



# User Manual

## **Nuvair Q-325**

**(Also Operation and Maintenance for Q-370)**

**Gas, Diesel and Electric**

rev. 12.18

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

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8:00 AM to 5:00 PM PST USA

The pictures in this manual may not represent the unit you have purchased, but operational and maintenance instructions apply to any units with the same components.

## **Warning**

**This User 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. 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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## **1.0 Introduction**

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.

This manual will assist you in the proper set-up, operation and maintenance of the Nuvair Q-325 Compressor System. Be sure to read this entire manual and the included Quincy 325 manual and Yanmar, Kohler or WEG motor manuals included.

Throughout this manual we will use certain words to call your attention to conditions, practices or techniques that may directly affect your safety. Pay particular attention to information introduced by the following signal words:

### **Danger**

Indicates an imminently hazardous situation, which if not avoided, will result in serious personal injury or death.

### **Warning**

Indicates a potentially hazardous situation, which if not avoided, could result in serious personal injury or death.

### **Caution**

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.

## 2.0 Safety Warnings

### Warning

This equipment is used to provide breathing gas for the purpose of underwater 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 manufacture air 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

Never mix the Compressor Lubricant with other lubricants. If unsure of compressor lubricant remove all existing lubricant and replace with the proper breathing air compressor lubricant prior to use. The use of improper lubricants can lead to un-safe air quality, which may cause serious personal injury or death.

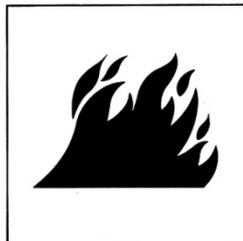
#### Warnings Graphics Defined:



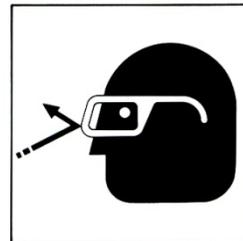
Moving belts



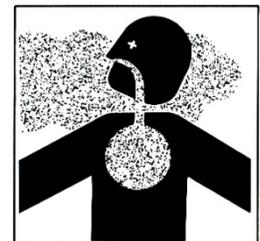
Electrocution



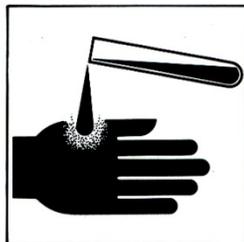
Fire



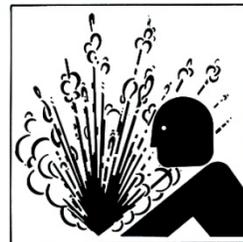
Eye protection



Gas inhalation



Skin damage



Explosion



Explosion



Electrocution



Machinery

#### Abbreviations commonly used in this manual:

Psi	Pounds per Square Inch	CFM	Cubic Feet per Minute
RPM	Rotations per Minute	LP	Low Pressure
L/min	Liters per Minute	CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide		

### 3.0 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.
- 2) For installation, follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Administration (OSHA) standards.
- 3) Electric motors must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system to the compressor starter; by using a separate ground wire connected to the bare metal of the motor frame; or other suitable means.
- 4) Protect all power cables from coming in contact with sharp objects. Do not kink power cables and never allow the cables to come in contact with oil, grease, hot surfaces, or chemicals.
- 5) Make certain that power source conforms to the requirements of your equipment.
- 6) Pull main electrical disconnect switch and disconnect any separate control lines, if used, before attempting to work or perform maintenance. "Tag Out" or "Lock Out" all power sources.
- 7) Do not attempt to remove any parts without first relieving the entire system of pressure.
- 8) Do not attempt to service any part while System is in an operational mode.
- 9) Do not operate the System at pressures in excess of its rating.
- 10) Do not operate compressor at speeds in excess of its rating.
- 11) Periodically check all safety devices for proper operation. Do not change pressure setting or restrict operation in any way.
- 12) Be sure no tools, rags or loose parts are left on the Compressor System.
- 13) Do not use flammable solvents for cleaning the Air Inlet Filters or elements and other parts.
- 14) 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.
- 15) Do not operate the compressor without guards, shields, and screens in place.
- 16) 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.
- 17) Do not operate in areas where there is a possibility of inhaling carbon monoxide, carbon dioxide, nitrogen, or flammable or toxic fumes.
- 18) 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.
- 19) Inspect unit daily to observe and correct any unsafe operating conditions found.
- 20) Do not "play around" with compressed air, or direct air stream at body, this can cause injuries.
- 21) Compressed air from this machine absolutely must not be used for food processing or breathing air without the properly maintained downstream filters, purifiers, controls and periodic air quality testing.
- 22) Always use an air pressure-regulating device at the point of use, and do not use air pressure greater than marked maximum pressure.
- 23) Check hoses for weak or worn conditions before each use and make certain that all connections are secure.

The user of any Compressor 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.

## 4.0 Legal Precautions

It is highly recommended that a Dive log be maintained when using an Air Compressor on a job site to document the following information. This log must be of permanent binding style with no loose pages.

- ◆ Date and time of day
- ◆ Job Name & Number
- ◆ Supplier's check of air quality plus signature and date
- ◆ MOD (Maximum Operating Depth) in user's handwriting

Proper air analysis tested on a quarterly basis and comprehensive maintenance is the best way to assure proper, safe, and economical air production.

### Notice

While Nuvair manufactures LP compressors for commercial diving use, Nuvair does not determine the regulations and or standards governing the use of "Air Compressor Systems". Operators of Nuvair compressors should consult your local and or national government and or managing bodies to determine the regulation obligations necessary to operate a Nuvair Compressor for divers and breathing air use.

In the U.S. and Canada, regulators include, but are not limited to:

OSHA  
 US Coast Guard  
 US Military- Army, Navy, Marines, Air Force  
 CSA International  
 ANSI  
 ACDE  
 ADCI  
 USACE  
 ACDE  
 AAUS  
 NFPA

Some of the regulations in print pertain to the actual compressor equipment and others pertain to the Contractors and Dive Team.

You should be clear of any regulations, standards and requirements that are present for your use of a Nuvair Compressor before operating the compressor.

Nuvair can manufacture your Compressor package to meet any regulatory standards. Please provide us with the standards you operate under and we can provide you with the proper equipment to meet those standards or regulations.

## 5.0 System Overview

The Nuvair Q-325 system is designed to be portable yet rugged and open with good access to components, yet good moving part protection while it is running. This package is for use to supply low pressure surface supplied air direct to divers. The operator should be able to produce air with a minimum of start-up hassles.

### Quincy 325:

- Air Supply and Regulated Air Input Gauges
- 1 Air Intake Filters
- Hankison Series 20 LP Filtration to .003 PPM Oil Vapor for divers
- Nuvair 455 FDA Approved Food Grade Compressor Lubricant in 325
- Heavy Duty Marine Grade Aluminum Frame with wheels, handles, lifting eye, and optional forklift slots
- Vibration Isolation Mounts
- 1 x Low pressure Two-Stage Compressor
- 1 x 1 Gallon ASME LP Surge Tank with ½” delivery ball valve  
Yanmar or Kohler 10 HP diesel engine with electric start.  
or
- WEG TEFC Electric Motor 5hp

### Air Compressor Technical Data:

- LP Compressor 5 or 10 HP 18.64cfm@175psi
 

Maximum Block Output Pressure:	200 psi (13.75 bar)
Final System Discharge Pressure:	200 psi (13.75 bar)
Dual Control Head Unloaders	
Number of Stages:	2
Number of Cylinders:	2
Package Free Air Delivered Max:	18.64 CFM (528 L/Min)
Lubricant:	Nuvair 455
Condensate Drain	Manual

- ◆ Weight: Diesel 536 lbs Electric 500 lbs
- ◆ Dimensions (L x W x H): 48 x 28 x 48 in

### Suggested Maintenance Intervals:

Replace Nuvair 455 Lubricant: in Q-325	200 Hours or yearly
LP Filtration Elements	100 Hours or yearly

*(Nuvair recommends checking filter elements for moisture and proper operation daily.)*

### Typical Specification For Grade-D Air:

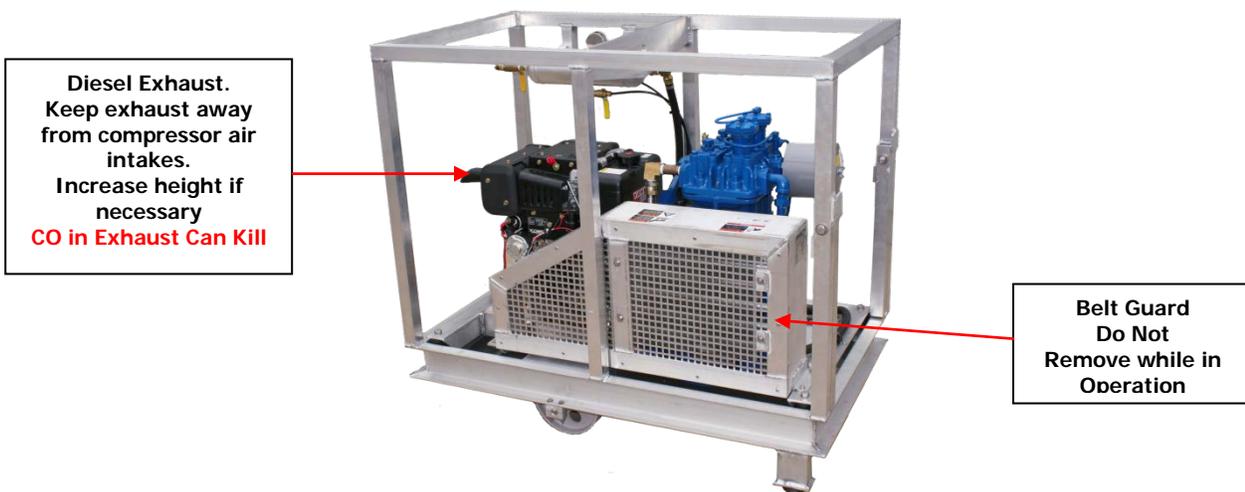
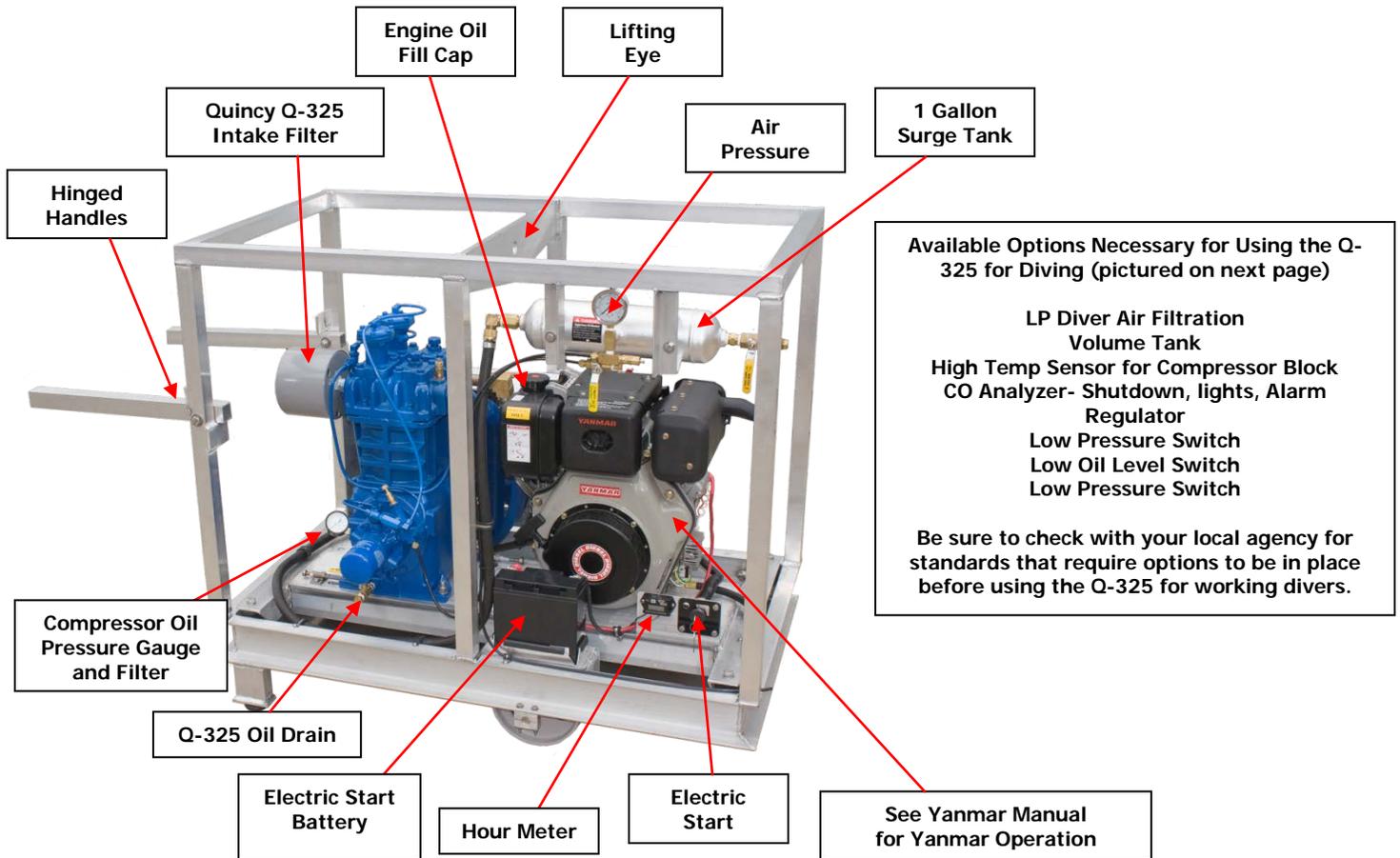
- O<sub>2</sub> Percentage: 20-22
- CO<sub>2</sub>: 1000 PPM
- CO: 10 PPM
- Hydrocarbons: 25 PPM
- Odor: None

## 6.0 System Component Identification:

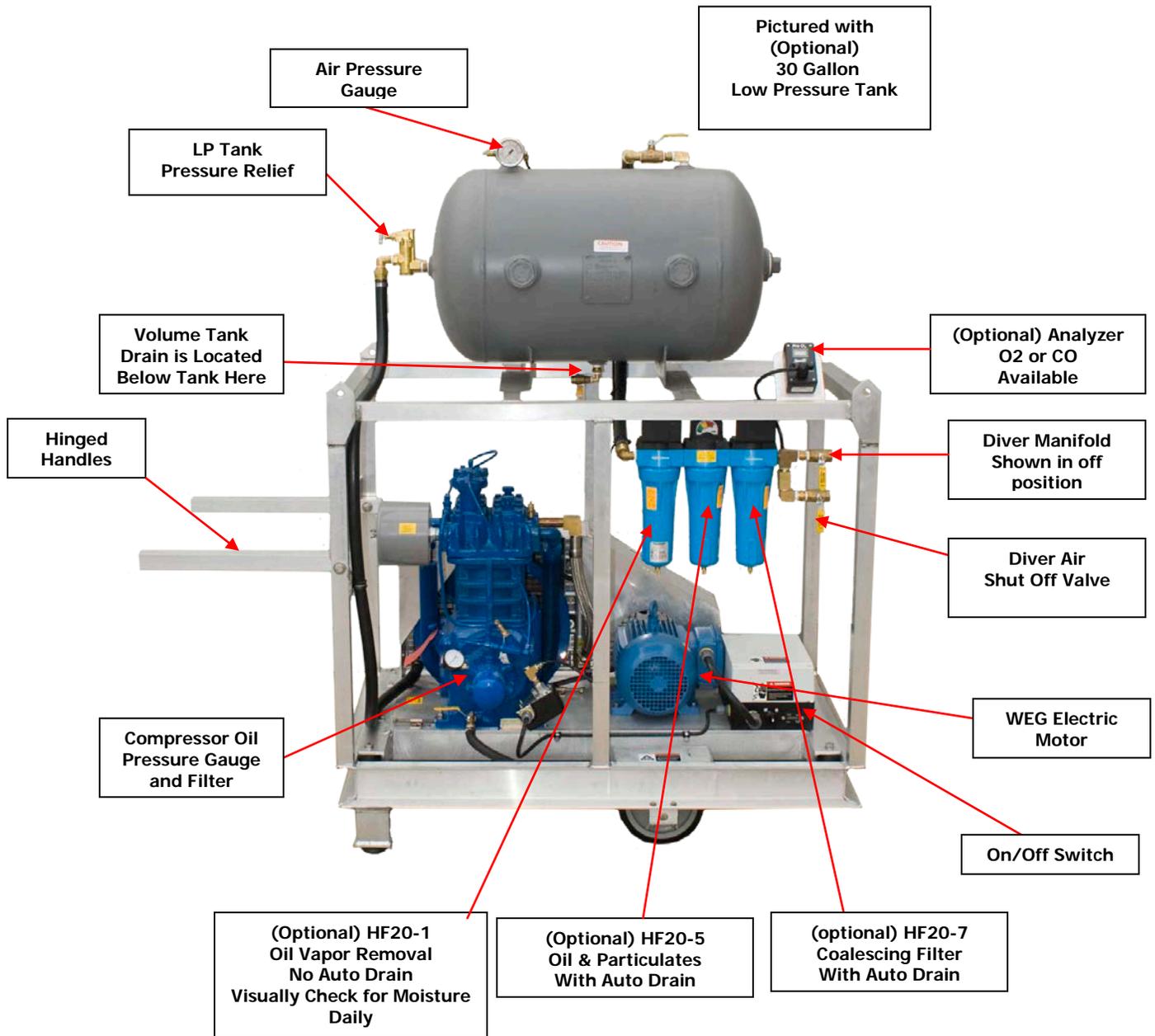
The **Quincy Q-325** system is a self-contained, portable, low pressure delivery package capable of supplying Air for the divers use.

The system utilizes a Quincy 325 low pressure compressor that is mounted together with a 10 hp Yanmar or Kohler Diesel Engine or a 5 hp WEG electric motor in a rigid, aluminum frame. The system components include: Marine Grade Frame, Compressor and motor. All of the component assemblies and parts are mounted to facilitate easy setup, operation and transport.

**Q-325 Diesel Compressor System Components**



7.0 Q-325e Compressor System Component Identification with Options



**Available Options to consider:**

- \*Volume Tank- With pressure gauge, pressure relief valve, on/off valve and drain
- \*LP Diver Filtration- 3 stage filtration or 4 stage filtration
- \*\*High Temp Sensor- To warn if compressor is running hot
- \*\*CO Analyzer- Will monitor CO levels of air supply being delivered to the diver manifold

\* These items are required to use the compressor package for "Diver Breathing Air"

\*\*Required to be compliant with some Diving standards

## Notice

If any information in this manual conflicts with any of the other manuals call Nuvair before proceeding.

### 8.0 Theory of Operation:

Before Starting the Nuvair Q-325 system:

### 9.0 Assembly Preparation:

1. First familiarize yourself with the components of the system in the first section of the manual.
2. Please read and follow instructions for compressor and motor provided in additional manuals.
3. Unpack the System and remove from the pallet.
4. Visually inspect the system to make sure there has been no damage\* during shipping.
5. Follow the remaining step by step instructions for initial set up and operation.

\*If damaged, please call Nuvair to file a damage report. Please take photos and supply detailed information about the damage.

### 10.0 Set-up and Assembly

#### 10.1 Power Connection:

This package comes with a 12 volt battery for the Diesel electric start to function properly.

**Red Is Positive!** Connecting the wrong leads may damage circuitry.

Electric Option:

A WEG 5 hp electric motor is supplied with the current and voltage specified at time of purchase.



## Warning

**The system must be properly wired according to national and local electrical codes by a qualified electrician. Improper wiring may lead to fires, which can cause serious personal injury or death.**

#### 10.2 Proper Rotation:

When the Weg electric motor is used to drive the system it is important that the power supply is properly connected to prevent improper motor rotation. Running the compressor in the wrong direction will damage the compressor and void warranty.

**A. Yanmar or Kohler Engine Operation:**  
See engine Manual

**B. WEG Motor Operation:**  
See WEG Motor Manual and Electrical Schematic on page 30 of this manual.

## 11.0 Operation

Once you have read through this manual, the compressor manuals, the diesel manual, the CO analyzer manual, made the necessary set-up connections, and you understand how the system functions; follow the steps below to operate the system:

1. Always check fluid levels before starting compressor and engine.
2. Open Diver tank on/off valve and Volume Tank valves for Air
3. Start diesel as per instructions or electric motor
4. Turn off diver Air Valves
5. Warm for a few minutes (Diesel engine)
6. Adjust throttle to run position (Diesel engine)

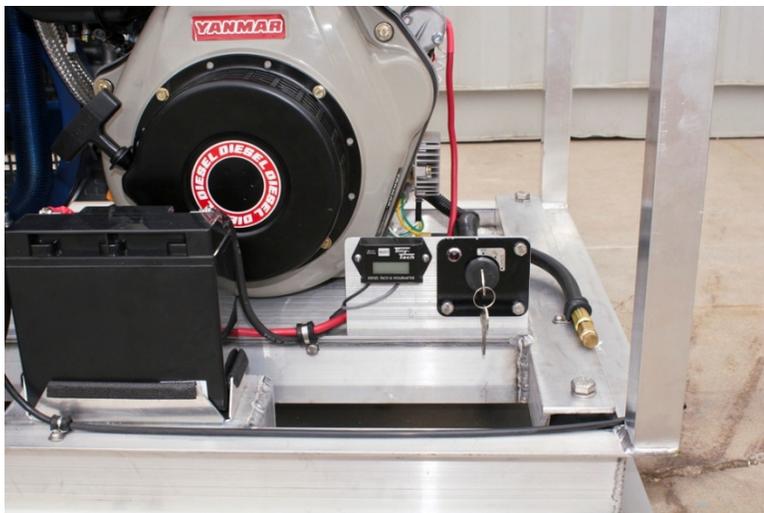
### Warning

OSHA Regulations require an emergency backup source of breathing gas for the diver in case of an emergency or compressor malfunction.

#### 11.1 Shutdown:

Before shutting down any compressor, make sure all divers are no longer using the compressor this includes in water divers and decompressing divers.

Electric & Diesel: The Engine can be shut off by turning the power key off.



Diesel Engine Power Switch and Tach



Electric Motor Power Switch and Tach.

**12.0 Operation Notes:**

- During the running of a Nuvair Q-325 you should hear air escaping from fittings, belt slap from a loose belt, knocking noise or any other audible concerns switch the diver to back up source and stop operation of the compressor to prevent damage to the compressor or faulty operation.
- The Nuvair Q-325 utilizes standard Hankison series 20 air filtration, Do NOT use any substitutes.
- Bleed condensate drain on the volume tanks daily or every 8 hours of operation.
- Use only Nuvair 455 compressor lubricant in the Q-325 piston compressor.  
Do NOT substitute or Mix Lubricants.

**13.0 Maintenance**
 **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.

 **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.

 **Caution**

If system is located 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.

**13.1 Routine Maintenance**

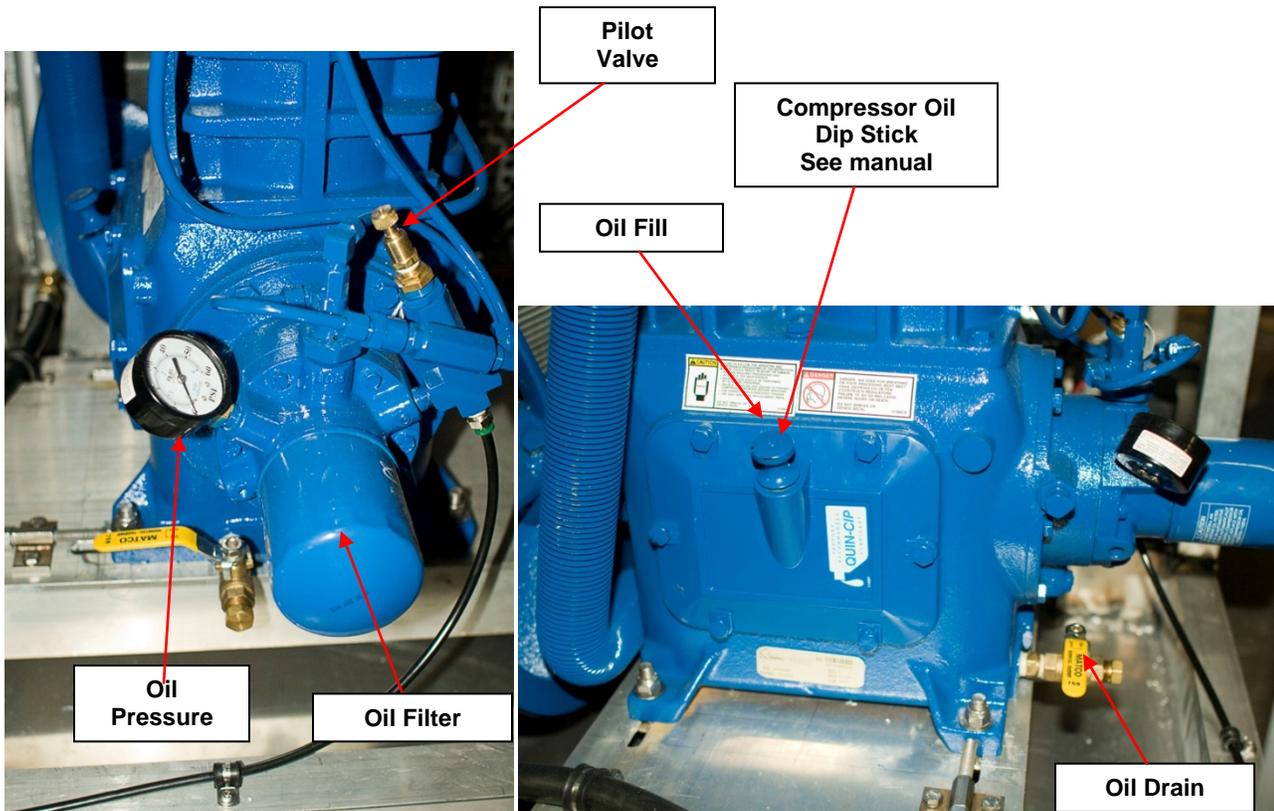
- 1) Q-325 Compressor Lubricant: Change compressor lubricant after the first 50 hour break in period and every 200 hours thereafter on the Q-325. Only use lubricants rated for use with breathing Air systems such as Nuvair 455. Never mix Compressor Lubricants. See LP Compressor manual for details.  
*(Optional Diver 3 stage Filtration Package)*
- 2) LP Filtration Inspection: On a daily basis, inspect each Filter Bowl for the presence of moisture and each Element for any unusual degradation or wetness.  
*(Optional Diver 3 stage Filtration Package)*
- 3) LP Filtration Elements: Change LP Filter Elements every 100 hours to maintain CGA Grade D air standards. Visual differential pressure (DP) indicators on the HF7 and HF5 filters assist with monitoring replacement intervals. See Section 14.3 for details. If the Compressor System is operated in high humidity and/or high temperature, Filter Elements must be changed more often.
- 4) (Optional) Low Volume tanks should be drained daily of Moisture.
- 5) 1 Gallon Surge tank should be drained regularly and at end of daily operation.

### 13.2 Compressor Lubricant:

Change Q-325 with Nuvair 455 rated lubricant every 200 hours or minimum once per year. Do not mix brands.

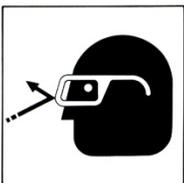
- 1) Check oil and diesel levels before operation.
- 2) Drain (optional) Volume tanks daily. Check filters for moisture daily.

**Refer to Supplied Engine manual for proper oil and maintenance.**



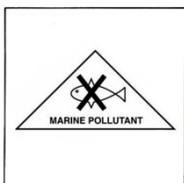
### **Warning**

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.



### **Caution**

Wear eye protection, gloves, and skin protection when performing oil changes. Although the oil is not classified as a dangerous substance, the oil can be irritating to your eyes and skin.



### **Caution**

Both oil and oil filter are classified as “special wastes” and must be disposed of properly according to applicable national and local laws. Failure to dispose of these wastes properly can lead to death of wildlife as well as government



## ⚠ Warning

Do not carry out any maintenance tasks if the compressor has just shut down. Wait for the compressor to cool to avoid skin burns.

## ⚠ Caution

Special attention needs to be given to the arrangement of the four LP Air Filtration Elements and Bowls. Properly reinstall each Element and Bowl to the correct Housing. Improper sequence can cause damage to downstream components

### 14.0 LP Filtration (*Optional Diver 3 stage Filtration Package*)

Three stages of Hankison LP filtration are used to produce Grade D air:

- 1) Particle Removal to 1 micron
- 2) Coalescing & Water/Oil Vapor Removal to 0.01 micron
- 3) Oil Vapor Removal to 0.003 PPM

#### 14.1 Filtration Inspection

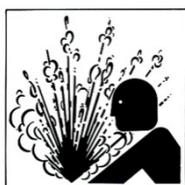
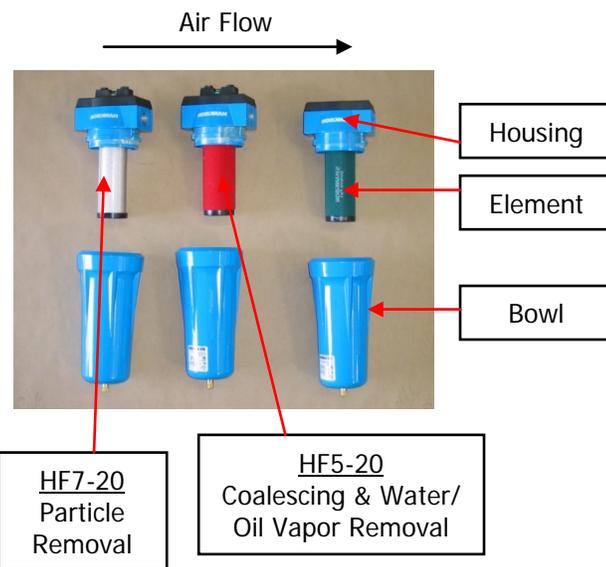
Open each Filter and inspect as follows:

1. Inspect Bowl for the presence of moisture. A high level of moisture build-up in the HF7 or HF5 Filter indicates improper operation of auto-drain floats. Any evidence of moisture in the HF1 Filter indicates the air is not cooling properly and moisture is not properly being removed. Excess moisture will prevent the final filter from operating properly.
2. Inspect Elements for any unusual degradation or wetness. Element degradation can indicate more serious problems. Contact Nuvair for assistance.



HF1 Filter with Manual Drain – Should not Contain Moisture

HF7 & HF5 Filters with Auto-Drain Floats & DP Indicators.



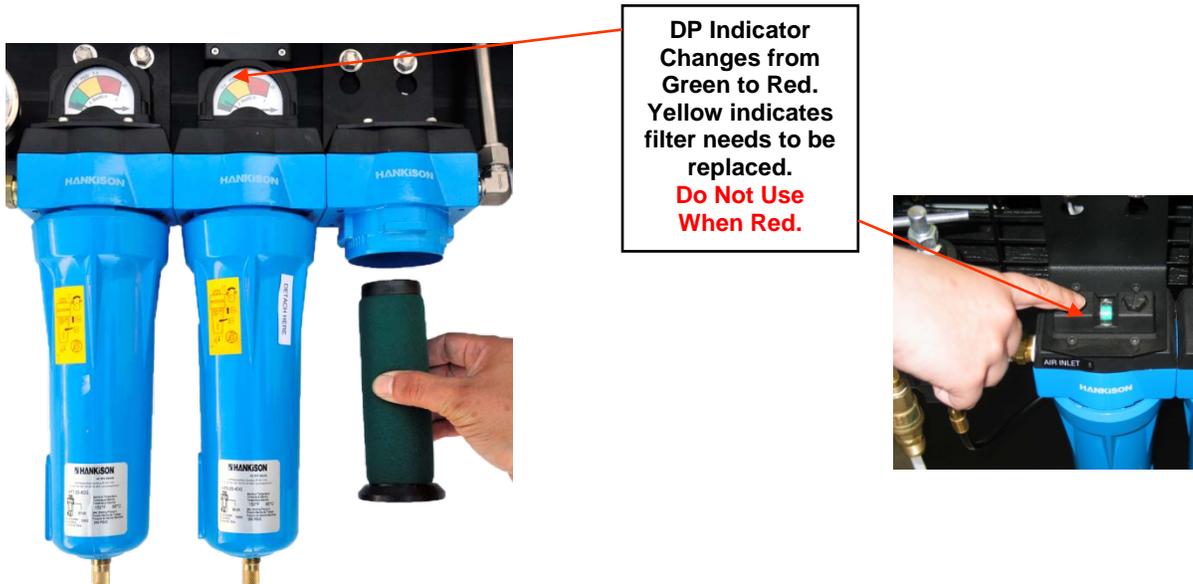
## ⚠ Warning

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.

## 14.2 Changing Filtration Elements (optional Breathing Air Elements)

Change the LP Filter Elements **every 100 hours or once per year\***. If the Compressor System is operated in high humidity and/or high temperature, Filter Elements must be changed more often. Visual DP indicators on the HF7 and HF5 filters assist with monitoring replacement intervals.

- 1) Push up on the Bowl, rotate CCW, and lower to remove.
- 2) Gently rotate Filter Element and pull down off mounting post.
- 3) Replace Element and reassemble in reverse order.



### ⚠ Notice

The interior of the Filter Bowls can be cleaned with a diluted solution of Simple Green™ and flushed thoroughly with clean water. This will assist to prolong the life of the element, bowl, and auto drain.

## 14.3 Changing Air Intake Filtration

Inspect and or change the air intake Filter Elements **every 40 hours or once per year**. If the Compressor System is operated in high humidity or a dusty dirty environment, Filter Elements must be changed more often. Inspect elements periodically to determine if the elements should be changed sooner than recommended.

## 14.4 Air Intake Extension

The air intake filter housings are mounted on couplings. In the event that the compressor will be used in a windy environment that may cause the diesel engine exhaust to be blown into the intake filters it may be necessary to extend the elements vertically to prevent engine exhaust from entering the elements. Reinforced hose tubing can be purchased from Nuvair to extend the height of the elements. By using a Nuvair PRO CO monitor you will notice changes in CO immediately and the use of a CO monitor is highly recommended by Nuvair.



### ⚠ Danger

**Carbon Monoxide "CO" is a colorless, odorless, tasteless gas that will not support life. Breathing gas mixtures containing CO will lead to unconsciousness and may cause death.**

**15.0 Spare Parts List**

See Compressor manual for LP Compressor parts list. Other System components and related items are listed below.

<b>System Components</b>	<b>Type</b>	<b>Part Number</b>
Compressor Lubricant, Food Grade	Nuvair 455, 1 Gal (Other Sizes Available)	9406
LP Filtration Element	Hankison HF 7-20	E7-20
	Hankison HF 5-20	E5-20
	Hankison HF 1-20	E1-20
Air Intake Filter Element	Quincy	18P
Quincy Oil Filter	Baldwin	B474
	<b>Related Equipment Components</b>	
Air Quality Analysis Kit	Specify: (1) CGA Grade Required	
	(2) Single Use or Program Use	



## **NUVAIR SYSTEM WARRANTY**

Nuvair extends a limited warranty, which warrants the 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.

A warranty registration card, supplied with system documentation, must be filled out and submitted to Nuvair for the warranty to be in full effect. If the warranty registration card is not received within thirty (30) days of installation, the thirty-six (36) month warranty will begin with the date of shipment from 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:**

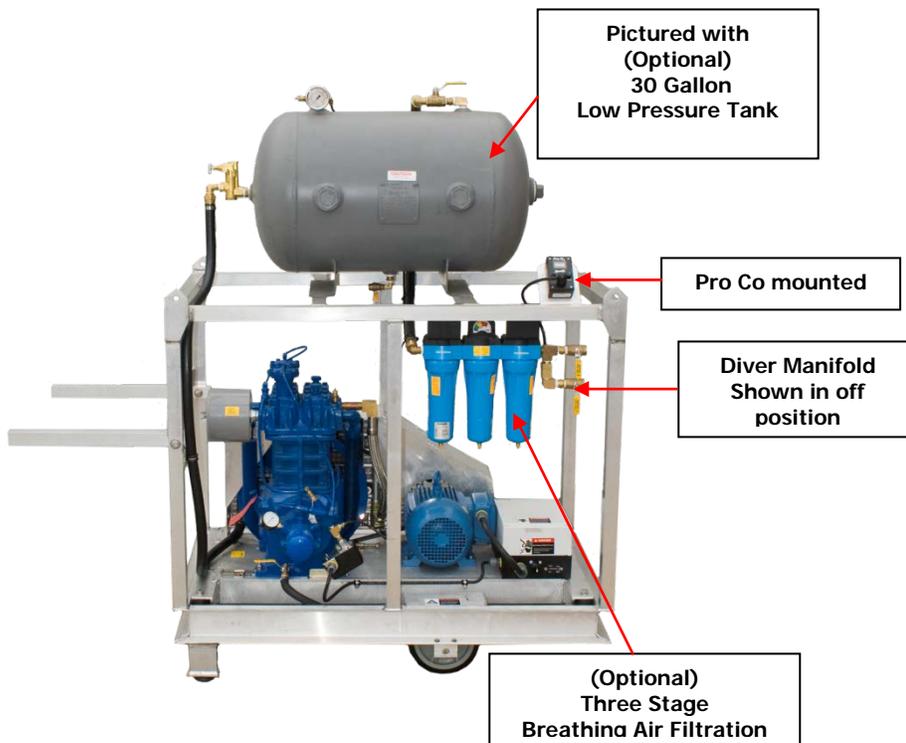
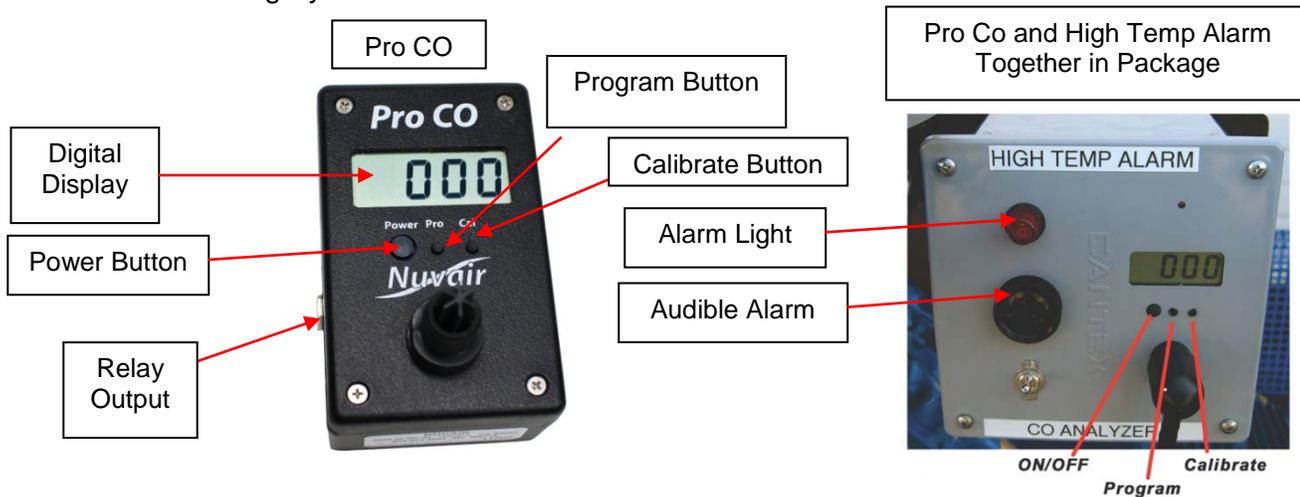
Application for warranty service can be made by contacting Nuvair during regular business hours and requesting a Return Material Authorization number. Materials that are found to be defective must be shipped, freight pre-paid, to the Nuvair office in Oxnard, California. Upon inspection and determination 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.

Options for Q-325 electric from Nuvair:

- Pro CO Monitor- Audible, visual and shutdown capable
- Pro Co High Temp Combo
- 30 Gallon or Larger receiver tank
- Breathing Air Filtration – 3 Stage or 4 stage
- Low Oil Level Switch
- Low Oil Pressure Switch
- Low Tank Pressure Switch
- 4 Point Lifting Eyes



# Nuvair Pro CO with High Temp Alarm

## FEATURES

- (2) Programmable audible / visual alarm thresholds
- Alarm at set point or 10 ppm CO
- Fast response
- Accuracy of  $\pm 5\%$
- High temp switch set at 350°F
- Compact water resistant container
- Made to test breathing gases\*\*
- Easy to operate, reliable and accurate
- Optional relays for external alarm or compressor control



## ADVANTAGES

- Audible / visual alarms for CO and high temp
- On / off button CO
- On / off switch high temp
- Response time of 90% in less than 15 seconds
- Temperature compensated sensor
- Rechargeable lithium battery
- Low battery warning indicator
- 4-20 mA output
- Resettable to factory default
- 6 ft sensor cable & analyzer hose

Please note: Never expose gas sensors to pressure or you may cause damage and/or false readings. Damaged sensors will not provide accurate gas analysis. Inaccurate gas analysis can lead to serious personal injury or death. Most gas analyzers can be used to analyze a regulated gas sample flow, the contents of a gas cylinder or the flow from a regulator. To produce this flow, a flow restrictor and regulator may be required.

## SPECIFICATIONS\*

SKU: 9620-LB

Flow Rate	0.5 - 1 L/min
Resolution	1 ppm
Repeatability	< +5%
Accuracy	$\pm 5\%$
Sensor Type	Electrochemical
Expected Sensor Life	>24 months in normal use from date of manufacture
Range	0-100 ppm CO
Alarms	(2) User-programmable audible and visual alarms
Response Time	<50 seconds over complete temperature range
Operating Temperature	11° to 122°F (-10° to 50°C) continuous -4° to 122°F (-20° to 50°C) intermittent
Operating Humidity	Ron-condensing 15-90% continuous, 0-99% intermittent
Storage Temperature	14° to 140° F (-10° to 60° C)
Power	Rechargeable lithium battery or 110/220 V wall plug-in
Dimensions (L x W x H)	14.4 x 7.9 x 7.4 in (11.2 x 20 x 19 cm)
Weight	3 lbs (less high temp cable)
Warranty	12 months

\*All specifications are at ambient / sea level, 77°F (25°C) and are subject to change without notice.  
\*\*Calibration must be confirmed with calibration CO test gas.

# PILOT VALVE ADJUSTMENTS

All adjustments made to the pilot valve must be performed by a qualified technician. The adjustments must be made while the unit is operating, therefore, extreme caution must be taken while working on the unit. Observe all necessary precautions. Always use a back-up wrench and make all differential and unload pressure adjustments in very small increments (1/8 turn).

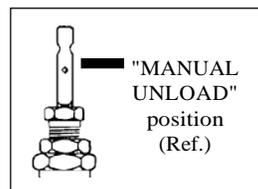
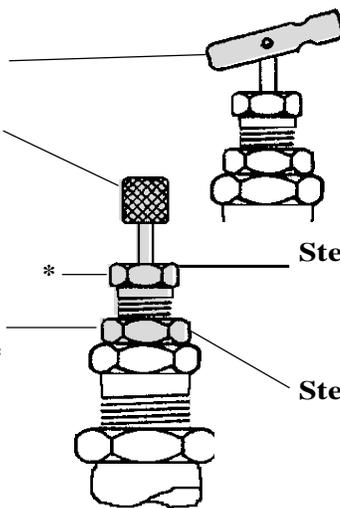
## ⚠ Warning

The pressure switch and / or pilot valve are set at the factory for maximum efficiency. Adjustments to either component must be performed by a qualified technician. Exceeding the factory recommended maximum pressure will void the warranty and may cause personal injury.

### Setting Unload Pressure

**Step 1.** Flip the toggle to the "RUN" position as shown, or turn the knurled knob (if so equipped) counterclockwise until it stops.

**Step 2.** Loosen locknut (counterclockwise). \* **Stabilize with back-up wrench!**

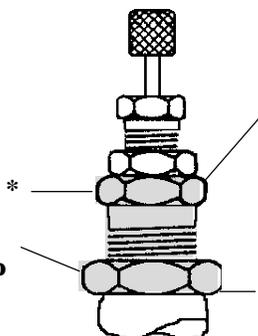


**Step 3.** Turn clockwise to increase unload pressure, turn counterclockwise to decrease unload pressure. Hold position with wrench and proceed to Step 4.

**Step 4.** Tighten locknut (clockwise) with wrench. \* **Stabilize with back-up wrench!**

### Setting Differential Pressure

**Step 5.** Loosen locknut (counterclockwise). \* **Stabilize with back-up wrench!**



**Step 6.** Turn clockwise to decrease the differential pressure and counterclockwise to increase the differential pressure. Hold position with wrench and proceed to Step 7.

**Step 7.** Tighten locknut (clockwise) with wrench. \* **Stabilize with back-up wrench!**





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