

ENMET

680 Fairfield Court
Ann Arbor, MI 48108
734.761.1270 Fax 734-761.3220

www.enmet.com

ENMET

Creative Gas Detection Solutions



AFS-100 Operation and Maintenance Manual

Table of Contents

1.0 INTRODUCTION..... 2

 1.1 Unpack..... 2

 1.2 Check Order 2

 1.3 Serial Numbers 2

2.0 FEATURES 3

3.0 OPERATION 5

 3.1 Installation 5

 3.2 Flow Rate and Pressure 5

 3.3 Simultaneous Operation of Respirators 5

 3.3.1 High-Flow Requirement Respirators (Hoods)..... 5

 3.3.2 Low-Flow Requirement Respirators (Face Mask) 5

4.0 MAINTENANCE 6

 4.1 Filter Change 6

 4.2 Fluid Drains 6

 4.3 Cleaning Polycarbonate Filter Bowl..... 6

 4.4 Lubricates 6

5.0 REPLACEMENT AND ACCESSORY PART NUMBERS 6

 5.1 Replacement Parts and Kits 6

 5.2 Options and Accessories..... 6

 5.2.1 Optional Equipment Part Numbers 6

List of Illustrations

FIGURE 1: AFS – 100 FEATURES.....4

Reference Information:

NOTE: *[important information about use of instrument]*

CAUTION: *[affects equipment – if not followed may cause damage to instrument, sensor etc....]*

WARNING: *[affects personnel safety – if not followed may cause bodily injury or death.]*



Attention / Warning



Earth Ground

1.0 Introduction

The **AFS – 100** System filters oil, water and solid particles from compressed air used for breathing. The single source to one to five users of high-flow requirement respirators, 20 cfm each. The **AFS – 100** does not filter carbon monoxide (CO) from breathing air, but it is compatible with electronic carbon monoxide monitors such as **ENMET** models CO-Guard, CO-Guard-MOS and ISA-300RAL.

NOTE: All specifications stated in this manual may change without notice.

1.1 Unpack

Unpack the **AFS – 100** and examine it for shipping damage. If such damage is observed, notify both **ENMET** customer service personnel and the commercial carrier involved immediately.

Regarding Damaged Shipments

NOTE: It is your responsibility to follow these instructions. If they are not followed, the carrier will not honor any claims for damage.

- This shipment was carefully inspected, verified and properly packaged at our company and delivered to the carrier in good condition.
- When it was picked up by the carrier at **ENMET**, it legally became your company's property.
- If your shipment arrives damaged:
 - Keep the items, packing material, and carton "As Is." Within 5 days of receipt, notify the carrier's local office and request immediate inspection of the carton and the contents.
 - After the inspection and after you have received written acknowledgment of the damage from the carrier, contact **ENMET** Customer Service for return authorization and further instructions. Please have your Purchase Order and Sales Order numbers available.
- **ENMET** either repairs or replaces damaged equipment and invoices the carrier to the extent of the liability coverage, usually \$100.00. Repair or replacement charges above that value are your company's responsibility.
- The shipping company may offer optional insurance coverage. **ENMET** only insures shipments with the shipping company when asked to do so in writing by our customer. If you need your shipments insured, please forward a written request to **ENMET** Customer Service.

Regarding Shortages

If there are any shortages or questions regarding this shipment, please notify **ENMET** Customer Service within 5 days of receipt at the following address:

ENMET
680 Fairfield Court
Ann Arbor, MI 48108
734-761-1270/734-761-3220 Fax

1.2 Check Order

Check the contents of the shipment against the purchase order. Verify that the **AFS – 100** is received as ordered. If there are accessories on the order, ascertain that they are present. Check the contents of calibration kits. Notify **ENMET** customer service personnel of any discrepancy immediately.

1.3 Serial Numbers

Each **AFS – 100** is serialized. These numbers are on tags on the equipment and are on record in an **ENMET** database.

2.0 Features

Refer to Figure 1 for component layout diagram.

Feature	Description
Inlet Port	¾ " NPT, female. The inlet pipe must be at least ¾ inch; we recommend one inch, or larger, with size reduced immediately before the panel connection. Quick-disconnect pneumatic connectors can be used at this point <i>ONLY IF</i> they do not restrict the flow rate excessively.
Coalescer Gauge	Indicates when filter needs to be replaced
Prefilter	Prefilter: removes large oil, water and solid particles from the compressed air. The prefilter extends the life of the Coalescer and adsorber filter elements.
Prefilter Drain	For periodically removing collected fluids in the prefilter bowl.
Manifold Pressure Regulator	For adjusting the pressure in the air distribution manifold. The pressure setting depends on the required manifold pressure and recommended respirator flow rate. Maximum pressure is 100 PSI. NOTE: The pressure relief valve sets this maximum. Any noisy hiss is a release of pressure coming from the valve, <i>NOT</i> the regulator, and indicates that a pressure adjustment is necessary because the 100 PSI maximum is exceeded.
Manifold Pressure Gauge	160 PSI pressure gauge; indicates manifold pressure, for setting the pressure for the particular respirator application.
Manifold	Provides uniform air distribution to four respirators and carbon monoxide monitor.
Adsorber	Removes odor from air system
Adsorber Drain	For periodically removing collected fluids in the adsorber bowl.
Coalescer	Coalescer filter: High-efficiency filter removes oil mist and fine (sub-micron) particles.
Coalescer Drain	For periodically removing collected fluids in the prefilter bowl.
Respirator Line Quick Disconnects (5)	For connecting respirator air lines. They are compatible with Hansen series 1000 quick-disconnects. Other fittings may be substituted; manifold holes are ½ " NPT
Carbon Monoxide Monitor Connector	Quick-disconnect for supplying an air sample to a carbon monoxide monitor.
Pressure Relief Valve	Spring-loaded relief valve activated by a manifold pressure of 100 PSI, to prevent overpressure of components attached to the filter panel.
Name Plate / Mini Manual	Labels include serial number for factory identification, cautions and short-form operation instructions.
Mounting Plate(Optional)	14-gauge steel mounting plate, to mount AFS – 100 and optional CO monitor. Not shown in Figure 1.

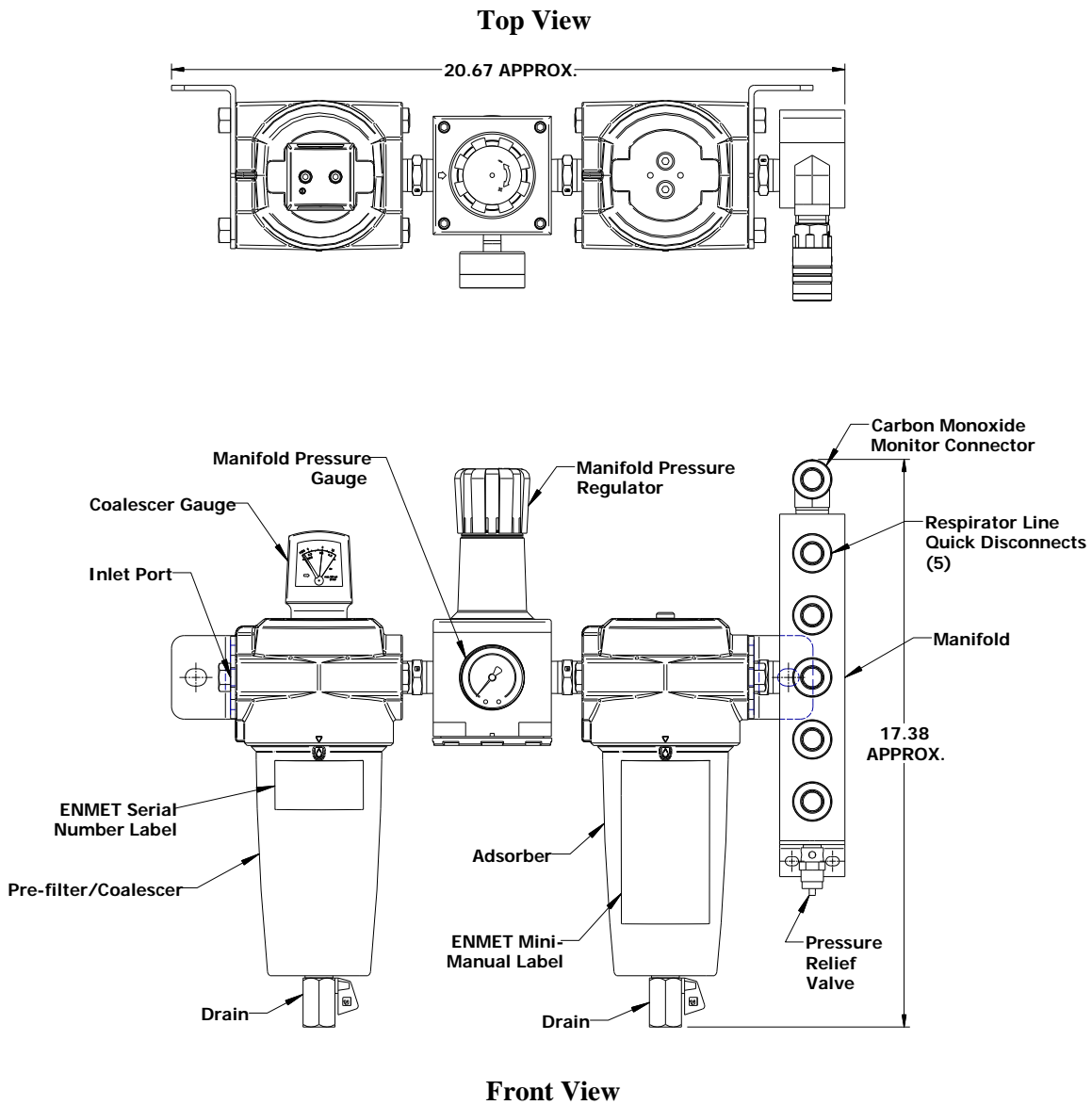


Figure 1: AFS – 100 Features

3.0 Operation

Prior to use *ALWAYS* open valve on adsorber bowl and drain any fluid that has accumulated.

3.1 Installation

Connect the respirators to the standard **AFS – 100** manifold. Use appropriate diameter air lines to provide sufficient pressure and flow. Air-line diameter should be at least $\frac{3}{4}$ "; we recommend 1" diameter lines. Quick-disconnect fittings on standard **AFS – 100** manifold are compatible with Hansen series 1000 quick-disconnect fittings. Other fittings may be substituted; manifold holes are $\frac{1}{2}$ " NPT.

Adjust the manifold pressure to yield the recommended pressure and flow rate to the respirators. Check the manifold pressure periodically.

3.2 Flow Rate and Pressure

The air filtration panel can provide up to 100 CFM total air flow:

Incoming Air Pressure	Rate
Minimum recommended	100 PSI
Maximum allowable	230 PSI
Maximum manifold pressure	100 PSI

CAUTION: A greater manifold pressure causes the pressure relief valve to vent.

3.3 Simultaneous Operation of Respirators

3.3.1 High-Flow Requirement Respirators (Hoods)

Such as: 3M Hoods and Helmets – Softcap hoods, Economy Hoods, Whitecap abrasive and welding helmets. (Other manufactures such as Bullard and MSA also furnish high-flow requirements hoods.)

Air Flow: operating pressures range 50 to 90 PSI. Whitecap systems may include Vortex cooling and Vortemp heating; 20 CFM each.

Others: 15 CFM

Up to 4 ports may be used, depending on the type of respirator.

3.3.2 Low-Flow Requirement Respirators (Face Mask)

Such as: American Optical, Scott, Bullard, Robert Shaw, MSA, SurvivAir, Norton, 3M, Pulmosan, Wilson (and others)

Air Flow: Operation pressure range 20 to 100 PSI.

Full or half-face mask respirators require 4 – 10 CFM.

All three available exit ports can be used to operate low-flow requirement respirators.

4.0 Maintenance

As the amount of matter collected in the prefilter/coalescer increases, the pressure from the input port to the prefilter/coalescer will drop. See section 4.1 for filter change procedure.

4.1 Filter Change

- De-pressurize the system.
- Replace coalescer element when the pressure drop from incoming to regulator is greater than 10 PSI. This filter retains fine particles and oil mist that pass the prefilter.
- Replace Adsorber when odor is unacceptable.

4.2 Fluid Drains

- ➔ There should not be more than one inch of liquid in the bottom of the coalescer/adsorber bowl.
- ➔ *NO fluid in Adsorber.*

Turn valve to open and drain the prefilter/coalescer and adsorber bowl. Prior to **EACH** use check and drain the adsorber bowl.

4.3 Cleaning Polycarbonate Filter Bowl

The adsorber bowl may need cleaning once in a while. Oil and other residues accumulate as they are filtered from compressed air.

- De-pressurize the system
- Remove the bowl guard and bowl.
- Clean the bowl. Use a mild soap and water only.
- Replace the bowl and guard.

CAUTION: Avoid bowl damage:

Do Not use chlorinated hydrocarbons, alcohol or other solvents.

Do Not exceed a pressure of 125 psi.

Do Not exceed a temperature of 110 F°.

Always operate with the bowl guard in place.

4.4 Lubricates

To avoid damage to the bowl, use only natural-based non-toxic compressor lubricants.

Do Not Use synthetic fluids, fire-resistant lubricants (i.e., Phosphate, Esther), oils containing detergents or other additives.

5.0 Replacement and Accessory Part Numbers

5.1 Replacement Parts and Kits

ENMET replacement part numbers:

Description	Part Number
Element Kit, Coalescer	73089-091
Element Kit, Adsorber	73089-092
Gauge, 160 PSI (Back Mount)	73089-054
Relief Valve	73060-012

5.2 Options and Accessories

5.2.1 Optional Equipment Part Numbers

The filtration system and an *ENMET* CO monitor CO-Guard, CO-Guard-MOS or ISA-300RAL can be mounted on one support plate.

Description	Part Number
Wall Mount Plate	03462-002
CO-Guard, Compact CO Monitor with electrochemical sensor	03481-005
CO-Guard-MOS, Compact CO Monitor with MOS sensor	03481-040
ISA-300RAL, Compact CO Monitor with electrochemical sensor	03408-300
ISA-300RAL, Compact CO and O2 Monitor with electrochemical sensor	03408-301

6.0 Terms and Conditions

6.1 Ordering Information

Address orders to:

ENMET

Attention: Customer Service Department
680 Fairfield Court
Ann Arbor, MI 48108

Email Orders: orderentry@enmet.com

Phone: 734-761-1270

Fax: 734-761-3220

You may also contact our customer service department by email info@enmet.com. MINIMUM ORDER IS \$50.00.

6.2 Delivery

Unless Seller otherwise specifies, delivery will be made: FOB Ann Arbor, MI and/or FOB Bowling Green, KY. Title and risk of loss shall pass to Buyer at that point. Shipping and handling charges will be Prepaid and Added to Buyer's invoice. Buyer may request shipping be charged to their own account with a preferred carrier. Seller shall have the right to choose means of transportation and to route shipment when specific instructions are not included with Buyer's order. Seller agrees to deliver the goods and services, within the time, in accordance with specifications, at the prices specified on the face hereof. Buyer's orders to this quotation are not subject to cancellation or deferral of delivery without indemnification of loss to the Seller resulting there from. Seller shall not be liable to Buyer for any loss or damage sustained on account of this delay or nonperformance due to causes beyond Seller's control and without his fault or negligence. Where performance of the terms here is contingent upon timely delivery of goods or services by the Buyer and such delivery is in default, Seller shall be indemnified for any damage or loss resulting there from, and/or by extension of Seller's delivery commitment, as applicable.

6.3 Payment Terms

Payment Terms are Net 30 Days from the date of shipment from Seller unless otherwise noted. All shipping and handling costs will be charged to Buyer on a Prepaid and Add basis. Buyer has the option of paying for shipping by charging its own account with a carrier

6.4 Warranty Information and Guidelines

The Seller warrants new instruments to be free from defects in workmanship and material under normal use for a period of one year from date of shipment. The warrant covers both parts and labor excluding calibration and expendable parts such as filters, detector tubes, batteries, etc. If the inspection by the Seller confirms that the product is defective, it will be repaired or replaced at no charge, within the stated limitations, and returned prepaid to any location in the United States. The Seller shall not be liable for any loss or damage caused by the improper use or installation of the product. The Buyer indemnifies and saves harmless the Seller with respect to any loss or damages that may arise through the use by the Buyer or others of this equipment. This warranty is expressly given in lieu of all other warranties, either expressed, implied or statutory, including that of merchantability, and all other obligations, or liabilities of ENMET, LLC for damages arising out of or in connection with the use or repair or performance of the product. In no event shall ENMET, LLC, be liable for any indirect, incidental, special or consequential damages or for any delay in the performance by ENMET, LLC, which may arise in connection with this equipment. ENMET neither assumes nor authorizes any representatives or other persons to assume for it any obligation or liability other than that which is set forth herein. Buyer agrees to indemnify and save harmless Seller for any damage or loss from lawsuits against Seller by reason of manufacture of sale of materials, parts, or use of processes resulting from Buyer's design specifications. Any patent, design, pattern, tool, die, jig, fixture, drawing, test equipment, or process furnished by Seller; whether possessed by the Seller before the date of this quotation, or devised or acquired by Seller during performance of the terms of this quotation, shall remain the property of the Seller except by specific stipulation on the face hereof. Seller reserves the right, without liability, for damage or loss, to destroy Buyer's drawings, specifications, patterns and special tools supplied by Buyer for performance of the terms on the face hereof, unless Buyer gives notice of the disposition of such items.

6.5 Return Policy

All returns for credit must be approved in advance by ENMET, LLC. Such returns are subject to a minimum \$50.00 or 20% restocking charge, whichever is greater. **Approval of equipment for return is totally at the discretion of ENMET, LLC.** All requests for return/exchange must be made no later 30 days of the original shipping date from ENMET. The actual amount of any resulting credit will not be determined prior to a complete inspection of the equipment by ENMET. Calibration gas cylinders cannot be returned or restocked.

7.0 Instructions for Returning an Instrument for Service

Contact the ENMET Service Department for all service requests.

Phone: 734-761-1270

Email: repair@enmet.com

Fill out the “Service Request Form” found at the end of this manual and return with your instrument for all needs. Please send your instrument for service to the site in which the product was purchased. A new “Service Request Form” may be requested if the one found in the manual is not available. All instruments should be shipped prepaid to ENMET.

Address for Service:

Michigan Location:

ENMET
Attention: Service Department
680 Fairfield Court
Ann Arbor, MI 48108

Kentucky Location:

ENMET
62 Corporate Court
Bowling Green, KY 42103

Providing the “Service Request Form” assists in the expedient service and return of your unit and failure to provide this information can result in processing delays. **ENMET** charges a one hour minimum billing for all approved repairs with additional time billed to the closest tenth of an hour. All instruments sent to **ENMET** are subject to a minimum evaluation fee, even if returned unrepaired. Unclaimed instruments that **ENMET** has received without appropriate paperwork or attempts to advise repair costs that have been unanswered after a period of 60 days may, be disposed of or returned unrepaired COD and the customer will be expected to pay the evaluation fee. Serviced instruments are returned by UPS/FedEx Ground and are not insured unless otherwise specified. If expedited shipping methods or insurance is required, it must be stated in your paperwork.

NOTE: *Warranty of customer installed components.*

For Warranty Repairs, please reference **ENMET's** “Warranty Information and Guidelines” (found earlier in this section).

Mailing/Shipping Address:

ENMET
680 Fairfield Court
Ann Arbor, MI 48108
repair@enmet.com



Phone: 734.761.1270
Fax: 734.761.3220

Service Request Form

Product Name or Number:

Product Serial Number:

Describe Problem or Needed Service:

Warranty Claim? Yes No

CUSTOMER INFORMATION

Billing Address:

Shipping Address:

Contact Name:

Phone #:

Email:

Fax #:

PO/Reference

#:

PAYMENT METHOD

- COD VISA/MasterCard American Express

Card Number

Exp. Date

Security Code:

Name as it Appears on Card:

RETURN SHIPPING METHOD

- UPS Ground UPS 3 Day Select UPS Next Day Air UPS ND Air Saver UPS 2 Day Air

UPS Account #: _____

- FedEx Ground FedEx Air Express Saver FedEx Air Overnight Std. FedEx Air 2 Day FedEx Air Overnight P-1

FedEx Account #: _____

Insure Shipment: Yes No

Insurance \$
Amount: _____