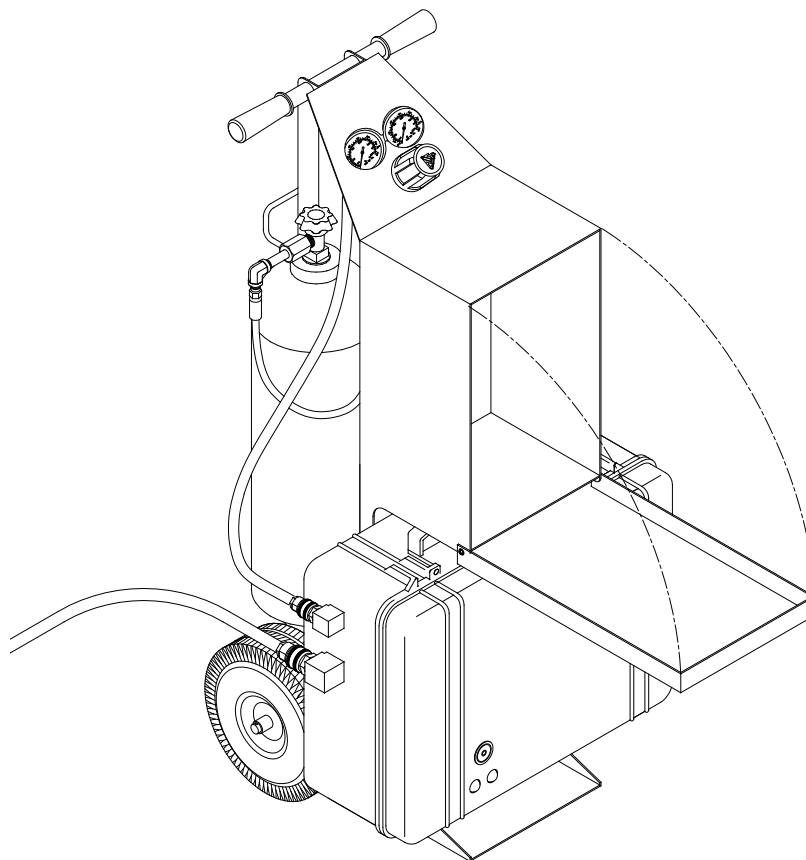




OPERATING INSTRUCTIONS AND REPLACEMENT PARTS

MODELS: BB30-HTAAP / BB50-HTAAP / BB100HTAAP
Intrinsically Safe Auto Air Cart



⚠ WARNING

This manual must be read carefully and followed by all persons who have or will have the responsibility for using or servicing this equipment. This equipment will perform as designed only if used according to the instructions. Otherwise it could fail to perform as designed, causing personal injury or death.

AIR SYSTEMS INTERNATIONAL, INC.

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www.airsystems.com.

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Warranty

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.

Breathing Air Quality Position Statement

The responsibility for the quality of breathing air rests with the user. Compliance with federal, state, or local regulations are the responsibility of the user and this recommendation does not supersede any existing rules, regulations, or laws which may apply. Breathing air filtration products meet or exceed CGA Grade-D specifications for air quality as adopted by Federal OSHA. Compressor air quality standards meet or exceed OSHA 1910.134 requirements. When the components are used in accordance with the manufacturer's instructions and recommendations, the "system" meets or exceeds federal regulations presently in force. It is incumbent upon the user to comply with any changes in the regulations or law which may occur in future situations.

The air supply compressor should be located in a safe, clean ambient air environment. This "safe" location should be tested periodically using proper instruments to ensure clean ambient air quality on a consistent basis. Total system Grade-D air quality should be tested at the time of initial setup. If the compressor is moved, retesting air quality is recommended. Should the location or environment significantly change, the air quality should be retested. The compressor filters and oil level should be checked daily and changed when contaminated or when the maximum number of "run" hours is achieved.

This series of air filtration units should be used according to the recommendations specified in the manual. The standard filtration package is not explosion-proof and should be located in a non-explosive environment. (An intrinsically safe model is available, please contact the factory for information.) The carbon monoxide monitor should be calibrated monthly or if the accuracy of the monitor is in question. System air quality should be tested for, but not limited to, the following Grade-D air components:

CO - Carbon Monoxide
O₂ - Oxygen
CO₂ - Carbon Dioxide
H₂O - Water (Moisture Content)
Hydrocarbons (Oil Mist)
Total Particulates

The maximum allowable level of these air quality components varies depending on Grade-D or E requirements. Contact sales for a copy of the latest standards.

Our Breathing Air compressors and filtration systems meet all of the following federal specifications when used and serviced in accordance with our instructions.

Federal OSHA 29 CFR 1910.134
"Compressor Operations for Breathing Air"

Army Corps of Engineers EM385-1-1,
paragraph 07b-11-4
"Compressed Breathing Air"

Auto-Air Box™ Overview

This Grade-D filtration unit has been designed for work in hazardous locations where the worker needs additional egress air to escape harmful gases and chemicals that may be present. IDLH atmospheres require that the worker wear a pressure demand airline respirator with a minimum of five minutes of escape air. However, this five minutes of escape air may not be sufficient to safely egress from the area. The Auto-Air Breather Box™ is attached to a secondary supply source of air. In the event of primary air loss, the Auto-Air system will automatically switch to the reserve air. Audible and visual alarms sound to signal the worker that they are on the backup air system and that they should egress the hazardous work area. Any size reserve air cylinder system can be attached to the Auto-Air Breather Box™, depending on the number of workers and length of time required to safely egress.

Plant or mobile compressors provide the primary air supply to the system. Continuous carbon monoxide monitoring is provided to meet federal, state, and local regulations.

The Auto-Air Breather Box™ series will supply Grade-D breathing air provided this unit is used according to this instruction manual. The carbon monoxide monitor (Model CO-91S) continuously receives 50 - 100cc of filtered air and monitors for the presence of carbon monoxide.

The outgoing pressure regulator is adjustable to conform to the particular respirator to allow the correct pressure. Refer to the NIOSH data sheet found with each respirator in use. Always adjust the outgoing pressure with the complete respirator(s) and desired hose length(s) in place.

Note: Always operate the Auto-Air Breather Box™ in the upright position. Failure to comply may result in one or all of the following:

- Auto drains will not function properly. This may result in the contamination of the CO monitor and cause water to be passed on through respirator hose and into worker's mask.
- Auto drains may become clogged, clean or replace auto drains. (See Maintenance Instructions)
- Filters may accumulate moisture and/or contamination; replace if necessary.

Specifications

	BB30-HTAAP	BB50-HTAAP	BB100HTAAP
Primary Air Inlet Size	1/2" Industrial Interchange	1/2" Industrial Interchange	1/2" Industrial Interchange
Back-up Air Inlet Size	1/4" Industrial Interchange	1/4" Industrial Interchange	1/4" Industrial Interchange
Number of Outlets	3	4	4
Maximum Air Flow (CFM)	48 CFM	79 CFM	123 CFM
Filtration	3 Stage Grade D	3 Stage Grade D	3 Stage Grade D
Remote Alarm Signal	Pneumatic	Pneumatic	Pneumatic
Maximum Inlet Pressure (Primary or Back-up)	150 PSI	150 PSI	150 PSI
Relief Valve	125 PSI	125 PSI	125 PSI
Air Monitoring	Carbon Monoxide	Carbon Monoxide	Carbon Monoxide
Power	9 VDC Batteries	9 VDC Batteries	9 VDC Batteries
Back-up Air Supply	5000 PSI Maximum	5000 PSI Maximum	5000 PSI Maximum
Connect Whips	Rated @ 5000 PSI	Rated @ 5000 PSI	Rated @ 5000 PSI
Cylinder Connections	CGA-347	CGA-347	CGA-347

Carbon Monoxide Monitor Overview

The monitor will analyze the air sample and display the CO concentration in parts per million (ppm). The system's green "NORMAL" operation light will illuminate and the red "HIGH CO" light will flicker approximately every second when the CO level is below 10ppm (5ppm Canadian). If the CO concentration level exceeds the alarm set point, the green "NORMAL" light will turn off, the red "HIGH CO" light will illuminate, and the audible alarm will sound. Once the CO concentration levels drop below the alarm set point, all alarm indicators will deactivate and the unit will return to "NORMAL" operation.

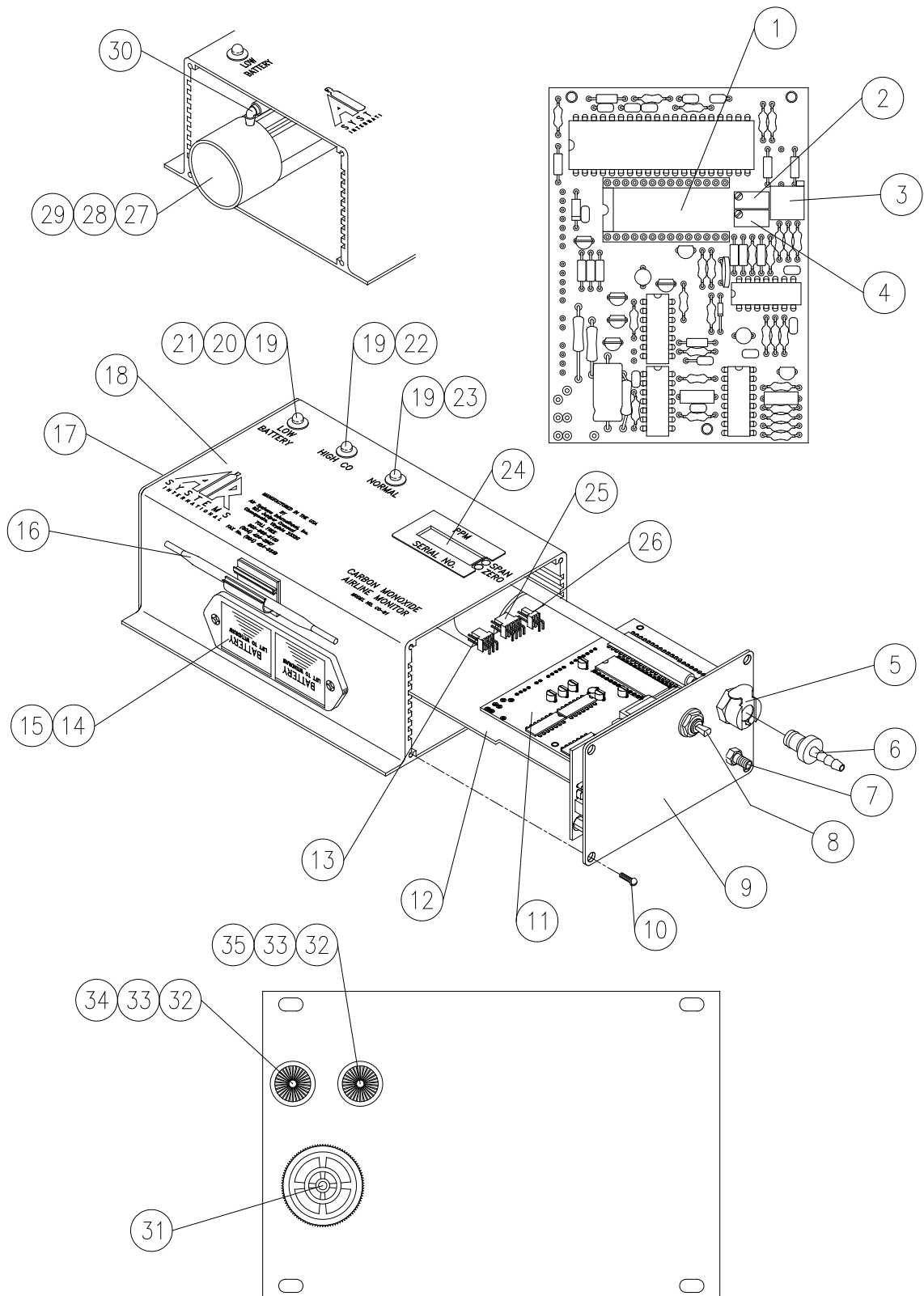
Carbon Monoxide Monitor Specifications

Size	2.75"H X 6.57"L X 5.1"W	Sensor Type	Sealed electrochemical sensor for Carbon Monoxide
Weight	2.8 IBS. (1.27kg.)	Accuracy	+/-1% full scale
Case	Extruded Aluminum - anodized black	Response	90% in 10-15 seconds
Voltage	9 VDC	Detectable Range	0-200 ppm CO
Operating Temperature	4° to 113° Fahrenheit (-15.5° to 45° Celcius)	Calibration	Manual CO zero and span adjustments
Humidity Range	10% to 90% relative humidity	Alarm Setting	10 ppm CO (5 ppm - Canadian)
Flow Requirement	50 - 100 cc/min	Warning Signals	Normal Operation - Green Light High CO - Red Light High CO - Audible Alarm Low Battery - Amber Light
Display	3 digit LCD CO concentration	Warranty	2 years from original date of purchase
Test Circuit	Manually activated		

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.

CO Monitor Components



NOTE: MODEL CO-91IS HAS THE INDICATOR LIGHTS AND AUDIBLE ALARM MOUNTED ON BOTTOM OF HOUSING AND MODEL CO-91ISLA HAS THE INDICATOR LIGHTS MOUNTED ON TOP OF HOUSING WITH THE AUDIBLE ALARM BEING MOUNTED ON THE LEFT ENDPLATE.

CO Monitor Components

ITEM #	DESCRIPTION	PART #
1	LCD Display	MONC703
2	Span Potentiometer	MONC702A
3	Alarm Set Point Potentiometer	MONC702A
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	CO-91IS/CO-91ISLA Faceplate Assembly	CO-91EXFP
10	Faceplate/Endplate Screw	MONC023
11	Main Circuit Board Assembly	CO-91ISPCB
12	Power Supply Board	CO-91EXPSB
13	Sensor Connector (Soldered To PCB)	MONC509
14	Battery Box	MONC006
15	9 Volt Battery	ELB9V
16	Calibration Tool	MONC028
17	Audible Alarm (CO-91ISLA)	ELLS008
18	Aluminum Housing	CO-91AHOU
19	Led Socket	MONC009LA
20	Yellow LED	MONC008NS
21	LED Socket And Yellow LED	CO-91LED
22	Red LED (CO-91ISLA)	MONC035NS
23	Green LED (CO-91ISLA)	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
31	Audible Alarm (CO-91IS)	ELLS004IS
32	Lamp Socket (CO-91IS)	ELDS004
33	Clear Lens (CO-91IS)	ELDS013
34	Red LED (CO-91IS)	MONC004
35	Green LED (CO-91IS)	MONC005

Set-up/Operation

Note: Always operate the Breather Box® in the upright position. Failure to comply may result in one or all of the following:

- 1) Auto drains will not function properly. This may result in the contamination of the CO monitor and cause oil/water to be passed through the respirator hose and into the worker's mask.
- 2) Auto drains may become clogged.
- 3) Filters may accumulate moisture and/or contamination.

Step 1)

Secure a primary air source of sufficient air flow and discharge pressure (150 PSI maximum). The number and type of respirators being used determines the flow rate and pressure required.

Step 2)

Secure a back-up air supply of sufficient capacity to achieve the desired time for all workers to egress from the hazardous area. The back-up air supply should be able to produce a sufficient flow rate and output pressure based on the flow rate and pressure required by the number and type of respirators being used for a specific duration. Adjust the back-up air supply to the proper discharge pressure for the respirators in use.

NOTE: The back-up air supply must be at least Grade D breathing air.

Step 3)

Connect the air sample hose to the monitor. Check airline monitor for fresh 9 volt batteries and place the "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 of the monitor may be necessary. See calibration procedure.

Step 4)

Connect pneumatic remote alarm (optional) to the remote alarm port.

Step 5)

Close the pneumatic horn regulator as well as the discharge regulator by turning their knobs counter-clockwise.

Step 6)

Connect the back-up air source to the back-up air inlet fitting. Adjust the back-up air pressure to the minimum operating pressure required by the respirator manufacturer. Back-up air pressure must be a minimum of 10 PSI below primary air pressure or valve will not reset itself. Confirm the proper operation of the back-up air warning horn as well as the pneumatic remote alarm (if used) by adjusting the horn regulator slowly until the desired volume is reached.

WARNING: BACK-UP AIR WARNING HORN IS VERY LOUD. ADJUST HORN REGULATOR SLOWLY AND DO NOT PLACE EAR NEAR HORN WHEN ADJUSTING HORN REGULATOR.

Step 7)

Connect primary air to the primary air inlet fitting and adjust the discharge regulator to the desired discharge pressure. The presence of sufficient primary air pressure will cause the 2-way valve to shift out of the back-up air position and local and remote alarms will deactivate.

IMPORTANT! Primary air pressure must be at least 10 PSI greater than the back-up air pressure for system to work properly.

Step 8)

Attach desired respirators and hoses to the quick connect couplings.

Step 9)

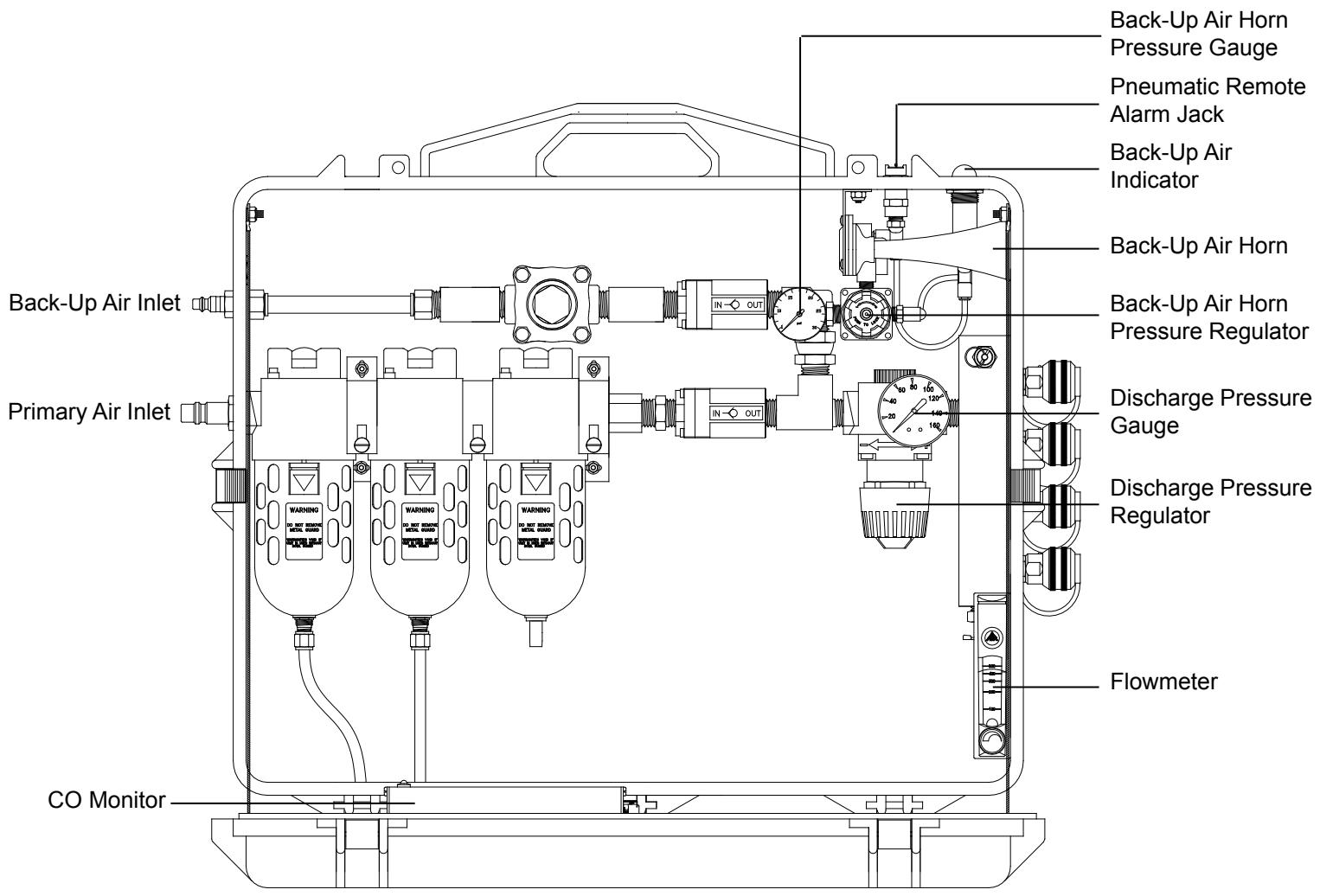
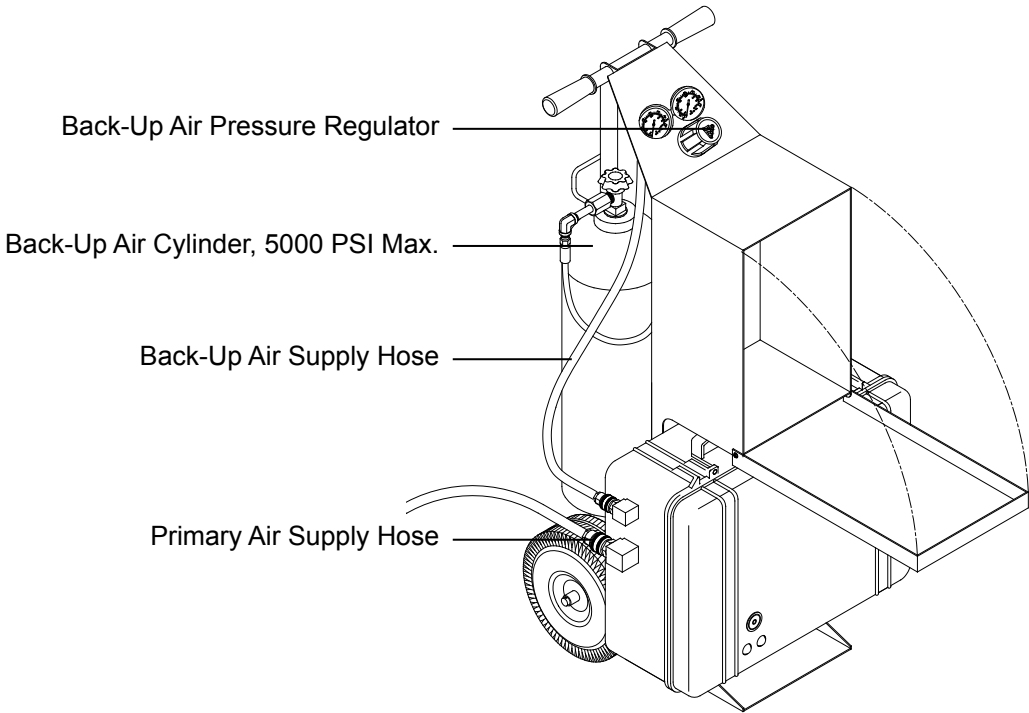
Adjust CO monitor air sample flow rate by turning the flowmeter control knob counterclockwise until the ball hovers between 50 and 100 cc/min. The box is now ready for operation.

The monitor will analyze the air sample and display the CO concentration in parts per million (ppm). The system's green "NORMAL" operation light will illuminate, and the red "HIGH CO" light will flicker faintly approximately every second when the CO level is below 10ppm (5ppm Canadian).

When the CO concentration level exceeds the alarm set point, the green "NORMAL" light will turn off, the red "HIGH CO" light illuminates, the audible alarm will sound, and the remote alarm connections will energize.

When CO concentrations drop below the alarm set point, all alarm indicators will deactivate and return to normal operation.

Set-up/Operation



Back-Up Air Pressure Regulator

Back-Up Air Cylinder, 5000 PSI Max.

Back-Up Air Supply Hose

Primary Air Supply Hose

Back-Up Air Horn Pressure Gauge

Pneumatic Remote Alarm Jack

Back-Up Air Indicator

Back-Up Air Horn

Back-Up Air Horn Pressure Regulator

Discharge Pressure Gauge

Discharge Pressure Regulator

Flowmeter

Back-Up Air Inlet

Primary Air Inlet

CO Monitor

Shutdown

- 1) Be sure all personnel have egressed the work area.
- 2) Close back-up air cylinder valves.
- 3) Remove primary air source from primary air inlet on box.
- 4) Bleed any remaining pressure from box by removing back-up airline from back-up air inlet or pulling ring on relief valve.
- 5) Turn off CO monitor.

System Maintenance/Inspection

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.

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.

DECAL085CD Calibration decal card, contains 14 calibration decals.

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

Connect Whips and Hoses: Periodic inspections for leaks or damage should be done routinely to insure safe operation. If leaks or damage are found, repair or replace immediately.

Cylinder Connections: Check the CGA connections for thread damage on nuts or missing o-rings from stems. Replace to insure cylinders retain pressure.

Leak Test: Pressurize unit. Close cylinder valves, close primary air source, close flowmeter, and watch pressure gauges on cart and on box. If pressure begins to decrease; use a squirt bottle with water mixed with a few drops of dishwashing soap and begin squirting connections until leak is found. This test can be performed annually or whenever a leak is suspected such as back-up air cylinders losing pressure.

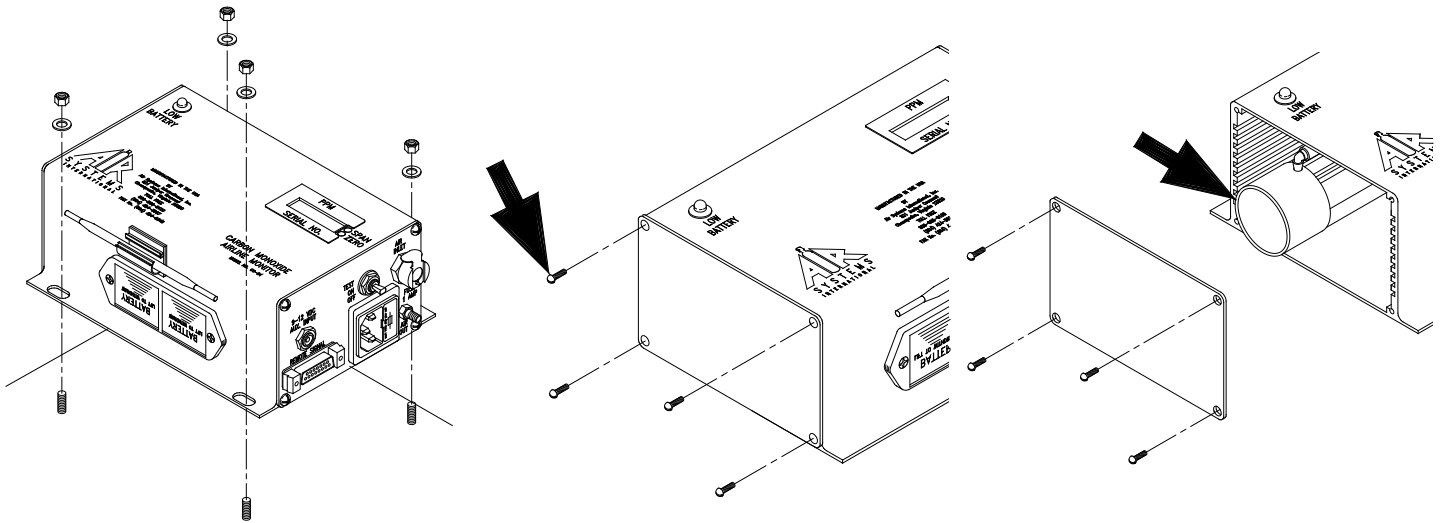
Battery Replacement

These batteries provide the required continuous bias voltage to the CO sensor as well as providing power to the monitor. If the 9 volt batteries are removed for a period of 2 hours or more, a 1 hour restabilization period is required as erratic 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.

CO 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)

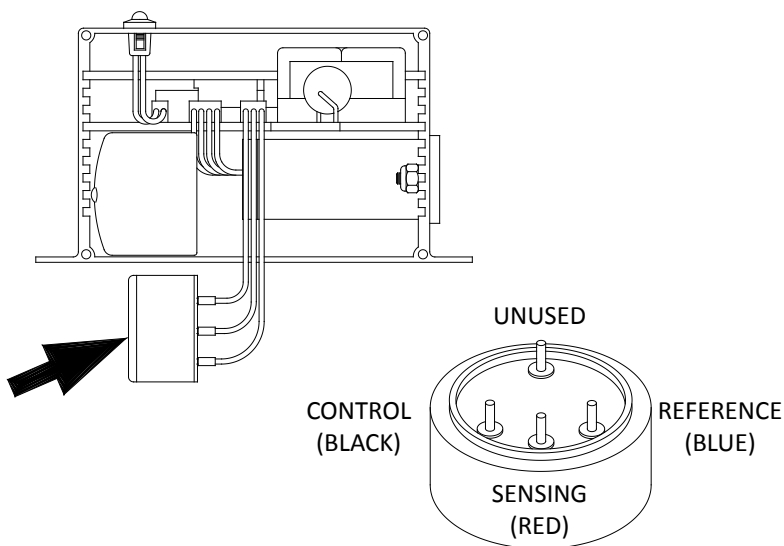
Disconnect all external connections. Remove CO monitor from the unit.

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 - Zero Adjustment

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)

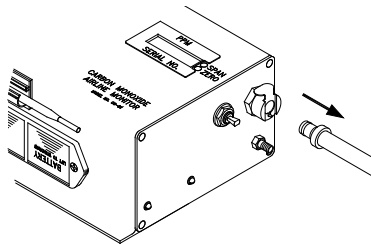
Hold the “ON/OFF/TEST” switch in the “TEST” position. The following will occur:

- 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.

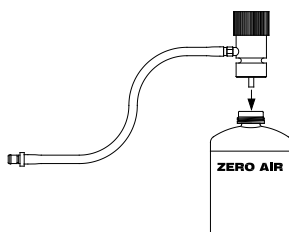
STEP 4)

Remove the air sample inlet tube.



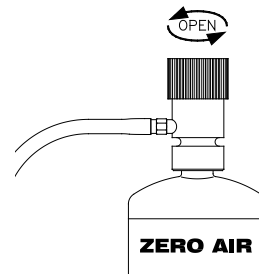
STEP 5)

Install regulator on the zero air cylinder reference gas.



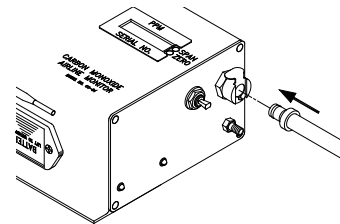
STEP 6)

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.

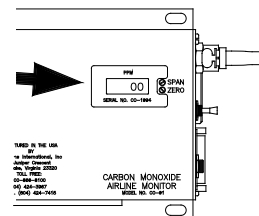


STEP 8)

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.

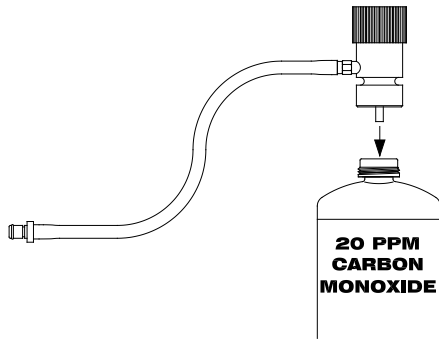
Calibration Procedure - Span Adjustment

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.

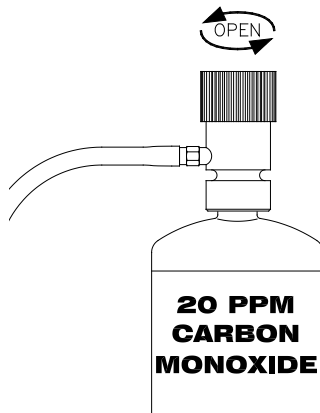
STEP 1)

Install regulator on the CO calibration gas cylinder.



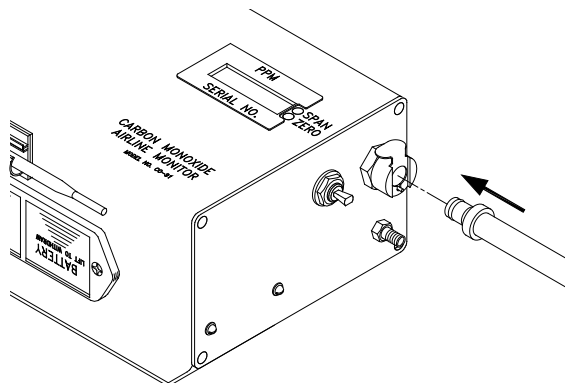
STEP 2)

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.

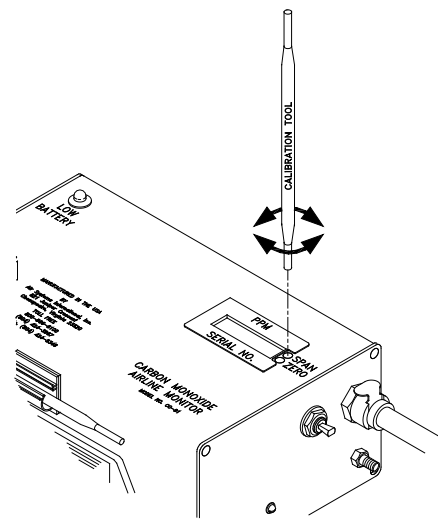


STEP 4)

Allow digital readout to stabilize 15-30 seconds.

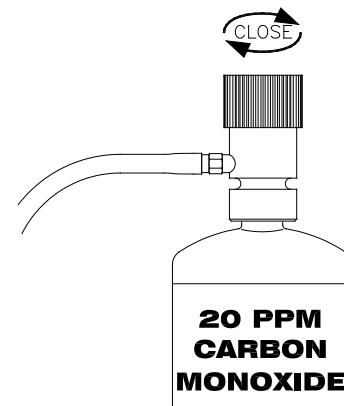
STEP 5)

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.



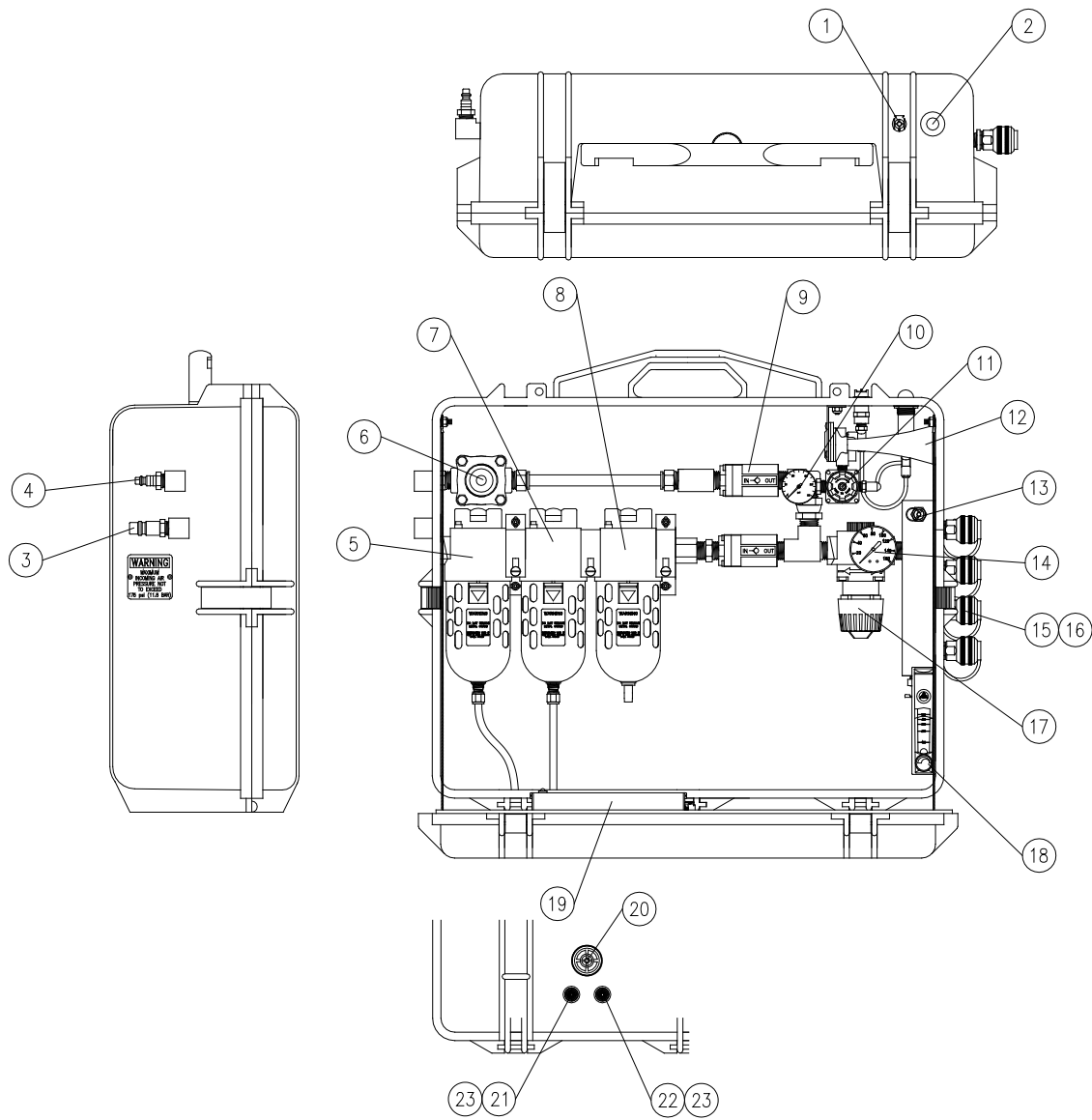
STEP 6)

Turn the regulator off and repeat the "zero" adjustment procedure. The digital readout should return to a "00" reading.

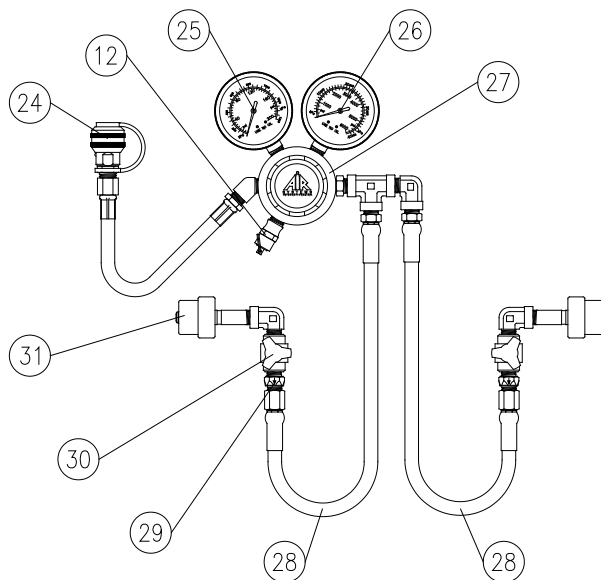


The monitor is now calibrated and should be recalibrated monthly or if accuracy is questionable. Check local requirements and recalibrate as required.

Auto-Air Breather Box®



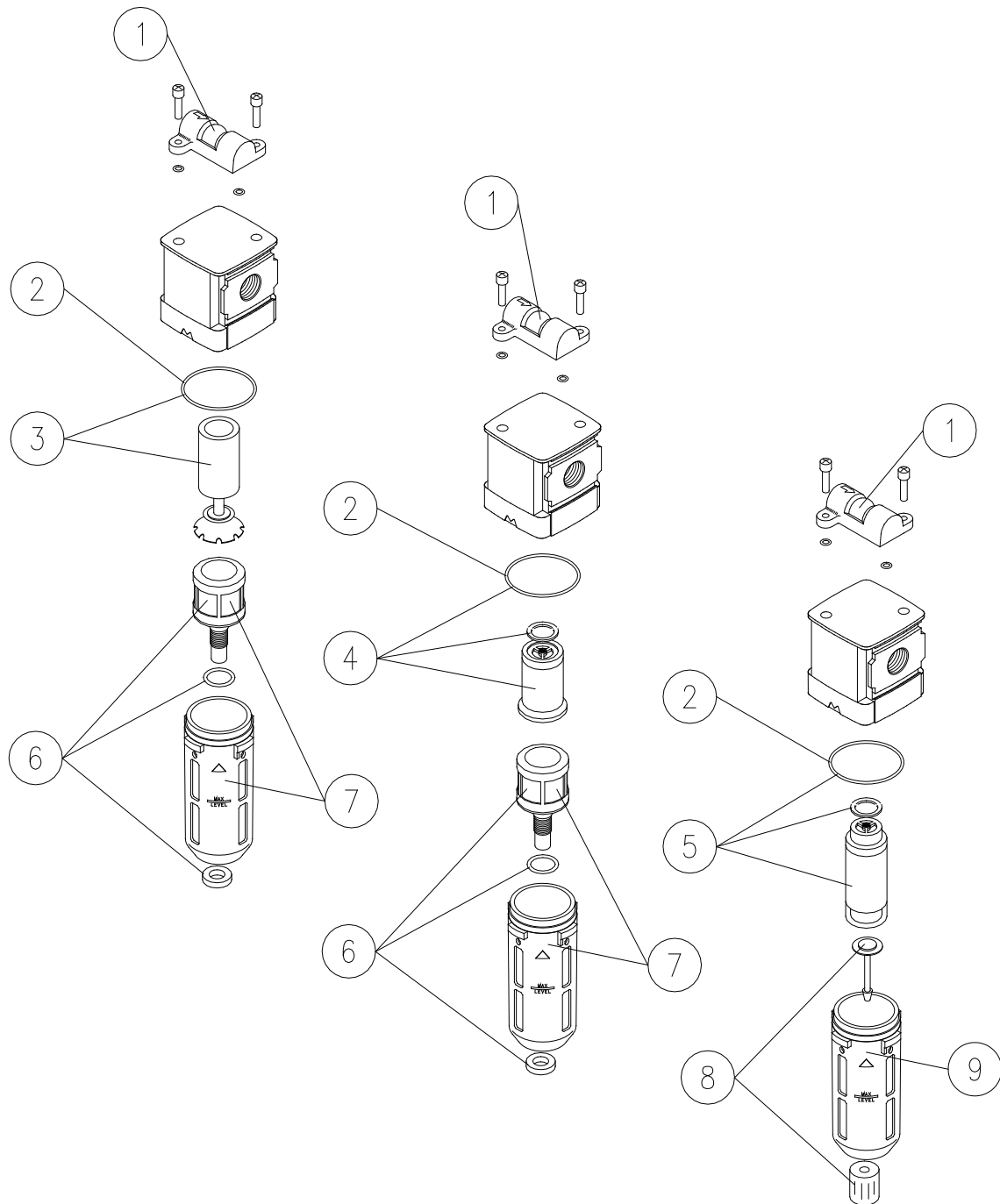
Back-Up Air Regulator Assembly



Parts List

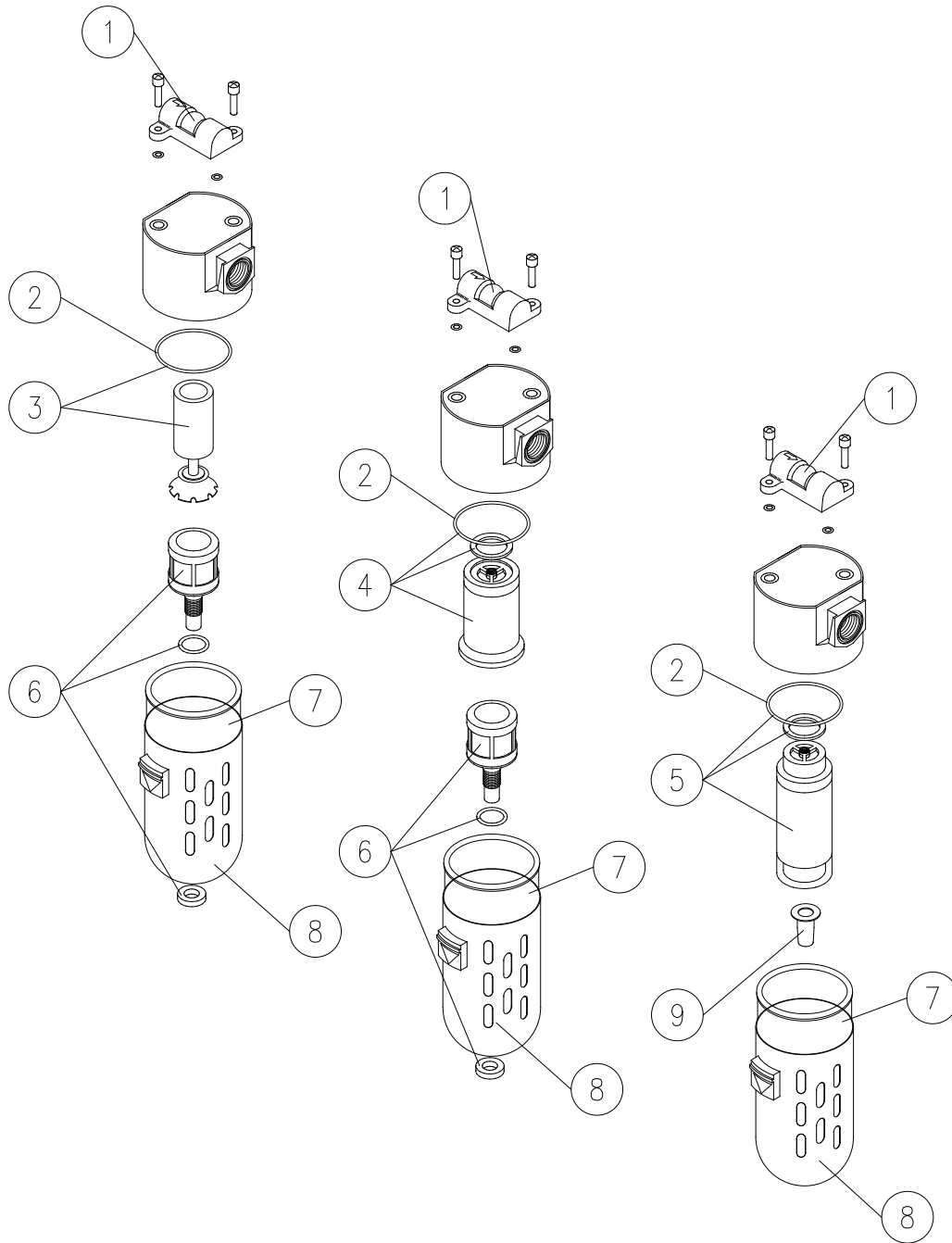
Item #	Description	BB30-HTAAP	BB50-HTAAP	BB100HTAAP
1	Pneumatic Remote Alarm Jack	QDCSL2M	QDCSL2M	QDCSL2M
2	Back-Up Air Indicator	GA15RED	GA15RED	GA15RED
3	Primary Air Inlet	QDH5PL8M	QDH5PL8M	QDH5PL8M
4	Back-Up Air Inlet	QDH3SL6M	QDH3SL6M	QDH3SL6M
5	First Stage Filter Assembly	WL251	WL007	WL066
6	2-Way Valve	PSVLV077	PSVLV077	PSVLV077
7	Second Stage Filter Assembly	WL253	WL008	WL017
8	Third Stage Filter Assembly	WL255	WL009	WL018
9	Check Valve	PSVLV017	PSVLV017	PSVLV017
10	Pneumatic Horn Pressure Gauge	GA1560B	GA1560B	GA1560B
11	Pneumatic Horn Regulator	WL013A	WL013A	WL013A
12	Pneumatic Horn	GAMLHORN	GAMLHORN	GAMLHORN
13	125 PSI Relief Valve	VR4125BR	VR4125BR	VR4125BR
14	Outlet Pressure Gauge	GA20160B	GA20160B	GA20160B
15	Hansen Coupling	QDH3SL6M	QDH3SL6M	QDH3SL6M
15A	Schrader Coupling	QDSSL6M	QDSSL6M	QDSSL6M
16	Hansen Dust Cap	QDH3DCAP	QDH3DCAP	QDH3DCAP
16A	Schrader Dust Cap	QDSDCAP	QDSDCAP	QDSDCAP
17	Discharge Regulator	WL257	WL014	WL015
18	Flowmeter	WL033NS	WL033NS	WL033NS
19	Intrinsically Safe CO Monitor	CO-91IS	CO-91IS	CO-91IS
20	Audible Alarm	ELLS004IS	ELLS004IS	ELLS004IS
21	Green LED	MONC005	MONC005	MONC005
22	Red LED	MONC004	MONC004	MONC004
23	Clear Lens	ELDS013	ELDS013	ELDS013
24	Hansen Coupling with Dust Cap	QDH3SL4MDC	QDH3SL4MDC	QDH3SL4MDC
25	Back-Up air outlet pressure gauge	GA25200SRG	GA25200SRG	GA25200SRG
26	Cylinder Pressure Gauge	GA256KSREG	GA256KSREG	GA256KSREG
27	Pressure Regulator (No Gauges)	REG-5000NG	REG-5000NG	REG-5000NG
27A	Pressure Regulator (W/Gauges)	REG-5000	REG-5000	REG-5000
28	5000 PSI Rated Connect Whip	PHA05026MF	PHA05026MF	PHA05026MF
29	1/4" Check Valve	VC4SMMSS	VC4SMMSS	VC4SMMSS
30	Bleed Valve	VAL030	VAL030	VAL030
31	Universal Hand-Tight (CGA-346/347)	SS347HT	SS347HT	SS347HT

BB30-HTAAP Filter Assemblies



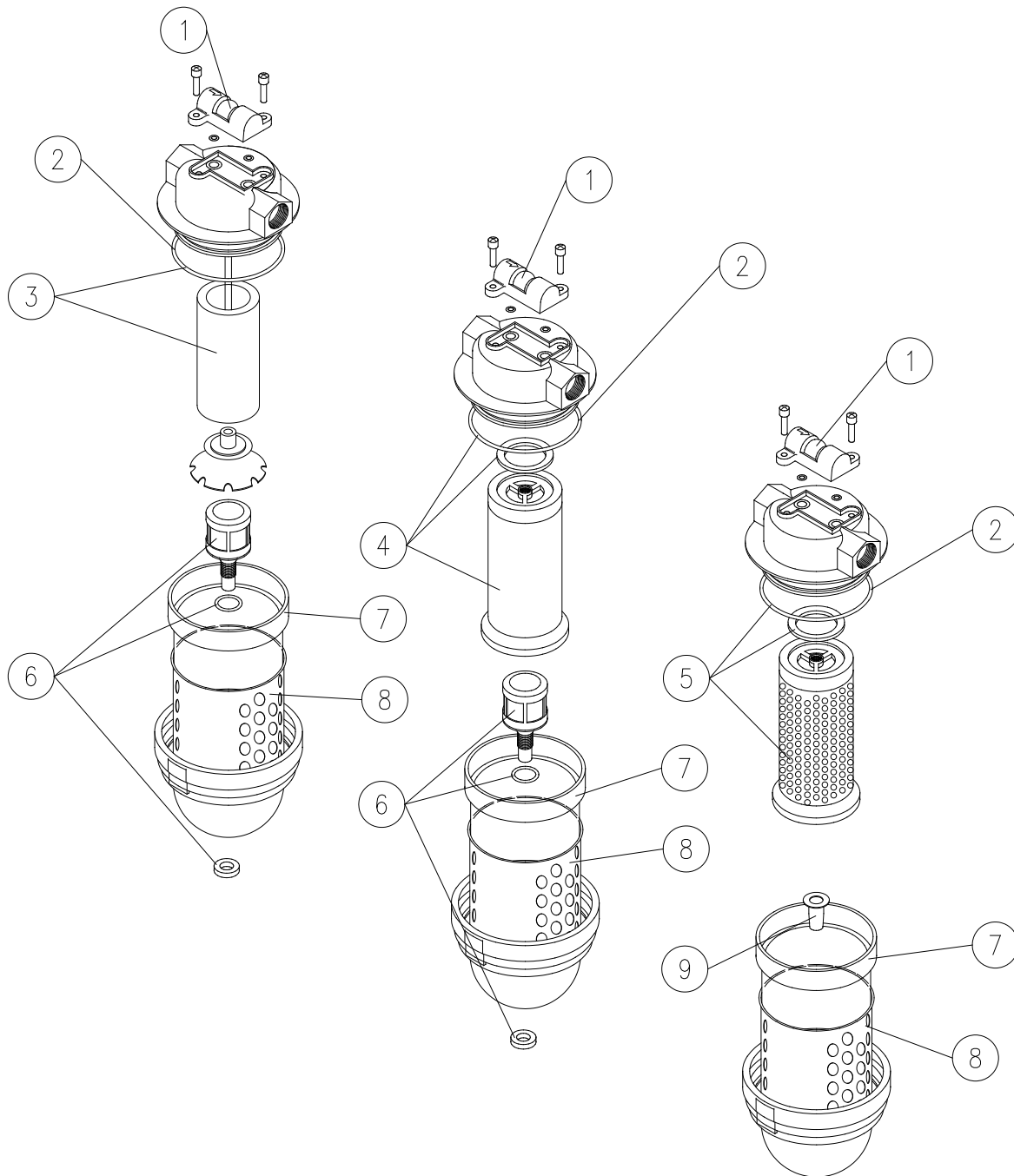
ITEM #	DESCRIPTION	PART #
1	FILTER CHANGE INDICATOR	WL261
2	FILTER BOWL O-RING	WL266
3	"A" FILTER ELEMENT AND O-RING	BB30-A
4	"C" FILTER ELEMENT AND O-RINGS	BB30-C
5	"D" FILTER ELEMENT AND O-RINGS	BB30-D
6	AUTO DRAIN ASSEMBLY	WL024
7	FILTER BOWL WITH GUARD AND AUTO DRAIN	WL264
8	MANUAL DRAIN	WL262
9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

BB50-HTAAP Filter Assemblies



ITEM #	DESCRIPTION	PART #
1	FILTER CHANGE INDICATOR	WL056
2	FILTER BOWL O-RING	WL091
3	"A" FILTER ELEMENT AND O-RING	BB50-A
4	"C" FILTER ELEMENT AND O-RINGS	BB50-C
5	"D" FILTER ELEMENT AND O-RINGS	BB50-D
6	AUTO DRAIN ASSEMBLY	WL024
7	PLASTIC FILTER BOWL	WL049
8	METAL FILTER BOWL GUARD	WL094
9	MANUAL DRAIN	WL153

BB100HTAAP Filter Assemblies



ITEM #	DESCRIPTION	PART #
1	FILTER CHANGE INDICATOR*	WL056
2	FILTER BOWL O-RING	WL113
3	"A" FILTER ELEMENT AND O-RING	BB100-A
4	"C" FILTER ELEMENT AND O-RINGS	BB100-C
5	"D" FILTER ELEMENT AND O-RINGS	BB100-D
6	AUTO DRAIN ASSEMBLY	WL024
7	PLASTIC FILTER BOWL	WL055
8	METAL FILTER BOWL GUARD	WL092
9	MANUAL DRAIN	WL153

