DC 12V VEHICLE HIGH PRESSURE PUMP

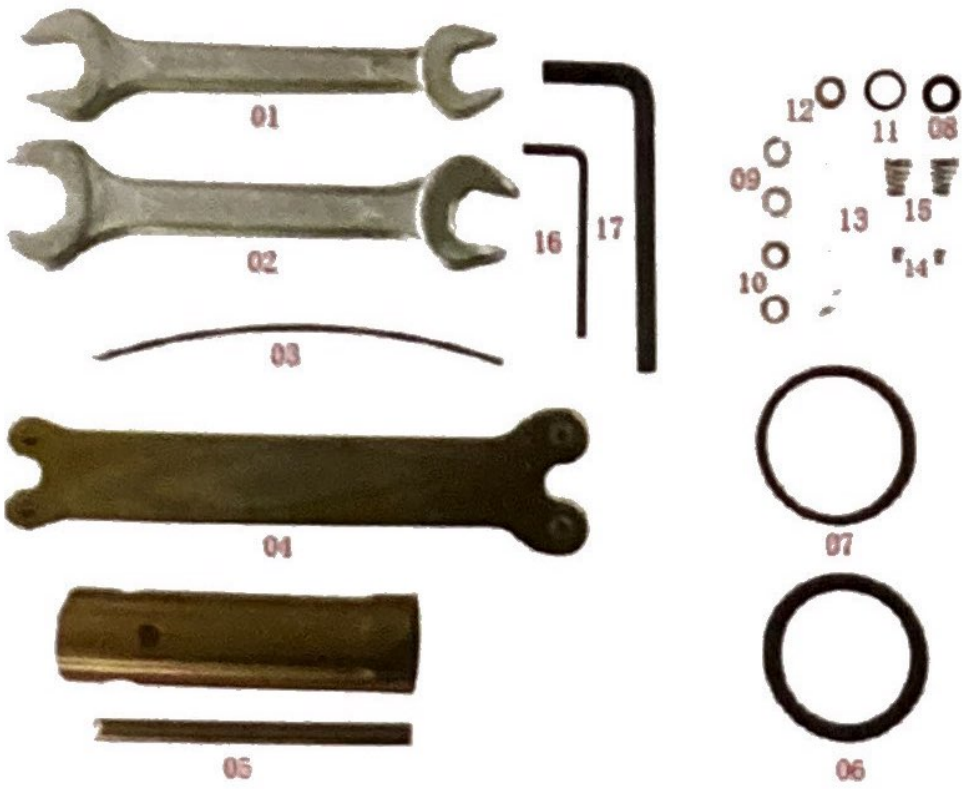
Patent:PCT/CN2018/093020

The GX-E-CS4-I pump uses four-stage compression, an inner water cooling system, and automatic separation of air and water. This design provides quality air that contains extremely low oil and water content and is environmentally friendly.

1 SPEC

Spec: GX-E-CS4-I
Weight: 13.9KGS
Power: 350W
MAX pressure: 5800PSI
Voltage: 110V/220V AC Voltage or 12V Car Battery
Outside size:32×15×36cm
Motor speed: 3000r/min
Max current: 30A
Fill rate: 13L/min
Noise level: 65DB
Charge time: 0.5L tank,from 200bar to 300bar need 4-5 mins.
0.5L tank,from 0bar to 300bar need 14-16 mins.

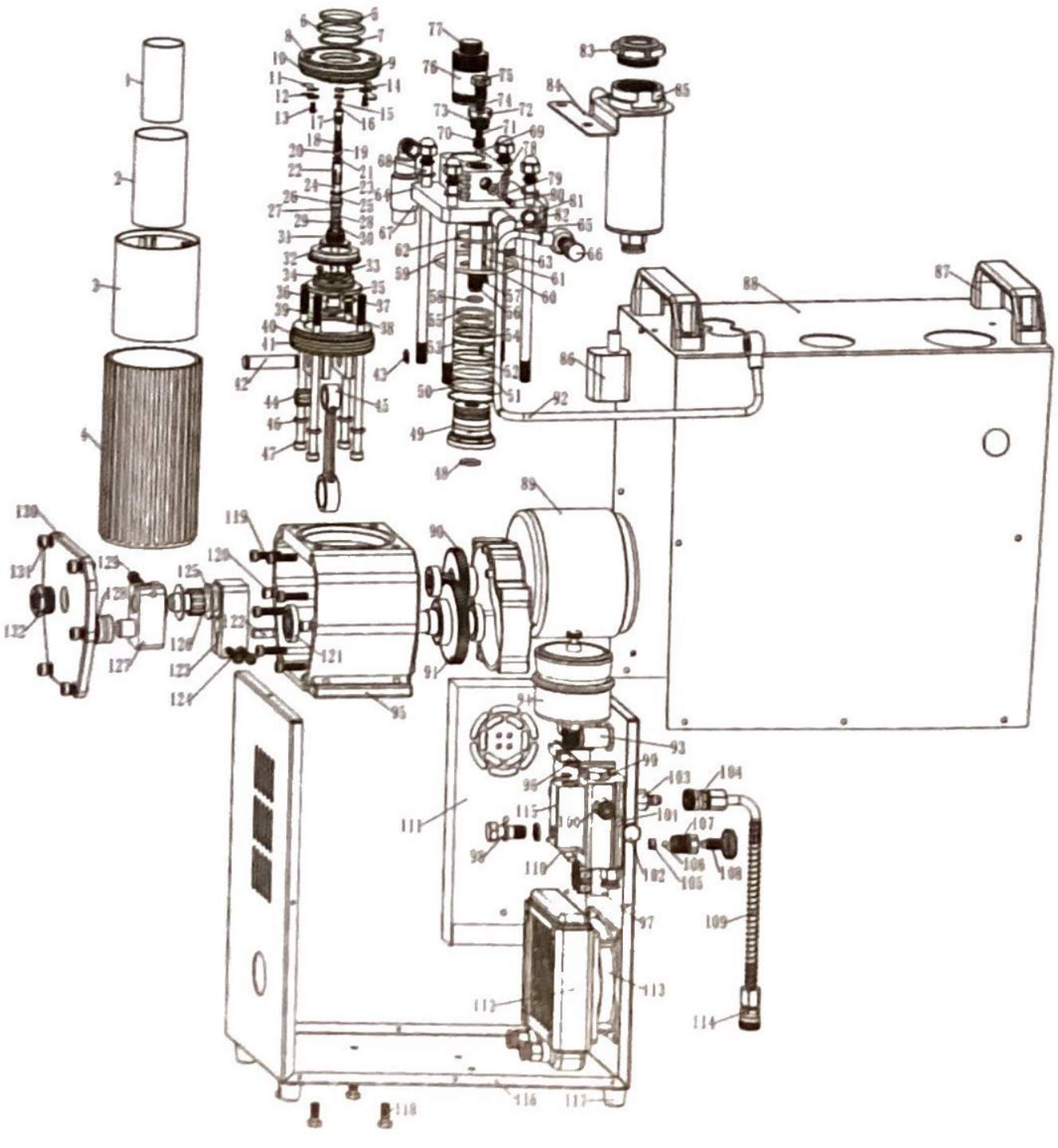
2 SPARE PARTS 、 PARTS DRAWINGS & LIST

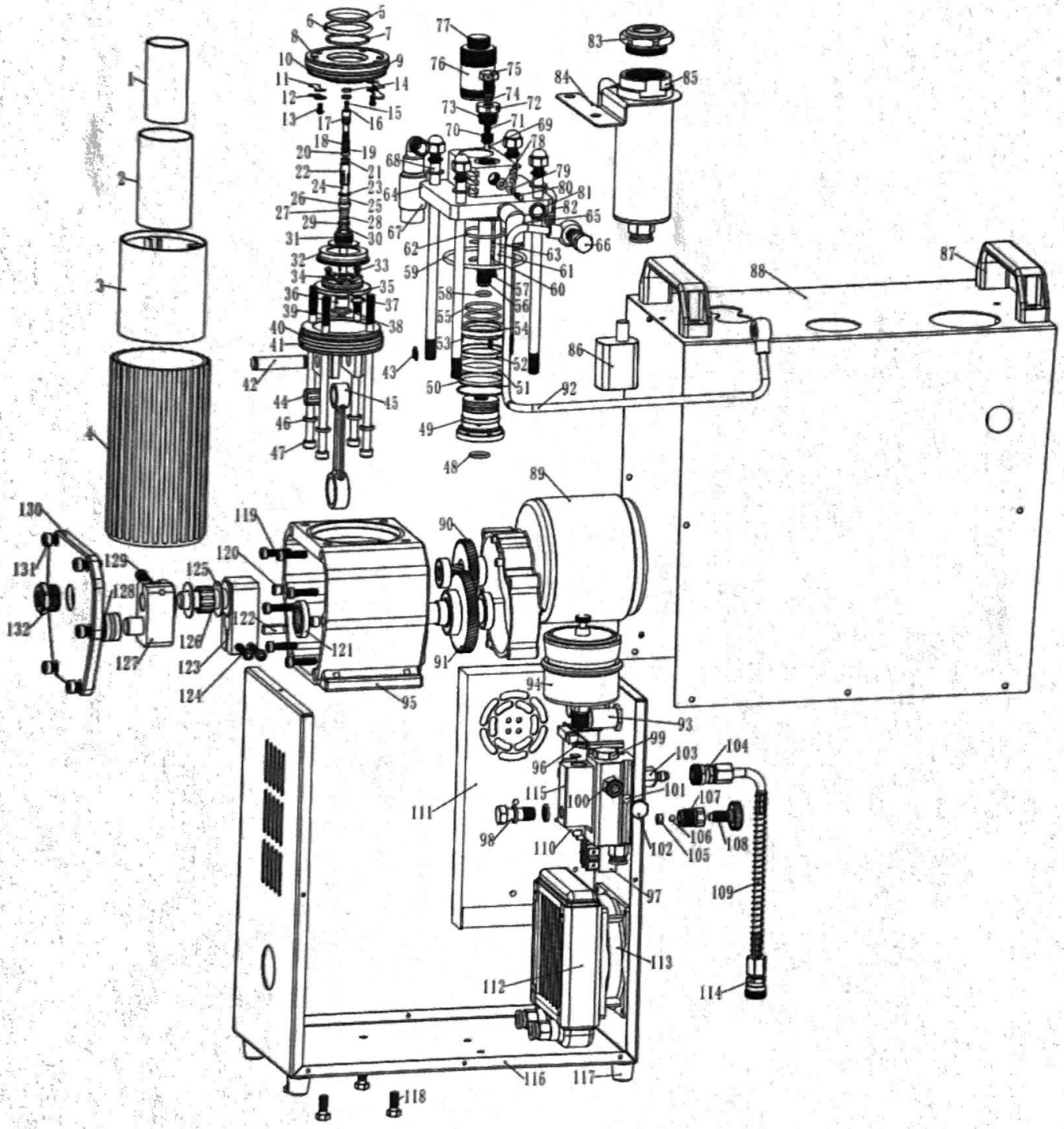


Spare parts

NO.	Name	QTY
1	12-14mm wrench	1
2	12-17mm wrench	1
3	Nozzle Cleaner	1
4	special wrench	1
5	19mm socket spanner	1
6	40 sealing ring	1
7	40 pistion ring	1
8	high pressure pistion set	1
9	high pressure pistion open ring	2

NO.	Name	QTY
10	6mminner sealing ring set	1
11	sealing ring	1
12	9*2 sealing ring	1
13	brust disc	5
14	φ3 spring	2
15	φ4-φ7 conical apring	2
16	2mm allen wrench	1
17	5mm allen wrench	1

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NO.	Name
1	Third-stage cylinder liner
2	Second-stage cylinder line
3	Air tube
4	First stage cylinder liner
5	33 inner piston ring
6	33 inner seal
7	33 inner spacer
8	Fixed plate
9	70*3 sealing ring
10	65*2 sealing ring
11	check valve disc
12	Check valve plate
13	3*6 round head socket head cap screws
14	High pressure piston split ring
15	03 spring
16	High pressure spool
17	High pressure piston
18	High pressure piston spring
19	High pressure piston copper pads
20	High pressure piston ring
21	High pressure piston pad
22	High pressure piston seat
23	Retaining ring
24	High voltage pole
25	9*2 sealing ring
26	Gland cover
27	Inner seal ring(top)
28	Under the inner seal ring(bottom)
29	Position pad
30	Position gasket
31	Seal seat
32	Primary valve spacer
33	3*4 round head socket head cap screws
34	U-shaped valve disc
35	Primary valve seat
36	High pressure rod tail sleeve
37	3mm pin
38	17*1.5 sealing ring
39	6*1 sealing ring
40	bottom fixed seat
41	70*3 guide ring
42	Connecting rod pin
43	Circlip
44	14*10 radial bearing
45	link
46	6mm Composite washers
47	M6*130 hexagon
48	17*2 sealing ring
49	Secondary piston
50	40 outer piston ring
51	40 seals
52	40 outer spacer
53	spring
54	Secondary piston
55	30*2 sealing ring
56	High pressure pipe
57	3*6 round head socket head cap screws
58	13*2 sealing ring
59	70*3 sealing ring
60	Check valve plate
61	Water pipe
62	37*2 sealing ring
63	Check valve disc
64	Cylinder seat
65	Outlet pipe joint
66	Articulated connectors

NO.	Name
67	Input air filter
68	M8 screw
69	High pressure
70	One-way seat
71	φ4-φ7 cone spring
72	Explosion-proof nut seat
73	17*1.5 sealing ring
74	burst disc
75	burst disc nut
76	Cylinder
77	Oil cylinder nut
78	Two-stage valve cushion
79	Two-stage check valve
80	spring
81	Composite washer
82	Water inlet pipe joint
83	water tank cap
84	Water tank bracket
85	Water tank
86	Water pump
87	Handle
88	shell -top
89	Motor
90	One stage reduction gear
91	Two stage reduction gear
92	High pressure link tube
93	Control switch
94	Pressure gauge
95	Crankcase
96	6mm composite washer
97	switch
98	Articulated connectors
99	Thread plugs
100	Explosion-proof nut adapter
101	Precision explosion-proof film
102	Precision explosion-proof nut
103	Connection connector
104	Quick Connector
105	bleed valve pad
106	5mm steel ball
107	bleed valve nut
108	bleed valve
109	Output hose
110	Control panel
111	Power converter
112	radiator
113	fan
114	Quick Connector
115	Filter adapters
116	shell-bottom
117	Foot
118	M6*10 hex screw
119	M5*16 hexagon socket screw
120	Position sleeve
121	Oil seal
122	Key block
123	Crankcase
124	M5*30 hex socket head cap screws
125	Crankshaft pad
126	22*16 radial bearing
127	Crankshaft bracket N4900 needle roller bearing
128	M5*20 socket head
129	cap screws
130	Crankcase cover
131	M6*16 hexagon socket screw
132	Breathing cap

3 INSTRUCTIONS FOR USE

Please read this instruction manual and follow the steps carefully. Verify that you have all of the parts and accessories shown in Figure 1 including the quick connectors are present and have o-rings in them... If there are any missing parts, please contact us. This machine was tested at the factory prior to pack-aging.

Quick connects on the airline are operated by gently pulling the collar back,pushing the female quick connect onto the plug and then releasing the collar.This is normally very easy to do and if not, it likely indicates that there is pressure that must be released.

NOTE: After using the compressor for 4 to 6 hours, turn the grease pot one turn clockwise -you will encounter some resis-tance towards the end of the turn and this is normal as the flow of grease is limited. This is a routine maintenance.If the com-pressor speed is normal, do not add grease.

Figure 1

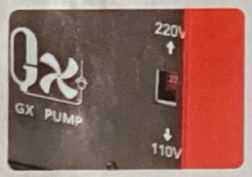

Figure 2

1.Test the machine with either a 12V vehicle battery (step 2) or using Household outlet (see step 4).

Make sure the machine's power switch is off!

·Release the bleed valve.

·If you are using a vehicle,plug in the DC cable, Clamp the red clip onto the positive head (or screw), and the black clip to the negative head (or screw).

Start it after ensuring the clip is secure. Be sure to start car while using compressor.

·Open the tank cover before the first use, add coolant (neutral distilled water or anti-freeze)until it reaches the internal return hole. MUST be distilled water or antifreeze (PH is about 7), cannot contain impurities such as minerals.

·Flip the power switch (Figure 1.) The water pump will start to work and the water level inside the water tank will drop rapidly.Keep adding distilled water until it comes out from the return hole.When the liquid level can reach the water return hole, it is full and the water tank cover can be closed. If the water does not flow, angle the machine slightly and move it in to allow the trapped air in the pump to escape and then it will pump the fluid.

·After starting the machine, listen to be sure there are no abnormal (friction) sounds,uneven running sounds, or air leaking sounds. A slight squeaking sound is normal, as it is the sound of the internal gear of the machine during the commutation operation.

·Check to be sure there are no loose fasteners on parts.

·Tighten and bleed valve, then observe the running speed of pressure gauge pointer.It should be around 38 seconds from 0 to 300 bar (plug test status).

Note: never start the compressor under load-release bleed valve first every time after power off.

2. Onboard Usage: Open the bleed valve and pull out the test plug and store it (the test plug is an important part to check and analyze for machine failure).

·Link the quick connector with the air cylinder connector to check the fitness of the quick connector to the male fitting. (The most common reason for air pressure not building up is due to an air leak caused by a mismatch between the con-nectors. This can be tested by introducing soapy water or leak detection fluid and looking for bubbles). Do not touch a high pressure connector when it is suspected to be leaking under load - bleed the pressure off first.

·Adjust the pressure gauge to set and control pressure. Rotatethe knob on the sur-face of the pressure gauge to adjust the pointer to the desired pressure number.The CS4/CS4-I has a main limit and a backup for added safety.

·Turn the red main power switch to "DC12V" position and you will hear the cooling fan start and run continuously-.Push the silver start button to begin pumping, make sure everything is normal and tighten the bleed valve to start filling.

(THIS STEP IS VERY IMPORTANT!)

·During the pumping process pay attention to be sure the operator is not too close to the inflatable container.Please keep a safe distance.Closely observe the indicated pressure of the pressure gauge.

The maximum design pressure of this machine is 400 BAR. When the pressure reaches the required pressure value, the machine will stop pumping and the cooling fan will continue to work.

·Then open the air bleed valve, drain the air and disassemble the quick connector.

Note: If quick connect fittings do not want to open then be cautious as there may be pressurized air in the line so always open the air bleed valve first.

3.Storage: Open the bleed valve to release the pressure and moisture but let the fans continue working at least two minutes before stopping the compressor. Ideally let them run until ambient temperature is reached

·Disconnect the air line from the air cylinder and re-insert the test plug.Then take off the clamps on the positive and negative poles in order. Coil the wire on the machine after the compressor cools down.

·Avoid storing in places where the compressor could be damaged by heavy objects.Avoid storing in wet areas. This machine can be stored vertically or horizontally.

4.Household outlet use: Before using it, ensure the slide switch is set to either 115 or 230V based on your home voltage (see Figure 2). Failure to select the right input volt-age will damage the internal inverter.

·After confirming the voltage, switch to "AC" position, install the unit's power cord and plug it into your household outlet.

·Plug The cooling fan of the internal inverter will turn on once it has power.

5. Maintenance: This machine is designed for oil free dry lubrication. During normal use the grease knob needs to be rotated every 4-6 hours. Rotate the nut in the direc-tion of the arrow and add a proper amount of grease. DO NOT ADD OIL OR PETROLEUM LUBRICANTS!

·Disassemble the machine every two years for maintenance and cleaning.

·Inspect the components as they are damaged easily. Observing the wear and tear of piston rings and seals to determine if they need to be replaced.