Manual

Cosmo

Cosmo Compressor

Manual: 010504/00003

Compressor

Table of Contents

Page

INTRODUCTION 3

STANDARD COMPONENTS 4

COMPRESSOR LAYOUT 5

OPERATION 6

SETTING UP 7

MAINTENANCE 9

SAFETY 12

TROUBLESHOOTING 13

ENVIRONMENTAL POLICY 16

Introduction

FOR YOUR SAFETY AND THE SAFETY OF OTHERS ALWAYS READ FULLY THESE INSTRUCTIONS BEFORE OPERATING THIS COMPRESSOR

INTRODUCTION

Congratulations on the purchase of your electric compressor. These compressors have been designed and manufactured to the highest standards and have been tested according to European Standards for a safe and trouble free operation.

WARRANTY

This Compressor is guaranteed against manufacturing defects for a period of 12 months from the date of purchase. Unless otherwise stated.

In order to give a satisfactory service the compressor MUST be correctly assembled, installed, maintained and used. The warranty against manufacturing defects depends on the user ensuring that the correct procedures are followed.

Always...

Ensure the correct power supplies are used. If the compressor is fitted with a 13A 3 pin plug, then it may be used on any domestic supply. See Setting Up on page 7

Inspect the compressor regularly and replace worn parts and consumables as necessary. See Maintenance on page 9

This warranty does not cover items, which are considered to be consumable, i.e. Air intake filters, or items worn through general wear and tear. Nor defects caused by incorrect assembly, installation, maintenance or use.

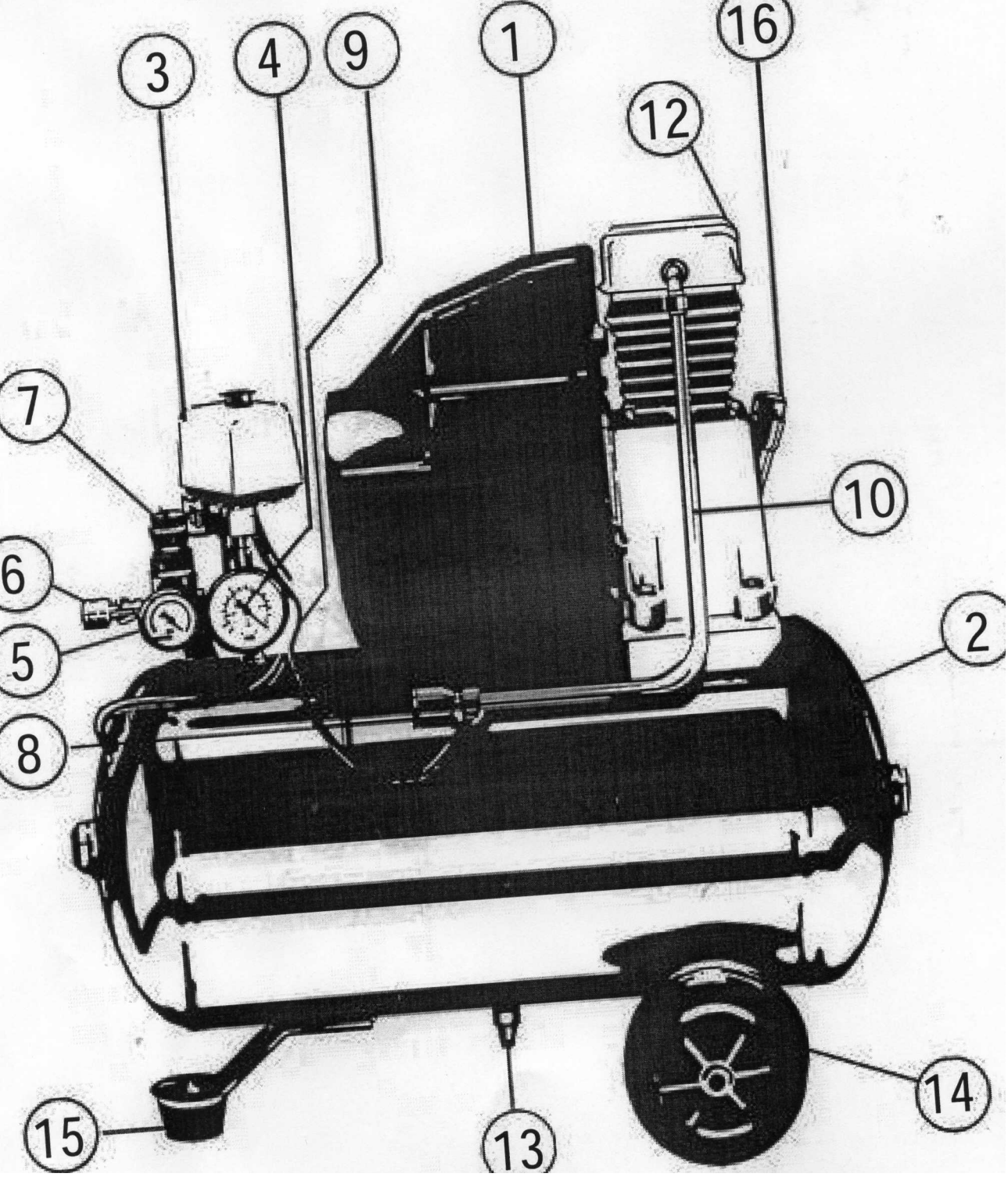
ALL WARRANTY CLAIMS MUST BE ACCOMPANIED WITH RECIEPT OF PURCHASE

N.B. Cosmo compressors are only designed to operate 10 minutes on and 10 minutes off. For models without recievers or pressure switches, do not operate for longer than 10 minutes at a time.

Standard Components

1	**MOTOR/PUMP UNIT:**	Provides the power and compresses air to the desired pressure.
2	***RECEIVER:**	Air storage providing pulsation free air on demand.
3	**PRESSURE SWITCH:**	Monitors the air pressure in the receiver and starts and stops the compressor automatically according to pressure level. Also acts as compressors on/off switch.
4	**RECEIVER PRESSURE GAUGE:**	Indicates Air pressure in the receiver.
5	***OUTLET PRESSURE GAUGE:**	Indicates air pressure being used/ delivered down the air line.
6	**AIR OUTLET VALVE:**	Gate valve to pressurize the airline. Some models have more than one outlet valve and can be regulated or unregulated.
7	***REGULATOR:**	Enables regulated air pressure to the outlet valve.
8	**NON-RETURN VALVE:**	Prevents the air pressure stored in the receiver to return back to the pump unit.
9	**BLEED PIPE:**	When the pressure switch turns off the motor any back pressure in the delivery pipe and pump unit is exhausted down this bleed pipe.
10	***DELIVERY PIPE:**	Delivers the compressed air from the pump to the receiver.
11	**SAFETY VALVE:**	In the event of excessive pressure build up this valve will release the excess pressure to the atmosphere.
12	**AIR INTAKE FILTER:**	Filters the intake of air to protect the pump unit from damage of air born debris. On some models the filter in integral to the pumps head.
13	**DRAIN VALVE:**	Allows the draining of moisture build up inside the air receiver. This is a manual operation and must be done daily.
14	***WHEELS:**	For portability.
15	***RUBBER FEET:**	To reduce vibration.
16	***OIL DIP STICK:**	To measure oil level also fill port for oil. Not on oil free models

* Items marked with asterisks indicate that some compressors may not have this component fitted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Operation

MODELS WITH AIR RECEIVERS.

To start the compressor use the on/off switch located on top of the pressure switch. This pressure switch then automatically controls the operation of the compressor, by stopping the motor when the pressure in the receiver has reached its maximum level. When air is used, the pressure switch will automatically restart the compressor as the pressure in the receiver falls below its lower setting. The pressure in the air receiver is shown on the receivers pressure gauge.

Air is drawn from the compressor via an outlet valve - see page 7. On some models there are two outlet valves. One is regulated, and the air pressure can be adjusted by turning the outlet pressure regulator and pressure is shown on the outlet pressure gauge. (On some models a ring gauge is used). The other is unregulated and when opened will let air pressure out at whatever pressure is in the receiver.

Always switch the compressor off by using the on/off switch on top of the pressure switch, before the mains supply is isolated. Failure to do so will mean the next time the compressor is turned on the motor will be under full load and will have problems starting, this will eventually burn the motor out.

MODELS WITHOUT AIR RECIEVERS.

These models have no air storage facility and therefore no pressure switch to automatically control the compressor. Known as constant bleed machines they will never turn off automatically.

Turn compressor on by switching on at the on/off switch, mounted on the motor. The pressure is regulated by turning the pressure regulator clockwise to increases pressure, and anti-clockwise to decrease pressure. When the regulator is fully tightened maximum pressure is achieved (8bar 118psi). From fully tight each 1/4 turn anticlockwise reduces the pressure by 1 bar (15 psi approx). 2 full turns will obtain minimal pressure of 3.5 Bar (50 - 55 Psi).

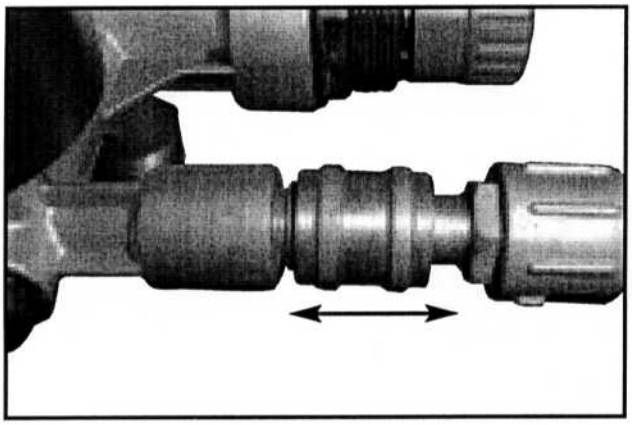
IMPORTANT.

All compressors are fitted with thermal overloads and will cut out if the motor overheats. Should this occur switch off the compressor and allow the unit to cool down. Unless the unit is fitted with a reset button on top of the motor then the thermal overload will be self-resetting. If you do not switch the unit off then it will restart without warning after it has cooled down.

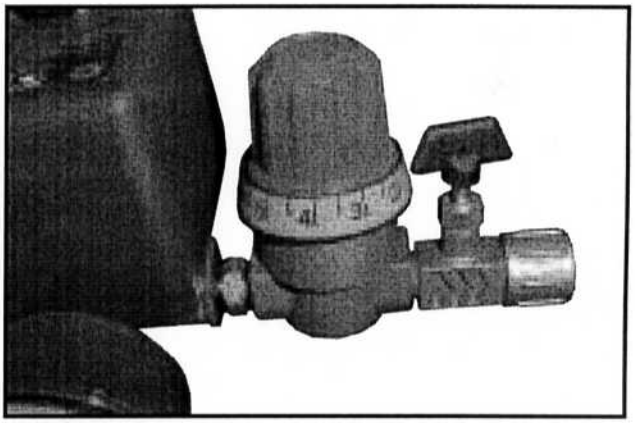
This compressed air is designed to operate a variety of air-operated tools and systems within the free air delivery specification of the compressor. Normally measured in CFM (Cubic Feet per Minute) or L/Min (Litres per Minute). Trying to operate systems or tools, which exceed this limit, will result in poor operation and over working of the pump unit.

Setting Up

OUTLET VALVES



There are various types of outlet valves. This picture shows a sliding valve. To open and close the valve slide the collar as indicated.



This is a standard valve. To open and close simply turn the black knob. This picure also shows a ring gauge, as mentioned on page 6

Ensure that the voltage from the mains supply is compatible with the machine I.E. 230v OR 110v.

If the compressor is supplied with a three pin UK plug then it will be capable of running from and domestic supply outlet. However, if not then check the compressors specification as to the correct fuse rating required i.e. 15A or above.

The wires in the mains leads are colour coded in accordance with the following code:

Brown or Red	Live
Blue or Black	Neutral
Green/Yellow	Earth

Connect to a suitable power supply according to local regulations.

THIS APPLIANCE MUST BE EARTHED

VOLTAGE DROP

If the compressor is moved a long way from the mains supply, the motor may appear to be sluggish, slow, buzz or unable to start. This is due to VOLTAGE DROP caused by the extended lead to the compressor. This can be prevented, by increasing the size of the cable. Incorrect voltage at the motor will invalidate any guarantee.

On oiled compressors, before starting always check the oil level. As some units are transported dry. For replacement oil use Compressor oil or equivalent 40 grade compressor oil such as Elf Dacnis P100. After about three hours initial running, the operator should tighten the cylinder head bolts. (Torque setting approx 6Ft lbs)

Some units are supplied with the air filter separately packed and a blanking plug in the cylinder head. This plug must be removed and the filter fitted before starting.

On some models the air intake filter is incorporated into the pump head. Ensure that the filter foam is in place before starting.

Maintenance

GENERAL MAINTENANCE.

Before carrying out maintenance.

Always make sure the compressor is turned off and isolated from the mains power supply and any stored compressed air is drained out of the receiver and airline system. Only a competent person should do internal inspections.

Cleanliness.

Always keep your compressor clean. Change the oil regularly and keep all external surfaces clean. A clean inside leads to good mechanical efficiency, a clean outside means better dissipation of heat to the circulating air.

Pressure switch unloader valve.

On most pressure switches (usually black in colour) there is either a button or rotary switch which is used to turn the compressor on and off. This switch also activates the unloader valve to relieve pressure in the delivery pipe and cylinder head to allow the motor to restart off load.. Depress this button or turn the rotary switch from time to time to ensure that the valve is working properly and exhausting the air.

Suction Action

Gently place your hand over the air inlet filter, the change in inlet suction noise should be heard. Poor suction would suggest a blocked air filter or damaged valves. Also causing excessive load onto the motor.

Piston Rings (not fitted on all models)

Sealing rings and oil scrapper rings should be inspected annually or if excessive oil is being used by the compressor., worn rings should be replaced. An oil change should always accompany rings or other major component replacements. Followed by a further oil change 50 hours running or one week whichever is sooner.

Spare part lists and exploded drawings are available from your local Cosmo retailer.

All warranty claims must be accompanied by proof of purchase.

PREVENTATIVE MAINTENANCE

Regular maintenance will ensure maximum efficiency for the longest period.

DAILY:

Oil: (not applicable to oil free models) Check the crankcase oil level, and top up with compressor oil if required (grade 40 compressor oil). If the compressor has not been used for any period check oil before starting. Also before starting the very first time. The initial oil should be drained and replaced after 50 hours running (or 4 months)

Water: Water builds up inside the receiver as the compressed air cools in the receiver and condensates. This water must be drained via the drain plug located on the underside of the receiver, daily or after each use. Retighten by hand only. Finger tight.

Leaks: check for air leaks from the compressor, fittings, delivery lines. Significant air losses can cause increased energy costs and reduce compressor life.

Cylinder Head Bolts: These should be checked and tightened after the first days running, after 50 hours and thereafter every 4 months. The cylinder head needs to be completely cool before carrying out this operation. Torque setting 6 Ft/lbs

Air Filter: Check and clean by reverse blowing with compressed air, or if badly contaminated replace.

WEEKLY OR AFTER 50 HOURS RUNNING.

Safety Valve: this is set to protect in case of pressure switch malfunction, or air blockages. With the pressure at maximum in the receiver the centre shaft of the valve can be lifted with ease to check its function.

Pressure Switch: If the compressor is cutting out to soon the pressure switch may be altered.

FOUR MONTHLY OR AFTER 50 HOURS RUNNING

Non-return valve inserts: (only on models with receivers). The non-return valve springs and inserts (pastels) should be removed and inspected. Oil, coke and scale deposits should be removed and damaged inserts replaced. The non return valve can be checked by stopping the machine at the pressure switch, if air continues to escape after the initial hiss then the inserts requires attention. The air must be completely drained from the air receiver before removing the non-return valve.

FOUR MONTHLY OR AFTER 500 HOURS.

Oil: Drain oil and replenish to the correct oil level. Using SIP compressor oil or 40 grade equivalent compressor oil.

Valves: Pump efficiency largely depends upon the condition of the valves and valve seats. The cylinder head should be removed and the valves taken out all dirt, carbon, varnish should be brushed and washed away and dried before replacement. Clean the top of piston. The manufacturer can supply gasket sets. Where valves cannot be removed carefully clean all accessible parts, particularly on the sealing faces of the valves. When replacing the cylinder head gently tighten all bolts then secure in a diagonal pattern to ensure a uniform seal. (see Cylinder head bolts above)

SIX MONTHLY OR AFTER 750 HOURS

Pressure regulator/filter: If fitted, it should be moved and thoroughly cleaned.

Safety

DO NOT:

1 Use compressed air for cleaning clothing.
2 Apply compressed air directly onto the skin
3 Use compressed air for breathing apparatus or charging breathing air cylinders, unless the air has been filtered using filters designed specifically for this purpose.
4 Use an open-air line, this will cause whip and could cause injury.
5 Use flammable liquids to clean the compressor.
6 Use naked flames to inspect the interior of the compressor or pressure vessel.
7 Allow children or inexperienced people to operate or go near the compressor.
8 Touch the air compressor with wet hands.
9 Move the compressor when in operation.
10 Move the compressor in any other method than the way in which it has been designed.

DO:

1 Use eye protection when using compressed air to clean equipment.
2 Ensure dirt is not blown towards other people, always use a blow gun for cleaning.
3 Ensure all ancillary equipment is in good condition and correctly rated for the job.
4 Check regularly that covers and guards are secure and in position.
5 Fit a non-return valve or shut off valve in the delivery line if the compressor is to be coupled in parallel with another compressor or connected to an airline system.
6 Ensure that all pipe work and hoses connected to the compressor are the correct size and suitable for the working pressure. Also in good condition.
7 Switch of the compressor and isolate from the mains supply and discharge any stored air from the receiver or airline system, before carrying out maintenance.
8 Install the compressor so that an adequate supply of cooling air can circulate around the pump unit, and that air passage through the cover and motor fan inlets is not restricted.
9 Ensure all safety rules and regulations are complied with, in all aspects applicable to the working environment in which the compressor operates.
10 Always site the compressor well away from spray painting operations.

Trouble Shooting

FAULT	CAUSE	REMEDY
KNOCKS OR RATTLES:	Cylinder valves. Worn or scored con rod. Piston rings. Defective crankshaft bearing.	Clean or replace. Replace if necessary. Replace if necessary. Replace if necessary.
AIR DELIVERY HAS REDUCED:	Clogged inlet filter. Air leaks in piping. (on or off machine). cylinder/pistons worn or scored	Replace/clean Remake joints Replace if necessary
WILL NOT COME UP TO SPEED:	Extension lead too long. Supply voltage too low. Non return valve faulty.	Reduce length or increase cable size Check mains supply Remove, clean or replace
MOTOR WILL NOT RUN:	Extension lead too light duty. Supply voltage too low. Motor capacitors faulty. Non return valve faulty.	Reduce length or increase cable size Check mains supply Replace Remove, clean or replace
BLOWING FUSES:	Extension lead too long. Supply voltage too low.	Reduce length or increase cable size Check mains supply
EXCESSIVE STARTING AND STOPPING:	Receiver full of water. Air leaks in piping. Receiver safety valve leaking. Compressor capacity too low	Drain air receiver Remake joints Replace Need larger capacity compressor

Notes

FAULT	CAUSE	REMEDY
RUNS VERY HOT:	Receiver safety valve leaking. Clean/replace cylinder valves. Compressor capacity too low Oil level too low (if oiled)	Replace Replace if necessary. Need larger capacity compressor Top up oil level
RUSTING IN CYLINDERS:	Wrong oil being used Site humid	Replace Relocate compressor
PUMPING OIL INTO AIR LINE:	Clogged inlet filter Oil level too high Oil viscosity too low Cylinder/piston rings worn	Clean/replace Drain oil Replace with correct oil Replace
ABNORMAL WEAR ON PISTON RINGS OR CYLINDER:	Oil viscosity too low Oil level too low Wrong oil being used Dusty atmosphere	Replace with correct oil Top up oil level Replace Use larger air filter if possible. Regularly clean or replace air filter

QUALITY AND ENVIRONMENT DEPARTMENT

COSMO

Congratulations upon your new Cosmo purchase.
We thank you for having purchased Cosmo equipment

All Cosmo equipment has been designed, manufactured, tested and quality controlled to be complete and free of manufacturing defects in order to provide long trouble free service.

In the unlikely event that difficulties should be experienced with your new purchase, please refer to the enclosed instruction manual prior to contacting the Cosmo retailer from which the purchase was made. If the retailer is unable to rectify the problem encountered, they will contact us directly on your behalf.

In order to solve your problem quickly, you will need to provide the following information.

1. Type and model of product purchased.
2. Proof of purchase indicating date and supplier.
3. Use for which product is tasked.
4. Problem encountered.

With this data we will always endeavour to find a prompt resolution.

ENVIRONMENT

We believe that the protection of the environment is of paramount importance, not only on a day to day basis but also for our future generations. Please take the time to read this and make yourself aware of the environmental issues related to the product which you have purchased so that you may also contribute towards the protection of our future.

1) Please dispose of the packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to your local amenity tip and place it in the appropriate recycling bin.

2) If the product you have purchased requires oil changes to be carried out as part of the normal maintenance schedule please ensure that the waste oil is disposed of in a responsible manner. Under Section 111 of the Water Industry Act 1991 it is an offense to contaminate a drain or public sewer with oil. Most local amenity tips have oil disposal facilities. Please use them.

3) When the product you have purchased has reached the end of its useful service life or if you dispose of it for another reason, give consideration to the fact that the product does contain recyclable materials. Most local amenity tips have facilities to recycle these materials. Please use them.

Thank you for protecting the environment for yourself and future generations.

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