



## MANUAL STORM™ BRASS NOZZLES STYLE 2171, 5071 OPERATING AND MAINTENANCE INSTRUCTION

The following is intended to provide basic instructions for the operation and maintenance of the Manual Storm™ Brass Nozzles. Read and understand these operating instructions before use.

### PRODUCT RATING:

Maximum Pressure: 200 psi

- Style 2171: fixed baffle set for specific flows between 500 and 2000 gpm at a specific pressure between 70 and 120 psi
- Style 5071: pressure balanced baffle, 1000 - 2000 gpm at 80 psi

### PRODUCT WARNINGS:

- ⚠ **WARNING:** Charge the unit slowly. Rapid charging may cause a pressure surge which has a potential to cause an injury, or damage the nozzle and associated equipment.
- ⚠ **WARNING:** Aim the unit in a safe direction before pumping water through it. Hitting power lines can cause electrocution. Do not use for fighting electrical fires.
- ⚠ **WARNING:** DO NOT exceed the maximum pressure rating of the nozzle. Exceeding this has the potential to cause an injury or damage the nozzle.
- ⚠ **WARNING:** Ensure the thread on the nozzle swivel matches the thread on the monitor outlet. Mismatched threads may allow the nozzle to suddenly come off under pressure, possibly causing property damage and/or serious bodily injury.
- ⚠ **WARNING:** The Storm Nozzle can produce large reaction forces. The device it is mounted on must be strong enough to withstand these reaction forces. Do not mount the nozzle on a hose or in a portable hose holder.
- ⚠ **WARNING:**
  - Your nozzle should be inspected prior and after each use, to ensure it is in good operating condition.
  - Periodically, an unanticipated incident may occur where the nozzle is used in a manner that is inconsistent with standard operating practices and those listed in IFSTA. A partial list of potential misuses follows:
    - Operating above maximum rated pressure and flow.
    - Not draining, and allowing water to freeze inside nozzle.
    - Dropping nozzle from a height where damage is incurred.
    - Prolonged exposure to temperatures above +130° F, or below -25° F.
    - Other misuse that might be unique to your specific fire fighting environment.

Also, there are many “tell tale” signs that indicate nozzle repair is in order, such as:

- Controls that are either inoperable or difficult to operate.
- Excessive wear.
- Poor discharge performance.
- Water leaks.

If any of the above situations are encountered, the nozzle should be taken out of service and repaired, plus tested by qualified nozzle technicians, prior to placing it back into service.

#### **PRODUCT CAUTIONS:**

- For use with water or standard firefighting foams only. Flush with fresh water after using with foam.
- Replace any tags or bands that are damaged or cannot easily be read.
- The nozzle is configured for optimum performance. Do not alter in any manner.
- Do not overtighten the nozzle onto an appliance connection.
- Ensure that the nozzle is properly matched to the eductor or proportioning system.

#### **GENERAL:**

An Automatic Nozzle, by definition is:

- 1) A nozzle designed to maintain a constant operating pressure over a wide range of flows.
- 2) A nozzle that effectively uses available water for maximum performance within its operating range.

The functions of the Automated Nozzle are to:

- 1) Efficiently apply the available water at the optimum pressure within its operating range.
- 2) Allow the maximum flow of the available water at the optimum nozzle pressure within its operating range.
- 3) eliminate the need for the nozzleman to adjust the nozzle for varying flow rates.
- 4) Cover a wide flow range which reduces the need for different nozzle sizes and styles.

#### **OPERATING INSTRUCTIONS**

##### **DETERMINING FLOW**

In determining flows or attempting to achieve specific flows with an automatic nozzle, it is important to understand that:

1. Nozzle pressure is as much a factor in flow as friction loss. Different nozzle pressures result in different flows at the same pump pressure.
2. Different baffle mechanisms react to water differently and thus operate at different nozzle pressures.
3. Nozzle reaction is mainly a result of flow. The greater the nozzle reaction, the greater the flow.

Due to the Akroflow Modulated Flow Mechanism, the 5071 Automatic Nozzle will more closely maintain approximately 80 P.S.I. nozzle pressure over the nozzle's operating range. Consequently, you can use the following formula to determine given flows:

$EP=FL+NP$  (+ loss or gain due to elevation)

EP=Engine pressure

FL=friction loss for hose size, length and desired GPM

NP=Nozzle Pressure

Note: Loss or gain due to elevation=approximately  $\frac{1}{2}$  P.S.I. per foot of height difference between the nozzle and the pump. With a Style 5071 Storm nozzle, assign 80 P.S.I. nozzle pressure at all times.

#### **PATTERN CHANGE**

- To change the spray pattern rotate the pattern sleeve using the handles. Rotate it clockwise for straight stream and counterclockwise for a wide fog. (tighten the forward handle to lock the pattern in position.)

#### **MAINTENANCE**

- Under normal conditions, periodically flushing the nozzle with clean water and cleaning grit and dirt from around exterior moving parts will allow the nozzle to operate properly.
- Over time the seals may need to be replaced. This can be accomplished by purchasing the appropriate Akron repair parts. Use qualified maintenance mechanics or return the nozzle to Akron Brass for repair.



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