Manual No. HP4009
Rev. 5 May 2013

OPERATING MANUAL

MODEL: TA3-AXAF

AIR SYSTEMS INTERNATIONAL, INC.

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ELECTRICAL REQUIREMENTS

The compressor contains a UL listed explosion-proof motor that is pre-wired to the voltage listed on the plastic decal located on the motor above the ON/OFF switch. If in doubt, consult factory or remove switch plate and compare wiring inside switch box to wiring schematic located on motor. A certified electrician should install the appropriate plug to meet local electric codes and working conditions. Never run this compressor on lower than rated voltage or damage to the motor may occur. When using extension cords, never use less than 14 GA. wire size or motor overheating may occur.

COMPRESSOR SPECIFICATIONS

Motor Life	Rotary vane air compressor with 50,000 hour vane service life
Output Pressure	Adjustable, 5-110 PSI
Motor Specifications	Different motors are offered. Please refer to motor plate for specs.
Dimensions	45”L x 26”W x 32”H
Weight	240 lbs. without cylinder 254 lbs. with (1) 4500 PSI / 60 min. cylinder 266 lbs. with (1) 2216 PSI / 30 min. cylinder
Noise Level	130 dbA @ 3 ft.
Back-Up Air System	Pneumatically operated automatic back-up air system that actuates at 25-35 PSI descending system pressure. Pneumatic audible and visual indicators activate with loss of system pressure.

MONITOR SPECIFICATIONS

Size	2.75”H X 6.57”L X 5.1”W
Weight	2.8 lBS. (1.27kg.)
Case	Extruded Aluminum - anodized black
Voltage	9 VDC
Operating Temperature	4° to 113° Fahrenheit (-15.5° to 45° Celcius)
Humidity Range	10% to 90% relative humidity
Flow Requirement	50 - 100 cc/min
Display	3 digit LCD CO concentration
Test Circuit	Manually activated

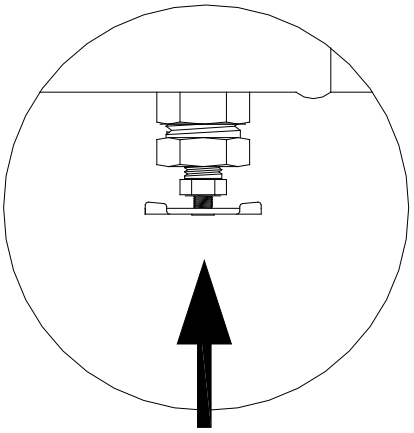
Sensor Type	Sealed electrochemical sensor for Carbon Monoxide
Accuracy	+/-1% full scale
Response	90% in 10-15 seconds
Detectable Range	0-200 ppm CO
Calibration	Manual CO zero and span adjustments
Alarm Setting	10 ppm CO (5 ppm - Canadian)
Warning Signals	Normal operation - Green Light High CO - Red Light High CO - Audible Alarm Low Battery - Amber Light
Warranty	2 years from original date of purchase

FILTRATION EFFICIENCY

1st Stage	Particulate/Bulk Liquid Separation	Auto drain and filter change indicator. Removes 95% bulk particulate and liquids @ 5 microns.
2nd Stage	Oil Coalescing and Ultra Fine Particulate	Auto drain and filter change indicator. Removes oil and particulate to 99.9998% @ 0.01 microns.
3rd Stage	Activated Charcoal	Manual drain and filter change indicator. Removes organic vapors, odors, and tastes. Less than 0.003 pp/wt remaining oil content.

SETUP/OPERATION

STEP 1)
The compressor contains a UL listed explosion-proof motor that is pre-wired to the voltage listed on the plastic decal located on the motor above the ON/OFF switch. If in doubt, consult factory or remove switch plate and compare wiring inside switch box to wiring schematic located on motor. A certified electrician should install the appropriate plug to meet local electric codes and working conditions. Never run this compressor on lower than rated voltage or damage to the motor may occur. When using extension cords, never use less than 14 GA. wire size or motor overheating may occur.

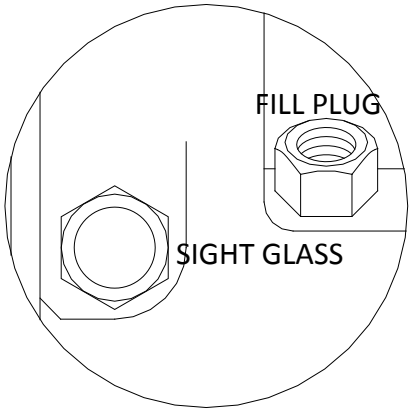


STEP 2)
Drain moisture from tanks by opening drain cocks located under tanks.

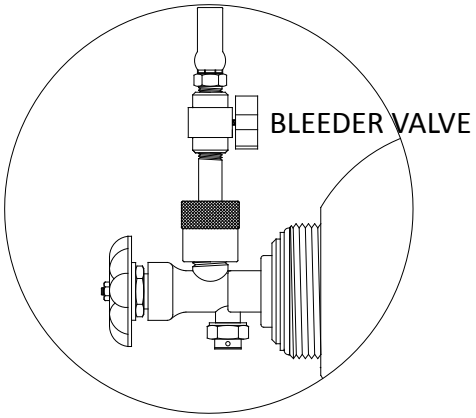
Note: This should be done daily.

STEP 3)
Check compressor oil level by looking at the sight glass. Oil should be near or at the top of the sight glass. Oil level can also be checked by removing the fill plug using a 7/8” socket or box end wrench. Oil should be up to the lower threads. When adding oil use Air Systems’ USDA approved oil, P/N HP-268. Change oil every 500 hours.

Note: The internal threads on the fill plug are for a thermal probe.



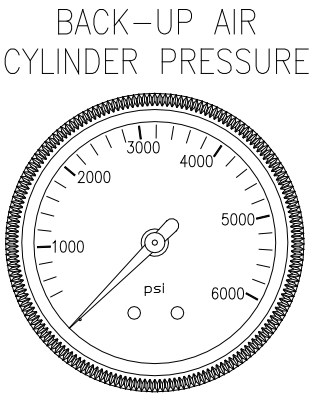
STEP 4)
Install back-up air cylinder on cart and connect whip assembly to cylinder. Close bleeder valve.



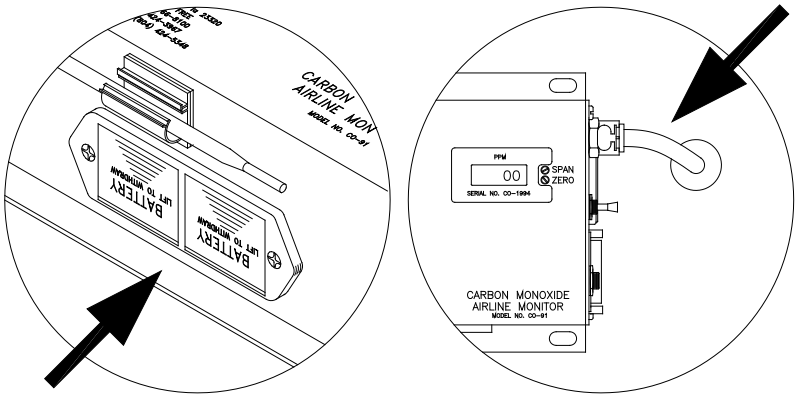
SETUP/OPERATION

STEP 5)
Close the “BACK-UP AIR HORN REGULATOR” by turning the knob fully counterclockwise.

Note: Pull regulator knob out to adjust, push in to lock.



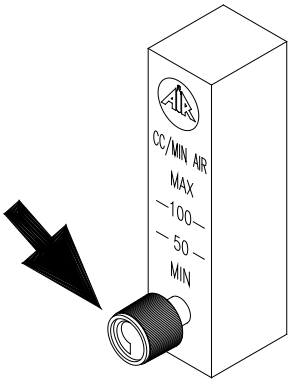
STEP 6)
Open the cylinder valve and check its pressure on the back-up air cylinder pressure gauge.



STEP 7)
Connect air sample hose to the monitor. Check monitor for fresh 9 volt batteries and place “ON/OFF/TEST” switch to the “ON” position. Allow 30 seconds for the readout to stabilize. If a reading other than “00” is displayed, calibration may be necessary. See calibration procedure on pages 8-9.

Note: The 9 volt batteries continuously provide a required bias voltage to the CO sensor and power the monitor. If power is removed for a period of 2 hours or more, a 1 hour restabilazation period is required for the sensor as erratic readings may occur.

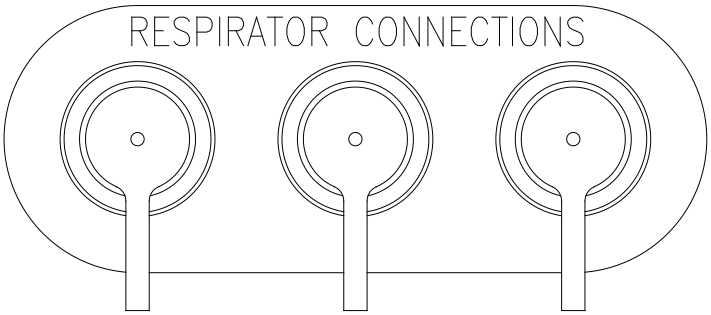
WARNING: INSTALL 9 VOLT BATTERIES OUTSIDE OF THE HAZARDOUS ENVIRONMENT TO PREVENT POSSIBLE IGNITION.



STEP 8)
Close the flowmeter by turning the knob fully clockwise.

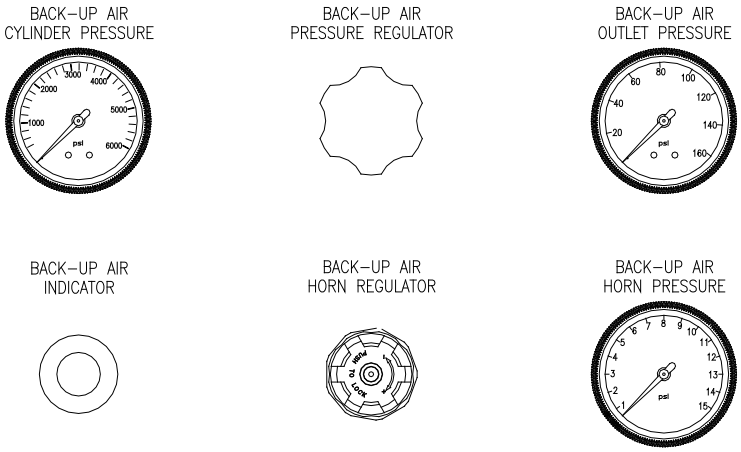
SETUP/OPERATION

STEP 9)
Connect respirators and hoses to the respirator connections



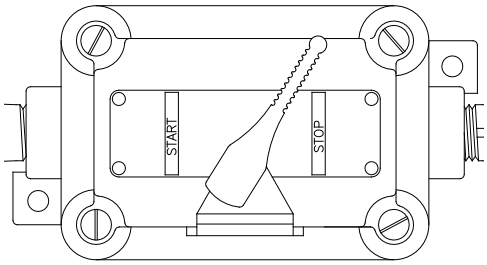
Note: Do not leave a respirator mask to free flow as this will cause a loss of main system pressure and the back-up air will actuate.

STEP 10)
Adjust the "BACK-UP AIR PRESSURE REGULATOR" to the minimum operating pressure required by the respirator manufacturer. Confirm proper operation of the "BACK-UP AIR INDICATOR". Adjust the "BACK-UP AIR HORN REGULATOR" to obtain the desired sound level of the horn. 5-10 PSI is normally sufficient.

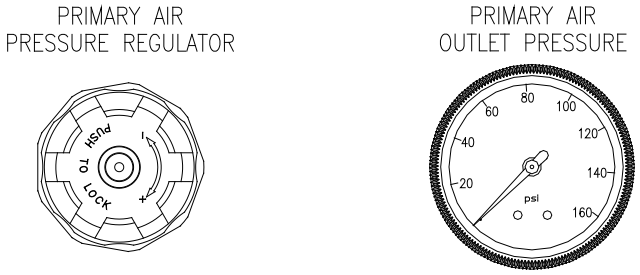


STEP 11)
Turn the compressor on.

Note: During the initial set-up and running of compressor, high levels of carbon monoxide may be experienced for up to a minute. This will quickly be purged from the system by bleeding off system air.



STEP 12)
Adjust the "PRIMARY AIR PRESSURE REGULATOR" at least 10 PSI above the back-up air pressure set in Step 10. Confirm proper operation of back-up air directional valve. The presence of sufficient primary air pressure will cause the directional valve to shift out of the back-up air position and both audible and visual back-up air indicators will deactivate. The back-up air activation pressure can be changed by adjusting the back-up air pressure regulator. The folowing settings should cover most respiratory requirements:



BACK-UP AIR PRESSURE	ALARM/BACK-UP AIR ACTIVATION
70 PSI	55 PSI
80 PSI	60 PSI
90 PSI	68 PSI
100 PSI	75 PSI

STEP 13)
Adjust the flowmeter so the flow ball hovers between 50-100 cc/min.

SYSTEM MAINTENANCE

CAUTION: Always depressurize the system before performing service.

Filter Housing/Bowls: Periodic cleaning of the polycarbonate bowls may become necessary. Remove the auto drains and clean the bowls with a mild soapy solution. The auto drains may also be cleaned with a mild soapy solution at this time. Dry and reinstall into the filter housing.

Filter Change: The filtration system consists of filter change indicators which will gradually change from green to orange when filter life is spent.

Note: Air must be flowing through the filters before the filter change indicators will function.
With system pressurized, close inlet ond outlet ball valves. Release the filter trio pressure by pressing the manual drain assembly to the side. Remove the bowl assemblies by releasing the lock ring.

Calibration: Monitor calibration should be done monthly or whenever the reading may be questionable. A calibration date sticker should be affixed for future reference. To obtain an accurate calibration, we recommend the use of Air Systems' calibration kits.

Part Number:
BBK-10 Canadian calibration kit for CO monitor; 10ppm CO, zero air, regulator and case - 17 liter size.

BBK-20 Calibration kit for CO monitor; 20ppm CO, zero air, regulator and case - 17 liter size.

BBK-20103 Calibration kit for CO monitor; 20ppm CO, zero air, regulator and case - 103 liter size.

DECAL085 Calibration decal, sold in sheet of 14.

To assure sensor accuracy, calibration of monitor is required. If you cannot obtain an accurate calibration, sensor replacement may be necessary. Consult Repair Service Department before ordering.

Part Number:
CO-91NS Replacement CO sensor

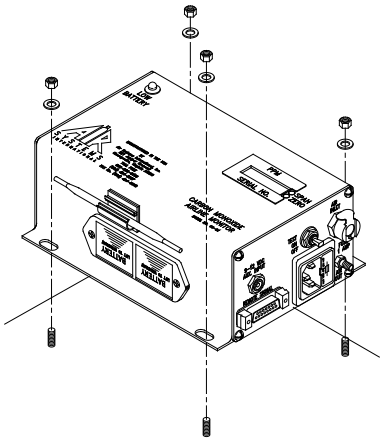
MONITOR BATTERY REPLACEMENT

These batteries provide the required continuous bias voltage to the CO sensor and power the monitor in the event of AC power loss. If AC and DC power are removed for a period of 2 hours or more, a 1 hour restabilization period is required as eratic readings may occur.

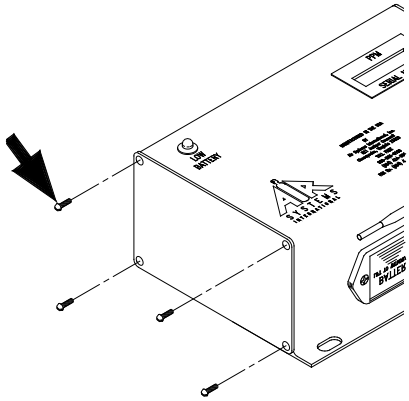
Battery Replacement: Replace 9 volt batteries when the amber "Low Battery" light illuminates. If the monitor is not used for 90 days, check the 9 volt batteries and replace if necessary.

SENSOR REPLACEMENT

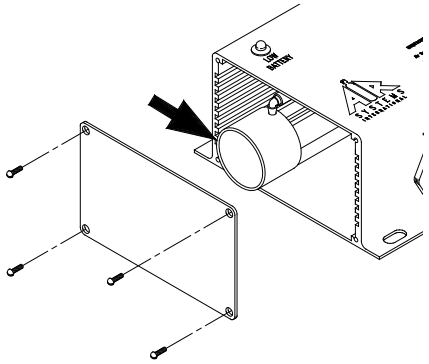
Replacement sensors are shipped with a metal spring installed between the electrodes. Do not remove the clip until the sensor is to be installed into the monitor.



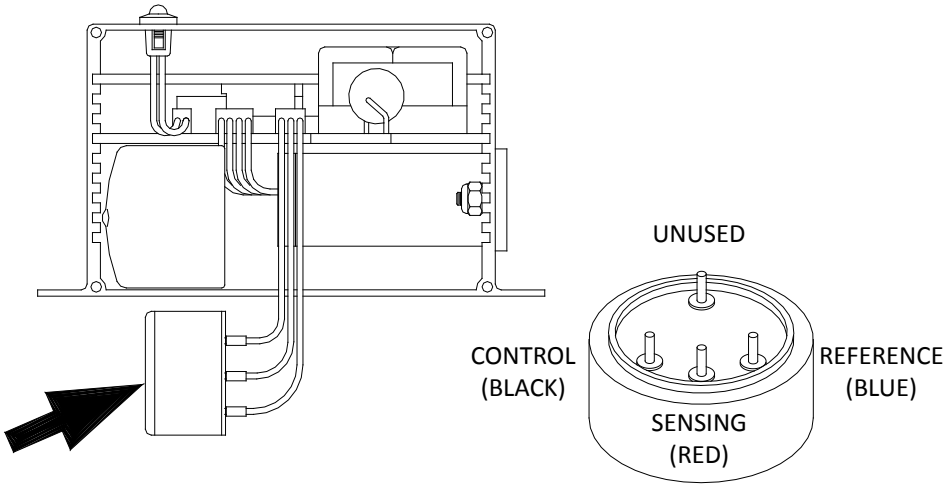
STEP 1)
Disconnect all external connections. Remove CO monitor from the unit.



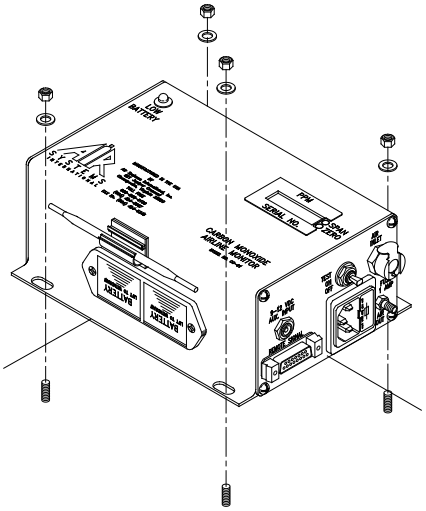
STEP 2)
Remove the four screws from the monitor's left endplate.



STEP 3)
Remove endplate to gain access to the sensor cup.



STEP 4)
Remove sensor from sensor cup and remove leads. Take the new sensor and remove the metal spring. Reattach leads to the proper colored terminals on the new sensor. Install new sensor into sensor cup.



STEP 5)
Reassemble monitor and reinstall in unit. Connect all cables and air sample hose. Allow monitor to stabilize 30 minutes to 1 hour and recalibrate.

CALIBRATION PROCEDURE

Do not use inert gases to zero the monitor. This will cause premature failure of the sensor.

CO Monitor Zero Adjustment

To zero the monitor, follow the steps below. Zero calibration gas should be used to properly "zero" the monitor and assure that a valid calibration is achieved. If zero adjustment cannot be made as indicated, sensor replacement may be necessary. ***After each monitor adjustment outlined in the steps, allow time for the changes to stabilize.***

STEP 1)
Place the "ON/OFF/TEST" switch in the "ON" position.

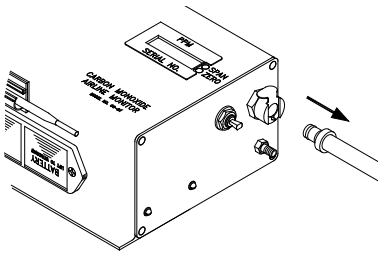
STEP 2)
Allow 30 seconds for the readout to stabilize. The green indicator will illuminate.

STEP 3)
Hold the "ON/OFF/TEST" switch in the "TEST" position. The following will occur:

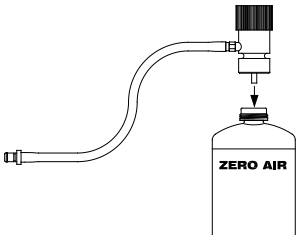
Audible alarm will sound
Green LED will flash
Amber Low Battery indicator on monitor will illuminate
Red LED will be on

This test ensures the circuitry is operable and continuity to the sensor is proper. Release the switch.

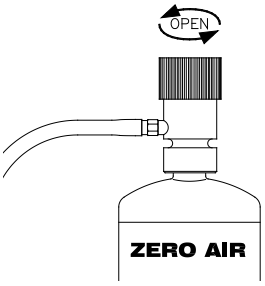
STEP 4)
Remove the air sample inlet tube.



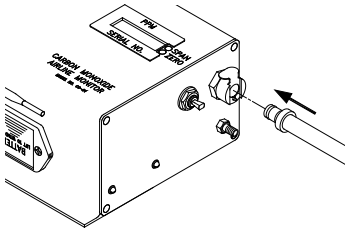
STEP 5)
Install regulator on the zero air cylinder reference gas.



STEP 6)
Turn the knob on the regulator counterclockwise to allow the flow of gas thru the hose. Verify flow of gas thru the hose via touch or sound.

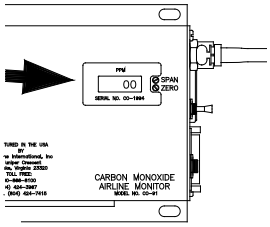


STEP 7)
Attach the clear tubing with the male plug to the air sample inlet on the monitor.



STEP 8)
Allow digital readout to stabilize approximately 15-30 seconds.

STEP 9)
Adjust the "zero" adjustment screw (clockwise to increase or counterclockwise to decrease) until a reading of "00" is obtained.



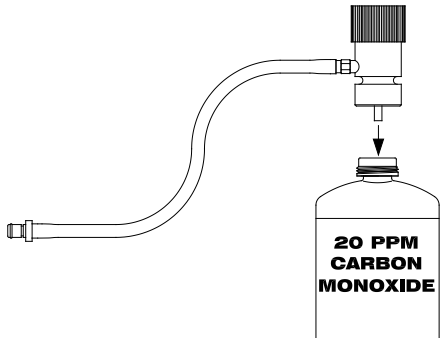
STEP 10)
Turn the regulator off and disconnect the regulator-from the zero gas cylinder.

CALIBRATION PROCEDURE

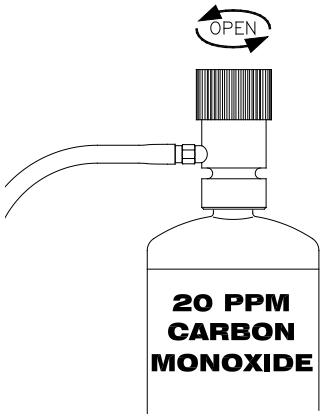
CO Monitor Span Adjustment

Use only 10-20ppm CO gas for calibration. Using a higher concentration may decrease accuracy at lower scale readings. Note: 10ppm gas must be used to satisfy Canadian calibration requirements.

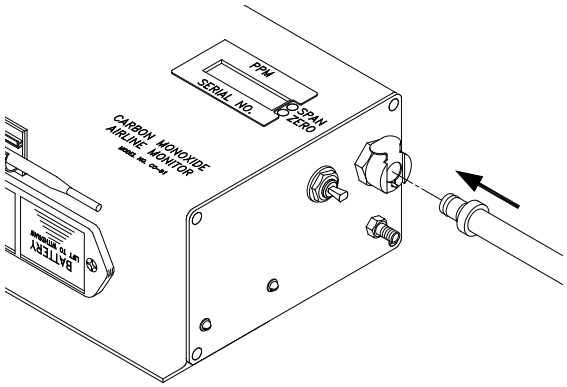
STEP 1)
Install regulator on the CO calibration gas cylinder.



STEP 2)
Turn the knob on the regulator counterclockwise to allow the flow of gas thru the hose. Verify flow of gas thru the hose via touch or sound.

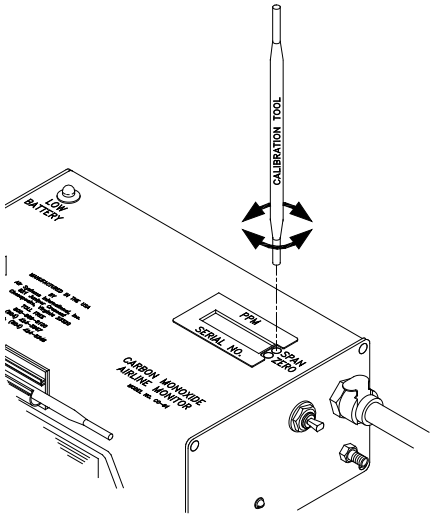


STEP 3)
Connect the plug to the air sample inlet on the monitor.

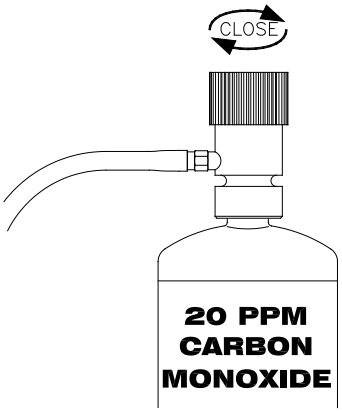


STEP 4)
Allow digital readout to stabilize 15-30 seconds.

STEP 5)
Adjust the “span” adjustment screw (clockwise to increase or counterclockwise to decrease) until the digital readout reads the same as the concentration (ppm) as printed on the calibration gas cylinder.

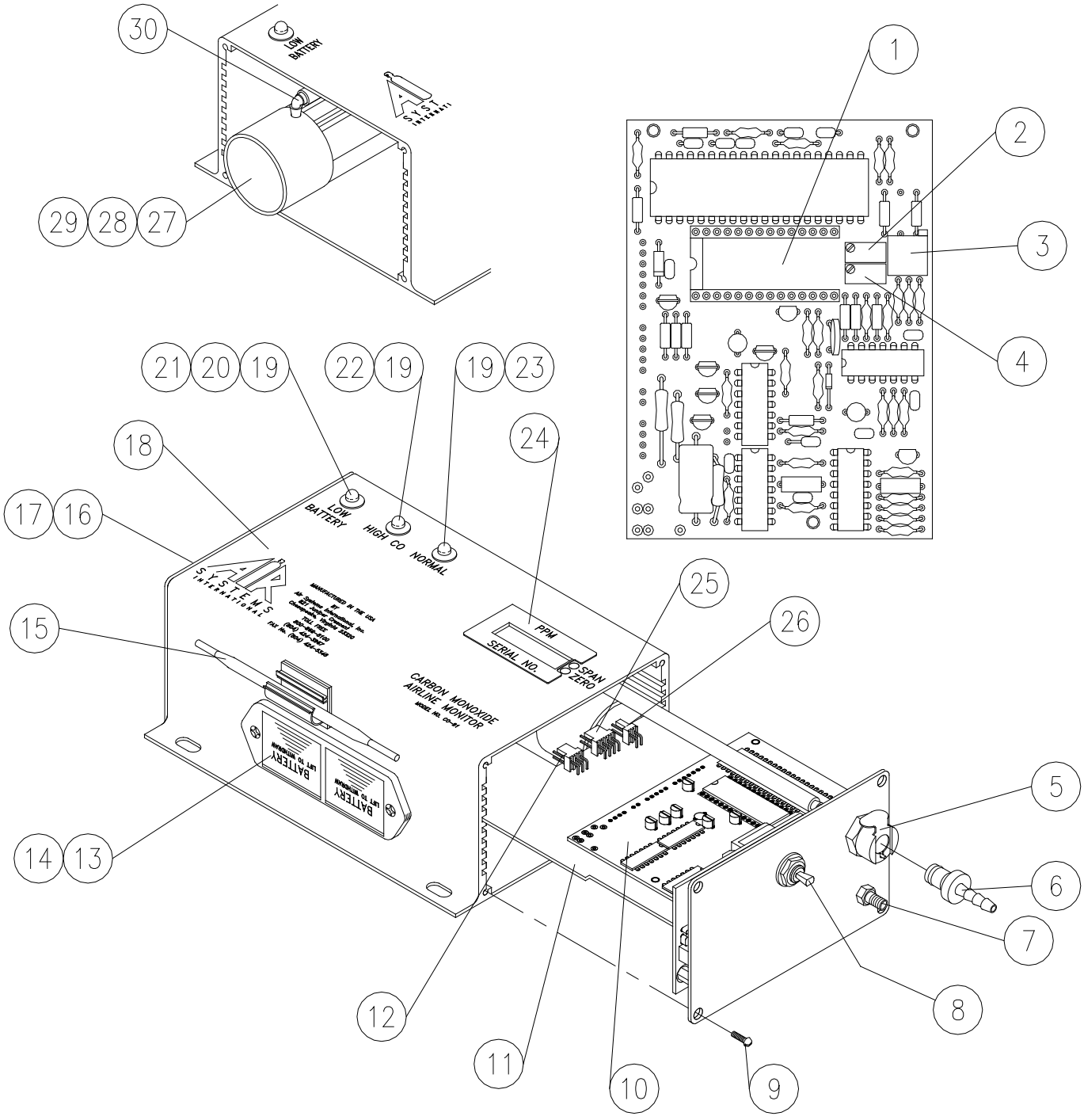


STEP 6)
Turn the regulator off and repeat the “zero” adjustment procedure. The digital readout should return to a “00” reading.



The monitor is now calibrated and should be recalibrated monthly or if accuracy is questionable. Check local requirements and recalibrate as required.

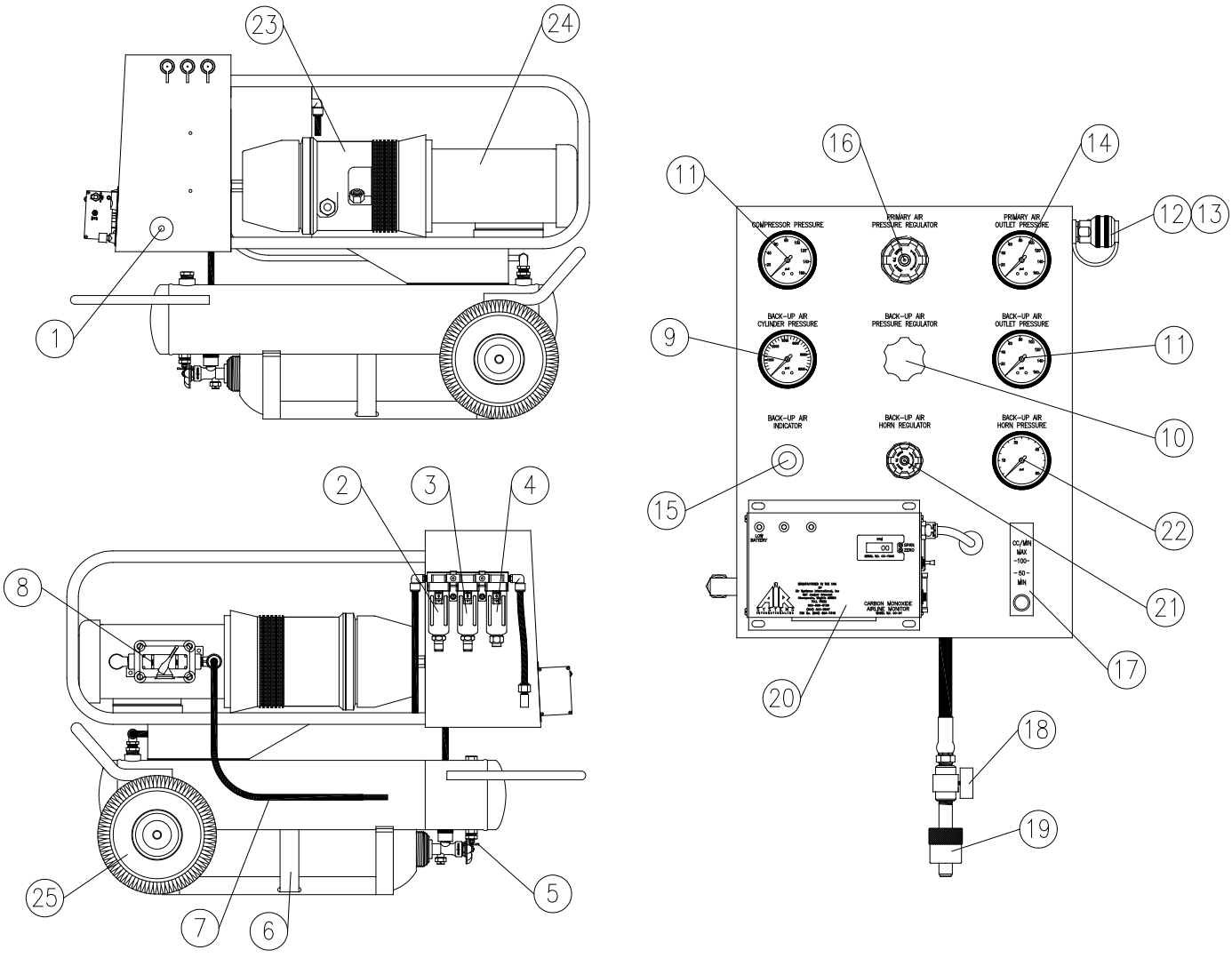
CO-91ISLA PARTS BREAKDOWN



CO-91ISLA PARTS BREAKDOWN

ITEM #	DESCRIPTION	PART #
1	LCD Display	MONC703
2	Span Potentiometer	MONC702A
3	Alarm Set Point Potentiometer	MONC702S
4	Zero Potentiometer	MONC702
5	Air Sample Inlet Socket	MONC001
6	Air Sample Plug	MONC002
7	Air Exhaust Port	MONC003
8	On/Off/Test Switch	MONC007
9	Faceplate/Endplate Screw	MONC023
10	Main Circuit Board Assembly	CO-91ISPCB
11	Power Supply Board	CO-91EXPSB
12	Sensor Connector (Soldered To PCB)	MONC509
13	Battery Box	MONC006
14	9 Volt Battery	ELB9V
15	Calibration Tool	MONC028
16	End Plate	CO-91BEP
17	Audible Alarm	ELLS008
18	Aluminum Housing	CO-91EXHOU
19	Led Socket	MONC009LA
20	Yellow LED	MONC008NS
21	Led Socket And Yellow Led	CO-91LED
22	Red LED	MONC035NS
23	Green LED	MONC036NS
24	PPM/Serial No. Sticker	MONC031
25	Battery Box Connector (Soldered To PCB)	MONC516
26	Led Connector (Soldered To PCB)	MONC511
27	CO Sensor	CO-91NS
28	CO Sensor Holder	MONC810
29	CO Sensor Electrical Leads	CO-91SL
30	90° Hose Barb	MONC811

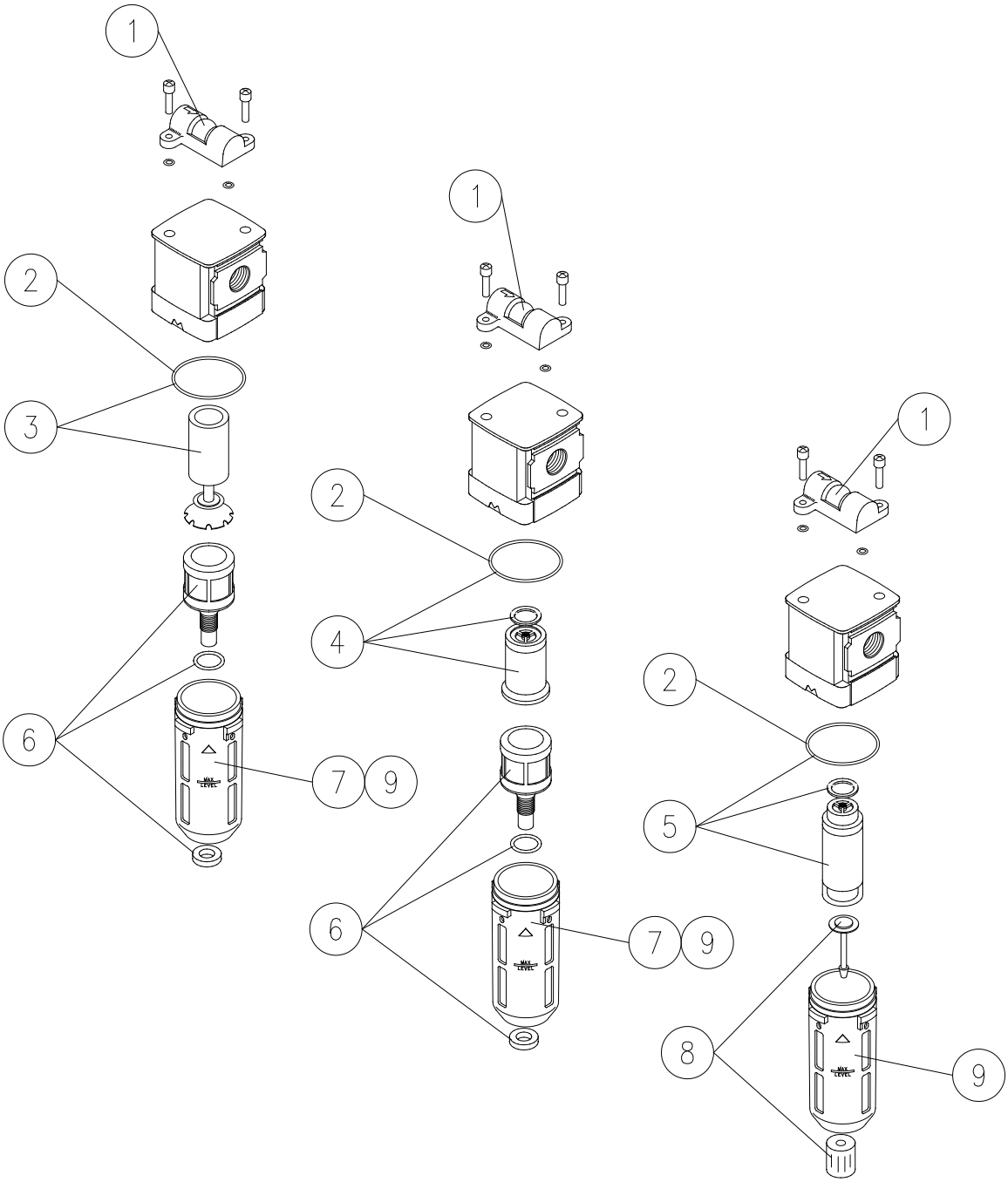
REPLACEMENT PARTS



REPLACEMENT PARTS

ITEM #	DESCRIPTION	PART #
1	BACK-UP AIR WARNING HORN	GAMLHORN
2	“A” FILTER ASSEMBLY	WL251
3	“C” FILTER ASSEMBLY	WL253
4	“D” FILTER ASSEMBLY	WL255
5	DRAIN COCK	BR2DCM
6	CYLINDER STRAP	HDWR113A
7	POWER CORD (SOLD PER FOOT)	ELCB017
8	EXPLOSION PROOF ON/OFF SWITCH	ELSW015
9	BACK-UP AIR CYLINDER PRESSURE GAUGE	GA206KP
10	BACK-UP AIR PRESSURE REGULATOR	REG004
11	0-160 PSI PRESSURE GAUGE	GA20160P
12	HANSEN COUPLING	QDH3SL6M
12A	SCHRADER COUPLING	QDSSL6M
13	HANSEN DUST CAP	QDH3DCAP
13A	SCHRADER DUST CAP	QDSDCAP
14	PRIMARY AIR OUTLET PRESSURE GAUGE	GA20160P
15	BACK-UP AIR INDICATOR	GA15RED
16	PRIMARY AIR PRESSURE REGULATOR	15REGW
17	FLOWMETER	WL033NS
18	BLEEDER VALVE	VAL030
19	CGA-346/347 HAND-TIGHT	SS347HT
20	INTRINSICALLY SAFE CO MONITOR	CO-91ISLA
21	BACK-UP AIR HORN REGULATOR	WL013
22	BACK-UP AIR HORN PRESSURE GAUGE	GA2060P
23	COMPRESSOR AIR END	COMP018
24	2 HP EXPLOSION PROOF MOTOR	MTR018
25	10” PNEUMATIC WHEEL	HDWR108
26	125 PSI RELIEF VALVE (LOCATED BEHIND PANEL)	VR4125BR

FILTER BREAKDOWN



ITEM #	DESCRIPTION	PART #
1	FILTER CHANGE INDICATOR	WL261
2	FILTER BOWL O-RING	WL266
3	“A” FILTER ELEMENT AND O-RING	BB30-A
4	“C” FILTER ELEMENT AND O-RINGS	BB30-C
5	“D” FILTER ELEMENT AND O-RINGS	BB30-D
6	AUTO DRAIN ASSEMBLY	WL024
7	FILTER BOWL WITH GUARD AND AUTO DRAIN	WL264
8	MANUAL DRAIN	WL262
9	FILTER BOWL WITH GUARD (NO DRAIN)	WL267

WARRANTY DISCLAIMER

Air Systems' manufactured equipment is warranted to the original user against defects in workmanship or materials under normal use for one year from the date of purchase. Any part which is determined by Air Systems to be defective in material or workmanship will be, as the exclusive remedy, repaired or replaced at Air Systems' option. This warranty does not apply to electrical systems or electronic components. Electrical parts are warranted, to the original user, for 90 days from the date of sale. During the warranty period, electrical components will be repaired or replaced at Air Systems' option.

NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER IS GIVEN BY AIR SYSTEMS IN CONNECTION HEREWITH. UNDER NO CIRCUMSTANCES SHALL THE SELLER BE LIABLE FOR LOSS OF PROFITS, ANY OTHER DIRECT OR INDIRECT COSTS, EXPENSES, LOSSES, OR DAMAGES ARISING OUT OF DEFECTS IN, OR FAILURE OF THE PRODUCT OR ANY PART THEREOF.

The purchaser shall be solely responsible for compliance with all applicable Federal, State and Local OSHA and/or MSHA requirements. Although Air Systems International believes that its products, if operated and maintained as shipped from the factory and in accordance with our "operations manual", conform to OSHA and/or MSHA requirements, there are no implied or expressed warranties of such compliance extending beyond the limited warranty described herein. Product designs and specifications are subject to change without notice. **Rev. 2, 12/98**

Air leaks are not covered under warranty except when they result from a defective system component, i.e. an on/off valve or regulator or upon initial delivery due to poor workmanship. Air leaks due to poor delivery or damage will be covered under delivery claims. Minor air leaks are part of routine service and maintenance and are the responsibility of the customer just as are filters and oil changes.

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