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Submersible, electric and engine driven for DIY, agriculture and industry.

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All sizes for car & commercial use.



# Clarke<sup>TM</sup>

## air



## PIONEER OIL FREE COMPRESSOR

MODEL NO: 210 OF  
PART No: 2320210

### Clarke<sup>TM</sup> INTERNATIONAL

For spare parts and servicing, please contact your nearest dealer, or Clarke International on

**020 - 8988 - 7400**

e-mail: [Parts@clarkeinternational.com](mailto:Parts@clarkeinternational.com) e-mail: [Service@clarkeinternational.com](mailto:Service@clarkeinternational.com)

## OPERATION & MAINTENANCE INSTRUCTIONS

0503

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## SPECIFICATIONS

Model: .....	Pioneer 210 O/ F
Part No: .....	2320210
Motor: .....	1.5 Hp
Voltage: .....	230 vac
Fuse rating .....	13amp
Air Displacement: .....	6.3 cfm
Max Working Pressure: .....	8 Bar
Air Receiver capacity: .....	6 ltr
Net Weight: .....	13 kg
Dimensions: .....	L350 x W260 x H490mm
Duty Cycle .....	S3-40% @ Max 7bar*

\* The compressor may only be operated continuously for 4 minutes in any period of 10 minutes, when output is max. 7 bar. (ie ; 4mins ON 6 mins OFF)

Please note that the details and specifications contained herein are correct at the time of going to print. However CLARKE International reserve the right to change specifications at any time without prior notice. Always consult the machines data plate



## SAFETY PRECAUTIONS

### WARNING

As with all machinery, there are certain hazards involved with their operation and use. Exercising respect and caution will considerably lessen the risk of personal injury. However, if normal safety precautions are overlooked, or ignored, personal injury to the operator, or damage to property may result.

It is in your own interest to read and pay attention to the following rules:

1. **COMPRESSED AIR IS DANGEROUS, NEVER** direct a jet of air at people or animals, and **NEVER** discharge compressed air against the skin.
2. **DO NOT** operate your compressor with any guards removed.
3. **DO NOT** leave pressure in the receiver overnight, or when transporting.
4. **DO NOT** adjust, or tamper with the safety valves. The maximum pressure is factory set, and clearly marked on the machine.
5. **DO NOT** operate in wet or damp conditions. Keep the machine dry at all times. Similarly, a clean atmosphere will ensure efficient operation. Do not use in dusty or otherwise dirty locations.
6. **DO NOT** exert any strain on electrical cables and ensure that air hoses are not tangled or wrapped around machinery etc.
7. **ALWAYS** adjust the pressure regulator to the recommended setting for the particular spray gun or tool being used.
8. **ALWAYS** protect yourself. Think carefully about any potential hazards which may be created by using the air compressor and use the appropriate protection. e.g. Goggles will protect your eyes from flying particles. Face masks will protect you against paint spray and/or fumes.
9. **ALWAYS** make sure that children and animals are kept well away from the compressor and any equipment attached to it.
10. **ALWAYS** ensure that all individuals using the compressor have read and fully understand the Operating Instructions supplied.
11. **ALWAYS** ensure that any equipment or tool used in conjunction with your compressor, has a safety working pressure exceeding that of the machine.
12. Before spraying any material always consult paint manufacturers instructions for safety and usage.
13. Some of the metal parts can become quite hot during operation. Take care not to touch these until the machine has cooled down.
14. When disconnecting air hoses or other equipment from your compressor ensure that the air supply is turned off at the machine outlet and expel all pressurised air from within the machine and other equipment attached to it.
15. Electrical or mechanical repairs should only be carried out by a qualified engineer. If problems occur, contact your Clarke dealer.
16. Before carrying out any maintenance, ensure the pressure is expelled from the air receiver, and the machine is disconnected from the mains supply.
17. When spraying inflammable materials e.g. cellulose paint, ensure that there is adequate ventilation and keep clear of any possible source of ignition.

For a professional looking finish paint must be thinned. If the manufacturers recommendations on thinning are not available, the following can be used as a general guide:

Water based paints (emulsions)	- 10-20% water
Oil based paints (gloss)	- up to 10% white spirit thinners
Cellulose paints	- up to 50% cellulose thinners

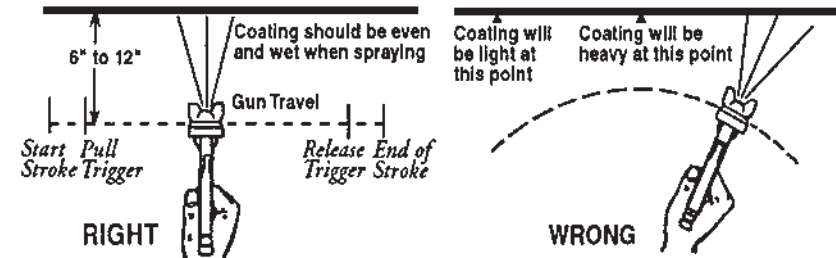
### 3. Handling The Gun

The first requirement for a good resultant finish is the proper handling of the gun. The gun should be held perpendicular to the surface being covered and moved parallel to it. The stroke should be started before the trigger is pulled and the trigger should be released before the stroke is ended. This gives accurate control of the gun and material.

The distance between gun and surface should be 6 to 12 inches depending on material and atomizing pressure. The material deposited should always be even and wet. Lap each stroke over the preceding stroke to obtain a uniform finish.

**NOTE:** To reduce overspray and obtain maximum efficiency, always spray with the lowest possible atomizing air pressure.

### 4. Spray Gun Maintenance



1. Immerse only the front end of the gun until solvent just covers the fluid connection.
2. Use a bristle brush and solvent to wash off accumulated paint.
3. Do not submerge the entire spray gun in solvent because:
  - a. the lubricant in the gland packings will dissolve and the packings will dry out.
  - b. the lubricant will dissolve causing harder operation and faster wear.
  - c. residue from dirty solvent may clog the narrow air passages in the gun.
4. Wipe down the outside of the gun with solvent dampened rag.
5. Lubricate gun daily. Use a light machine oil on:
  - a. fluid needle packing.
  - b. air valve packing.
  - c. fan control packing.
  - d. trigger pivot point.

Coat the fluid control spring with vaseline.

**Caution:** Never use lubricants containing silicone as this may cause finish defects.

## PAINT SPRAYING HINTS



**WARNING**

**NEVER** attempt to spray unless you are wearing suitable, approved respiratory and eye protection.

**REMEMBER** that some modern paints require specialist respiratory protection...always consult the paint manufacturers instructions.

### 1. General Preparation

- Ensure that the area in which you will be spraying is clean and dust free.
- Connect spray gun to compressor via suitable flexible hose.
- With no paint in spray gun, test system for air leaks.
- Cover adjacent pieces of equipment to prevent overspray. Mask areas of the article not to be sprayed.
- Ensure surface to be painted is clean, dry and free from oil and dust. Check paint manufacturer's instructions for any special surface preparation required.

REMEMBER - TIME SPENT PREPARING SAVES TIME SPENT FINISHING

### 2. Paint Preparation

- Achieve the correct paint viscosity. This should be done according to paint manufacturer's instructions, and will vary according to type of paint.
- Having mixed the paint thoroughly in a separate container, pour into the spray gun paint container through a fine filter.

**DO NOT OVERFILL SPRAY GUN PAINT CONTAINER** - three quarters full is maximum

- It is usually best to experiment with a couple of practice spray coats on a piece of material with the same type of surface as the article you wish to spray, eg. metal for a car body panel, wood for a piece of furniture etc.
- Some common problems:

PROBLEM	CAUSE	CORRECTION
Paint does not atomise (comes out in blobs)	Paint is too thick, air pressure is too low. specified by paint manuf.	Add thinners. Increase air press. (not above 50 psi, unless
Paint dries before hitting surface, leaving it dry with a rough texture	Paint is too thin. Air pressure is too high	Add more paint. Reduce air pressure
Finish is pitted like Orange peel work	Air pressure too high or spray too close to gun and work.	Reduce air pressure, increase distance between

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## ELECTRICAL CONNECTIONS

Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved 13 amp BS 1363 plug, or a suitably fused isolator switch.



**WARNING! THIS APPLIANCE MUST BE EARTHED**



**IMPORTANT:** The wires in the mains lead are coloured in accordance with the following code:

Green & Yellow	-	Earth
Blue	-	Neutral
Brown	-	Live

As the colours of the flexible lead of this appliance may not correspond with the coloured markings identifying terminals in your plug proceed as follows:

Connect GREEN & YELLOW cord to terminal marked with a letter "E" or Earth symbol  or coloured GREEN or GREEN & YELLOW.

Connect BROWN cord to terminal marked with a letter "L" or coloured RED.

Connect BLUE cord to terminal marked with a letter "N" or coloured BLACK.

### IMPORTANT

If this appliance is fitted with a plug which is moulded onto the electric cable (i.e. non-rewireable) please note:

- The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
- Never use the plug without the fuse cover fitted.
- Should you wish to replace a detachable fuse carrier, ensure that the correct replacement is used (as indicated by marking or colour code).
- Replacement fuse covers can be obtained from your local dealer or most electrical stockists.

### Fuse Rating

The fuse in the plug must be replaced with one of the same rating (**13 amps**) and this replacement must be approved to BS1362.

**We recommend that this machine is connected to the mains supply via a Residual Current Device (RCD)**

If in any doubt, **DO NOT** attempt any connections or repairs yourself. Consult a qualified electrician, your Clarke dealer, or CLARKE International Service Dep't on

**020 8988 7400**

or e-mail: [Service@clarkeinternational.com](mailto:Service@clarkeinternational.com)

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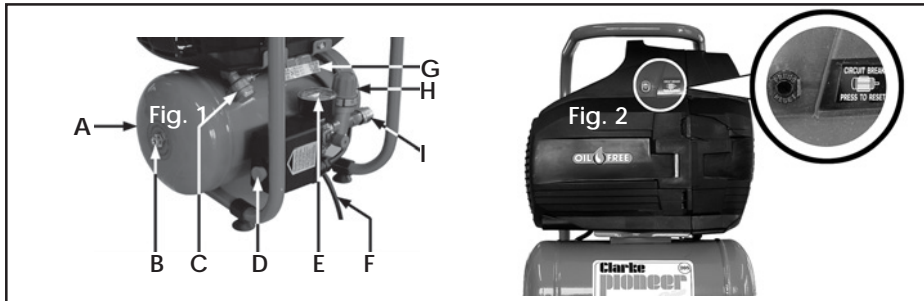
## OPERATING INSTRUCTIONS (Figures in brackets refer to Fig. 1 below)

Before connecting your Pioneer compressor to the mains supply, check the following:-

1. The mains voltage is 230V.
2. The ON/OFF control knob (D) is in the OFF (inner) position.
3. The pressure regulator (H) should be set at its lowest setting, by pulling knob upwards and turning it fully anticlockwise to required pressure, push back down to lock in position.
4. If the machine has not been used for 24 hours or so, open the air receiver drain valve (B) and turn it on its end in order to drain any condensate which may have accumulated. When clear, close the valve, finger tight. **DO NOT rest the compressor on the drain valve.**

### IMPORTANT

If the receiver is under pressure, keep your hands well away from the air being expelled... remember, compressed air can be DANGEROUS!



A.	Air Receiver	F.	Mains Lead
B.	Air Receiver Drain Valve	G.	Air Receiver Specification Plate
C.	Non Return Valve	H.	Air Pressure Regulator Knob
D.	ON / OFF Knob	I.	Quick Fit Coupling
E.	Air Receiver Pressure Gauge		

Connect a suitable air hose, fitted with a quick fit adaptor, to the quick fit coupling (I) on the compressor.

On the other end of the air hose, fit the spray gun or air tool to be used, using a conventional 1/4" BSP connector and or quick fit coupling, **DO NOT** use snap couplings at the tool. If a snap coupling is used, it must be connected via a whip hose.

Once the connections are complete, CHECK AGAIN to ensure the air pressure regulator knob (I) is turned fully anticlockwise, plug the compressor into the mains supply and switch and switch **ON**, switch the compressor **ON** by pulling the **ON/Off Switch (B)** out, until it clicks into position.

The compressor will now start, and the pressure will build up in the receiver to a regulated max, pressure of 8 bar (116 psi) the motor should then stop.

Should the motor fail to start immediately, this is probably because the receiver is already fully charged, check the pressure gauge (E). If you release some air, by opening the drain valve (B), the motor should start automatically once the air pressure has dropped sufficiently, ie; when the cut in pressure is reached.

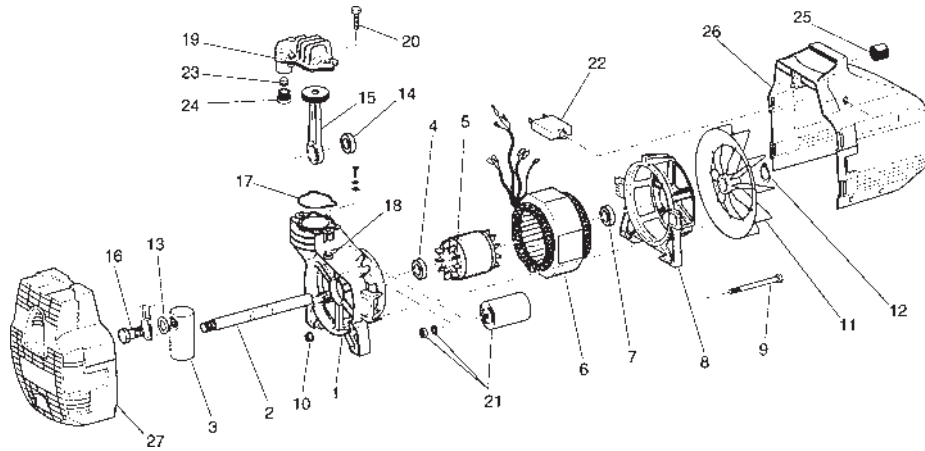
## PARTS LIST (Pump)

Index No	Part No	Description	Qty
1	FN116HP0001	Housing	1
2	FN116HP0002	Main Shaft	1
3	FN116HP0003	Crank	1
4	FN033047000	Bearing	1
5	FN034139000	Rotor	1
6	FN316HP1604	Stator	1
7	FN033005000	Bearing	1
8	FN116120007	Housing	1
9	FN014002154	Bolt	3
10	FN014003003	Nut	3
11	FN116120008	Fan	1
12	FN015083000	Circlip	1
13	FN014005069	Distance Piece	1
14	FN033055000	Bearing	1
15	FN416HP0004	Piston	1
16	FN116HP0005	Special Bolt	1
17	FN116120013	Gasket	1
18	FN014003001	Nut	2
19	FN416HP0007	Cylinder Head	1
20	FN014001056	Screw M8	2
21	FN009200004	Capacitor Compl.	1
22	FN008277000	Overload/Reset	1
23	FN011117000	Olive	1
24	FN116HP0011	Nut	1
25	FN116120017	Filter Element	1
26	FN116HP0008	Cover	1
27	FN116HP0009	Cover	1

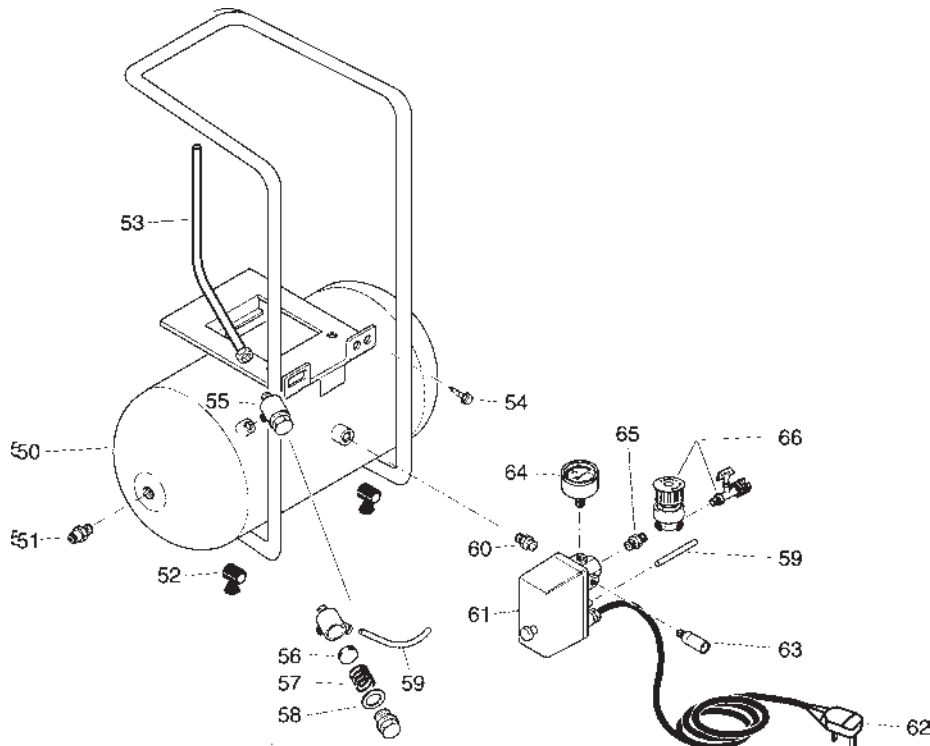
## PARTS LIST (Receiver)

50	FN126HB0012V	6lt Tank	1
51	FN022020000	Drain Cock 3/8"	1
52	FN020201000	Vibration Damper	3
53	FN129HU0011	Delivery Tube	1
54	FN014013042	Screw M5x15	2
55	FN347043000	Check Valve	1
56	FN047113001	Seal	1
57	FN047113002	Spring	1
58	FN010041000	Gasket	1
59	FN046001000	Rilsan Tube	1
60	FN011017000	Nipple 1/4"	1
61	FN321028000	Pressure Switch	1
62	FN101GA0200	Power Cable With BSI Plug	1
63	FN347022000	Safety Valve	1
64	FN330004000	Pressure Gauge Ø50-1/4"	1
65	FN011017000	Nipple 1/4"	1
66	FN319044000	Pressure Reducer With Line Cock	1

## PARTS DIAGRAM (Pump)



## PARTS DIAGRAM (Receiver)



If the motor still fails to start, it is possible that the over load circuit breaker (Fig. 2) has tripped out. This is a safety device to prevent the motor from overheating and eventually burning out.

If the breaker has tripped, switch the compressor OFF by pushing the ON/OFF switch (D) in, allow the machine to cool down before attempting to reset it.

Once the machine has cooled down sufficiently, push the circuit breaker reset switch (Fig. 2) in, switch the machine ON, by pulling the ON/OFF switch out, the motor should now run and the air pressure should build.

If the motor still fails to start, check the fuse etc, if no apparent fault is found consult your local CLARKE dealer.

### IMPORTANT

As no outlet pressure gauge is fitted to this model, and the graduation marks on the pressure regulator knob, provide an indication only of the output pressure. Therefore if the tools or equipment that you are using are pressure sensitive, a pressure gauge should be inserted into the airline to accurately regulate the output pressure.

When the compressor reaches its maximum working pressure (116 psi), the motor will automatically cut out, and will restart when the pressure has fallen by approximately 20 psi. This automatic STOP/START process will continue, as necessary to maintain pressure in the air receiver.

Adjust the pressure regulator knob to the pressure required for the tool/equipment fitted.

Check to ensure that there are no air leaks at any of the couplings or any other part of the system before operating the spray gun or air tool in the normal way.

When you have finished the job in hand **ALWAYS** switch OFF at the ON/OFF switch, NOT the mains supply, and release any pressure remaining in the system by opening the drain valve until all air is expelled.

**ALWAYS** operate the tool etc to further ensure that there is no pressure remaining in the system before removing the tool. Finally, reset the pressure regulator to zero by turning the knob fully anticlockwise.

### ROUTINE MAINTENANCE

#### IMPORTANT

Before carrying out any maintenance, **ALWAYS** switch OFF and disconnect the compressor from the mains supply by removing the plug from the socket, drain the air receiver and, if necessary allow the machine to cool down before starting work.

#### Daily

**ALWAYS** before use, open the drain valve to expel any air left in the system, tip the compressor onto its end and drain all condensate, if any, from the receiver, hold in that position until all condensate has drained off. **DO NOT** rest the compressor on the drain valve.

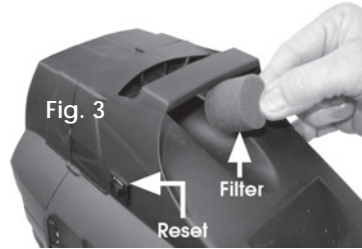
#### Monthly

It is important to keep the compressor clean, to do this, use a small soft dusting brush and vacuum cleaner. In particular, the air intake filter should be removed and inspected and cleaned, in very dusty environments this should be carried out frequently.

the performance of the machine, and even shorten its life.

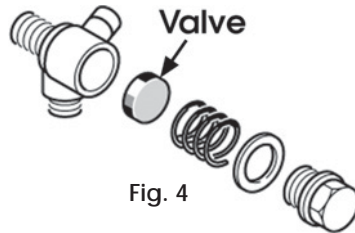
To clean the air intake filter, carefully remove the sponge element shown in Fig. 3. Clean the sponge and the housing using a brush and/or clean lint free cloth.

If necessary, the sponge may be gently washed in warm soapy water, it must be rinsed and allowed to dry thoroughly before refitting.



**Every 500 hours of operation or every 6 months**

- Clean all the external parts of the compressor. (This cleaning makes the cooling process more efficient and prolongs the life of the machine).
- Examine the non-return valve and renew if necessary (fig. 4) (Item 55, page 9/10.)



- In the event of an air leak follow the procedure below:

- Load compressor to maximum pressure
- Unplug the compressor
- With a brush and soapy water wet all 'screwed' air connections
- Any leaks will show through the formation of air bubbles.



**WARNING**

**NEVER unscrew a connection whilst the air receiver is under pressure.  
ALWAYS make certain that the tank has been emptied.**

**ACCESSORIES**

Your Clarke Pioneer Oil Free Air Compressor can be used in conjunction with a wide range of optional accessories for inflating tyres, air brushing, stapling, blowing and many other uses. For details contact your local accessory stockist.

A suitable Spraygun and air hose is available for use with your Pioneer 210 oil free compressor, part numbers as follows.

**Spraygun PS ..... Part No. 5080813**

**Hose JP3 ..... Part No. 3120203**

A wide range of accessories is available from your nearest CLARKE dealer, for further information, contact your nearest dealer, or telephone CLARKE International Sales department on 01992 565300.



**TROUBLE SHOOTING**

With considerate use, your CLARKE Air Compressor should provide you with long and trouble free service. Routine checks should be made on both the electrical supply as well as the compressed air lines and connections. If any fault appears, the reason for which is not immediately obvious, please contact your local CLARKE Dealer.

PROBLEM	PROBABLE CAUSE	REMEDY
The compressor stops and will not start again.	Bad connections.	Check electrical connections. Clean and tighten as necessary.
	Overload cutout switch has tripped.	Switch off and wait 5 minutes before switching on.
	Motor windings burnt out.	Contact your local dealer for a replacement motor.
The compressor does not reach the set pressure and overheats easily.	Compressor head gasket blown or valve broken.	Contact your CLARKE dealer.
	Worn Piston	Replace Piston (contact your CLARKE dealer)
Compressor does not start.	Air receiver charged	Open drain cock to expel air. Compressor should start again when pressure reduces to approx.
Air leaking from the pressure switch valve when the compressor is not running.	Faulty non-return valve.	First drain the receiver completely. Replace non-Return Valve
Air pressure from regulator will not adjust.	The diaphragm within the regulator body is broken.	Replace Regulator

**IMPORTANT:**

The use of parts other than CLARKE replacement parts may result in safety hazards, decreased tool performance and may invalidate your warranty.

**CAUTION** Do not attempt any repair or adjustment if you are uncertain as to how it should be done. If you have any queries, contact your local CLARKE Dealer.

