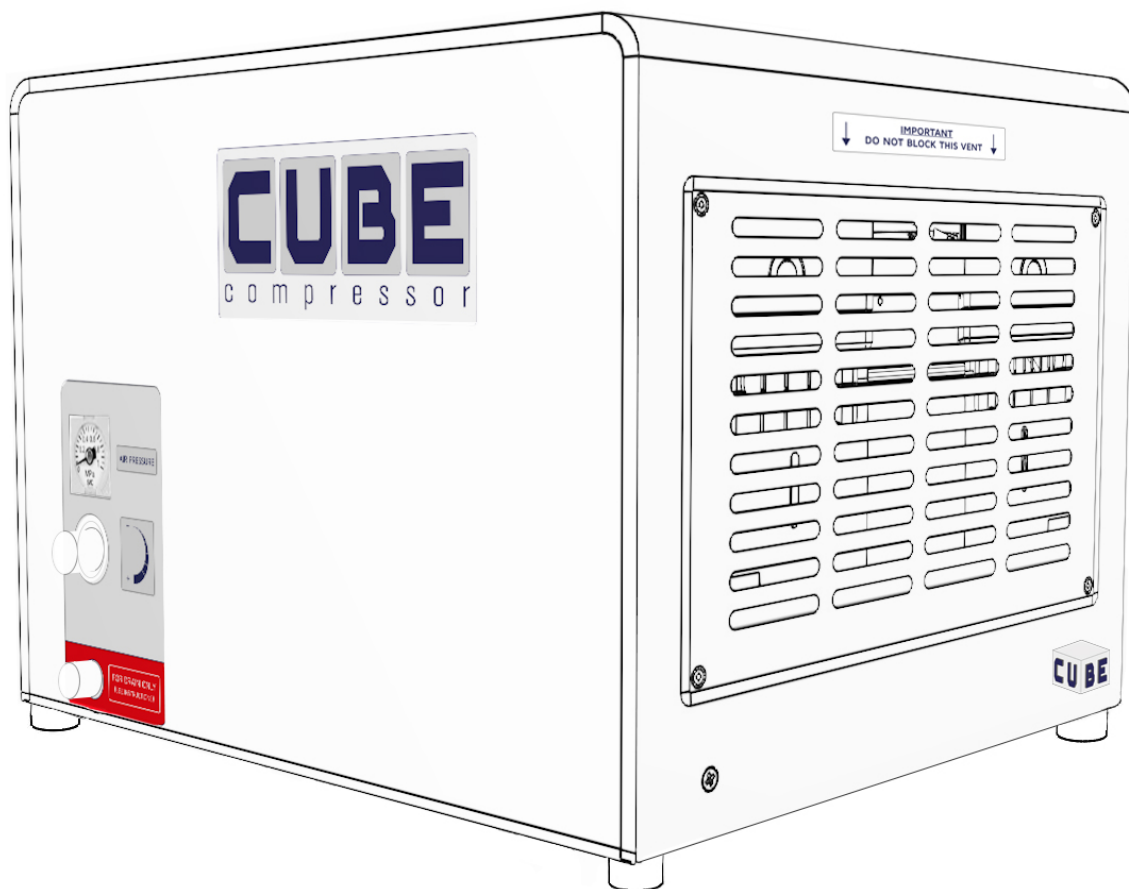


Service Manual



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Operating Manual

The CUBE air compressor is both an electrical and pressure device and as such should be treated with all due care and attention. As part of the compressed air system, filters should be installed for the removal of contaminant that may have formed as part of the compression process.

CUBE compressors with dryers when installed with appropriate recommended filters and properly maintained, will deliver clean dry air.

Under no circumstances should members of the public be allowed within the vicinity of the compressor. Any maintenance work performed on the compressor should only be done so in accordance with the manufacturer's instructions and by competent persons.

The substitution of parts not produced nor approved by Medivance can impair performance, service life and create potential mechanical or personnel hazards and will invalidate your warranty. Medivance maintains whatever authority is needed to change the substance of this working booklet without notification and the information is in no way binding on the company.

CE-Marking

All products bear the CE Conformity Marking. This marking denotes that the products conform to the safety guidelines and directives laid down by the European Union.

Guidelines and Directives

The product has been CE marked in accordance with the following directives and assessed to the relevant clauses in Standards mentioned below:

- Machinery Directive 2006/42/EC.
- Electromagnetic Compatibility 2004/108/EC.
- Low-Voltage Directive 2006/95/EC.
- Waste Electrical and Electronic equipment (WEEE) 2012/19/EU
- BS EN 1012-1:2010 Compressors and vacuum pumps. Safety requirements. Air compressors
- BS EN ISO 12100:2010 (Incorporating corrigendum January 2011) Safety of machinery – General principles for design – Risk assessment and risk reduction
- BS EN 60601-1-2:2007 Clause 17 Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Electromagnetic compatibility. Requirements and tests
- BS EN 60204-1:2006+A1:2009 Safety of machinery – Electrical equipment of machines – Part 1: General requirements.

General Information

The User Manual forms an integral part of the machine. They must be kept close to the machine and in readiness whenever required. Precise observance of these instructions is a prior condition for use of the machine for the intended purpose and for its correct operation.

This User Manual should be passed on to future users if necessary.

Warranty

Provided the operating instructions have been followed, and the compressor has been properly maintained, Medivance Cube compressors are guaranteed against faulty workmanship for a period of 1 year. The warranty does not cover damage by misuse, unauthorised parts or unauthorised service. Contact Medivance Instruments Limited or your retailer for additional information.

Safety Precautions

It is in your own interest to read and pay attention to the following safety rules. Always read these instructions before using your air compressor.

- When operating the compressor the laws and regulations in force in the place of use must be observed! In the interest of safe operation, the operator and user are responsible for observing such regulations.
- The original packaging has to be kept in a safe place in case of having to return the unit.
- Ensure that the packaging is kept out of the reach of children. Only the original packaging warrants optimum protection of the unit during transport.
- In the event of the unit having to be returned during the period of guarantee, Medivance Instruments Ltd. does not assume any liability for damage in transit due to faulty or improper packing.
- If storage of the packing materials is not possible, ensure that they are disposed of in a manner serving to protect the environment. The transport carton can be disposed of in the paper recycling bin.
- Prior to connecting up the machine, a check must be carried out to see whether the mains voltage and mains frequency specified on the machine conform to the data applicable to the supply mains.
- Prior to being put into operation, the machine and the lines need to be inspected for damage. Damaged lines, socket outlets and plugs must be replaced immediately.
- Ensure the compressor has been installed, electrically connected and piped in by a properly qualified person.
- Ensure the compressor is kept upright at all times
- Compressed air is dangerous - Never direct a jet of air at people or animals.
- Do not operate your air compressor with any covers or guards removed.
- Do not operate your air compressor without the Air Filter Intake screwed, (see Installation & positioning in page 12).
- Before attempting any repair or maintenance work of any kind, the mains plug must always be disconnected from the socket. In addition, air must be removed from all pressure lines and the pressure tank depressurised.
- After switching off remember to leave an adequate cool-down period before touching any inside parts.
- 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 +44 (0)20 8965 2913

Safety Precautions

- Do not leave pressure in air receiver overnight or when transporting.
 - Do not adjust or tamper with any safety valves. The maximum working pressure of the compressor is clearly stated on the machine.
 - Exercise caution when transporting the machine to avoid tipping it over.
 - Do not operate in a wet/damp environment.
 - Locate your air compressor on a firm flat surface and ensure an adequate supply of clean air is available to the pump unit.
 - Do not exert any strain on electrical cables and ensure that air pipes are not tangled or wrapped around the machine.
 - Ensure that any equipment/tool used in conjunction with your compressor has a safe working pressure exceeding the output pressure of the machine.
 - When disconnecting air pipes 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 pipe and other equipment attached to it.
 - In hazardous situations or in the event of technical faults occurring, disconnect the machine from the mains immediately (disconnect plug from mains).
 - 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).
 - Never let anyone operate the compressor unless they have had the necessary instructions.
-
- Each time prior to using the machine the user must check to ensure that it is functionally safe and in proper condition.
 - The user must be familiar with how to operate the machine.

The product is not intended for use in areas of rooms that are exposed to risk of explosion. Explosion hazards may result from the use of inflammable anaesthetics, skin cleansing agents, oxygen and skin disinfectants.

- In the event of the maximum working pressure (8 bar) being exceeded, the compressor set must be switched off and disconnected from the mains (disconnect mains plug). Inform the technician responsible.
- The machine is not suitable for operation in a combustion-stimulating atmosphere.
- The compressed air produced by the compressor is unsuitable for operating breathing equipment or similar facilities without additional filters required for the operating area.

Warning Information and Symbols

In the Instructions for Assembly and Use, as well as on the packaging and the product itself, use is made of the following terms or symbols to denote data or information of special importance:



Information and/or mandatory regulations or prohibitions for the prevention of personal injury or substantial property damage.



Caution! Compressor can start up automatically!



Observe Instructions for Assembly and Use!



The product packaging can be recycled.



Not for general waste.



Do not stack more than 3 compressors during transit.



Safety information must be reviewed before the product is used.



Keep away from sunligh.



Fragile.



Switch OFF (power) the CUBE Compressor.



Warning of dangerous electrical voltage.



Caution! Hot surface inside. Do not touch!



Disconnect mains plug before opening cover.



CE-marking.



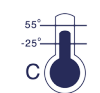
Location of manufacture.



This way up.



Make due allowance for environmental effects. Do not operate the machine in a damp or wet environment!



Recommended storage temperature.



Safety earth to the chassis. Do not remove.



Switch ON (power) the CUBE Compressor.

Use for the Intended Purpose

The compressor is intended to be used for generating compressed air required for operating Aquacare units or for similar applications.

Installation to provide compressed air as required:

In designing and constructing the compressor, allowance has been made for the requirements of medical products where applicable. Accordingly, the unit can be used for installation in medical care facilities.

If the unit is installed in medical care facilities, the requirements stipulated in Directive 93/42 EEC as well as the relevant norms must be observed as applied to installation and assembly.

Prior to installing the compressor in medical facilities, it must be ensured that the available medium complies with the requirements stipulated for the relevant purpose in each individual case. Observe the particulars given in Chapter 2.4. "Technical specification".

When installing, classification and conformity rating must be verified by the installer of the equipment.

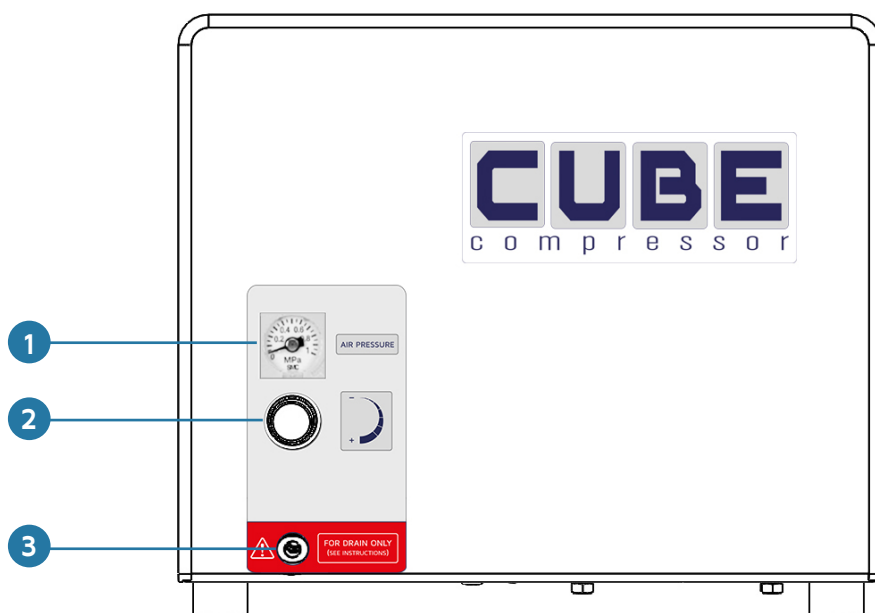
Any other use or use beyond what is specified is deemed to be not for the intended purpose. The manufacturer accepts no liability for damage resulting therefrom. All risk is borne solely by the operator/user.

Product Description

The compressor generates an oil-free compressed air required for operating Aquacare units or similar dental equipment.

Front Face of Cube Air Compressor

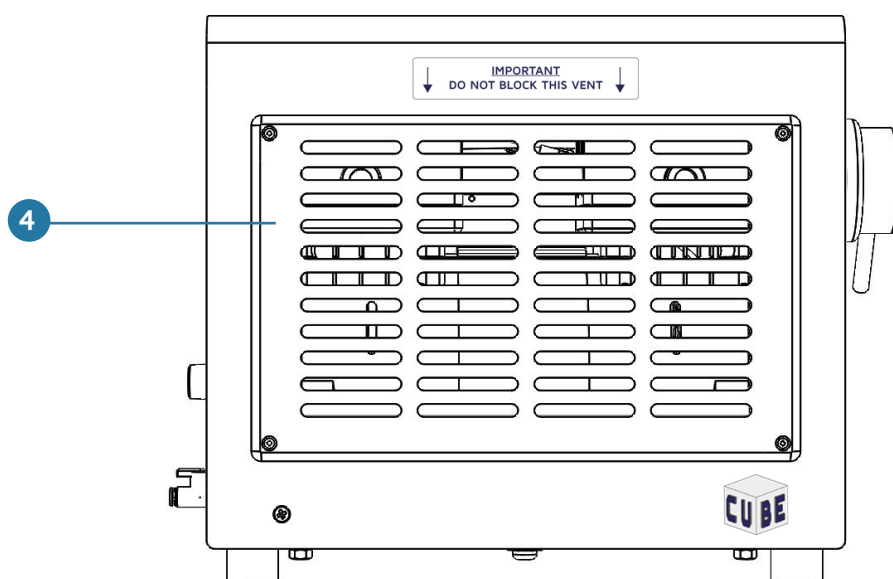
1. Pressure Indicator
2. Pressure Regulator
3. Drain point ball valve



Right Face of Cube Air Compressor

There is a vent at the right side of the compressor. Do not block this vent as the compressor will not work efficiently if the heat inside is not allowed to escape.

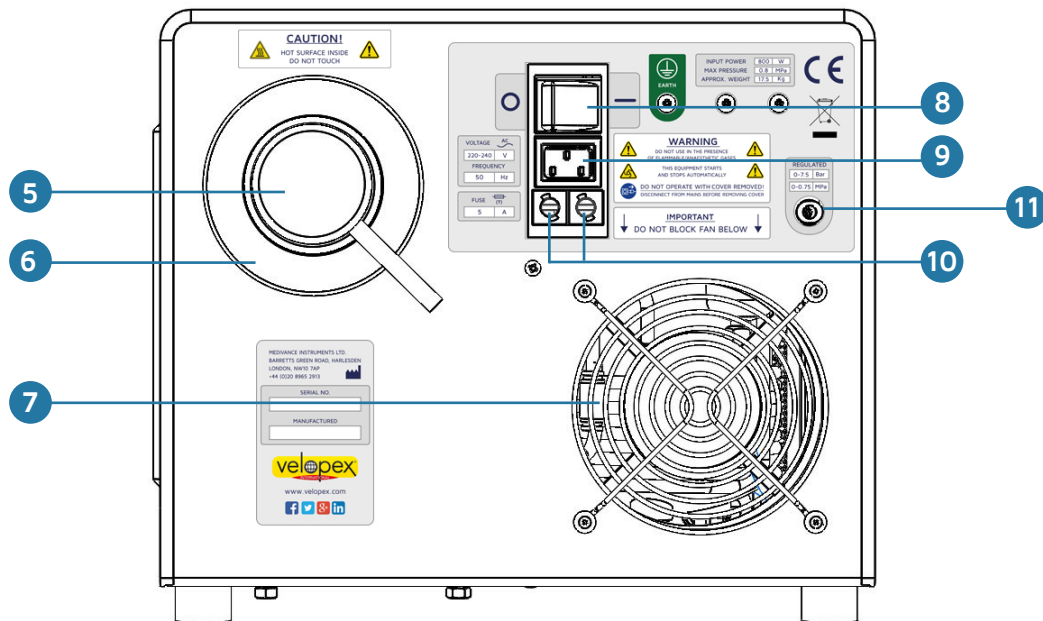
4. Vent



Product Description

Back Face of Cube Air Compressor

- | | | | |
|----|-------------------|-----|------------------------------|
| 5. | Air Filter Intake | 9. | Power Inlet Socket |
| 6. | Seal | 10. | 2x Fuses (5A) |
| 7. | Inlet Fan | 11. | Air outlet ball valve |
| 8. | Power Switch | | |



Electrical Connections

Where applicable, compressors are supplied with a moulded plug in accordance with national standards.

220-240v/50Hz models wired in accordance with European Standard.

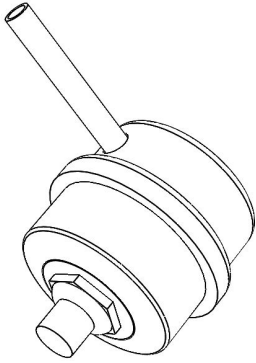
Blue = neutral
Brown = live
Yellow & Green Stripe = earth

Technical Specification

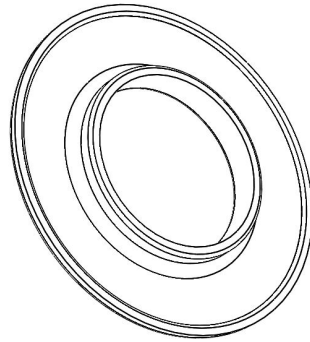
Voltage (V)	220-240 V (+/-10V)
Frequency (Hz)	50 Hz
Rated current for 8 bar/0.8 MPa (A)	3 A
Rated Power (KW)	0.800 KW
Air flow (L/min)	50 L/min @ 5bar
Noise (Db)	< 63 dB
Initial pressure/ cut off pressure	6/ 8 bar
Safety valve pressure setting	8.8 bar
Dimensions (H x L x D (cm)	28 x 33 x 38 cm
Filtration grade (µm)	5 µm
Weight (Kg)	17.5 Kg
Max. Duty Cycle*	80% (25 L/min @ 5 Bar, relative humidity up to 50% at a max. temperature of +40°C)
* The motor pump should stop at least once every 30 min	

Installation

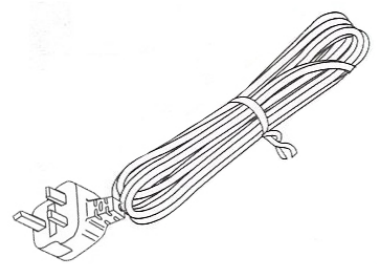
- Check that the compressor has not been damaged during transit. Do not connect damaged compressors to the mains.
- Do not use extension leads, multiple plugs or sockets.
- Confirm that the feeding line is adequate to feed the compressor.
- Remove packaging from the top and identify the enclosed items:



Air Intake Filter with Tube



Seal

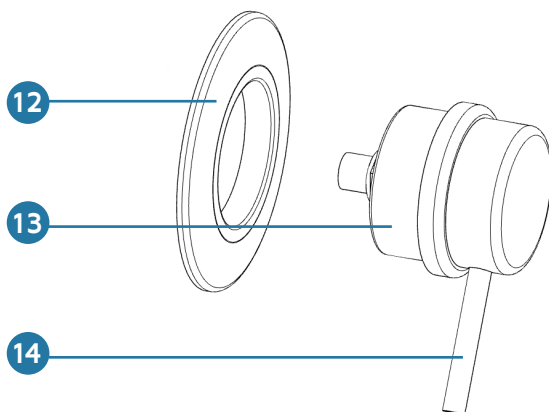


Power Cable

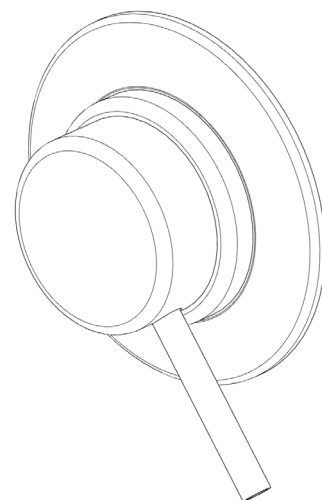
NOTE: Always ensure the tube on the Air Intake Filter is secure as it reduces noise level.

Place the Seal on the Air Intake Filter pushing it up to the flange.

12. Seal
13. Air Intake Filter
14. Tube



Air Intake Filter and Seal

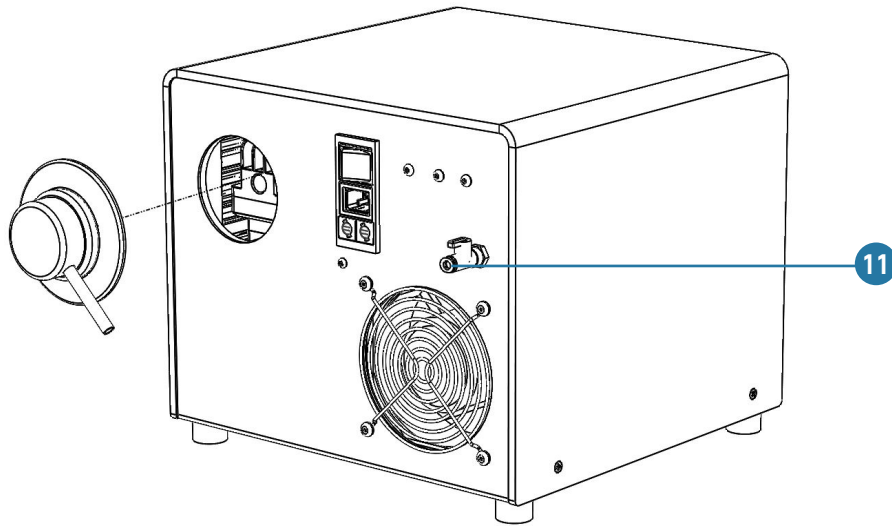


Air Intake Filter and Seal assembled

Installation

- After assembling the Seal to the Air Intake Filter, screw it into the threaded intake of the motor as shown on the picture below. Turn clockwise to tighten the air filter. The Air Intake filter cap may come loose while tightening the air filter assembly. Press and twist anti-clockwise to secure the cap.

11. Air **outlet** ball valve



Location of Air Intake Filter Assembly

Connect a piece of 6mm tubing to the air outlet ball valve on the back of the CUBE Compressor and then open it.

Positioning the Compressor

You should

- Provide suitable protection from the weather conditions.
- Place the compressor at floor level on a flat surface.
- Permit access for maintenance all around the compressor.
- Position it in a dry area, avoiding damp or humid surroundings. The site must be dust free, well ventilated and have a cool ambient temperature. 5°C to 40°C should be regarded as the minimum and maximum allowable ambient.

You should not:

- Cover the compressor or allow hot air generated by the motor to re-circulate around the compressor. Ensure there is approx. 20cm clearance around the compressor.
- Restrict air flow around the fan, inlet or cover vent.

IMPORTANT: The compressor produces heat. Under no circumstances restrict any of the vents otherwise severe damage may occur.

Starting

Ensure the Air Intake Filter is screwed into the threaded intake of the motor (see Installation & Positioning Page 12).

- Plug the compressor into an outlet socket of nominal voltage.
- Turn on the compressor using the green switch on the back of the compressor.
- The compressor will start running and will automatically switch off at the pre-set pressure. As air is used the pressure drops and the motor will restart at the pre-set pressure.
- Every time the compressor switches off, you will hear a short hiss of air. This is the unloader valve discharging the residual delivery pipe pressure and is normal.
- Every time the CUBE Compressor switches on, you will notice the fan turns on too. When the compressor switches off, the fan will turn off as well.
- The fan has a thermal switch which will turn on the fan if inside the CUBE Compressor there is excessive temperature and it will turn off the fan once the temperature inside the CUBE Compressor cools down.
- Use the pressure regulator to adjust the outlet pressure. To increase line pressure, rotate the black knob in a clockwise direction; to decrease turn anti clockwise. Lock the setting by pushing the knob down until it "clicks" home.

Starting

IMPORTANT

- The motor must never be allowed to run continuously for over 30 minutes, as it will get damaged.
- Do not ignore air leaks. All air connections must be leak free to prevent the compressor from overworking.
- The compressor is fitted with a thermal overload. In the event of excessive temperature, the motor will switch off. After about 50 minutes when the motor has cooled it will automatically reset.

You must find the cause of the overload and rectify this before continuing to use the compressor.

Check for

- Drain tap not closed properly
- Air leaks on the drain/output fittings
- Compressor not the correct size for the work load
- Cooling fan cover vent restricted
- Cooling fan not working at any time

If problems persist contact your dealer.

Climatic Conditions for Storage and Transport

- Temperature -25°C to $+55^{\circ}\text{C}$, 24h to $+70^{\circ}\text{C}$
- Relative Atmospheric Humidity 10 % to 90 % (without condensation)

Climatic Conditions for Operation

- Temperature $+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$
- Relative Atmospheric Humidity up to +50 %

Preventative Maintenance

Annual maintenance parts should only be done by qualified personnel.

Operation	Daily	Weekly	Annually
Drain Air Receiver	■		
Clean Ventilation Grills & Vents		■	
Replace Air Intake Filter			■
Check Pressure Relief Activation			■
Replace Internal Air Filter			■
Replace Exhaust Filter			■
Check Pressure Switch			■

Above are to be considered minimum frequency

Draining the Air Receiver

Condensation water may form inside the air receiver due to differences in temperature. Every day you should drain the air receiver just before use for maximum efficiency of the CUBE Compressor.

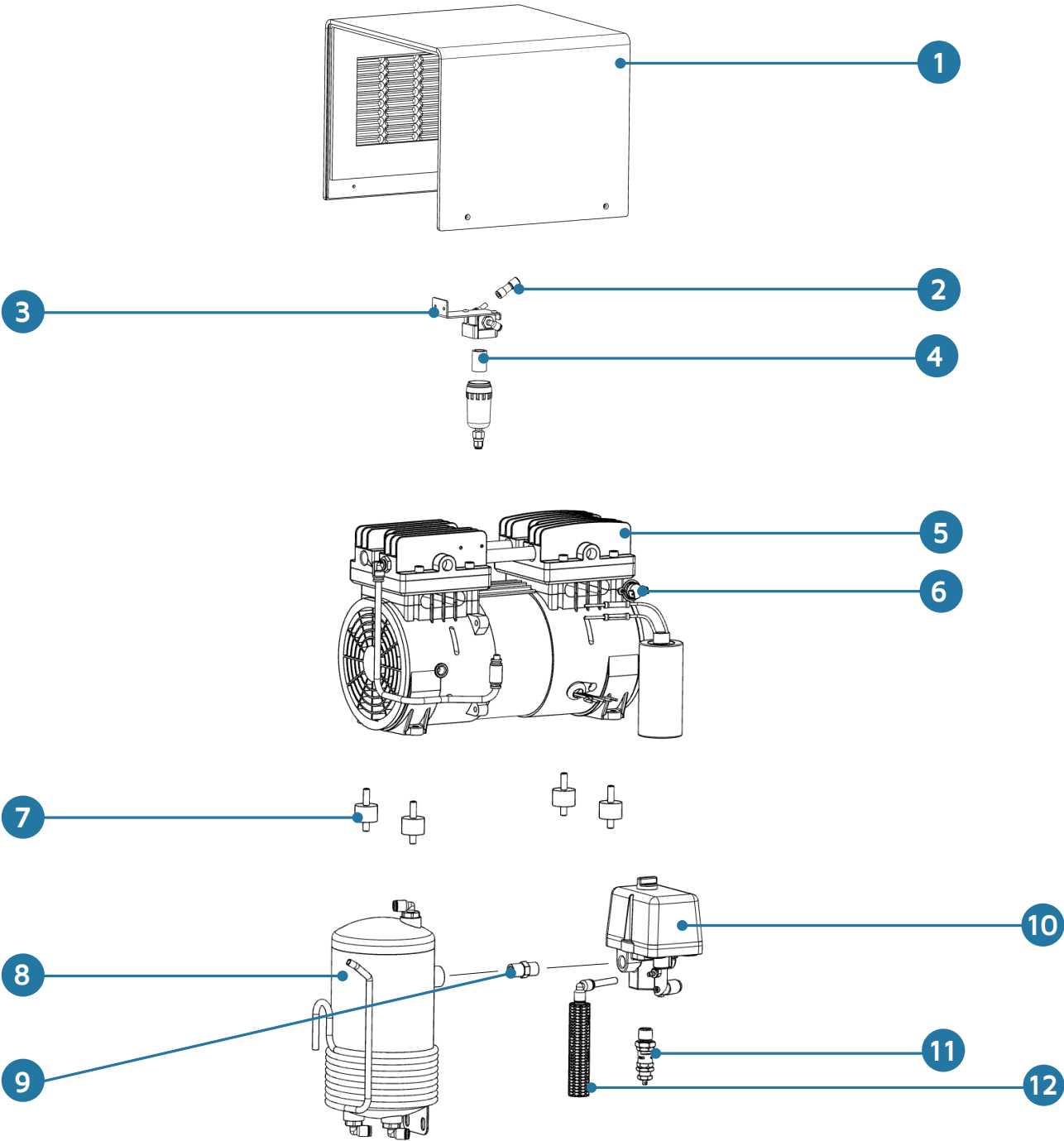
When doing this, proceed as follows:

- Take a small towel/ tissue and place it facing the drain point valve on the front face of the compressor.
- With the compressor in the switched-on state, slowly open the drain valve provided to allow water to flow out. (See fig. 1 - Front face of the CUBE Compressor). The maximum pressure of the air receiver is 8 bar.
- Wait until the motor switch on again and then close the drain valve.
- Repeat the above two or three times.

Parts reference

Ref No.	Description	Part No.
1	Cube Cover With Acoustic Isolation	I/ASS6013F
2	One Way Valve	I/FIT0117F
3	Air Filter	I/ASS6011F
4	Filter Element (2 pack)	I/FIT8186F
5	Compressor Pump	I/ASS6003F
6	Thermal Switch	I/ELC0067F

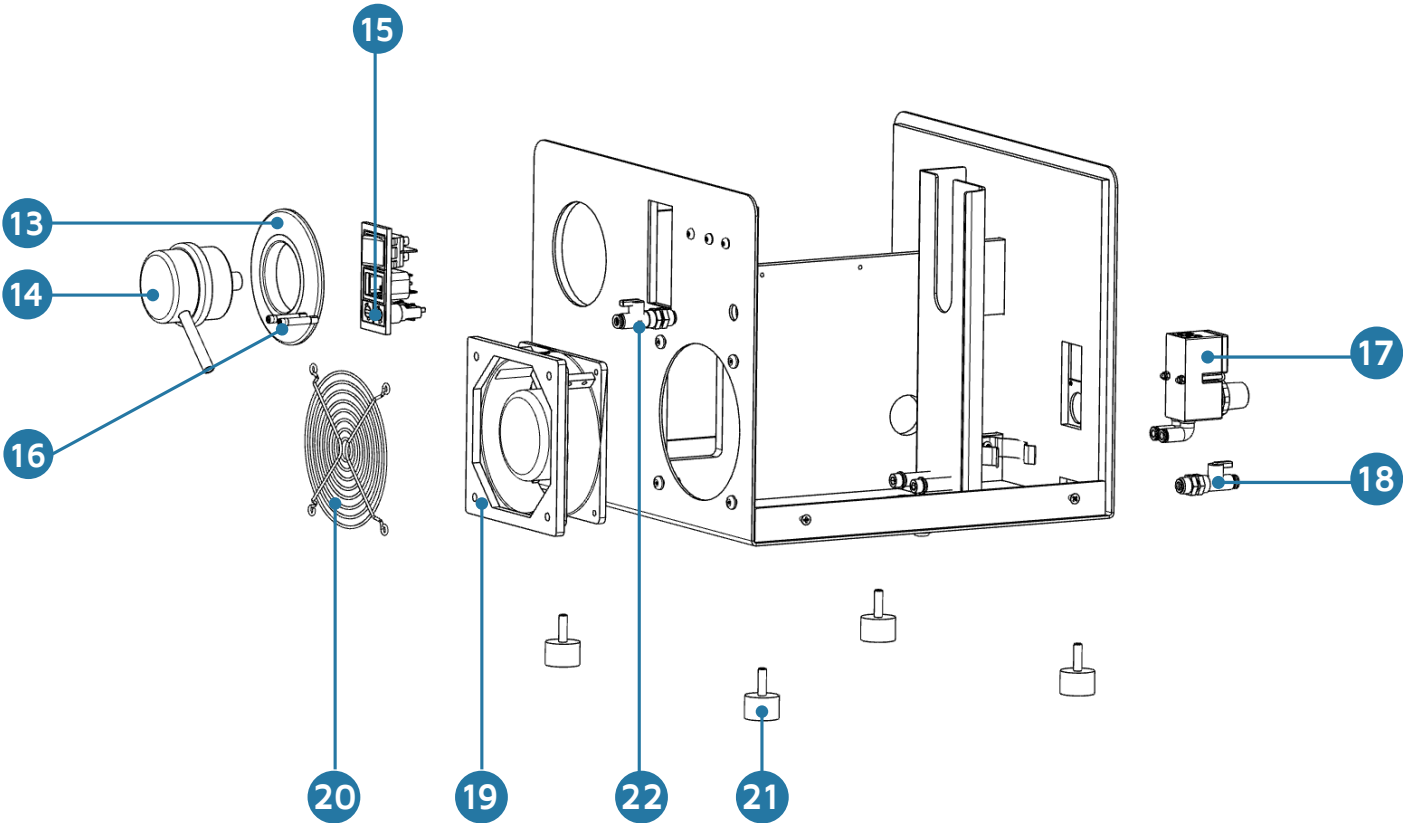
Ref No	Description	Part No.
7	Rubber Mount Motor (4 sets)	I/FIX0321F
8	Air Receiver	I/ASS6007F
9	Adaptor Stud	I/FIT0174F
10	Pressure Switch	I/ELC0066F
11	Pressure Relief Valve	I/FIX2173F
12	Exhaust Silencer	I/ASS6010F



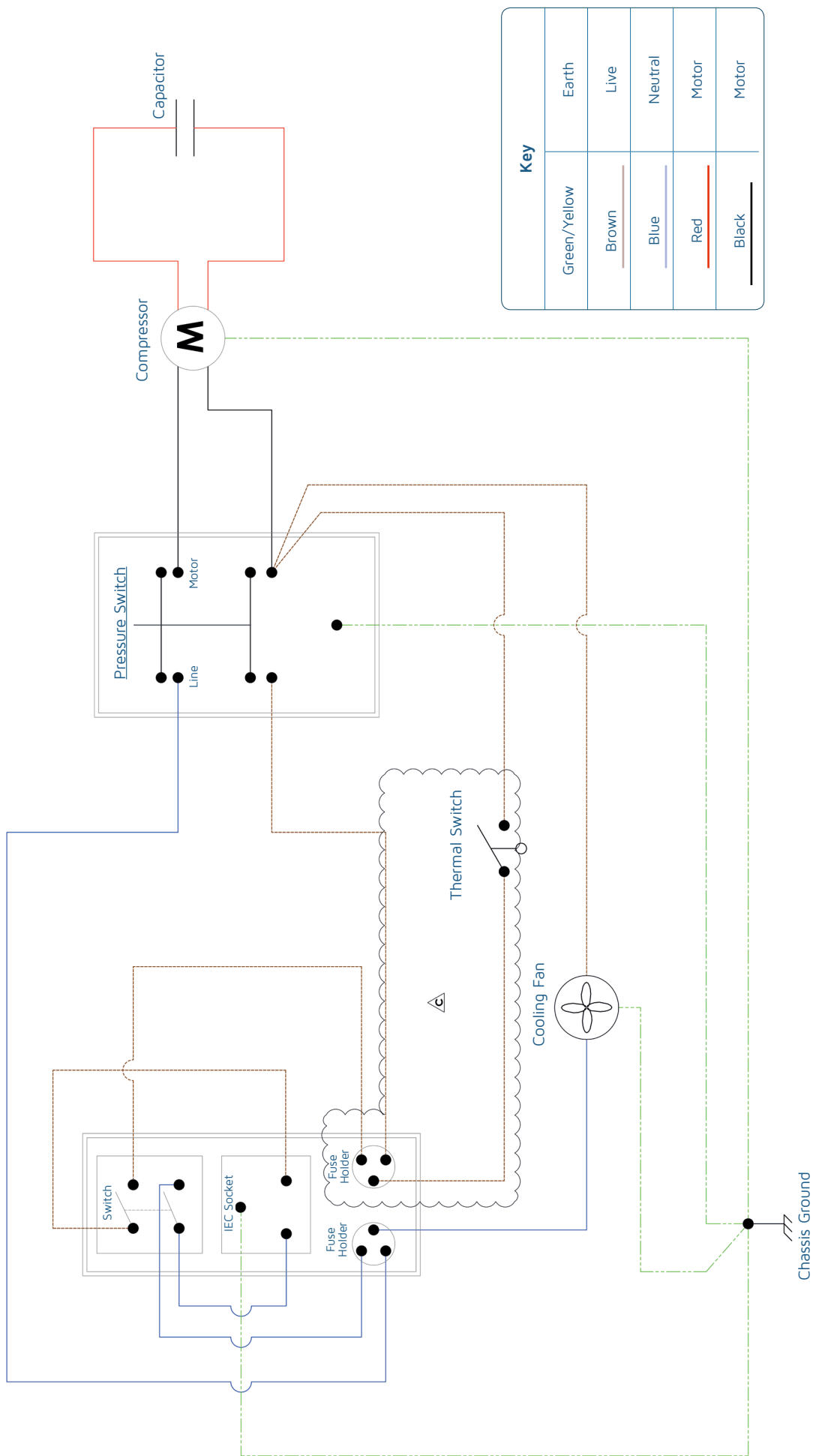
Parts reference

Ref No	Description	Part No.
13	Air Intake Filter Seal	I/FIX0048F
14	Air Intake Filter	I/FIX0047F
15	Power Module	I/ELC0064F
16	5A Fuse (10 pack)	I/ELC1014F
17	Pressure Regulator With Gauge	I/FIT0184F

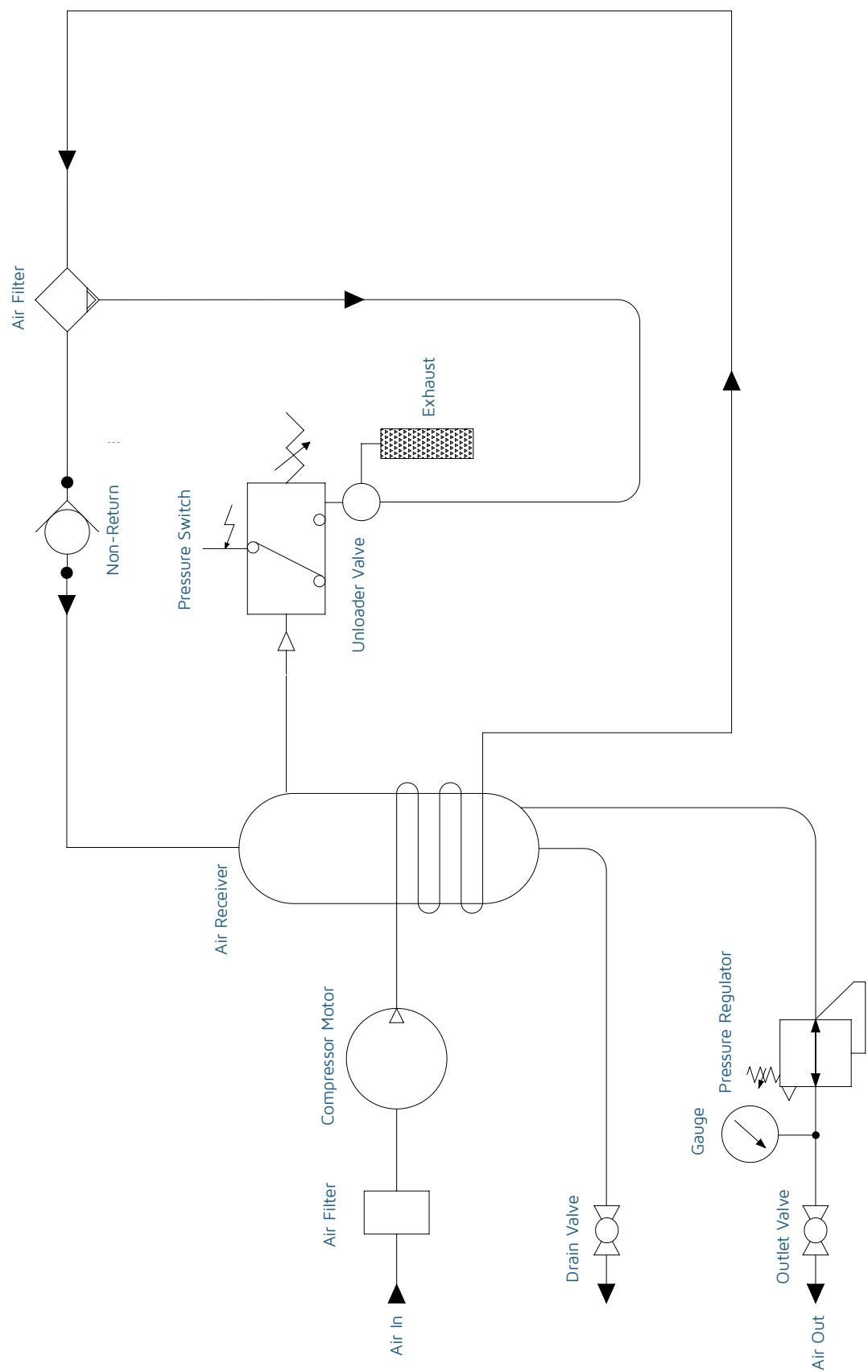
Ref No	Description	Part No.
18	Drain Ball Valve	I/FIT0185F
19	Fan With Gasket	I/FIX0045F
20	Fan Guard	I/FIX0050F
21	Rubber Foot Base (4 packs)	I/FIX0322F
22	Outlet Ball Valve	I/FIT0185F



Wiring Diagram



Pneumatic Diagram





Recommended Accessories

WARNING: All replacement parts must be sourced from Velopex to ensure correct and safe functioning of the Cube Compressor

Description

Spare Parts

CUBE COVER WITH ACOUSTIC INSULATION:	I/ASS6013F
ONE WAY VALVE:	I/FIT0117F
AIR FILTER ASSEMBLY:	I/ASS6011F
FILTER ELEMENT (2 PACK):	I/FIT8186F
COMPRESSOR PUMP ASSEMBLY:	I/ASS6003F
THERMAL SWITCH:	I/ELC0067F
RUBBER MOTOR MOUNT (4 SETS):	I/FIX0321F
AIR RECIEVER ASSEMBLY:	I/ASS6007F
ADAPTOR STUD :	I/FIT0174F
PRESSURE SWITCH ASSEMBLY :	I/ELC0066F
PRESSURE RELIEF VALVE:	I/FIX2173F
EXHAUST SILENCER ASSEMBLY:	I/ASS6010F
AIR INTAKE FILTER SEAL:	I/FIX0048F
AIR INTAKE FILTER:	I/FIX0047F
POWER MODULE:	I/ELC0064F
5A FUSE (10 PACK):	I/ELC1014F
PRESSURE REGULATOR WITH GAUGE:	I/FIT0184F
DRAIN BALL VALVE:	I/FIT0185F
FAN WITH GASKET:	I/FIX0045F
FAN GUARD:	I/FIX0050F
RUBBER FOOT BASE (4 PACK) :	I/FIX0322F
OUTLET BALL VALVE:	I/FIT0185F

Additional Spares

SS ELBOW & STRAIGHT CONNECTORS:	I/FIT0188F
ELBOW CONNECTORS (5 PACK):	I/FIT0171F
COVER FASTENERS (4 PACK):	I/FIX2056F