



BoatWasher Hull Cleaning Machines



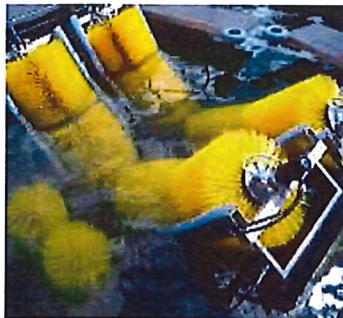
Brushes the hull clean from algae's, barnacles and other fouling. Cleans both motor- and sailing yachts.

Three sizes of washers fit most boat types, up to approximate 6 meter width and 2,4 meter depth.

The machine is designed to handle tough weather, temperature changes, high salinity and pollution. If there is a storm warning or worse, it should not interfere with a good night's sleep, and everything should work in the same way if the machine is in the Baltic Sea or in the Indian Ocean.

Unique features

- Possibility to clean stern, outboard shafts and propellers, and externally mounted rudders.
- Easy to place in odd places and narrow harbours
- Twin rows of brushes give faster, more stable and easier operation than single row.
- Fewer moving parts give longer life.
- Four wheels on chassis give easy loading on trailer, launch able on sea ramp/slip, easy moving on land.
- Waste gathering basin with pump and sludge tank.



Durability and life span

The prerequisites for this to work are that the construction is built in the appropriate material and the number of moving and mechanical parts is minimized.

In the BoatWasher machine, the entire brush package is fixed, and the boat is winched over the brushes. Thereby there is less need for components compared to a situation where the whole brush package is to be moved in the water back and forth. Thanks to this construction it is also possible to wash in tougher weather.

Material and Corossion

In terms of material selection, the most important parameters, strength, corrosion resistance and reperative properties are ie easy to process, weld in etc.

Regarding corossion, there is a rule that says precious metals eat less precious metals, which is best seen by looking at the system of sacrificial anodes. BoatWasher is made of stainless acid-proof steel in alloys suitable for marine or high-salt seas.

There are three metals that are more precious than our steel, and they are gold, silver and graphite. The least precious metals available are aluminum, zinc and magnesium. BoatWasher does not use any of these metals in the construction except as sacrificial anodes.

When the machine is brushing off old boat paint, that often contains copper, it is extra important not to use non-ferrous metals such as zinc or aluminum in the construction.

Additional details that are important to avoid correction are the galvanic currents that occur not least if there are electrical parts on the machine. BoatWasher therefore has the all electricity in an isolatet separate box in stainless steel box, as well as the oil reservoir for the hydraulic oil and the electric motor.

Efficent Waste gathering

From an environmental point of view, when a waste gathering basin is used, the basin and sludge pumping works better when the the brushes are in the middle of the basin.



Easy to store on land when not in use

The machine should be stored in winter on land, which makes the service easier and the ability to safely control the hoses and other equipment, as well as the longevity of the pool will be much longer with land storage.

For this to work smoothly, the machine is designed so that it can easily be lifted by a regular lift in the port or by a small crane of the type used for launching pleasure boats.

The machine is on wheels and can easily be moved and placed where you wish. The surface needed for winter storage is also quite minimal.

Three sizes of washers fit most boat types,
up to approximate 25-meter length, 6-meter width and up to 2,4 meter depth.

Size of biggest washable boat ¹⁾:

| <u>Model</u> | <u>Max. width, cm</u> | <u>Max. depth, cm</u> | <u>Max. length</u> |
|----------------------|-----------------------|-----------------------|--------------------|
| Swede 400 | 400 | 220 | ∞ |
| Swede 500 | 500 | 220 | ∞ |
| Swede 600 | 600 | 240 | ∞ |

- 1) Maximum measures depend on type of boat, hull, rudder, keel, shaft etc. The length of the washable boat is no restriction while the boat is winched back and forth over the brushes. Put the winching point at a distance from the washer equivalent with the length of the longest boat to be washed.

Washing speed

The washing speed is approx. 2 min/meter and be adjusted.

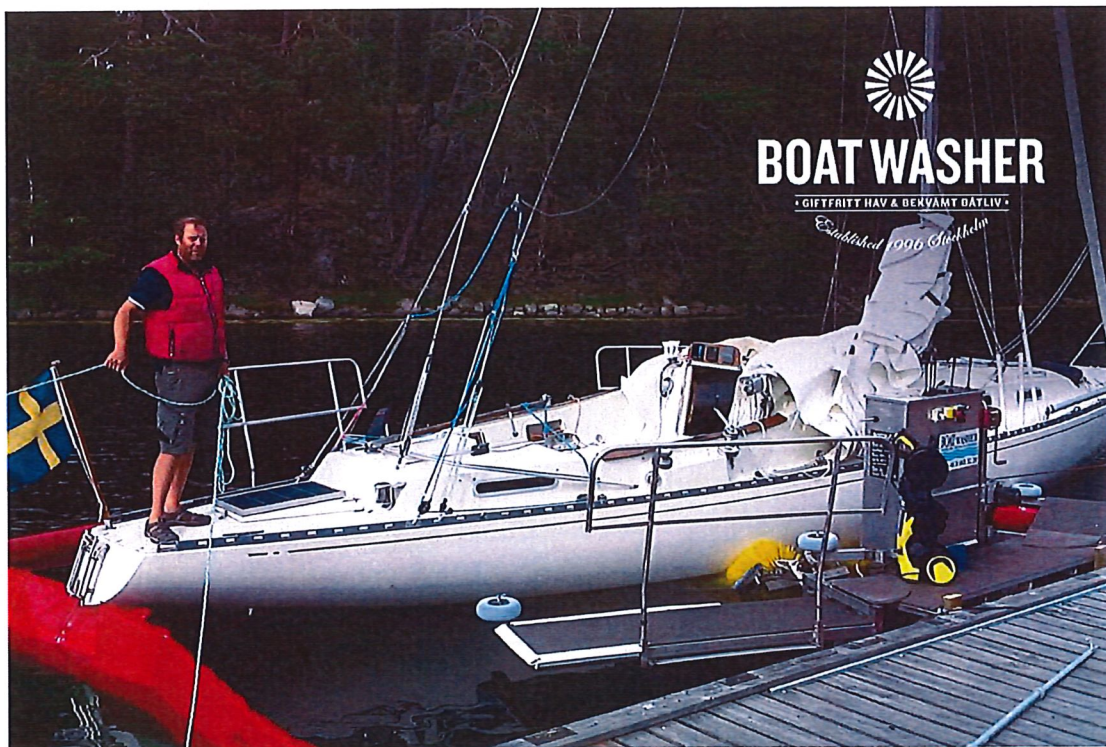
Boat length: Approx. time per boat wash:

| | |
|-------------------|------------|
| 16 ft. / 5 meter | 10 minutes |
| 30 ft. / 9 meter | 18 minutes |
| 35 ft. / 11 meter | 22 minutes |
| 50 ft. / 15 meter | 30 minutes |



Easy and fast to handle

1. Drive the boat into the washer
2. Attach the bow to the winch rope
3. Turn off the motor
4. Start the brushes and winch the boat back and forth over the brushes once or more, depending on fouling on the hull.
5. Let the brushes push the boat out of the washer.
6. Start engine and enjoy your boat trip with a clean hull

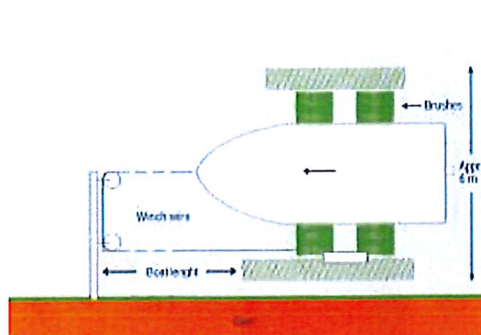


Possible to clean shaft and stern

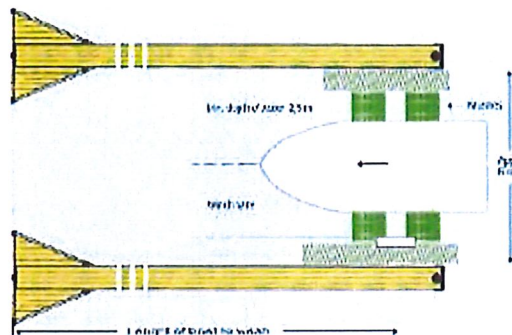
Thanks to adjustable ledges on both sides of the boat it is possible to clean shafts and stern with a brush or high pressure water.



Easy to place – Need only little space



Placed on quay or jetty

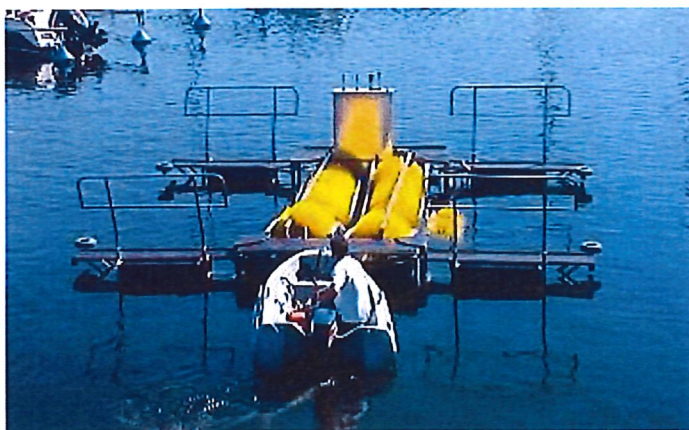


Placed between y-booms (Only float models)

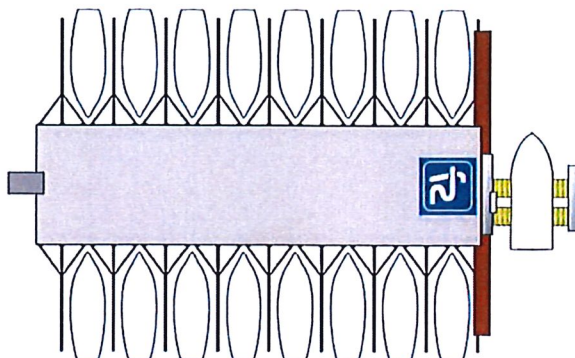
Easy to move in water.

Tow or mount outboard motor.

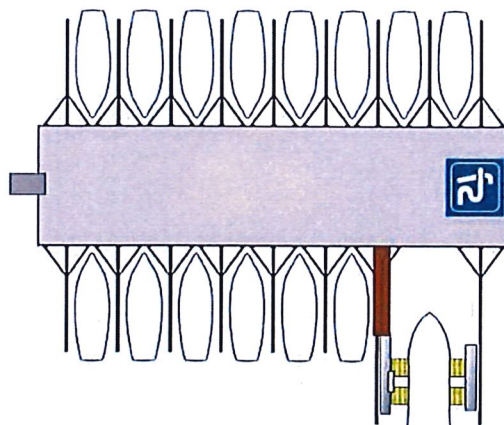
Electricity needed "on board" or through land cable.



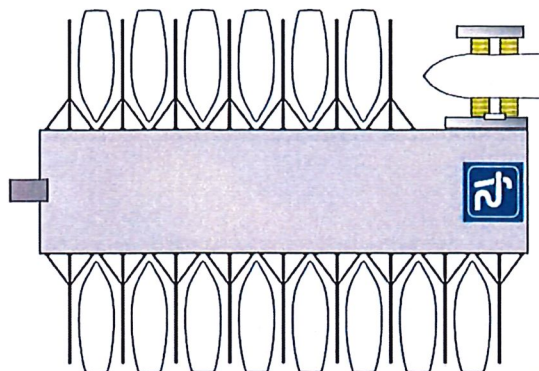
Placed on edge of jetty



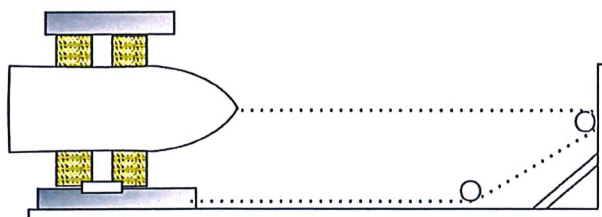
Placed between y-booms



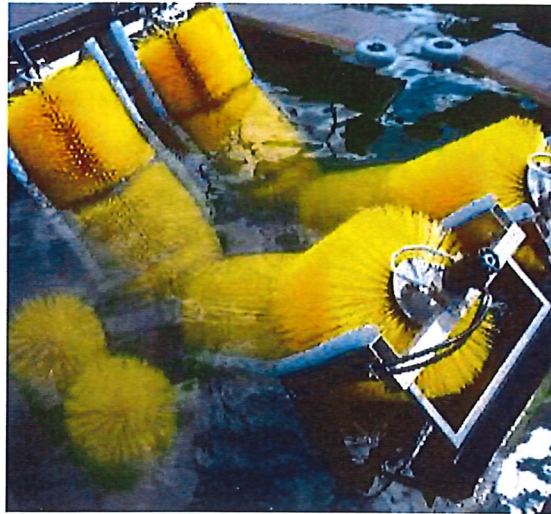
Placed along dock/jetty or quay



Mobile/free floating with winch arm



Brushes



Two rows of brushes

Faster, more stable, and more comfortable operation...than one row of brushes

Horizontal brushes

Cleans bottom and part of the boat's sides.

The angle of the brushes follows the shape of the boat bottom. The angle can also be changed manually

Vertical brushes:

Cleans keel, rudder and lower parts of shafts/propellers.

Rudders on stern and outboard shafts can be cleaned thanks to the outside-lying vertical brushes.

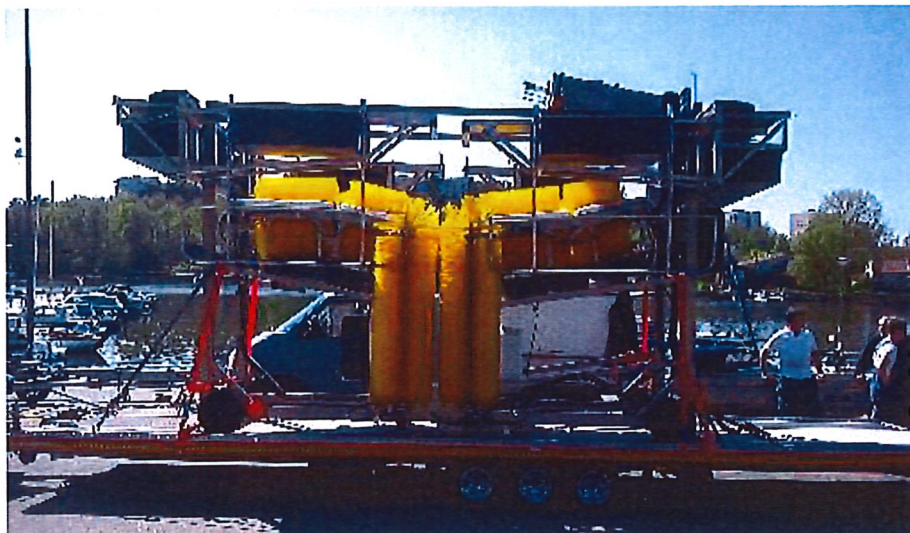
Brush pressure

The brushes are floating in the water and the pressure can be adjusted by pumping in and out air in the pontoons and by a winch cord.

Hydraulics

The brushes are rotated by hydraulic motors, driven by an electrical motor. Output requirement 4.0 kW (400V, 16 A), 3-phase

Roll on and off trailer



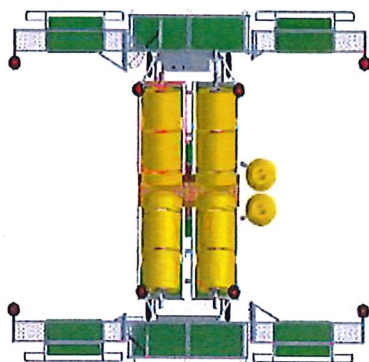
Launch on slip or lift with crane



Start-Up in less than a day

The washers are easy and fast to launch and start.

When launched and moored to dock, plug in the cord and start washing boats immediately.



Easy maintenance and storage

Winter storage:

1. Put on land, do necessary service and cover with canvas or put indoors.
2. Leave in water if no ice or keep waters free from ice with rotator or compressor.

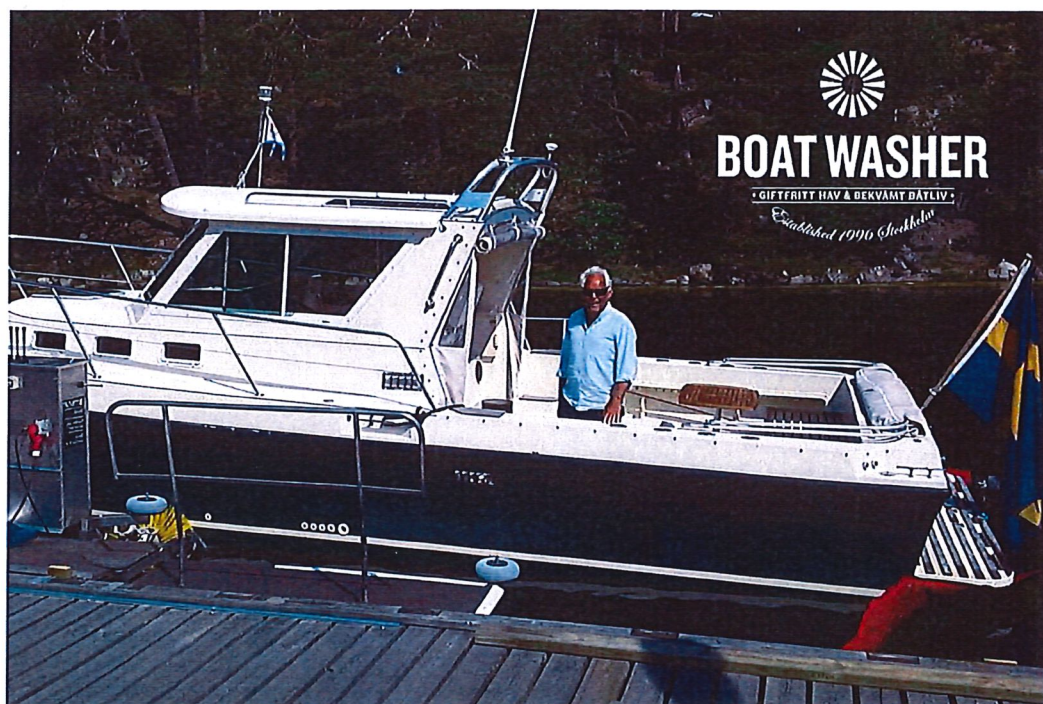
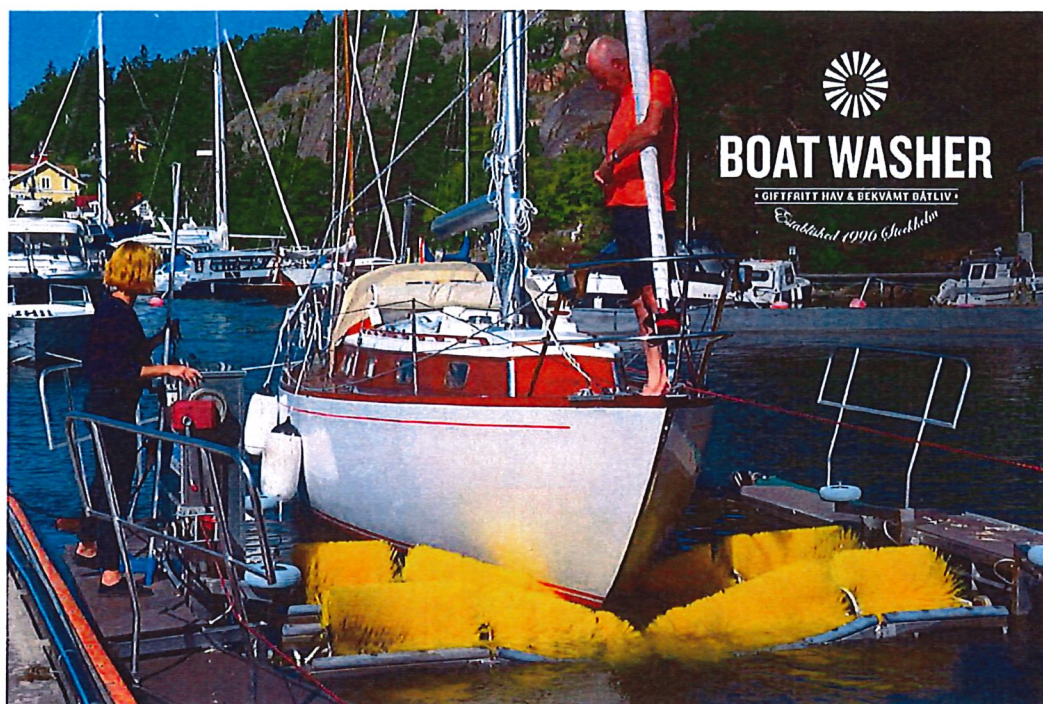
Service – Short version:

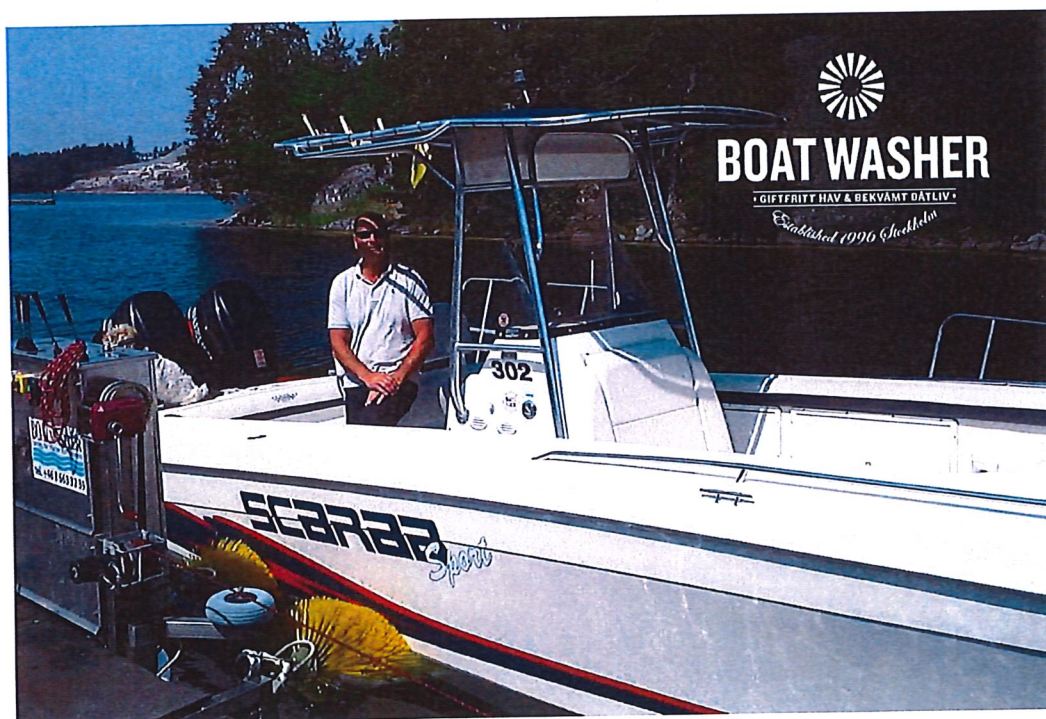
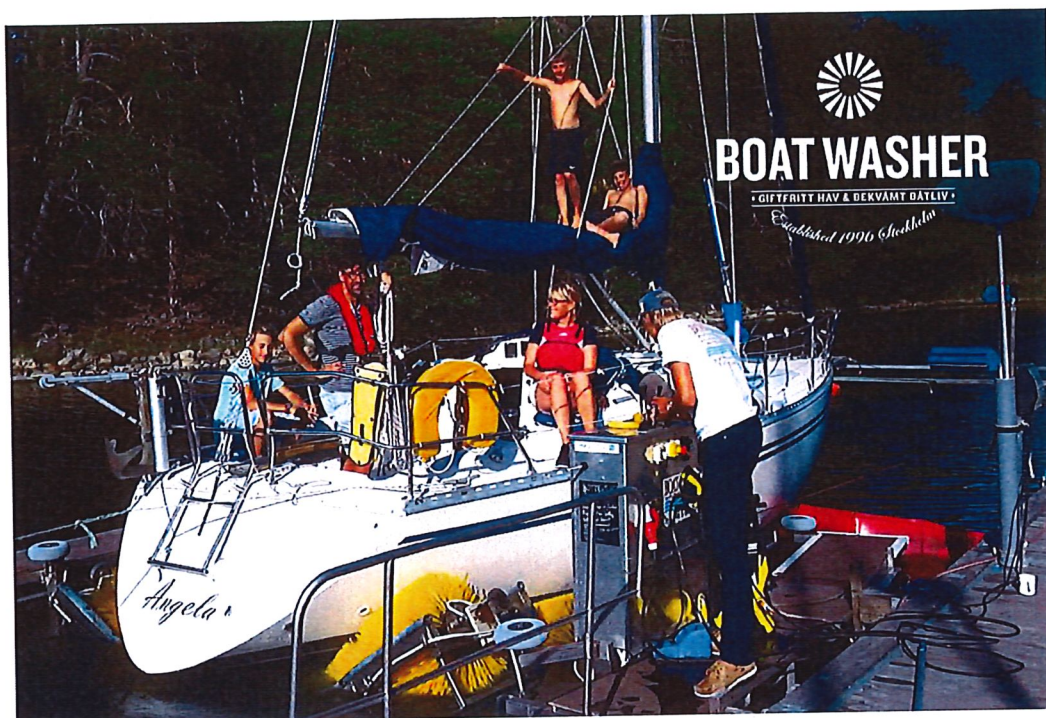
- a. Take the parts to be served above waterline or put the whole machine on land.
- b. Clean with med high pressure water.
- c. Service and maintenance according to user's manual.
 - a. Change hydraulic oil
 - b. Check functionality of mechanics, hydraulics, electricity, pneumatics, pontoons and other parts. Do necessary repairs.

Waste gathering basin



In case you want to wash boats with sloughing-paint that come off during the washing process, you can assemble a catch basin under the boat washer. Dissolved paint brushed away from the hull falls into a pocket in the bottom of the basin. Basin sludge is removed regularly, and the remains taken to a recycling centre for disposal.





Notes:

