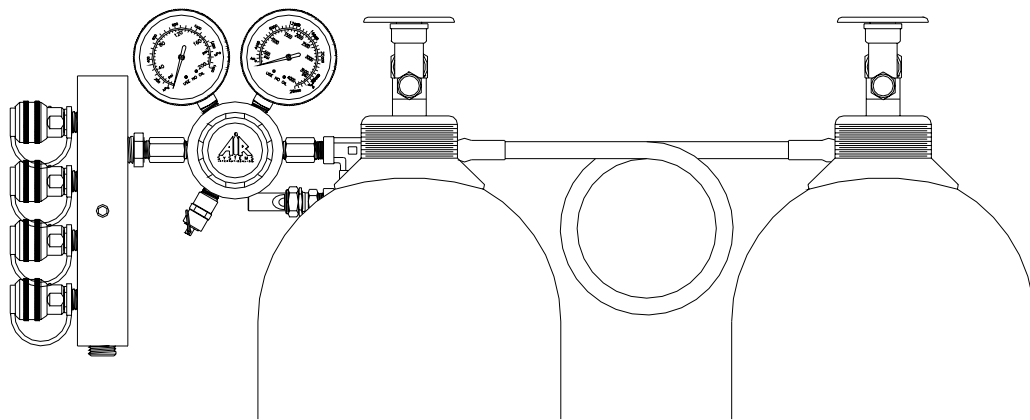




# Operating Manual

## CBA Series

### Cascade Breathing Air Assemblies



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Air Systems International, Inc  
Registered to ISO 9001  
Certificate No. A5033

## OVERVIEW

The cascade breathing air assemblies are designed to provide breathing air to four respiratory devices. A pressure reducing regulator is supplied to deliver the correct pressure recommended by the respirator manufacturer. A low pressure warning whistle is supplied to notify the user that the cascade system has dropped below 500psi (35 bar). (An optional low pressure alarm bell is available.) Check valves are installed on each cylinder stem to prevent pressure equalization. These valves also allow the user to independently change cylinders without depressurizing the complete system.

## SPECIFICATIONS

<b>Weight (Hardware only):</b>	8 lbs. (3.6 kg) .5lb. (.23kg) /per additional bottle connection
<b>Inlets:</b>	<b>CGA-346</b> wrench tight nuts, stem check valves, 3000psi (207 bar) maximum <b>CGA-347</b> wrench tight nuts, in-line check valves, 4500psi (310 bar) maximum <b>CGA-702</b> wrench tight nuts, in-line check valves, 6000psi maximum
<b>Whip Assemblies:</b>	Thermo plastic 5000psi (345 bar) rated 4:1 safety factor for Models CGA-346 and CGA-347 Thermo plastic 6000psi rated 4:1 safety factor for Model CGA-702
<b>Primary Regulator Pressure:</b>	<b>RG-3000</b> 3000psi (207 bar) maximum inlet, 125psi (8.6 bar) maximum outlet <b>RG-5000</b> 4500psi (310 bar) maximum inlet, 125psi (8.6 bar) maximum outlet <b>REG009</b> 6000psi in 150psi out
<b>Primary Regulator</b>	80cfm (2260 LPM) @ 125psi (8.6 bar)
<b>Flow Rate:</b>	discharge pressure
<b>Relief valve:</b>	125psi (8.6 bar) ASME preset
<b>Check valves:</b>	Allows independent cylinder operation and removal without complete systems shutdown
<b>Warning Alarm:</b>	Pneumatic whistle (optional bell available) alarms @ 500psi (35 bar) descending pressure
<b>Air Distribution:</b>	Four (4) regulated quick connect fittings
<b>Intrinsically Safe:</b>	No electronic devices

## SETUP/OPERATION

### STEP 4)

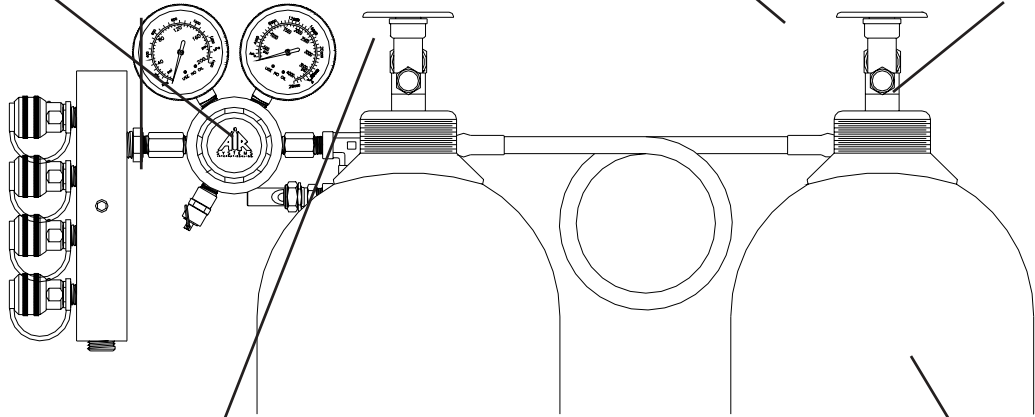
Set the required respirator pressure with the regulator control knob and bleed the pressure at either the relief valve or by partially engaging a male plug into one of the respirator couplings. This depressurizes the manifold and simulates low cylinder pressure. The low pressure warning alarm will sound at approximately 500psi (35bar).

### STEP 3)

Open one cylinder. At this time the low pressure warning alarm will sound until it sets itself at approximately 1000psi (69 bar). Check reading on gauge to verify that it is full. Close the cylinder.

### STEP 2)

Attach the CGA connections to the cylinder(s) and tighten with a wrench. *Note: CBA-347 Series: This connection will work on a CGA-346 or CGA-347 header valve. CBA-346 or CBA-702 Series: These connection will only work on a CGA-346 or CGA-702 header valve respectively.*



### STEP 6)

Couple respirators and lengths of hoses needed to the manifold and readjust pressure regulator if necessary. The system is now operational.

### Step 5)

Open the other cylinder. At this time the low pressure warning alarm will resound until it sets itself at approximately 1000psi (69 bar). Check reading on gauge to verify that it is full.

### STEP 1)

Secure a high pressure Grade-E air source.

## OPERATION

When the cylinder in use has been depleted to approximately 500psi (35 bar), the low pressure warning alarm will sound indicating that the cylinder needs to be replaced. To change a cylinder valve while the cascade breathing air assembly is still in use:

- 1) Open the second cylinder and note the gauge pressure to assure that it is full.
- 2) Close the drained cylinder. Loosen the CGA-346/347/702 nut to relieve pressure and remove fittings.
- 3) Remove the drained cylinder. Install a full cylinder in its place and connect CGA-346/347/702 wrench tight nut to cylinder valve. It is now ready for use when the other cylinder pressure descends to 500psi.

*Note: The system is equipped with check valves that will prevent back flow from the other cylinder in use.*

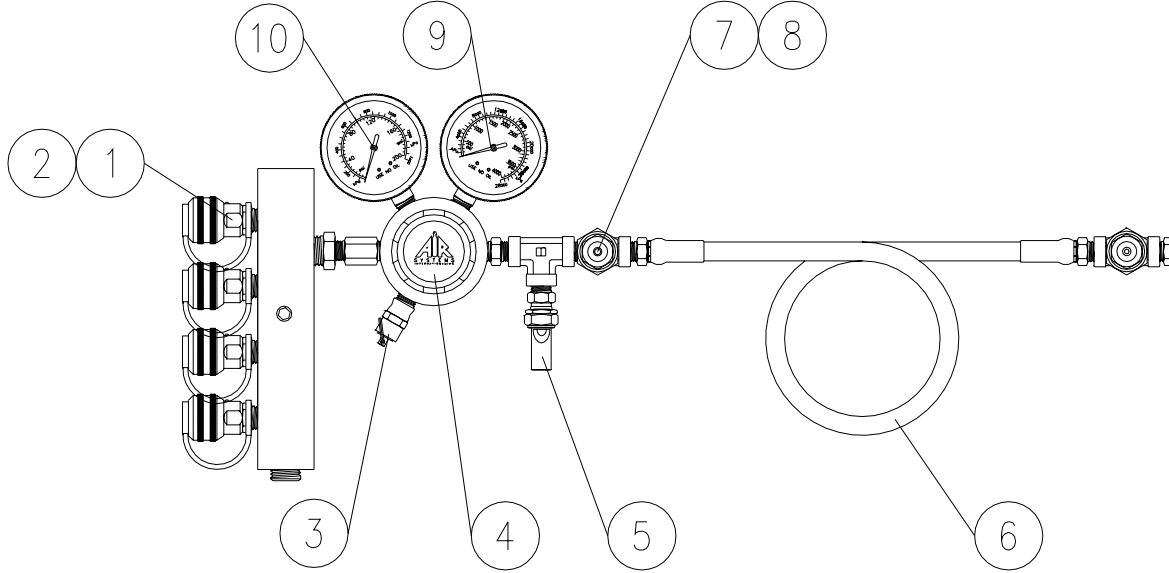
## PARTS IDENTIFICATION

ITEM #	DESCRIPTION	CBA_-346	CBA_-347	CBA_-702
1	HANSEN SOCKET	QDH3SL6M	QDH3SL6M	QDH3SL6M
1A	SCHRADER SOCKET	QDSSL6M	QDSSL6M	QDSSL6M
2	HANSEN DUST CAP	QDH3DCAP	QDH3DCAP	QDH3DCAP
2A	SCHRADER DUST CAP	QDSDCAP	QDSDCAP	QDSDCAP
3	125 PSI RELIEF VALVE	VR4125BR	VR4125BR	VR4125BR
4	PRESSURE REGULATOR	REG-3000NG	REG-5000NG	REG009
5	LOW PRESSURE WHISTLE	AC-PA25	AC-PA25	AC-PA25
6	30" WHIP ASSEMBLY	CWCV-30	CWCV-30HP	CWCV-702
7	WRENCH TIGHT NUT	HPBR025	HPBR049	SS702N
8	STEM	HPBR027	HPBR050	SS702S
9	INLET PRESSURE GAUGE	GA254KSREG	GA256KSREG	GA256KSREG
10	OUTLET PRESSURE GAUGE	GA25200SRG	GA25200SRG	GA25200SRG
11	CHECK VALVE* (CBA_-347 & CBA_-702 MODELS ONLY)	N/A	VC4SMMSS	VC4SMMSS

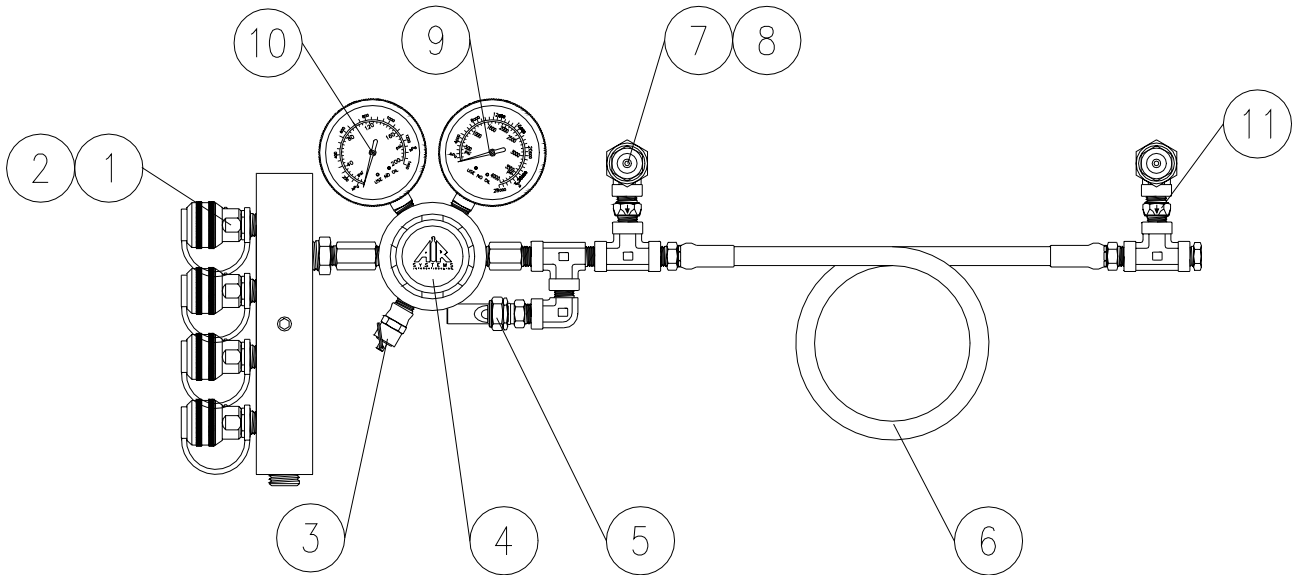
\* CHECK VALVE IS BUILT INTO THE STEM ON CBA\_-346 MODELS

### PARTS IDENTIFICATION

#### MODEL CBA\_\_ - 346



#### MODEL CBA\_\_ - 347 & CBA\_\_-702



## **HIGH PRESSURE AIRLINE GENERAL MAINTENANCE & INSPECTION**

### **Monthly**

1. Check regulators, gauges, and valves for external leakage.
2. Inspect valves for proper closure.
3. Check cylinder pigtailed for cleanliness, flexibility, wear, leakage, blisters on hose, and thread damage. Replace damaged pigtailed immediately.
4. Inspect check valves for closure ability.

### **Annually**

1. Check relief valve's pressure.
2. Check regulator function by opening and closing regulator valve knob fully.

### **Every 4 years**

1. Replace all flexible pigtailed.

## **SHUTDOWN**

1. Make sure all personnel have egressed the work area.
2. Close cascade cylinder valves.
3. Relieve system pressure by pulling the relief valve test ring.
4. Remove the whip assemblies.
5. Install cylinder transportation caps.

### ***Warranty Disclaimer***

Air Systems' manufactured equipment is warranted to the original user against defects in workmanship or materials under normal use for one year after 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.*