



Efficient corrosion protection with the use of high pressure water jetting

Economical – High quality preparation – Eco-friendly

Dockboy

Dockmaster

Dockmate

Spiderjet

Manual tools

High pressure pumps

Efficient corrosion protection using water jetting

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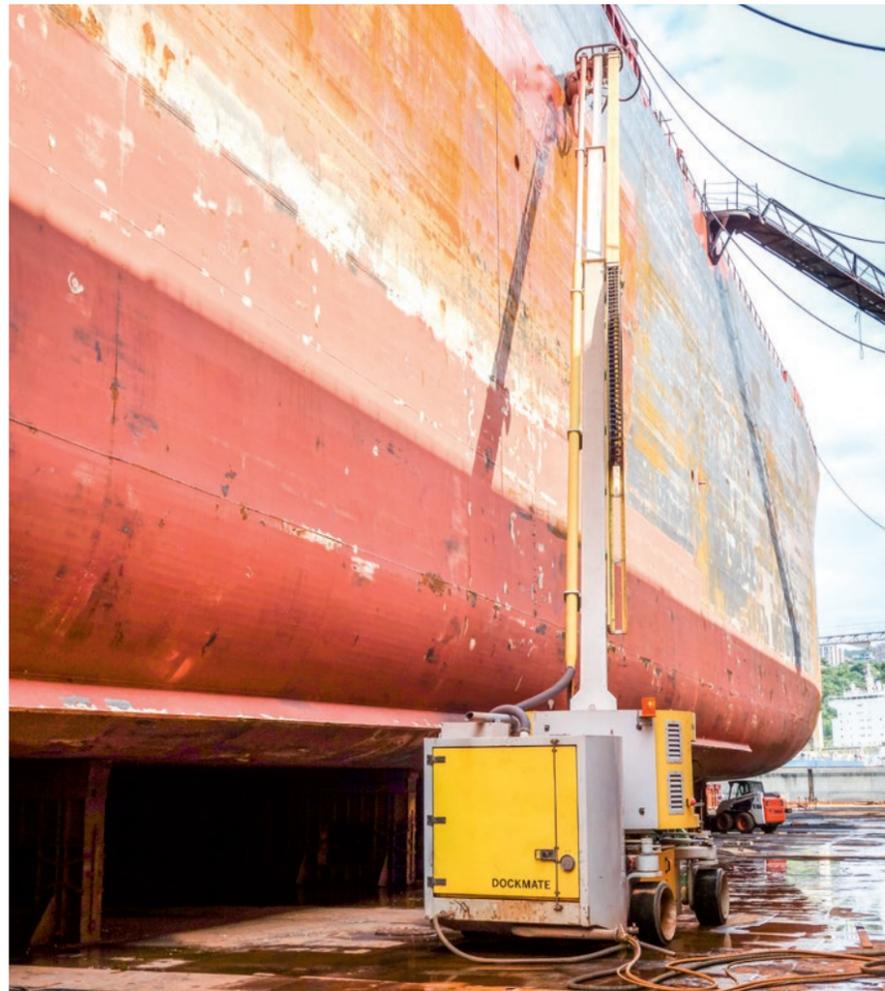
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High pressure water jetting

Economical

- Reduced docking time
- Priming can be carried out following the inspector's approval. No cleaning of surfaces necessary following treatment.
- The spray arms are designed to provide an even energy distribution over the full working width
- Tremendously increased area output with the same pump performance
- No costs for intensive shrouding of sensitive equipment, reduced time for cleaning of the dock. Water will not harm nearby seaworthy equipment and machinery as is often the case with flying grit particles
- Other trades can work close to water blasting area
- The amount of waste to be disposed of is far less than that produced by dry blasting. It is only the waste water, old paint, marine growth and rust that need to be collected for separation and disposal. Water can be treated and recycled
- All-weather work possible
- The filtered (but not treated) water is pumped out of the vacuum system. This allows longer working times as the vacuum tank only needs to be replaced when full of slurry or mud
- Reduced labour costs due to the small number of operating personnel required



Eco-friendly

- No formation of dust, as dust particles are bound in water
- The amount of material to be disposed of is 1/100 compared to dry blasting
- Systems with a vacuuming unit provide direct feeding of the waste water and removed paint particles to an aftertreatment system
- Easy waste separation for controlled disposal. The waste water can be collected if the dock has no central water collection and treatment facilities
- The mud is collected in the settling tank and can be dumped into a bin. Either a spare tank is provided for quick exchange or an XXL filter bag is used which can be lifted out of the settling tank

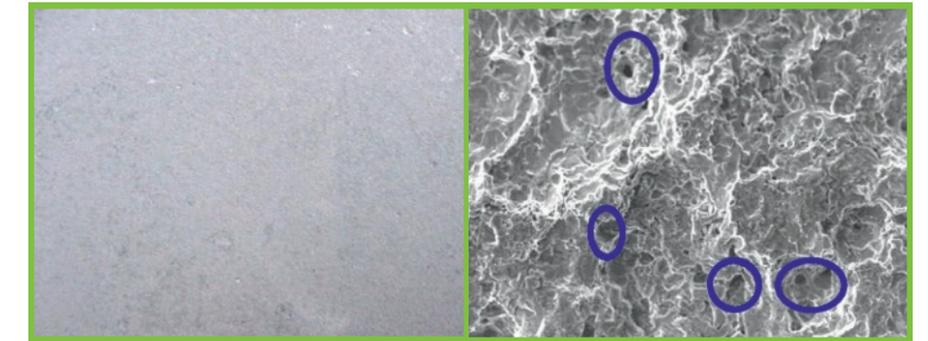


High pressure water jetting

High quality preparation

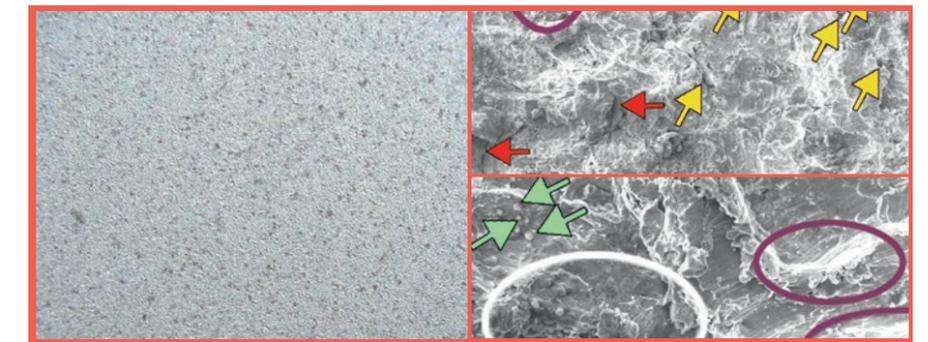
- Exposes the surface profile beneath the original coating
- Optimised bonding for fresh coatings, especially when using surface tolerant paints
- Steady removal quality due to constant feed and standoff distance of the nozzles
- The surface quality when using UHP water jets is far better compared to conventional methods
- No foreign particles, corrosion provoking materials or poorly adhering coatings remain
- Other methods require the surfaces to be cleaned afterwards
- Substrates prepared by Hammelmann systems meet the quality requirements set by international paint manufacturers and standards authorities (NACE/SSPC) for the application of new coatings

Water jetting



Microscope image on right: the pockets and holes prior to treatment (circled in blue) are cleaned by water jetting, removing all impurities from them and from the surface. The residual chloride levels are at least 5 times lower than on a grit blasted surface and the substrate profile remains intact ensuring good adhesion of the new coating and greatly reducing the risk of future paint film defects.

Grit blasting



Microscope image on right: pockets and holes prior to treatment (indicated by yellow arrows). Blasting material residue and slag after sandblasting (green arrows). Wavelike substrate deformations (violet circles). Salt residue (white bits). Pitted material (red arrows).

Reference: EUROMARINE

Health / Safety

- No risk of silicosis and other respiratory illnesses
- Reduced physical strain on operating personnel compared to hand-lancing
- No clouds of dust and dirt to put yard personnel's health at risk
- Vacuum eliminates jetting noise



Features of Hammelmann's semi-automatic surface preparation systems



Quick set-up



Quick change of working place



Easy to manoeuvre in limited spaces



No in-dock constructions necessary



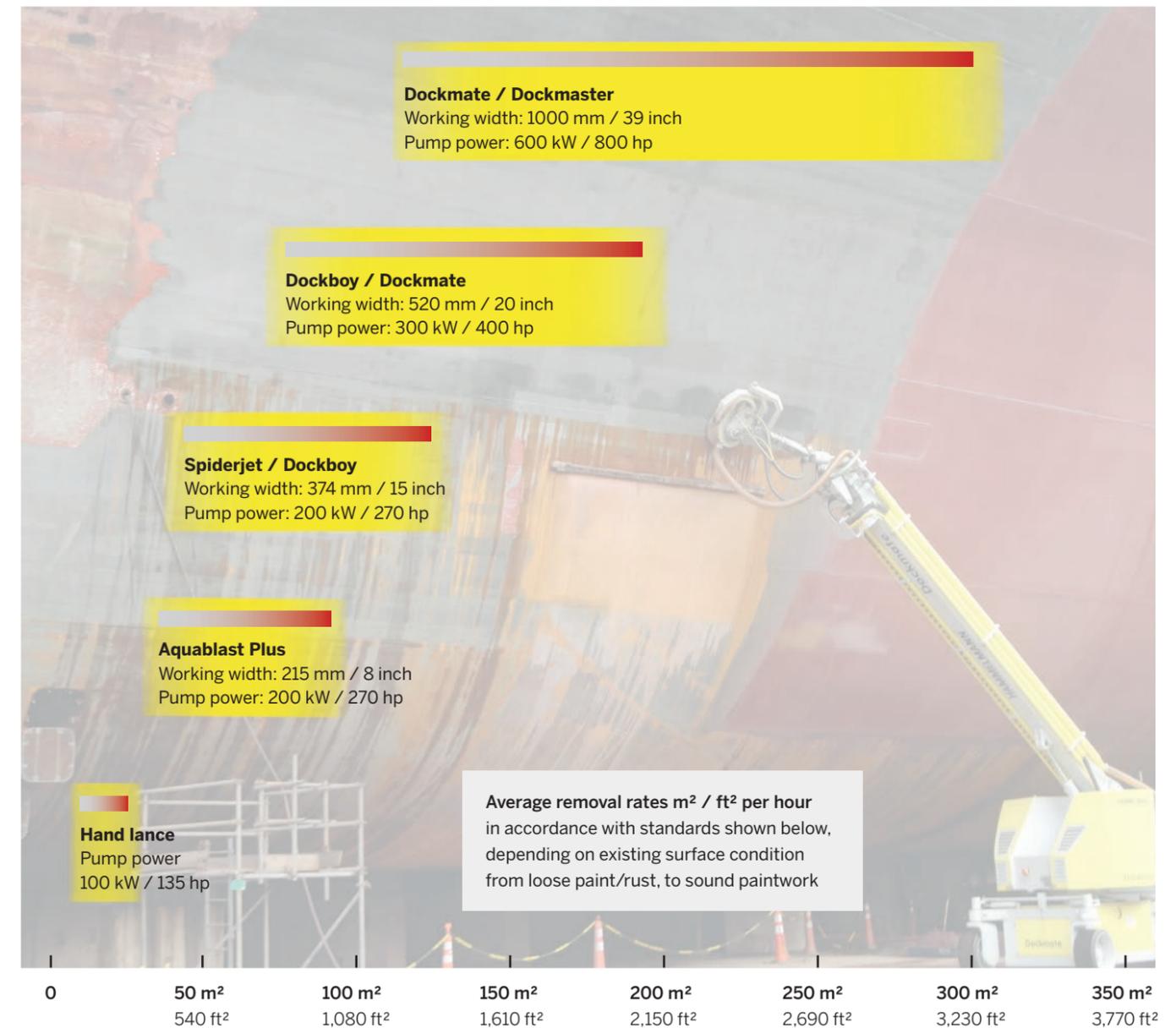
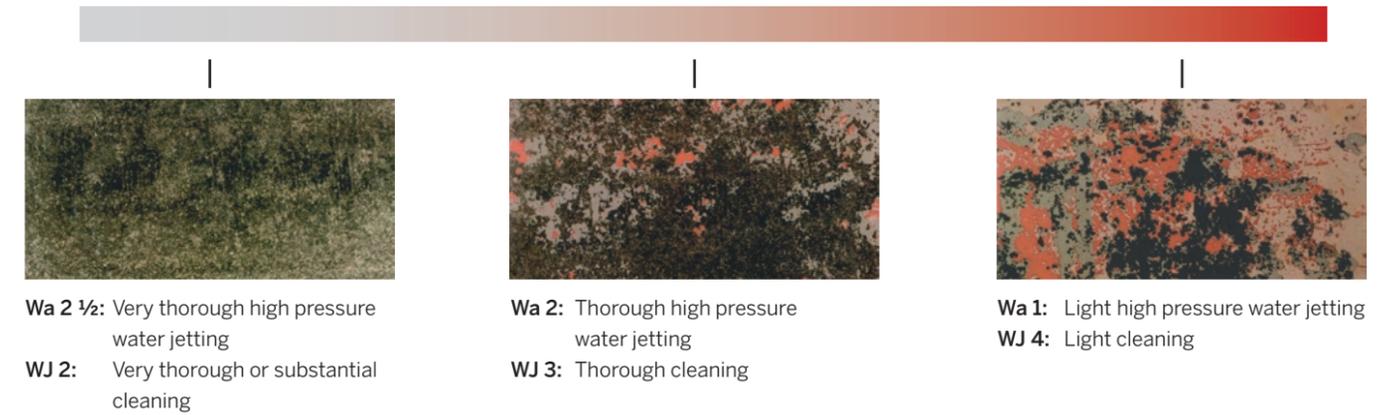
Minimum space required



Parallel painting, maintenance and coating removal possible

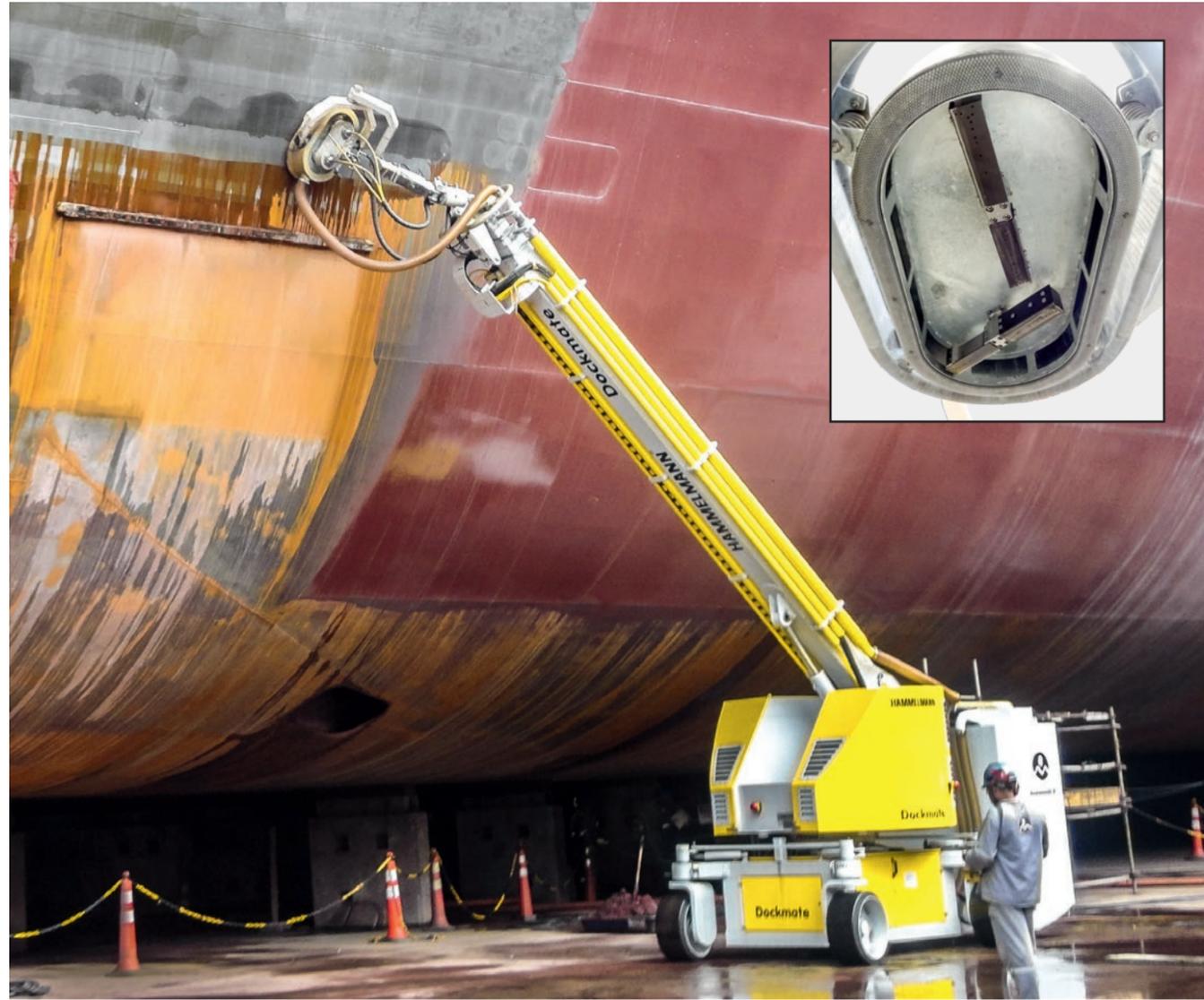
Performance examples of Hammelmann's corrosion protection systems

Water jetting standards according to ISO 8501-4 – SSPC / NACE



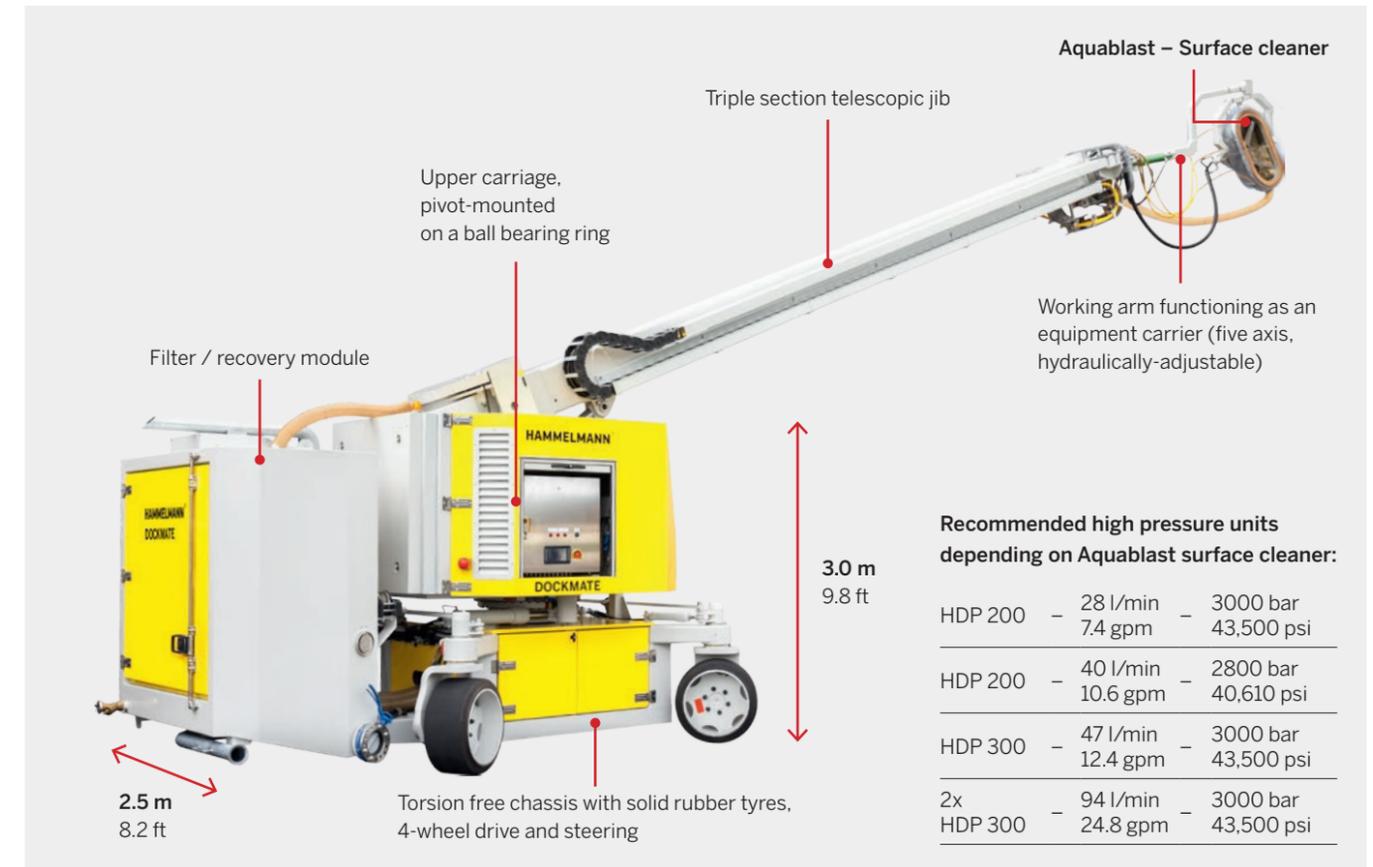
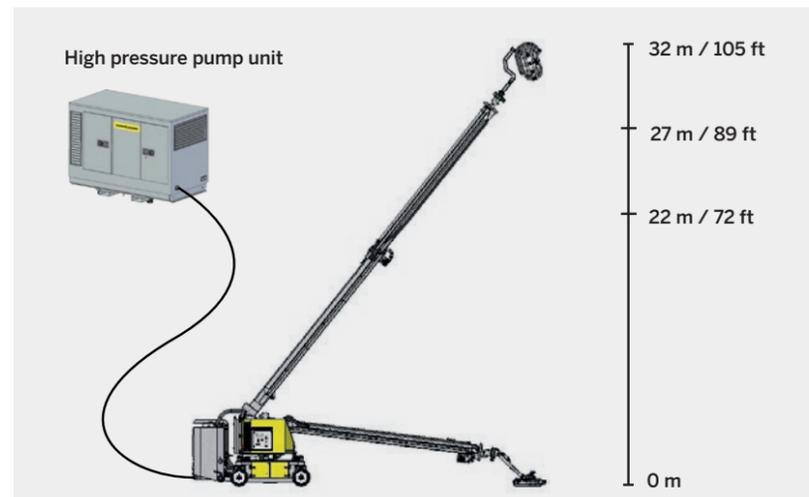
Dockmate

The Dockmate is a completely dust-free and eco-friendly semiautomatic water blasting vehicle. The high pressure unit is attached separately.



Available versions:

Jib height:	22 m	72 ft
Transport length:	9.6 m	31.5 ft
Weight:	17 t	37,500 lbs
Jib height:	27 m	89 ft
Transport length:	12.3 m	40.4 ft
Weight:	20 t	44,100 lbs
Jib height:	32 m	105 ft
Transport length:	14.0 m	46.0 ft
Weight:	23 t	50,700 lbs
Min. vehicle height:	3.0 m	9.8 ft
Vehicle width:	2.5 m	8.2 ft

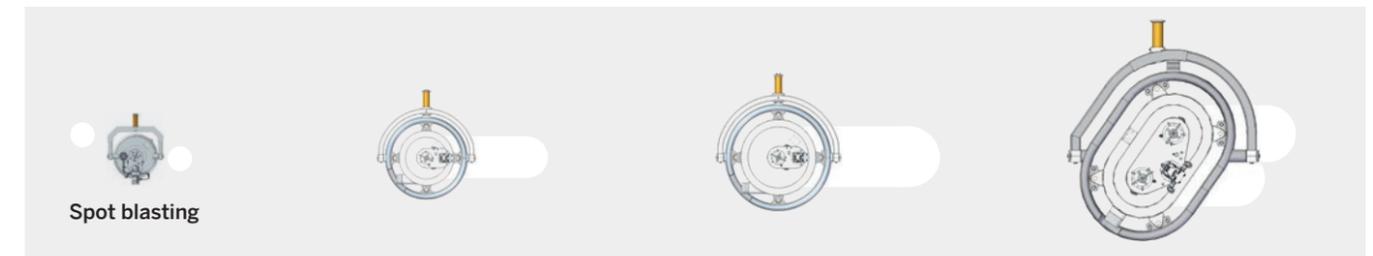


Recommended high pressure units depending on Aquablast surface cleaner:

HDP 200	– 28 l/min – 7.4 gpm	– 3000 bar – 43,500 psi
HDP 200	– 40 l/min – 10.6 gpm	– 2800 bar – 40,610 psi
HDP 300	– 47 l/min – 12.4 gpm	– 3000 bar – 43,500 psi
2x HDP 300	– 94 l/min – 24.8 gpm	– 3000 bar – 43,500 psi

Aquablast surface cleaner

- Special nozzle layout ensures uniform distribution of the high pressure water across the working width
- Hydraulically driven – for a constant rotation speed at all times
- Infinitely adjustable rotation speed from 100 to 2500 RPM
- Oil and water totally separated – no contamination of the hydraulic oil through high pressure leakage possible
- Threefold Poly-V belt drive for long service intervals
- Rotary joint with quick access to wearing parts (high pressure seals) from the top
- Powerful long-life axial piston hydraulic motor
- Equipped with an RPM sensor



Working width	Working width	Working width	Working width
274 mm 11 inch	374 mm 15 inch	520 mm 20 inch	1000 mm 39 inch
Working parameters 28 – 47 l/min 2800 – 3000 bar	Working parameters 28 – 47 l/min 2800 – 3000 bar	Working parameters 47 l/min 2800 – 3000 bar	Working parameters 94 l/min 2800 – 3000 bar
7.4 – 12.4 gpm 40,610 – 43,500 psi	7.4 – 12.4 gpm 40,610 – 43,500 psi	12.4 gpm 40,610 – 43,500 psi	24.8 gpm 40,610 – 43,500 psi

Dockmate features

Electronic control unit

- Enables a safe and easy operation of the Dockmate
- Ensures uniform supply to the blasting head – resulting in a steady paint removal
- Failsafe! Sensors detect unsafe and critical conditions – triggering automatic stops or shutdowns
- Operational functions are mostly automated
- Pre-selection of main parameters at the control cabinet – regular operation via radio remote control



Surface cleaner – automatic contact force

- A system of sensors and proportional hydraulic valves enables a constantly consistent contact force of the blasting tool
- In overhead, vertical and inclined operating position, this makes sure that the Aquablast is always in contact with the ship hull or the surface to be treated
- The boom mounted Aquablast automatically follows the ship hull curvature
- Automatic compensation of the changing distance between vehicle and ship hull caused by travel



Integrated vacuum system

- Absorbs the solids (removed coating, rust) and waste water directly at the ship hull
- Particles are actively removed - resulting in a cleaner surface
- Dries the blasted surface rapidly, meaning less formation of flash rust



Filter / disposal module

- Pre-separation of solids directly in the vehicle
- Collection of particles in a "big-bag" for easy disposal
- Rotary lobe pump feeds the waste water to a treatment plant in a controlled manner (where available)

Dockmate features

4-wheel drive and steering

4-wheel drive equipped with an integral, hydraulically controlled differential for safe operation and constant feed on uneven ground. High stability for precise tracking of the blasting head for blasting head accuracy. Powerful at low feeding speed, maximum traction.

Excellent manoeuvrability thanks to independently steerable axles. This ensures maximum manoeuvrability in the often narrow space between hull and dock wall or through dock access ways.



Construction and specification

Caterpillar engine:

- C 4.4:
- 82 kW @ 1800 RPM
- 110 HP @ 1800 RPM
- 4 cylinder – 4.4 l turbo charged
- Fuel tank capacity: 165 l (43.6 gallons)

Hydraulic system:

- Axial piston pump with infinitely variable flow
- Performance of both systems:
- 125 l/min @ 240 bar 50 l/min @ 400 bar
- 33 gpm @ 3480 psi 13.2 gpm @ 5800 psi
- Hydraulic oil capacity: 230 l (60.80 gallons)
- Biodegradable hydraulic oil
- Radiator oil-cooler with electric fan

Electric system:

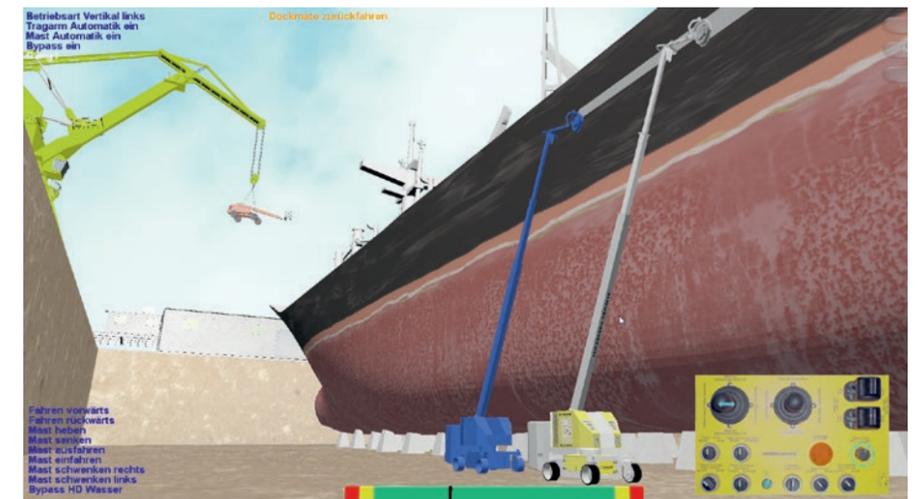
- 24 V DC

Training software

All work steps and functions can be taught using a simulation software combined with a modified Dockmate remote control.

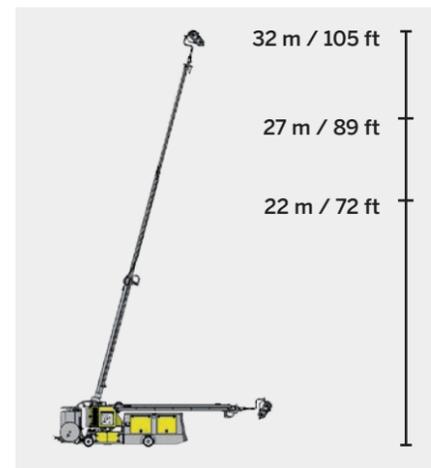
Errors made when using the remote control are displayed and suggestions are given to improve operation.

No matter where the operator is, he can teach himself the individual functions and procedures using this software.



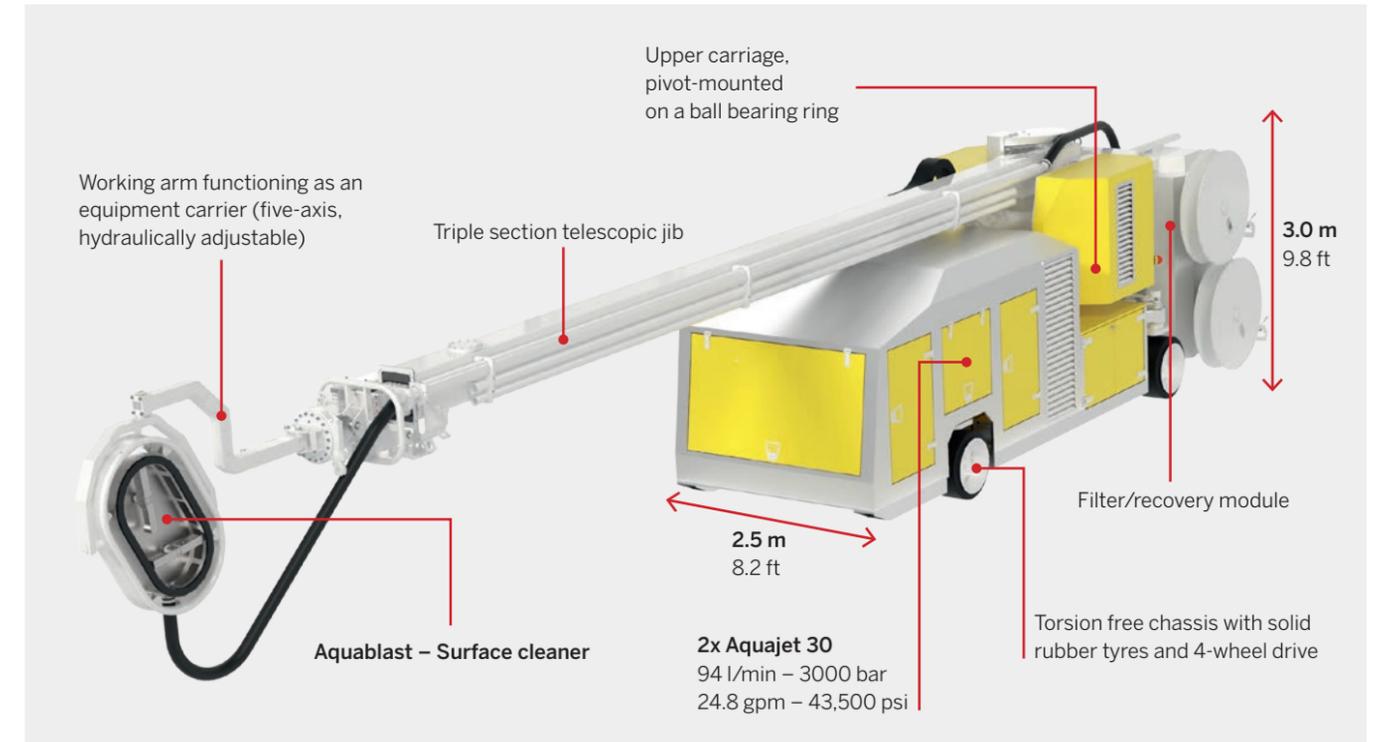
Dockmaster

The Dockmaster is a completely dust-free and eco-friendly semi automatic water jetting vehicle. The high pressure pump is on board.



Optional jib height configurations

Dockmaster



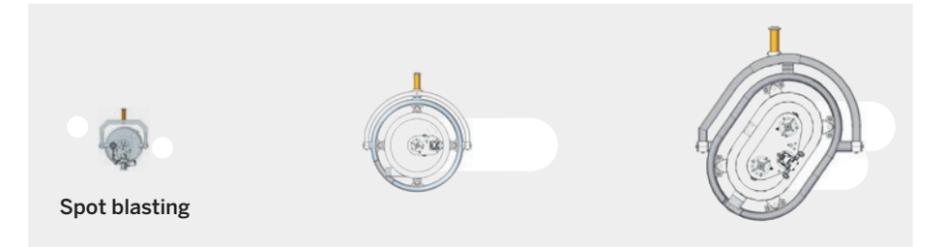
Dockmaster

The Dockmaster is a Dockmate system extension. The structurally identical parts are supplemented with a complete pump unit and a reel system for fresh and waste water.

The high pressure pump unit can be used as an independent system for other cleaning work.

Min. vehicle height:	3.0 m	9.8 ft
Vehicle width:	2.5 m	8.2 ft
Jib height:	22 m	72 ft
Transport length:	9.6 m	31.5 ft
Weight:	24 t	52,910 lbs
Jib height:	27 m	89 ft
Transport length:	12.3 m	40.4 ft
Weight:	25 t	55,115 lbs
Jib height:	32 m	105 ft
Transport length:	14 m	46 ft
Weight:	26 t	57,320 lbs

Aquablast surface cleaner

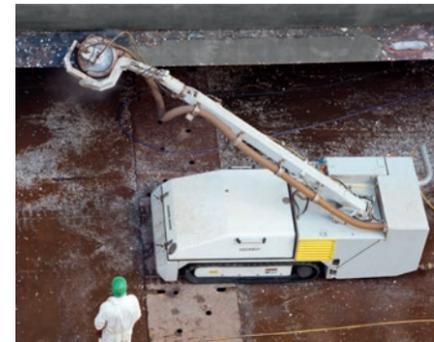


	Spot blasting	2x Aquajet 30 (66 % RPM)	2x Aquajet 30 (100 % RPM)
Working width:	274 mm 11 inches	520 mm 20 inches	1000 mm 39 inches
2x Aquajet 30 (66 % RPM)		65 l/min - 3000 bar 17.2 gpm - 43,500 psi	94 l/min - 3000 bar 24.8 gpm - 43,500 psi
1x Aquajet 30 (100 % RPM)		47 l/min - 3000 bar 12.4 gpm - 43,500 psi	In "one pump mode" the second pump is disconnected via clutch.



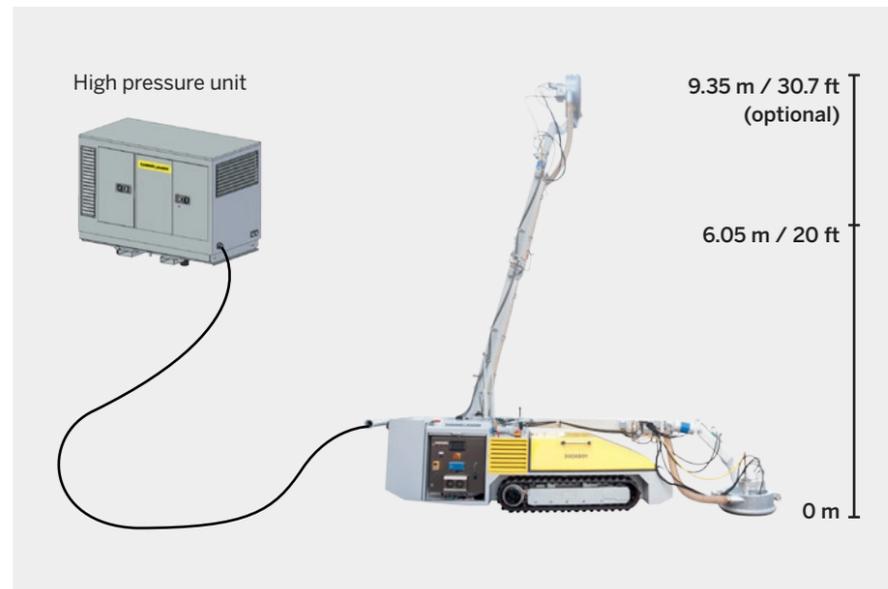
Dockboy

The Dockboy is a semiautomatic vehicle primarily for working on ship hull bottoms or similar surfaces. Nearly all larger flat or slightly curved areas of a ship can be blasted.

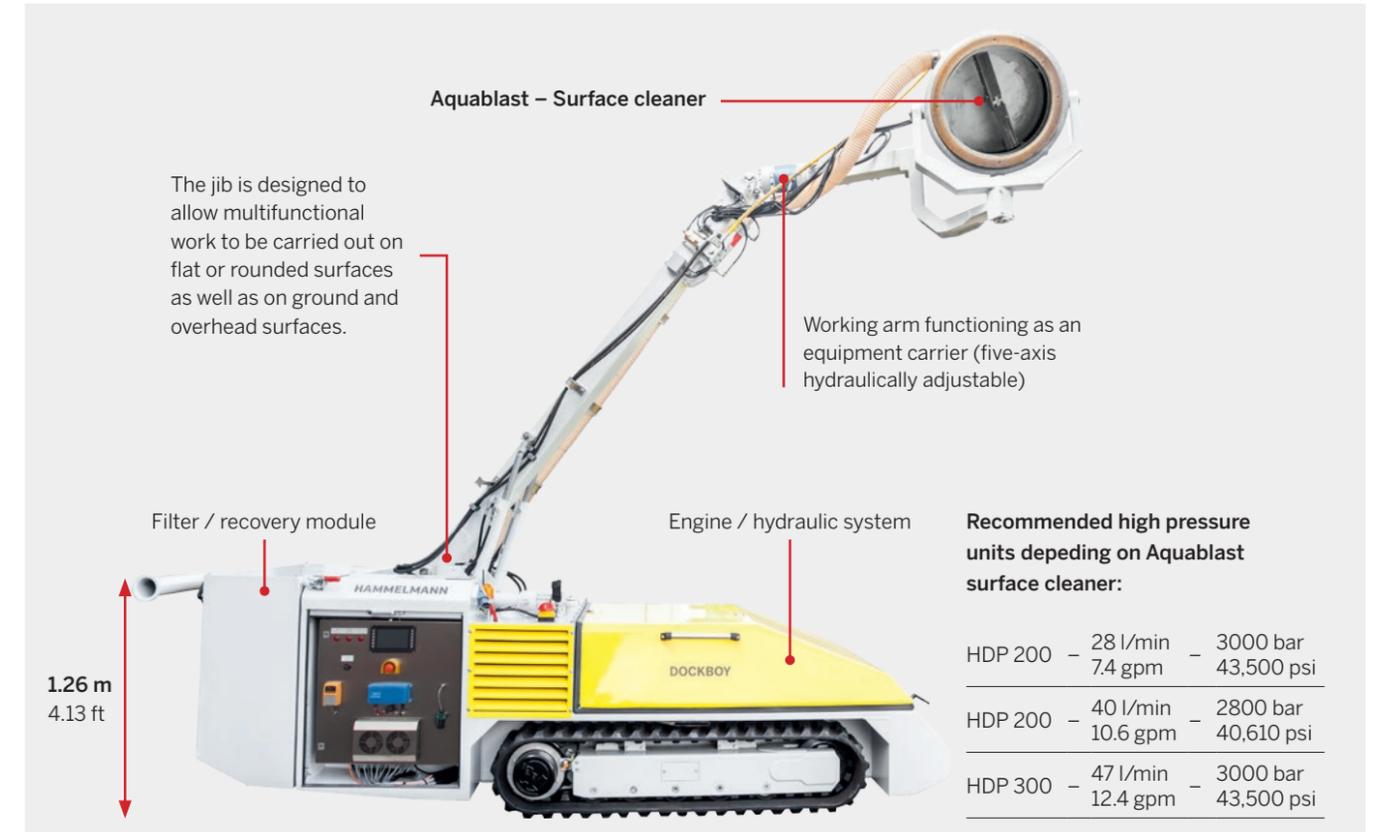


In combination with direct vacuuming, it ensures eco-friendly rust removal and old coating removal with waste and waste water collection.

- Designed to treat flat areas such as: Ship hull bottoms, all kinds of curvatures, superstructures up to a height of approx. 6.05 m (20 ft) or optionally with telescopic extension arm of 9.35 m (30.7 ft)
- Can be used on ship decks, car and cargo decks and other flat floors
- For work on ship hull bottoms, the minimum vehicle height is just 1.26 m (4.13 ft)
- Vehicle height lower than the most common keel blocks (mostly 1.5 m (4.9 ft) or higher)
- Work functions are automated and adjustable to a great extent



Dockboy



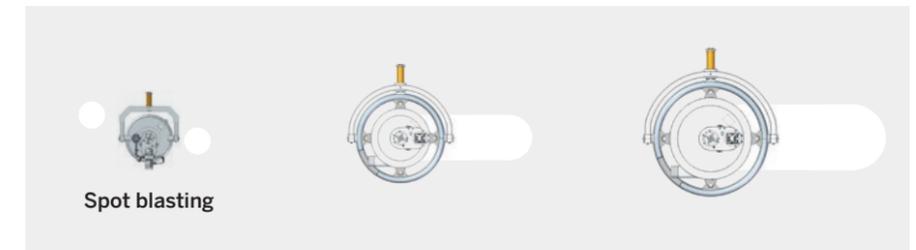
Recommended high pressure units depending on Aquablast surface cleaner:

HDP 200	28 l/min 7.4 gpm	3000 bar 43,500 psi
HDP 200	40 l/min 10.6 gpm	2800 bar 40,610 psi
HDP 300	47 l/min 12.4 gpm	3000 bar 43,500 psi

Max. operating pressure:	3000 bar	43,500 psi	Working height:	0 – 6.05 m (0 – 9.35 m)	0 – 20 ft (0 – 30.7 ft)
Recommended flow rate:	up to 47 l/min	12.4 gpm	Length:	6.30 m (6.50 m)	20.67 ft (21.33 ft)
Min. vehicle height:	1.26 m	4.13 ft	Weight:	appr. 5 t (appr. 5.2 t)	11,000 lbs (11,500 lbs)
Vehicle width:	1.48 m	4.86 ft	Arc width:	4.60 m (5.00 m)	15.1 ft (16.4 ft)

Aquablast surface cleaner

- Special nozzle layout ensures uniform distribution of the high pressure water across the working width
- Hydraulically driven for a constant rotation speed at all times
- Infinitely adjustable rotation speed from 100 to 2500 RPM
- Oil and water totally separated – no contamination of the hydraulic oil through high pressure leakage possible
- Threefold Poly-V belt drive for long service intervals
- Rotary joint with quick access to wearing parts (high pressure seals) from the top
- Powerful long-life axial piston hydraulic motor
- Equipped with an RPM sensor



Working width	274 mm (optional) 11 inches (optional)	Working width	374 mm (optional) 15 inches (optional)	Working width	520 mm (optional) 20 inches (optional)
Working parameters	28 – 47 l/min 2800 – 3000 bar	Working parameters	28 – 47 l/min 2800 – 3000 bar	Working parameters	47 l/min 2800 – 3000 bar
	7.4 – 12.4 gpm 40,610 – 43,500 psi		7.4 – 12.4 gpm 40,610 – 43,500 psi		12.4 gpm 40,610 – 43,500 psi

Dockboy

Hydraulically powered vehicle

- Working boom, adjustable in five axes, with a gimbal mounted Aquablast working head at the end
- Makes it possible to follow the ship hull curvature
- Enables a constantly optimal surface fit
- Keeps the nozzle standoff distance constant
- Excellent manoeuvrability between keel blocks
- Mounted on crawler tracks
- Powerful at low feeding speed
- High stability for blasting head accuracy



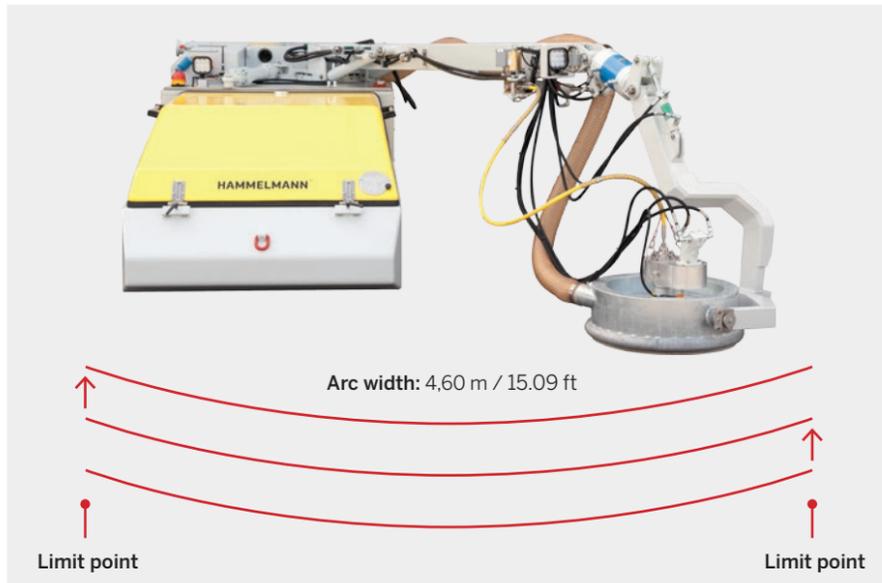
Electronic control unit

- Enables a safe and easy operation of the Dockboy
- Ensures uniform feeding of the blasting head – resulting in a steady paint removal
- Failsafe! Sensors detect unsafe and critical conditions, triggering automatic stops or shutdowns
- Operational functions are mostly automated
- Pre-selection of main parameter at the control cabinet
- Regular operation via radio remote control



Fully automatic mode for floor and overhead operation

- Adjustable step length and speed
- Programmable slewing range through freely selectable endpoints
- Adjustable slewing speed
- Forward/backward operation possible



Dockboy

AQUABLAST surface cleaner – automatic contact force

- A system of sensors and proportional hydraulic valves enables a constantly consistent contact force of the blasting tool
- In overhead, vertical and inclined operating position, this makes sure that the Aquablast is always in contact with the ship hull or the surface to be treated
- The boom mounted Aquablast automatically follows the ship hull curvature
- Automatic compensation of the changing distance between vehicle and ship hull caused by travel



Integrated vacuum system

- Absorbs the solids (removed coating, rust) and waste water directly at the ship hull
- Particles are actively removed - resulting in a cleaner surface
- Dries the blasted surface rapidly, meaning less formation of flash rust

Filter / disposal module

- Pre-separation of solids directly in the vehicle
- Collection of particles in a "big-bag" for easy disposal
- Rotary lobe pump feeds the waste water to a treatment plant in a controlled manner (where available)



Construction and specifications

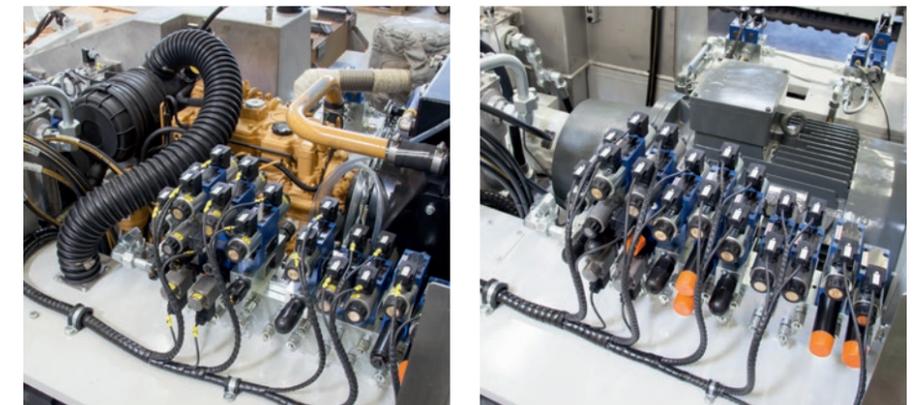
Caterpillar diesel engine:

- C 2.2 DIT: 36 kW @ 2500 RPM
48 hp @ 2500 RPM
- 4 Cylinder – 2.2 l turbo charged
- Fuel tank capacity: 150 l (39.6 gallons)

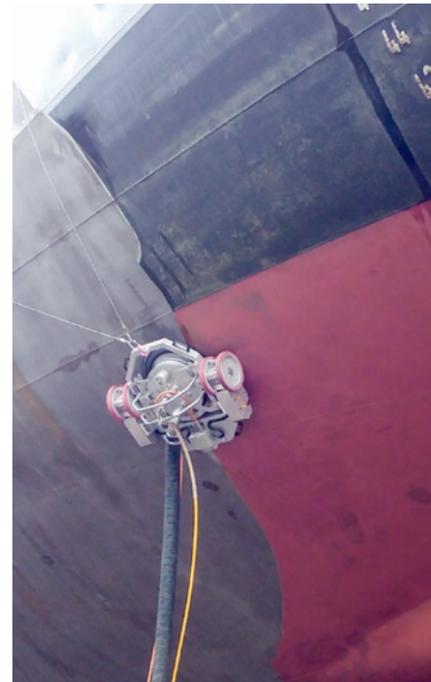
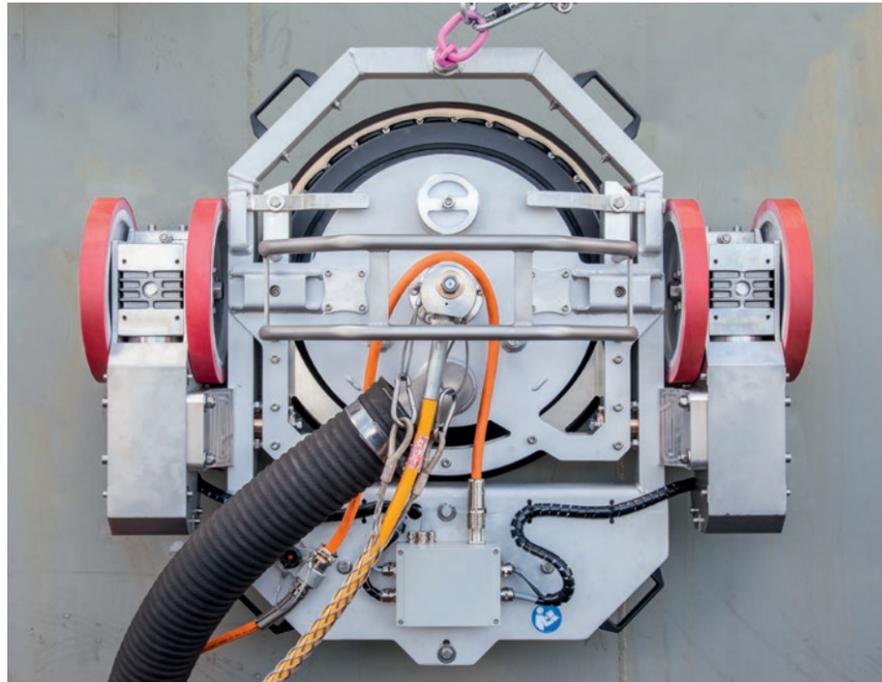
or

Electric motor:

- 45 kW, 50 Hz/60Hz



Spiderjet V – vacuum



The Spiderjet V is held on the work surface by a vacuum, which at the same time suctions off the removed waste material and waste water.



Separation tank



Vacuum collectors



Vacuum collector - 660

Technical data - Spiderjet V

Working width:	374 mm 14.7 inch
Operation pressure:	up to 3000 bar up to 43,500 psi
Flow rate:	up to 50 l/min up to 13.2 gpm
Weight:	95 kg 209 lbs
Max. operation speed:	0–7 m/min 0–22 ft/min

Vacuum:
depending on the nature of the surface
approx. 0.5 bar / 7.2 psi
Suction connection: DN 100

Suction Power @ 500 mbar	1900 m ³ /h (67,097 ft ³)
Max vacuum	500 mbar (7.2 psi)
Vacuum generator:	Roots - rotary piston blower
Electric motor:	45 kW (60 hp)
Length	2335 mm (91.9 inches)
Width:	1500 mm (59.1 inches)
Height:	2380 mm (93.7 inches)
Separation tank:	
Capacity:	3 m ³ (106 ft ³)
Length	2350 mm (92.5 inches)
Width:	2350 mm (92.5 inches)
Height:	4200 mm (165 inches)

Vacuum collector - 1900

Suction Power @ 500 mbar	660 m ³ /h (23,307 ft ³)
Max vacuum	500 mbar (7.2 psi)
Vacuum generator:	Roots - rotary piston blower
Electric motor:	15 kW (20 hp)
Length	1750 mm (68.9 inches)
Width:	970 mm (38.2 inches)
Height:	2180 mm (85.8 inches)
Separation tank:	
Capacity:	1,3 m ³ (45,9 ft ³)
Length	2050 mm (80.7 inches)
Width:	2050 mm (80.7 inches)
Height:	3660 mm (144,1 inches)

Vacuum collector - 660

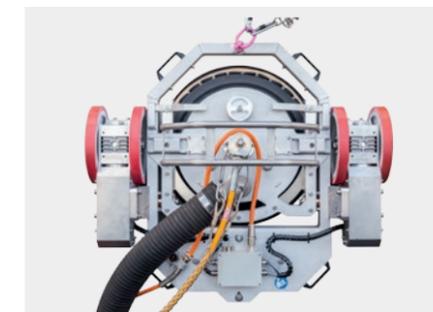
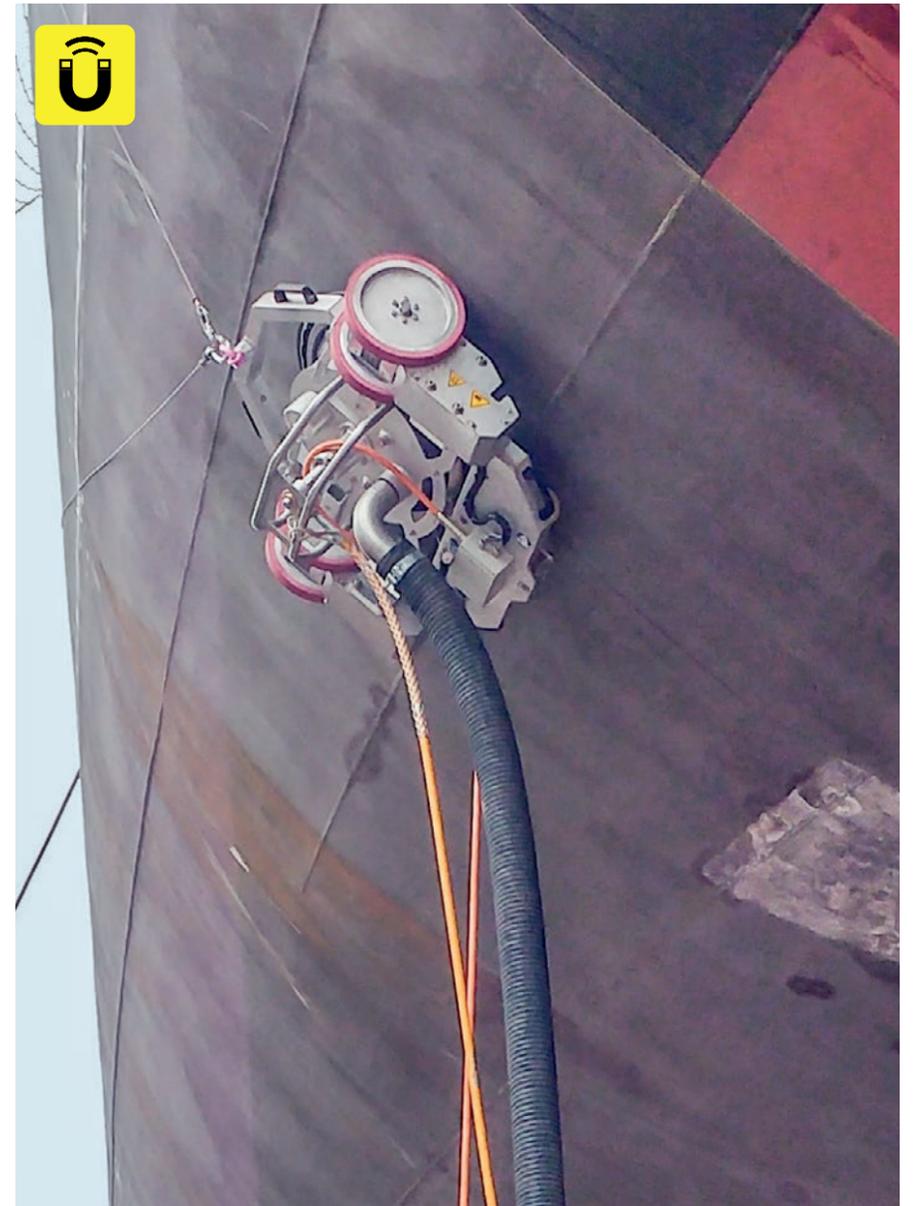
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Height:	2180 mm (85.8 inches)
Separation tank:	
Capacity:	1,3 m ³ (45,9 ft ³)
Length	2050 mm (80.7 inches)
Width:	2050 mm (80.7 inches)
Height:	3660 mm (144,1 inches)

Spiderjet M – magnetic

The Spiderjet M is attached to the work surface with permanent magnets. An optional vacuum system retrieves all waste water and removed solids.

- Maximum manoeuvrability via two individually, electrically driven magnetic wheels
- Radio remote control
- Secured by a double fall arrest system
- Special nozzle layout ensures a uniform distribution of the high pressure water across the working width
- Nozzle holder is self-propelled due to the reaction force of the high pressure water jets
- Rotation speed can be varied with the spraybar angle
- Rotary joint with dynamic high pressure seals, leakage-free, long service intervals

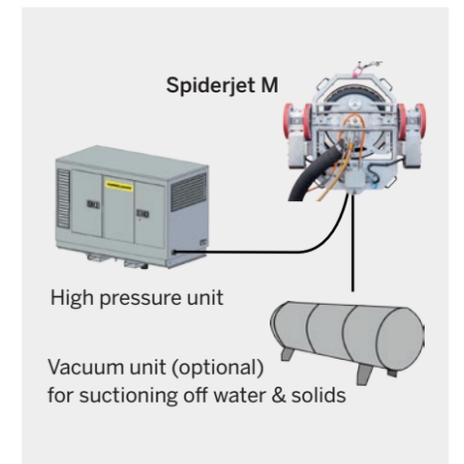
Working width:	374 mm 14.7 inch
Operation pressure:	up to 3000 bar up to 43,500 psi
Flow rate:	up to 50 l/min up to 13.2 gpm
Weight:	112 kg 247 lbs
Max. operation speed:	0–7 m/min 0–22 ft/min



Radio remote control



Electrical control cabinet



Spiderjet M
High pressure unit
Vacuum unit (optional)
for suctioning off water & solids

Aquablast® Remote



Self-sufficient carrier vehicle that can connect various jetting tools for surface treatment i.e. the cleaning and de-coating of ship decks,

- Flexible use in combination with cleaning vehicles and with independent high pressure units
- Easy to use in combination with cleaning vehicles, without the hassle of performing hydraulic installation on the vehicle
- Modular system for different working widths
- Simple and safe handling via, radio remote control.
- Operator can control it from outside danger zones
- One-man operation

Overhead work

- No-hassle add-on for the existing Aquablast Remote
- Minimal working height at just 1.15 m (3.8 ft)
- Telescopic pipes enable ceiling cleaning at heights of up to 2.50 m (8.2 ft)
- Aquablast can be moved transverse to the direction of travel

Technical data

Working width:	520 mm	20.5 inches
Working height:	1.15 m – 2.50 m	3.8 ft – 8.2 ft
Travelling speeds:	5 – 67 m/min	16.4 – 220 ft/min

Operating pressure:	max. 3000 bar	max. 43,500 psi
Flow rate:	47 l/min	12.4 gpm

Floor work

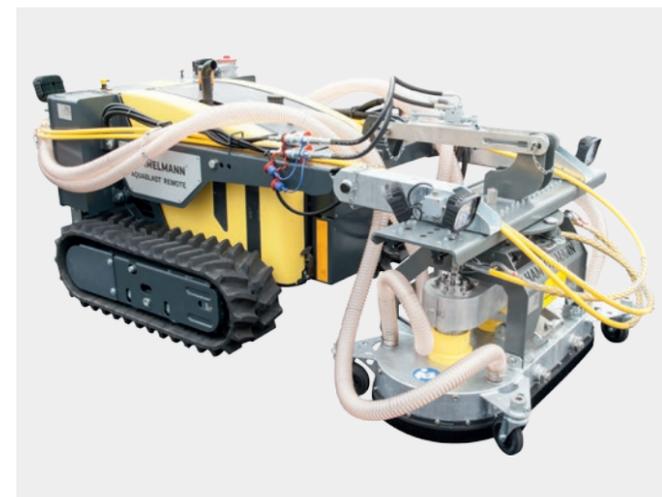
Typical applications

- Removal of road markings on lanes, parking and storage spaces
- Cleaning and de-coating of ship decks, industrial floors etc.
- Can be used at airports to clean runways and terminal areas
- Removal of concrete laitance

Technical data

Working width:	max. 860 mm	max. 34 inches
Travelling speeds:	5 – 67 m/min	16.4 – 220 ft/min

Operating pressure:	max. 3000 bar	max. 43,500 psi
Flow rate:	79 l/min	21 gpm



Aquablast® PLUS and vacuum systems

Aquablast PLUS with direct vacuuming

Self propelled spray bar, driven by reaction force of water jets.

Max. op. pressure:	3000 bar	43,500 hp
Max. flow rate:	40 l/min	10.6 gpm
Working width:	215 mm	8.5 inches
Weight:	90 kg	198 lbs

Optimum spray bar design with 4 nozzle arms enabling the fitting of up to 16 nozzle inserts.



Vacuum system type “200”

Dual chamber system suitable for suctioning off and pre-filtering waste water.

Separator:	230 litres	61 gpm
Fine filter:	230 litres	61 gpm
Weight:	670 kg	1,477 lbs
Engine:	Electric engine	
	5.5 kW	7.4 hp
Suction power:	200 m³/h	7,063 ft³/h
Vacuum:	200 mbar	2.9 psi



Vacuum system type “650”

Dual chamber system suitable for suctioning off and pre-filtering waste water.

Separator:	630 litres	166.3 gpm
Fine filter:	430 litres	113.5 gpm
Weight:	1.5 t	3,308 lbs
Engine:	3-cylinder diesel engine	
	36.7 kW	49.2 hp
Suction power:	650 m³/h	22,955 ft³/h
Vacuum:	240 mbar	3.5 psi



Jetboy

Mechanical assistance for manual gun work

- Enables virtually fatigue-free working
- Noticeable increase in work rate
- Suitable for floor and overhead work
- Max. reaction force: 300 N (67.4 lbf)
- Twin handgrip bypass control of pump unit
- Weight attachment to adjust the counterbalance
- Adjustable length drawbar
- Joint for pivoting around two axes
- Mounting for the selected cleaning tool
- Demountable for space saving transport



As a supplement to ceiling cleaning, an Aquablast is available for cleaning floors

Jetmate

Reaction free water jetting for fatigue-free working. Enables safe working with less physical strain on the operating personnel.

- Easy movement of cleaning tool in all directions thanks to a gimbal mounting
- Pneumatic deployment module to advance and retract during blasting
- Pneumatically powered
- Twin handgrip bypass control of pump unit
- Suitable for standard gun barrels

Stroke length:

500 mm (19.7 inches)

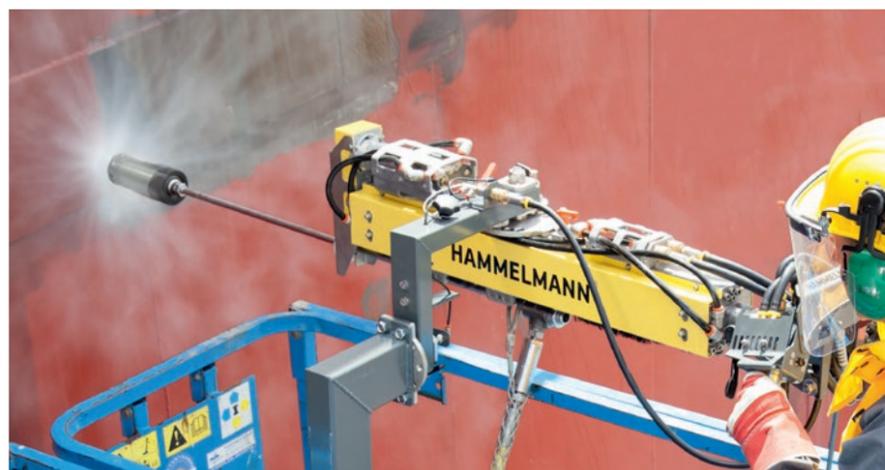
Maximum reaction force:

400 N / 600 N
(90 lbf / 135 lbf)

Weight (deployment unit):

40 kg (88.2 lbs)

The system can be mounted onto various suitable carrier systems (e.g. manlifts, carrier baskets, work platforms etc.).

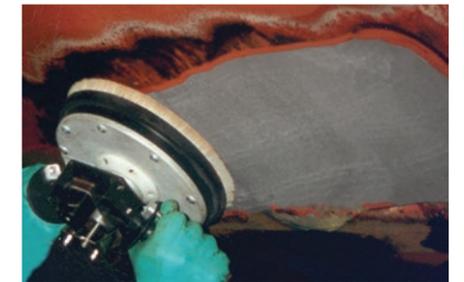


Handheld Aquablast

Ergonomic handheld cleaning and stripping tool for removing marine growth and stripping hull coatings above and below the water line.

- Twin trigger operation
- Aluminium housing with all water bearing parts made of stainless steel
- Brush arrangement ensures that stand off distance is maintained
- Connection for vacuum system

Max. op. pressure: 3000 bar 43,500 psi
Max. flow rate: 19 l/min 5.0 gpm
Working width: 140 mm 5.5 inches
Weight: 7.7 kg 17 lbs



Aquablast LINE

Device for cleaning and de-coating vertical or vertically inclined surfaces. It is especially suitable for the treatment of rusty spots and similar areas of spot damage.

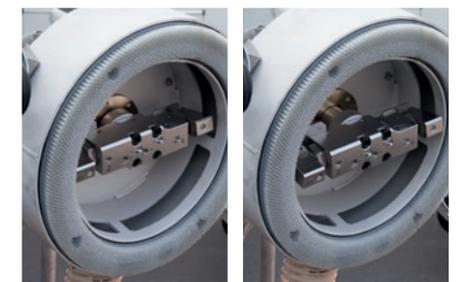
The system can be mounted onto various suitable carrier systems (e.g. manlifts, carrier baskets, work platforms etc.).

Max. op. pressure: 3000 bar 43,500 psi
Max. flow rate: 40 l/min 10.6 gpm
Working width: 250 mm 9.8 inches
Weight: 120 kg 265 lbs
Working distance: 450 – 900 mm
 17 – 35.4 inches

- Vacuum suction connection
- Gimbal mounting of Aquablast and preloaded springs ensure stable positioning on the surface
- Version with electrical and manual stroke movement available



Preloaded springs ensure contact stability and gentle approaching



Stroke movement for the optimal treatment of spot damage

High pressure water blasting guns

An ergonomically formed handle and various extensions can be easily combined. Each operator can find the working posture that best suits him, saving him effort and increasing workplace health and safety.

A simple lever mechanism makes the trigger of our new blasting guns very easy to operate. The operator can use the gun without feeling strain and physical stress which enables more concentrated working over longer periods.



Removing burnt primer from weld seams

Removal of discharge residue and silicates from weld seams

- Removal of impurities from weld seams
- Metallically pure weld seams created
- Exposure of possible defects makes quality assessment possible
- Optimal adhesion for painting or coating
- No silicates or weld beads that might detach later
- No premature corrosion on and around weld seams in particular

Op. pressure: 2500 – 3000 bar
36,300 – 43,500 psi



Weld seam



After water jetting

Rotor jets

Rotor jets utilise the high efficiency of round jets to blast more surface in less time. Thanks to varying nozzle heads and controlled rotation speed adjustment, there are a great

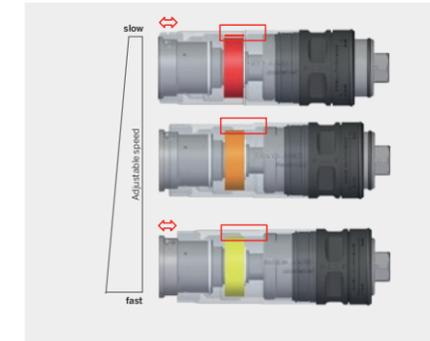
number of possibilities when it comes to blasting surfaces. The light and compact design enables the operator to reach areas with limited access.

Typical applications for surface preparation:

- Cleaning / Roughening
- Removing coatings
- Concrete demolishing

RD Masterjet

The new rotor jet generation with HPS sealing technology



Variable speed

High level of ergonomics
due to the light weight and compact nozzle design

Outstanding performance
with operating pressures up to 3200 bar

High energy efficiency
The optimum internal flow allows the pump's total performance to be used without loss of energy

Surface preparation versions



4-nozzle version
3200 bar – 50 l/min
46,400 psi – 13.2 gpm



Working with 2 or 4 nozzle inserts

Long life expectancy
based on the Hammelmann HPS seal system and new robust components

Versatile
Universal nozzle hub for working with 2,4 or 6 nozzle inserts

Variable speed
controlled by infinitely variable magnetic brake



6-nozzle version
3200 bar – 50 l/min
46,400 psi – 13.2 gpm



Universal nozzle hub

Speed adjustable by hand
controlled by variable magnetic brake, in rev. settings (no oil or filling tool required)

Easy maintenance
Service friendly design with few components

Maximal operating pressures
Standard version: 1800 bar / 26,106 psi
HPS version: 3200 bar / 46,412 psi



4-nozzle version – "Low Flow"
especially designed for low flow rates
3200 bar – 9,5 l/min
46,400 psi – 2.5 gpm

Pipe cleaning versions



6 nozzles (Radial-, push- and pull nozzles)
3200 bar – 50 l/min
46,400 psi – 13.2 gpm

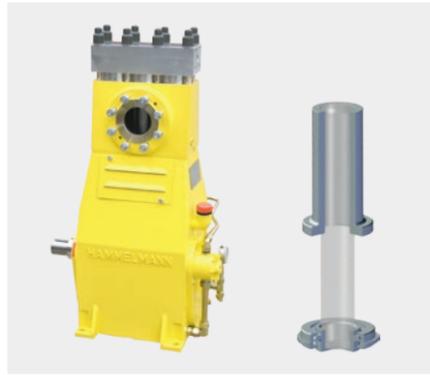


6 nozzles (Radial-, pull nozzles)
3200 bar – 50 l/min
46,400 psi – 13.2 gpm



6 nozzles (Radial-, push- and pull nozzles)
400 bar – 80 l/min
5,800 psi – 21.1 l/min

High pressure pumps



The endurance runner in top quality

- **Long lifetime of all high pressure components** due to optimal valve and sealing technology, use of top quality materials and precise series production with most modern machines
- **Long lasting corrosion resistance** of the fluid end
- **High operational reliability** and long maintenance intervals through the hermetical sealing of the gear end by means of the patented bellows sealing system
- **Leakage free pump** thanks to the arrangement of all pressurised high pressure components inside the pump housing
- **Significant operating cost advantage** thanks to the crank section with pressurised lubrication system which is designed for at least 25,000 operating hours under full load
- **High reliability in continuous duty** due to the performance reserves of high pressure pump, drive engine and all components

Energy savings through high efficiency

- **Highly efficient** Aquajet ultra high pressure pumps convert 95 % of the shaft power into hydraulic energy
- **Very smooth running** due to low speed at maximum performance
- **Low diesel consumption** due to modern engines

Safe operation

- **Everything under control**
Monitoring, control and nozzle calculation via the Hammelmann ES3 control unit. Intuitive navigation in many languages. All important operating data at a glance
- **Easy set-up**
due to easily accessible supply and high pressure connections

Sturdy industrial engine

- **Economical industrial engines** in accordance with the current exhaust emission certification step 4
- **Ample power reserves**

Environmentally friendly

- **Low noise pump unit***
due to super soundproofing
≤ 75 dB(A) at distance of 7 m (23 ft),
≤ 84 dB(A) at distance of 1 m (3.3 ft)

* Optional soundproof covers/containers
- **Environmentally safe operation** is ensured by a totally enclosed bottom tray where installation is in a container or soundproofed housing
- **Large fuel reserve** for long hours of continuous operation

Pump units for on-board operation

The E2500-07 shipboard design with a minimum space requirement is ideal for UHP water blasting operations where access is restricted such as in ship gangways.

At only 750 kg (1,654 lbs), this unit has an extremely high power to weight ratio. It is also available as a high pressure unit.

On-board applications

- Spot blasting
- Rust and coating removal in ballast tanks, holds and bunkers
- Blast cleaning and coating removal of superstructures, decks, deck machinery, anchor chains etc.

E 2500-07



Width: 550 mm 21.7 inches
Length: 1698 mm 66.9 inches
Height: 1704 mm 67.1 inches

Electrical connection:	125 A plug	200 A plug
Pump power:	52 kW (70 HP)	70 kW (94 HP)
Op. pressure:	1800 bar (26,100 psi)	1000 bar (14,500 psi)
Flow rate*:	13 l/min (3.4 gpm)	26 l/min (6.9 gpm)

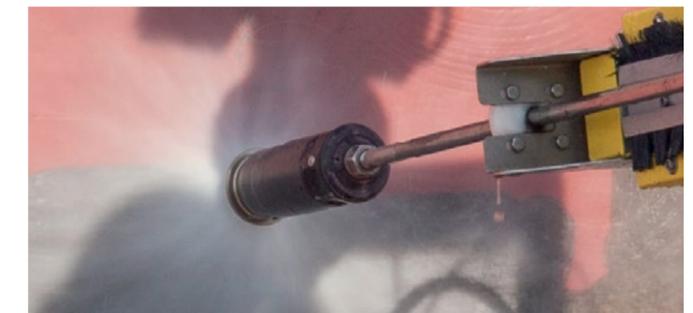
* Operation with 460 V / 60 Hz supply

HDP 30 Basic



Width: 865 mm 34.1 inches
Length: 1500 mm 59.1 inches
Height: 1450 mm 57.1 inches

Electrical connection:	63 A plug		
Pump power:	30 kW	30 kW	30 kW
Op. pressure:	500 bar	1000 bar	1900 bar
Flow rate:	28 l/min	16 l/min	8 l/min
Pump power:	(40 HP)	(40 HP)	(40 HP)
Op. pressure:	(7,250 psi)	(14,500 psi)	(27,500 psi)
Flow rate:	(7.4 gpm)	(4.2 gpm)	(2.1 gpm)



High pressure unit Aquajet 14



Stationary unit within a 10 ft. sound damped container

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for pump unit alone, or a 20 ft. container for a unit and workshop combination to customer specification
- Stationary with sound damping cover
- Mobile with sound damping cover
- Road-going on tandem axle trailer
- Basic unit: stationary without sound damping cover

Op. pressure		Flow rate	
3200 bar	46,412 psi	23 l/min	6.1 gpm
2800 bar*	40,610 psi*	26 l/min	6.9 gpm
2600 bar*	37,710 psi*	30 l/min	7.9 gpm
1800 bar	26,106 psi	42 l/min	11.1 gpm
1240 bar	17,984 psi	61 l/min	16.1 gpm
910 bar	13,198 psi	84 l/min	22.2 gpm

Required motor rating: **140 kW / 187 HP**

* Pressure steps selectable at the control unit

High pressure unit Aquajet 30



Stationary basic unit

Op. pressure		Flow rate	
3200 bar	46,400 psi	47 l/min	12,4 gpm
2800 bar*	40,610 psi*	51 l/min	13,5 gpm
2600 bar*	37,709 psi*	62 l/min	16,4 gpm
1800 bar*	26,106 psi*	86 l/min	22,7 gpm
1600 bar*	23,206 psi*	101 l/min	26,7 gpm
1240 bar*	17,985 psi*	122 l/min	32,2 gpm
1100 bar*	15,954 psi*	145 l/min	38,3 gpm
910 bar*	13,198 psi*	167 l/min	44,1 gpm
800 bar*	11,603 psi*	200 l/min	52,8 gpm

Required motor rating: **300 kW / 402 HP**

* Pressure steps selectable at the control unit

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for pump unit alone, or a 20 ft. container for a unit and workshop combination to customer specification
- Stationary with sound damping cover
- Mobile with sound damping cover
- Road-going on tandem axle trailer
- Basic unit: stationary without sound damping cover

High pressure unit Aquajet 20



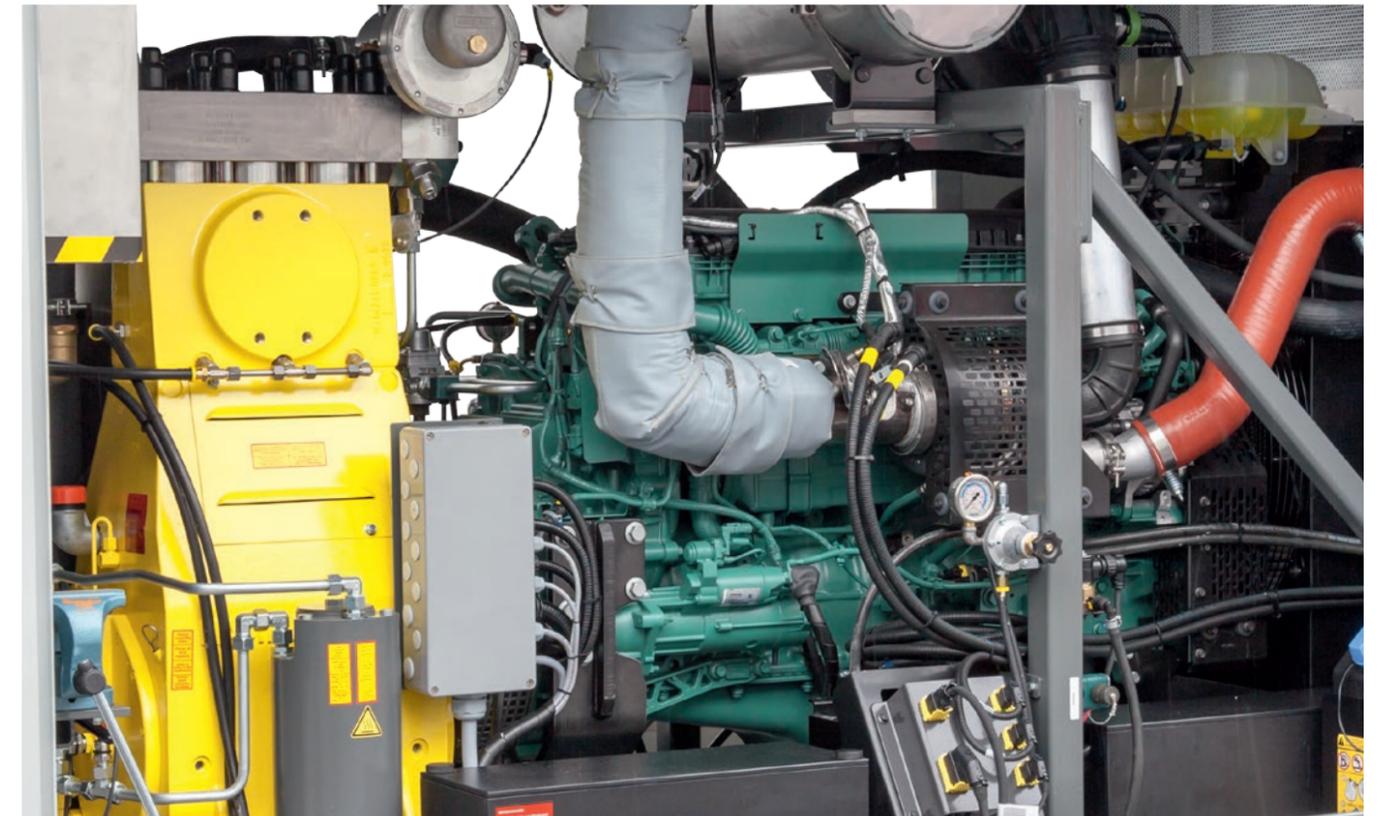
Stationary unit with sound damping cover

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for pump unit alone, or a 20 ft. container for a unit and workshop combination to customer specification
- Stationary with sound damping cover
- Mobile with sound damping cover
- Road-going on tandem axle trailer
- Basic unit: stationary without sound damping cover

Op. pressure		Flow rate	
3200 bar	46,412 psi	28 l/min	7.4 gpm
2800 bar	40,610 psi	40 l/min	10.6 gpm
1400 bar	20,305 psi	78 l/min	20.6 gpm
1200 bar	17,404 psi	87 l/min	23.0 gpm
1000 bar	14,504 psi	110 l/min	29.1 gpm

Required motor rating: **200 kW / 268 HP**



High pressure E-unit HDP 140



Stationary basic unit with variable frequency drive

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for the pump unit
- Stationary with sound damping cover
- Mobile with sound damping cover
- Basic unit: stationary without sound damping cover

Op. pressure		Flow rate	
3200 bar	46,412 psi	21 l/min	5.5 gpm
2600 bar	37,710 psi	26 l/min	6.9 gpm
1660 bar	24,076 psi	42 l/min	11.1 gpm
1160 bar	16,824 psi	61 l/min	16.1 gpm
980 bar	14,213 psi	75 l/min	19.8 gpm

Required motor rating: **140 kW / 187 HP**

High pressure E-unit HDP 300



Stationary unit within a 10 ft. sound damped container

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for pump unit alone, or a 20 ft. container for a unit and workshop combination to customer specification
- Basic unit: stationary without sound damping cover

Op. pressure		Flow rate	
3200 bar	46,412 psi	39 l/min	10.3 gpm
3200 bar*	46,412 psi*	47 l/min	12.4 gpm
2800 bar	40,610 psi	51 l/min	13.5 gpm
2600 bar*	37,709 psi*	62 l/min	16.4 gpm
1800 bar	26,106 psi	86 l/min	22.7 gpm
1600 bar*	23,206 psi*	101 l/min	26.7 gpm
1030 bar	14,938 psi	152 l/min	40.2 gpm
900 bar	13,053 psi	182 l/min	48.1 gpm

Required motor rating: **300 kW / 402 HP**

* Frequency converter required or 60 Hz line frequency

High pressure E-unit HDP 200



Stationary unit with sound damping cover and with variable frequency drive

Available setups:

- Containerised with sound damping, e.g. a 10 ft. container for the pump unit
- Stationary with sound damping cover
- Mobile with sound damping cover
- Basic unit: stationary without sound damping cover

Op. pressure		Flow rate	
3200 bar	46,412 psi	30 l/min	7.9 gpm
2800 bar	40,610 psi	36 l/min	9.5 gpm
1750 bar	25,381 psi	62 l/min	16.4 gpm
1400 bar	20,305 psi	78 l/min	20.6 gpm
1000 bar	14,503 psi	110 l/min	29.1 gpm

Required motor rating: **200 kW / 268 HP**



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