

**"Save  
Your  
Breath  
With** **NST®** **MODERN SAFETY TECHNIQUES**

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**SERVICE MANUAL  
MODEL BA020ANM-S1  
BREATHING AIR PANEL**

\*\*\*\*\*  
**WARNING: Do not attempt to operate this equipment without first reading and understanding the service manual enclosed with this device.**  
\*\*\*\*\*

## **GENERAL OPERATION MANUAL**

### **WARNING: The MST Breathing Air Panel Model BA020ANM-S1:**

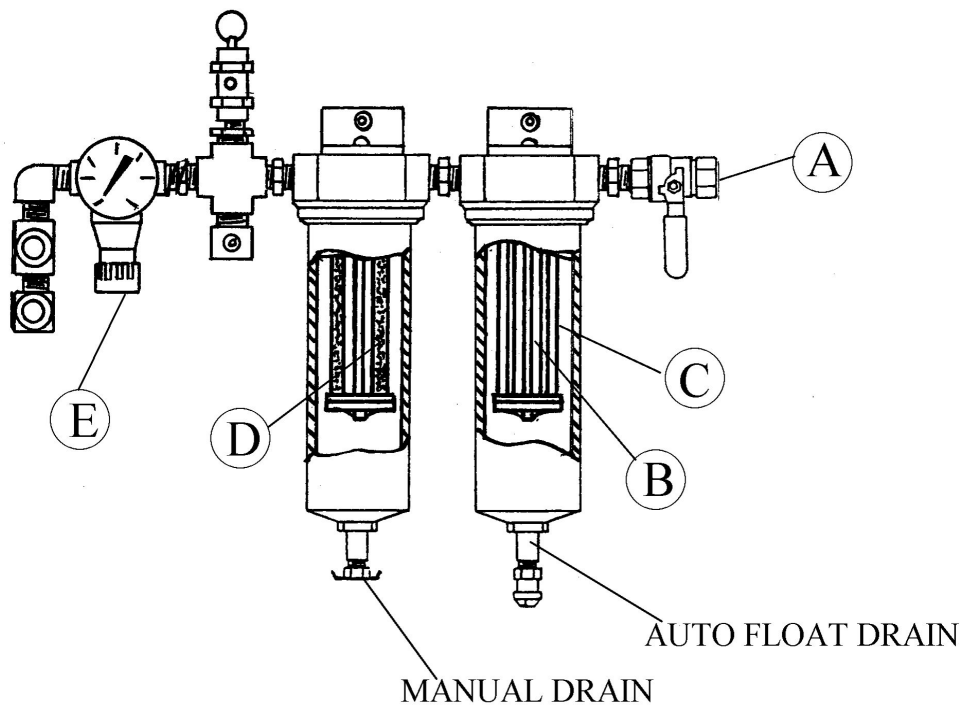
- 1) WILL NOT remove Carbon Monoxide.
- 2) SHOULD NOT be used when the air entering the filtering system is oxygen deficient. The MST Breathing Air Panel will not increase the oxygen content of the air.
- 3) SHOULD NOT be used in an Immediately Dangerous to Life and Health Atmosphere (IDLH) unless it is used in conjunction with a Back-Up Escape system or a supplied air Self-Contained Breathing Apparatus (SCBA), where applicable.
- 4) SHOULD NOT have air inlet pressure greater than 150 PSIG static (10.4bar). Personal injury could result.
- 5) SHOULD NOT have air outlet pressure that exceeds Manufacturers' Respirator/Hose Assembly pressure requirements. Personal injury could result.

The MST Breathing Air Panel is a Three Stage Filtration System designed to remove or reduce select contaminants found in compressed air lines while monitoring for carbon monoxide through the MST Monitor. The Breathing Air Panel can be connected directly to shop air from a standard compressed air source to help provide breathing quality air to face masks, helmets, hoods and other supplied air breathing apparatus.

## **GENERAL FILTER SYSTEM DESCRIPTION**

(Refer to Figure No.1)

Air entering the MST Breathing Air Panel at the inlet (A) is usually contaminated with oil, water, dirt, rust, scale and gaseous Hydrocarbons. As the air passes through the First Stage (B) of the MST Prefilter, particulate matter is trapped and retained down to 0.3 microns. The air then enters the Second Stage (C) of the Prefilter which coalesces liquid contaminants down to 0.75 microns with an efficiency rating of 99.97% (meets Underwriters Laboratories Specification UL 586 for High Efficiency, Particulate, Air Filter Units). The liquid contaminants are trapped in the lower chamber of the prefilter and expelled out through the Automatic Float Drain. The Third Stage (D) contains a bed of odor absorbing activated charcoal which collects various gaseous Hydrocarbons (such as oil fumes, benzene, etc.). The air is then passed through the Air Pressure Regulator (E), which is used to adjust the air pressure going to the respirator.



**FIGURE NO.1**

## GENERAL INSTRUCTIONS

The MST BA020ANM-S1 Breathing Air Panel, a compressed air purifier, when used in accordance with the following instructions, will remove or reduce selected contaminants from compressed air lines.

\*\*\*\*\*  
**WARNING:** The MST Breathing Air Panel BA020ANM-S1 should not be used when the air entering the filter is oxygen deficient (air with a low oxygen content). The MST Breathing Air Panel will not increase the oxygen content of oxygen deficient air.  
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MST, Inc. strongly recommends that a complete safety program be initiated to ensure that the respiratory air is in compliance with all OSHA standards and other applicable laws regulating the use of supplied air respiratory systems. MST, Inc. recommends that the air quality be tested upon installation and periodically re-tested to ensure that the minimum requirements for breathing air are maintained.

\*\*\*\*\*  
**WARNING:** The MST Breathing Air Panel BA020ANM-S1 will not remove Carbon Monoxide.  
 \*\*\*\*\*

This system is to be used only by trained qualified personnel in accordance with a respirator program as outlined in OSHA Regulation 29 CFR 1910.134(b). MST, Inc. will not assume any liability for accidents or personal injury resulting from the improper use of this equipment.

The air supply entering The MST Breathing Air Panel must meet two (2) criteria to ensure maximum efficiency of the MST filter system:

- 1) Temperature range should be between 68-150°F (20-65°C)
- 2) Liquid size range should be between 2-8 microns.

Conditioning equipment may be necessary, prior to the filter, to achieve this temperature range and bulk liquid removal.

\*\*\*\*\*  
**WARNING:** Maximum pressure supplied to this unit IS NOT to exceed 150 PSIG. Personal injury could result.  
 \*\*\*\*\*

The Regulator 80112 is used to adjust the air pressure supplied to the operator(s) to maintain the correct air exchange inside the mask. Consult instructions on your particular breathing mask or hood for pressure requirements per NIOSH. The Breathing Air Panel Model BA020ANM-S1 is supplied with 3/8" FPT at the inlet and two 1/4" Industrial Interchange Quick-Disconnects at outlet.

\*\*\*\*\*

**WARNING: DO NOT Exceed mask and hose assembly manufacturer's requirements for outlet pressure. Personal injury could result.**

\*\*\*\*\*

The filter cartridges used in the Breathing Air Panel Model BA020ANM-S1 have an average life expectancy of (3) three months, (depending on the quality of the air in your compressed air lines) under normal conditions. MST, Inc. recommends changing the two (2) filter cartridges after three months of use unless conditions warrant more or less frequent replacement.

## **SERVICE INSTRUCTIONS**

(Refer to Figure No.2)

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**WARNING: Always turn off air supply and bleed air pressure before disassembling unit or SERIOUS INJURY COULD RESULT.**

\*\*\*\*\*

MST, Inc. recommends replacing the two (2) filter cartridges after three (3) months of use unless conditions warrant more or less frequent replacement. To refill or replace the filter cartridge the Breathing Air Panel Model BA020ANM-S1, follow these steps:

### 1. PREFILTER FIRST/SECOND DUAL STAGE ELEMENT REPLACEMENT

- A) Unscrew Prefilter bowl Assembly 1 . Clean in mild soap and water and blow dry with low pressure air.
- B) Remove Dual Stage Element 2 by unscrewing End Cap Retaining Nut 3 .
- C) Inspect the Prefilter Manifold 4 for dirt/contaminates and clean as required. Inspect "O"-Ring 5 for cuts, etc. and replace if required.
- D) Install new Dual Stage Element and tighten End Cap Retaining Nut. Be sure Element is seated squarely on Manifold boss and End Cap.
- E) Apply light film of petroleum jelly on Bowl's beveled edge to provide good seal between Bowl and "O"-Ring. HAND TIGHTEN ONLY.
- F) Dispose of used Dual Stage Element according to local, state and federal regulations.

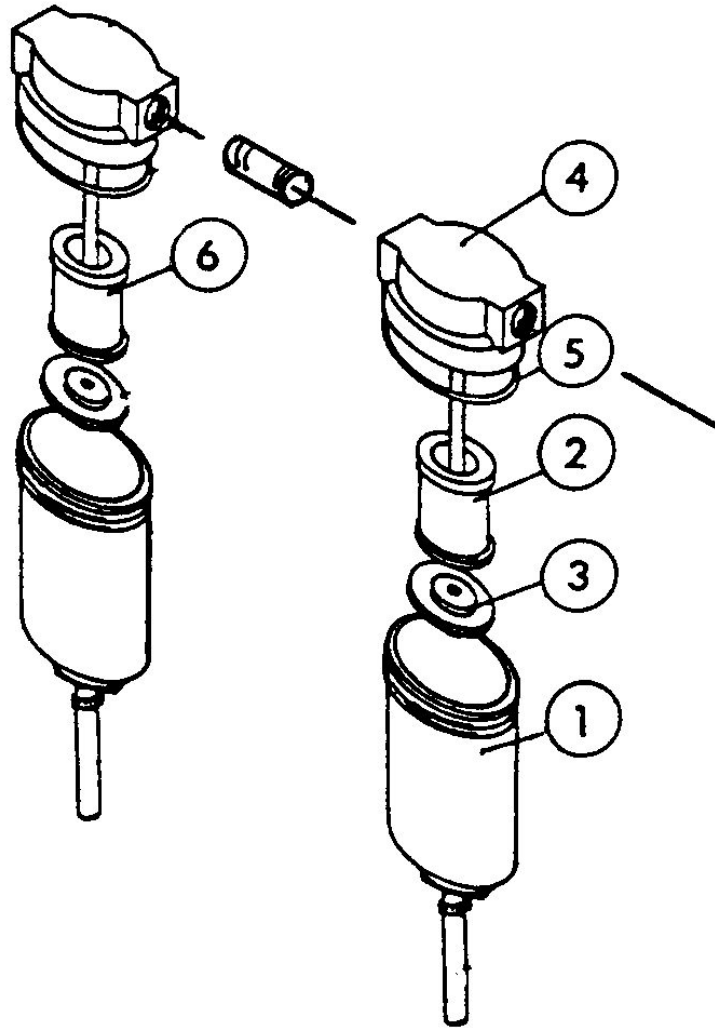
### 2. THIRD STAGE ADSORBER CARTRIDGE REPLACEMENT

The Absorber Cartridge change is required when any odor is detected by operator, and/or if any liquids are expelled out of Third Stage manual drain.

- A) Replace the Absorber Cartridge (6) using the above "Prefilter" replacement instructions.
- B) Dispose of used cartridge, according to local, state and federal regulations.

### 3. FINAL CHECK AND CALIBRATION

- A) Pressurize system and check for leaks.
- B) Flush system with compressed air for five (5) minutes.



**FIGURE NO.2**

## **RECORD KEEPING**

Record all periodical air quality checks, monitor calibration dates, filter cartridge change intervals and any other service performed on the MST Breathing Air Panel.

**MST INC. SHALL NOT BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE, (DIRECT OR CONSEQUENTIAL), ARISING OUT OF THE USE OF OR THE INABILITY TO USE THIS PRODUCT, BEYOND THE REPLACEMENT OF DEFECTIVE MATERIALS OR WORKMANSHIP. USER OF SUPPLIED AIR RESPIRATORS SHOULD EVALUATE THEIR OWN PARTICULAR APPLICATION AND PERFORM THEIR OWN TESTS FOR AIR QUALITY TO DETERMINE THE SUITABILITY FOR USE OF THIS PRODUCT.**

For further information, or questions about service or maintenance care of this unit, contact your local distributor or MST, Inc. at (800) 542-6646.



**MST, INC.**  
**SERVICE RECORD**  
**BREATHING AIR PANEL MODEL BA020ANM-S1**

<b>DATE OF SERVICE</b>	<b>SERVICE PERFORMED</b>

**SPECIFICATIONS**  
**BREATHING AIR PANEL**  
**MODEL BA020ANM-S1**

INLET PRESSURE (MAX.)	150 PSIG STATIC (10.4 BAR)
RATED AIR FLOW (MAX.)	20 SCFM (9.4L/s)
OPERATING PRESSURE	100 PSIG DYNAMIC (6.9 BAR)
OUTLET PRESSURE RANGE	0-125 PSIG (0-8.6 BAR)
OPERATING TEMP. RANGE	68-150°F (20-65°C)
OUTSIDE DIMENSIONS	16"L X 16"W X 5.5"D (406 mm X 406 mm X 140 mm)
WEIGHT	10 LBS. (4.5 Kg)
REPLACEMENT FILTER SET	FB020

## BREATHING AIR PANEL MODEL BA020ANM-S1 PARTS

- |   |                                    |    |  |
|---|------------------------------------|----|--|
| 1 | 80142, (1), 3/8" BALL VALVE        | 9  | 80014, (1), 1/4" x 150 PRV             |
| 2 | S608-005, (4), HEX NIPPLE -3/8"    | 10 | S623-003, (3), 3/8" x 90 ST. ELBOW     |
| 3 | 80126, (1), PREFILTER-20 SCFM      | 11 | S687-003, (1), 3/8" FLUSH PLUG         |
| 4 | 80051, (1), TUBE LOCKING COLLAR    | 12 | 80112, (1), REGULATOR                  |
| 5 | S710-005, (1), DRAIN TUBE          | 13 | 80528, (1) PRESSURE GAUGE, 0-160       |
| 6 | 80161, (1) ABSORBER FILTER         | 14 | S631-003, (1), 3/8" ST. TEE            |
| 7 | 80098, (1), 3/8" CROSS             | 15 | 80022, (2) 1/4"II x 3/8" MPT QUICK-DIS |
| 8 | S638-007, (1) 3/8" x 1/4" HEX BUSH | 16 | 80426, (1), 16" x 16" x 1/2" BOARD     |

