SMART CATALOGUE

Water Jetting Equipment

WJ

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PTC
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COMPANY PROFILE

INTRODUCTION

P.T.C. Srl is an Italian limited company founded in Genoa in 1968 with main activity as certification of petroleum products and calibration of storage tanks. Later the company diversified its activity including High Pressure Water Jetting technology, particularly related to the maintenance of petroleum processing plants, refineries, dry docks, etc. Currently this activity, which "heart" is based on top of the range plunger pumps, has moved into different applications in many other areas using high pressure water jetting for civil maintenance (buildings and concrete structures, sewers, etc) and industrial purposes (refineries, sugar processing, petrochemical plants, foundries, cement works, power plants, etc.) and in processing machinery for the rubber hoses and automotive production industry.

HYDRODYNAMIC UNITS

PTC hydrodynamic units cover a complete power range from 15 to 550 kW (20 - 750 HP) in continuous duty thanks to high grade triplex pumps with maximum working pressures up to 3000 bar (44.000 psi). These units are projected by our technical staff and produced in our facilities in a wide range of models to suit different input power (by electric or diesel engine), assemblies (skid or trolley) and with accessories (soundproof cabinet, remote control, etc.), all tested in-house to assure the satisfaction of even the strictest requirements concerning reliability and performances.
For this reason our customer base is increasingly wide since PTC can solve innovative and standard applications mainly in the fields of:
› Industrial maintenance (ship hulls, pipe washing, systems, exchangers, towers, filters, etc.)
› Pressurization of industrial lines (presses, hydro-forming, line and plant testing, etc)
› Concrete renovation (hydro-demolition, flaming, ripping, etc.)
› Various industrial uses (foundry castings, precision foundry, steel plate and billet descaling, cleaning and deburring of special pieces, engines, etc.) as well as underwater jobs.

SPECIAL EQUIPMENT

Over the years, PTC has worked closely with its customers to develop a wide range of taylor made equipment required to use high pressure water jets efficiently and safely, including:
› RIGID OR MAGNETIC MOTORIZED TRACKS: to accompany the nozzle movement to delineate precise linear, radial or circular cuts and hydro-ripping
› WASHING ROBOTS: (internal and external) for heat exchangers and pipe bundles in refineries
› TEST BENCHES AND SYSTEMS: for flushing and testing pipes and systems up to 4000 bar
› FIXED WASHING SYSTEMS: for easy hp cleaning in industrial areas.

QUALITY - PROFESSIONALITY - TECHNICAL ASSISTANCE

These are the key factors PTC makes available to its customers. Not just a product, but all the skill and service required to assure maximum performance and high reliability.

HIGH PRESSURE UNITS

HIGH PRESSURE UNITS < 45 kW

ELECTRICAL UNITS

EasyPower **XL E**

PTC **1 E HOT**

PTC **1 E**

PTC **2 E**

Model	kW (HP)	bar (psi)	l/min (USgpm)
EASY POWER XL E	30 kW (40 HP)	1000 bar (14500 psi)	38 l/min (10,8 USgpm) at 400 bar (5800 psi) 15 l/min (3,9 USgpm) at 1000 bar (14500 psi)
PTC 1 E HOT	30 kW (40 HP)	500 bar (7250 psi)	38 l/min (10,8 USgpm) at 400 bar (5800 psi) 30 l/min (7,9 USgpm) at 500 bar (7250 psi)
PTC 1 E	37 kW (50 HP)	1000 bar (14500 psi)	70 l/min (18,4 USgpm) at 280 bar (4060 psi) 19 l/min (5,0 USgpm) at 1000 bar (14500 psi)
PTC 2 E	45 kW (61 HP)	2100 bar (30450 psi)	232 l/min (61,2 USgpm) at 100 bar (1450 psi) 11 l/min (2,9 USgpm) at 2100 bar (30450 psi)

DIESEL UNITS

EasyPower **XL D**

PTC **1 D HOT**

PTC **1 D**

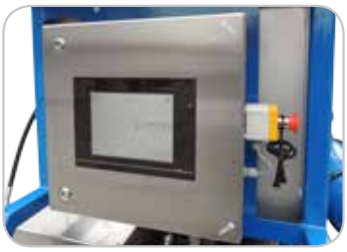
PTC **2 D**

Model	kW (HP)	bar (psi)	l/min (USgpm)
EASY POWER XL D	37 kW (50 HP)	1000 bar (14500 psi)	38 l/min (10,8 USgpm) at 500 bar (7250 psi) 19 l/min (5,0 USgpm) at 1000 bar (14500 psi)
PTC 1 D HOT	37 kW (50 HP)	500 bar (7250 psi)	38 l/min (10,8 USgpm) at 400 bar (5800 psi) 30 l/min (7,9 USgpm) at 500 bar (7250 psi)
PTC 1 D	37 kW (50 HP)	1000 bar (14500 psi)	70 l/min (18,4 USgpm) at 280 bar (4060 psi) 19 l/min (5,0 USgpm) at 1000 bar (14500 psi)
PTC 2 D	45 kW (61 HP)	2100 bar (30450 psi)	232 l/min (61,2 USgpm) at 100 bar (1450 psi) 11 l/min (2,9 USgpm) at 2100 bar (30450 psi)

HIGH PRESSURE UNITS > 45 kW

UNITS GENERAL FEATURES

High-pressure hydrodynamic units for intensive professional use, suitable for all typical water-jetting applications (hydro-demolition, sandblasting, paint stripping) and industrial cleaning.
Extreme compactness and sturdiness, combined with the wide variety of available configurations, makes these machines ideal for use in industries, construction sites and offshore oil platforms.
The basic unit consists of a motor pump installed on a supporting frame, equipped with electronic adjustment and monitoring systems.
The triplex pump is also equipped with pressure regulation devices, pressure gauge, safety valve and temperature and pressure control sensors.
The frame, made of rustproof painted steel, rests on vibration-damping supports to improve stability and allow stationary mounting or on mobile systems.



Pump

High pressure triplex pump.

Power from 75 to 400 kW

Pressure from 270 to 2800 bar

Flow rate from 13 to 223 l/min

Material: cast iron gear - end with stainless steel head

Direct **engine-pump drive** by means of flexible joint and protective casing

Engine

FPT **Diesel** Electronic Common Rail **engine** with liquid cooling, EPA Tier 4B/Stage IV

Power from 90 to 400 kW, low power consumption

Diesel **tank** dimensioned for continuous operation of about 8 hours

Control Panel

Touch screen **control panel** for engine and pump management, equipped with pump pressure and motor RPM controls, alarms and diagnostics.

Pump alarms: low water pressure, high pump oil temperature, low pump oil pressure, low air pressure.

Booster pump for maximum high-pressure pump performance

Double filtration, coarse at tank inlet and fine at pump inlet

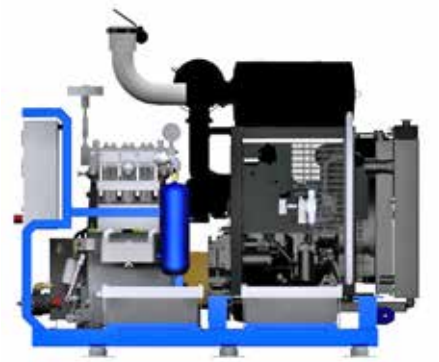
Versions with **electric motor:** high efficiency three-phase AC electric motor IE3.

Water tank

Large stainless steel **tank** integrated in the machine, compensates pressure variations in the water mains, prevents air bubbles in the water circuit and provides the unit with good autonomy.

CONFIGURATIONS

PTC high pressure units are available in five different configurations to suit any application or the customer's specific requirements in any application area.



POWER PACK (75-210 kW)

Extremely compact base unit mounted on a steel frame with vibration-damping mounts, suitable for fixed installation in vehicles, trailers or containers.

Dimension (approx.)
2200x1400x2000 mm

Weight (approx.)
2000 kg

SKID

Compact unit mounted on a steel frame with openings for easy transport with a forklift, designed for stationary use in industrial plants or construction sites with limited space.

Available on request in trolley version with wheels and tow bar.

Dimension (approx.)
3000x1750x2250 mm

Weight (approx.)
2500 kg

TRAILER (PTC 4 and PTC 5 only)

In the trailer configuration, the base unit is mounted on a double-axis trolley made of treated steel, for a maximum total weight of 3.5 tonnes, and covered with a high-strength fibreglass casing equipped with ventilation grilles. Ideal for applications on construction sites where ease of transport is a must.

Dimension (approx.)
4500x2225x2400 mm

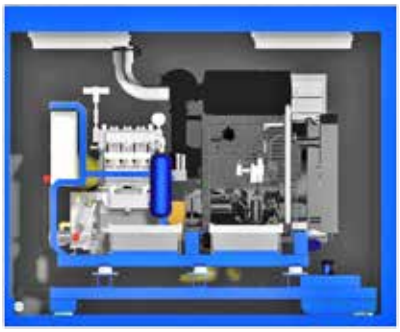
Weight (approx.)
3500 kg

SKID with soundproof cover

Compact unit mounted on a steel frame with openings for easy transport with a forklift, designed for stationary use in industrial plants or construction sites with open spaces. Equipped with a fibreglass casing that protects the unit from any external agents.

Dimension (approx.)
3000x1750x2250 mm

Weight (approx.)
3500 kg



CONTAINER

The interior fittings of containers represent a customised solution for special needs linked in particular to their use on offshore platforms.

Dimension (approx.)
2991x2438x2591 mm

Weight (approx.)
3500 kg

PERFORMANCES

ELECTRICAL UNITS

Model	kW (HP)	bar (psi)	l/min (USgpm)
PTC 3 E - 75 kW	75 kW (102 HP)	2800 bar (40610 psi)	283 l/min (74,7 USgpm) at 135 bar (1950 psi)
			12 l/min (3,1 USgpm) at 2800 bar (40610 psi)
PTC 3 E - 90 kW	90 kW (122 HP)	2500 bar (36260 psi)	316 l/min (83,5 USgpm) at 130 bar (1885 psi)
			18 l/min (4,7 USgpm) at 2500 bar (36260 psi)
PTC 4 E - 110 kW	110 kW (150 HP)	2800 bar (40610 psi)	454 l/min (120,0 USgpm) at 125 bar (1815 psi)
			22 l/min (5,8 USgpm) at 2800 bar (40610 psi)
PTC 4 E - 130 kW	130 kW (177 HP)	2500 bar (36260 psi)	496 l/min (131,0 USgpm) at 135 bar (1960 psi)
			27 l/min (7,1 USgpm) at 2500 bar (36260 psi)
PTC 5 E	160 kW (217 HP)	2800 bar (40610 psi)	522 l/min (138,0 USgpm) at 160 bar (2320 psi)
			26 l/min (6,8 USgpm) at 2800 bar (40610 psi)
PTC 6 E	250 kW (340 HP)	2800 bar (40610 psi)	1145 l/min (302,0 USgpm) at 115 bar (1670 psi)
			41 l/min (10,8 USgpm) at 2800 bar (40610 psi)

DIESEL UNITS

Model	kW (HP)	bar (psi)	l/min (USgpm)
PTC 3 D - 75 kW	75 kW (102 HP)	2800 bar (40610 psi)	283 l/min (74,7 USgpm) at 135 bar (1950 psi)
			13 l/min (3,4 USgpm) at 2800 bar (40610 psi)
PTC 3 D - 90 kW	90 kW (122 HP)	2500 bar (36260 psi)	316 l/min (83,5 USgpm) at 130 bar (1885 psi)
			18 l/min (4,7 USgpm) at 2500 bar (36260 psi)
PTC 4 D - 110 kW	110 kW (150 HP)	2800 bar (40610 psi)	454 l/min (120,0 USgpm) at 125 bar (1815 psi)
			22 l/min (5,8 USgpm) at 2800 bar (40610 psi)
PTC 4 D - 130 kW	130 kW (177 HP)	2500 bar (36260 psi)	496 l/min (131,0 USgpm) at 135 bar (1960 psi)
			27 l/min (7,1 USgpm) at 2500 bar (36260 psi)
PTC 5 D	160 kW (217 HP)	2800 bar (40610 psi)	522 l/min (138,0 USgpm) at 160 bar (2320 psi)
			26 l/min (6,8 USgpm) at 2800 bar (40610 psi)
PTC 6 D	250 kW (340 HP)	2800 bar (40610 psi)	1145 l/min (302,0 USgpm) at 115 bar (1670 psi)
			41 l/min (10,8 USgpm) at 2800 bar (40610 psi)
PTC 7 D - 350 kW	350 kW (476 HP)	2500 bar (36260 psi)	1310 l/min (346,0 USgpm) at 140 bar (2030 psi)
			70 l/min (18,4 USgpm) at 2500 bar (36260 psi)
PTC 7 D - 400 kW	400 kW (544 HP)	2500 bar (36260 psi)	1310 l/min (346,0 USgpm) at 155 bar (2250 psi)
			83 l/min (21,9 USgpm) at 2500 bar (36260 psi)

WORKING TOOLS

DRY SHUT GUN

	Dry shut gun with L=1m lance, hand holder and round (or flat) jet nozzle. Flex hose L=20m and respective fittings.	≤ 1000 bar ≤ 15 kpsi

DUMP GUN

	Dump gun with L=1m lance, hand holder and round (or flat) jet nozzle. Flex hose L=20m and respective fittings	> 1000 bar > 15 kpsi

ELECTRONIC GUN for WJAC

	Spray gun type free flux with electronic command (only for UHP units), L=1m lance, hand holder, round (or flat) jet nozzle and 5m electrical cable. Flex hose L=20m and respective fittings, 100m extension el. cable.	>1500 bar >20 kpsi

PNEUMATIC ROTATING LANCE with TUMBLE BOX

	Pneumatic rotating lance, pneumatic handle, nozzles head and pn. hose. HP Flex hose L=20m and respective fittings. Air operated flow control valve (tumble box). Available for multi gun ops.	>1500 bar >20 kpsi

PN GUN with TUMBLE BOX

	Special gun with pneumatic feedback, L=1m lance, hand holder and round (or flat) jet nozzle. Flex hose L=5m and respective fittings. Air operated flow control valve (tumble box). Available for multi gun ops.	>1500 bar >20 kpsi

U/W DUMP GUN

	U/W Dump gun with L=1m lance, hand holder and round (or flat) jet nozzle. Flex hose L=20m and respective fittings

WORKING TOOLS

DRY SHUT FOOT VALVE

	Dry shut foot valve. Flex hose L=20m and respective fittings. Thermoplastic hose max 1000bar (Spir star 6/2). Self propelling nozzle.

DUMP FOOT VALVE

	Dump foot valve. Flex hose L=20m and respective fittings. Thermoplastic hose max 1000 bar (Spir star 6/2). Self propelling nozzle.	> 1000 bar > 15 kpsi

PROTECTIVE CLOTHING

	Protective clothing for waterjetting (TST). Helmet, apron, gaiters (above 500 bar), hand protections.

HOT WATER MOBILE GENERATOR

	Mobile hot water generator 500 bar. Only for EasyPower XL E and EasyPower XL D.

SCIMITAR 22K - 40K SELF-ROTARY WATERBLASTING TOOLS

	Scimitar are fundamental tools for waterblasting featuring an efficient speed control system, adjustable thanks to a magnetic brake with easy-rotation of the handle grip. Specially developed for surface treatment, they can be mounted on gun lance or automatized systems. These lightweight tools are particularly efficient for surface preparation. Scimitar are easy-to-use and easy-to-maintain tools, suitable for many different working areas.

APPLICATION SECTORS

bar (psi)
200 - 2.800
(3.000 - 40.000)

ALLUMINIUM AND STEEL MILLS

Hardened bauxite dust on mills, filters, floors, tanks, sumps and sewers; water scale, coke, ore and lime in heat exchangers, flues, boilers, open hearths, furnaces, chutes and hoppers, descaling billets and water hydraulics; mill scale, tight rust and weld slag from vessels, tanks and pipes.

bar (psi)
700 - 2.800
(10.000 - 40.000)

AUTOMOBILISTIC INDUSTRY

Paint from booths, machinery, gratings, conveyers, dollies and skids.

bar (psi)
700 - 1.400
(10.000 - 20.000)

AVIATION

Expansion joints, grease, rubber and hydraulic fluids on airport runways.

bar (psi)
200 - 1.500
(3.000 - 22.000)

BREWERIES AND DISTILLERIES

Yeast, sediments and fermentation residues on vats, pipes and facilities; cleaning of boilers tubes, vats and pipe lines.

bar (psi)
200 - 1.000
(3.000 - 15.000)

CEMENT PLANTS

Remove dirt, grease and product build up on grates, floors, external piping, bins, walls, hopper cars and handling equipment; cooler hearths and pre-heater columns, bins, hopper cars, floors, rotary kilns and walls.

APPLICATION SECTORS

CHEMICAL PROCESSING

Chemicals from boiler tubes, tanks, valves, evaporators, heat exchangers, tube bundles, pipes, vessels, reactors and facilities.

bar (psi)
350 - 2.800
(5.000 - 40.000)

CONSTRUCTION AND RENOVATION

Asphalt distributors, mixers, tar cookers and pavers; asphalt, dirt, concrete, mortar, tar, grease, mastic and clay on vehicles, mixer trucks and machinery; canals, lifts, dams and runways; cleaning of natural stone walling, removal of joint materials, coats, damaged or corroded coatings from walls and floors, roughening of concrete and stone surfaces.

bar (psi)
200 - 2.800
(3.000 - 40.000)

FOOD AND BEVERAGES PROCESSING

Fats, oils, dirt and dough, food residues from vats, ovens, mixers, conveyors and facilities; cleaning of cold storage facilities, slaughter-houses, fish and meat butchers, sugar processing plants, bottling plants, food cutting, evaporators, milk tanks, centralised dairy systems, ultra-filtration by reverse osmosis; water jet cutting.

bar (psi)
200 - 1.000
(3.000 - 15.000)

FOUNDRIES

Removal of deposits, metal oxidation, ceramic and sand core materials from castings, furnaces and paddles.

bar (psi)
100 - 700
(1.500 - 10.000)

HYDRODEMOLITION

Concrete cement cutting, reclamation and wet sandblasting of tunnels also using special robots; concrete surface hydro-ripping for large infrastructure, dams, viaducts, homes and offices; surface preparation.

bar (psi)
1.000 - 2.800
(15.000 - 40.000)

APPLICATION SECTORS

bar (psi)
350 - 2.800
(5.000 - 40.000)

MARINE

Removal of marine growth, barnacles, loose paint and rust on ship hulls, docks, ballasts, platform, condensers, floating draydocks, anchor chains, storage tanks and boilers; underwater cleaning of pipes and drilling platforms, of barncles and marine growth to “white metal”; coatings removal prior to repainting; draining of sludge and sediments from cargo holds, ballast tanks and double bottoms; surface preparation.

bar (psi)
700 - 2.800
(10.000 - 40.000)

MILITARY

Airport cleaning, nuclear decontamination, cleaning navy applications, wheel and tracked vehicles, rehabilitation and/or decommissioning of concrete installations, cold cutting of ammunition and armoured tanks in decommissioned sites.

bar (psi)
100 - 500
(1.500 - 7.000)

MINING

Pre-maintenance cleaning of dumpers, drag lines, underground haulage lines and shafts; aids in the recovery of ore; unclog plant machinery due to deposits of coal, rock dust, mud or oils.

bar (psi)
200 - 500
(3.000 - 7.000)

MUNICIPALITIES

Reservoirs and containers, sewers and drain pipes, sanitation equipment and refuse vehicles; insulators, boiler tubes, vehicles and machinery; surface preparation.

bar (psi)
200 - 2.800
(3.000 - 40.000)

OLIFIELDS

Paraffin and crude residues from platforms and storage tanks; removal of drilling mud and cement from drill pipes; “cold” cutting.

APPLICATION SECTORS

bar (psi)
350 - 2.800
(5.000 - 40.000)

PETROCHEMICAL PROCESSING AND REFINERIES

Algae, carbon, scum, soft polymers and asbestos, wax, paraffin, grease and crude residues, water scale, calcium sulphate, chlorides, hard polymers, iron oxide, coke, hard carbon, PVC and PVA in heat exchangers, re-boilers, tanks, reactors, pipes, cooling towers and facilities; “cold” cutting.

bar (psi)
500 - 2.800
(7.000 - 40.000)

PHARMACEUTICAL

Cleaning of chemicals (liquid and solid) from pipes, kettles, mixers, tubes, heat exchangers, reactors, filters and evaporators.

bar (psi)
100- 700
(1.500 - 10.000)

PIPES (INDUSTRIAL)

Removal of rust and varnish prior to recoating, dope and oil from pipe threads for inspection, drilling mud and debris in various kinds of pipes (internal); manual or fully automatic test units equipped with plunger pumps for filling and test processes.

bar (psi)
700 - 2.800
(10.000 - 40.000)

POWER STATIONS

Nuclear decontamination of fuel capsules, ‘U’ tube exchangers, flash from pre-heater tubes, hand tools and equipment.

bar (psi)
400 - 7.000
(6.000 - 100.000)

PRESSURE TESTING

Manual or fully automatic test benches up to 7.000 bar used for pressure testing of valves, tubings, hoses, fittings and complete systems.

APPLICATION SECTORS

PULP & PAPER

Cleaning of grease, oil, pitch, dirt and wood pulp from heat exchangers, tubes, foundries, press sections of paper machines, suction rolls, stock chests and lines; water jet cutting.

bar (psi)
350 - 700
(5.000 - 10.000)

RAILWAYS

Gypsum, potash, cement, lime in hopper cars; removing grease, dirt and deposits from trucks, undercarriages and tank cars; removal of leaf mulch from railway lines.

bar (psi)
350 - 2.800
(5.000 - 40.000)

RUBBER PROCESSING

Latex, SBR and water scale in reactors, storage tanks, heat exchangers, tubing, pipes and facilities.

bar (psi)
600 - 2.800
(9.000 - 40.000)

TRAFFIC AND TRANSPORTS

Removal of road markings, cleaning of railway carriages and buses, renovation of concrete surfaces; cleaning of grease, vegetation, mud, tar, cement or asphalt on vehicles and machinery; graffiti, stains, tar and mastics on concrete bridges and overpasses, removal of expansion joints and paint strips; unblock culverts on bridges and clean up overspill.

bar (psi)
350 - 1.000
(5.000 - 15.000)

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PTC
High Pressure Jetting

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