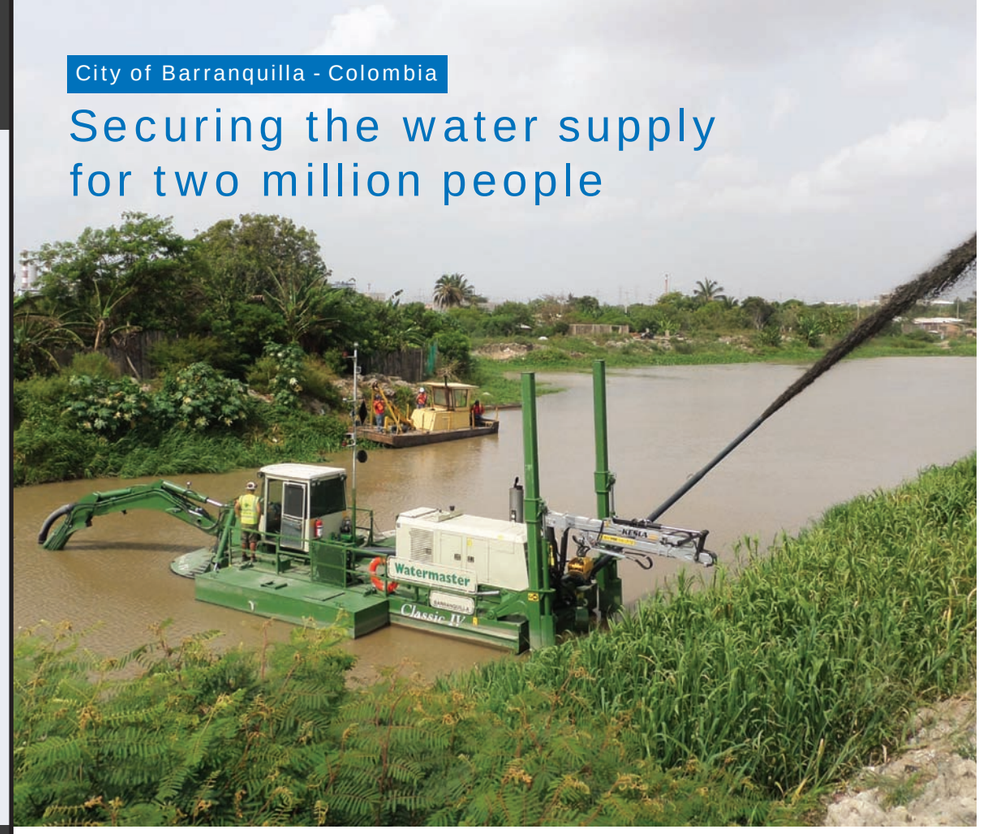
Briefly

Project info

- Triple A is in charge of supplying water for the City of Barranquilla in Colombia
- Their water inlet on the shore of Magdalena River needs constant maintenance work due to accumulating silt and vegetation
- Old conventional methods and machinery were **inefficient** and expensive to operate
- Working with the versatile **and efficient Watermaster** concept makes the maintenance work easy and brings them massive savings every year

City of Barranquilla - Colombia

Securing the water supply for two million people



Sociedad de Acueducto, Alcantarillado y Aseo de Barranquilla, S.A. E.S.P. (Triple A) is the company in charge of operating the water supply facilities in the city of Barranquilla, Colombia and 15 other municipalities in Atlantic department, serving two million persons.

Triple A takes the water from the Magdalena River through a water inlet on the shore of the river. The river carries an enormous quantity of sediments, floating vegetation, debris and trash which means a high risk of blocking the intake of river water for the treatment plants.

Triple A conducted a careful study lasting over a year to make sure they invested in the best available technology for carrying out the work needed to guarantee the normal water flow to the treatment plants. The process culminated in the selection of the Watermaster technology after realizing its superior performance, versatility and mobility over other choices.

Barranquilla is one of Colombia's most important cities on the Caribbean coast

Triple A previously owned a conventional single purpose dredge. After operating Watermaster at the same site they acknowledge that Watermaster has clearly better productivity and much lower fuel consumption.

One important factor they also noticed is that with Watermaster they decrease non-productive time due to the fact that the machine covers a big area from each positioning which reduces the need to move the machine. They also do not need to operate winches and

On top: Cleaning the mouth of the water inlet
Below: Training the new operators

The site from above,
Watermaster working in the bottom right corner

cables when repositioning so it can be done quickly with minimum loss in effective working time. At the same time they avoided the blocking of the river way with cables when working along the river shore.

The operation with Watermaster started in September 2013 and in May 2014 they had **operated** the machine for approximately **1200 hours, dredging and cleaning the whole 22,000 square meters of the water inlet area down to a depth of 4 meters with excellent results.**

They haven't had to hire any additional machinery (excavators on the top of hopper barges) anymore, as was required when working with the conventional dredge. This means **big continuous savings** in their budget and a fast return on the investment in Watermaster technology.

Watermaster suction dredging near the water treatment plants

The training for the selected operators was conducted at the worksite itself by Aquamec Ltd.'s trainer from Finland. Training was coordinated with Mr. Manuel Cid who is the Director of Mechanical Maintenance department from Triple A. Mr. Cid together with Mr. Ramón Hemer and Mrs. Cecilia Moreno, who are part of Triple A's management team, recognized that utilizing Watermaster is significantly more efficient than working with their previous equipment.

Due to the ease of transportation of the Watermaster, Triple A is planning on using it for cleaning water treatment settlement ponds at different locations. They also plan to assist other small municipalities who face problems with their water inlets, especially during the dry season when the low water level prevents their conventional non-amphibious dredgers from operating.

In Barranquilla there are also four additional Watermaster machines owned by a private company. They recently won a contract for cleaning the city channels due to Watermaster's ability to work in an economical and ecological way and to operate in all conditions found in the channels.

Fabio Zapata
Aquamec ltd., Colombia

Video of the project

Step 1 - de-silting the water inlet by suction dredging

Step 2 - removing vegetation by raking

Step 3 - backhoe dredging at the mouth of the water inlet

Step 4 - continuous maintenance work, plenty of capacity for other projects, too.

www.watermaster.fi/barranquilla.wmv

View a video of the project from here:

www.watermaster.fi/barranquilla.wmv

Meet us at

Exhibition list
can be found at
www.watermaster.fi

Aquamec Ltd.
P.O.Box 260, FI-27801 Säkylä, Finland
Tel: +358 10 402 6400
Fax: +358 10 402 6422
E-mail: watermaster@aquamec.fi

www.watermaster.fi

make a comparison

compare Watermaster concept to other choices

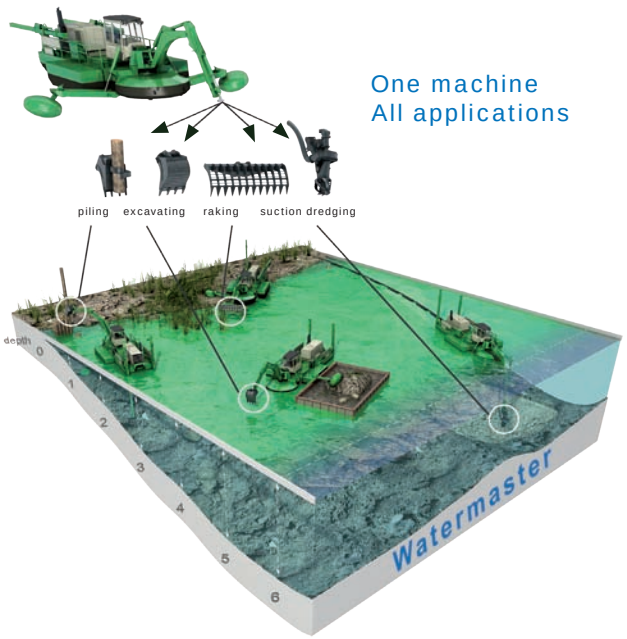
Watermaster

versatile - mobile - proven

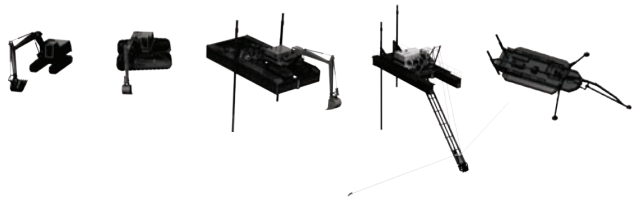
multipurpose - all shallow water applications with one machine	✓
transportable as a complete unit on a standard trailer	✓
launching without setup-times and cranes	✓
amphibious - continuous operation on land and in water	✓
self-propelled - no tugboat assistance required	✓
steady independent anchoring with four own stabilizers	✓
independent operation without winches and wire-cables	✓
covers over 90 m^2 area from each positioning	✓
submersible cutter pump for maximum **dredging efficiency**	✓
low fuel consumption and overall operational costs	✓
proven technology and service - hundreds of references	✓

Your current machinery or
other choices you consider

multipurpose - all shallow water applications with one machine	
transportable as a complete unit on a standard trailer	
launching without setup-times and cranes	
amphibious - continuous operation on land and in water	
self-propelled - no tugboat assistance required	
steady independent anchoring with four own stabilizers	
independent operation without winches and wire-cables	
covers over 90 m^2 area from each positioning	
submersible cutter pump for maximum **dredging efficiency**	
low fuel consumption and overall operational costs	
proven technology and service - hundreds of references	



One machine
All applications



watermaster@watermaster.fi

contact us to learn more about IWOS / IWSS
and the whole Watermaster concept

the shallow water specialist

www.watermaster.fi


Watermaster
Truly amphibious
Heavy duty versatility
Operating in over 65 countries worldwide
www.watermaster..fi