

**OWNER'S MANUAL
SPARE PARTS &
MAINTENANCE
ACCESSORIES**

Caretech HPC 500
Water Blaster 500 Bar
3x440 / 60Hz



MARINE  CARE

Technical data

Model	Caretech HPC 500-II
Code No	705060
Voltage & frequency	3x440V / 60Hz
Motor power rating	18.5kW
Operating Pressure	150-500 bar
Admissible overpressure	550 bar
Water flow (maximum)	18 lpm
Maximum water input temperature	60 °C
Min. / max. water inlet pressure	2-8 bar
Minimum inlet hose size	3/4"
Nozzle size	034
Pump oil quantity	0.9Kg (1 litre)
Oil grade	SAE 15W40
Dimension	95 x 70 x 80
Weight	165Kg

Machine's I.D.

Serial Number:

Important

**Change the oil of the pump after the first 50 operating hours!
Use fully synthetic oil, grade SAE 15W40, quantity 1 liter.**

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USER'S MANUAL CARETECH HPC 500

Introduction

Thank you for purchasing the **Caretech HPC 500** high pressure unit!

This manual or part of it should not be reproduced without the written approval of the manufacturer.

Every effort has been made to ensure that the information in this manual is both accurate and current. However, we reserve the right to change, alter or otherwise improve the product and its documentation at any time without prior notice.

Manufacturer's warranty is limited to repair or replacement of faulty parts at the time of manufacture.

Warning

Please read carefully this manual before starting the machine for the first time and keep this manual in a safe place. We cannot be held responsible for damages or malfunctions due to not reading this manual.

Safety symbols

The below symbols used in this manual indicate actions that should not be ignored, as they may result in human injuries or damages to the machine.



Risk for persons



Risk for the product



Risk due to electric power



Important helpful information

Safety precautions



This machine should be operated by qualified adult people only. Never let children or people who are not trained for its use, to run the machine.

The machine should be used according to relevant national safety rules.



Always check and ensure that the machine and its accessories (hoses, cable, fittings, gun, nozzle etc.) are in good working condition before start-up.



If during operation you observe any leakage, abnormal noise or any other malfunction, stop the machine and get it serviced.

You should not attempt to repair and reuse damaged high pressure hoses. Replace with original hoses only.



Never direct the spray jet at yourself, other people or animals, at the machine itself and never attempt to clean your clothes or footwear with the machine.

Keep bystanders away from the working area.

Always use eye protection, ear protection, adequate protective clothing and footwear.



Use the correct type of electric plug to a corresponding socket with ground earth wiring.

Ensure you connect the machine to the correct main supply voltage, as specified by the manufacturer.

Use only watertight cable, plugs and sockets. Any electrical installation should be made only by a qualified electrician.

Always ensure the machine is placed in a stable position and cannot move.



Do not operate the machine without water or with insufficient quantity of water.

Do not make modifications and service regularly the machine as described in this manual.



Use only original spare parts for maintaining the machine. Repairs should be done only by qualified personnel.

After works, the machine should be stored and secured against unauthorised use.

Standard equipment, quick overview

The machine comprises of the following standard equipment:

- Stainless steel frame with Stainless Steel top cover and handle
- 10mtr watertight cable H07RN-F, oil resistant
- 20mtr high pressure outlet hose, with couplings

Electric motor S1 duty, class F with thermal protection	
High pressure pump with nickel plated head	
Unloader valve, adjustable 150-500 bar	
Water inlet filter, washable	
Electric control panel complete	
Water inlet quick coupling with barb hose	
Waterless cut-off protection switch	
Working hours counter	
Pressure gauge 1000 bar	
Thermo-protection valve	
Spray gun with safety latch	
Overpressure bursting disc	
1000mm single lance with nozzle quick coupling	
High turbo nozzle / rotating nozzle	

Operating the machine

Check points before start-up

- Electrical mains voltage/frequency should be the same with the electrical data of the machine
- General condition of the machine and accessories (cable, power & water connectors, hoses, gun, lance, nozzle etc.)
- Water mains supply should be sufficient (pressure 2-8 bar, min. flow 25 lpm)
- Machine is placed horizontally; it is stable and cannot move
- The oil level in the pump is correct and oil is not milky

Connections

Water inlet

- Use a clean hose of 3/4" (minimum) diameter and rinse it thoroughly before connecting it to the machine. Attach -using a clip- the provided hose plug (barb) to the hose and then fit it to the inlet quick coupling of the machine. You should not use a very long water inlet hose (maximum 10mtr).



In case you connect the machine to potable water mains supply, you should use a prevention backflow valve, as per EN 1717.



Insufficient water supply can cause heavy damage to the pump and/or electric components.

In case the feed water is quite dirty, we recommend the use of an additional water filter.

High pressure water outlet

- Connect the high pressure hose to the outlet of the machine. You should not use tools to tighten the couplings.
- Connect the spray gun with the lance, equipped with a nozzle.

Electric power

- Install a corresponding to your installation electric plug (3+1 x 32Amps or 3+1 x 63A) at the end of the power supply cable. The machine comes with 3phases + earth cable.



Use the correct dimension of electric cable wire in case you connect an extension cable. For cable extension lengths up to 50mtr, the cross section of the wire to be used is 6mm².

Working with the machine

- Open the feed water and press the trigger of the gun for minimum 30 seconds (subject to water hose inlet and hose length) to release air from the circuit.
- Connect the electric cable plug to the power source socket (should be an earth wired one), after which the **POWER** indicator on the control panel will lit.
- Twist slightly clockwise to unlock the **EMERGENCY STOP** button.
- Push the **START** button on the control panel and the motor will now start.
- Release the **safety latch** of the spray gun, and you are now ready to work.



Be aware of torque and recoil. Ensure stable foothold before pressing the trigger of the gun.



Make sure the feed water pressure is constantly over 1.5 bar, as otherwise the machine will trip and the corresponding indicator (**TRIP**) on the control panel will lit.



When the trigger of the gun is released, the water will circulate in by-pass mode inside the pump. After some time in this working condition, if the water temperature exceeds 60 °C the thermo-protection valve will open releasing hot water. **Do not leave the machine running in idle mode for more than 5 minutes.**



During operation observe for eventual leaks at the pump, hoses, connections and other components of the hydraulic circuit. Also observe if there are any pressure variations or any abnormal noise from the motor or pump.

In such cases, you should stop the machine and eliminate the cause. Consult **Troubleshooting guide** (see page 11).

Auto shut-off

The machine is equipped with automatic shut off sensor. If the machine works in by-pass mode continuously for more than 3 minutes, then the machine will automatically stop. You would need to press the **START** button at the control panel for re-starting the machine.



In case there are leakages at the high pressure circuit (i.e. at fittings, hoses, gun etc) then the auto shut-off sensor will not work properly and therefore the machine will not stop automatically.

Shut down after works

- Press the **STOP** button, and then press the **EMERGENCY STOP** button as well.
- Disconnect the machine's electric cable from the electric power source.

- Press the trigger of the gun to de-pressurize the high pressure circuit and then lock the safety latch of the trigger.
- Close the feed water tap and disconnect the inlet hose from the machine.
- Release remained water at the high pressure hoses, reel up and store carefully.
- Store the machine and its accessories in a safe, frost protected and dry area.

Inspection and Maintenance

Maintenance schedule

	Every time, before the use of the machine	After the first 50 hours of operation	Every 200 hours of operation, or, every six months
Water Filter (subject to water quality)	✓		
Oil level at the pump	✓		
Visual inspection of the machine and its equipment/accessories (hoses, gun, lance, fittings, electrical components, other equipment)	✓		
Inspection for proper air ventilation from the back of the motor	✓		
Oil renewal of the pump crankcase (SAE 15W40, fully synthetic)		✓	✓
Unloader valve lubrication			✓



Disposal of the oil of the pump crankcase, disposal of any parts and components of the machine should be done according to regulations



Oil of pump crankcase: Fully synthetic, SAE 15W40
Quantity: ~0.9Kg (1 ltr)

Flexible coupling connecting the pump with the motor should be checked annually

Troubleshooting

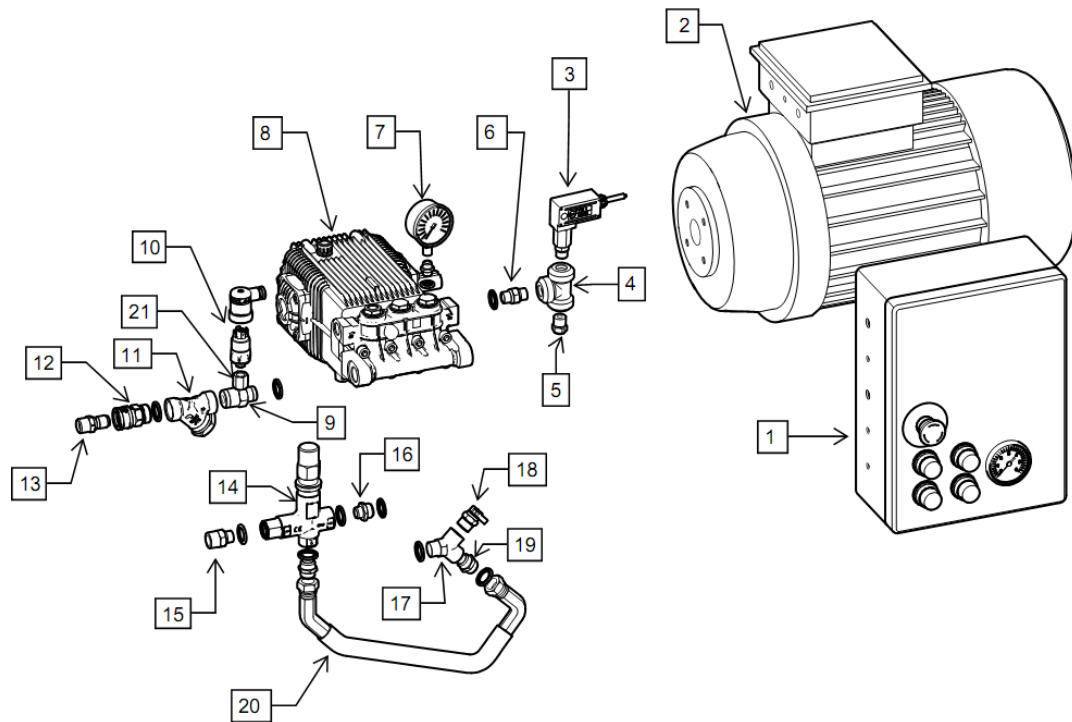
Malfunction	Possible cause	Repair
The machine does not start	The machine is not connected to the mains power supply	Check the installation and connections
	Burn fuse	Replace. If the fuses keep burning, ask for an electrician
	Activated waterless cut-off switch (TRIP indicator should lit)	Confirm adequate quantity of water
	Activated Thermal overload relay inside the control panel (TRIP indicator should lit)	Press the RESET button of the thermal overload relay
The machine makes abnormal noise	Phase is missing	Check the installation is correct
	Low oil level in the pump crankcase	Fill in
	Motor bearings or pump bearings worn	Replace
Pressure drop	Pump sucks air	Gaskets to be checked and replaced
	Insufficient water flow	Eliminate
	Clogged water filter	Clean or replace
	Nozzle worn or wrong size	Replace
	Worn gaskets on Unloader valve	Replace
	Air inside the piping	Eliminate
Leakages on the hydraulic system	Eliminate	
Pressure fluctuates, or, hose vibrates	Insufficient water flow	Eliminate
	Nozzle clogged	Clean or replace
	Dirt on pump valves	Clean or replace
	Dirt on Unloader valve	Clean or repair

➤ ***If the problem insists, ask for assistance from the manufacturer***

SPARE PARTS LIST

Pos	Part No	Description	Pos	Part No	Description
1	301430	Disc	33	301486	Screw
2	301431	Ring	34	301148	Washer
3	301432	O-ring	35	301423	Flange
4	301433	Gasket	36	301421	O-ring
5	301434	Nut	37	301410	Bearing
6	301405	Plunger	38	301731	Rod assy
7	301722	Valve plug	39	301493	Pin
8	301715	Back up ring	40	301732	Connecting rod
9	301716	O-ring	42	301733	Water seal LP
10	301723	Discharge valve	43	301734	Water seal HP
11	301716	O-ring	44	301459	Washer
12	301724	Ring	45	600061	Hex screw
13	301725	Suction valve	46	301148	Washer
14	301176	O-ring	47	301735	Plug
15	301498	Ring	48	301736	Crankcase
16	301727	Manifold	49	301146	Plug
17	301427	Washer	50	301537	Gasket
18	301428	Screw	51	301419	Oil dipstick
19	301413	O-ring	52	301418	Gasket
20	301416	Hex screw	53	301820	Back cover
21	301462	Washer	54	600062	Hex screw
22	-	Plug (not installed)	55	301420	Back cover gasket
23	-	Gasket (not installed)	56	301738	Shaft
24	301456	Spacer	57	301531	Key
25	301429	O-ring	58	301410	Bearing
26	301146	Plug	59	301421	O-ring
27	101105	Bonded washer	60	301530	Shim
28	301728	Head	61	301422	Flange
29	301729	Ring	62	301417	Oil seal
30	301730	Ring	63	301436	Screw
31/41	301443	O-ring	64	301148	Washer
32	301425	Oil seal			
7A	301657	Valve plug threaded for manometer (not illustrated)			

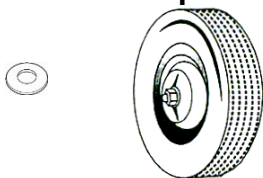
Main assembly



Pos.	Code	Description
1	101280	Electrical control panel
2	101661	Motor
3	101126	Auto shut off switch control
4	101352	Tee sst
5	101286	Bursting disc assembly
6	101351	Nipple
7	101625	Pressure gauge 1000bar
8	101765	HP Pump
9	101268	Reducing nipple, 3 way
10	101287	Dry running protection switch

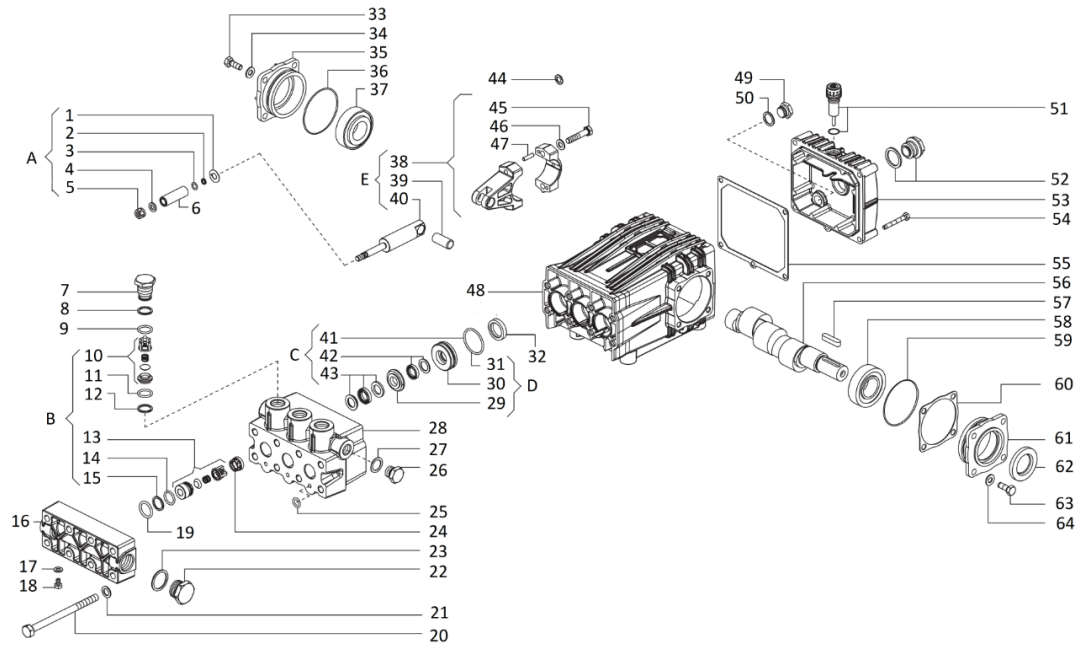
Pos.	Code	Description
11	101266	Water filter
12	101200	Quick coupling
13	101172	Hose barb
14	101110	Unloader valve
15	101297	Reducing outlet nipple
16	101298	Reducing nipple
17	101196	Y-Fitting
18	101129	Thermo-valve
19	101249	Nipple
20	101261	By-pass hose
21	101272	Adaptor

Miscellaneous parts



Code	Description	Qty
101014	Mos washer 1/4	1
101105	Mos washer 3/8	2
101109	Mos washer 1/2	2
301161	O-ring for high pressure hoses	2
101244	Wheel, solid rubber with cover	4

High Pressure Pump







High pressure pump - Spare parts list

Pos	Part No	Description	Pos	Part No	Description
1	301430	Disc	33	301486	Screw
2	301431	Ring	34	301148	Washer
3	301432	O-ring	35	301423	Flange
4	301433	Gasket	36	301421	O-ring
5	301434	Nut	37	301410	Bearing
6	301405	Plunger	38	301731	Rod assy
7	301722	Valve plug	39	301493	Pin
8	301715	Back up ring	40	301732	Connecting rod
9	301716	O-ring	42	301733	Water seal LP
10	301723	Discharge valve	43	301734	Water seal HP
11	301716	O-ring	44	301459	Washer
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14	301176	O-ring	47	301735	Plug
15	301498	Ring	48	301736	Crankcase
16	301727	Manifold	49	301146	Plug
17	301427	Washer	50	301537	Gasket
18	301428	Screw	51	301419	Oil dipstick
19	301413	O-ring	52	301418	Gasket
20	301416	Hex screw	53	301820	Back cover
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22	-	Plug (not installed)	55	301420	Back cover gasket
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28	301728	Head	61	301422	Flange
29	301729	Ring	62	301417	Oil seal
30	301730	Ring	63	301436	Screw
31/41	301443	O-ring	64	301148	Washer
32	301425	Oil seal			
7A	301657	Valve plug threaded	>	>	for manometer (not illustrated)

PUMP REPAIR KIT

Repair Kit	Pos	Part No	Description
A Plunger Kit #301404	1	301430	Disc
	2	301431	Ring
	3	301432	O-ring
	4	301433	Gasket
	5	301434	Nut
B Valves Kit #301629	10	301723	Discharge valve
	11	301716	O-ring
	12	301724	Ring
	13	301725	Suction valve
	14	301176	O-ring
	15	301498	Ring
C Water seals Kit #301414	31/41	301443	O-ring
	42	301733	Water seal LP
	43	301734	Water seal HP
D Back up rings Kit #301403	29	301729	Ring
	30	301730	Ring
	31/41	301443	O-ring
E Connecting rod Kit #301637	38	301731	Rod assembly
	39	301493	Pin
	40	301732	Connecting rod

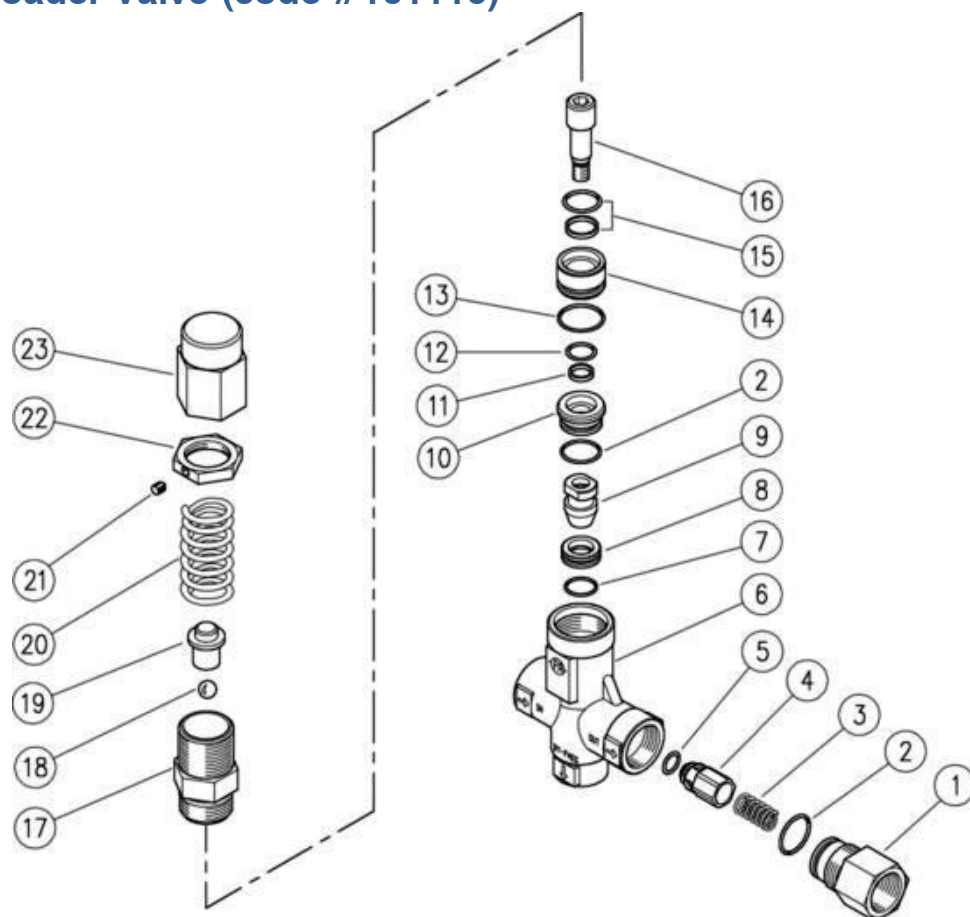
Symbols

C - Tightening torque tolerance 0-10%,  - Screw with LOXEAL 55-14,  - Lubricate with grease Molykote PG54,  - The thread lock should only be placed on the nut, not on the screw prior to assembly,  - Tighten by hand, do not use screwdrivers to avoid breakage of the valves

Oil

Fully Synthetic, SAE 15W40, ~1ltr (0.9Kg)

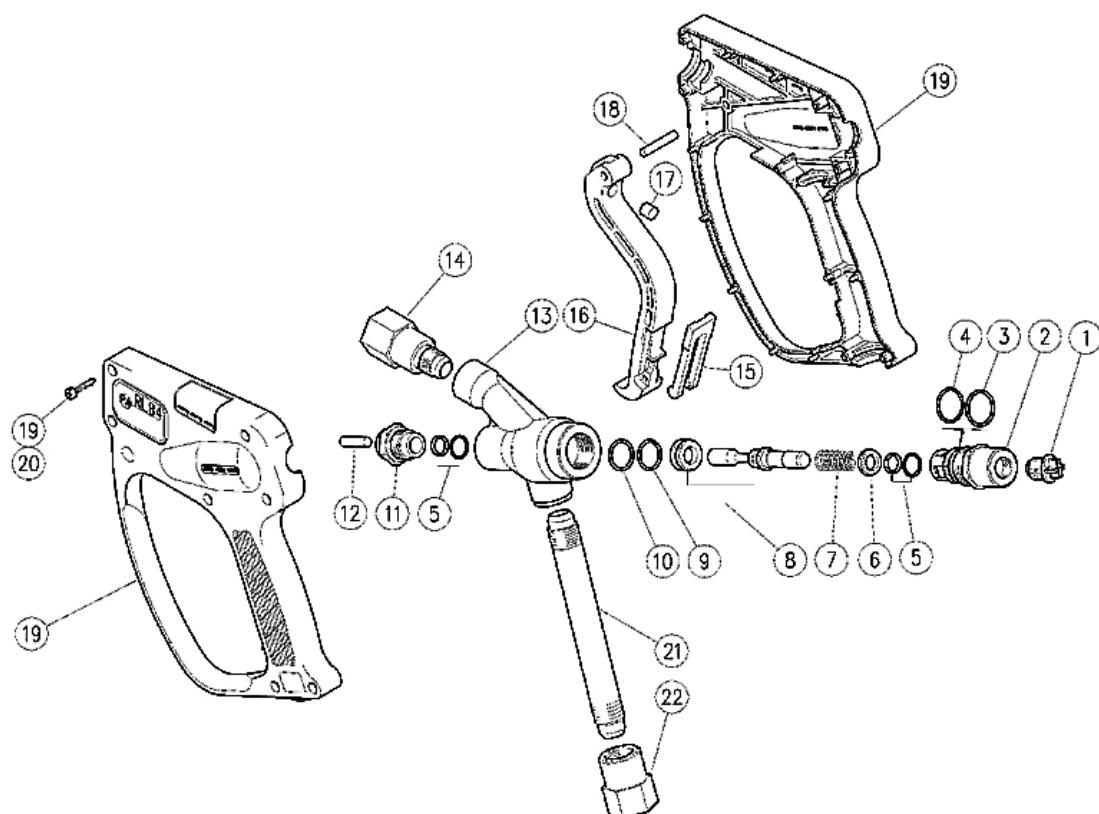
Unloader Valve (code #101110)



Pos.	Code	Description	Qty	KIT K1
1	301127	Shutter coupl. 1/2F Bsp Sst	1	
2	301196	O-ring 1.78x17.17mm Ni 85	2	■
3	301128	Spring Sst	1	
4	301129	Shutter pin Sst	1	
5	301197	O-ring	1	■
6	301208	Sst body	1	
7	301172	O-ring	1	■
8	301209	Seat Sst	1	■
9	301223	Shutter pin Sst	1	■
10	301012	Spacer ring Sst	1	
11	301224	Back-up ring	1	■
12	301225	O-ring	1	■
13	301226	O-ring	1	■
14	301130	Spacer ring Sst	1	
15	301227	Stem seal + O-ring	1	■
16	301131	Piston Sst	1	
17	301132	Piston holder	1	
18	301013	Ball Sst	1	
19	301133	Spring rest pin	1	
20	301011	Spring Zpl	1	
21	301134	Set screw	1	
22	301010	Ring nut, brass	1	
23	301059	Valve regulating ring nut, brass	1	

K1	301014	Spares Kit, 9x1 pcs
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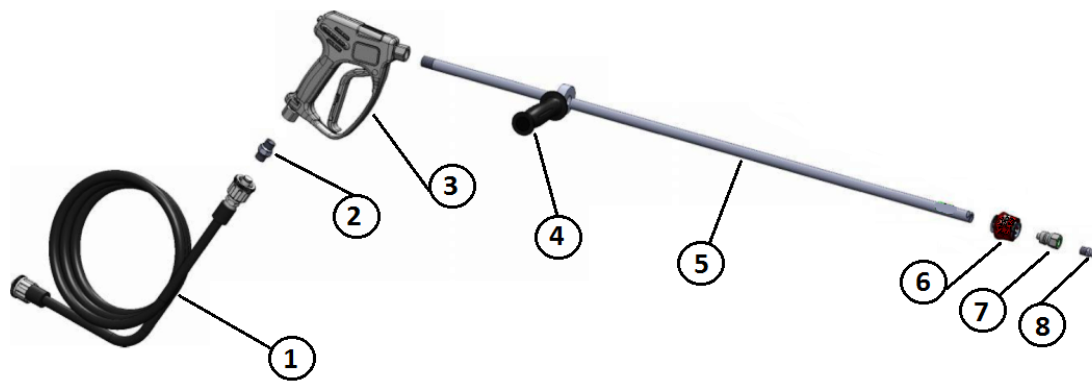
Spray Gun (code #110701)



Pos.	Code	Description	Qty	KIT K1
1	301228	Plug, plastic black	1	
2	101081	Spring holder	1	
3	301173	Back-up ring	1	■
4	301229	O-ring	1	■
5	301174	Stem seal + O-ring	2	■
6	101080	Spacer ring	1	
7	101093	Spring Sst	1	■
8	301330	Piston + seat	1	■
9	301172	O-ring	1	■
10	301175	Back-up ring	1	■
11	101082	Front plug	1	
12	101083	Parallel pin, brass	1	
13	101089	Housing, brass	1	
14	101084	Coupling Stt	1	
15	101085	Safety latch	1	
16	101086	Trigger, black	1	
17	101087	Stop pin	1	
18	101088	Parallel pin, brass	1	
19	301096	Casing kit + screws	1	
20	301331	S/tapping screw Sst	7	
21	101090	Black tube Sst	1	
22	101092	Coupling Sst	1	

K1	101186	Spares Kit for spray gun, 8pcs
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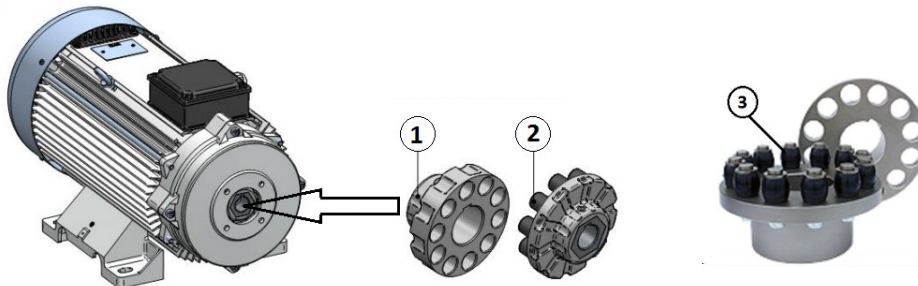
Spraying equipment, standard



Pos.	Code	Description	Qty
1	101175	High pressure hose 10mtr	1
2	101297	Nipple	1
3	110701	Spray gun	1
4	110751	Hand grip	1
5	110991	Lance 1000mm	1
6	101246	Quick release coupling	1
7	101247	Quick release plug	1
8	101189	High pressure flat fan nozzle	1

Motor/pump assembly flexible coupling

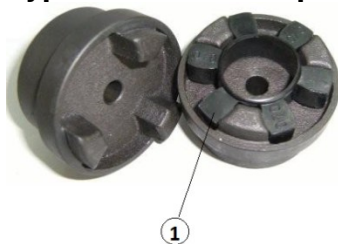
Type E flexible coupling – Code #301099



Flexible coupling (1 – motor side, 2 – Pump side)

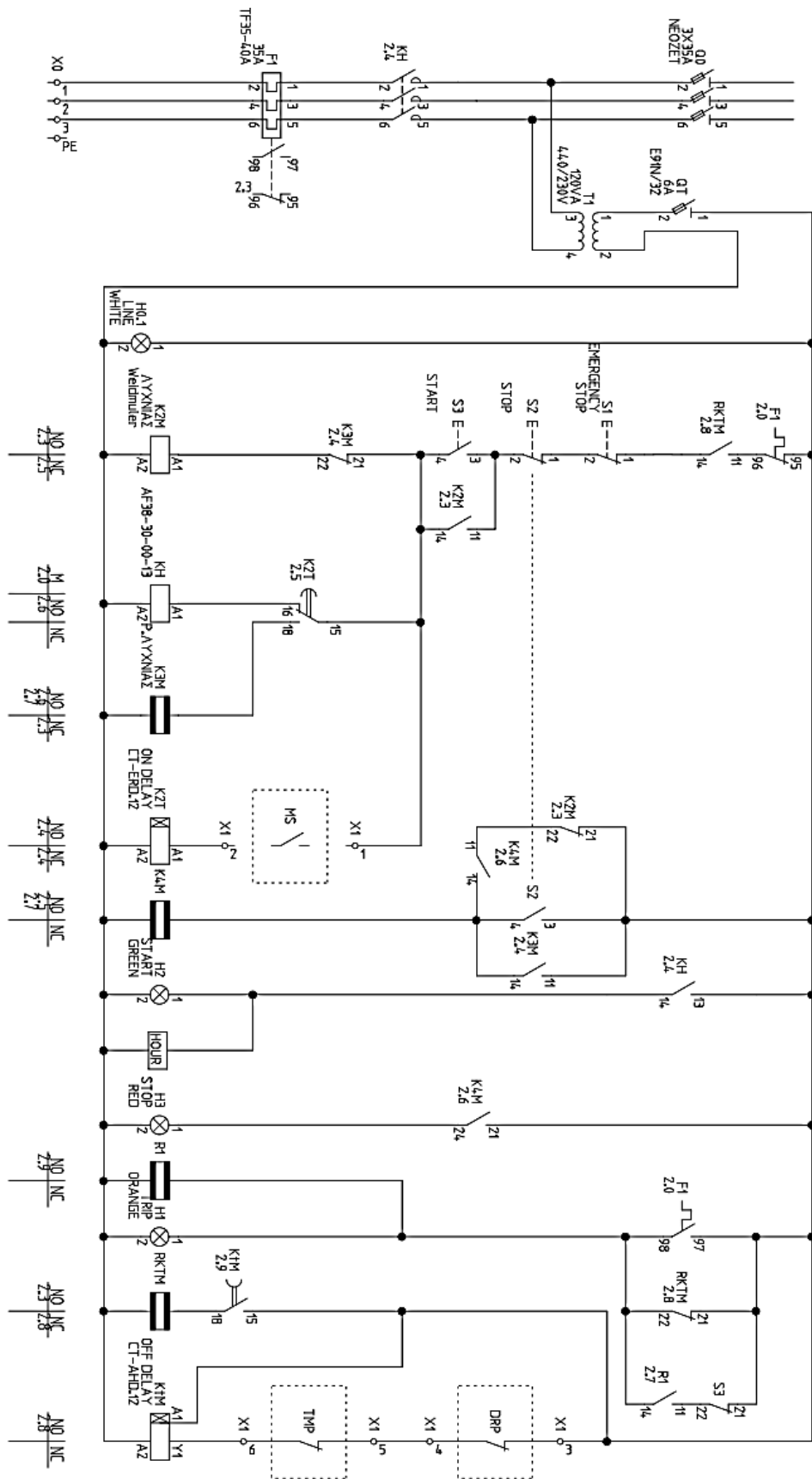
Pos.	Code	Description
3	301332	Elastic bushing replacement set E

Type N flexible coupling – Code #301084



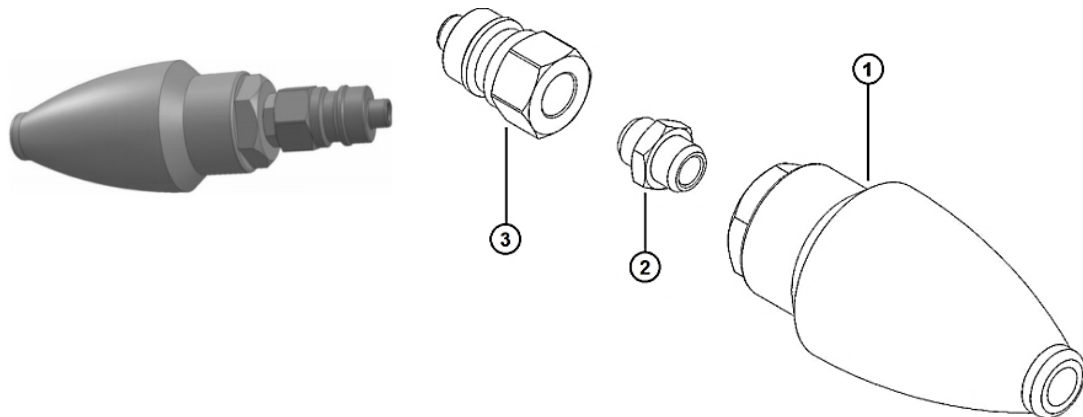
Pos.	Code	Description
1	101512	Elastic spider replacement set N

Electrical circuit diagram



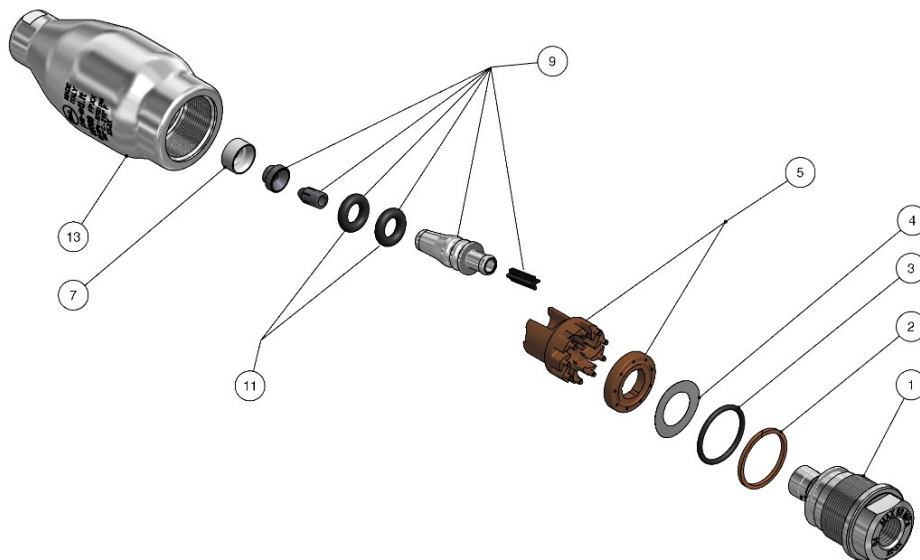
Optional accessories

Turbonozzle Quick Release attachment package (code #201106)



Pos.	Code	Description
1	110995	Turbonozzle 600/35
2	101262	Nipple
3	101247	Quick release plug

Turbonozzle 600/35 (code #110995)



Position	Part No	Description
1	301650	Sst coupling
2	301651	Back-up ring
3	301226	O-ring
4	301508	Washer
5	301140	Turbine
7	301652	Seal
9	301141	Repair Kit
11	301197	O-ring
13	301653	Sst housing

How to operate properly the Turbonozzle

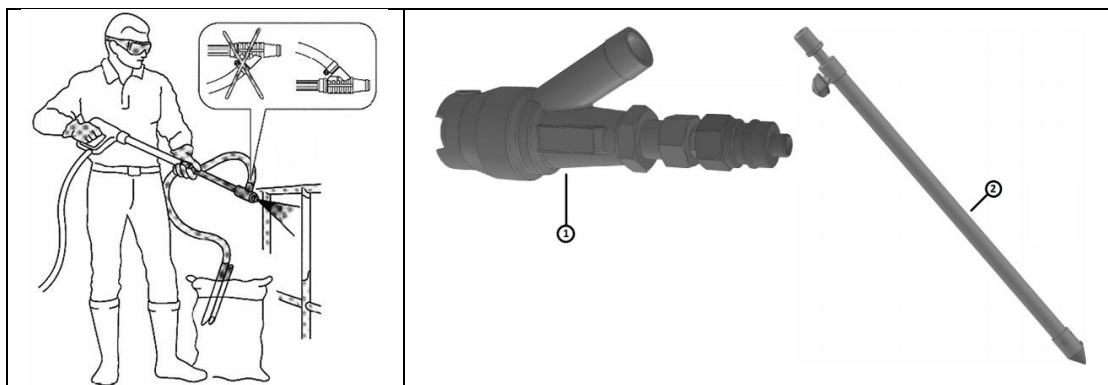


When starting to spray, keep the gun in upright position with nozzle facing down. Press the trigger and the nozzle will start rotating. You can now start moving to horizontal position at area to be blasted.






If you do not follow the above-described procedure then your Turbonozzle might get damaged or wear out prematurely.







Sandblasting QR attachment package (code #201107)



Pos.	Code	Description
1	201107	Sandblasting QR head, complete
2	110904	Sand suction probe

Accessories Quick List

Part No	Description	
101177 (Stock part)	HP EXTENSION HOSE 20MTR, WITH SST FITTINGS	
101178 (Stock part)	CONNECTION NIPPLE FOR HP EXTENSION HOSE	
201128 (Stock part)	TURBONOZZLE QR PACK 600/35	
201107	SANDBLASTING QR PACK 500	
110702	SHOULDER REST FOR SPRAY GUN	
110804	DOUBLE LANCE 500 BAR	
110994	LANCE SHORT 500mm	
110993	LANCE LONG 2000mm	
101054	GEASE FOR SEALS 50ml, WATER RESISTANT	

Part No	Description	
201102 (Stock part)	EXTENSION CABLE 50MTR, W/CONNECTORS IP67	
101357 (Stock part)	WATER INLET HOSE 3/4", 25MTR COIL	
101359	HOSE CLIPS 3/4"	
201152	HOSE REEL 500 BAR, for 50MTR hose	
201113	PIPE CLEANING HOSE 20MTR w/MICRONOZZLE	
110990	FLOOR CLEANER (MAX 280 BAR)	

Declaration of conformity

DECLARATION OF CONFORMITY		CE
Distributor	Marine Care BV	
Address	Oude Maasweg 35 3197 KJ Botlek - Rotterdam The Netherlands Tel : +31(0)10 2950342 E-mail : operations@marinecare.nl	
Declares that the product		
Product name	HIGH PRESSURE CLEANING MACHINE (ELECTRIC OPERATED, COLD WATER)	
Model & Type	Caretech HPC 500, 3X400V/50Hz & 3X400V/60Hz	
<i>conforms to the essential requirements of the directive 2006/42/EC based on the following specifications:</i>		
STANDARDS	EN ISO 13857:2008	
	Safety distances to prevent hazard zones being reached by upper and lower limbs	
	EN ISO 12100-2:2003	
	Safety of machinery. General principles for design. Risk assessment and risk reduction	
	EN 349/93 + A1:2008	
	Safety of machinery - Minimum gaps to avoid crushing of parts to the human body	
Date	July 2016	

Ruled lines for writing.

Date	Service Description	Remarks

Date	Service Description	Remarks

Marine Care BV

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