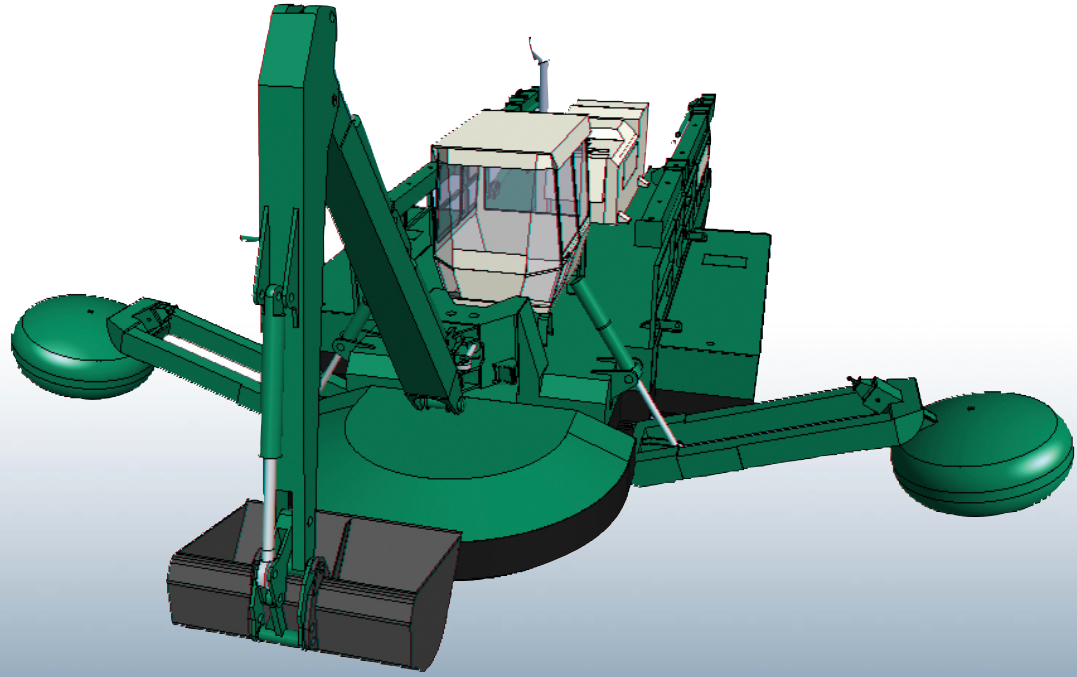
Watermaster

Smart solution for hard work

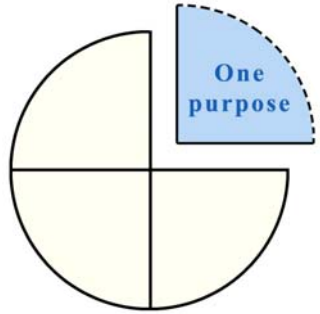
Introduction

- Backhoe dredging, suction dredging and pile driving capabilities built in one compact sized machine
- For shallow waters, lakes, rivers, canals, ponds and basins
- “Walks” in and out of water without assistance and cruises with own propulsion system
- Independent working movement and anchorage without winches and wire cables
- Manufactured in an ISO 9001 certified production plant in Finland



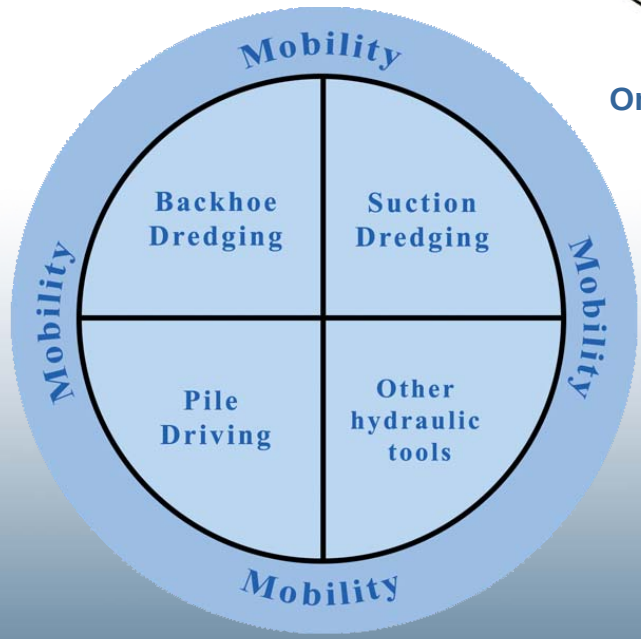
Multipurpose Watermaster

- Watermaster replaces several one purpose machines and assisting vessels supporting them
  - **No need for excavators on pontoons**
  - **No need for one purpose suction dredgers**
  - **No need for cranes**
  - **No need for tugboats**
  - **No need for assisting vessels for anchorage**
- Reduces investment, operational, maintenance and transportation costs
- Environmental working method
- The change between working modes takes about 30 minutes



One purpose machine

Watermaster



Applications

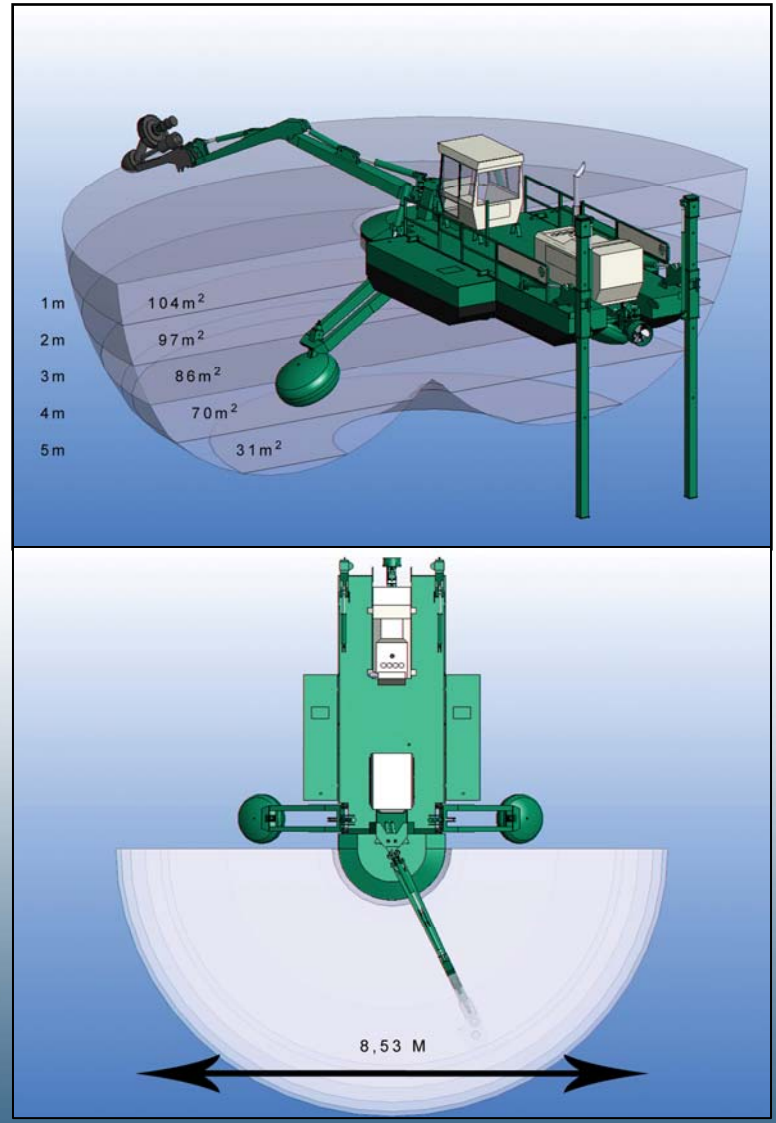
- Watermaster is an ideal machine for civil engineering, construction and dredging companies as well as municipalities etc.

- Example Watermaster applications:

  - Maintenance and deepening of rivers, lakes, canals, channels, marinas etc.
  - Removing vegetation (rooted)
  - Flood control
  - Reconstruction of shorelines, building quays
  - Maintenance of industrial pools
  - Cable and pipeline works
  - Etc.

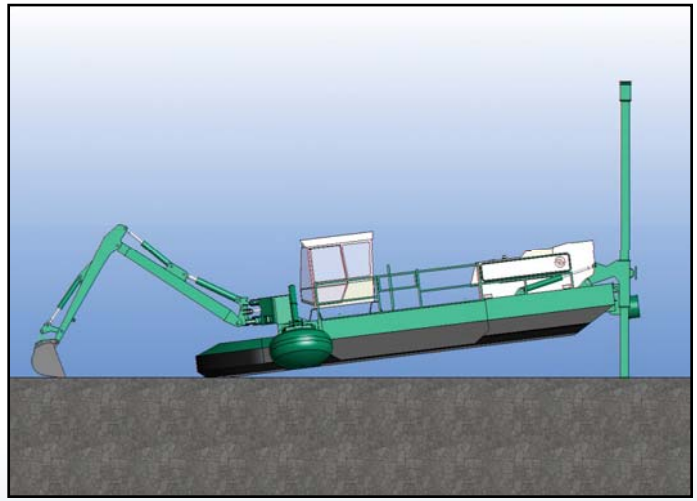
Working depths

- Watermaster is designed for shallow waters
- The maximum reach is 5,4 meters
- The most efficient working depth is up to 4 meters
- Watermaster uses front spuds and rear legs to anchor itself to the bottom
- It can operate in very shallow waters, wetlands or even on dry ground



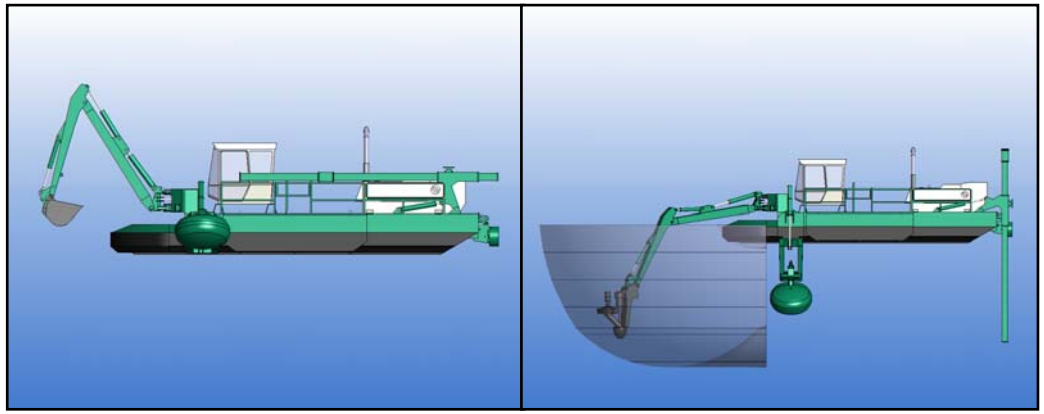
Mobility in land

- Transportable on public roads on a standard size trailer
- Is transported as a complete unit – no assembly times
- Moves in and out of water without crane assistance



Mobility in water

- Cruises to the site with own propulsion system
- Moves at the site with excavator boom, spuds and propeller – no assisting vessels, anchors or wire cables needed
- Can work in very shallow and narrow locations – where most other machines cannot



Cruising mode | Working mode

Backhoe work

- Steady anchorage with four spuds
- The indicational capacity of solids is 30-50 m3/h, depending on soil type and backhoe bucket
- The most efficient backhoe working depth is 0 – 3 m
- Watermaster can operate in such shallow water sites where the land-based excavators nor excavators on pontoons cannot

Backhoe work - Tools

1. **400l bucket**
   - For general backhoe work
   - Included in the base unit
2. **700l bucket**
   - For soft soil when bigger capacity is needed
3. **Clamshell bucket**
   - For environmental dredging
   - Reduces the mixing of the soil and the water
4. **Rake**
   - For removing vegetation and trash

Backhoe work - 400l bucket

Backhoe work - 700l bucket

Backhoe work - Clamshell bucket

Backhoe work - Rake

Suction dredging

- The suction tools have powerful Watermaster dredging pumps
- The most efficient suction dredging depth is 0,8 m - 4,5 m
- The indicational capacity of solids is 50-100 m3/h, depending on soil type, pumping distance and height
- Maximum pumping distance is up to 1,5 km
- Watermaster can operate in such shallow water sites where traditional dredgers cannot

Suction dredging – Tools & equipment

1. **Cutter pump**
   - Primary pumping tool with a cutter head for most kind of soils
   - Submersible pump
   - Recommended discharge pipe diameter 225 mm

2. **Discharge equipment**
   - Pipelines, dredge hoses, spray pipes etc.

Suction dredging - Cutter pump

Pile driving & other tools

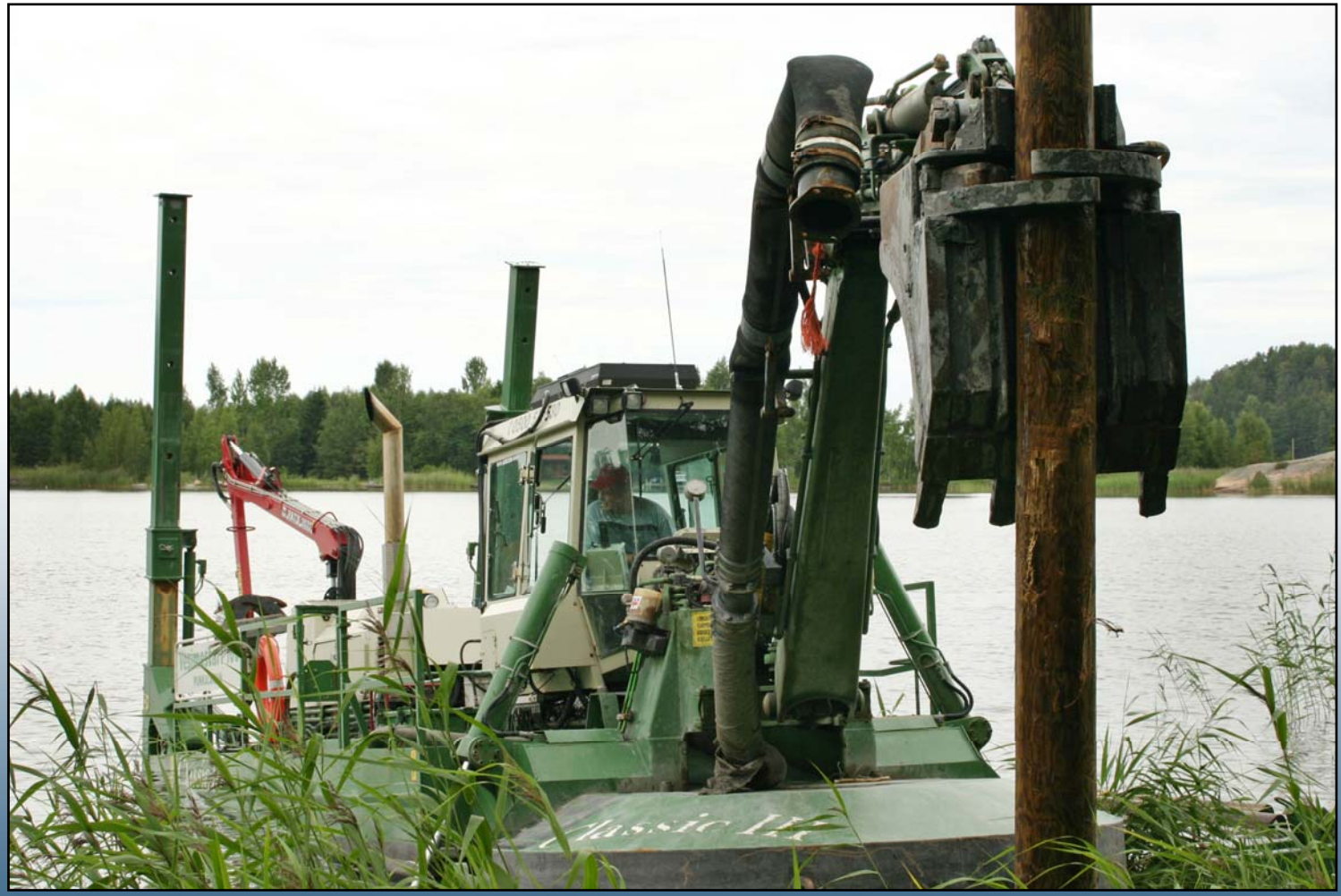
- Watermaster can drive piles
- Watermaster crabs the piles from the side
- Suitable pile length is up to 7 m
- Besides pile driving tools, it is also possible to use other hydraulic tools with Watermaster

Pile driving - Tools

1. **Pole-erecting bucket**
   - General pile driving tool
   - For soft soil
   - For wood piles
   - Driving by boom force

2. **Vibrating pile driving tools**
   - Watermaster can also operate hydraulically driven vibrating driving tools

Pile driving - Pole-erecting bucket



Production & back-up

- Aquamec Ltd. is based in Finland
- The production plant has ISO 9001 Quality certificate and ISO 14001 Environmental certificate
- Watermaster is a serial product with approximately 150 references around the world
- After sales service includes comprehensive training, field service and spare parts service

Technical specifications

Engine

Caterpillar C7, turbo charged, water cooled, 6-cylinder diesel engine

– flywheel power at 2000 rpm	168 kW (225hp)
– fuel tank capacity	1200 l
– electric system	24 V
– batteries	2x180 Ah
– electric fuel pump	

Hydraulics

one axial piston pump for dredging and propeller

– maximum operating pressure	320 bar
– capacity	95 ccm/rev

one axial piston pump for digging and stabilizers

– maximum operating pressure	210 bar
– capacity	100 ccm/rev

Excavator

– swinging angle	180°
– break-out force from bucket cylinder	77 kN
– digging force from arm cylinder	40 kN
– lifting capacity at max. reach	16 kN
– lifting capacity with Power Lift, at max reach	19 kN
– quick couplings for tools	

Stabilizers

– front detachable floats, max depth	3,7 m
– rear tilting spuds, max depth	4,9 m

Hull

– one piece hull divided into 7 watertight compartments
– corrosion resistant painting outside and inside
– protective skid bars on bottom
– slip-safe deck
– handrails

Cabin

– deluxe seat with full adjustability
– three opening side windows
– heating, ventilation, roof hatch
– complete gauging for hydraulics and engine
– four working lights
– radio receiver with CD-player

Transport dimensions and weight

Transport length (without boom)	10.45 m
Transport width	3.25 m
Transport height	3.05 m
Transport weight	c. 17 t

Travel speed with propulsion system
c 4 knots

Watermaster

www.watermaster.fi