

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

# **Caretech HPC 500**

**Water Blaster 500 Bar**

3x400 / 50Hz - 3x440 / 60Hz



**MARINE  CARE**

## Technical data

Model	Caretech HPC 500	
Code No	705050	705060
Voltage & frequency	3x400V / 50Hz	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	¾"	
Nozzle size	035	
Pump oil quantity	0.9Kg (1 litre)	
Oil grade	Fully synthetic SAE 75W90	
Dimension	95 x 70 x 80	
Weight	155Kg	

## 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 75W90, quantity 1 liter.**

---

## Contents

Technical data .....	1
Machine's I.D.....	1
Important.....	1
Introduction.....	4
Safety precautions .....	5
Standard equipment, quick overview .....	6
Operating the machine .....	7
Check points before start-up.....	7
Connections .....	7
Water inlet.....	7
High pressure water outlet.....	7
Electric power .....	7
Working with the machine .....	8
Auto shut-off .....	8
Shut down after works.....	8
Inspection and Maintenance.....	9
Maintenance schedule .....	9
Troubleshooting .....	10
Main assembly .....	12
High Pressure Pump.....	13
High pressure pump - Spare parts list.....	14
Unloader Valve .....	16
Spray Gun .....	17
Spraying equipment, standard .....	18
Motor/pump assembly flexible coupling .....	18
Electrical circuit diagram.....	19
Optional accessories .....	20
Turbonozzle Quick Release attachment package.....	20
Turbonozzle 500/35 .....	20
How to operate properly the Turbonozzle .....	21
Sandblasting QR attachment package .....	21
Accessories Quick List.....	22
Declaration of conformity .....	24
Notes .....	25

---

# **USER'S MANUAL CARETECH HPC 500**

---

---

## Introduction

Thank you for purchasing **Caretech HPC 500** heavy duty 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 pressure fan nozzle with quick release plug	

---

## 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 6mm<sup>2</sup>.



---

## 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 75W90, 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 75W90  
Quantity: ~0.9Kg (1 ltr)

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

### Troubleshooting

Malfunction	Possible cause	Repair
<b>The machine does not start</b>	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
<b>The machine makes abnormal noise</b>	Phase is missing	Check the installation is correct
	Low oil level in the pump crankcase	Fill in
	Motor bearings or pump bearings worn	Replace
<b>Pressure drop</b>	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
<b>Pressure fluctuates, or, hose vibrates</b>	Insufficient water flow	Eliminate
	Nozzle clogged	Clean or replace
	Dirt on pump valves	Clean or replace
	Dirt on Unloader valve	Clean or repair

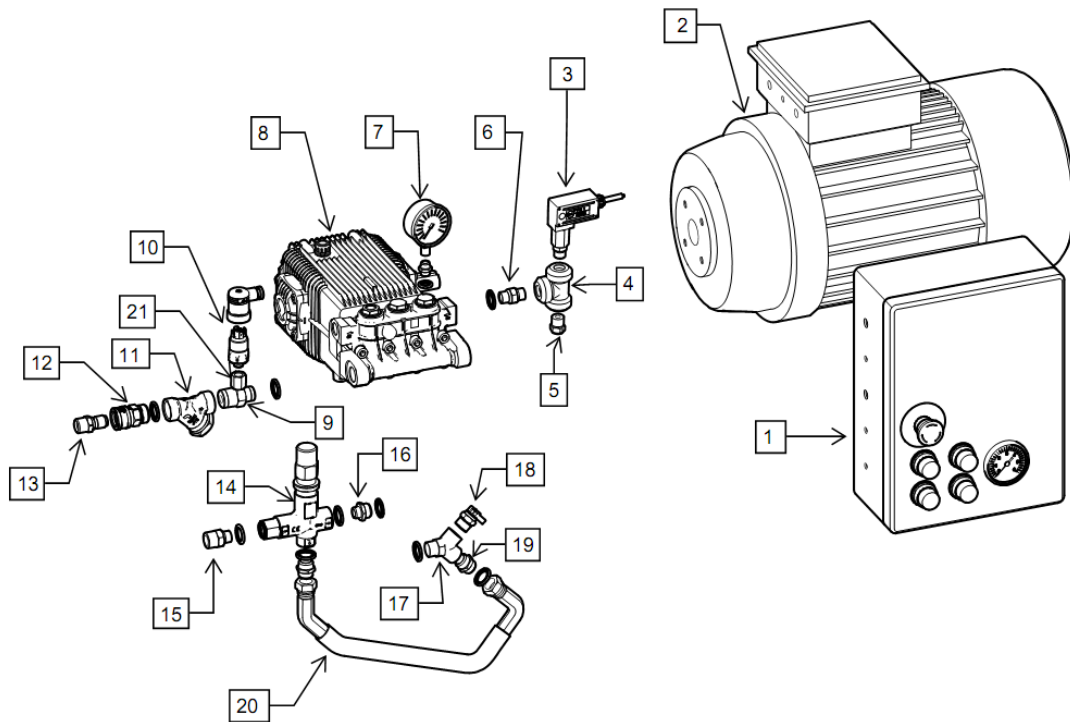
➤ ***If the problem insists, ask for assistance from the manufacturer***

---

# SPARE PARTS LIST

---

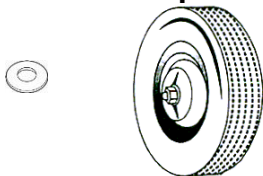
## Main assembly



Pos.	Code	Description
1	101280	Electrical control panel
2	101502	Motor 1450 rpm
	101511	Motor 1720 rpm
3	101126	Auto shut off switch control
4	101352	Tee sst
5	101286	Bursting disc assembly
6	101351	Nipple
7	101350	Pressure gauge 1000bar
8	101420	Pump 1450 rpm
	101419	Pump 1720 rpm
9	101268	Reducing nipple, 3 way
10	101287	Dry running protection switch

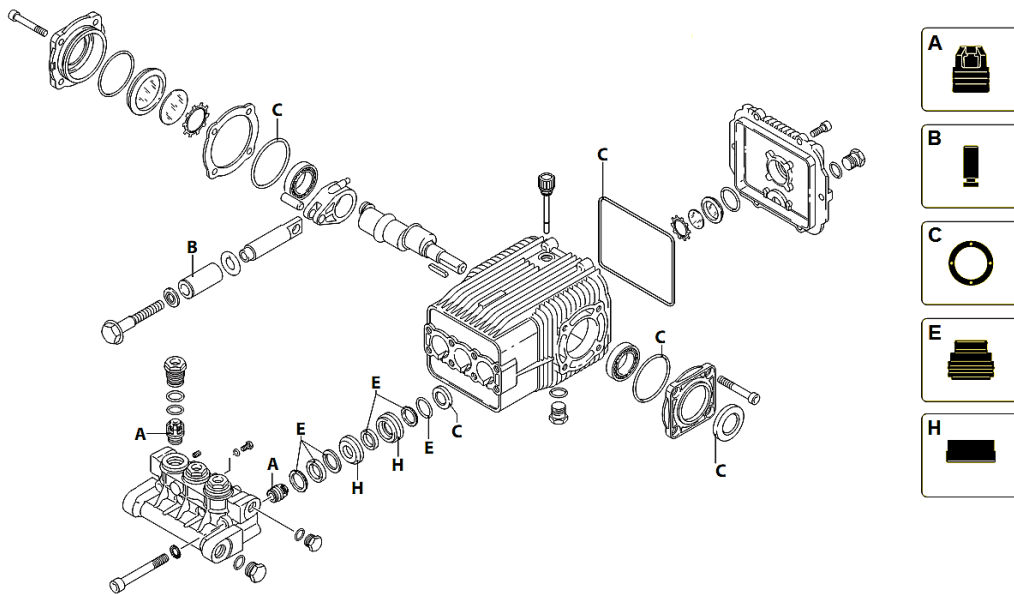
Pos.	Code	Description
11	101266	Water filter
12	101200	Quick coupling
13	101172	Hose barb
14	101110	Unloader valve
15	101297	Reducing outlet nipple
16	101298	Reducing nipple
17	101196	Y-Fitting
18	101129	Thermo-valve
19	101249	Nipple
20	101349	By-pass hose
21	101272	Adaptor

## Miscellaneous parts



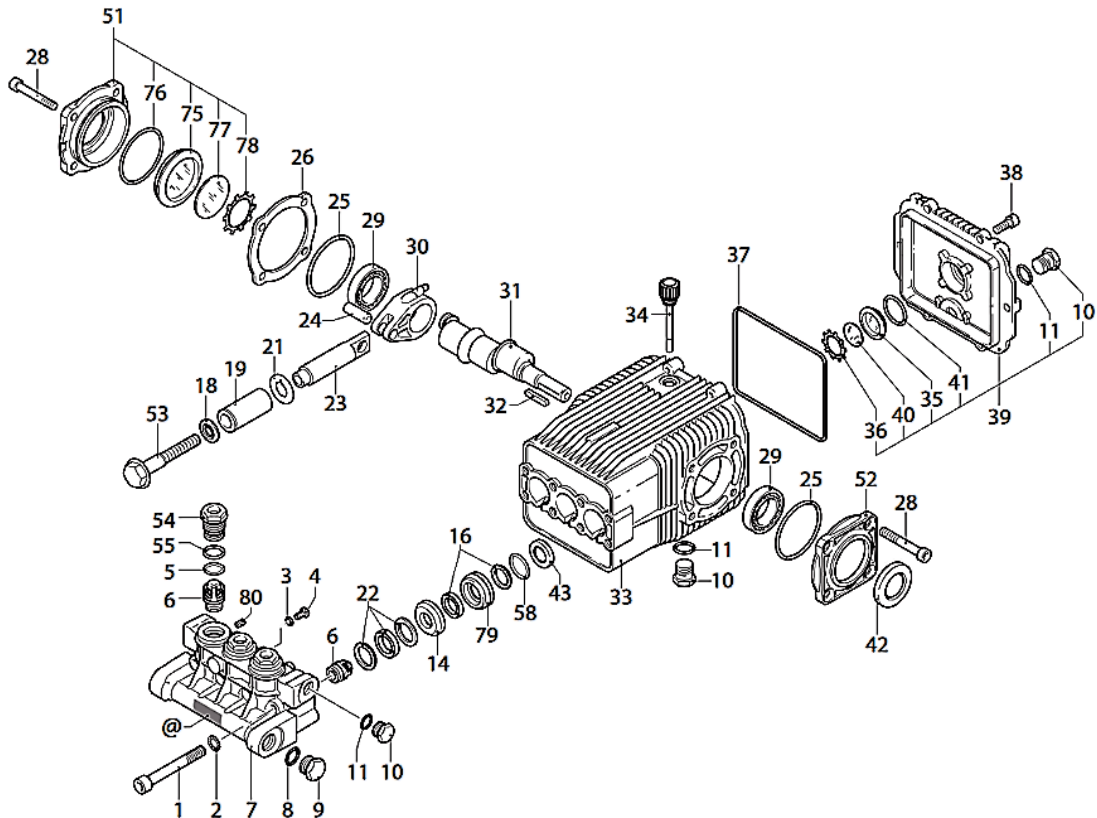
Code	Description	Qty
101014	Mos washer 1/4	1
101105	Mos washer 3/8	2
101109	Mos washer 1/2	2
301161	O-ring for high pressure hoses	2
101244	Wheel, solid rubber with cover	4

## High Pressure Pump



### REPAIR KITS

A= KIT 2185 Valves		B=KIT 2872 Ø18 Pistons		C=KIT 2873 Oil Seals		E=KIT 2874 Water Seals		H=KIT 42120 Pistons Guide	
Code 301060		Code 301067		Code 301076		Code 301061		Code 301068	
Pos.	Qty.	Pos.	Qty.	Pos.	Qty.	Pos.	Qty.	Pos.	Qty.
6	6	19	3	25	2	16	3	14	3
				37	1	22	3	79	3
				42	1	58	3		
				43	3				



### High pressure pump - Spare parts list

Pos.	Code	Description	Qty	Note	KIT
1	301169	Screw	8	C=50Nm	
2	301150	Washer	8		
3	301151	Washer	3		
4	301152	Screw	3	C=7Nm	
5	301091	O-ring	3		
6	301060	Complete valve	6		KIT 2185
7	301126	Head <b>(pre-assembled, complete)</b>	1		
8	301202	O-ring	1		
9	301203	Plug	1	C=30Nm	
10	301146	Plug	3	C=25Nm	
11	301145	O-ring	3		
14	301204	Piston guide	3		KIT 42120
16	301205	Water seal	3		KIT 2874
18	301153	Washer	3		
19	301067	Piston	3		KIT 2872
21	301154	Plate	3		
22	301171	Gasket	3		KIT 2874
23	301155	Piston	3		
24	301156	Hub pin	3		
25	301206	O-ring	2		KIT 2873
26	301207	Shim	1		
28	301143	Screw	8	C=24.5Nm	
29	301085	Bearing	2		
30	301157	Connecting rod	3		
31	301201	Shaft	1	1450 rpm	
	301200			1720 rpm	
32	301158	Key	1		
33	301095	Pump body <b>(crankcase pre-assembled)</b>	1	1450 rpm	
	301088			1720 rpm	

34	301159	Plug	1		
35	301121	Level gauge	1		
36	301086	Ring	1		
37	301087	O-ring	1		KIT 2873
38	600017	Screw	6	C=10Nm	
39	301210	Cover, complete	1		
40	301122	Plate	1		
41	301123	O-ring	1		
42	301211	Ring	1		KIT 2873
43	301212	Ring	3		KIT 2873
51	301213	Cover	1		
52	301214	Support	1		
53	301215	Screw	3	■ C=7Nm	
54	301089	Plug	3		
55	301090	Ring	3	☉ C=60Nm	
58	301164	O-ring	3		KIT 2874
75	301217	Level gauge	1		
76	301218	O-ring	3		
77	301219	Plate	1		
78	301220	Ring	1		
79	301204	Piston guide	3		KIT 42120
80	301222	Screw	1	☉ C=4Nm	

### Symbols

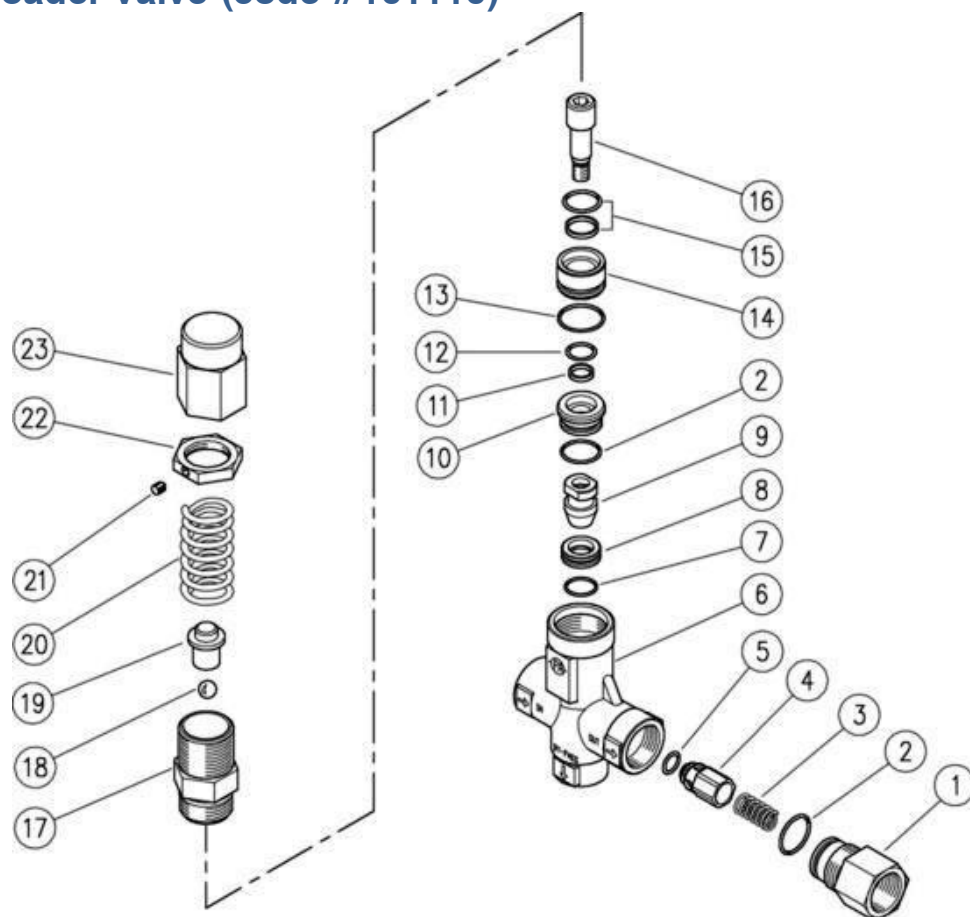
C - Tightening torque tolerance 0-10%, ☉ - Screw with LOXEAL 55-14, □ - Lubricate with grease Molykote PG54, ■ - The thread lock should only be placed on the nut, not on the screw prior to assembly, ☐ - Tighten by hand, do not use screwdrivers to avoid breakage of the valves

### Oil

Fully Synthetic, SAE 75W90, ~1ltr (0.9Kg)



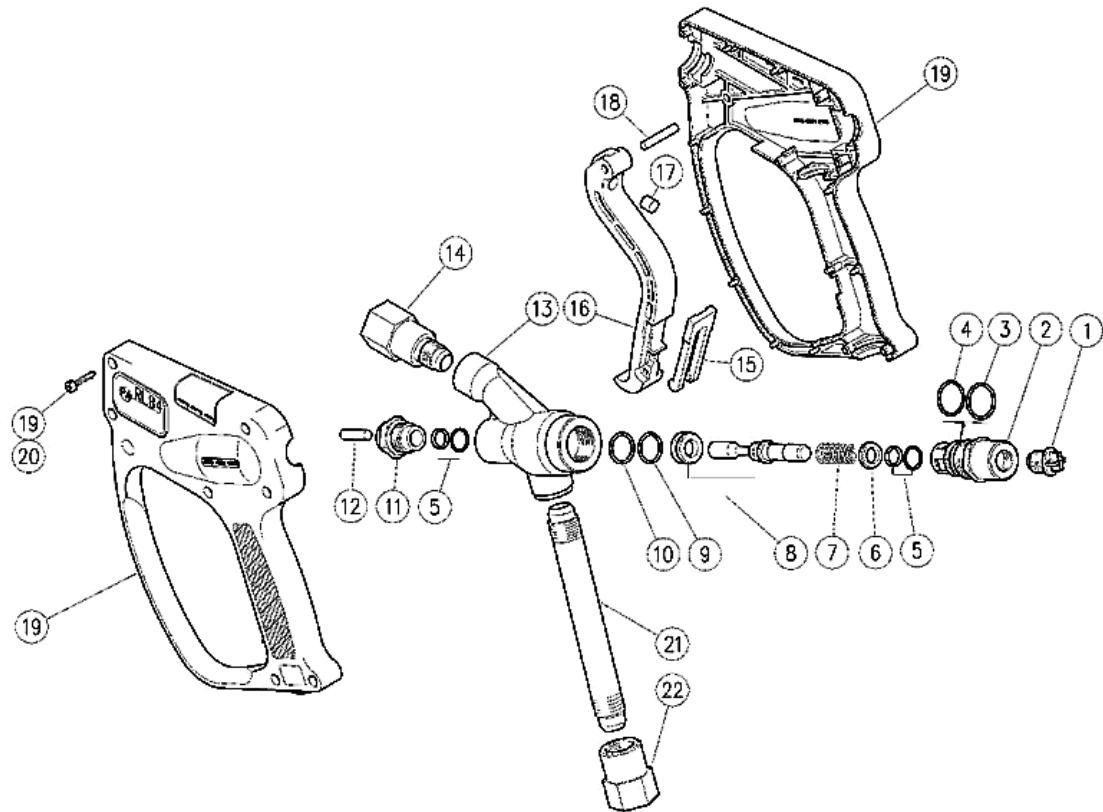
## Unloader Valve (code #101110)



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	

<b>K1</b>	<b>301014</b>	<b>Spares Kit, 9x1pcs</b>
-----------	---------------	---------------------------

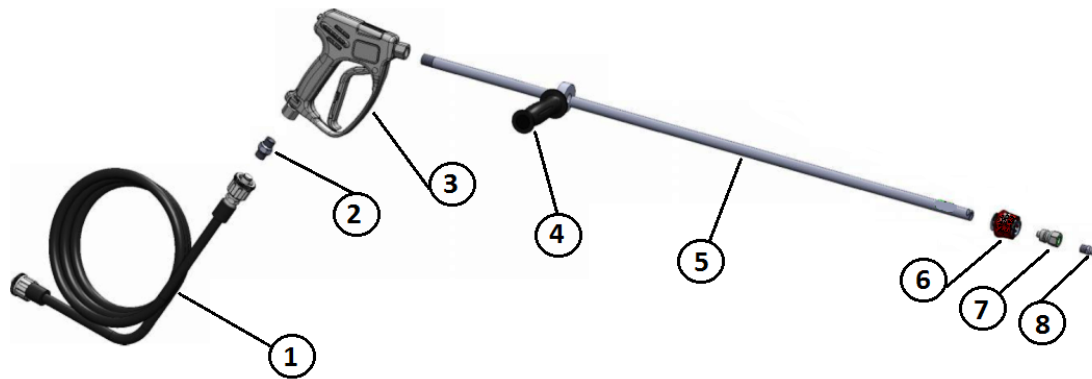
## Spray Gun (code #110701)



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	

<b>K1</b>	<b>101186</b>	<b>Spares Kit for spray gun, 8pcs</b>
-----------	---------------	---------------------------------------

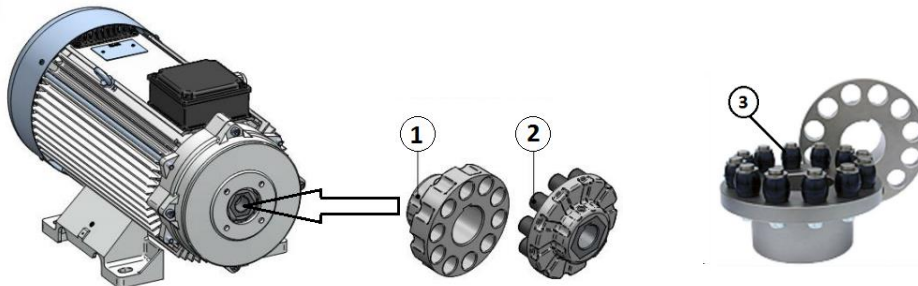
## Spraying equipment, standard



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	101181	High pressure flat fan nozzle	1

## Motor/pump assembly flexible coupling

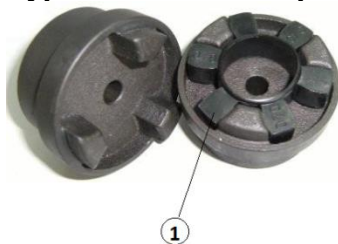
### Type E flexible coupling – Code #301099



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

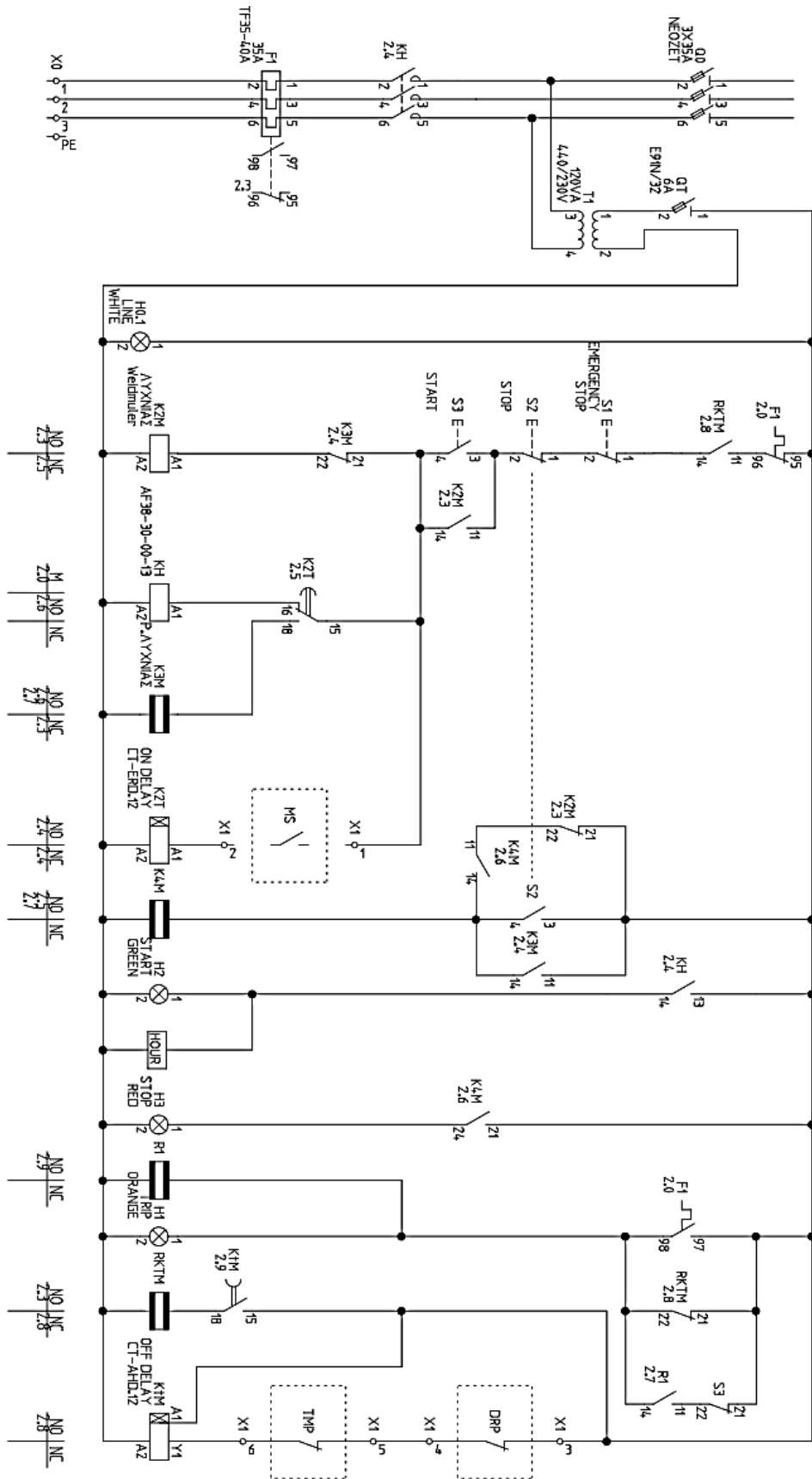
Pos.	Code	Description
3	301332	Elastic bushing replacement set E

### Type N flexible coupling – Code #301084



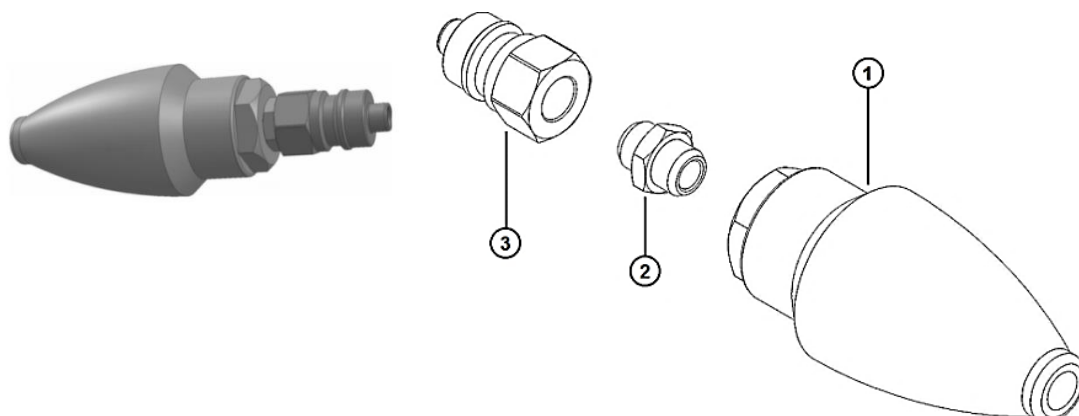
Pos.	Code	Description
1	101512	Elastic spider replacement set N

# Electrical circuit diagram



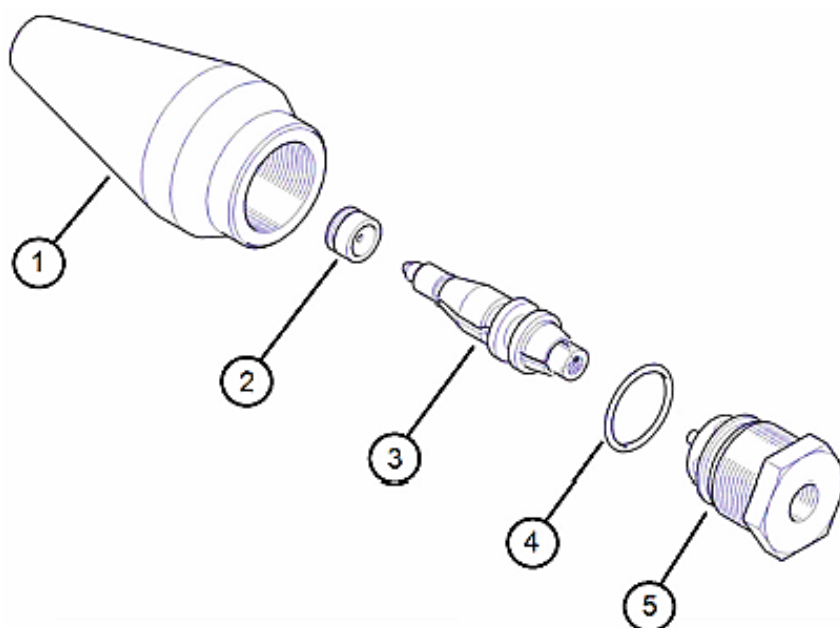
## Optional accessories

### Turbonozzle Quick Release attachment package (code #201106)



Pos.	Code	Description
1	110966	Turbonozzle 500/35
2	101262	Nipple
3	101247	Quick release plug

### Turbonozzle 500/35 (code #110966)



Pos.	Code	Description	KIT K1
1	110966	Turbonozzle 500/35	
2	301072	Ceramic bearing	■
3		Rotor (not sold separately)	■
4	301392	O-ring for drive plug	■
5	301066	Drive plug	

<b>K1</b>	<b>110975</b>	<b>Repair Kit for Turbonozzle 500/35</b>
-----------	---------------	--

## IMPORTANT NOTE!

### How to operate properly the Turbonozzle

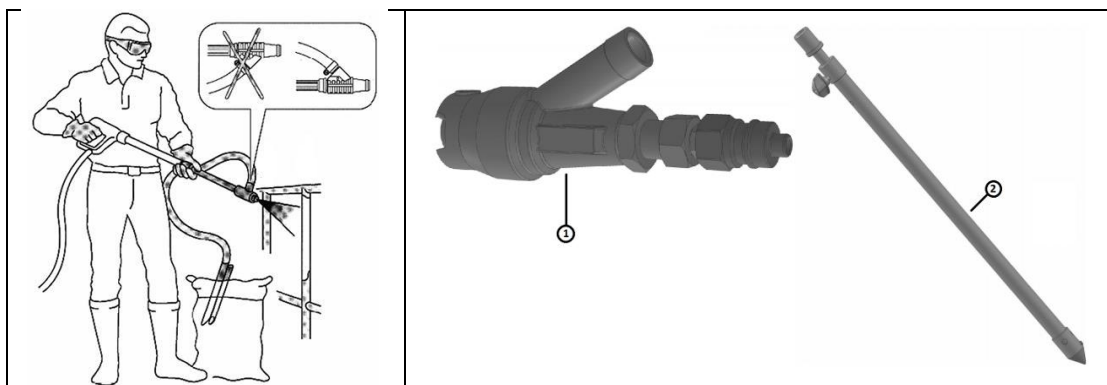


When starting to spray, keep the gun in upright position with nozzle facing down. Press the trigger and the nozzle will start rotating. You can now start moving to horizontal position at area to be blasted.



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	
201106 (Stock part)	TURBONOZZLE QR PACK 500/35	
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

<b>DECLARATION OF CONFORMITY</b>		<b>CE</b>
<b>Distributor</b>	<b>Marine Care BV</b>	
<b>Address</b>	Oude Maasweg 35 3197 KJ Botlek - Rotterdam The Netherlands Tel : +31(0)10 2950342 E-mail : operations@marinecare.nl	
<b>Declares that the product</b>		
<b>Product name</b>	<b>HIGH PRESSURE CLEANING MACHINE (ELECTRIC OPERATED, COLD WATER)</b>	
<b>Model &amp; Type</b>	<b>Caretech HPC 500, 3X400V/50Hz &amp; 3X400V/60Hz</b>	
<b><i>conforms to the essential requirements of the directive 2006/42/EC based on the following specifications:</i></b>		
<b>STANDARDS</b>	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	
<b>STANDARDS</b>	EN 349/93 + A1:2008	
	Safety of machinery - Minimum gaps to avoid crushing of parts to the human body	
<b>Date</b>	July 2016	



Lined writing area consisting of 27 horizontal lines.





---

Date	Service Description	Remarks

Date	Service Description	Remarks

---

**Marine Care BV**  
Oude Maasweg 35  
Port number 4005  
3197 KJ Rotterdam – Botlek  
The Netherlands

**T** +31 (0)10 29 50 342  
**E** [operations@marinecare.nl](mailto:operations@marinecare.nl)  
**W** [www.marinecare.nl](http://www.marinecare.nl)