



Operation Manual

Nuvair MCH36 6250 psi Vertical Silent



SKU 8058.6

Notes:

[illegible]

If you have any questions on this equipment, please contact Technical Support at:

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8:00 AM to 5:00 PM Pacific Time



WARNING

This Operation Manual contains important safety information and should always be available to those personnel operating this equipment. Read, understand, and retain all instructions before operating this equipment to prevent injury or equipment damage.

Every effort was made to ensure the accuracy of the information contained within. Nuvair, however, retains the right to modify its contents without notice.

Under Nuvair's system of continuous improvement, certain components may be updated or changed as higher quality or more efficient parts and assemblies become available.

Nuvair will make every effort to update manuals as parts and functional aspects change. However, the look or location of components on your product may differ from those in this manual if improvements have been made that do not affect functionality or operational procedures.

Units pictured may also be equipped with different options than those on your product. In this case, the basic operational and maintenance guidelines will still apply.

If you have problems or questions after reading the manual, stop and call Nuvair at +1.805.815.4044 for information.

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Separate Manuals Included:

Compressor Parts Manual

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1.0 Introduction

This manual will assist you in the proper set-up, operation, and maintenance of the Nuvair MCH36 electric compressor packages. Be sure to read the entire manual.

1.1 Symbol Conventions

This manual uses certain words and symbols to call your attention to conditions, practices or techniques that may directly affect your safety. Pay particular attention to information introduced by the following symbols or words:

SYMBOL	MEANING	DESCRIPTION
	DANGER	Indicates an imminently hazardous situation, which if not avoided, will result in serious personal injury or death.
	CAUTION	Indicates a potentially hazardous situation, which if not avoided, could result in serious personal injury or death.
	WARNING	Indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	NOTICE	Notifies people of installation, operation or maintenance information which is important but not hazard-related.

1.2 System Description

The Nuvair MCH36 Vertical Silent Compressor is a continuous-duty, commercial grade, high-pressure compressor that utilizes the Nuvair MCH36 pumping unit to supply up to 18 CFM FAD (510 L/min or 30 m³/hr) at 6250 psi (431 bar) working pressure. The compressor block and its power unit—a 20 hp (14.7 kW) TEFC electric motor—are mounted in a fully enclosed and silenced cabinet.

1.3 Required Operator Training

This manual must be read carefully and in its entirety.

- All compressor operators / maintenance personnel must read this entire manual with due care and attention and observe the instructions/information contained herein.
- Company owners ensure that the operator has the required training for operation of the compressor and that he/she has read the manual.

1.4 Important Information for the User

The information/instructions for compressor use contained in this manual concern the **Nuvair MCH36 Series** of high-pressure compressors.

- The instruction manual must be read and used as follows:
- Read this manual carefully; treat it as an essential part of the compressor.

- The instruction manual must be kept where it can readily be consulted by compressor operators and maintenance staff.
- Keep the manual for the working life of the compressor.
- Make sure updates are incorporated in the manual.
- Make sure the manual is given to other users or subsequent owners in the event of resale.
- Keep the manual in good condition and ensure its contents remain undamaged.
- Do not remove, tear or re-write any part of the manual for any reason.
- Keep the manual protected from damp and heat.
- If the manual is lost or partially damaged and its contents cannot be read it is advisable to request a copy from the manufacturer.

1.5 Foreword

The regulations/instructions for use contained in this manual constitute an essential component of the supplied compressor.

These regulations/instructions are intended for an operator who has already been trained to use this type of compressor. The contained information is necessary and essential to efficient and proper use of the compressor.

Hurried or careless preparation leads to improvisation, which is the cause of accidents.

Before beginning work, read the following suggestions carefully:

- 1) Before using the compressor, gain familiarity with the tasks to be completed and the admissible working position.
- 2) The operator must always have the instruction manual to hand.
- 3) Plan all work with due care and attention.
- 4) You must have a detailed understanding of where and how the compressor is to be used.
- 5) Before starting work make sure that safety devices are working properly and that their use is understood; in the event of any doubts do not use the compressor.
- 6) Observe the warnings given in this manual with due care and attention.
- 7) Constant and careful preventive maintenance will always ensure a high level of safety when using the compressor. Never postpone repairs and have them carried out by specialized personnel only; use only original spare parts.

1.6 Assistance

Nuvair technicians are at your disposal for all routine/unscheduled maintenance work. Please forward your request for assistance to **Nuvair** by sending a fax or e-mail to:

Phone: +1.805.815.4044
Fax: +1.805.486.0900
Email: info@Nuvair.com

1.7 Responsibility

Nuvair considers itself exonerated from any responsibility or obligation regarding injury or damage caused by:

- Failure to observe the instructions contained in this manual that concern the running, use and maintenance of the compressor.
- Violent actions or incorrect maneuvers during use or maintenance of the compressor.
- Modifications made to the compressor without prior written authorization from Nuvair.
- Incidents beyond the scope of routine, proper use of the compressor



WARNING

Maintenance and repairs must only be carried out using original spare parts and qualified technicians. Nuvair cannot be held liable for any damages caused by failure to observe this rule. The compressor is guaranteed as per the contractual agreements made at the time of sale. Failure to observe the regulations and instructions for use contained in this manual shall render the warranty null and void.

1.8 Purpose of the Machine

This high-pressure compressor has been designed and built for the purpose of producing breathing air by drawing it from the surrounding environment. The surrounding environment air must be free from any harmful fumes or contaminates. The air is pulled through an intake air filter, compressed, and passed through breathing air filtration before it is stored in tanks constructed to contain air at high pressure. The compressor can also be used for the pumping of gases:

- Nitrogen
- Helium
- Nitrox mixtures up to 40%

Any other use is inappropriate. The manufacturer cannot be held liable for any personal injury or damage to objects or the machine itself caused by improper use.



DANGER

Use only tested, certified storage tanks: do not exceed the working pressure indicated on them.

- **Use the compressor in areas free from dust, risk of explosion, corrosion, and fire.**
- **Improper use could have serious consequences for the user.**
- **Do not disconnect the hose from the fittings or the clamp when under pressure.**
- **Change the air purification filters regularly as described in section 10.14.**
- **Drain the condensate regularly as illustrated in section 10.16.**
- **The power must be disconnected and locked out before carrying out any cleaning or maintenance tasks.**
- **Never pull a plug out by tugging the cord. Make sure the cord is not bent at a sharp angle and that it does not rub against any sharp edges. Use of extensions is not advised.**
- **Never operate the compressor when the power cord is damaged, or the power supply covers/guards are removed.**

- All routine and unscheduled maintenance tasks must be carried out with the compressor at a standstill with all lines depressurized.
- After switching off the compressor and disconnecting from power, wait about 30 minutes before carrying out any maintenance tasks to prevent burns.
- The high-pressure flex hose that connects to external components must be in good condition, especially in the areas near the fittings.
 - The plastic sheath that covers the pipe must not show any signs of abrasion otherwise damp could get in, corrode the steel braid and weaken it.
 - The hose must be changed periodically (yearly) or when it shows signs of wear.
 - Failure to observe this rule could seriously endanger the users' safety.
 - Make sure the minimum bending radius of the hose is no less than 250 mm (9.8 inches).

To ensure maximum working efficiency, Nuvair has constructed the compressor with carefully selected components and materials. The compressor is tested prior to delivery. Continued compressor efficiency over time will also depend on proper use and maintenance as per the instructions contained in this manual.

All the components, connections and controls used in its construction have been designed and built to a high degree of safety to resist abnormal strain or in any case a strain greater than that indicated in the manual. Materials are of the finest quality; their introduction and storage in the company and their utilization in the workshop are controlled constantly to prevent any damage, deterioration, or malfunction.



DANGER

Before carrying out any work on the compressor each operator must have a perfect understanding of how the compressor works, know how to use the controls, and have read the technical information contained in this manual.

- It is forbidden to use the compressor under conditions or for purposes other than those indicated in this manual and Nuvair cannot be held liable for breakdowns, problems or accidents caused by failure to observe this rule.
- Check that the fittings provide a proper seal by wetting them with soapy water: Stop the compressor and eliminate any leaks immediately when detected.
- Do not attempt to repair high pressure tubes by welding them or while the compressor is running.
- Do not empty storage tanks completely—not even for long term storage—as this practice allows damp air to get in and eventually corrode the tank.
- It is forbidden to tamper with, alter or modify, even partially, the systems and equipment described in this instruction manual, especially as safety guards and safety symbols are concerned.
- It is also forbidden to carry out work in any way other than that described or to neglect the illustrated safety tasks.
- The safety information and the general information given in this manual are very important.

1.9 Where the Compressor May be Used

The compressor must only be used in environments having the characteristics described in the following table:

Area of Machine Use: Essential Data Table		
Temperature Ambient		Minimum: +14°F (+10°C); Maximum: +104°F (+40°C)
Air Humidity		Maximum: 80%
Tolerated Weather Conditions	rain hail snow	None
Maximum Tilt Angle (bank)		15%

Check that the area in which the compressor is to be positioned is adequately ventilated: good air exchange (more than one window) with no dust and no risk of explosion, corrosion, or fire.

If ambient temperatures exceed 113°F (45°C), air conditioning will be required.

Make sure that lighting in the area is sufficient to identify every detail (such as the writing on the info plates/stickers); use artificial lighting where daylight alone is insufficient.

When pumping nitrox, ambient temperature maximum is +100°F (+38°C) and maximum fill pressure is 3600 psi (250 bar).

1.10 Running and Testing the Compressor

Each compressor is carefully tested prior to delivery. A new compressor must nevertheless be used with caution during the first five (5) working hours to complete proper break-in of its components. If the compressor is subject to an excessive workload during initial use, its potential efficiency will be prematurely compromised, and functionality soon reduced.

During its initial use, open the high-pressure outlet and allow the compressor to run up to the pressure maintaining valve (PMV) setting of about 2000 psi (138 bar).

After the first 25 hours carry out in addition to the scheduled maintenance the following tasks:

- Change the compressor oil.
- Change the oil filter.
- Check and adjust nuts and bolts.



WARNING

When changing the oil filter, inspect the filter element and check for any deposits. If metal or carbon deposits are present, locate the source before restarting the compressor.

2.0 Safety Warnings

Nuvair has taken extreme care in providing you with the information you will need to operate this system. However, it is up to you to carefully read this manual and make the appropriate decisions about system safety.



WARNING

This equipment is used to provide breathing air or nitrox for the purpose of life support. Read this manual in its entirety. Failure to heed the warnings and cautions contained in this document may result in severe injury or death.



WARNING

The equipment you will be using to compress air or nitrox will expose you to both low- and high-pressure gas. Gas, even under moderate pressures, can cause extreme bodily harm. Never allow any gas stream to be directed at any part of your body.



WARNING

Any pressurized hose can cause extreme harm if it comes loose or separates from its restraint (or termination) while under pressure and strikes any part of your body. Use appropriate care in making and handling all gas connections.



WARNING

Do not use any form of mineral oil or synthetic lubricant not rated for the compressor in this system. Use only the recommended compressor lubricant. Never mix the compressor lubricant with other lubricants. The use of improper lubricants can lead to fire or explosions, which may cause serious personal injury or death.

2.1 Safety and Operation Precautions

Because a compressor is a piece of machinery with moving and rotating parts, the same precautions should be observed as with any piece of machinery of this type where carelessness in operations or maintenance is hazardous to personnel. In addition to the many obvious safety precautions, those listed below must also be observed:

1. Read all instructions completely before operating any compressor or nitrox system.
2. For installation, follow all local safety codes and the Occupational Safety and Health Administration (OSHA) standards.
3. Protect all power cables from contacting sharp objects. Do not kink power cables and never allow the cables to contact oil, grease, hot surfaces, or chemicals.
4. Make certain that the power source conforms to the requirements of your equipment.
5. Do not attempt to remove any parts without first relieving the entire system of pressure.
6. Do not attempt to service any part while the system is in operational mode.
7. Do not operate the system at pressures more than its rating.
8. Do not operate compressor at speeds more than its rating.
9. Periodically check all safety devices for proper operation. Do not change pressure setting or restrict operation in any way.
10. Be sure no tools, rags or loose parts are left on the compressor system.
11. Do not use flammable solvents for cleaning the air inlet filters or elements and other parts.
12. Exercise cleanliness during maintenance and when making repairs. Keep dirt away from parts by covering parts and exposed openings with clean cloth or Kraft paper.
13. Do not operate the compressor without guards, shields, and screens in place.

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14. Do not install a shut-off valve in the compressor discharge line, unless a pressure relief valve, of proper design and size, is installed in the line between the compressor unit and shut-off valve.
15. Do not operate in areas where there is a possibility of inhaling carbon monoxide, carbon dioxide, nitrogen, or flammable or toxic fumes.
16. Be careful when touching the exterior of a recently run electric, gasoline, or diesel motor - it may be hot enough to be painful or cause injury. With modern motors this condition is normal if operated at rated load - modern motors are built to operate at higher temperatures.
17. Inspect unit daily to observe and correct any unsafe operating conditions found.
18. Compressed air can be a serious hazard. Always use caution. Never direct air stream at any part of the body as this can cause injuries.
19. Compressed air from this machine must not be used for food processing or breathing air without adequate downstream filters, purifiers and controls and periodic air quality testing.
20. Always use an air pressure-regulating device at the point of use, and do not use air pressure greater than marked maximum pressure.
21. Check hoses for weak or worn conditions before each use and make certain that all connections are secure.

The user of any compressor or nitrox system manufactured by Nuvair is hereby warned that failure to follow the preceding Safety and Operation Precautions can result in injuries or equipment damage. However, Nuvair does not state as fact or does not mean to imply that the preceding list of Safety and Operation Precautions is all-inclusive, and further that the observance of this list will prevent all injuries or equipment damage.

2.2 High-Risk Areas of Compressor

Some areas of the compressor pose a level of operator/bystander risk that were not possible to eliminate at the design stage or for which safeguards could not be provided without compromising the functionality of the compressor. Users must be aware of these hazards and potential injury associated with each area.



DANGER

To prevent accidents and injuries, all operators must be aware of the potential high-risk areas of the compressor unit:

1. Air contamination. Danger of contaminating produced air due by exposing the air intake to exhaust fumes or lubricating oil vapors.
2. Electrical dangers. Use the machine with suitable environmental protections, especially against water and humidity.
3. Heat-related dangers. Use the machine with suitable safety devices and after switching off the machine, wait 30 minutes for the machine to cool down before carrying out maintenance work.
4. Noise. Danger deriving from noise emitted by the compressor.
5. Fire risk.
6. Entanglement. Risk of being crushed, dragged or entangled by transmission belts.
7. Impact. Danger of impact/abrasion with the cooling fan.
8. Impact. Danger operator injury or death if high-pressure hoses fail.

3.0 Compressor Layout

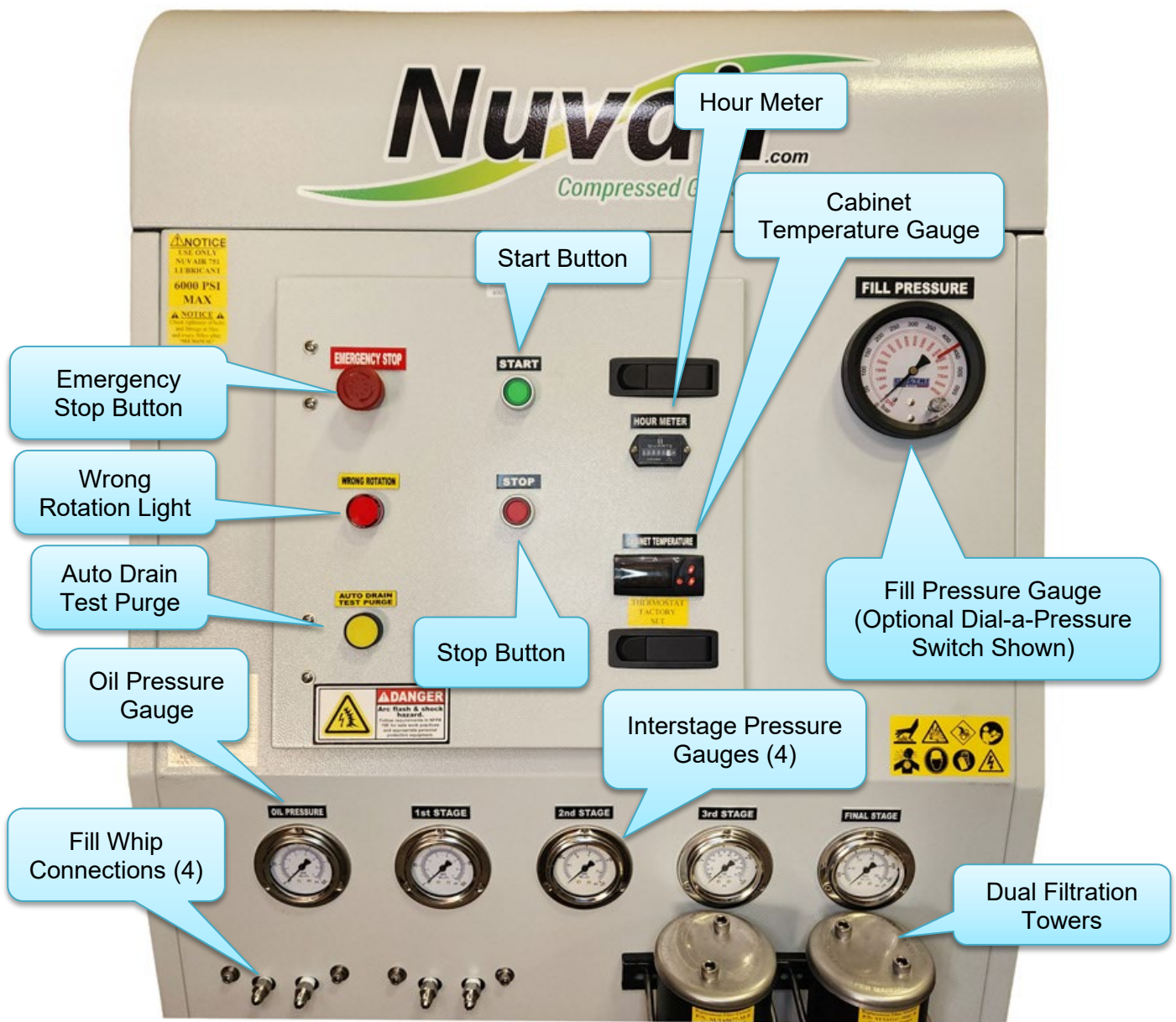


Figure 1. Compressor control panel and front side.

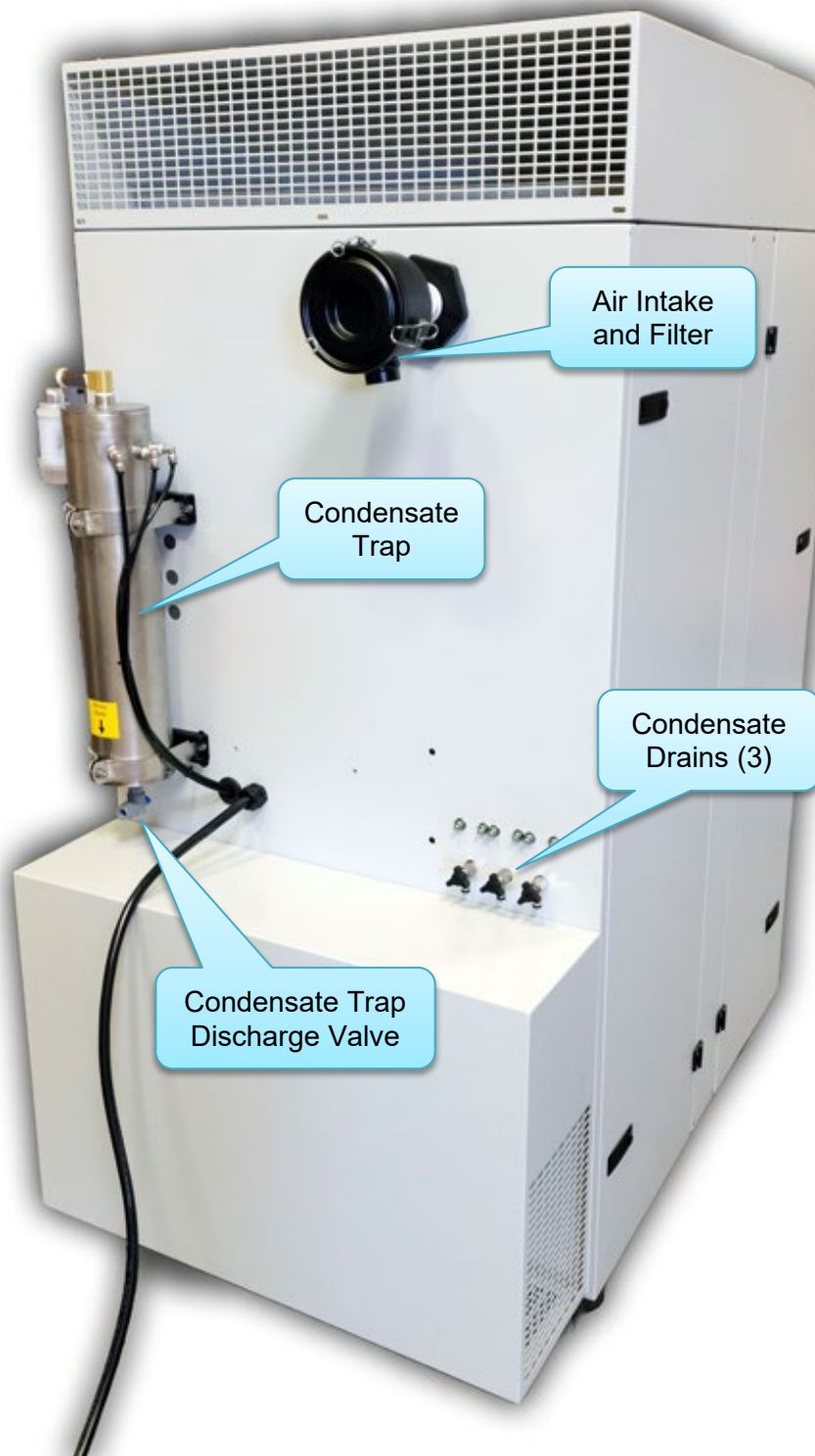


Figure 2. Compressor reverse side.

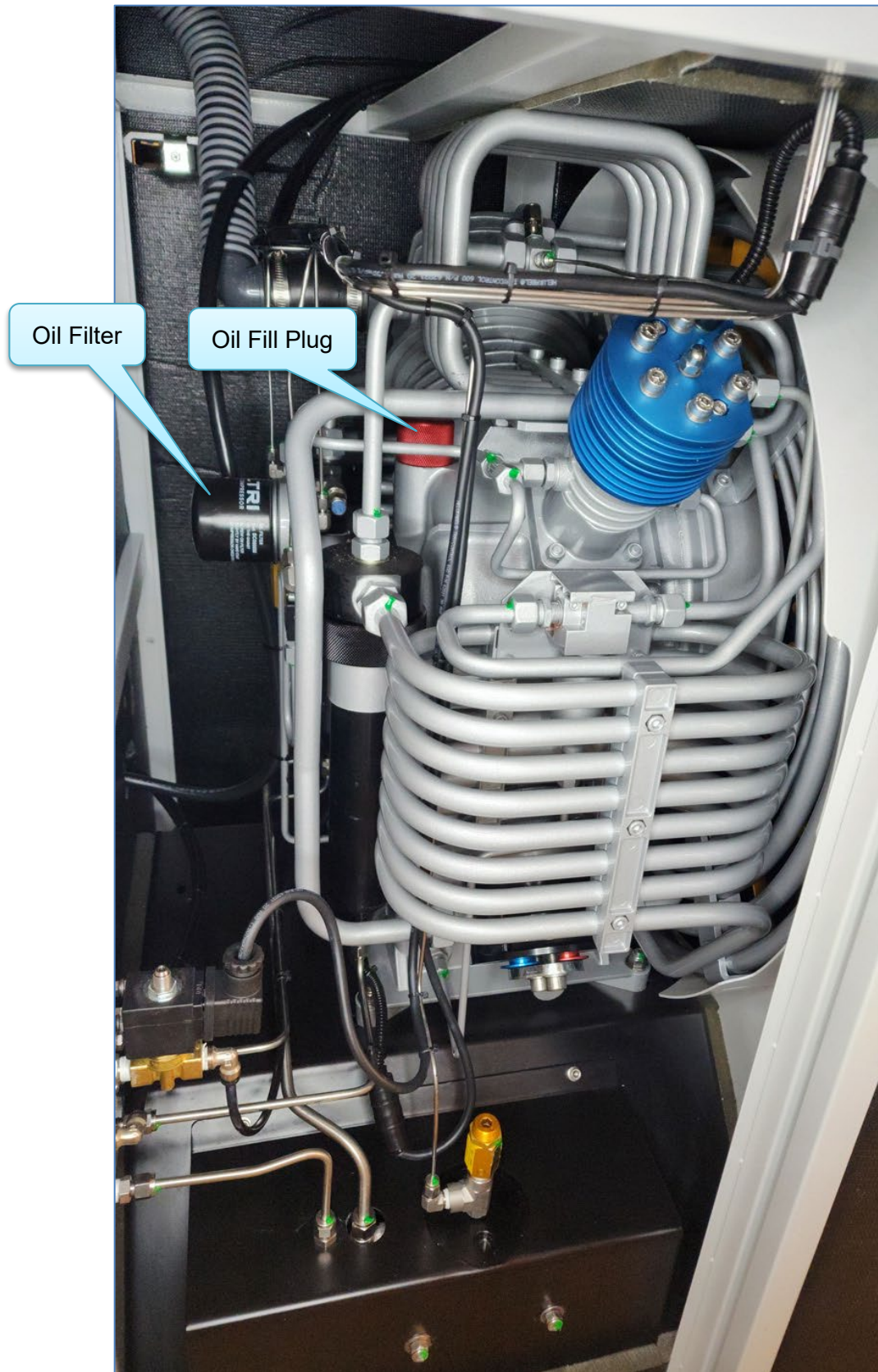


Figure 3. Cabinet interior and compressor block.

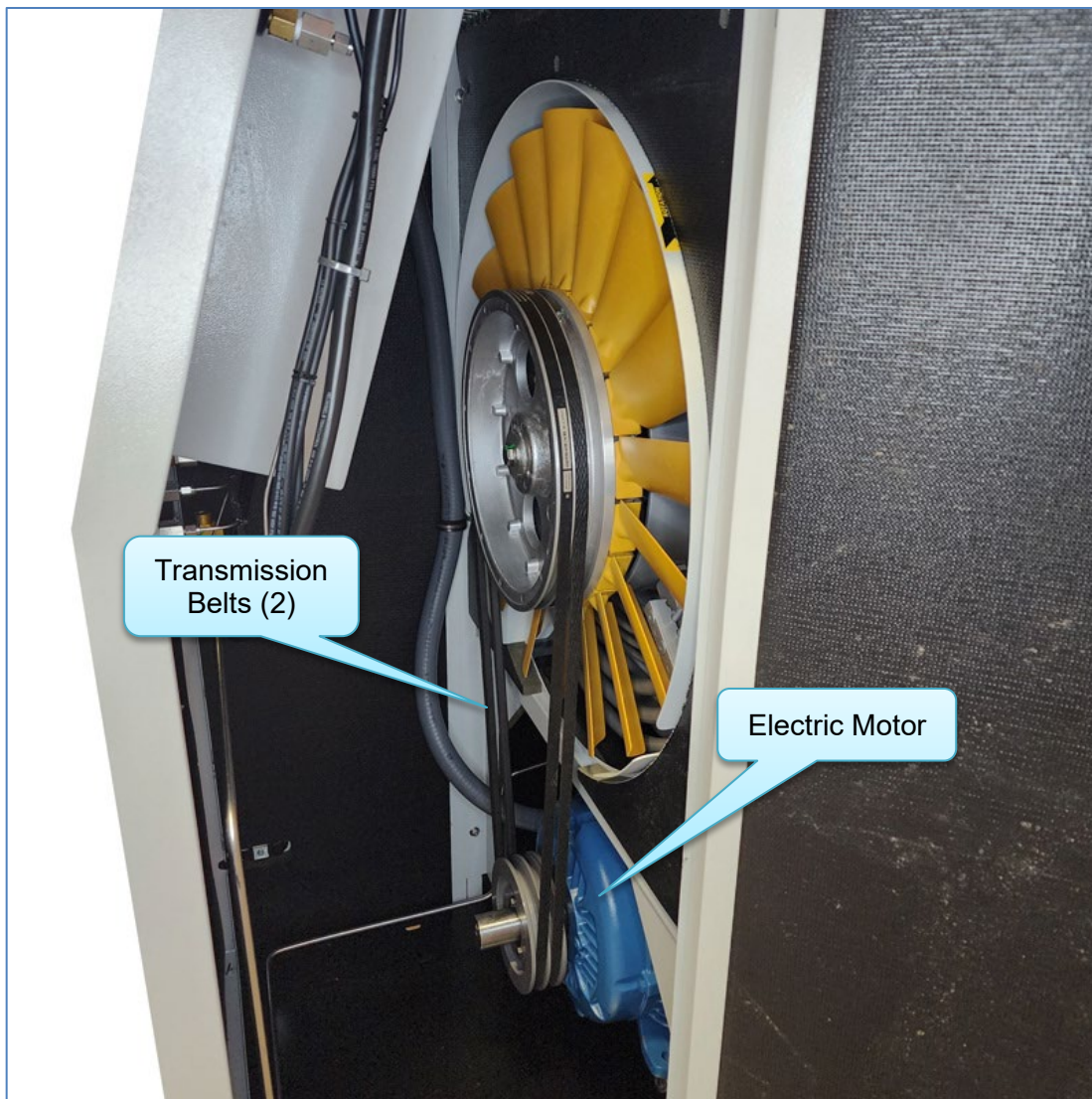


Figure 4. Front cabinet access to transmission belts.

4.0 General Safety Rules

The compressor must only be used by qualified personnel. They must fully understand the arrangement and function of all the controls, instruments, indicators, warning lights and the various information labels.

4.1 Protective Clothing

All operators must use accident prevention items such as gloves, hard hat, eye goggles, accident prevention shoes and ear defenders against noise (Figure 5).



Figure 5. Protective clothing examples.

4.2 Emergency Equipment

Make sure first aid supplies and a fire extinguisher rated for use on electrical equipment is nearby. In the United States, extinguishers with a Class C rating are designed for use with fires involving energized electrical equipment.

4.3 Checks and Maintenance

When work is being performed on the compressor, apply “DO NOT USE” signs on all sides of the compressor to prevent accidental startup of a compressor undergoing repair/maintenance (Figure 6).

Inspect the compressor carefully every day it is used as per the checklist given in this manual.



Figure 6. “Do Not Use” sign.

5.0 Safety Information Labels: Location & Description

Safety information labels are affixed to various parts of the compressor unit. Understand the meaning of each label and follow any instructions given on any label.

1. General operation warning label: “Do not use the compressor without having first read the instruction manual supplied with the machine and observed the instructions. The user shall pay all necessary attention and adopt appropriate control devices, safety and protection for vessels which have indicated, on the test certificate, maximum working pressure lower than that indicated on compressor.”
2. Condensate discharge information label. Indicates position of condensate discharge valve. To discharge the condensate, see section 10.16.
3. Lubricating oil information label. Check oil level daily before starting the compressor. Only use compressor oil authorized by the manufacturer. See section 10.8.
4. Oil drain label. Indicates the position of the lubricating oil drain taps. See section 10.8.
5. Air filtration cartridge change information label. To change the filter cartridges, see section 10.10.

6.0 System Components

- Nuvair MCH36 high-pressure air compressor
 - 4 Cylinder, 4 Stage, Air Cooled
- 20 hp TEFC electric motor
 - Star Delta starter
- (4) Fill hoses
- Dial-a-Pressure fill pressure gauge
- Emergency stop button
- Start button
- Stop button
- Hour meter
- Phase (proper rotation) recognition
- Interstage pressure gauges
- Automatic condensate drains with test button
- Large stainless steel interstage cooling tubes
- Low pressure oil pump with filter
- Oil level sight gauge
- Oil pressure gauge
- Automatic condensate drains
- Pressure-free start / stop
- Low oil shutdown switch
- High temperature switch
- Cabinet temperature thermostat and display screen
- (2) Nuvair CAN-35 filtration towers rated to 7000 psi (482 bar)
 - 60,000 cu ft

Lubricant:

- Nuvair 455™ Food Grade Lubricant (standard for breathing gas compressors)
- Nuvair 751™ Diester Based Lubricant (optional for industrial gas compressors)

7.0 Compressor Specifications

Compressor Model	Nuvair MCH36	
Fill Time*	~3 minutes	
Charging Rate*	22 CFM (623 L/min)	
CFM FAD	18 CFM FAD (510 L/min)	
Maximum Operating Pressure	6250 psi (431 bar)	
Pumping Unit RPM	1315	
Number of Stages	4	
Lubrication	Pressure Lubrication, capacity 0.92 gal (3.5 L)	
Oil Pressure	cold routine use minimum pressure	58 psi (4 bar) 21.75 psi (1.5 bar) 14.5 psi (1 bar)
Air Quality	CGA Grade E	
Dimensions (L x W x H)	31.9" x 49" x 69" (81 x 124 x 175 cm)	
Weight	1210 lb (549 kg)	
Noise Level	70 dB @ 1m	
Operating Temperature	32°F–120°F (0°C–48°C)	
Cooling Air Required	3000 CFM · 5097 m ³ /hr	
Power	400V/E3/50Hz · FLA 28.9 (other power configurations available)	

*Based on 80 cu ft cylinder from 500 to 3000 psi.



CAUTION

Ambient room temperature should never exceed +120°F (48°C) during compressor system operation. Operation at higher temperatures may lead to system damage and malfunction.

7.1 Unpacking and Installation

- Please read all information supplied before physically installing the compressor system.
- Unpack the system and remove it from the pallet. Visually inspect the system to make sure there has been no damage during shipping. If damaged, please call Nuvair to file a damage report. Please take photos and supply detailed information about the damage.
- Place the system in a permanent location allowing a minimum spacing of 39 inches (1 m) from adjacent walls and inches 59 inches (1.5 m) from ceiling (Figure 7).
- Select a location where ambient room temperature complies with stated requirements.
- Make sure the installation space is well ventilated.

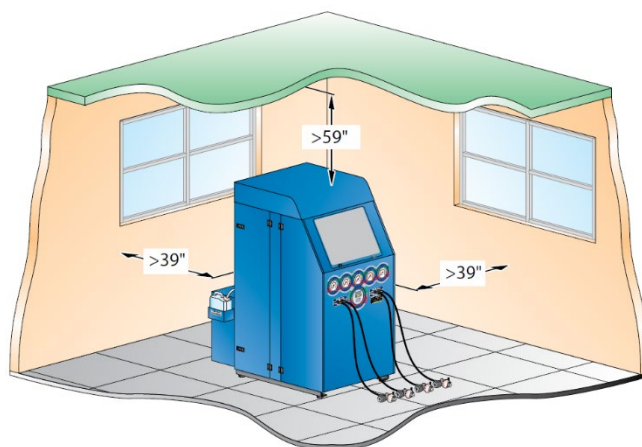


Figure 7. Illustration of proper positioning.

7.2 Air Intake Extension Kit

If the compressor is installed in an area without the necessary ventilation requisites described in section 7.1, it will be necessary to install a remote air intake extension kit leading in from outdoors or a place with the required ventilation requisites.

- The kit (like the one pictured in Figure 8, which is available as an option), must be connected to the compressor air intake.
- Connect extension pipe to fitting.
- Fit the supplementary intake filter on the end of the extension pipe.
- Position the end of the extension with the air intake filter in a properly ventilated area sheltered from weather and exhaust fumes.
- Point the air intake against the wind.
- Check that there are no kinks or breaks along the pipe. If it is damaged replace it.



Figure 8. Typical remote air intake kit.

7.3 Checks for the Start of Each Working Day

Inspect the exterior of the compressor (couplings, pipes, pneumatic components, etc.) and check for any oil leaks. Replace parts where necessary or contact **Nuvair**.

7.4 Lubricating Oil Level Check

Check that the level of lubricating oil is within acceptable limits (i.e., between minimum and maximum in the oil level viewer). Note that an excessive quantity of oil can leave deposits on the valves while too low a level prevents proper lubrication and could cause compressor seizure.

If the oil level is below the minimum limit shown in Figure 9, top up as described in section 10.6, “Checking and Changing the Lubricating Oil & Filter.”

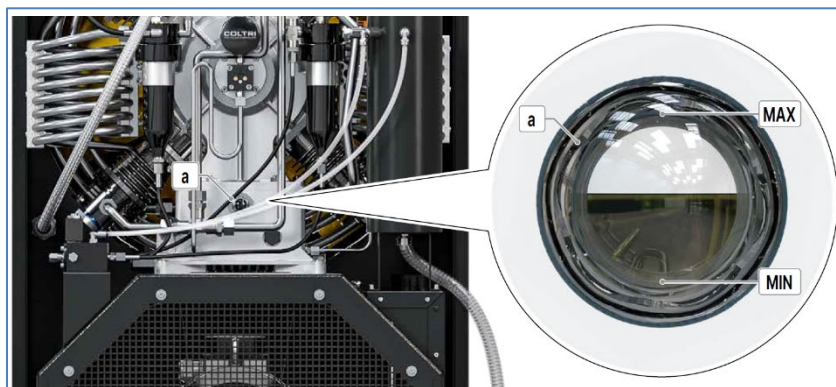


Figure 9. Oil level sight gauge (a).

7.5 Check Refill Hoses

Inspect the refill hoses and make sure there are no cuts, holes, abrasions, leaks etc. If necessary, replace with new hoses.

7.6 Check the Safety Valves

The final safety valve (also known as a “pressure relief valve,” shown in Figure 10) protects storage tanks and the compressor from excessive pressure; the valve setting is made at the time of compressor testing. Safety valves are available in different pressures depending on customer specifications. Available standard safety valve pressures include:

- 3364 psi (232 bar)
- 3625 psi (250 bar)
- 3988 psi (275 bar)
- 4350 psi (300 bar)
- 4786 psi (330 bar)
- 6454 psi (445 bar)

The safety valve must be tested every 250 working hours of the compressor. To check the safety valve:



Figure 10. Safety valve example.

- Set the pressure to a pressure higher than that of the valve setting.
- After attaching all fill whips to tanks, start the compressor with the tank valves closed.
- Using the final pressure gauge, note when the safety valve trips to ensure the valve activates at the maximum working pressure.



CAUTION

Tampering with the safety valve to increase the pressure setting is strictly forbidden. Tampering with the safety valve can seriously damage the compressor, cause serious injury to personnel, and renders the warranty null and void. Should the safety valve fail to work properly, contact Nuvair Technical Support.

7.7 Storing Technical Documentation

The use and maintenance manual and its appendices must be stored carefully and must always be kept where they can be accessed easily for immediate review.



WARNING

This Operation Manual contains important safety information and should always be available to those personnel operating this equipment. Read, understand, and retain all instructions before operating this equipment to prevent injury or equipment damage.

The Operation Manual is an integral part of the compressor and must always be handed over in the event of a change in ownership.

8.0 Control Panel

Specific components of the compressor control panel are described here. The compressor control panel can be viewed in Figure 1 (top image).

8.1 Gauge Matrix

The gauge matrix (Figure 11) is described below, from right gauge to left gauge. The compressor front panel has a total of six (6) mechanical gauges.



Figure 11. Pressure gauges (6).

Fill Pressure

The largest gauge indicates the pressure as it exits the compressor. The Dial-a-Pressure Switch allows users to set the desired pressure at the high-pressure out connection. If the pressure fails to reach the pressure switch set pressure, switch off the compressor and contact Nuvair.

4th Stage

This gauge indicates the pressure inside the fourth—and final—compression stage.

3rd Stage

This gauge indicates the pressure inside the third compression stage.

2nd Stage

This gauge indicates the pressure inside the second compression stage.

1st Stage

This gauge indicates the pressure inside the first compression stage.

Oil Pressure

This gauge indicates the pressure inside of the lubricating oil circuit. Oil pressure is also monitored by the Dashboard. If no oil pressure or a high pressure reading occurs, switch off compressor and contact Nuvair.

Oil Pressure	58 psi (4 bar)	Cold Routine Use Minimum Pressure
	21.75 psi (1.5 bar)	
	14.5 psi (1 bar)	

8.2 Pressure Controls

The compressor is equipped with a choice of one of two types of automatic start/stop systems (Figure 12).

- Pressure Switch: Shuts down the compressor at a set high pressure.
- Dial-A-Pressure Switch: Allows the operator to dial-in a high pressure for the compressor to automatically stop at when the pressure is reached during the filling process.



Figure 12. Dial-a-Pressure Switch (top image) and Pressure Switch.

9.0 Tank Refill Procedure



NOTICE

During refill, the operator must be in the work area. During the tank refill phase, it is advisable to submerge tanks in cold water to reduce the drop in pressure that accompanies tank cooling.



WARNING

During tank refill, those not involved in the refill procedure must maintain a safety distance of at least 9 feet (3 meters). Also, it is forbidden to disconnect the hoses from the fittings or the high-pressure out connection while the machine is under pressure. If an emergency occurs during refill, shut down the compressor immediately.



DANGER

Should tanks show evident signs of internal or external corrosion, do not refill them even if they have been tested.



WARNING

Use only tested tanks (as proven by a test stamp and/or certificate). The working and tank refill pressures are stamped on the tanks themselves. It is forbidden to refill them at a pressure greater than that indicated.

Different fill valves are available at the time of purchase. Variations include INT (Yoke), DIN232, DIN300, and SCBA. To refill tanks, follow procedures described below and as illustrated in Figure 13:

- Check that tanks to be refilled are in good condition.
 - Tanks must be inspected as required by local law and have evidence (stamped or label) attesting to said certification or inspection.
 - Conduct a visual inspection of the tank/s exterior.
- Check that fill whips and associated fittings are in good condition.
- Set the desired fill pressure using the dial-a-pressure switch.
- Fit the hose connector (a) to the fill valve (b).
- Screw in the fill valve knob (c) until it is tightened.
- Check that the bleed valve (f) is closed by rotating it clockwise.
- Open the valve (d) by rotating it counterclockwise.
- Start the compressor.
- Open the valve (e) by rotating it counterclockwise.

Nuvair MCH36 6250 psi Vertical Silent

- Once refilling has been completed wait for automatic shutdown of the compressor with the pressure switch.
- Close valves (d) and (e) by rotating them clockwise.
- Open the bleed valve (f) by rotating it anticlockwise until all the residual air in the whip has been expelled.
- Unscrew the fill valve knob (c) by rotating it counterclockwise.
- Disconnect the tank fill valve.

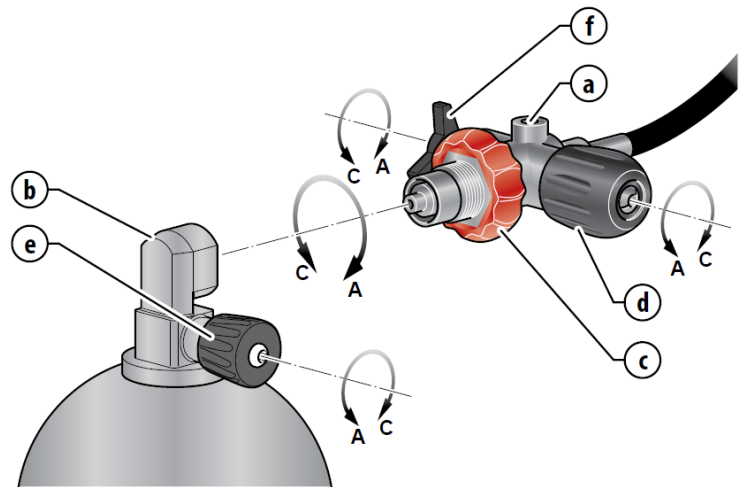


Figure 13. Tank refill illustration (DIN valve pictured).

Never drain a tank completely, not even for seasonal storage or long periods of inactivity. Pressure prevents internal damage caused by moisture intrusion.

10.0 Maintenance

10.1 Foreword

To obtain the best possible performance from the compressor and ensure a long working life for all its parts it is essential that personnel follow the use and maintenance instructions with extreme diligence. It is thus advisable to read the information below and consult the manual every time an inconvenience arises. For further information, please contact Nuvair:

Phone: +1.805.815.4044
Email: info@Nuvair.com

**DANGER**

Do not carry out these tasks if the compressor has just shut down and is hot; wait for the compressor to cool. All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the wall socket.

**DANGER**

Depressurize the entire compressor circuit before carrying out any maintenance tasks. To depressurize the compressor, open the drain valve (Figure 14).

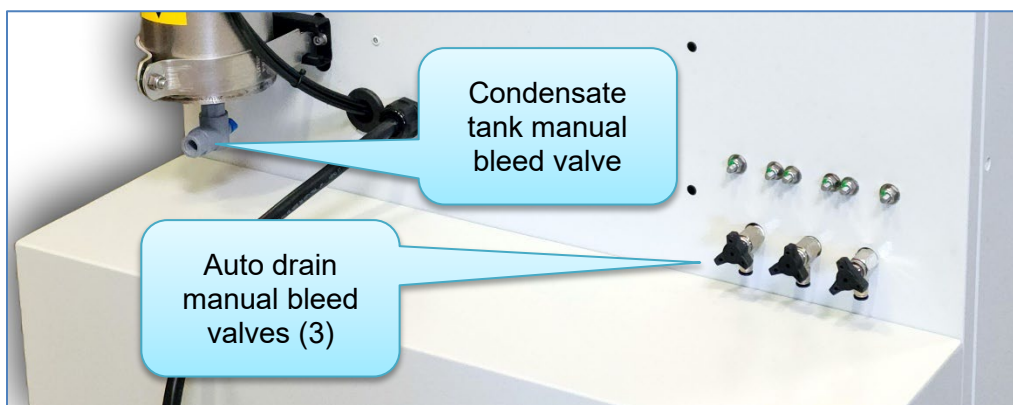


Figure 14. Manual bleed valves.

10.2 General

- Proper preservation of the compressor requires thorough cleaning.
- This type of refill station, designed and built according to the most advanced technological criteria, requires only minimum preventive and routine maintenance.
- Before carrying out any maintenance tasks, run checks and/or controls on the compressor, switch off the compressor, and disconnect power.
- The residual pressure present in the compressor and all lines must be released.
- During disassembly and reassembly of the compressor, always use suitable wrenches/tools so as not to damage the relevant components.
- Loosen stiff parts with a copper or plastic mallet.
- When refitting parts make sure they are clean and lubricated sufficiently.
- Compressor maintenance tasks must only be carried out by authorized personnel and recorded in the Service Log of this manual.

10.3 Unscheduled Work

Unscheduled work involves repairs and/or replacement of the mechanical parts of one or more compressor components. This work normally needs to be done after some years of use. If substantial modifications are made, the manufacturer cannot be held liable for any dangers that might arise. This work must be carried out by a Nuvair approved mechanic.

10.4 Scheduled Maintenance Table

Maintenance interval times are for typical use and may vary based on the conditions under which the compressor is used.

Before Every Use	Hours												
	Hourly Maintenance	5	25	50	100	250	500	1000	2000	3000	4000	5000	20,000
Condensate Container Discharge	○	○				●							
Air Intake Filter				○		●							
Lubricating Oil Level Check	○												
Lubricating Oil & Filter			●		**	●*							
Automatic Shutdown Check	○												
1 st , 2 nd , 3 rd Stage Valves							○	●					
4 th Stage Valves								●					
Condensate Separator & Filter						○							●
CAN-35 Filter Tower Complete						○							
Separator Filter Element Cleaning								○					
1 st , 2 nd , 3 rd Stage Segments									●				
4 th Stage								●					
HP Flex Hoses				○						●			
Fitting/Hose Leak Check						○							
Safety Valve						○						●	
Coolers Tube											●		
Transmission Belt Wear & Tension						○	●						
Water & HP Oil Separator											●		
Adjust Nuts & Bolts			○										

○ Checking and cleaning ● Change

* Nuvair recommends oil changes every 250 hours of runtime, or once per year, whichever is less.

** Change oil every 100 hours when compressor is used with nitrox.

Annual Maintenance	Years			
	1	5	10	15
Air Intake Filter	●			
Lubricating Oil & Filter Change	●			
Condensate Separator & Filter				●
CAN-35 Filter Tower Complete				●
Separator Filter Element Cleaning	○			
HP Flex Hoses		●		
Safety Valve			●	
Transmission Belt Wear & Tension	●			

○ Checking and cleaning ● Change

10.5 Troubleshooting

Problem	Cause	Solution
Compressor overheats	• Cooling tubes dirty • Incomplete valve closure (causing overload of another stage) • Poor ventilation	• Clean cooling tubes • Contact technical support • Contact technical support
Rotation speed and flow rate decrease	• Motor power too low • The belt slips	• Check the motor • Restore drive belt tension
The flow rate diminishes without RPM decreasing	• Valves not working • 4th stage piston worn • Fittings loose / leaking seals • Intake filter clogged • Intake extension kinked • Piston or piston rings worn	• Contact technical support • Contact technical support • Check for leaks with soapy water and eliminate them • Replace filter • Straighten, use stiffer pipe • Contact technical support
Air smells of oil	• Cartridge filter exhausted • Piston rings worn • Condensate not being drained	• Replace filter • Contact technical assistance • Check auto drains and manually drain more often
Electric motor does not start	• Phase missing	• Check fuses or condenser

10.6 Checking and Changing the Lubricating Oil & Filter

During the compressor initial break-in period, the original oil filter and lubricating oil must be changed at the 25-hour runtime mark. After the initial change of lubricants and filter the oil and oil filter must be changed every 100 hours of use or annually, whichever comes first.

HP Compressor Lubricant: Only use lubricants rated for use with nitrox, such as Nuvair 455™ or Nuvair 751™. **Never mix compressor lubricants.** Nuvair compressors are shipped with Nuvair 455 synthetic food grade lubricant (for breathing air use) or Nuvair 751 (for industrial use).



WARNING

Use only the specified Nuvair lubricants in this system. The use of incompatible lubricants presents a risk of fire and/or explosion and may result in system damage. This can lead to severe personal injury and death.



DANGER

Do not carry out these tasks if the compressor has only just shut down; wait for the compressor to cool. Pressure must be drained before opening LP fill plug.

Any oil spilt during the oil/filter change could cause personnel to slip; wear protective garments and anti-slip footwear and remove traces of oil immediately.

Both oil and filter are classified as special wastes and must therefore be disposed of in compliance with the anti-pollution laws in force.

All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the main socket.

10.7 Checking the Oil Level

The oil level must be checked every five (5) working hours of the compressor. The oil level must be between the minimum and the maximum shown on the oil level viewer (Figure 9).

If the oil level is above the maximum level:

- Position a receptacle under the drain hose so that the oil flows into the exhausted oil receptacle.
- Open the drain valve and let the oil flow out until the oil level returns within the maximum and minimum limits.
- Close the drain valve.

If the oil level is below the minimum level:

- Open the top fill plug.
- Top off with oil until the level returns within the maximum and minimum limits.
- Close the fill plug.



CAUTION

After running the compressor, the lubricant will be very hot. Take care when removing the drain plug and draining the lubricant to avoid burns.



NOTICE

Recommended nitrox compressor lubricant is changed when the first 25 hours of use is reached, then change lubricant in 100-hour cycles or annually.



CAUTION

Wear gloves when handling compressor lubricant. If contact with skin is made, wash the skin surface with soap and water.



CAUTION

Always wear goggles when handling compressor lubricant. These materials can cause eye irritation. If you accidentally get lubricant into your eyes, flush with fresh water for 15 minutes and contact a physician if irritation develops.



CAUTION

Compressor lubricant should be recycled after use at a licensed facility in accordance with Federal, State, and local regulations.

10.8 Changing the Lubricating Oil and Filter

The lubricating oil must be changed every 250 working hours or annually.¹ Every time the lubricating oil is changed the oil filter must be changed also.

To change the oil:

- Position the supplied oil drain hose in a used oil receptacle with a capacity of at least 1.2 gal (5 L).
- Open the oil fill plug.
- Remove the oil drain hose brass end cap.

¹ At Nuvair, we prefer to have oil changed every 250 hours (or once per year, whichever interval is less) unless you are taking advantage of an oil analysis program that confirms the oil is still good.

- Unscrew the filter being sure to recover the oil inside it.
- Replace the filter with a new one.
- Wet the gasket of the filter with a little oil and firmly tighten the filter manually.
- Replace the oil drain hose brass end cap.
- Remove the top-up plug (b).
- Fill the oil sump with 3.5 L (0.92 gal) of oil using the oil fill plug.
- Close the oil fill plug.
- Switch on the compressor and run it depressurized for 30 seconds.
- Switch off the compressor.
- Check the oil level using the oil level viewer. If the oil level is not within the allowed limits, top up or drain off.
- Replace the oil fill plug.

10.9 Tightening Torque Values

The table below shows tightening torques for bolts or hexagonal-head or cylindrical-head recessed hexagonal bolts and screws, except for specific cases indicated in the manual.

Pipe connections (swivel nuts, compression fittings) should be finger tight plus an additional 1/2 turn.

Tightening Torque Values	
Thread	Maximum Torque
M6 - 1/4"	10 Nm (7 ft-lb)
M8 - 5/16"	25 Nm (18 ft-lb)
M10 - 3/8"	45 Nm (32 ft-lb)
M12 - 1/2"	75 Nm (53 ft-lb)
M14 - 9/16"	120 Nm (85 ft-lb)
M16 - 5/8"	200 Nm (141 ft-lb)

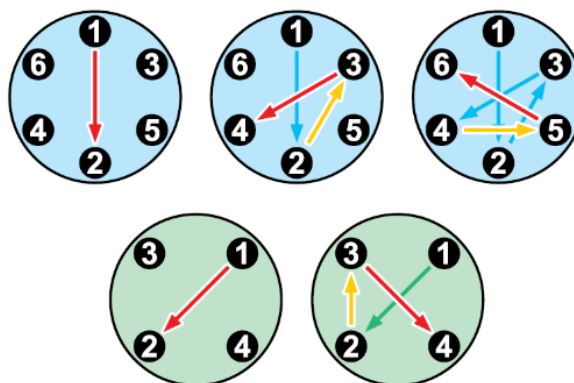


Figure 15. 6-bolt and 4-bolt torque sequence.

10.10 Changing the Air Intake Filter

After putting the compressor into service, the intake filter (located on the reverse side of the compressor cabinet, Figure 17) must be changed after the first 50 working hours.

The air filter must then be changed every 250 working hours or annually.

Rotate the filter cartridge inside the filter housing 90° every 50 hours.

Change the air filter by following these steps (as illustrated in Figure 16):

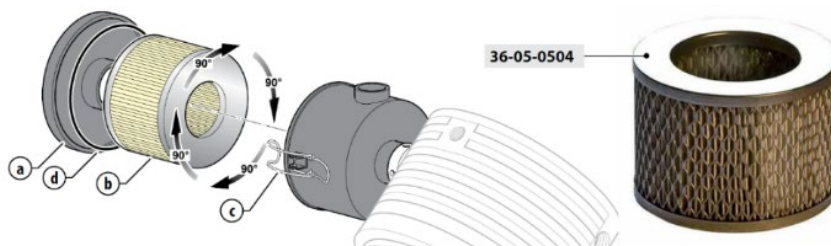


Figure 16. Rotating the air intake filter.

- Open clips (c) and remove the air filter cover (a).
- Remove the air filter cartridge (b).
- Replace the cartridge with a new one.
- Replace the O-ring (see “d” Figure 16) with a new one.
- Reclose the cover (a) and close the clips (c).



DANGER

Do not carry out these tasks if the compressor has just shut down and is hot; wait for the compressor to cool. All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the wall socket.



Figure 17. Air filter.



NOTICE

If the compressor is used in a dusty environment, the filter change interval should be reduced to every 50 hours, or more frequently as required.

10.11 Transmission Belts

Belt tension must be checked monthly. The transmission belts must be replaced every 500 working hours of the compressor.

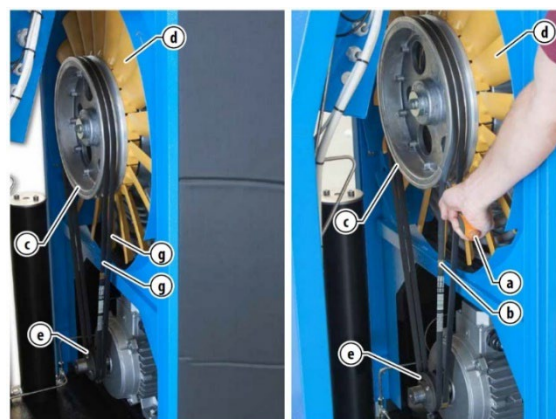


Figure 18. Changing the transmission belt.



DANGER

Do not carry out these tasks if the compressor has just shut down and is hot; wait for the compressor to cool. All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the wall socket.

10.12 Checking Transmission Belts

To check for proper transmission belt tension (g, Figure 19) exert a pressure of approximately 22 lb (10 kg) on the belt; check the belts do not flex by more than 1 cm (0.39 in) with respect to its original position. Should they flex more than this, the belts must be replaced.

10.13 Changing Transmission Belts

To replace the transmission belts, proceed as follows (see Figure 19):

- Insert a screwdriver (a) between the first belt (b) and the pulley (c) of the cooling fan (d).
- Rotate the fan (d) counterclockwise until the belt comes out of the pulley groove.
- Repeat the procedure on the second belt.
- Change the belts with new ones. Make sure the belt model and length are the same. Check that the characteristics of the new belt are identical to those of the old one.

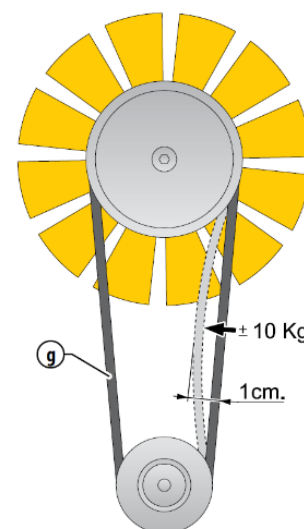


Figure 19. Transmission belt tension.

- Insert the new belt on the internal groove of the motor pulley (e).
- Insert the belt on the internal groove of the fan pulley while simultaneously turning the fan by hand until the belt slips perfectly into the groove of the pulley.
- Check that the belt is inserted perfectly in the grooves of the two pulleys and that belt tension is correct.
- Insert the second belt and carry out the same procedure described for the first belt.

If belts (g) tension is not correct contact Nuvair for technical assistance.

10.14 Changing Air Filtration Cartridges

Correct filtering system component maintenance ensures that the quality of the air exiting the compressor complies with the international breathing air standards.

The air filtration elements (cartridges) must be replaced at intervals calculated on the characteristics of the environment in which the compressor is located. To calculate these intervals, refer to the table in section 10.15.

The filter cartridge must be replaced before the air develops an unpleasant smell, when the litmus test paper mounted inside the cartridge element turns white or a color other than blue.

The *MCH36 Vertical Silent* compressor comes standard with one (1) molecular sieve drying filter (SKU NUV65677-M-B) and one (1) tri-chem breathing air filter (SKU NUV65247-MHC-B). Change filter elements every 60,000 cubic feet of air pumped. If the compressor system is operated in high humidity and/or high temperature, filter elements must be changed more often. See section 10.15 for details on filter element “life factors.”



CAUTION

A special breathing air filter element (containing a desiccant blend, activated carbon, and a carbon monoxide catalyst) must be used with this gasoline engine powered compressor.

- Shut down the compressor system.
- Open and leave open the drain valve/s (Figure 14) to vent all pressure from the circuit.
- Use the wrench (Figure 23) to apply leverage on the screw heads of the plug and rotate counterclockwise. If a filter wrench (SKU TL-033) is not available, a large screwdriver can be used to unscrew the filter plug (1, Figure 22).
- Remove the filter plug (2, Figure 22).
- Remove the first cartridge (3, Figure 22) and the second cartridge; replace both with new cartridge elements. Place pressure on each cartridge (4, Figure 22) to seat the element fully into the canister.
- Replace the filter canister plug O-ring every time the filter is changed.
- Reinstall cap to canister by rotating clockwise and tightening with screwdriver or cap wrench.

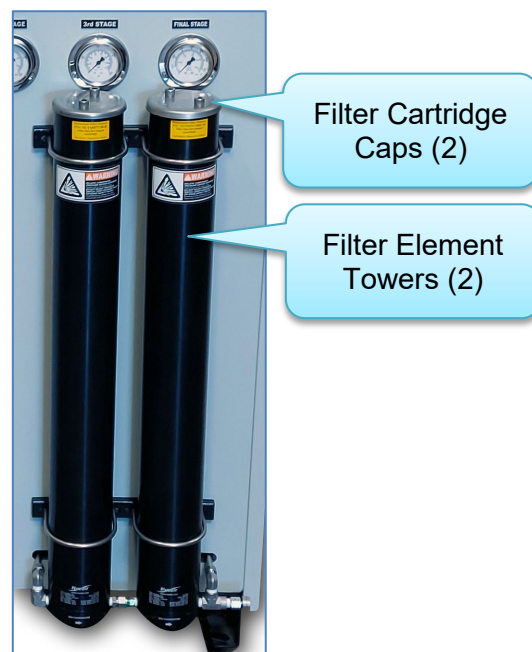


Figure 20. Filter cartridge canisters and caps.



Figure 21. CAN-35-6000 canister towers and filters.

- Close the drain valve/s.



DANGER

Do not carry out these tasks if the compressor has just shut down and is hot; wait for the compressor to cool. All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the wall socket.



WARNING

Be sure that all pressure has been relieved from the system prior to opening any filtration canister. Failure to vent pressure from the system prior to opening the canister can lead to serious personal injury or death. Difficulty turning the filter cap may indicate there still is pressure in the filter canister.



CAUTION

If the compressor is in an area where there is high humidity and high heat, the life of all filtration elements may be as little as 35% of rated operating capacity. Check the compressor manual and appendix for details on Filter Element Life Factors.

10.15 Filter Element Life Factors

Breathing air filter element life is typically rated by manufacturer based on an air temperature of 80°F at the filter inlet. Under normal operation this temperature is +12°F (+5°C) warmer than the ambient air, resulting in an equivalent ambient temperature rating at +68°F (+20°C).

To determine element life at a different ambient temperature, multiply the rated life by the life factor listed below:

Filter Temperature	Ambient Temperature	Filter Element Life Factor
53°F (12°C)	41°F (5°C)	2.6 × Life
62°F (17°C)	50°F (10°C)	1.8 × Life
71°F (23°C)	59°F (16°C)	1.35 × Life
80°F (27°C)	68°F (20°C)	1 × Life
89°F (32°C)	77°F (25°C)	0.8 × Life
96°F (36°C)	84°F (29°C)	0.55 × Life
105°F (41°C)	93°F (34°C)	0.45 × Life
114°F (46°C)	102°F (39°C)	0.35 × Life



WARNING

The active carbon filters are classified as special waste once the compressor has been used to make air. They must be disposed of in compliance with the local antipollution standards in force.



Figure 22. Changing air filter cartridge.



Figure 23. TL-033 wrench.

10.16 Condensate Discharge

An outflow of condensate water with lubricating oil is normal during refills: the quantity will depend on the level of humidity in the air. Condensate must be disposed of according to the instructions shown in section 11.4, Waste Disposal.



NOTICE

The condensate tank must be drained at the end of every working day or every 2 to 3 hours of operation. The compressor condensate must be drained every 5-10 minutes of operation.

Users can attach a hose to the condensate trap discharge valve and use a 5-gallon bucket to collect condensate. Make sure to properly dispose of collected condensate appropriately and at regular intervals to avoid overflowing collection container.



WARNING

Auto drains must be checked for proper operation weekly.

10.17 Changing Flex Hoses

The hoses must be changed periodically (every 5 years or every 3000 hours) or when they show signs of abrasion/wear/damage. The bending radius of the hoses must not be less than 250 mm (9.8 in).



DANGER

Do not carry out these tasks if the compressor has just shut down and is hot; wait for the compressor to cool. All maintenance work must be carried out with the compressor OFF and the power supply lead unplugged from the wall socket.



DANGER

Depressurize the entire compressor circuit before carrying out any maintenance tasks. To depressurize the compressor, open the drain valve (a, Figure 12).

Tank refill pressure is extremely high. Therefore, before refilling the tanks check that hoses are correctly connected and in good condition. Check also that the valves on any unused hoses are closed properly to prevent the dangers associated with hose whipping.

To change the tank refill hoses, proceed as follows:

- Disconnect the bottle refill hoses by unscrewing the fittings (17 mm wrench).
- Replace the old hoses with new ones.
- Screw the hoses onto the connectors (a, Figure 23).
- Use a dynamometric wrench to tighten the hoses on the compressor with a torque of 15 Nm.

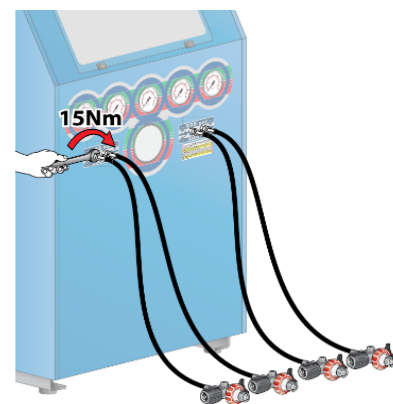


Figure 24. Tank refill hose changes.



WARNING

When the tanks are being refilled, unauthorized personnel must remain at a distance of at least 3 meters (10 feet). It is strictly forbidden to disconnect the hoses from the fittings or refill valve when the machine is under pressure.

10.18 Safety Valves

The safety valves must be replaced every 10 years or 5000 hours. There are four safety valves installed on the compressor. Safety valve locations are shown in Figure 25. Safety valve values are as follow:

- (a) 5 bar / 73 psi
- (b) 22 bar / 319 psi
- (c) 100 bar / 1450 psi
- (d) 420 bar / 6091 psi



DANGER

Tampering with the safety valve to increase the pressure setting is strictly forbidden.

Tampering with the safety valve can seriously damage the compressor, cause serious injury to personnel and renders the warranty null and void.

Should safety valves fail to work properly, contact Nuvair for technical assistance.

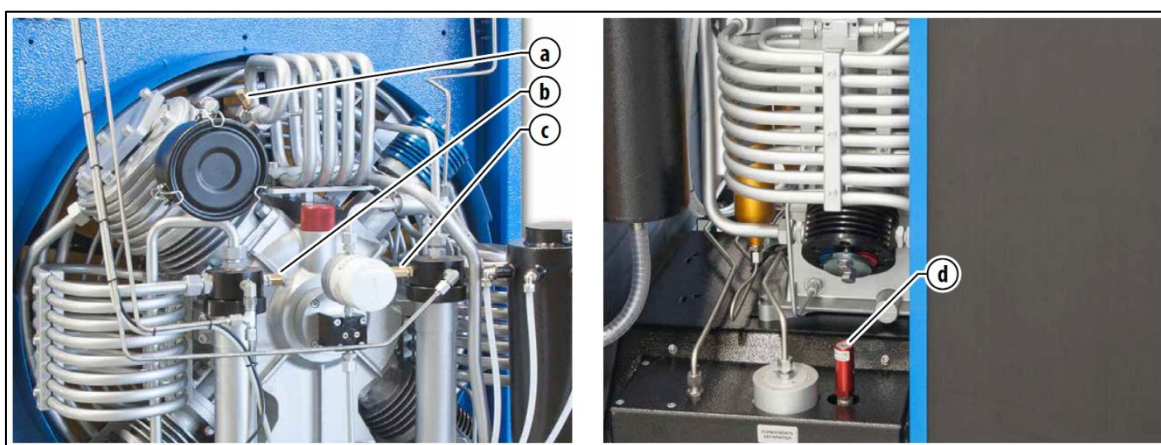


Figure 25. Safety valve locations.

11.0 Storage

Should the compressor not be used, it must be stored in a dry sheltered area at an ambient temperature of between +32°F and +104°F (0°C and +40°C). Store the compressor away from sources of heat, flames or explosive.

11.1 Stopping the Machine for a Brief Period

If you do not intend to use the compressor for a brief period proceed with general cleaning. Once the compressor has cooled down you should wipe off dirt, dust and moisture on the compressor and the surrounding area.

11.2 Stopping the Machine for an Extended Period

If you do not intend to use the compressor for a long period, extract the active carbon filter cartridge. Run the compressor for a few minutes without actually filling tanks so as to flush out all the residual condensate. Stop the compressor, disassemble the intake filter, restart the compressor and spray a few drops of compressor oil into the air intake hole so that a light film of lubricant is aspirated and penetrates the interior of the compressor. Stop the compressor and refit the air intake filter. Clean the external parts: eliminate any moisture, salt, or oil deposits. Protect the compressor from dust and water by storing it in a clean, dry place. Switch off the machine via the main switch and remove the plug from the mains power socket. Proceed with a thorough general clean of all machine parts. During machine downtimes it is advisable to run the compressor for 20 minutes every 15 days.

11.3 Dismantling and Putting the Compressor Out of Service

Should you decide not to use the compressor or any of its parts any longer you must precede with its dismantling and putting it out of service. These tasks must be carried out in compliance with the standards in force.



WARNING

Should the compressor, or a part of it, be out of service its parts must be rendered harmless so they do not cause any danger.



WARNING

Bear in mind that oil, filters, or any other compressor part subject to differentiated waste collection must be disposed of in compliance with the standards in force.

11.4 Waste Disposal

Use of the compressor generates **waste** that is classified as **special**. Bear in mind that residues from industrial, agricultural, crafts, commercial and service activities not classified by quality or quantity as urban waste must be treated as special waste. Deteriorated or obsolete machines are also classified as special waste. Special attention must be paid to active carbon filters as they cannot be included in urban waste: observe the waste disposal laws in force where the compressor is used. Bear in mind that it is compulsory to record loading/unloading of exhausted oils, special wastes and toxic-harmful wastes that derive from heavy/light industry processes. Exhausted oils, special wastes and toxic-harmful waste must be collected by authorized companies. It is especially important that exhausted oils be disposed of in compliance with the laws in the country of use.



NOTICE

Disassembly and demolition must only be carried out by qualified personnel. At every stage of demolition observe the safety regulations contained in this manual carefully.

11.5 Dismantling the Compressor

Dismantle the compressor in accordance with all the precautions imposed by the laws in force in the country of use. Before demolishing request an inspection by the relevant authorities and relative report. Eliminate any interfaces the compressor may have with other machines, making sure that interfaces between remaining machines are unaffected. Empty the tank containing the lubricating oil and store in compliance with the laws in force. Proceed with disassembly of the individual compressor components and group them together according to the materials they are made of the compressor mainly consists of steel, stainless steel, cast iron, aluminum, and plastic parts. Then scrap the machine in compliance with the laws in force in the country of use.

12.0 Instructions for Emergency Situations

12.1 Fire

In the event of fire, use a carbon dioxide (CO₂) extinguisher in compliance with the relevant standards in force. Contact the fire department.

13.0 Maintenance Register

13.1 Customer Service

Customers continue to receive assistance after the purchase of a compressor. To this end **Nuvair** has created a worldwide customer service network.

13.2 Scheduled Maintenance

The scheduled maintenance program is designed to keep your compressor in perfect working order. Some simple tasks, described in this manual, can be carried out directly by the customer; others, instead, require that the work be carried out by trained personnel. For the latter we recommend you always contact our office. This section provides a simple tool with which to request assistance and register completed scheduled maintenance work. Start-up and maintenance checks/tasks, once completed by our qualified technician, are registered in this maintenance chapter by way of an official stamp, signature, and inspection date; the number of working hours is also registered. The maintenance schedules/coupons easily let you know when our assistance service should be contacted to carry out work.

13.3 Using the compressor under heavy duty conditions

Where compressors are used in particularly difficult conditions (high levels of pollution, presence of solid particulate in suspension etc.), scheduled maintenance tasks must be carried out more frequently as per the advice given by our assistance network.

13.4 Nuvair Customer Care Contact

Telephone: +1.805.815.4044
Fax: +1.805.486.0900
E-mail: info@Nuvair.com
Web: www.Nuvair.com/

14.0 Spare Parts List

Compressor System Components	Type	Part Number
Compressor Lubricant, Food Grade (nitrox compatible)	Nuvair 455 (1 gal)	9406
Compressor Lubricant, Industrial Grade	Nuvair 751 (1 gal)	9403
High Pressure Air Filter Elements (x1 each)	Drying Filter Cartridge	NUV65677-M-B
	Breathing Air Filter	NUV65247-MHC-B
Air Intake Filter Element		36-05-0504
Oil Filter	Spin On	SC000688
Transmission Belts (x2)		A75
Filter Tower Wrench	Stainless Steel	TL-033

15.0 Service Log

[illegible]

16.0 Appendix

16.1 Supply and Breathing Air Specifications

All supply and breathing air must meet the following requirements of CGA G-7.1-1997. Periodic air quality testing to assure compliance is recommended. All breathing air for diving produced by a downstream compressor must be purified to meet Grade E quality, and periodic air quality testing to assure compliance is mandatory.

Item	Grade D	Grade E
Oxygen	19.5-23.5%	20-22%
Carbon Dioxide (maximum)	1000 PPM	1000 PPM
Carbon Monoxide (maximum)	10 PPM	10 PPM
Hydrocarbons (maximum)	Not specified	25 PPM
Water Vapor (maximum)	Not specified	Not specified
Dew Point (maximum) ¹	Not specified	Not specified
Oil & Particles (maximum) ²	5 mg/m ³	5 mg/m ³
Odor	None	None

Notes: ¹ Dew point of supply air must be >10°F (6°C) colder than coldest ambient air expected.

² Supply air delivered to the membrane system must contain <0.003 PPM oil vapor.

17.0 Nuvair Compressor System Warranty

Nuvair extends a limited warranty, which warrants the compressor system to be free from defects in materials and workmanship under normal use and service for a limited period. All other Original Equipment Manufacturer (OEM) components used in the system are warranted only to the extent of the OEM's warranty to Nuvair. Nuvair makes no warranty with respect to these OEM components, and only warrants the workmanship that Nuvair has employed in the installation or use of any OEM component. This warranty is not transferable.

Nuvair will, at its discretion and according to the terms as set forth within, replace or repair any materials which fail under normal use and service and do not exhibit any signs of improper maintenance, misuse, accident, alteration, weather damage, tampering, or use for any other than the intended purpose. Determination of failure is the responsibility of Nuvair, which will work together with the customer to adequately address warranty issues. When any materials are repaired or replaced during the warranty period, they are warranted only for the remainder of the original warranty period. This warranty shall be void and Nuvair shall have no responsibility to repair or replace damaged materials resulting directly or indirectly from the use of repair or replacement parts not approved by Nuvair.

Maintenance Items

Any materials which are consumed, or otherwise rendered not warrantable due to processes applied to them, are considered expendable and are not covered under the terms of this policy. This includes maintenance and consumable items listed as part of a suggested maintenance program included with system documentation.

Return Policy

Application for warranty service can be made by contacting Nuvair during regular business hours and requesting a Return Material Authorization (RMA) number. Materials that are found to be defective must be shipped, freight prepaid, to the Nuvair office in Oxnard, California USA. Upon inspection and determination of failure, Nuvair shall exercise its options under the terms of this policy. Warranty serviced materials will be returned to the customer via Nuvair's preferred shipping method, at Nuvair's expense. Any expedited return shipping arrangements to be made at customer's expense must be specified in advance.

Limitation of Warranty and Liability

Repair, replacement, or refund in the manner and within the time provided shall constitute Nuvair's sole liability and the purchaser's exclusive remedy resulting from any nonconformity or defect. Nuvair shall not in any event be liable for any damages, whether based on contract, warranty, negligence, strict liability or otherwise, including without limitation any consequential, incidental, or special damages, arising with respect to the equipment or its failure to operate, even if Nuvair has been advised of the possibility thereof. Nuvair makes no other warranty or representation of any kind, except that of title, and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, are hereby expressly disclaimed. No salesman or other representative of Nuvair has authority to make any warranties.

Additional Record of Changes

It is the responsibility of the owner of this product to register their ownership with Nuvair by sending the warranty card provided to Nuvair. This card is to establish registration for any necessary warranty work and as a means of communication that allows Nuvair to contact the user regarding this product.

The user must notify Nuvair of any change of address by the user or sale of the product. All changes or revisions to this manual must be recorded in this document to ensure that the manual is up to date.

Change Date	Description of Change



Nuvair

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