



AIR COMPRESSOR

XE RANGE - ELECTRIC MOTOR DRIVEN

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

LS0720 - ISS 5

INTRODUCTION

Thank you for purchasing this CLARKE compressor which is designed to supply compressed air to air powered tools for a wide range of applications such as spraying, sanding, drilling, and cutting.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safe operation of the compressor.

Please Note, these compressors are for indoor use only.

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

ENVIRONMENTAL RECYCLING POLICY



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

SPARE PARTS AND DIAGRAMS

Spare parts and diagrams are available on request by contacting our parts and service department on 020 8988 7400.

MODELS COVERED AND NOISE DATA

| Model Number | Sound Power level dB(LWA) | Sound Pressure level dB(LAEQ) |
|--------------|------------------------------|----------------------------------|
| XEV11/100 | 98 | 81 |
| XEPV11/50 | 98 | 75 |
| XEPVH11/50 | 98 | 75 |
| XEP15/50 | 101 | 78 |
| XEPV16/50 | 99 | 77 |
| XEPVH16/50 | 99 | 77 |
| XE15/150 | 98 | 81 |
| XEV16/100 | 98 | 82 |
| XEV16/150 | 101 | 84 |
| XEV16/200 | 101 | 84 |
| XEV26/200 | 99 | 81 |
| XE18/200 | 104 | 87 |
| XET19/200 | 100 | 83 |
| XE25/200 | 102 | 84 |
| XE29/270 | 105 | 87 |
| XE37/270 | 106 | 88 |

RESIDUAL RISK

Although this manual contains extensive safety warnings and information on the safe operation of your compressor, every tool does have certain residual risks which cannot be completely excluded with warnings or safety devices. This compressor must therefore always be operated with caution.

SAFETY PRECAUTIONS

Before using your compressor it is in your own interest to read and pay attention to the following safety rules:

1. **COMPRESSED AIR IS DANGEROUS** - Never direct a jet of air at people or animals.
2. Do not operate your air compressor with any guards removed.
3. Electrical or mechanical repairs should only be carried out by a qualified electrician/engineer. If you have a problem, contact your local dealer, or our Service Department on 020 8988 7400
4. Before attempting any repair ensure pressure is expelled from the air receiver and disconnect from electrical supply.
5. Do not leave pressure in air receiver overnight or when transporting.
6. Do not adjust or tamper with any safety valves. The maximum working pressure of the compressor is clearly stated on the machine.
7. Exercise caution when transporting the machine to avoid tipping the machine over.
8. Do not operate in a wet/damp environment.
9. Locate your air compressor on a firm flat surface with AVMs and ensure an adequate supply of clean air is available to the pump unit.
10. Do not exert any strain on electrical cables and ensure that air hoses are not tangled or wrapped around machinery etc.
11. The cylinder head and delivery pipes of your compressor become quite hot during operation. Do not touch. After switching off remember to leave an adequate cool-down period before touching.
12. Ensure that any equipment/tool used in conjunction with your compressor has a safe working pressure exceeding the output pressure of the machine.
13. 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 air hose and other equipment attached to it.
14. If using your compressor for paint spraying:
 - Never spray close to any source of flame or heat.
 - Always ensure that the spraying area has adequate fresh air ventilation.
 - Hazardous paints require special apparatus (see paint manufacturers recommendations).
15. Never let people operate the compressor unless they have had the necessary training.
16. Permanently installed pipework systems should be designed and installed by a competent engineer.

INSTALLATION

Before installing your machine, check that its air output is sufficient for the equipment to be used. The air output from the compressor must be more than the volume of air required. We recommend the following:

1. **Firm and level site, and the use of floor mountings for stationary compressors - anti-vibration pads. (Do not bolt machines directly to the floor).**



WARNING: MOVE THE COMPRESSOR ON A PALLET OR USING SLINGS BENEATH THE RECEIVER NEAR TO THE DOMED ENDS, EMPLOYING A FORK LIFT TRUCK OR WHEELED GANTRY CRANE. BEWARE OF OFF CENTRE LOADS. THE WEIGHT OF THE COMPRESSOR IS SHOWN ON THE DATA TABLE ON PAGE 2.

2. Dust and damp free environment.
3. Adequate ventilation for:-
 - Air intake to compressor pump (in order to draw in clean air).
 - Cooling to compressor pump, and electric motor.
4. To allow sufficient access for servicing, a minimum clearance of 500mm must be allowed around the machine.
5. The power cable from the main supply must be large enough to carry the starting and running load of the electric motor. This is particularly relevant if the compressor is some distance from the source of supply.
6. Electrical installations should be completed by a qualified electrician.
7. Electrical connection to the mains supply must be via a suitably fused (see table on page 6) approved plug or isolator (allowing sufficient capacity for motor starting). If using a circuit breaker, ensure it is motor rated and of sufficient size to allow for motor starting.
8. Compressors should be connected to mains electricity supply via an earth leakage protection device (RCD).

ELECTRICAL CONNECTIONS

See wiring lable on the power cable.

SUGGESTED FUSE RATINGS

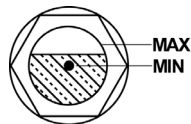
| MOTOR SIZE | | SINGLE PHASE MOTOR D.O.L. | THREE PHASE MOTORS 415V | |
|------------|------|------------------------------|-------------------------|------------|
| KW | HP | | DOL | STAR DELTA |
| 0.75 | 1.0 | 13 amp | 10 amp | |
| 1.1 | 1.5 | 13/15 amp | 10 amp | |
| 1.5 | 2.0 | 20 amp | 10 amp | |
| 1.9 | 2.5 | 20 amp | | |
| 2.2 | 3.0 | 30 amp | 16 amp | |
| 3.0 | 4.0 | 40 amp | 20 amp | |
| 4.0 | 5.5 | | 25 amp | |
| 5.5 | 7.5 | | 30 amp | |
| 7.5 | 10.0 | | | 25 amp |

LUBRICATION

Pump: Use Clarke compressor oil, as indicated on machine plate.

BEFORE STARTING COMPRESSOR, CHECK:-

1. Compressor Pump Oil Level using (a) Dipstick (to level marked) or (b) sight glass (see fig.1)
2. Automatic Control:- Pressure switch ON/OFF switch is in the OFF position.



WARNING:

1. **BEFORE STARTING COMPRESSOR, OPEN ALL OUTLET VALVES.**
2. **THE FOLLOWING START AND STOP INSTRUCTIONS MUST BE FOLLOWED IN THE CORRECT SEQUENCE TO AVOID SERIOUS DAMAGE TO THE COMPRESSOR/MOTOR.**

TO START COMPRESSOR

1. Switch on isolator (mains supply)
2. Switch on pressure switch (lift knob or twist switch). (See "GENERAL ARRANGEMENT" on page 8., item 22)
3. Check rotation (Flywheel/Fan blows air over pump)
4. Check that pressure does not exceed maximum working pressure (stamped on machine plate), if the pressure exceeds the maximum working pressure stated, stop the machine (see below), vent the system and contact the Clarke Service Department.

TO STOP COMPRESSOR

1. Switch off at the pressure switch (Push knob down or turn switch).
2. Isolate from the Mains Supply.
3. Drain air receiver (release drain tap).



WARNING: COMPRESSOR PUMPS, DELIVERY PIPES WILL REMAIN HOT FOR SOME TIME AFTER USE.

NOTE: When starting compressors up to and including the 3HP models, an auto bleed valve will operate and air will be heard vent. This is quite normal and should not cause concern. The valve should close after several seconds. Should it fail to close, consult your Clarke dealer.

GENERAL ARRANGEMENT

A. STATIONARY

NB: Must be mounted on Anti Vibration Pads

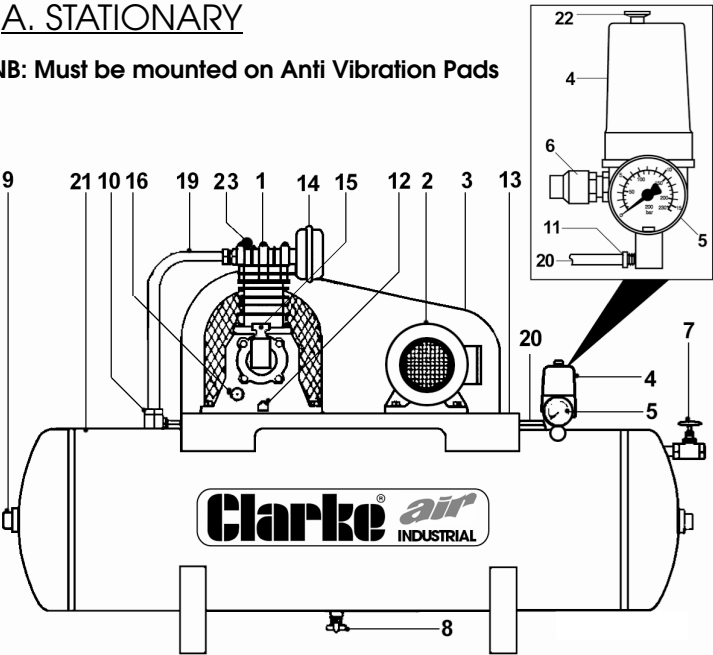


Fig.2

**Illustrative
purposes
only**

| | | | | | |
|---|---------------------|----|-----------------------|----|-------------------|
| 1 | Air Compressor Pump | 9 | Inspection Plug | 17 | - |
| 2 | Electric Motor (or | 10 | Non-Return Valve | 18 | - |
| 3 | Wire Guard | 11 | Air Bleed Valve | 19 | Air Delivery Pipe |
| 4 | Pressure Switch | 12 | Oil Drain Plug | 20 | Air Bleed Pipe |
| 5 | Pressure Gauge | 13 | Saddle | 21 | Air Receiver |
| 6 | Safety Valve | 14 | Air Intake Filter | 22 | On/Off switch |
| 7 | Ball Valve | 15 | Oil Filler/Breather | 23 | Auto Air Bleed |
| 8 | Drain Tap | 16 | Oil Level Sight Glass | | |

NOTE: On automatic machines (10 H.P), a solenoid valve is fitted to the delivery pipe.

NOTE: On automatic machines (10 H.P), an Auto Star Delta (ASD) starter is fitted, ready to be mounted to a wall or panel etc. It is **IMPORTANT** to note that **NO ADJUSTMENTS** should be made to this component. The ASD should be connected to a 3-phase supply by a qualified electrician.

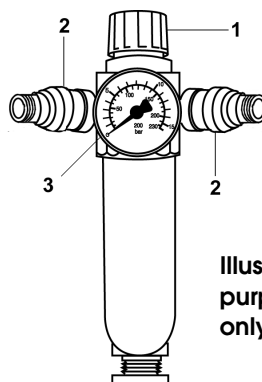
OUTLET PRESSURE ADJUSTMENTS

PORTABLE COMPRESSORS

1. Pressure Adjusting Knob
2. Outlet Taps
3. Pressure Gauge

TO ADJUST OUTLET PRESSURE:

To increase pressure - turn knob (1) clockwise. To decrease pressure - turn knob (1) anticlockwise.
Outlet taps - slide knurled section (2) away from body to open, push towards body to close.



Illustrative
purposes
only

NOTE: Pressure Gauge (3). Pressure shown will differ by approximately 1 bar depending on whether the outlets are open/closed.

STATIONARY COMPRESSORS

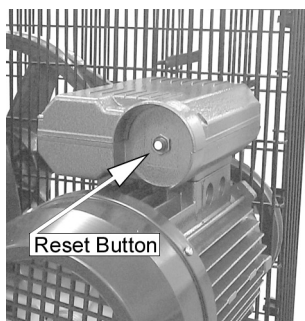
These machines are not supplied with the facility to adjust outlet pressure. A comprehensive range of airline accessories is available from your local CLARKE stockist.

OVERLOAD BUTTON (SINGLE PHASE ONLY)

The electric motor is fitted with an automatic overload detector which will stop the motor if an overload is detected.

If this happens,

1. **SWITCH OFF THE PRESSURE SWITCH** (Push knob down or turn switch).
 - Allow the compressor to cool down for 5-10 minutes.
2. Press the Reset button shown on the right.
3. Switch on pressure switch (lift knob or twist switch).



If the overload trips repeatedly, it may indicate a fault with the compressor, in this case you should contact the Clarke service department.

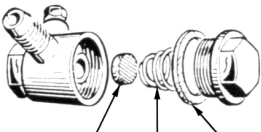
OTHER PRODUCTS WITHIN OUR RANGE In addition to Air Compressors from 3-40 cfm, we offer a vast range of air tools and airline equipment. Please ask your local dealer for details of our range or a copy of our Power Products Catalogue

TROUBLESHOOTING CHART

IMPORTANT!

1. Any remedial work that may be required must be carried out by a qualified electrician/engineer.
2. Disconnect from the mains supply before removing any parts from the compressor.
3. Empty Air Receiver of Air before dismantling any part of the compressor unit's pressure system.
4. If your compressor develops a fault do not use until the fault has been rectified.

| SYMPTOM | PROBABLE CAUSE | REMEDY |
|--|---------------------------------------|---|
| Compressor will not start automatically | Fault in electrical installation | Let an electrician check electrical installation. |
| | Current supply failure. | |
| | Voltage drop. | |
| | Motor starter faulty. | |
| | Motor incorrectly connected or faulty | |
| | Starter overload has tripped out. | Reset by depressing button. |
| | Pressure switch defective. | Have pressure switch changed by an electrician. |
| | Fuse blown. | Check fuse rating - replace. |
| Compressor unit will not stop automatically. | Pressure switch defective. | Contact Clarke Service |
| Fuses keep blowing. | Inadequate size fuse installed. | Replace with reference to chart See page 6. |
| | Fault in motor. | Contact Clarke Service |
| Bleed valve under pressure switch blows whilst compressor is not running | Non-return valve leaking. | Clean non-return valve or replace. |

| SYMPTOM | PROBABLE CAUSE | REMEDY |
|---|---|--|
| Bleed valve under pressure switch blows whilst compressor is running | Non return valve stuck (NRV) open at junction of the tank and the pump delivery pipe. | Drain Tank and remove inspection nut to clean Non Return valve  Valve Spring Gasket |
| Compressor unit starts, but stops again after only a few revolutions. | Non-return valve leaking (compressor unit is on load during start). | Disconnect from the mains supply and empty air receiver. Clean or replace |
| | Non-return valve blocked, possibly frozen up. | Thaw non-return valve out (Unit must be installed in frost-free place). |
| | Solenoid valve leaking or defective (only applies to 10 HP machines and above). | Contact Clarke Service |
| Unusual noise from compressor | Bolts loose. | Tighten Bolts. |
| | V-Belt flywheel or cooling coil touching belt guard | Find place of contact and remedy fault. |
| | Flywheel loose. | Tighten flywheel. |
| | Unit installed on an unsuitable base. | Move unit to a more solid base |
| | Bearings, piston rings or cylinder worn. | Contact Clarke Service |
| | Valve broken. | Contact Clarke Service |
| | Bearings of electric motor worn | Contact Clarke Service |
| Compressor unit starts and stops more frequently than usual. | Large amount of condensation in air receiver. | Drain off condensation AT LEAST once a week. |
| | Leaks in control unit or inspection cover. | Locate leaks (by means of soapy water) and repair. |
| | Too little pressure differential. | Contact Clarke Service |

| SYMPTOM | PROBABLE CAUSE | REMEDY |
|--|---|--|
| Compressor's oil consumption rising. | Too much oil in compressor. | Check oil level 2 or 3 minutes after stopping. |
| | Leaks around crank case. | Contact Clarke Service |
| | Working temperature of compressor too high because of insufficient cooling. | Increase ventilation to air compressor. |
| | Unit too small in proportion to air consumption. | Connect supplementary. |
| | Semi-automatic unit Load too small. | Convert to fully automatic operation. |
| | Cylinder worn | Contact Clarke Service |
| | Intake air filter blocked. | Clean / Change air filter. |
| Compressor runs continuously and can't attain the working pressure required. | Suction filter blocked. | Change filter. |
| | V-belt too slack (not applicable to direct drive machines). | Tighten V-Belt. |
| | Leak between compressor block and air receiver/ leaks in or near air receiver. | Tighten connection and repair leak or Contact Clarke Service |
| | RPM too low because of incorrectly connected electric motor. | Contact Clarke Service |
| | Valves blocked by dirt, paint, dust or coked up. | Contact Clarke Service |
| | Inspection cover or plug leaking | Empty air receiver and change seal or Contact Clarke Service |
| | Suction rendered difficult or impossible at suction intake or the air being taken in is too warm. | Ensure unobstructed air flow around the unit. |
| | Pressure gauge defective. | |
| | Unit too small in relation to air consumption of connected equipment | Install a larger compressor |
| | Compressor worn. | Have compressor overhauled or replace it. |
| Compressor unit starts when no air is being used. | Leaks in pipework system | Locate and repair leaks. |

| SYMPTOM | PROBABLE CAUSE | REMEDY |
|---|---|--|
| Machine running but not pumping air into the receiver (10HP only) | Air exhausting from solenoid after starter has changed direction from star to delta. | Check solenoid valve |
| | | Contact Clarke Service |
| Compressor becomes too hot. | Insufficient ventilation | See that sufficient air is supplied to flywheel or fan of compressor and that hot air is properly vented. |
| | Oil level too low (check 2 or 3 times after stopping). | Fill with oil - See page 7. |
| | Fault in valves (machine not stopping). | Contact Clarke Service |
| | Blown head gasket (machine not stopping). | Contact Clarke Service |
| | Dirt on cooling fins or suction filter. | Clean cooling fins and suction filter. |
| | Unit working at too high a pressure | Contact Clarke Service |
| | Non-return valve partly blocked. | Clean or thaw out non-return valve. |
| | Compressor being overworked and running continuously. | Use a larger compressor |
| Oil in the air delivered | Sump over full | Reduce oil to correct level |
| | Cylinder worn | Contact Clarke Service |
| | Intake air filter blocked | Change air filter |
| Condensation in crank case (especially in 2-stage compressors). | Compressor over dimensioned (operational periods too short in relation to resting periods). | Frequent oil changes Reduce Cooling of crank case (e.g. by shielding it from the air stream). Contact Clarke Service |
| Condensation at outlet points | Piping installation is incorrect | Consult your local dealer |
| | Compressor is taking in air that is too warm | Obtain better fresh air supply for the compressor. |
| | Delivery temperature of air from air receiver is too high | Use a larger air receiver |
| | | Contact Clarke Service |

| SYMPTOM | PROBABLE CAUSE | REMEDY |
|--|--|------------------------|
| Electric motor too hot: Maximum temperature 90oC (194oF). | Operational voltage too low | Call an electrician |
| | Faults in electrical installation | Contact Clarke Service |
| | Cooling fins of electric motor blocked by dirt | Clean Cooling fins |

MAINTENANCE CHART

| CHECK LIST | DAILY | WEEKLY | 6 MONTHLY | NOTES |
|-------------------------|-------|-----------------------|----------------------------------|---|
| Oil level | Check | | Change | |
| Air Receiver | Drain | | | |
| Intake Filter | | Check / Clean | | Replace if necessary |
| Oil breather | | Check / Clean | | |
| Fan and cooling fins | | Clean | | |
| Inlet and outlet valves | | | | If worn Contact Clarke Service department |
| Non Return Valve | | Clean | Replace if worn | |
| Belt Tension | | | Check / Adjust / Replace if worn | Does not apply to direct drive |
| Big end bearings | | | Check | If worn Contact Clarke Service department |
| Main bearings | | | Check | If worn Contact Clarke Service department |
| Piston Rings | | | | If worn Contact Clarke Service department |
| Cylinder head bolts | | Check Torque settings | | See above for details. |

DECLARATION OF CONFORMITY



Hemnal Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

2004/108/EC *Electromagnetic Compatibility Directive.*

2006/42/EC *Machinery Directive.*

2011/65/EU *Restriction of Hazardous substances.*

2009/105/EC *Simple Pressure Vessel Directive.*

2000/14/EC *Noise Emissions Directive, (amended by 2005/88/EC).*

The following standards have been applied to the product(s):

EN 1012-1:2010, EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011, EN 61000-3-2:2006+A2:2009,
EN 61000-3-3:2008

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2016

Signed:

J.A. Clarke
Director

