

# Cleaning with high pressure



## Why Clean at all ?

- **Hygiene.**  
Cleaning is an essential part of hygiene maintenance in agriculture and food industry. Lack of cleaning can lead to build up of bacteria and outbreaks of disease.
- **Security and long working life.**  
Clean production equipment will resist corrosion better. The lifetime of the equipment will be prolonged and security will be guaranteed.
- **Service.**  
Cleaning may be part of a service package offered for example by car hire firms, garages, valetting systems.
- **Image.**  
A clean lorry is good advertising of the transport company name or the company name.

# The Cleaning Process

## The Cleaning Process

Several questions have to be asked before beginning cleaning :

1. What is the object/surface to be cleaned ?
2. Which type of task ?
3. How is the accessibility ?
4. Which type of dirt ?
5. Where to clean ?

### 1. Type of Object/Surface

Is the surface hard or soft ? What is it made of ?

Hard surfaces can resist high pressure.

Soft, more delicate surfaces may require lower levels of pressure to avoid damage.

Porous surfaces such as stones will be harder to clean than smooth surfaces and detergents should be handled carefully to avoid leaving residue in the stones or bricks.

The more rigid and solid the surface, the more it will support pressure in cleaning.

### 2. Type of Task

Is the surface to be merely cleaned ? Should it be stripped and prepared for further treatment (eg/ sandblasting). How good a result is required ?

### 3. How is the accessibility ?

Is the surface or object easy to reach or is special equipment required ?

### 4. What is the type of dirt ?

There are 5 main groups of dirt :

- Soluble in water (sugar, salts, mineral acids)
- Emulsions (grease and oils)
- Soluble in chemicals (gelatins, eggs, blood)
- Non soluble, non emulsions (sand, ash, animal waste)
- Bacterias

Dirt can be heavily incrustated and require high pressure levels to be broken down – this is the case for example for emulsions such as oil.

Dirt can also be loose but in large quantities such as animal waste in barns. In these cases, high water flow will be required to flush the dirt to an evacuation point where it can be treated.

The type of dirt will also determine the ideal cleaning temperatures and whether chemical products should be used. Protein rich waste such as chicken waste or blood requires a maximum temperature of around 56-60°C as above this level, the dirt will stick to surfaces.

Depending upon the type of dirt and surface, an alkaline or acidic or neutral detergent will be very useful.

### 5. Where to clean ?

Is cleaning taking place indoors or outdoors ? This may determine the nature of the cleaning tool to be used or indicate any constraints linked to its use (exhaust gas emission for example)

# ACCESSORIES

ALTO provides one of the widest accessory ranges for our pressure washers, adapting them to a large number of applications.

- Inlet filters for the protection of the pump against dirt
- Different hose lengths and hose reels in order to increase the working radius and ease of storage
- Various lance types for different applications :
  - Flexopower and Coaxial lance with pressure-flow regulation
  - Tornado lance with pressure-flow regulation and high impact especially for cleaning of paint...
  - Turbo Hammer and Powerspeed rotary nozzles for improved cleaning of heavy dirt on floors and equipment.
  - Long reach lances
  - Short lances for close up cleaning
- **Special Cleaning Equipment**
  - Hydroscrub floor cleaner with double nozzle on rotating bar
  - Wash brushes
  - Rotary Brushes
  - Undercarriage washers
  - Floorcleaner
- **Detergent Application and Special Maintenance**
  - Softblasting graffiti removal
  - Sandblasting kits
  - Whitewashing equipment
  - Detergent injectors
  - Drain cleaning kits
- **Installation Equipment**
  - Slot paying mechanisms
  - Automatic control units
  - Chimney systems
  - Hose routing systems

For more information, see catalogue.

# DETERGENTS

To complete the offering and render cleaning even easier and more economical, ALTO provides a full range of proprietary cleaning agents.

Products are offered for a wide range of uses :

## VEHICLE CLEANING

- Slightly acidic pre-cleaners for insect removal or rim cleaning
- Neutral and alkaline car shampoos for general cleaning
- Drying agents and protective waxes

## AG, INDUSTRY, FOOD

- Acidic, neutral and alkaline cleaners for use on hard surfaces in stables, industrial sites, food processing areas...
- Cleaning agents for textile surfaces.
- Gloss and Polymer floor protection

## MAINTENANCE

- Anti calc and decalcifying products.

For more information, see catalogue

# Application Description

Object to be cleaned + Type of task and result + Accessibility + Type of Dirt + Area = Application Description.

The application description in its simplest form can be described by 4 parameters :

- Surface or Equipment (object to be cleaned)
- Hard or Soft (object to be cleaned)
- Maintenance or Preparation (type of task and result)
- Indoor or Outdoor (area).

Follows also a more detailed description of the nature of the dirt and the surroundings.

# Cleaning Plan

Based upon the above descriptions, a cleaning plan for HPW can be established. The cleaning plan will show the interaction of certain parameters that influence the end result.

- Pressure
- Flow
- Temperature
- Chemical products
- Accessories

- **Pressure and Flow.**

Pressure does not always have a significant effect on the cleaning result unless the dirt is particularly tough. However, the water flow plays a much more important role. Indeed, in many applications in food and agricultural sectors, the higher the flow the better, up to around 1200 l/h. This is ideal for flushing and rinsing of loose dirt. In certain cases of very large quantities of dirt over large surfaces, higher water flows may be required. Generally in areas such as agriculture and food, increased water flow will reduce the cleaning time. However, an increase in pressure has no notable effect on cleaning time. A balance should be obtained between the increased cost of water and the reduced labour costs offered by using higher water flow.

- **Temperature.**

Cleaning is often more efficient at higher temperatures. Certain dirt types such as oil and grease are much easier cleaned at 80-85°C. Car bodywork requires a temperature of approx 50 – 60°C. Generally, the efficiency of chemical products/detergents increases at higher temperature levels. Again, there is a trade-off based upon the cost of fuel for heating the water against the reduction in water and labour costs by the time saving nature of hot water.

- **Chemical Products or Detergents.**

Ideal for pre-soaking and for increasing the cleaning effect offered by the HPW. May be acidic, neutral or alkaline. Generally, they attain an adequate level of reaction and efficiency after 3 minutes action on the surface to be cleaned.

- **Accessories.**

Certain specific tasks may only be solved by the use of accessories. The nature of the accessory is to reduce the effort required by adding a supplementary effect (hydraulic, mechanical) or by adding to user comfort. The type of accessory and the distance it is positioned from the surface may also effect on the cleaning time and result.

# Cleaning Plan

Pressure + Flow + Temperature + Detergent + Accessory  
= Cleaning Result  
(quality, time, effort, cost).

Parameter Increase	Effect on Cleaning Result
Increase in pressure	No notable effect on cleaning result in agriculture, food. Possible reduction in time, water and power costs in industry or construction. Not advisable to increase pressure on vehicles.
Increase in Flow	For agriculture and Food: Reduction in cleaning time and power/labour costs. Some increase in water costs. Exact calculation depends on time and rate of labour, water and power costs.
Temperature	General reduction in cleaning time. Reduction in labour and water costs. Increase in power costs. Recommended for fats, oils and grease.
Detergent	General improvement of cleaning effect. Cost of detergents. Reduction in power and labour costs. Possible reduction in water costs (may be outweighed by need to rinse).
Accessories	Generally improve the cleaning result. Help reduce time for cleaning (labour, power and water costs). Cost of accessory.

# Examples of Cleaning Methods



In Agriculture – cleaning of animal sties and stables of large quantities of animal waste. Firstly, remove any straw (manually or with a sweeper). If the animal waste is dry or semi-dry, then a first step of soaking is required. Soaking for 3-5 minutes with an alkaline detergent – or for slightly longer with foam detergent - will soften up the dirt and reduce overall cleaning time considerably. Cleaning then can be done with high pressure and high water flow (1000-1800 l/h in general). The high flow will allow excellent flushing of the loose dirt towards evacuation pipes or drains.

Cleaning may be done with cold water, but hot water of 50-60 degrees will be more effective. After all dirt has been removed, disinfection is possible either through a pressure washer or using any other veterinary approved products and methods.

Vehicle Cleaning. In cases where the bodywork of a vehicle is particularly dirty or many dead insects are incrustated, it may be recommended to begin the cleaning process with a pre-spraying of heavily concentrated slightly acidic detergent (concentration between 10-30%) onto the specific areas.

Following this phase, the normal cleaning process can begin with the application of a neutral or alkaline detergent/shampoo. Apply the detergent from bottom to top of the vehicle to avoid "super clean streaks". The third cleaning stage (especially in cases of heavy dirt) may be that of the mechanical effect obtained by use of a brush. The brush may either be dry, be part of the water injection equipment or even allow the application of foam detergent simultaneously.

Next step is pressure washing. If detergent has been used and the water is heated (50-60°C is sufficient), then a relatively low pressure of 70-100 bar and water flow of around 700 l/h will often be adequate to clean of the remaining dirt. For protection of the vehicle bodywork, apply a wax (probably slightly acidic). Finally rinse with cold water to avoid white streaks in case of hard water.



# Machine components

## • Pump

Model	Features	Benefit
<b>Pump 30</b>	<b>Axial pump with wobble disc system</b>	
Used in 30 CA/30HA	Brass pump head Three stainless steel pistons and fibre reinforced seals	Long working life - non corroding Extends working life and reduces maintenance costs. Ideal for high frequency uses of short duration.
	Oil sealed pump	No oil top up or oil changes required. No oil waste or possibility of water entering oil.
	Aluminium wobble disc/bearing drive	Minimal friction, maximal out put - long life
<b>40</b>	<b>Axial pump with wobble disc system</b>	
Used in 40HA/Triton DX/50C13 COMPACT BOOSTER	Brass pump head Three ceramic piston heads and fibre reinforced seals	Long life - no corrosion Extends working life greatly and reduce maintenance costs. Ideal for less frequent uses of longer duration.
	Oil sealed pump	No oil top up or oil changes required. No oil waste or possibility of water entering oil.
	Aluminium wobble disc/bearing drive	Minimal friction, maximal out put - long life time
<b>03/C3</b>	<b>Axial pump with wobble disc system</b>	
Used in POSEDON/03/TC3VA/DELTA BOOSTER/UNO/DUO BOOSTER Kos/KLU/TRITON PE/POSEDON PE K3I/Contractor/High Flow	Brass pump head Four pistons	Long working life - no corrosion Low strain on pump ensures high performance, extended working life and reduced maintenance costs. Low noise. The 03 pump has stainless steel pistons. The C3 pump has full ceramic pistons.
	Steel wobble disc	Minimal friction, maximum out put- long life time

# Machine components

- Pump
- Wap Cylinder pump

Model	Features	Benefit
<b>Pump</b> <b>3R</b>	<b>Radial piston pump with excentric drive</b>	
Used in HWM 830/930	Brass pump head Three full ceramic piston heads and fibre reinforced seals Excentric drive	Long working life - non corroding Extends working life greatly and reduces maintenance costs. Ideal for less frequent uses where water may remain in pump - no corrosion. Less power consumption – one bearing for three pistons
<b>Wap Cylinder pump</b> <b>2 Cylinder</b>		
Elektra, CS1020, HWM 730	Brass pump head 2 or 4 full ceramic pistons or 6 pistons with ceramic sleeves and fibre reinforced seals One bearing for two pistons	Long life - no corrosion Extends working life greatly and reduces maintenance costs. Ideal for less frequent uses where water may remain in pump - no corrosion. Less power consumption
<b>4 Cylinder</b>		
HPS UNO/DUO, HWM 900EG/1280		
HWM 900EG/1280		
<b>6 Cylinder</b>		
Super 2000		

# Machine components

- Boiler
- Motors

<b>Model</b>	<b>Benefit</b>
<b>Boiler</b> <b>Vertical</b> Used on 30HA/40HA/C3VA, Contractor	Good treatment of condensed water Symmetric flame – good heat exchange
<b>Horizontal</b> Used on SC, DX, HWM, HPS, CS10200, C1450, Super 2000	3 stage heating ensures high level of efficiency (SC and DX) Ignition system not subject to strong heat effect
<b>Motors</b> <b>1400 rpm</b> Used on POSEIDON/VA/UNO/DUO BOOSTER, High Flow, Delta Booster, Super 2000, C1450, HPS, Elektra, SC single phase	Ideal for heavy duty use Turn slower ensuring less wear and tear Low noise level
<b>2800 rpm</b> Used on 30CA/HA, SC, DX, 40HA, TRITON, COMPACT BOOSTER	Adapted to low and medium intensity use
<b>Petrol, diesel, oil and air driven</b> TRITON 800PE, TRITON 1000 PE, POSEIDON 1100 PE, CS1020 DE/PE, Contractor, 5203KD, 2603KLU, 4403KOS	No need for electrical installation

# Machine components

- Unloader valve

Model	Benefit
<b>Unloader valve Pressure driven</b> Used on 30CA/HA, SC, DX, TRITON, HWM, HPS, CS1020, C1450, Elektra, Super 2000	Possibility for self suction and auto S/S Low sensitivity to impurities in water circuit Gives full pressure immediately when trigger is activated All accessories are functioning – independent of nozzle size Possibility for using the VarioPress pistol with hydraulic water volume and pressure control
<b>Flow driven</b> Used on 40HA, POSEIDON, C3VA, TRITON PE, POSEIDON PE, UNO / DUO BOOSTER DELTA BOOSTER, CONTRACTOR	Allowing leakage, without starting the motor. Low standby pressure in the hose, easy to activate pistol, long life time. Low standby pressure in the hose, easy to activate pistol, long life time. Gives full pressure after 2 seconds when trigger activated. Gradual start up reduces sudden shock on arm and hand.

# Standard equipment

- Pistol
- Couplings

## Benefit

## Model

### *Pistol*

#### ERGO 3000 Spray gun

Made of the most robust materials and fitted with a unique KEW Technology quick coupling that facilitates interchange between lances and accessories, two swivel features eliminate the problem of twisted hoses. Overall design optimises ergonomics. Pistol held in the axe of arm, reducing strain and fatigue. Trigger activated by two strongest fingers low activation force. Reduces tiredness. The construction reduces the vibrations by 58% which again reduced the "white fingers" effect, that leads to tiredness and illness caused by repetitive or prolonged action.

#### Wap Technology pistol

The ergonomically designed pistol has optimal trigger - which makes it ideal for long working periods without fatigue. Safety lock from pistol to hose and lance – prevents accidental disconnection. This pistol also comes with VarioPress for fast, convenient pressure and flow regulation directly on the gun. This pistol only works with the pressure driven unloader valve.

#### ERGO 3000 safety

Standard on professional KEW Technology products in order to facilitate quick and easy connection of inlet hose and high pressure hose as well as accessories. Saves set up time and increases efficiency of the cleaning process. Less risk of damage to couplings – high reliability. Couplings swivel – hose rotates and increases ease of use and manoeuvrability. Protective cover shields against heat transfer. ERGO 3000 security coupling ensures that hose can only be removed when less than 4 bar pressure remains in the system

#### Wap Screw coupling system

Wap Safety connection prevents accidental disconnection of the high-pressure hose from the gun - for maximum safety. Anti drill function – hose rotates and increases ease of use and manoeuvrability.

# Standard equipment

- Lances

<b>Model</b>	<b>Benefit</b>
<i>Lances</i> <b>Tornado lance</b>	An ultra sharp water jet makes the patented Tornado nozzle the most powerful fixed nozzle on the market today. 70% more efficient than standard nozzles. No movable parts in the nozzle ensure long lifetime and low maintenance. The ergonomically designed Tornado lances are self balancing and suit right as well as left hand users. An easy to use thumb control allows continuous adjustment of the water pressure to suit the individual cleaning task. Quick couplings provides ease of connection to pistol.
<b>FlexoPower lance</b>	Pressure control with a constant water flow adjustable directly on the nozzle head. Low weight makes lance easy to use over long periods.
<b>PowerSpeed Vario</b>	Rotating jet increases cleaning effect ideal for encrusted dirt. Ceramic nozzle allows an inlet temperature of 85°C Adjustment of spraying angle at the nozzle head from 0 to 20°C for cleaning of incrustated dirt or of soft surfaces. An easy to use thumb control allows continuous adjustment of the water pressure to suit the individual cleaning task. Separate LP nozzle ensures a good rinsing and flushing effect. Quick couplings provide ease of connection to pistol.
<b>Coaxial lance</b>	Continuous pressure control with a constant water flow adjustable on convenient side bar on coaxial lance Light weight 'two in one' pipe lance is easy to use over long periods.
<b>Turbo Hammer</b>	Rotating high pressure jet increases cleaning effect; ideal for incrustated and dried dirt.
<b>Universal lance</b>	The screw coupling at the end of the lance allows the use of a great variety of different nozzle heads.

# Security features

Model	Benefit
<b>Security features</b> <b>Motor protection</b> All machines	Protection against excessive current and thus overheating
<b>Thermal cut out</b> All hot water machine	Safety switch to prevent heating without water (dryboiling)Rotating jet increases cleaning effect ideal for encrusted dirt.
<b>Double thermostats</b> 30 HA	Continuous control of water temperature. 0Ensures max. water temperature does not exceed 150 °C..
<b>Fuel cut off</b> SC, DX, 03VA/C3VA	Cut off before the unit runs out of fuel. Protection of fuel pump SC and DX have a two step fuel cut off – first a warning light tells that you have to refill and if this is not done it cuts off after a while.
<b>Double flow control</b> 40HA, 03VA/C3VA	Protects against burning fuel without water in the coil.
<b>Flame sensor</b> DX, SC, 40HA, 03VA/C3VA, HWM, HPS	Ensures that no fuel is pumped into the boiler if the flame is not active

# Security features

<b>Features</b>	<b>Benefit</b>
<b>LongLife Automatic start/stop with delayed stop</b> 40, POSEIDON	When the spray handle is released the machine stops after a short delay. This results in less unnecessary start/stop and thus low wear on the pump, which increases the working life of the machine. Furthermore the user is not disturbed by noise during pauses in the cleaning task.
<b>LongLife Automatic start/stop</b>	When the spray handle is released the machine stops immediately. This results in low wear on the pump, which increases the working life of the machine. Furthermore the user is not disturbed by noise during pauses in the cleaning task. A must when working on stationary systems.
<b>Duo Motor</b> DX, Super 2000, C1450, CS 1020	Separate motors for the ventilator fan and for the pump on hot water models. In cold-water mode only one motor operates, in the hot-water mode two motors. Saves energy in cold water mode. Avoids problems linked to fan not functioning if electrical phases connected incorrectly. This means that the machine can be delivered with plug - ready to use. No need for switching the phases if inverted.
<b>WDK System</b> DX, Elektra, C1450, Super 2000, CS1020	Select, dose, rinse. Prevents unwanted mixing of different detergents. Before using detergent from the second detergent tank, the system is rinsed automatically with clean water.
<b>Check Control</b> DX, 40H	Electronic self-monitoring and signalling of the actual state – ideal for fast fault detection.
<b>No scale</b>	Automatic injection of no scale to the water during use on hot water operation to avoid furring and damage of the burner coil.

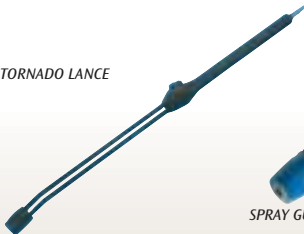




# ALTO ERGO 3000

New Standard Equipment

*TORNADO LANCE*



*SPRAY GUN*



*QUICK COUPLING*



Less effort • Less time • Less cost • More efficient.

## **Effortless cleaning for the 3rd millenium.**

Today, ALTO makes an effort in differentiates itself from competitors by paying considerable attention to how our customers clean. Cleaning is a tough but inevitable job and nobody really enjoys it. ALTO's vocation is to make it just a little bit easier and quicker for our customers to clean...and save them some money!

ALTO's goal is to be the clear leader in the areas of ergonomics, design and cleaning solutions, setting new standards that help our customers do their job better and better.

The result of this work is the ERGO 3000 equipment – ergonomical cleaning for the 3rd millenium. Everything in this line is targeted to :

- Reducing user tiredness and strain
- Reducing cleaning time
- Improving user safety

This new line will feature on our high pressure range as from 2002.

## **ERGO 3000 Spray Gun**

### **Reduced Tiredness**

The spray gun itself fits perfectly into the axe of the arm, reducing strain at the wrist. But more importantly, the trigger itself is activated by the 2 strongest fingers, rather than the 2 weakest!

### **58% Less Vibrations**

- The new spray gun reduces vibrations within the pistol by an astonishing 58%. Less vibrations means a major reduction in the well known "white fingers" effect

# Specifications for ALTO ERGO 3000



## One-handed Use

- The spray gun uses the well known KEW bayonet coupling system. No need to waste time screwing the accessory or lance into place. Simply click it in to the spray gun.

## Double Swivel System

The ERGO 3000 hose swivel, that functions under pressure, avoids vrilling of the hose as you move around. And with our patented FlexoSwivel you can turn the hose around the axe of the spray gun when moving around over obstacles.

## VarioPress

You can reduce the performances of the pressure washer without returning to the machine. With the Vario Press, you can control the water flow directly at the spray gun.

## ERGO 3000 Quick Coupling System

ALTO's new coupling system allows you to simply click in the hose to the machine connection

– no time wasted screwing connecting pieces together!

As health and safety laws progress, the concept has evolved to include 2 new safety features, protecting our users even more.....

- New extra plastic cover around the metal parts, insulating the connectors when using hot water units.
- A safety system that locks the couplings when more than 4 bar pressure is present in the hose.

## ERGO 3000 Lances

ALTO offers the Tornado lance which comes equipped with the patented Tornado nozzle, tried and tested... and still proven to be 70% more efficient than standard available nozzles.

### Tornado

The robust, industrial Tornado lance can be found on the heavy duty range. The double piping system offers separate high and low pressure nozzles that is ideal for rinsing and flushing eg/ in agriculture or food industry.



Cold water range

# 30CA

Compact, cold water, mobile, electric driven high pressure washer

**User groups:** Small businesses, light industry, small garages, craftsmen, screen printers, painters, artificers, crop, hobby and dairy farms.

**Applications:** Cleaning of garage floors, washrooms and showrooms, vehicle bodywork, chassis and windows. Cleaning of small farm equipment, tractors and milk sheds.



30CA

Use intensity



**Compact and light weight design:** Facilitates storage and transport

**Large wheels:** Rubber coated and makes plenty of clearance under the machine to enhance manoeuvrability and facilitates transport over rough ground.

**Ajustable transport handle:** Handle can be adjusted to ease storage and transport of the machine. Include also room for winding of hose.

**3 stainless steel piston pump:** Long life pumps for light everyday applications.

**Internal injector:** No need for external injectors. Feature to adjust detergent dosage. The use of detergents is determined directly from the lance

**Holder for detergent container:** The user-friendly hook for detergent holds ALTO 1 liter screwcapped container and all larger 5 litres containers with handle on top. Facilitates a quick change of detergent e.g. from auto cleaner to wax.

**Hose rack:** The handle features storage for cable and hose and enhances mobility

**Lance holder:** The built in lance holder provides ideal storage and protects lance from damage

# Specifications for 30CA



## 30CA COMPACT (Three-phase)      30CA COMPACT-I (Single-phase)

Pump pressure	bar	160	150/80*
Water flow (max)	l/h	690	600/520*
Water flow $Q_{fic}$	l/h	620	540/440*
Max inlet temp.	°C	60	60
Power absorbed	kW	3.4	2.8/1.4*
Voltage/phase/frequency/current V/~/Hz/A		220/3/60/10.5	220/1/60/13.5
		230/3/50/10	230/1/50/13
		400/3/50/6	240/1/50/12.5
		440/3/60/5.3	110/1/50/13.5*
Weight	kg	24	24
Dimensions L x W x H	mm	390x390x815	390x390x815
Suction height	m	1	1

### Standard equipment

Cable length	m	8	8
Hose length	m	10	10
Lance type		Tornado	Tornado
Automatic standby		•	•
Nozzle type and size		Tornado 25035	Tornado 2503
Couplings		ERGO 3000	ERGO 3000
Pistol gun		ERGO 3000	ERGO 3000



*Cold water range*

# TRITON

Mid range, cold water, mobile, electric driven high pressure washer

**User groups:** medium industry, agriculture, dairies, construction, garages, small fleet parks, vehicle and within hire industry.

**Applications:** Cleaning of cars and vans, farm equipment and small stables, tractors milk sheds, pre-soaking, disinfecting, shifting manure fishing nets, small industrial equipment.



TRITON

Use intensity 

**Compact design:** Facilitates storage and transport

**Large wheels:** Large ground clearance for easy transport over rough ground

**3 ceramic piston pump:** Long life pumps for intense applications of 2-4 hours per day. Low service requirements. Low wear and tear.

**Lance holder:** The built in lance holder provides storage and protects lance from damage

**Water Inlet and outlet on the same side:** Quick and convenient connection of hoses. Eases transportation.

**Inbuilt 10 l detergent tank:** Your favourite detergent is always ready for use. Eases transport.

**Detergent dosing system:** No need for external injectors. Feature to adjust detergent dosage. The use of detergents is determined directly from the lance.

**Control safety block:** Stepless water volume and pressure control system.

# Specifications for TRITON



	TRITON 1000 (Three-phase)	TRITON 850 (Three-phase)	TRITON 730 (Single-phase)
Pump pressure	bar 195-20	180-20	110-20
Water flow (max)	l/h 1000	850	730
Water flow $Q_{IEC}$	l/h 900-250	770-250	660-250
Max inlet temp.	°C 60	60	60
Power absorbed	kW 6.7	5.9	3.2
Voltage/phase/frequency/current V~/Hz/A	400/3/50/12	400/3/50/10	230/1/50/14
	415/3/50/11	415/3/50/9.5	230-240/1/50/13
	230-400/3/50/20-12	230-400/3/50/18-10	220/1/60/15
	220-440/3/60/21-10.5	220-440/3/60/18-9	
	200/3/50/23	200/3/50/20	
Weight	kg 43	43	43
Dimensions L x W x H	mm 650 x 402 x 885	650 x 402 x 885	650 x 402 x 885
Suction height	m 1.5	1.5	1.5
<b>Standard equipment</b>			
Cable length	m 8	8	8
Hose length	m 10	10	10
Lance type	Tornado	Tornado	Tornado
Detergent tank	l 10	10	
Automatic standby	•	•	•
Nozzle type and size	Tornado 2505	Tornado 2504	Tornado 2505
Couplings	ERGO 3000	ERGO 3000	ERGO 3000
Pistol gun	ERGO 3000	ERGO 3000	ERGO 3000
Ceramic pistons	•	•	•



Cold water range

# 3300

Mid range, cold water, mobile, electric driven high pressure washer

**User groups:** Medium industry, agriculture, dairies, construction and within hire industry.

**Applications:** Cleaning of cars and vans, farm equipment and small stables, tractors milk sheds, pre-soaking, disinfecting, shifting manure fishing nets, small industrial equipment .



3300

Use intensity



**Compact design:** Facilitates storage and transport

**Large wheels:** Large ground clearance for easy transport over rough ground

**3 ceramic piston pump (Interpump):** Long life pumps for intense applications over 2-4 hours per day. Low service requirements. Low wear and tear.

**Lance holder:** The built-in lance holder provides storage and protects lance from damage

**Inlet and outlet on the same side:** Quick and convenient connection of hoses. Eases transportation.

**Inbuilt 10 l detergent tank:** Your favourite detergent is always ready for use. Eases transport.

**Detergent dosing system:** No need for external injectors. Feature to adjust detergent dosage. The use of detergents is determined directly from the lance.

**Turbo Hammer:** Rotating high pressure jet increases cleaning effect ideal for encrusted and dried dirt.

**VarioPress pistol:** Convenient pressure and flow regulation directly on the gun.

**Control safety block:** Stepless water volume and pressure control system.

# Specifications for 3300



## 3300 (Three-phase)

Pump pressure	bar	220-20
Water flow (max)	l/h	1200
Water flow $Q_{fic}$	l/h	1100-250
Max inlet temp.	°C	60
Power absorbed	kW	8.8
	V/~/Hz/A	400/3/50/15
Weight	kg	47
Dimensions L x W x H	mm	650 x 402 x 885
Suction height	m	1.5
<b>Standard equipment</b>		
Cable length	m	8
Hose length	m	10
Lance type		Tornado
Detergent tank	l	10
Automatic standby		•
Ceramic pistons		•
Nozzle type and size		Tornado 25xx
Couplings		ERGO 3000
Pistol		ERGO 3000
Powerspeed Vario		•



Cold water range

# ALTO POSEIDON

Heavy Duty, cold water, mobile, electric driven high pressure washer



ALTO POSEIDON

Use intensity



**Chassis and frame in strong steel (F in stainless steel):** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Broad, large rubber wheels:** High mobility and stability. The front wheel with front wheel brake ensures that the machine stays in position.

**4 ceramic piston pump:** Long life pumps for intense applications over 6 hours per day. Low service requirements. Low wear and tear.

**High pressure and high water volume:** Efficient and quick cleaning, high rinse effect. Optimal high pressure cleaning of incrustated dirt combined with a high flushing effect for loose waste.

**Up to 85°C inlet water:** Makes it possible to stand up to the most difficult cleaning tasks. Possible use of unit with preheated water for cleaning of greases, fats and oils.

**Hose hook on handle:** Feature storage for cable and hose and enhances mobility.

**Lance holder:** The two built in lance holders protect against damage and provides ideal storage for two different lances.

**Double wire hose:** Super strong double braided hose that is still manoeuvrable and user-friendly. The hose is capable of withstanding pressure up to 250 bar.

**Oil Check:** visual oilinspection from outside the cabinet.

**3 step start/stop:** This gives the possibility for both the wellknown automatic start/stop mode and a manual mode that enables suction or use of water brake tank. The Auto start/stop function stops the motor and pump 20 seconds after the spray gun is no longer activated.

**Sleep function:** This safety function in manual mode ensures that the POSEIDON will be turned of after 5 minutes break even if the user forgets.

**Storage tray with drain:** Ideal storage of gloves and smaller accessories.

# Specifications for ALTO POSEIDON

	POSEIDON 1200	POSEIDON 1280
Pump pressure	170 bar	190
Water flow (max)	1200 l/h	1280
Water flow $Q_{IEC}$	1120-540 l/h	1180-540
Max inlet temp.	85 °C	85
Power absorbed	6.7 kW	8.0
Voltage/phase/frequency/current V~/~/Hz/A	230/3/50/20	200/3/50/28
	400/3/50/12	440/3/60/12.5
	415/3/50/11	200/3/60/28
	440/3/60/10.5	415/3/50/13
		575/3/60/9k
		230/3/50/24
		230/3/50/14
Weight	71 kg	74
Dimensions L x W x H	1020 x 480x 940 mm	1020 x 480x 940
Suction height	3 m	3
<b>Standard equipment</b>		
Cable length	8 m	8
Hose length	10 m	10
Lance type	Tornado	Tornado
Automatic standby	•	•
Ceramic pistons	•	•
Nozzle type and size	Tornado 2506	Tornado 2506
Couplings	ERGO 3000	ERGO 3000
Pistol gun	ERGO 3000	ERGO 3000
Stainless steel frame		•F



Cold water range

# C3KA HIGH FLOW

Heavy Duty, cold water, mobile, electric driven high pressure washer

**User groups:** heavy industry such as manufacturing, construction, mining, transport and agriculture.

**Applications:** Cleaning of farm equipment and stables, industrial and food industry equipment and sites.

**Installation:** When used on a stationary system the pipes must be  $\varnothing 22$  for maximal water flow. When the machine is used by two users at the same time, the lance must be equipped with at prenozzle item no. 6300894 and a highpressure nozzle size 06



C3KA HIGH FLOW

Use intensity



**Chassis and frame in strong stainless steel:** Robust product, resistant to shocks. Strong frame protects motor pump unit. No corrosion.

**2 Large foam filled wheels and turning wheel:** Eases transport over uneven ground such as building sites. 3 wheels ensure good level of stability and manoeuvrability. The turning wheel with wheel brake ensures that the machine stays in position.

**Hose rack:** Feature storage for cable and hose and enhances mobility.

**2x4 ceramic pistons:** Long life pumps for tough everyday applications over 6 hours per day. Low service requirements.

Possibility for 1 or 2 users simultaneously

**High pressure and high water volume:** Efficient and quick cleaning, high rinse effect up to 2280 l/h. Optimal high pressure cleaning of incrustated dirt combined with a high flushing effect for loose waste.

**Lance holder:** The built-in lance holder protects against damage and provides ideal storage.

**Double wire hose:** Super strong double braided " hose that allows the high water flow with a minimum pressure drop. The hose is capable of withstanding pressure up to 250 bar.

# Specifications for CK3A HIGH FLOW



## CK3A HIGH FLOW (Three-phase)

Pump pressure	bar	180
Water flow (max)	l/h	2560
Water flow $Q_{fic}$	l/h	2360
Max inlet temp.	°C	60
Power absorbed	kW	2 x 8.0
Voltage/phase/frequency/current V/~/Hz/A		400/3/50 2x14, 5, 230/3/50/2x25
Weight	kg	135
Dimensions L x W x H	mm	1050 x 720 x 765
<b>Standard equipment</b>		
Cable length	m	10
Hose length	m	10
Lance type		High Flow (Double)
Automatic standby		•
Ceramic pistons		•
Nozzle type and size		Standard 1513
Couplings		ERGO 3000
Pistol gun		ERGO 3000
Stainless steel frame		•





### *Cold water range*

## **TRITON 800PE, TRITON 1000PE, POSEIDON 1100PE**

Cold water, mobile, petrol driven range of high pressure washers.

**User groups:** Tradesmen, building and construction workers, rental, agriculture.

**Applications:** Cleaning of vehicles, tools and equipment on sites where electricity is not available.



Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Large solid wheels:** Eases transport over uneven ground such as building sites.

**Honda motors:** Well known, tough and reliable motors with long life.

**3 ceramic piston pump (Triton):** Long life pumps for tough everyday applications.

**4 steel piston pump (Poseidon):** Exceptionally resistant pump with increased working life assures even the toughest of applications for over 6 hrs per day.

**Adjustable transport handles:** Handles can be adjusted to ease storage and transport of the unit. Include also room for winding of hose.

**Self sucking capacity:** Units are not only autonomous due to petrol, but can also suck water from wells, rivers and tanks if no water network connection is present.

# Specifications for

TRITON 800PE, TRITON 1000PE, POSEIDON 1100PE

	POSEIDON 1100PE	TRITON 1000PE	TRITON 800PE
Pump pressure	bar	220	140
Water flow (max)	l/h	1100	800
Water flow $Q_{10c}$	l/h	1000	740
Max inlet temp.	°C	70	60
Power absorbed	HP	11.4	4.8
Motor type	Honda GX390, 9.6 kW/13 HP	Honda GX340, 8.1 kW/11 HP	Honda GX160, 4.0 kW/5.5 HP
Fuel consumption	l/h	3.6	2.0
Weight	kg	75	43
Dimensions L x W x H	mm	1010 x 550 x 830	1010 x 550 x 830
Suction height	m	3	2
<b>Standard equipment</b>			
Hose length	m	10	10
Lance type	Tornado	Tornado	Tornado
Nozzle type and size	Tornado 2505	Tornado 2505	Tornado 2505
Couplings	ERGO 3000	ERGO 3000	ERGO 3000
Pistol gun	ERGO 3000	ERGO 3000	ERGO 3000
Ceramic pistons	•	•	•



Hot water range

# 30HA

Compact, hot water, mobile, electric driven high pressure washer

User groups: automotive industry such as small garages, small carriers and haulage contractors, small hobby farms and light industry.

Applications: Cleaning of vehicles, small farm equipment and tools.



30HA

Use intensity



**Compact and high mobility:** Large rubber tyres and little front wheel . Build in lifting grips in bottom chassis enhances manoeuvrability

**3 stainless steel piston pump:** Long life pumps for light everyday applications.

**Constant ignition:** Prevents unburned fuel and adds to safety

**One button operation:** Easy to use with all controls at one bouton.

**Exists in 1 and 3 phase:** Adapted to a wide variety of different sites depending upon electrical installation.

**Hose hook built into transport handle:** The large handles feature storage for cable and hose and enhance mobility

**Lance holder:** Provides ideal storage for two lances and thus protects lance against damage

**Inbuilt 8 l detergent tank:** Your favourite detergent is always ready for use. Eases transport. Detergent tank easy to fill and empty. Sight level for detergent. Suction tube can be removed for suction from external tank.

**Internal injector:** No need for external injectors. Feature to adjust detergent dosage. The use of detergents is determined directly from the lance

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

# Specifications for 30HA

	30HA MASTER (Three-phase)	30HA STANDARD - 1 (Single-phase)	30HA MASTER - 1 (Single-phase)
Pump pressure	bar	145/85	145/30
Water flow (max)	l/h	670	530
Water flow $Q_{lit}$	l/h	600-290	480-230
Max inlet temp.	°C	30	30
Water temperature (max flow/stream)	°C	80/140	80/140
Power absorber	kW	3.8	1.7
Voltage/phase/frequency/current V/-/Hz/A		400/3/50/6.5	230/1/50/13
		415/3/50/6	240/1/50/12
		440/3/60/5.1	220/1/60/12.5
		220/3/60/9.5	110/1/50/15
	230/3/50/10.5		
Fuull tank capacity	l	15	15
Fuel consumption @ $\Delta t = 45^{\circ}\text{C}$	kg/h	3.2	2.4
Weight	kg	85	85
Dimensions L x W x H	mm	870 x 580 x 780	870 x 580 x 780
<b>Standard equipment</b>			
Cable length	m	8	8
Hose length	m	10	10
Lance type		Tornado	Tornado
Detergent tank	l	8	8
Automatic standby		•	•
Nozzle type and size		Tornado 15035	Tornado 1503
Couplings		ERGO 3000	ERGO 3000
Pistol gun		ERGO 3000	ERGO 3000



Hot water range

# SC 780

Compact, hot water, mobile, electric driven high pressure washer

**User groups:** Automotive industry such as small garages, small carriers and haulage contractors, small hobby farms and light industry.

**Applications:** Cleaning of vehicles, small farm equipment and tools.



SC

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Compact and high mobility:** Large rubber tyres and little front wheel enhances manoeuvrability. Can be transported in a station wagon.

**3 ceramic piston pump:** Long life pumps for light everyday applications.

**Exists in 1 and 3 phase:** Adapted to a wide variety of different sites depending on electrical installation.

**Lance holder:** Provides ideal storage the lance and thus protects lance against damage.

**Inbuilt 5.5 l detergent tank:** Your favourite detergent is always ready for use. Eases transport.

**Internal injector:** No need for external injectors. Feature to adjust detergent dosage.

**Heating coil:** The heating coil is controlled by a thermostat, that ensures optimum heating of the water in a very short time. In only few seconds the high pressure washer is ready to start.

**Heat exchanger:** The heat exchanger heats in 3 stages ensuring higher efficiency and stability and a lower level of emissions.

**VarioPress pistol ( SC 780):** Convenient pressure and flow regulation directly on the gun.

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

**Control safety blok:** Stepless water volume and pressure control system.

**Check Control / micro processor control system:** Electronic self-monitoring and signalling of the actual state – ideal for fast fault detection. Optional remote control and automatic machine shut off.

# Specifications for SC 780



## SC 780 (Three-phase)

Pump pressure	bar	160-30
Water flow (max)	l/h	710
Water flow $Q_{10}$	l/h	670-280
Max inlet temp.	°C	30
Water temperatur (max flow/stream)	°C	75/140
Power absorber	kW	4.5
	V/~/Hz/A	400/3/50/8
Fuull tank capacity	l	11.5
Fuel consumption @ $\Delta t = 45^{\circ}\text{C}$	kg/h	3.5
Weight	kg	79
Dimensions L x W x H	mm	1020 X 590 X 600

## Standard equipment

Cable length	m	5
Hose length	m	10
Lance type		Universal
Detergent tank	l	5.5
Automatic standby		•
Nozzle type and size		Standard 2504
Couplings		ERGO 3000
Pistol gun		ERGO 3000
Ceramic pistons		•



Hot water range

# 40H/HA

Mid range, hot water, mobile, electric driven high pressure washer

**User groups:** Garages, hire firms, small fleet parks, agriculture, medium sized industry

**Applications:** Cleaning of stables, cars, van, lorry and industrial equipment.



40HA

3040HA

1640HA

Use intensity



**3 ceramic piston pump:** Long life pumps for intense applications up to 6 hours per day. Low service requirements. Low wear and tear.

**Electronic safety system:** Machine is tested at start up and during operation. Digital display panel reports any faults immediately.

**Electronic thermostat and temperature indicator:** Accurate heating and total control over instantaneous temperatures.

**Electronic fuel level indicator:** Indicates when the 25 l fuel tank needs refill.

**Service indicator and hour counter:** Indicates need for service and enables Service Engineer to diagnose a pattern of use.

**Exists in 1 and 3 phase:** Adapted to a wide variety of different sites depending upon electrical installation.

**Low weight:** Easy to lift and enhances manoeuvrability

**Hose rack:** Provide ideal storage for cable and hose and enhances mobility

**Lance holder:** Ideal storage and protects lance against damage

**Integral detergent compartment:** Fits all 5 litres containers and makes it easy to see what detergent the container holds. Also facilitates change of detergents e.g. from Auto cleaner to Wax. Eases transport

**Steam hose:** Super strong double braided hose that is standard on professional machines and still manoeuvrable and user-friendly. The hose is capable of withstanding pressure up to 250 bar and 150°C.

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

**Delayed Stop:** When the spray handle is released the machine stops after a short delay.

# Specifications for 40H/HA

	40HA MARSTER (Three-phase)	3040HA (Three-phase)	1640HA (Single-phase)
Pump pressure	bar	195-30	110/100*-30
Water flow (max)	l/h	960	720/630*
Water flow $Q_{lic}$	l/h	880-370	660-310/570-250*
Max inlet temp.	°C	30	30
Water temperature (max flow/stream)	°C	80/140	80/140
Power absorber	kW	6.2	3.3/2.8*
Voltage/phase/frequency/current V/-/Hz/A		400/3/50/12 230/3/50/20 220/3/60/20 440/3/60/11 415/3/50/11	110/1/50/30* 230/1/50/14 220/1/60/14 240/1/50/13
Fuull tank capacity	l	25	25
Fuel consumption @ $\Delta t = 45^\circ C$	kg/h	4.4	3.3/2.8*
Weight	kg	95	95
Dimensions L x W x H	mm	925 x 660 x 950	925 x 660 x 950
<b>Standard equipment</b>			
Cable length	m	8	8
Hose length	m	10	10
Lance type		Tornado	Tornado
Automatic standby		•	•
Nozzle type and size		Tornado 1505	Tornado 1503
Couplings		ERGO 3000	ERGO 3000
Pistol gun		ERGO 3000	ERGO 3000
Ceramic pistons		•	



Hot water range

# DX

Mid range, hot water, mobile, electric driven high pressure washer

**User groups:** Garages, hire firms, small fleet parks, agriculture, medium sized industry

**Applications:** Cleaning of stables, cars, van, lorry and industrial equipment.



DX 845 W

DX 865

DX 985

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**3 ceramic piston pump:** Long life pumps for intense applications up to 6 hours per day. Low service requirements. Low wear and tear.

**Exists in 1 and 3 phase:** Adapted to a wide variety of different sites depending on electrical installation.

**Duo motor:** Separate motors for the ventilator fan and for the pump on hot water models. In cold-water mode only one motor operates, in the hot-water mode two motors. Saves energy in cold water mode.

**Check Control / micro processor control system:** Electronic self-monitoring and signalling of the actual state – ideal for fast fault detection. Optional remote control and automatic machine shut off.

**WDK detergent system:** Select, dose, rinse. Prevents unwanted mixing of different detergents. Before using detergent from the second detergent tank, the system is rinsed automatically with clean water.

**2 x Inbuilt 15 l detergent tanks:** Your two favourite detergents are always ready for use. Eases transport.

**Internal detergent suction:** No need for external injectors. Feature to adjust detergent dosage. High pressure injection of detergent gives additional cleaning effect

**Lance holder:** Provides ideal storage for the lance and thus protects against damage

**Heating coil:** The heating coil is controlled by a thermostat that ensures optimum heating of the water in a very short time. In only few seconds the high pressure washer is ready to start.

**Heat exchanger:** The heat exchanger heats in 3 way draft system ensuring higher efficiency and stability and a lower level of emissions.

# Specifications for DX



**VarioPress pistol (three phase machines):** Convenient pressure and flow regulation directly on the gun.

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

**Control safty blok:** Stepless water volume and pressure control system via VarioPress pistol or at the block.

	DX 985 (Three-phase)	DX 865 (Three-phase)	DX 845 W (Single-phase)	TRITAN ENERGY (Three-phase)
Pump pressure	200-30 bar	170-30	100-30	180-30
Water flow (max)	1050 l/h	860	750	970
Water flow QIEC	980-400 l/h	800-400	700-400	900-400
Max inlet temp.	30 °C	30	30	30
Water temperature (max flow/stream)	75/140 °C	80/140	80/140	80/140
Power absorber	7.9 kW	5.6	3.3	6.9
	400/3/50/12.5	400/3/50/9.	230/1/50/10	400/3/50/11.5
Fuull tank capacity	30 l	30	30	30
Fuel consumption @ ΔT = 45°C	5.1 kg/h	4.2	3.7	4.7
Weight	175 kg	161	154	173
Dimensions L x W x H	1060 x 705 x 758 mm	1060 x 705 x 758	1060 x 705 x 758	1060 x 705 x 758
<b>Standard equipment</b>				
Cable length	5 m	5	5	5
Hose length	10 m	10	10	10
Lance type	Universal	Universal	Universal	Universal
Detergent tank	2 x 15 l	2 x 15	2 x 15	2 x 15
Automatic standby	•	•	•	•
Nozzle type and size	Standard 25055	Standard 2505	Standard 25055	Standard 25055
Couplings	ERGO 3000	ERGO 3000	ERGO 3000	ERGO 3000
Pistol gun	ERGO 3000	ERGO 3000	ERGO 3000	ERGO 3000
Ceramic pistons	•	•	•	•

Hot water range

# ELEKTRA

Mid range, hot water, mobile, electrical driven and heated pressure washers

**User groups:** Garages, hire firms, small fleet parks, medium sized industry.

**Applications:** Cleaning of cars, vans, lorries and industrial equipment.  
For hot water uses where pollution from oil heated units could be a problem.

Can be used in closed production rooms/ halls – no exhaust fumes.



ELEKTRA 18

ELEKTRA 24

Use intensity 

**Steel frame and robust cabinet:** Robust, solid product with long life span.

**2 ceramic piston pump:** Long life pumps with reduced wear and tear due to slow running, belt driven system. Long working life.

**3 step electrical heating system:** 3 Chambers: cold water, pre-heating and hot water. For a more stable heating effect. Less temperature fluctuations.

**Electrical heating chamber:** No air pollution. Available in 12, 18 or 24 kW versions.

**Stainless steel heat exchanger:** No corrosion

**2 x 17 l inbuilt detergent tanks:** Your two favourite detergents are always ready for use. Eases transport.

**Detergent dosing system with WDK:** Select, dose, rinse. Prevents unwanted mixing of different detergents. Before using detergent from the second detergent tank, the system is rinsed automatically with clean water.

**Single wire hose:** A strong single braided hose with high flexibility

**Water volume and pressure control valve at pump:** Stepless water volume and pressure control system. Allows adjustment according to cleaning task, which saves time, water and detergents

# Specifications for ELEKTRA



	<b>ELEKTRA 18</b>	<b>ELEKTRA 24</b>
Pump pressure	bar 110-40	110-40
Water flow (max)	l/h 770	770
Water flow $Q_{fic}$	l/h 730-370	730-370
Max inlet temp.	°C 30	30
Water temperature (max flow)	°C 30-80	30-80
Power absorber	kW 21.5	27.5
Voltage/phase/frequency/current V/~/Hz/A	400/3/50/6+26	400/3/50/6+36
Weight	kg 128	131
Dimensions L x W x H	mm 1170 X 720 X 780	1170 X 720 X 780
<b>Standard equipment</b>		
Cable length	m 5	5
Hose length	m 10	10
Lance type	Universal	Universal
Detergent tank	l 2 x 17	20 x 17
Automatic standby	•	•
Ceramic pistone	•	•
Nozzle type and size	Standard 2505	Standard 2505
Couplings	ERGO 3000	ERGO 3000
Pistol gun	ERGO 3000	ERGO 3000



Hot water range

# C1450

**User groups:** Fleet management, industry, building and construction.

**Applications:** Cleaning of lorry fleets, industrial equipment and sites, building equipment and sites, large stables.

The C1450 is often mounted stationary with remote control



C1450

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**3 ceramic piston pump:** Long life pumps for intense applications over 6 hours per day. Low service requirements. Low wear and tear.

**1400 rpm motors:** Slow running motors give longer working life in high intensity uses.

**40 l detergent tank:** Your favourite detergent is always ready for use. Eases transport.

**Hose and cable rack:** Provides storage for cable and hose and enhances mobility

**Heating coil:** The heating coil is controlled by a thermostat that ensures optimum heating of the water in a very short time. In only few seconds the high pressure washer is ready to start.

**Duo motor:** Separate motors for the ventilator fan and for the pump on hot water models. In cold-water mode only one motor operates, in the hot-water mode two motors. Saves energy in cold water mode. Avoids problems linked to fan not functioning if electrical phases connected incorrectly.

**WDK detergent system:** Select, dose, rinse. Prevents unwanted mixing of different detergents. Before using detergent from the second detergent tank, the system is rinsed automatically with clean water.

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

**VarioPress pistol :** Convenient pressure and flow regulation directly on the gun.

# Specifications for C1450



**Coaxial lance:** ≤Continuous pressure control with a constant water flow adjustable on convenient side bar on coaxial lanceLight weight 'two in one' pipe lance is easy to use over long periods.

**Control safety block:** Stepless water volume and pressure control system via VarioPress pistol or at the block

<b>C1450 (Three-phase)</b>	
Pump pressure	bar 160-30
Water flow (max)	l/h 1330
Water flow $Q_{10C}$	l/h 1250-550
Max inlet temp.	°C 30
Water temperatur (max flow/stream)	°C 80/140
Power absorber	kW 7.5
	V/~/Hz/A 400/3/50/13
Fuull tank capacity	l 40
Fuel consumption @ $\Delta T = 45^{\circ}C$	kg/h 6.6
Weight	kg 245
Dimensions L x W x H	mm 1500 x 835 x 845
<b>Standard equipment</b>	
Cable length	m 5
Hose length	m 10
Lance type	Universal
Detergent tank	l 40
Automatic standby	•
Nozzle type and size	Standard 25085
Couplings	ERGO 3000
Pistol gun	ERGO 3000
Ceramic pistons	•



Hot water range

# 03V/03VA/C3VA

Heavy duty, hot water, mobile, electric driven high pressure washer

**User groups:** Larger agriculture, fleet management, heavy industry such as manufacturing, construction, mining, transport and shipping.

**Applications:** Cleaning of lorry fleets, industrial equipment and sites, building equipment and sites, large stables.

For extreme high temperature at high water flow



03V

03VA

C3VA

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Broad, large rubber wheels:** High mobility and stability. The front wheel with front wheel brake ensures that the machine stays in position.

**4 ceramic (C3) or stainless steel (03) piston pump:** Long life pumps for intense applications over 6 hours per day. Low service requirements. Low wear and tear.

**1400 rpm motors:** Slow running motors give longer working life in high intensity uses.

**Variable water control:** Allows adjustment according to cleaning task, which saves time, water and detergents.

**Continuous control of temperature from 30°C to 140°C:** Ensures a very accurate heating to the desired temperature.

**Internal injector:** No need for external injectors. Feature to adjust detergent additive. Can apply detergent on low as well as high pressure.

**Superior heating coil:** 48 m thick tube with 115 kW heating effect ensures efficient heating. Nearly boiling water at full water flow.

**Hose rack:** Provides ideal storage for cable and hose and enhances mobility

**Lance holder:** Ideal storage and protects lance against damage

**Steam hose:** Super strong double braided hose that is standard on professional machines and still manoeuvrable and user-friendly. The hose is capable of withstanding pressure up to 250 bar and 150°C.

**No scale system:** Water softener that minimises scale in boiler tube. Indicates when refill is necessary. Scale slows down the heating process in coil due to decreased water flow, higher pressure drop and thus higher combustion temperatures.

**Delayed Stop:** When the spray handle is released the machine stops after a short delay.

# Specifications for 03V/03VA/C3VA

## 42C3VA/4203VA (Three-phase)

Pump pressure	bar	175-30
Water flow (max)	l/h	1260
Water flow $Q_{lic}$	l/h	1170-480
Max inlet temp.	°C	30
Water temperature (max flow/stream)	°C	100/140
Power absorber	kW	8.3
Voltage/phase/frequency/current V/-/Hz/A		220/3/50/30 <sup>03</sup>
		415/3/50/13.6
		200/3/60/30 <sup>03</sup>
		440/3/60/13
		220/3/60/27
		230/3/50/25
		400/3/50/14
Fuull tank capacity	l	40
Fuel consumption @ $\Delta t = 45^\circ\text{C}$	kg/h	6.1
Weight	kg	221
Dimensions L x W x H	mm	1370 x 665 x 990

## Standard equipment

Cable length	m	8
Hose length	m	10
Lance type		Tornado
Automatic standby		•
Nozzle type and size		Tornado 15065
Couplings		ERGO 3000
Pistol gun		ERGO 3000
Ceramic pistons		• <sup>53</sup>

## 50C3VA/5003VA (Three-phase)

Pump pressure	bar	155-30
Water flow (max)	l/h	1200
Water flow $Q_{lic}$	l/h	1110-480
Max inlet temp.	°C	30
Water temperature (max flow/stream)	°C	100/400
Power absorber	kW	7.1
Voltage/phase/frequency/current V/-/Hz/A		220/3/60/22 <sup>03</sup>
		230/3/50/21
		400/3/50/12.5
		415/3/50/12
		440/3/60/11 <sup>03</sup>
Fuull tank capacity	l	40
Fuel consumption @ $\Delta t = 45^\circ\text{C}$	kg/h	5.8
Weight	kg	216
Dimensions L x W x H	mm	1370 x 665 x 99

## Standard equipment

Cable length	m	8
Hose length	m	10
Lance type		Tornado
Automatic standby		•
Nozzle type and size		Tornado 15065
Couplings		ERGO 3000
Pistol gun		ERGO 3000
Ceramic pistons		• <sup>53</sup>



Hot water range

# SUPER 2000

Heavy duty, hot water, mobile, electric driven high pressure washer

**User groups:** Fleet management, industry and food industry, building and construction.

**Applications:** Cleaning of lorry fleets, industrial and food industry equipment and sites, building equipment and sites, large stables.

Extreme high flow



SUPER 2000

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Slow running (approx. 750 rpm) 6 ceramic piston pump:** Long life pumps for intense applications over 6 hours per day. Low service requirements. Low wear and tear. Hydraulic control system and high capacity pump allows 2 users to work independently and simultaneously.

**2 spray devices for simultaneous and independent use:** Is supplied with both a coaxial lance with continuous pressure control at a constant water flow adjustable on the convenient side bar and a universal lance with screw coupling at the end of the lance allowing the use of different nozzles.

**Variable water and pressure control:** Allows adjustment according to cleaning task which saves time, water and detergents.

**2 x 20 l detergent tanks:** Your two favourite detergents are always ready for use. Eases transport.

**WDK detergent system:** Select, dose, rinse. Prevents unwanted mixing of different detergents. Before using detergent from the second detergent tank, the system is rinsed automatically with clean water.

**Duo motor:** Separate motors for the ventilator fan and for the pump on hot water models. In cold-water mode only one motor operates, in the hot-water mode two motors. Saves energy in cold water mode. Avoids problems linked to fan not functioning if electrical phases are inverted.

**Control safety block:** Stepless water volume and pressure control system.

# Specifications for SUPER 2000

## SUPER 2000 (Three-phase)

Pump pressure	bar	150-30
Water flow (max)	l/h	1950
Water flow $Q_{fic}$	l/h	1900-850
Max inlet temp.	°C	30
Water temperatur (max flow/stream)	°C	80/140
Power absorber	kW	9.0
Voltage/phase/frequency/current V/~/Hz/A		400/3/50/16 400-415/3/50/16
Fuull tank capacity	l	45
Fuel consumption @ $\Delta t = 45^{\circ}C$	kg/h	10
Weight	kg	365
Dimensions L x W x H	mm	1500 x 960 x 980

## Standard equipment

Cable length	m	5
Hose length	m	10 x 2
Lance type		2 x Universal
Detergent tank	l	2 x 20
Automatic standby		•
Nozzle type and size		Standard 2511 + 2 x 25055
Couplings		ERGO 3000
Pistol gun		ERGO 3000
Ceramic pistons		•



Hot water range

# CS1020 PE

Hot water, mobile, petrol and diesel driven high pressure washers.

**User groups:** Building and construction workers, rental.

**Applications:** Cleaning of vehicles, tools and equipment on sites where electricity is not available.



CS1020 PE

Use intensity



**Chassis and frame in strong steel:** Robust products, resistant to shocks. Strong frame protects motor pump unit.

**Petrol and Diesel driven Honda motors:** Well known, tough and reliable motor with long life.

**3 Large pneumatic wheels:** Eases transport over uneven ground such as building sites. 3 wheels ensures good level of stability and manoeuvrability

**3 ceramic piston pump:** Long life pumps for tough everyday applications up to 8 hours per day. Low service requirements.

**Control panel:** Easy to use and understand panel with all controls at hand.

**Electric Start:** No need to pull on starting cord – simply push a button for motor start – ease of use and low level of effort.

**WDK Detergent system:** CS1020 equipped with double detergent injection system that rinses out the water circuit when changing over from one detergent to another. Eliminates the risk of mixing 2 detergents and reduces potential risk of corrosion of internal components.

**Duo Motor System:** Saves energy and wear and tear. Separate motors for pump and ventilator fan. In hot water mode, both motors turn dividing the work load over 2 motors and reducing wear. In cold water mode, only the motor for the pump is used thus saving energy.

**Control safety block:** Stepless water volume and pressure control system.

# Specifications for CS1020 PE



## CS1020 PE

Pump pressure	bar	150-25
Water flow (min-max)	l/h	920
Water flow QIEC	l/h	860-400
Max inlet temp.	°C	30
Water temp. (max flow)	°C	80/140
Weight	kg	230
Dimensions L x W x H	mm	1380 x 740 x 840
Motor type		Honda GX340 – SXE 4,8, 1 kW/10,9 HP
Motor fuel consumption, max pressure	l/h	3,0
Boiler fuel consumption, @ $\Delta t=45^{\circ}\text{C}$	kg/h	4,5
Fuel tank capacity, boiler	l	6,5

## Standard equipment

Hose length	m	10
Lance type		Universal
Ceramic pistons		•
Nozzle type and size		Standard 2505
Couplings		ERGO 3000
Pistol gun		ERGO 3000





Hot water range

# CONTRACTOR

Hot water, fixed or trailer mounted, petrol and diesel driven high pressure washers.

**User groups:** Building and construction workers, rental. Large contractor cleaners and builders.

**Applications:** Cleaning of vehicles, tools and equipment on sites where electricity is not



Use intensity



## Chassis and frame in strong steel

Robust products, resistant to shocks. Strong frame protects motor pump unit.

## Petrol and Diesel driven motors from Honda, Ruggerini and Mitsubishi

Well known, tough and reliable motors with long life chosen for their robustness.

## 4 ceramic piston pump

Long life pumps for intense applications over 8 hours per day. Low service requirements. Low wear and tear.

## Control panel

Easy to use and understand panel with all controls at hand.

## Electric Start

No need to pull on starting cord – simply push a button for motor start – ease of use and low level of effort.

## High performance boiler

115 kW boiler system gives the quickest heating capacity on the market and ensures a stable temperature throughout the cleaning task.

## Insulating cabinet on Contractor Silent

Reduces the noise level considerably for use in areas where there is strict legislation about noise emissions.

**Note:** The Contractor was widely used in Brittany, France for depolluting and cleaning of beaches following the sinking of the oil tanker Erika in 1999.

# Specifications for CONTRACTOR



	MASTER (Petrol)	SILENT (Diesel)	HEAVY DUTY (Diesel)	DIESEL (Diesel)
Pump pressure	bar	200	210	180
Water flow (min-max)	l/h	1290	1050	1230
Water flow $Q_{ac}$	l/h	1200-580	960-490	1140-580
Max inlet temp.	°C	35	35	35
Water temp. (max flow)	°C	100/150	100/150	100/150
Power absorbed	kW	12.0	12.0	12.3
Weight	kg	510	315	315
Dimensions L x W x H	mm	1160 x 910 x 1250	1160 x 910 x 1060	1160 x 910 x 1060
Motor type		Mitsubishi S3L2-61SG 12.6 kW/16.9 HP	Ruggerini MD1515 12 kW/16.3 HP	Ruggerini MD1515 12 kW/16.3 HP
Motor fuel consumption, max pressure	l/h	3.5	3	3
Boiler fuel consumption, @ $\Delta t=45^{\circ}\text{C}$ kg/h		5.9	4.8	5.7
Fuel tank capacity, boiler	l	60	20	20
Suction height	m	2	5	5

## Standard equipment

Hose length	m	10	10	10
Lance type		Tornado	Tornado	Tornado
Ceramic pistons		•	•	•
Nozzle type and size		Tornado 1506	Tornado 1506	Tornado 1506
Couplings		ERGO 3000	ERGO 3000	ERGO 3000
Pistol gun		ERGO 3000	ERGO 3000	ERGO 3000



Cold water range

# COMPACT BOOSTER

Cold water, stationary, electrical driven pressure washer

**User groups:** automotive industry such as small garages, small carriers and haulage contractors, small hobby farms, light industry, supermarkets and butchers.

**Applications:** Cleaning of vehicles, small farm equipment and tools.



COMPACT BOOSTER

Use intensity 

**Frame and cabinet in stainless steel:** Easy to clean and service. High level of hygiene assured for use in food industry.

**Inlet water temp 55-60 °C:** Ideal for use with pre-heated water in order to obtain an increased cleaning effect. Adapted for use in most food industry environments for cleaning of animal fats (temp 50-55 °C recommended).

**3 ceramic piston pump:** Long life pumps for intense applications upto 3 hours per day. Low service requirements. Low wear and tear.

**Water brake tank:** Avoids the back flow of water from the machine to the water supply

**Control panel:** Easy to use and understand panel with all controls at hand. 1 button use.

**Oil sight:** Easy service – simple to keep a check on oil level.

**Exists in 1 and 3 phase:** Adapted to a wide variety of different sites depending upon electrical installation.

**Closed motor:** Resists corrosion giving longer working life. Reduces noise level, ideal for cleaning in enclosed areas.

# Specifications for COMPACT BOOSTER



	COMPACT BOOSTER 1	COMPACT BOOSTER
Pump pressure	bar 110	160
Water flow (QIEC/max)	l/h 660/720	890/990
Noise level	dBa 77	77
Max inlet temp	°C 55/60*	55/60*
Power absorbed	kW 3.2	5.5
Voltage/phase/ferquency/current V~/Hz/A	220/1/60/ 230-240/1/50/11,5	230/3/50/16,7 400/3/50/9,5

\*60°C with direct feed from water inlet to pump.

Recommended piping diameter and length:

Ø12 x 1,5mm = 30 meters for 3 phase units, 50 m for 3 phase units  
Ø15 x 1,5mm = 100 meters for 3 phase units, 150 meters for 1 phase units.



Cold water range

# UNO/DUO BOOSTER

Cold water, stationary, electrical driven pressure washer.

**User groups:** Medium to large agriculture, industry, food industry, shipping.

**Applications:** Any applications where cleaning takes place on a fixed site or in a fixed radius. Cleaning of stables, sties, processing equipment, industrial equipment, ship surfaces. Installation: Piping systems up to 500m.



UNO BOOSTER



DUO BOOSTER

Use intensity 

**Stainless steel frame and robust cabinet:** Robust, solid product with long life span. Stainless steel frame makes product adapted to use in food industry areas.

**Inlet water temp 70 C:** Ideal for use with pre-heated water in order to obtain an increased cleaning effect. Adapted for use in most food industry environments for cleaning of animal fats (temp 50-60 C recommended) but also for light degreasing in Industry.

**4 ceramic piston pump:** Long life pumps for intense applications over 8 hours per day. Low service requirements. Low wear and tear.

**2 pump system (DUO BOOSTER):** Through easy use of the control panel, it is possible to select for one user or two users simultaneously. With the right equipment, one single user can obtain the output of both pumps for heavy flushing and rinsing applications.

**1400 rpm motors:** Slow running motors give longer working life in high intensity uses.

**Extended version with options:** The basic version can be equipped with a factory mounted PEB giving access to factory mounted options such as remote control, hp detergent, pressure relief, ect.

# Specifications for UNO/DUO BOOSTER



	Uno Booster	Duo Booster
Pump pressure	160 bar	160
Water flow (max)	2400 l/h	1200
Water flow $Q_{ac}$	2240-1120 l/h	1120-540
Max inlet temp.	70 °C	70
Power absorbed	2 x 6.7 kW	6.7
Voltage/phase/frequency/current V~/Hz/A	230/3/50/2 x 21	230/3/50/21
	220/3/60/2 x 21	220/3/60/21
	400/3/50/2 x 12	400/3/50/12
	415/3/50/2 x 11	415/3/50/11
	440/3/60/ 2x 11	440/3/60/11
Weight	160 kg	81
Dimensions L x W x H	700 x 400 x 700 mm	700 x 400 x 1000

## Standard equipment

Cable length	4 m	4
Automatic stand-by	•	•
Ceramic pistons	•	•
Stainless steel frame	•	•



Cold water range

# DELTA BOOSTER

Cold water, stationary, electrical driven multi pump pressure washers.

**User groups:** Industry, food industry, shipping.

**Applications:** Any applications where cleaning takes place on a fixed site or in a fixed radius. Where 2 or more people are cleaning simultaneously. Cleaning of processing equipment, industrial equipment, ship surfaces...

**Installation:** Use with large piping systems (100m + ).

*The most versatile and complete industrial high pressure system on the market.*



Delta Booster

Use intensity



**Stainless Steel frame and robust cabinet:** Robust, solid product with long life span. Stainless steel frame makes product adapted to use in food industry areas.

**1 to 6 pump system. Possibility of coupling several Delta Boosters in line:** Delta Booster can be bought with any number of pumps from 1 to 6, allowing up to 6 simultaneous uses. Several Delta Boosters can be installed in line, allowing for 12, 24, 36... simultaneous users !

**4 ceramic piston pumps with 1400 rpm motors:** Long life pumps for intense applications over 8 hours per day. Low service requirements. Low wear and tear.

**Electronic pump control system:** Control system will detect the amount of water required by the relevant number of uses based upon flow and start the correct number of pumps automatically. As water requirement drops, pumps will be stopped. Starting of pumps is done by rotation to avoid excessive wear on any one pump. In case of faulty pumps or motors, the pump unit will shut down and the fault indicated. The Delta Booster will continue functioning with the remaining pumps.

**Different line pressures available:** Delta Booster is configured standard to 120 or 160 bar, but can be supplied with line pressure down to 80 bar.

**Inlet water capacity to 85 C via double hot and cold water tanks and temp control system:** The double tanks allow for a storage of both cold and pre-heated water. The control system near the PC board will maintain the selected temperature.

**Compact design with door opening both left and right:** Delta Booster is easy to transport and to install. Simply place and hook up to water and electricity sources. The unit can be installed in most areas due to the door opening both left and right.

**High level of serviceability:** Pumps and motors are quickly and easily removed and the unit will continue to function. Oil changes are easy. So reducing service costs and limiting down time.

# Specifications for DELTA BOOSTER



Colour coded lance System: Use of Delta Booster is made easy by 9 colour coded lances, pre-set to specific specifications (pressure and flow) for a wide range of applications – medium pressure/high flow, high pressure/low flow etc. High level of flexibility and user friendliness. (See catalogue or family brochure for more details).

Lance	Desired pressure(bar)		Desired rating (walter l/min.)		No of pumps required	
	120 bar	160 bar	120 bar	160 bar	120 bar	160 bar
White	20	27	17	17	1	1
Black	20	27	32	35	2	2
Green	40	50	16	17	1	1
Blue	60	80	16	17	1	1
Red	60	80	26	27	1.5	1.5
Orange	80	107	17	17	1	1
Yellow	80	107	27	26	1.5	1.5
Chrome	114	152	17	17	1	1

Delta Booster		*120/160	
Line*/pump pressure	bar	20-160	
Nozzle pressure	bar	6230 (6p)	
Water flow (max)	l/h	1040-6230	
Water flow Q <sub>1c</sub>	l/h	1040	
Water flow per pump	l/h	80	
Max inlet temp.	°C		
		<b>2 p</b>	<b>6 p</b>
Power absorbed	kW	13.7	40.5
Voltage/phase/frequency/current V~/Hz/A		230/3/50/42	125
		400/3/50/23.5	69.5
		415/3/50/21.5	64.5
		440/3/60/21.5	64.5
Weight	kg	250	450
Dimensions L x W x H	mm	715 x 790 x 1800	
<b>Standard equipment</b>			
Automatic stand-by		•	
Ceramic pistons		•	
Stainless steel frame		•	



Hot water range

# HWM

Hot water, stationary, electrical driven pressure washers.

**User groups:** Industry, food industry, automotive.

**Applications:** Any applications where cleaning takes place on a fixed site or in a fixed radius. Cleaning of processing equipment, industrial equipment, vehicles, degreasing of metal...

**Installation:** Use with medium piping and hose routing systems systems (50m + ).

*Electric, gas and oil powered heaters for a versatile range.*



HWM



Use intensity



## Steel frame and robust cabinet

Robust, solid product with long life span. Stainless steel frame makes product adapted to use in food industry areas.

## Slow running, 2-3 or 4 ceramic piston pumps

Long life pumps with reduced wear and tear due to slow running, belt driven system. Long working life.

## Expandable control technology

Each basic machine can be equipped with control technology to power a full range of options, adapting the unit to customized use (see page on options).

## Versions with oil, gas or electric heating

Heating types available for all uses and sites. Gas and electric heating respect environment via reduced or no emissions. Electric heating ideal for vehicle cleaning. Gas heating ideal for industry such as metal degreasing.

## Control Panel

Easy to use, large robust controls.

Oil and Gas fired burners heat water after the pump under high pressure. Electric heater situated before the pump under low pressure. Standard 18 kW, but 12 and 24 kW available.

**For information about HWM options, please consult section on "Accessories and Options".**

# Specifications for HWM



	Oil-heated		Gas-heated			Electrically heated
	HWM 1208	HWM 930	HWM 830	HWM 730	HWM 900 EG	HWM E 18
Operating pressure	150	150	160	140	150	110
Water flow (max)	1280	1050	910	730	960	780
Water flow Q <sub>ac</sub>	1200-800	980-600	850-580	680-500	900-600	730
Temperature adjustable	80/99	80/99	80/99	80/99	80/99	30-80 (mix. valve)
Pump type	4-piston	3-piston	3-piston	2-piston	4-piston	2-piston
Power absorbed	7.2	6.1	5.8	3.9	5.7	3.5+18*
Voltage/phase/frequency/current V~/Hz/A	400/3/50/12.5	400/3/50/10.5	400/3/50/10	400/3/50/7	400/3/50/10	400/3/50/6+26
Fuel consumption, @ ΔT=45°C	6.3	5.2	4.5	3.6		
Natural gas type L					6.3	
Dimensions L x W x H	1240 x 640 x 755	842 x 638 x 754	842 x 638 x 754	858 x 638 x 755	1240 x 640 x 755	842 x 638 x 754
Weight	260	220	215	210	270	188

\*Other heating capacities on request (max. 6l kW). Subject to technical change.



Hot water range

# HPS

Hot water, stationary, electrical driven pressure washers.

**User groups:** Industry, food industry, automotive.

**Applications:** Any applications where cleaning takes place on a fixed site or in a fixed radius. Cleaning of processing equipment, industrial equipment, vehicles, degreasing of metal...

**Installation:** Use with large piping and hose routing systems systems (100m + ).

*Electric, gas and oil powered heaters for a versatile range.*



HPS

Use intensity



**Steel frame and robust cabinet:** Robust, solid product with long life span. Stainless steel frame makes product adapted to use in food industry areas.

**Slow running, 4 ceramic piston pumps:** Long life pumps with reduced wear and tear due to slow running, belt driven system. Long working life.

**1 or 2 pump units:** 2 pump units give possibility of 2 simultaneous users for cleaning in 2 areas at the same time.

**Expandable control technology:** Each basic machine can be equipped with control technology to power a full range of options, adapting the unit to customized use (see page on options).

**Versions with oil, gas or electric heating:** Heating types available for all uses and sites. Gas and electric heating respect environment via reduced or no emissions. Electric heating ideal for vehicle cleaning. Gas heating ideal for industry such as metal degreasing.

**Control Panel:** Easy to use, large robust controls.

**Stainless steel boiler and combustion tanks:** Long life, resistant to corrosion and hygienic use in food industry. Oil and Gas fired burners heat water after the pump under high pressure. Electric heater situated before the pump under low pressure. Standard 18 kW, but up to 60 kW available.

Oil and Gas fired burners heat water after the pump under high pressure.

Electric heater situated before the pump under low pressure.

Standard (min.) 18 kW, but up to 60 kW available.

**For information about HPS options, please consult section on "Accessories and Options"**

# Specifications for HPS

	Oil-heated		Gas-heated		Electrically heated	
	HPS DUO	HPS UNO	HPS DUO	HPS UNO	HPS DUO	HPS UNO
Operating pressure	100	100	100	100	100	100
Water flow (max)	2 x 1070	1070	2 x 1070	1070	2 x 1070	1070
Water flow $\dot{Q}_{ac}$	2 x 1000	1000	2 x 1000	1000	2 x 1000	1000
Temperature adjustable	60-75	60-75	60-75	60-75	60-75	60-75
Pump type	4-piston	4-piston	4-piston	4-piston	4-piston**	4-piston
Power absorbed	8.4	4.4	8.4	4.4	8.4 + 18**	4.4 + 18**
Voltage/phase/frequency/current V/~/Hz/A	400/3/50/14.5	400/3/50/7.5	400/3/50/14.5	400/3/50/7.5	400/3/50/114.5+26	400/3/50/7.5+26
Fuel consumption, @ $\Delta t=45^{\circ}\text{C}$	10.5	5.3				
Natural gas type L			14.1	7.0		
Dimensions L x W x H	1280 x 780 x 910	1280 x 780 x 910	1280 x 780 x 910	1280 x 780 x 910	1560 x 780 x 910	1560 x 780 x 910
Weight	365	305	365	305	385	320

\*\*Other heating capacities on request (max. 60 kW. Subject to technical change.



# OPTIONS FOR UNO/DUO BOOSTER, HWM AND HPS SYSTEMS

The HPM, HWM and HPS units are originally sold as stand alone products, nevertheless capable of running with a basic remote control (simple on-off) and a mechanical coin checker with up to 1 detergent.

However, an extended unit with electronic control (new product item number), will give access to a wide range of factory mounted options. Each option is a combination of one or more item number, to be ordered with the electronic version of the HPW. The product will arrive complete or prepared for installation.

## **Cold-Warm Switchover (HWM)**

For HWM cold water units. When both hot and cold inlet water are available, allows switch back and to from cold to hot water mode.

## **Detergent A (UNO BOOSTER, HWM, HPS)**

Kit for application of one detergent from a distance. Includes dosing device, solenoid valve and remote control box with on-off and detergent A buttons.

## **Detergent A + B (UNO BOOSTER, HWM, HPS)**

Kit for selection and application of 2 detergents from a distance. Includes dosing devices, 2 solenoid valves and remote control box with on-off and 2 detergent buttons.

## **Pressure Relief System (all machines)**

When spray gun closes, the line remains under pressure. Through the pressure relief system, the latent pressure is bled from the system. After a given time (10 minutes on normal use), a timer relay closes down the system and 20 seconds later a solenoid valve relieves the high pressure side of the system.

# OPTIONS FOR HPM, HWM AND HPS SYSTEMS

## **Anti Frost Protection "Lost system" (HWM, HPS)**

Water constantly flows through the hose and through the frost proof trigger control gun.

A thermostat with outside sensor switches on the system at + 1°C. This can be adjusted to other temperatures.

## **Anti Frost Protection "Circuit" (HWM, HPS)**

Water constantly flows through the hose and through the frost proof trigger control gun.

The water does not drain away but flows to a AFP container with pump that recycles the water.

A thermostat with outside sensor switches on the system at + 1°C. This can be adjusted to other temperatures.

## **Output Reduction (all machines)**

Reduces the water quantity and pressure at the lance by 50% allowing an increase in detergent concentration – ideal for pre spraying or waxing. A solenoid valve opens and water flows from pressure to suction side. The vacuum on the suction side remains constant ensuring the same detergent dosing.

## **Foam Brush (HWM, HPS)**

When a foam brush is used and selected, this activates the forementioned options of detergent A and output reduction. These two options are required.

## **Coin Unit – electronic coin checker (all machines)**

Enables control of the system by external coin unit . Recognizes 4 coin types per country value. Program selector controls prespraying, foam brush, wash, rinse, hot wax and stop.

See catalogue for more information.