WOM-4 Automatic Water-Oscillating Monitor

Description
The ANSUL® WOM-4 automatic water-oscillating monitor is a master stream device for fixed locations and is designed for use with water or foam. The sweep is pre-set at installation to cover the hazard area and is also field adjustable.

The water flowing through the device powers the monitor to oscillate up to 165° horizontally. This eliminates the need for wiring or hydraulic controls. Elevation is pre-set by use of a handwheel worm gear drive.

Water fog, straight bore, or air-aspirating nozzles may be used with the WOM-4 1,750 gpm (3,785 Lpm) capacity monitor. Automatic nozzles should not be used. For more information, see the following data sheets:
- Air Aspirating Foam Nozzle AFN-2 (Form No. F-86187-2)
- Master Stream Monitor Nozzles (Form No. F-8586-5)
- Self-Educting Master Foam Nozzles (Form No. F-99132-05)

Features
The WOM-4 automatic water-oscillating monitor has the following features:
- Elevation lock is easily set to any angle with the handwheel
- Externally accessible controls including the test connection, selector valve, speed control valve, and in-line filter
- Quick winterization is easy with no need for the readjustment of end stops, breaking of plumbing, or use of glycol pumps
- Simple functionality of the manual override reduces training requirements
- Simple automatic valve circuit uses only one four-way water valve
- Reliable chain drive is fully accessible by an easily removable cover
- All working parts are made or plated with corrosion-resistant materials

Specifications and Materials
The WOM-4 automatic water-oscillating monitor is operated by a reciprocating, water-powered piston and cylinder. A small flow of water that by-passes the monitor inlet through a four-way valve drives the cylinder. A stroke adjustment nut at each end of a threaded rod actuates the toggle action four-way valve. This automatically reverses the cylinder at each end of the stroke. A stainless roller chain is attached to the cylinder heads and engages a sprocket on the monitor base. This converts the reciprocating cylinder motion to the oscillating motion.

Inlet
- Type: Eight hole aluminum flange
- Size: 4 in. (102 mm)
- Weight: 150 lb (69 kg)

Discharge
- Special flanged connection for AFN-2 nozzle
- NH nozzle adaptor is required for master stream nozzles

Vertical Range Setting
The vertical range setting is 24° below horizontal to 90° above horizontal.

Arc of Oscillation
The arc of oscillation is 0° through to 165°. When used with a dispersed pattern, a 165° monitor sweep results in 180° coverage. A dispersed pattern with a reduced range is required to meet foam application rates. The stock setting is 82.5° to either side of front center. The arc sweep is field adjustable in 7.5° increments throughout 360°.
### Specifications and Materials (Continued)

#### Weight
The weight is 130 lb (59 kg) without a nozzle.

#### Operating Pressure
The maximum operating pressure is 10.34 bar (150 psi).

#### Material Used
- Waterway: A-356-T6 anodized aluminum
- Chain: Stainless steel
- Tube fittings, cylinder heads, valves, and piston: Brass
- Rigid tubings: Stainless steel
- Flex tubing: Nylon
- Rod: Stainless steel and hard chrome plated
- Finish on chassis and covers: Enamel over primer
- Cylinder: Oriented fiberglass in epoxy matrix with non-corrosive, lubricating, isophthalic polyester lining
- Seals: BunaN and Teflon
- Swivels: Anodized aluminum
- Ball: Stainless steel
- Working steel parts - plated with bright zinc

#### Mounting
Direct to 4 in. (102 mm) 150 lb (68 kg) raised face flange. If plumbing is not adequate to support the monitor, four holes for 5/8 in. (16 mm) diameter bolts are provided in the chassis for mounting. A stand is available for floor mounting.

#### Test connection
Externally accessible 3/4 in. – 11 1/2 TPI NHT (garden hose) brass female swivel fitting with screen.

#### Speed Control
Externally accessible brass needle valve.

#### “Run-Test” Selector
Externally accessible 3-way brass body ball valve with stainless steel ball and Teflon seats with provision for security seal in "run" position.

#### Filter
Brass body and cap with reusable 90 micron sintered bronze element. The cap is externally accessible for standard cleaning.

#### Freeze Protectable
Freeze protectable without the use of tools, glycol pumping devices, adjustment of end stops, or breaking of plumbing.

#### Manual Operation
Possible use of selector valve and removal of ring pin.

#### Nozzle
ANSUL model AFN-2 air aspirating foam nozzle or adapter with non-aspirated master stream nozzles for water and Aqueous Film Forming Foam (AFFF) use.

### Application
- Aircraft Hangars
- Chemical Processes
- Fueling Areas
- Lumber Mills
- Helipads
- Coal Storage
- Refineries
- Paper Mills
- Tank Farms
- Dust Abatement
- Docks
- Satellite Facilities
- Railroad Yards
- Exposure Protection

### Ordering Information
When ordering WOM-4 automatic water-oscillating monitor, use the following information:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Model</th>
<th>Approximate Shipping Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>402675</td>
<td>WOM-4</td>
<td>150 (68.0)</td>
</tr>
<tr>
<td>400987</td>
<td>Support Stand</td>
<td>70 (31.7)</td>
</tr>
</tbody>
</table>

#### Adaptors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>73743</td>
<td>WOM-4 Flange x 2 1/2 NH Aluminum</td>
</tr>
<tr>
<td>415794</td>
<td>WOM-4 Flange x 2 1/2 NH Brass</td>
</tr>
<tr>
<td>431039</td>
<td>WOM-4 Flange x 3 1/2 NH Brass</td>
</tr>
</tbody>
</table>

### Oscillating Monitor Nozzle Data
To determine the maximum arc of oscillation and achieve a specific foam application rate (gpm/ft²) given a known nozzle flow rate and range, use the following formula:

\[
X° = \frac{F (360°)}{(R)^2 (\pi)(A)}
\]

Where:
- \(X\) = Maximum arc of oscillation in degrees
- \(R\) = Nozzle range in ft
- \(\pi\) = 3.1416
- \(F\) = Nozzle flow rate in gpm
- \(A\) = Application rate in gpm/ft²

**Example:** Given –
- Nozzle flow rate of 1,250 gpm at 100 psi, (330 gpm at 6.9 bar)
- Desired nozzle range of 125 ft (1,500 m)
- Desired application rate of 0.1 gpm/ft² (AFFF)

What is the maximum arc of oscillation allowable?

\[
X° = \frac{(1,250)(360)}{(125)^2 (3.1416)(0.1)} = 92°
\]
Optional Support Stand

1/2 IN. (13 mm) DIAMETER MOUNTING HOLES (8 PL)

22° – 30°

11 1/2 IN. (292 mm)

14 IN. (356 mm)

20 1/4 IN. (514 mm)

27 1/2 IN. (699 mm)

4 1/4 IN. (108 mm)

26 1/8 IN. (664 mm)

Note: Pipes and flanges are not supplied by ANSUL.

Friction Loss vs Flow Rate

4 1/4 in. Waterway, 4 in. Flange, and 4 in. Outlet

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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