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# PISTON COMPRESSOR

## Installation, Care & Maintenance Manual



**PULFORD**  
*Compressed Air Specialists*

[www.pulford.com.au](http://www.pulford.com.au)

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## Location Of The Unit

For optimum efficiency locate the compressor in a weatherproof, well-ventilated and clean area. Avoid placing obstacles around the compressor that will restrict the air flow necessary to keep the unit cool. Do not locate the unit in an inaccessible or ill-lit area where regular maintenance, such as checking the oil level, will be overlooked.

## Foundation

The compressor should be placed on a level area capable of holding the static weight of the compressor.

## Electrical

Do not attempt to wire the connections unless qualified, this must be carried out by a licensed electrician. Thermal overload protection is fitted to all of our units. Ensure that an isolating switch is fitted within sight of the electric motor and wired so that when switched off it completely cuts off all power to the unit.

## Fuses

- 3 X motor current for direct on line starting
- 2 X motor current for reduced voltage starting
- Inadequate fuses will cause single phasing and motor burnout. The standard types of thermal overloads will not prevent 3 phase motors from burning out as a result of phase failure. If this protection is required a separate phase failure relay must be fitted.

## Maintenance Instructions

### **Daily**

Check the oil level in the sump and top up when it reaches the low mark using Pulford piston oil. Do not overfill. **Do not use multi grade oil.** Drain condensate from the receiver.

### **Monthly**

To check the performance of the compressor the following procedure can be carried out. Isolate the air receiver from the air line distribution system by closing the air receiver ball valve. Drain all the air from the air receiver by opening the condensate drain cock. Close the drain cock and run the compressor from 0 to 700 kpa, the time taken should be recorded in a log book to detect any variation in the performance.

### **Half Yearly**

Check vee belt tension and condition. The correct tension is just sufficient to prevent slipping, provided that the belts do not hit each other or turn over in their grooves. Check that the maximum air demand does not exceed 80% of the compressors' output. Remove and clean air filters. Change oil. Change air filter cartridges if heavily contaminated.

### **Yearly**

Change oil and air filter cartridges, flush sump.



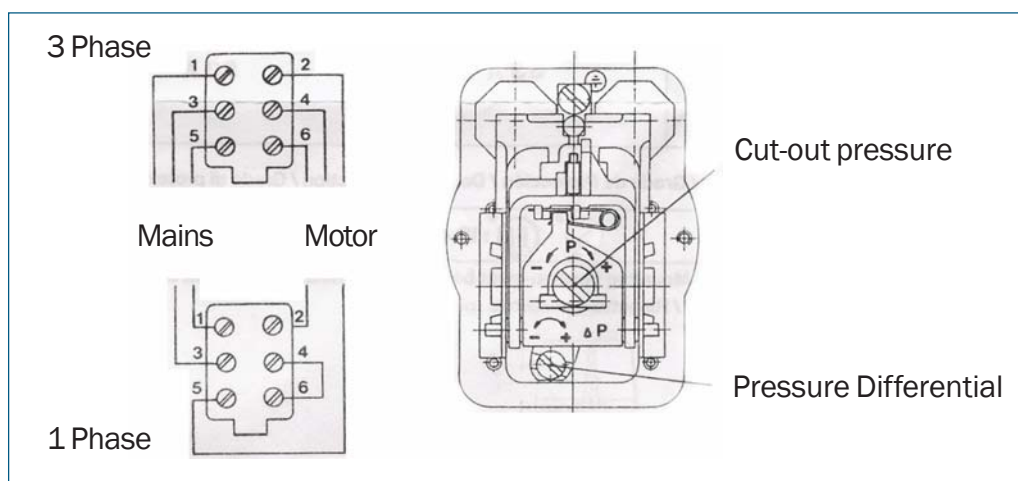
## Adjusting the Pressure Switch

**DANGER** - the Condor MDR4 pressure switch contains live exposed electrical terminals at 240V AC, ensure the adjustment of the pressure switch is carried out by suitably qualified personnel.

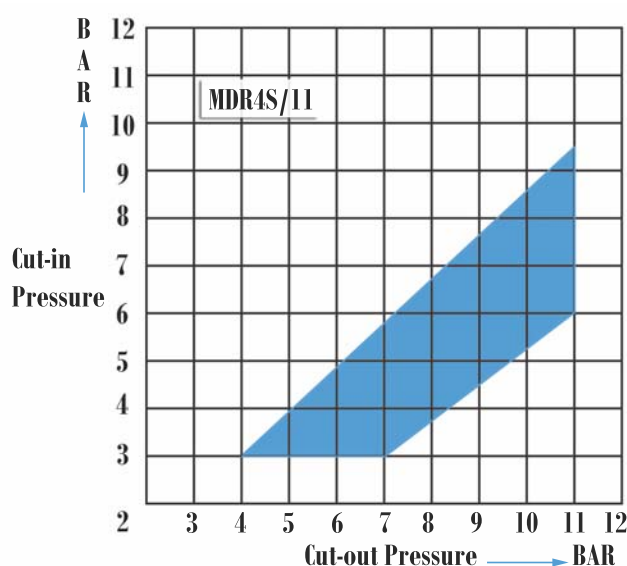
### Procedure

- 1 Ensure there is air pressure >2bar in the system prior to adjustment or it will result in damage to the diaphragm.
- 2 Remove the pressure switch cover using a phillips point screwdriver. Beware of the electrical terminals as they are 'live'.
- 3 Locate the 'cut-out' pressure adjustment screw (*refer to diagram*) to increase the system cut-out pressure turn the screw clockwise and observe the pressure gauge. DO NOT exceed 10bar as this is the maximum capability of the unit. To decrease the cut-out pressure turn the screw anti-clockwise
- 4 To adjust the 'cut-in' pressure locate the pressure differential adjustment screw (*refer diagram*). The pressure differential is the difference between the maximum (cut-out) pressure and the minimum (cut-in) pressure. To increase the differential turn the screw clockwise, to decrease turn the screw anti-clockwise.
- 5 Replace the cover.

### Wiring Diagram



### Pressure Diagram



## Failures Can Be Avoided

- Nothing will cause complete failure more quickly than running the compressor out of oil. Check oil level daily.
- Dirty oil reduces the life of the main bearings.
- Change the oil every 6 months, and inspect filter elements.
- Don't use the wrong grade of oil.
- Do service the air filters.
- Crankshaft failure is caused by strain brought about by excess belt tension, or the compressor starting and stopping under load.
- Never run with missing belts.
- Never use new belts with old, always replace with a matched set, and never over tension.
- Never increase the operating pressure beyond the recommended maximum.

## Frequency of Overhauls

The frequency of overhauls will depend solely on how hard the compressor is working, how cool it is kept, and how well routine maintenance is carried out or disregarded. It should be borne in mind that operating only one eight hour shift per day, 5 days per week, 50 weeks per year, the compressor covers an equivalent car distance of 100,000 kilometers.

*Our compressors have been designed and constructed along robust lines; their performance will depend on the care and attention devoted to them by the user.*

## Spare Parts

A wide range of spare parts are held in stock at our head office, interstate branches and authorised agents. Spare parts are still being produced for Pulford models dating back to 1930.

## Reconditioned Exchange Bare Compressors

In cases of major breakdowns, service exchange compressors are available for all models and are an easy, quick cost effective solution.



## Ongoing Service & Support

Pulford have a specialist team of service technicians on call 24hours 7days, it is our priority to provide honest, reliable, prompt support with both the technical aspects of our products and the functional aspects of individual applications. Onsite service can be carried out by our team of specialist service technicians, contact your nearest branch or agent for bookings.

A **Routine Service Request Form** has been included with this instruction manual, if you would prefer our service technicians to carry out your routine service, please fill out the request form and return it to our nearest branch.



- Service plans
- Site inspections
- Air quality analysis
- System appraisals & reports
- Monitoring services
- Installation & commissioning

## Procedure for Routine Service of Piston Compressors

### **Half Yearly**

Change Oil, check vee belts for wear, re-tension if necessary, replace air filter element, drain air receiver, and check for signs of oil.

### **Yearly**

Remove valve assemblies and inspect for wear, carbon build up and spring tension. Replace all suspect valves, change oil. Check vee belts for wear, re-tension if necessary. Replace all belts if wear or cracks are noticeable. Replace air filter element, line filter and unloader diaphragms. Drain air receiver, check for signs of oil. Check tension of all bolts; visually check overall condition of compressor. Check load/unload pressures are between required limits.



## Our Other Products

Pulford Compressed Air Specialists are entirely focused on developing and offering air solutions to increase the efficiency and reduce the expenses associated with our customers compressed air systems. Our full range of products provide for flexibility in technology, and a first class compressed air system ensuring reliable, cost effective air supply.

### Rotary Screw Compressors

- 19cfm to 760cfm
- Solid construction
- Efficient operation
- Easy installation
- Proven performance
- Modern technology
- Compact design
- Hire units are available for short and long term hire



### Air Line Installation Equipment & Accessories



- All types of air installations
- Advice on installation and design
- Advanced piping systems
- Quality fittings
- Professional looking finish



### Custom Build Compressors

- Specialise in custom designs for unique applications.
- On site manufacturing facilities allow quick modification to designs.

### Portable Diesel Compressors

- Strong compact carbon steel housing
- Rotary screw air end
- Easy maintenance
- Simple control panel
- Large fuel tank
- Easily removed from chassis & converted into a stationary compressor
- Hire units are available for short and long term hire



## Why Does Compressed Air Need Treatment

Compressed air is contaminated with solid particles, water vapour, odours, oil aerosols and oil vapour from atmospheric air and the compressor operation. Contaminants can cause expensive undue problems in your system. Pulford can offer you simple expert advice and products to combat any air related problems specific to your particular application.

### Treating the air will;

- Ensure consistent product quality
- Increase the efficiency of your compressed air system
- Reduce operating expenses
- Decrease corrosion in piping systems and air lines
- Limit damage to your pneumatic equipment and air tools
- Limit product spoilage
- Ensure you are getting the quality of air you really need.



### Compressed Air Treatment Products

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# Routine Service Schedule



F. R. Pulford & Son Pty Ltd  
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Company Name: \_\_\_\_\_ ABN: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Mobile: \_\_\_\_\_

Alternate Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

Compressed Air System Details			
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Make:	Model No:	Serial No:	Avg. Hrs per week:
Motor (hp):	Air Receiver Size (L):	Air Cleaner:	Element No:
Line Filters:	Dryer:	Other:	
Make:	Model No:	Serial No:	Avg. Hrs per week:
Motor (hp):	Air Receiver Size (L):	Air Cleaner:	Element No:
Line Filters:	Dryer:	Other:	
Make:	Model No:	Serial No:	Avg. Hrs per week:
Motor (hp):	Air Receiver Size (L):	Air Cleaner:	Element No:
Line Filters:	Dryer:	Other:	

Comments: \_\_\_\_\_

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Our Service Manager will contact your company when the service is due and arrange a suitable time to carry out the work.

The recommended service intervals for our range of compressors are:

- ALL PISTON TYPE: 1,000 HOURS OPERATING TIME
- ALL ROTARY SCREW MODELS: 2,000 HOURS OPERATING TIME.

We look forward to developing a longstanding relationship with your company and the opportunity to provide your business with outstanding, honest, reliable service and advice over the years to come.