



Operation Manual

Air Compressor for Diving

DC12V Battery Oil Free Series

SCU80/LM80

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SAFETY CAUTIONS

Please read this operation manual carefully before installation and operation

This series are high pressure air compressor. It compresses atmosphere air go to pressure 0.3/0.8Mpa, 45/110psi, after be purified and separated by the filter and separator.

It discharge clean air accords to GB18435-2001 breathing air standard. It is widely be used for breathing of diving and fire fighting; paintball PCP shooting and other high pressure filed industries by its reliability, durability and portability.

Products range include :

- DC 12V
- AC 110V 220V
- Gas engine driven

Optional accessories : diving hose and musk



- Check the electric voltage in nameplate is same as your local electric supply
- Check the lubricate oil has been put in before running
- Increase rated pressure setting is forbidden
- There is potential danger of pipe burst or connect fitting blow off under high pressure, please avoid body too near compressor when it running
- if there are no auto stop function, don't leave compressor until it reach rated pressure and shut down it by manual

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TECHNICAL DATA

SCU80 /LM80/ DC 12V diving air compressor

Charging Rate: 60-100L/min; 2-3cfm

Suction pressure: atmosphere

Working pressure: 0.8MPa , 8bar, 110psi

Media: air

No.of stage and cylinder: 1

DC power: 550W/12V

Cooling: air

Driven: direct driven with DC motor

Shut down : Automatic stop by pressure switch

Pressure indicate : Gauge

Protection : Safety valve in outlet

Filtration : water separator and breathing filter

Lubricant: oil free, no lube oil

Dimension : 500 X 450 X 450mm

Weight : 25kg

Noise : Less than 45 dB(A)

Receiver tank: 10 liters stainless steel

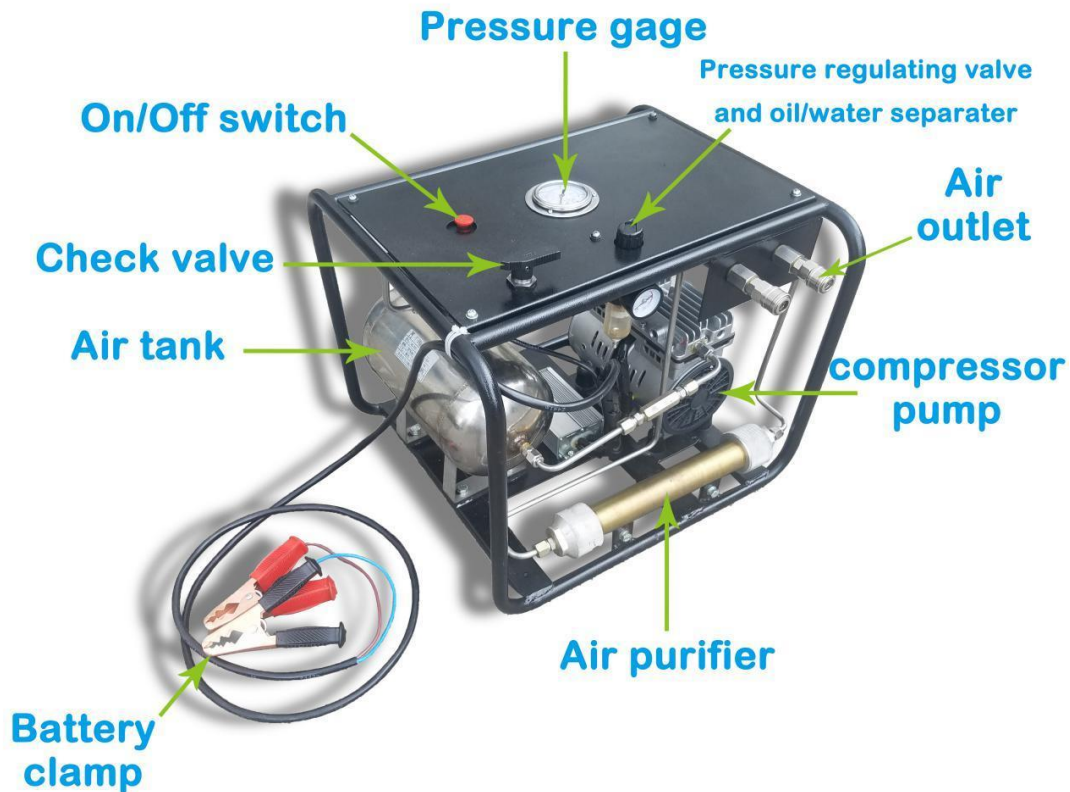
Outlet: 2 ports



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STRUCTURE

3.1 Main Components



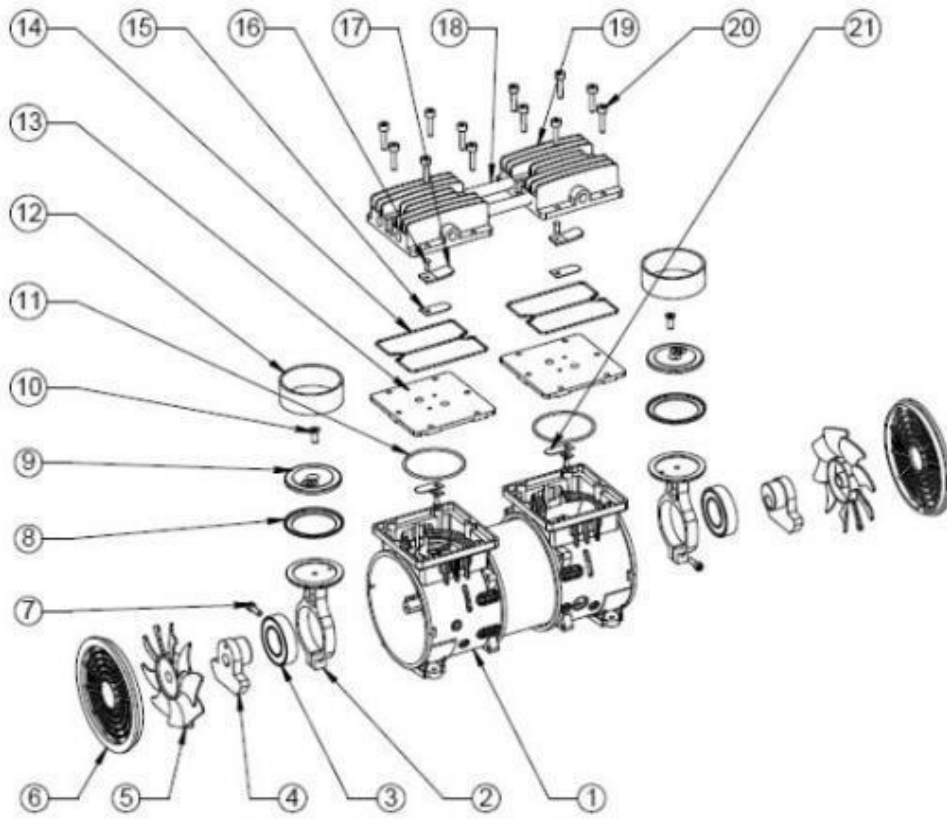
3.2 Working process

Atmosphere air is sucked into cylinder of the compressor, and compressed to reach 0.3Mpa/0.8MPa 40/110 psi pressure, through regulator with water separator , then purified by filter. Discharge clean air for diving breathing.

3.3 Pump unit

The pump block unit is composed of crankcase, crankshaft, cylinder, piston, intake and discharge valves, connect rod , bearing etc.

It is oil-free, non lubrication, direct driven type compressor.



Part number	Part name	quantity
001	Pump body	1
002	Connect rod	2
003	Eccentric wheel bearing	2
004	Eccentric wheel kit	2
005	Cooling fan	2
006	Cooling fan cover	2
007	screw	2
008	Piston bowl ring	2

009	Press plate	2
010	screw	2
011	Cylinder seal	2
012	cylinder	2
013	Valve plate	2
014	Cylinder cover gasket	2
015	Discharge valve plate	2
016	screw	2
017	Limited position kit	2
018	Connect hose	2
019	Cylinder cover	2
020	screw	12
021	Intake valve plate	2

Maintain schedule

NO. 008 009 010 011 012 013 014 015 021 are consumable parts, regular replace it every 1year or 2000 hours. Time will be shorter if use compressor near the sea.

3.4 Gauge & safety valve

The pressure gauge is installed in final stage of the compressor to display discharge pressure.

The safety valve is installed at the place of discharge to take the overpressure protection. If the discharge pressure is higher than preset value, the safety valve will open and release pressure.

Note: do not adjust the safety valve, otherwise it will result in serious damage

3.5 Pressure switch

The compressors are preset rated working pressure as per order require. The compressor will stop automatically when pressure reach rated pressure. And re-start compressor when pressure is lower than minimum.

Note: don't try to adjust it if not get authorized

3.6 electric starter

Press ON/OFF red button on pressure switch to start compressor.

3.7 drain valve

Open valve under receiver tank to drain moisture water in tank.

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INSTALL AND OPERATION

4.1 Installation

The compressor must be mounted on a firm, level base Where is with well-ventilated and rain-proof , non-hazardous locations

The environment temperature is required to be lower than 40 degree C.

4.2 Check before running

Pressure switch check

--pressure switch must be in position " OFF" (STOP)

Intake air filter check

--install intake air filter on pump block

4.3 Running

1. Connect electric cable to DC power supply (12V ONLY)

DC battery: 12V ; Power connection:

red color wire/clamp to + (positive pole) / black color wire/clamp to - (negative pole)



2. Connect air hose to discharge outlet port with fast plug in coupling

3. Open discharge check valve

4. Close drain valve under air tank
5. Press ON bottom in pressure switch to start compressor
6. Compressor will download automatically when reach rated pressure
(presetting unload pressure is 0.8Mpa/ 8bar/ 110psi),
and load again when pressure drop down to minimum pressure
(presetting load pressure is 0.5Mpa/ 5bar/ 75psi)
7. Turn around regulator to make discharge pressure go through air hose to suitable for mask breathe.
8. Press OFF bottom in pressure switch to stop compressor when finish work

Note: Compressor is oil-free type, don't need any lubricate oil to take in

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MAINTENANCE

Intake filter element (No.022) and part NO. 008 009 010 011 012 013 014 015 021 are consumable parts, regular replace it every 1year or 2000 hours. Time will be shorter if use compressor near the sea.

	1000 h	Annually or 2000hrs
Intake air filter element		◆
Piston bowl ring		◆
Press plate		◆
screw		◆
Cylinder seal		◆
cylinder		◆
Valve plate		◆
Cylinder cover gasket		◆
Discharge valve plate		◆
Intake valve plate		◆

△ Check ◆ replace

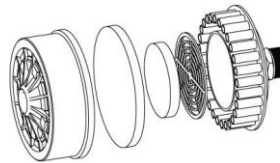
5.1 lubricate oil

Oil free type, don't need lube oil

5.2 air filter

blow air filter by compressed air to clean dust.

The air filter element must be changed every 2000 wc



5.3 Filtration for breathing air (ACTIVE CARBON FILTE.,)

The outlet air purification depends on the activated carbon and molecular sieve, so filter elements must be replaced periodically, especially for breathe purpose. Follow are advice interval time.

Ambient temperature(°C)	Capacity (L) × Number	Time for change (hour)

40	6×55	10
30	6×100	18
20	6×160	30
10	6×300	55
5	6×400	75
0	6×600	110

Note: Filter elements must be replaced at once if people feel particular smell.

Replacement: open the filter cover; replace the active carbon in bottle



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TROUBLESHOOTING

Fault Reason	Over low P	Over high P	Over noise	Over heat	Not start	Air leak
Pressure switch damage	√	√				
Motor capacitor damage					√	
safety valve damage	√	√				√
drain valve damage	√					√
Discharge valve damage	√	√				√
Piston ring damage	√		√			
protector shut off					√	
foot damage			√			
Solenoid valve damage	√				√	
One way valve damage			√		√	
DC/AC power too low				√	√	
intake filter block	√					
In/out valve damage	√		√			

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CIRCUIT DIAGRAM

