"Save Your Breath With MST® MODERN SAFETY TECHNIQUES"

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MST MODEL 5700 - 1/2
AIRLINE "CO" MONITORING SYSTEM
MANUAL

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

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07/14

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SPECIFICATIONS
MST AIRLINE "CO" MONITORING SYSTEM
MST MODEL 5700 - 1/2

MST MODEL 5700-1 (110 VAC)
MST MODEL 5700-2 (12 VDC)

SIZE:	10 3/4"W X 9 3/4"H X 7"D (273mm X 248mm X 179mm)
WEIGHT:	LESS THAN 7 LBS (3.2 KG)
OPERATING PRESSURE (MAX.):	100 PSIG DYNAMIC (6.9 BAR) (Flow meter to be set at (1.0) SCFH)
SENSOR TYPE:	ELECTROCHEMICAL
RANGE:	0-199 PPM CO
ACCURACY:	+/-5% OF READING
ALARM-TYPE:	PIEZOELECTRIC - 85 dB(A) AT (1) FT.
ALARM LEVEL SETTING:	USER ADJUSTABLE FACTORY SETTING: 10PPM (5 PPM IF SPECIFIED)
AMBIENT OPERATING TEMPERATURE RANGE:	32 - 104^{o} F (0 - 40 ^{o} C)
OTHER FEATURES:	PROTECTIVE ENCLOSURE ADJUSTABLE SAMPLE FLOW METER EXTERNAL REMOTE ALARM JACK LOW-BATTERY INDICATOR RED LED ALARM INDICATOR 9 VDC BATTERY BACK-UP

GENERAL DESCRIPTION

The MST Airline Carbon Monoxide Monitoring System is designed to take a continuous air source sample and monitor for levels of Carbon Monoxide. If pre-set alarm level is reached, a visual and audible alarm will be energized. The system is housed in a corrosion/water resistant carrying case.

GENERAL OPERATION

(Refer to Figure No. 1)

Initially power the monitor system by connecting the supplied 110 VAC or 12 VDC Adapter **(A)** to power source. Note that 9-volt transistor-type batteries can be installed in monitor at **(B)** to provide a back-up power source if the main power source fails. The regulated air source to be monitored will enter through system's inlet at **(C)**. The source air flow rate will be set at the Flow Meter Adjusting Knob **(D)**. The metered source air flow is then introduced to the Monitor's CO" Sensor at **(E)**. Audible/LED Lights **(F)** will be energized when the pre-set "CO" alarm level has been reached.

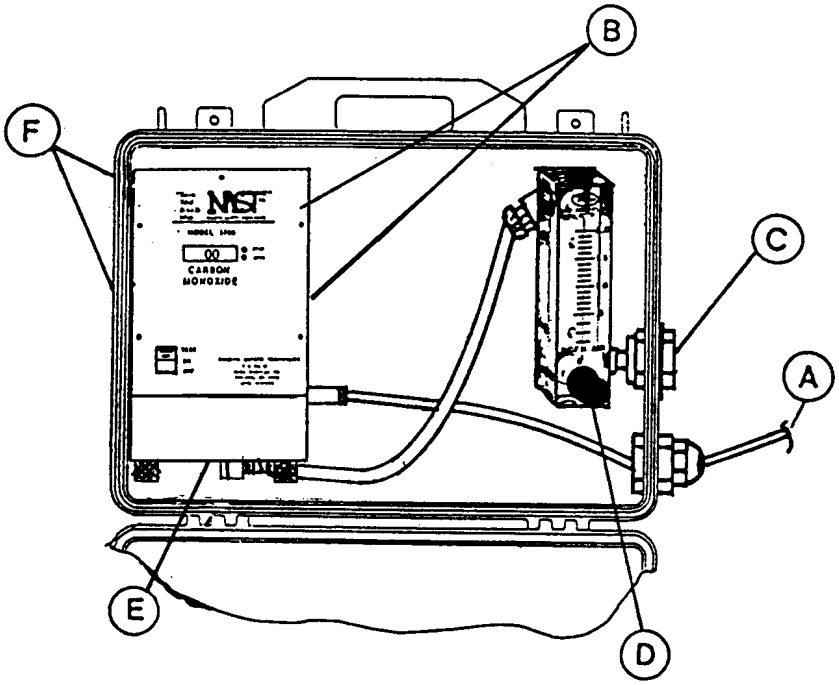

FIGURE NO. 1

GENERAL OPERATION

MST, Inc. strongly recommends that a complete safety program be instated to ensure that the respiratory air is in compliance with all OSHA/CSA standard 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.

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

CUSTOMER AIR SUPPLY (Refer to Figure No. 2)

1) SUPPLIED AIRLINE PRESSURE - The maximum air pressure at inlet of MST's Unit should not exceed 100 PSIG.

2) REGULATED SUPPLIED AIR - MST recommends that the supplied air be regulated to 100 PSIG max. pressure prior to entering the MST Unit so the air sample flow rate to monitor remains constant at 1.0 SCFH, or black floating ball is within the green boxed area etched on Air Sample Metering Valve.

3) SUPPLIED AIR CONDITIONING - Remove excessive water/oil from supplied air to prevent contamination/clogging of MST's Flow Meter and "CO" Sensor.

4) AVOID INSTALLING MST UNIT AFTER DESICCANT DRYER - The Desiccant Dryer produces extremely dry air, (4% R. H. or less), which over a period of time will dry the "CO" sensor out and decrease its life substantially.

MST'S AIRLINE "CO" MONITORING SYSTEM INITIAL INSTALLATION AND START-UP

(Refer to Figure No. 2)

1) SUPPLIED AIR HOOK-UP- MST Unit's inlet is supplied with 1/8" NPT female threads for customer hook-up. MST suggest the supplied air be regulated and free of large volumes of water/oil.

2) POWER MONITOR AND CALIBRATE - Connect MST's 110 VAC or 12 VDC Adapter to power source and let warm up for a minimum of (5) minute. If battery back-up is required, install the 9-volt transistor-type batteries in monitor at this time. (NOTE: The 9 volt batteries will power monitor for approximately (30-35) hours. After warm-up period, the "NORMAL GREEN LED" light will be on and the "ALARM RED LED" light will be faintly blinking. Monitor's calibration should be checked now. Refer to MST Monitor Manual.

3) CALIBRATION GAS REQUIREMENTS - Zero Gas: Nitrogen, free of "CO". Span Gas: 95 PPM of "CO" concentration in air. Calibration gas flow to monitor should be 1.0 SCFH (472 cc/minute).

4) EXTREME TEMPERATURE CHANGES: Avoid; MST Monitor best performs at an ambient temperature range of 32- 104^{o} F (0-40^{o} C). Always calibrate monitor after it has stabilized in the surrounding temperature where system is to be used.

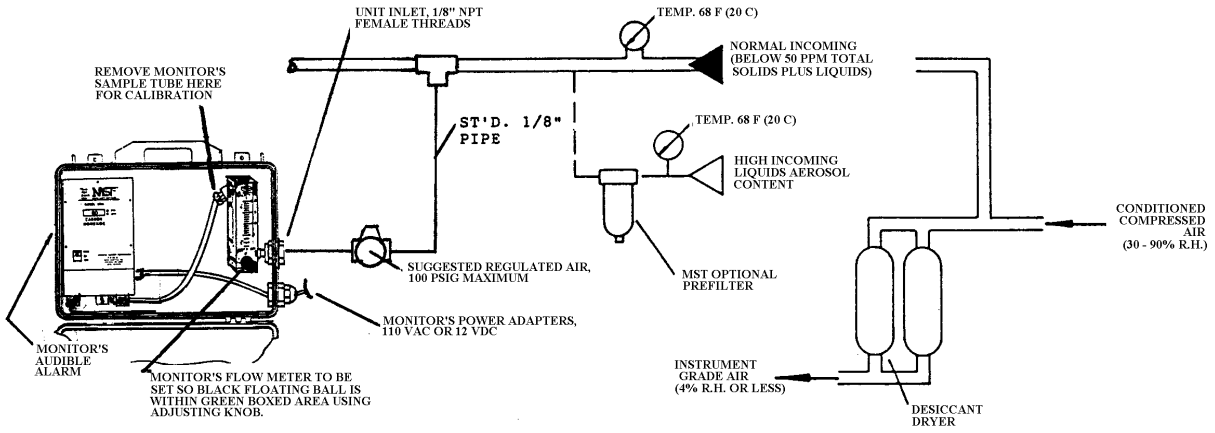

FIGURE NO. 2

AIR SAMPLE TO MONITOR ADJUSTMENT

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WARNING : SERIOUS INJURY could result if the AIR SAMPLE METERING VALVE is not properly adjusted. Proper sample air flow to 'CO' monitor is required for monitor to give correct 'CO' level readout.

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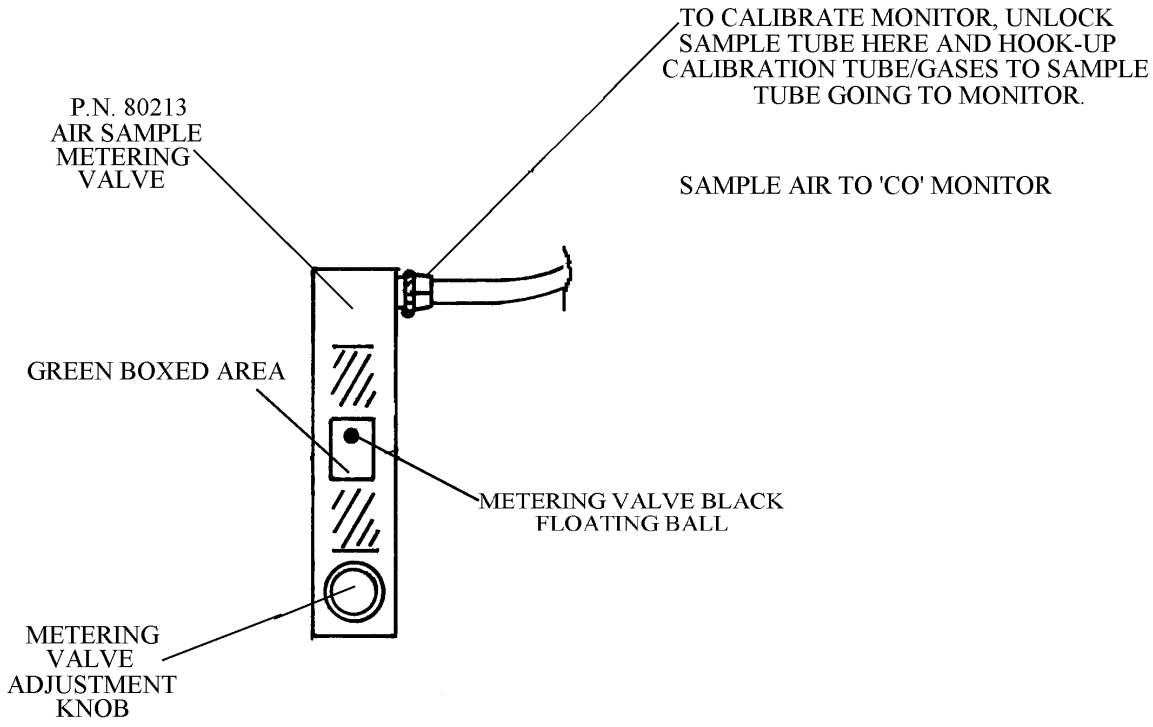
AIR SAMPLE METERING VALVE ADJUSTMENT

A) Pressurize system and set regulator for proper air flow to Airline Monitor Inlet, 100 PSIG Max.

B) Adjust Air Sample Metering Valve's adjustment knob so the black floating ball is within the GREEN BOXED area etched on valve body. Proper air sample is now being metered to the 'CO' Monitor. Periodically check to be sure ball is floating in this area.



MST AIRLINE "CO" MONITORING SYSTEM
GENERAL OPERATION AND MAINTENANCE

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WARNING: If the Monitor's alarm should sound, remove mask or hood immediately and move to a safe breathable atmosphere. Have the proper qualified personnel examine air system and make the appropriate corrections before using again.

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1) MONITOR ALARM CONDITION - The monitor will alarm due to one or more of the following conditions:

    a) Monitor is out of calibration. The Monitor should be calibrated monthly if used continuously and prior to use if used on a non-continuous basis. Calibrate Monitor as outlined in the MST Monitor Manual.

    b) If the Monitor can be and is calibrated, but the alarm still sounds, excessive CARBON MONOXIDE IS PRESENT IN YOUR AIR LINE. REMOVE MASK OR HOOD IMMEDIATELY AND MOVE TO A SAFE BREATHABLE ATMOSPHERE. CHECK AIR SYSTEM TO CORRECT PROBLEM BEFORE USING AGAIN.

    c) If the Monitor cannot be calibrated, the Carbon Monoxide Sensor may require replacement. See MST MONITOR MANUAL for replacement instructions and other trouble shooting information. The MST MONITOR has a (1) year warranty. All warranty work must be performed at factory.

    d) If the Monitor was calibrated in a surrounding temperature other than where the system was being used and the temperature difference was 36^{o} F (20^{o} C) or greater, the Monitor may give a false alarm due to its characteristics. Always calibrate the Monitor in the temperature conditions where the monitor is to be used in. Monitor best performs at temperature range of 32 to 104^{o} F (0 to 40^{o} C).

2) MONITOR "NORMAL" MODE - The Monitor's "NORMAL GREEN LED" light will be on full bright from 0-9 PPM of carbon monoxide and the "ALARM RED LED" light will be faintly blinking while the “Low Battery Amber LED” is off.

3) MONITOR "LOW BATTERY" MODE - If the power source should fail and the battery back-up is below a preset voltage output, the "AMBER LOW BATTERY LED" will come on. Note: The 9-volt batteries in the battery back-up system will power Monitor continuously for approximately (30-35) hours.

4) MONITOR "ALARM" MODE - If carbon monoxide concentrations exceeds the alarm point (factory set at 10 PPM), the "ALARM RED LED" light will come on full bright, the "NORMAL GREEN LED" light will be off and the audible alarm will sound.

5) CONTAMINATED AIR SUPPLY - If water and/or oil are visibly seen in the flow meter and/or sample tube to MST Monitor, excessive water and/or oil is present in the supplied air. These contaminates should be coalesced out prior to inlet of MST's "CO" Monitoring System to eliminate clogging of MST's Flow Meter and or "CO" Sensor.

RECORD KEEPING

Record all periodical air quality checks, monitor calibration date and any other service performed on the MST "CO" Monitoring System.

MST, INC. SHALL NOT BE LIABLE FOR ANY INJURY LOSS OF DAMAGE, (DIRECT OR CONSEQUENTIAL), ARISING OUT OF THE USE OF OR THE INABILITY TO USE THIS PRODUCT, BEYOND THE REPLACEMENT OF THE 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. @ (800) 542-6646.

SERVICE RECORD
MST AIRLINE "CO" MONITORING SYSTEM
MODEL 5700 - 1/2

DATE OF SERVICE	SERVICE PERFORMED

MST "CO" AIRLINE MONITOR SYSTEM
MODEL 5700 - 1/2 PARTS

1) 80211, (1), CASE
2) 80210, (1), BRASS BULKHEAD ASSEMBLY
3) 80243, (1), PLASTIC BULKHEAD ASSEMBLY
4) S603-001, (1), $^1/_8$" CLOSE NIPPLE
5) S623-001, (1), $^1/_8$" - 90^o STREET ELBOW
6) 80213, (1), 0-2.0 SCFH FLOW METER
7) 80261, (1), TUBE LOCKING COLLAR
8) 80247, (1), 110 VAC ADAPTER FOR MODEL 5700-1
9) 80123. (1), 12 VDC ADAPTOR FOR MODEL 5700-2
10) 80127, (1), MST "CO" MONITOR, MODEL 5700
11) 80133, (1), "CO" SENSOR