

# HYDRO BLASTING SOLUTION

The best solutions for  
hull coating removal.



HYDRODYNAMIC UNITS



NECK SERIES



MINI MAGNETIC ROBOT





# The best solutions for hull coating removal

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## **NECK Series:**

The NECK series units for hull coating removal, designed by P.T.C., utilize proprietary algorithms based on artificial intelligence and advanced ultra-high-pressure water jet technology for superior surface preparation.

These innovative machines are capable of cleaning and removing rust from over 95% of the ship's hull surfaces, making them ideal for comprehensive vessel maintenance.

## **Mini magnetic Robot:**

PTC offers innovative magnetic robots for steel surface cleaning, combining high quality and advanced technologies.

Our solutions are designed to meet diverse needs, ensuring operational efficiency, safety, and sustainability.

Compact, versatile, and remote-controlled, PTC robots deliver fast and precise results even in confined spaces or difficult areas, reducing operational costs and improving productivity.

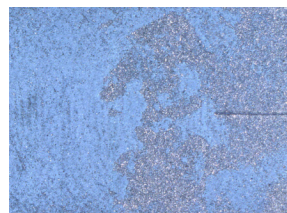


# NECK 10

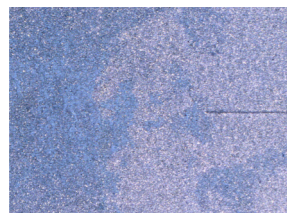
## Hull Coating Removal Vehicle

Engineered for optimal performance in low and curved areas such as **flat bottoms, bilge keels**, and **bow** and **stern areas**, NECK 10 operates at a maximum water pressure of 3000 bars with a working height of up to 10 meters. With a maximum efficiency of **50 m<sup>2</sup>/h**, NECK 10 conforms to the Cleanliness Standard of **WJ-2 / Wa 2½**, ensuring efficient ship hull cleaning and reliable surface preparation.

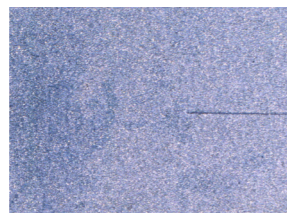
■ *Cleanliness Standards According to ISO 8501/SSPC-NACE*



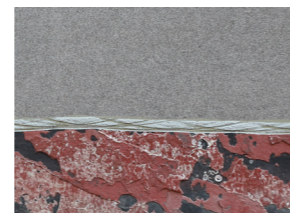
ISO Wa 1/SSPC-NACE WJ 4  
Light Cleaning



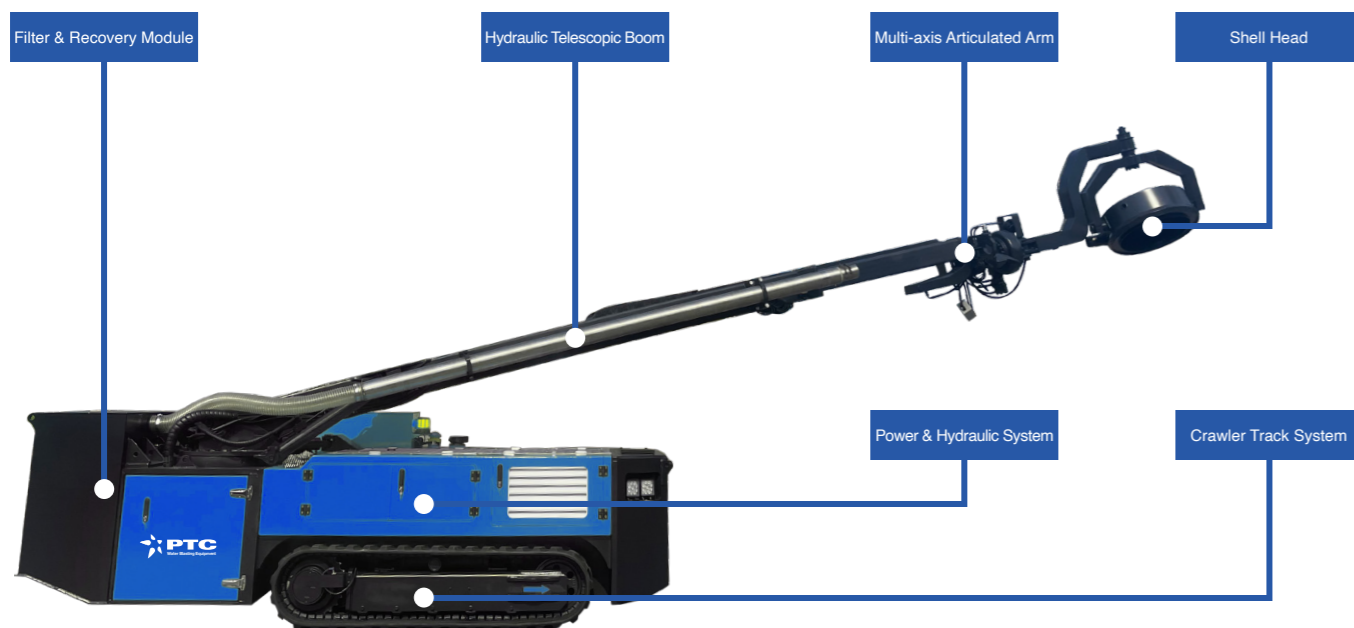
ISO Wa 2/SSPC-NACE WJ 3  
Thorough Cleaning



ISO Wa 2½/SSPC-NACE WJ 2  
Very Thorough Cleaning



Surface prepared by NECK 10 & TCX 25  
Wa 2½/WJ 2 Very Thorough Cleaning



**10 m**

Max. Working Height

**50 m<sup>2</sup>/h**

Max. Working Rate

**3000 bar**

Max. Water Pressure

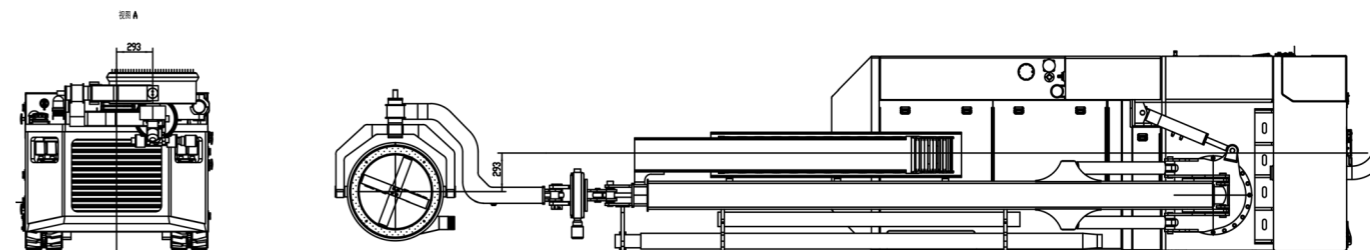
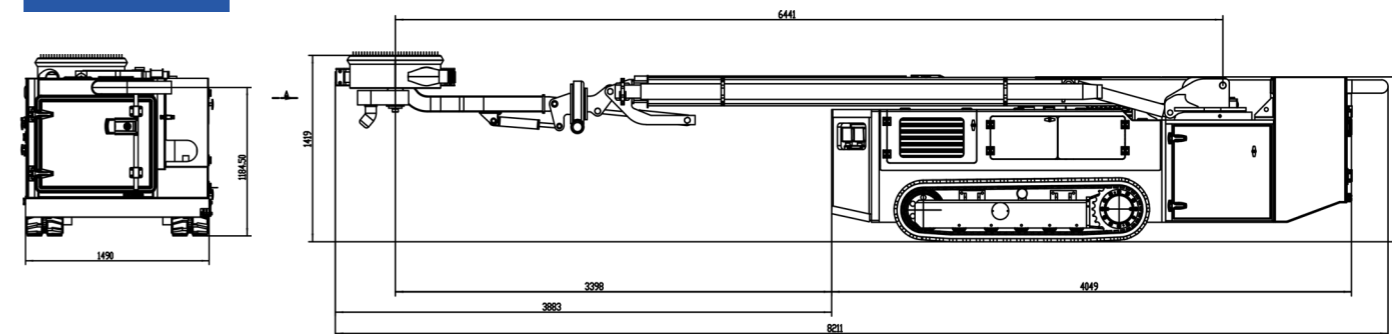
**50 l/min**

Max. Water Flow

**Wa 2.5**

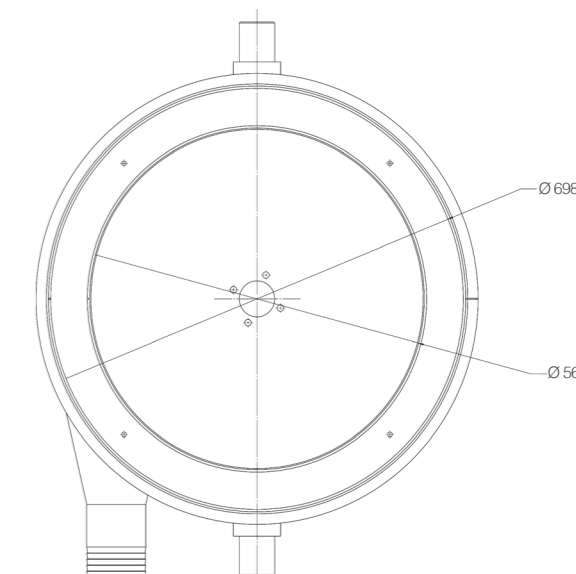
Cleanliness Standard

**Load Chart**



Item	Parameters
Dimensions	8211 mm x 1490 mm x 1260 mm
Weight	6.5 T
Shell Head	566 mm
Fuel Tank	180 L
Engine Power	44.7 kW@2800 rpm, 4-cylinder
Travelling Speed	0 - 2 km/h
Engine Consumption	≤6.0 l/h
Efficiency	up to 50 m <sup>2</sup>
Working Height	up to 10 m
Max. Water Pressure	3000 bar
Max. Flow Rate	50 l/min
Cleanliness Standard	≥Wa 2½ / WJ-2

**Shell Head Chart**





# NECK 10

## Product Features



Safe



Eco-friendly



Agile



Efficient



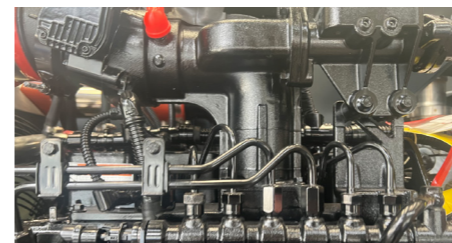
### Shell Head

- The shell head operates at heights from 1.5 to 10 meters, ideal for low and narrow hull areas
- The optimized nozzle layout ensures uniform high-pressure water distribution for stable and efficient cleaning
- Reinforced, sealed, and dust-proof design reduces maintenance frequency and ensures long-lasting performance



### Power System

- Powered by a 4-cylinder, 2.2 l turbocharged diesel engine, offering low emissions and high efficiency for cost-effective operation
- Deliver 44.7 kW (60 HP) with fuel consumption below 6 l/h, ensuring fuel quality with complete oil-water separation to prevent engine damage
- Feature robust power, smooth startup, and flexible operation, with brake energy recovery to reduce carbon footprint



### Filter & Recovery Module

- Suction solids (removed coating, rust, etc.) and wastewater from blasting, directing the mixture to the rear filter and disposal module through the suction pipe
- Pre-separate solids and liquid directly in the vehicle, collecting particles in a big bag for easy disposal
- Clean water is controlled and either drained or recycled back to the UHP pump via the vehicle-mounted clean water pump



### Hydraulic System

- The hydraulically driven telescopic boom is designed for multifunctional work on flat or curved surfaces, either on the ground or overhead
- The multi-axis hydraulic control arm, with a universal joint connecting the cleaning disc at the end, ensures constant contact force
- The boom-type contact design adapts to the curvature of the ship's hull, automatically compensating for changes in the distance between the blasting head and the hull



### Electronic Control Unit

- Ensure safe and easy operation with real-time data visualization, remote control, and customizable parameter presets
- Failsafe sensors detect unsafe conditions, triggering automatic stops or shutdowns
- Provide uniform feeding of the blasting head for steady paint removal, with regular operation managed via semi-automatic remote radio control



### Crawler Track System

- Strong and stable performance at both low and constant speeds, easily handling bumps, potholes, and dock passageways
- Real-time monitoring of steering angle and speed for precise control and durability
- Precision system for excellent maneuverability between dock blocks, with differential steering to reduce track wear

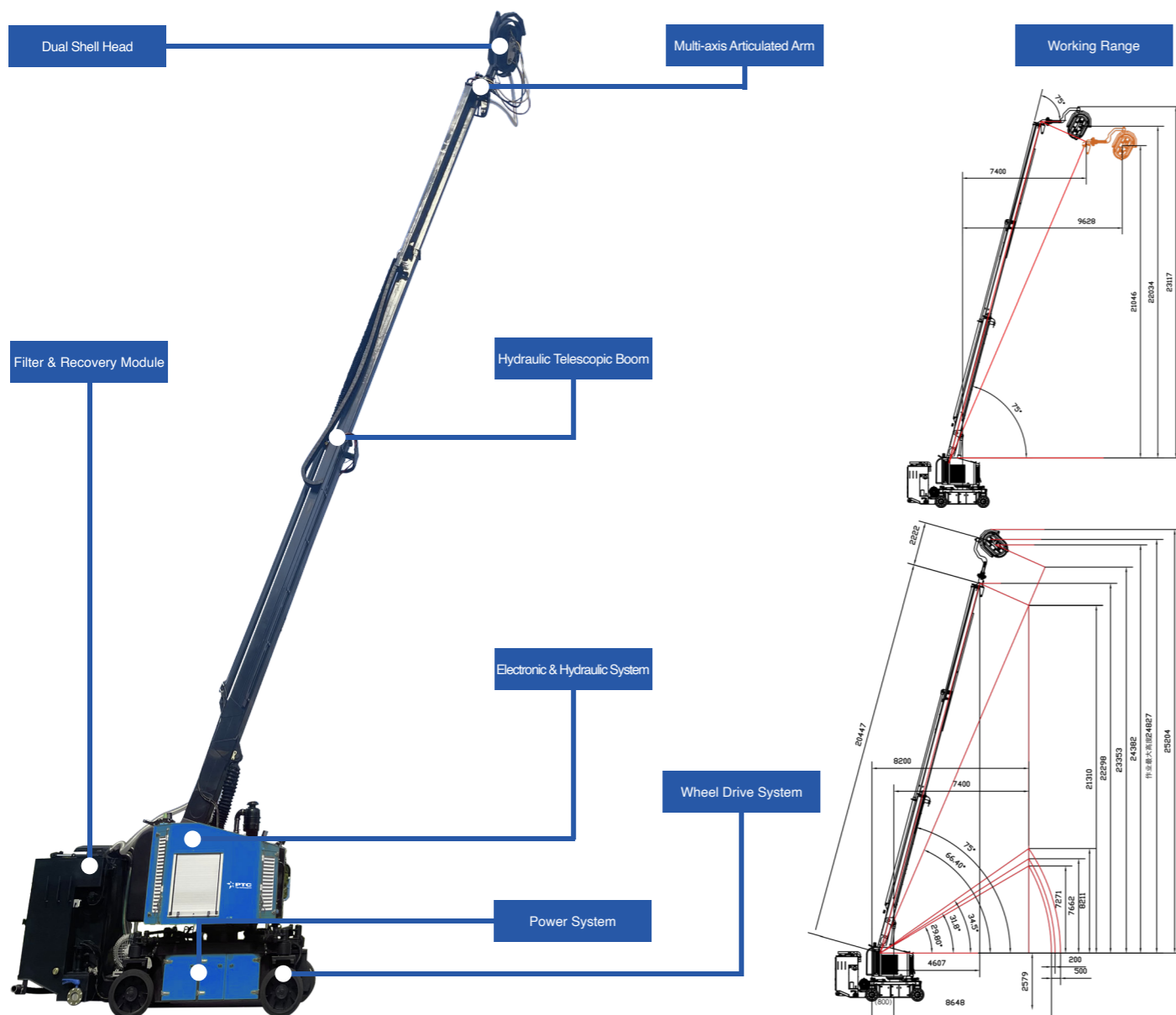




# NECK 25

## Hull Coating Removal Vehicle

Engineered for optimal performance in large flat surfaces, NECK 25 employs ultra-high-pressure water jetting technology. Operating with a working height of up to **25 meters** and at a maximum efficiency of **120 m<sup>2</sup>/h**, NECK 25 conforms to the Cleanliness Standard of **WJ-2 / Wa 2½**.



**25 m**

Max. Working Height

**120 m<sup>2</sup>/h**

Max. Working Rate

**3000 bar**

Max. Water Pressure

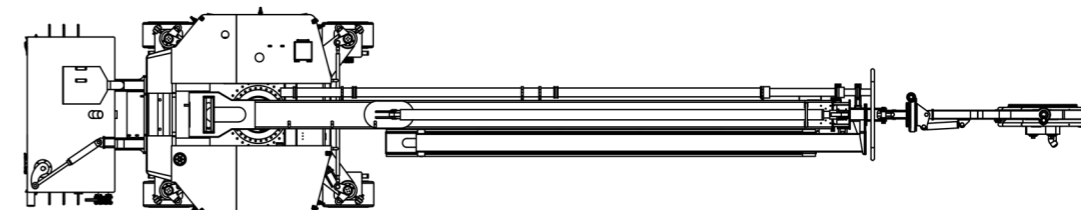
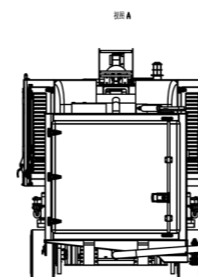
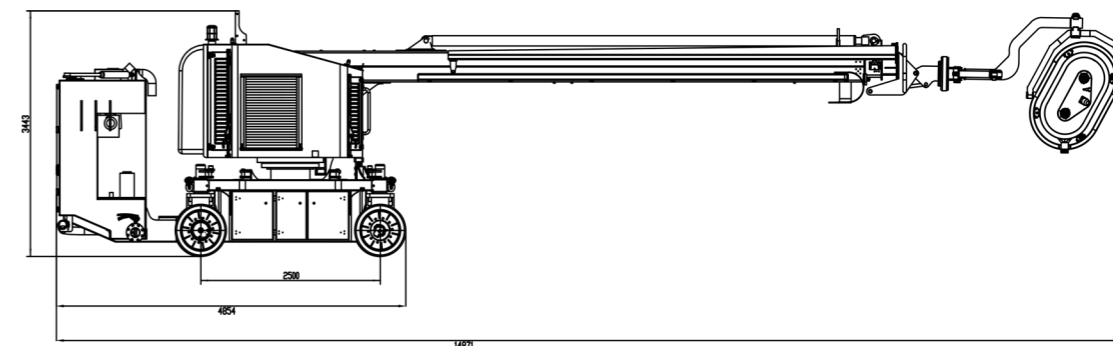
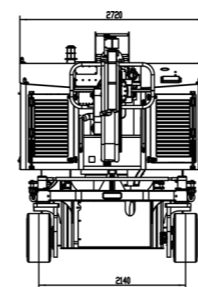
**100 l/min**

Max. Water Flow

**Wa 2.5**

Cleanliness Standard

### Load Chart



Item	Parameters	Shell Head Chart
Dimensions	14771 mm x 2720 mm x 3443 mm	
Weight	22 T	
Shell Head	566 mm x 1114 mm	
Fuel Tank	200 L	
Engine Power	96 kW@2500 rpm, Stage IV	
Travelling Speed	0 - 2.2 km/h	
Engine Consumption	≤14.8 l/h	
Efficiency	up to 120 m <sup>2</sup>	
Working Height	up to 25 m	
Max. Water Pressure	3000 bar	
Max. Flow Rate	100 l/min	
Cleanliness Standard	≥Wa 2½ / WJ-2	



# NECK 10

## Product Features



Safe



Intelligent



Economic



Eco-friendly



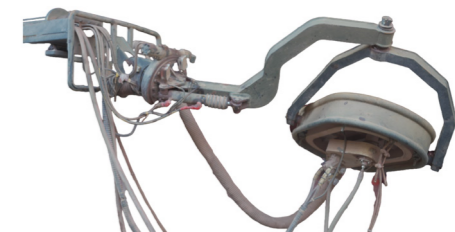
### Dual Shell Head

- Dual spray bars, high-density brush, and optimized layout for even high-pressure impact
- Core algorithms ensure pressure and force compensation, enhancing efficiency and consistency
- Optimized nozzle layout delivers uniform high-pressure water jet for stable, efficient and dust-free operation



### Hydraulic System

- Three-section hydraulic telescopic boom with a maximum height of 25 meters, featuring a multi-axis joint and hydraulically adjustable working arm
- Sensor and hydraulic valve control ensure constant contact force between the cleaning disc and the work surface
- The boom arm adapts to the ship's curvature, compensating for distance changes during movement



### Power System

- Powered by a 4-cylinder, 3.9 l turbocharged diesel engine, offering low emissions and high efficiency for cost-effective operation
- Deliver 96 kW (130 HP) with fuel consumption below 14.8 l/h, ensuring fuel quality with complete oil-water separation to prevent engine damage
- Feature robust power, smooth startup, and flexible operation, with brake energy recovery to reduce carbon footprint



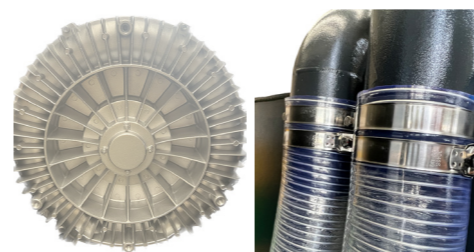
### Electronic Control Unit

- Ensure safe and easy operation with real-time data visualization, remote control, and customizable parameter presets
- Failsafe sensors detect unsafe conditions, triggering automatic stops or shutdowns
- Provide uniform feeding of the blasting head for steady paint removal, with regular operation managed via semi-automatic remote radio control



### Filter & Recovery Module

- Suction solids (removed coating, rust, etc.) and wastewater from blasting, directing the mixture to the rear filter and disposal module through the suction pipe
- Pre-separate solids and liquid directly in the vehicle, collecting particles in a big bag for easy disposal
- Clean water is controlled and either drained or recycled back to the UHP pump via the vehicle-mounted clean water pump



### Wheel Drive System

- Powerful at low speeds and stable at constant speeds, easily navigating bumps, potholes, and dock passageways
- Solid rubber tires, universal four-wheel drive, and excellent maneuverability in narrow spaces
- Differential steering with real-time monitoring to improve passability and reduce tire wear





# SHELL

## High-pressure washing

Our robot for flat steel surface preparation. Using high-quality components and the latest control technologies, our magnetic robots offer high productivity and reduced downtime. The robots enable maintenance teams and service providers to carry out cleaning projects more quickly, safely, and environmentally friendly. Thanks to its compact size, this robot can adapt to most applications. The wireless remote control ensures that the operator stays away from the high-pressure cleaning area, reducing the risk of injury and enhancing safety. The robot's easy and seamless operation eliminates the need for physical effort in water jet cleaning, resulting in highly productive work shifts.



### Advantages

- High productivity and work speed
- Precise surface cleaning
- Reduced setup times and labor requirements
- Increased safety due to remote control operation
- Elimination of the need for access equipment (scaffolding, platforms, or cranes)
- Ability to work near other maintenance processes

### Technical Specifications

Element	Parameters
Dimensions (L x W x H)	960 x 460 x 450 mm
Weight (with Blast Can)	up to 70 kg
Maximum driving speed	up to 12 m/min
Power supply required	230V / 16A / 50~60Hz
Drive motor power	2 x 600W
Protection rating	IP67
Working width	400 mm
Recommended HP machine	2500-2800 bar @ 30-40 l/min

### Equipment and Accessories [included with the robot]

- 1 x Wireless remote control unit
- 1 x Power supply unit



- 1 x Plate – Single [Working width 400 mm]
- Includes flexible seal for suction



- 1 x Rotary joint
- 1 x Nozzle bar + Spray nozzles



- 1 x Electric cable - 50m



- 1 x Instruction, service, and spare parts manual

### Notes

For surface preparation applications (without suction), the sealing gasket can be removed from the plate.

Operator training is recommended.

Training can be provided either at our facility or at the customer's site.

The rate will be agreed upon based on the location of the training and the final package agreed upon.

The training includes: operation, safety, and maintenance sections.



# MINI SHELL

For ultra-high-pressure washing\*

Using high-quality components and the latest control technologies, our magnetic robots offer high productivity and operations with reduced downtime.

The robots enable maintenance teams and service providers to carry out cleaning projects more quickly, safely, and environmentally friendly.

Thanks to their compact size, the robot can access areas with limited space or where there are high curves.

The wireless remote control ensures that the operator remains away from the high-pressure cleaning area, reducing the risk of injury and enhancing safety.

The easy and seamless operation of the robot eliminates the need for physical effort in water jet cleaning, resulting in highly productive work shifts.

\*Also available in a version with material suction via vacuum.

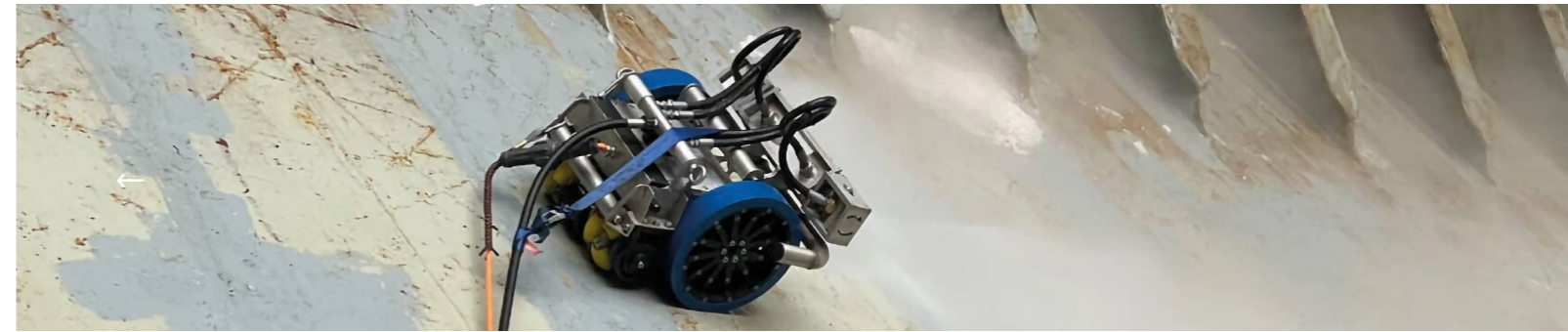


## Advantages

- High productivity and work speed
- Precise surface cleaning
- Reduced setup times and labor requirements
- Increased safety due to remote control operation
- Elimination of the need for access equipment (scaffolding, platforms, or cranes)
- Ability to work near other maintenance processes

## Technical Specifications

Element	Parameters
Dimensions (L x W x H)	680 x 334 x 320 mm
Weight (with Blast Can)	up to 35 kg
Maximum driving speed	up to 12 m/min
Power supply required	230V / 16A / 50~60Hz
Drive motor power	2 x 600 W
Protection rating	IP67
Working width	200 mm



## Equipment and Accessories [included with the robot]

- 1 x Wireless remote control unit
- 1 x Power supply unit



- 1 x Plate – Single [Working width 200 mm]
- Includes flexible seal for suction



- 1 x Rotary joint
- 1 x Nozzle bar + Jet nozzles



- 1 x Electric cable - 50m



- 1 x Instruction, service, and spare parts manual

## Notes

For surface preparation applications (without suction), the sealing gasket can be removed from the plate.

Operator training is recommended.

Training can be provided either at our facility or at the customer's site.

The rate will be agreed upon based on the location of the training and the final package agreed upon.

The training includes: operation, safety, and maintenance sections.



# CRAB 500

For high-pressure washing

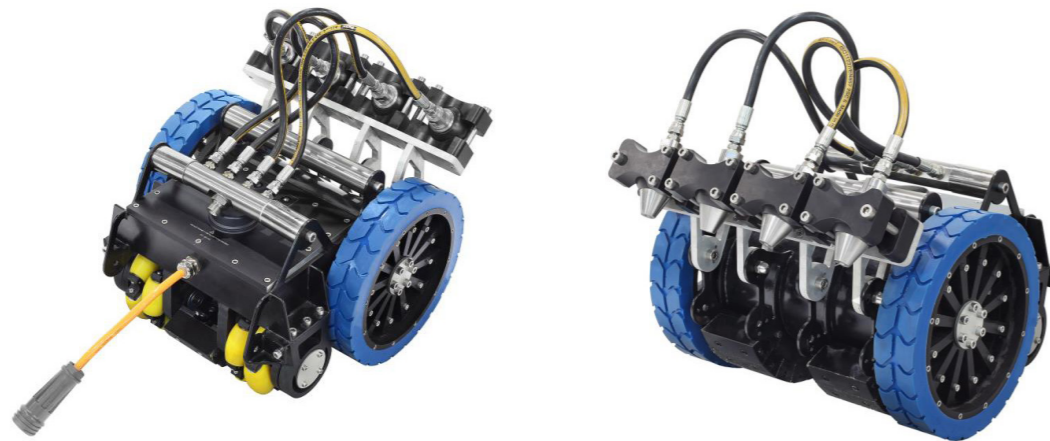
Our washing robot for high-pressure cleaning applications on flat steel surfaces.

Developed with the latest control and drive technologies, this magnetic robot offers high productivity and reduced downtime. The robot allows ship owners, crew members, and service providers to clean surfaces more quickly, safely, and environmentally friendly, while keeping costs to a minimum.

Thanks to its compact size, this robot can adapt to most applications, including various types of ship cargo holds and hard-to-reach areas.

The wireless remote control ensures that the operator stays away from the high-pressure cleaning area, reducing the risk of injury and enhancing safety.

The robot's easy and seamless operation eliminates the need for physical effort in water jet cleaning, resulting in highly productive work shifts.



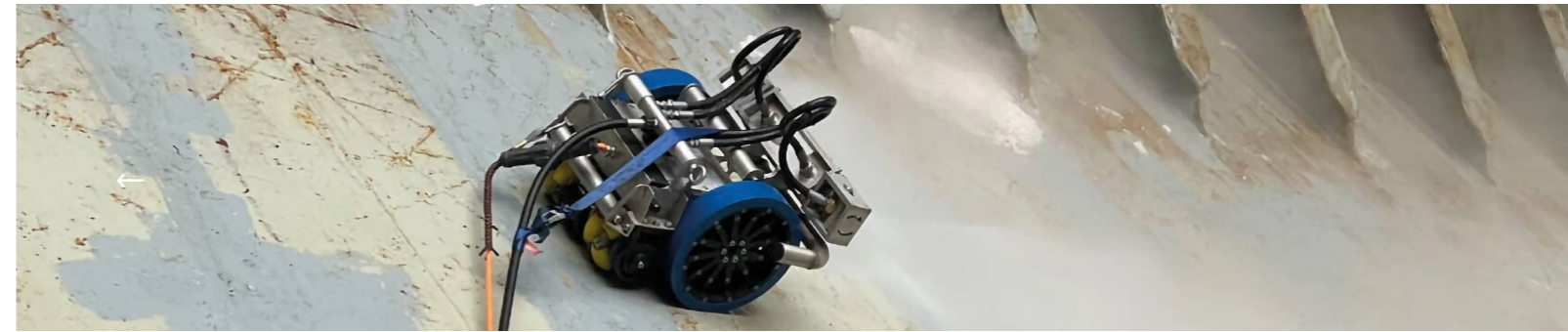
## Advantages

- High productivity and work speed
- Precise surface cleaning
- Reduced setup times and labor requirements
- Increased safety due to remote control operation
- Elimination of the need for access equipment (scaffolding, platforms, or cranes)
- Ability to work near other maintenance processes

## Technical Specifications

Element	Parameters
Dimensions (L x W x H)	450 x 450 x 450 mm
Weight	up to 55 kg
Maximum driving speed	up to 12 m/min
Power supply required	230V / 16A / 50~60Hz
Drive motor power	2 x 600W
Protection rating	IP69
Cleaning productivity	300-600 mq / hour*
Recommended HP machine	500 bar @ 30+ l/min

\*Productivity depends on various factors, including machine pressure, flow rate, and surface conditions.



## Equipment and Accessories [included with the robot]

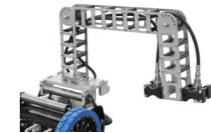
- 1 x Wireless remote control unit
- 1 x Power supply unit



- 1 x Fixed nozzle support assembly
- 4 x Rotary nozzles [up to 500 bar]



- 1 x Extension arm attachment
- 2 x Rotary nozzles [up to 500 bar]



- 1 x Electric cable - 50m



- 1 x Instruction, service, and spare parts manual

## Notes

It is recommended to use a high-pressure water jet machine with a minimum of 30 l/min to achieve the desired cleaning productivity with the robot. PTC offers a full range of high-pressure water jet equipment, with special packages for robot + machine. If an existing HP machine is to be used, it is recommended to have a remote control system on the unit to control the on/off pressure. The robot has the capability to control the on/off pressure via the wireless remote control, through an electrical signal cable connection from the HP machine to the robot's control box [further details available upon request].

Operator training is recommended. Training can be provided either at our facility or at the customer's site. The rate will be agreed upon based on the location of the training and the final package agreed upon.

The training includes: operation, safety, and maintenance sections.



## PTC UNIT SUITABLE FOR ROBOT



### PTC 300 D

For NECK SERIES

#### Technical Specifications

PUMP	FLOW lpm	PRESSURE bar	INSTALLED POWER kW
HPP H-300 UAP	45	2800	305
KAMAT K-250 UAP	44	3000	305

### PTC 125 D

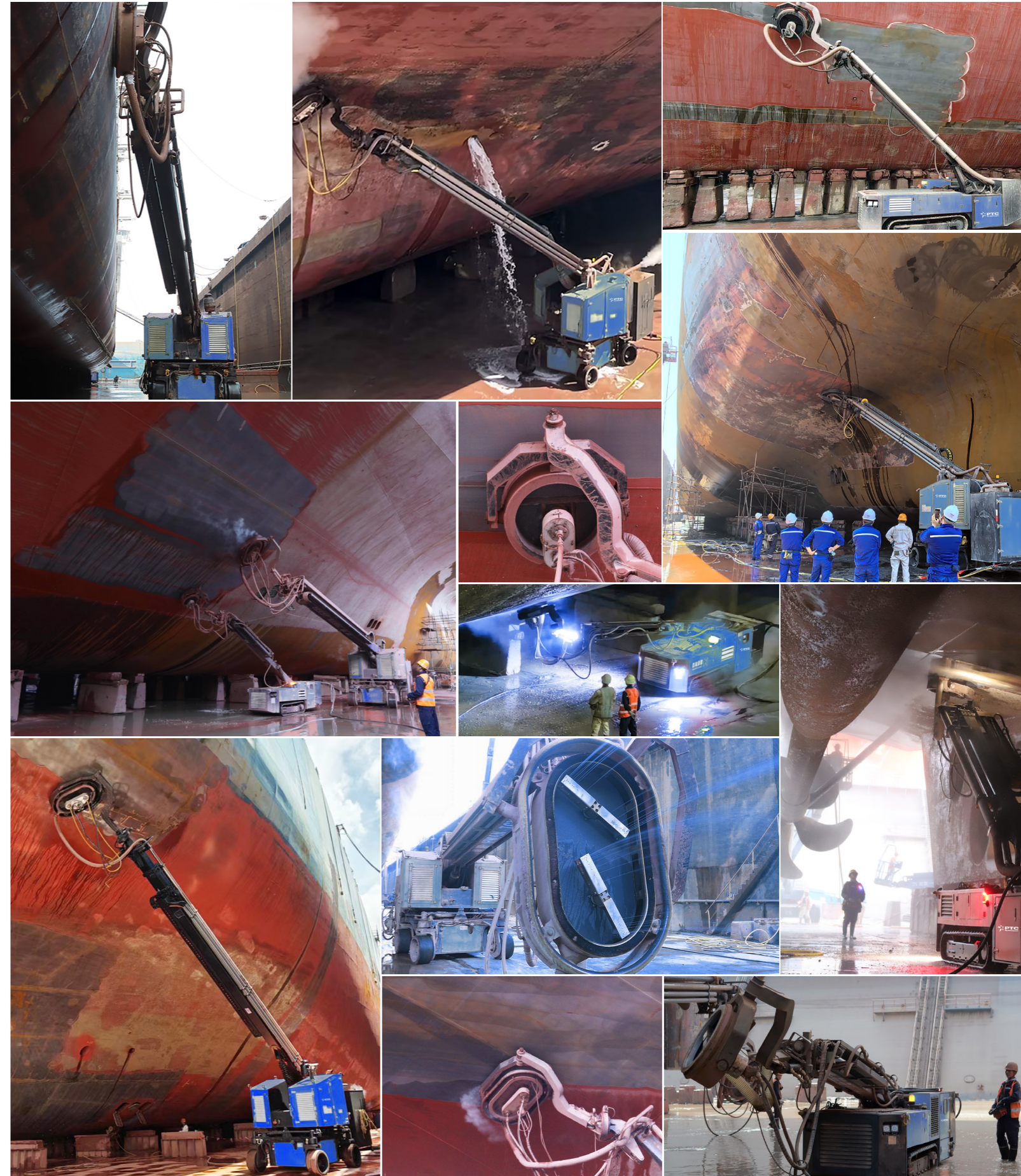
For MAGNETIC ROBOT

#### Technical Specifications

PUMP	FLOW lpm	PRESSURE bar	INSTALLED POWER kW
HPP H-150 UAP	24	2800	151



It is possible to combine electric units of the same power.  
Available configurations include solutions on skid, trailer, or container, for both diesel and electric units.







**P.T.C. S.r.l.**

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