

**For Non-Health Hazard Applications**

Job Name \_\_\_\_\_ Contractor \_\_\_\_\_  
 Job Location \_\_\_\_\_ Approval \_\_\_\_\_  
 Engineer \_\_\_\_\_ Contractor P.O. No. \_\_\_\_\_  
 Approval \_\_\_\_\_ Representative \_\_\_\_\_

# Model 9BD

## Backflow Preventer for Vending Machine Water Supply Lines

Watts 9BD prevents backflow of carbon dioxide gas and carbonated water into the water supply system to vending machines, thus eliminating the hazardous reaction of carbon dioxide with copper tubing.

Its design features include a double check valve assembly to assure positive, dependable seating protection. For trouble-free longevity, it is also equipped with a ball check valve which is a third-check member, its main function being to prevent backpressure on each pump cycle from unnecessarily acting directly on the check members. Instant check valve response prevents unnecessary vent discharge during pump "off cycle".

Vent discharges CO<sub>2</sub> gas to atmosphere in the event of fouling or malfunction of check No. 2 thereby safeguarding the potable water system from CO<sub>2</sub> gas contamination. In line design minimizes pressure drop across the valve thereby assuring maximum pump performance.

### FEATURES

- ✦ *Stainless steel body and parts*
- ✦ *Instant check valve response*
- ✦ *Minimum pressure drop*
- ✦ *Triple check protection of the water supply*

### SPECIFICATIONS

Maximum pressure 150 psi (10.34 bars). Maximum temperature 140°F (60°C). Suitable for initial pressures up to 150 psi (10.34 bars). All stainless steel body and heavy duty rubber parts assure the longest and most dependable operating life. All rubber compounds comply with FDA food additive regulations.

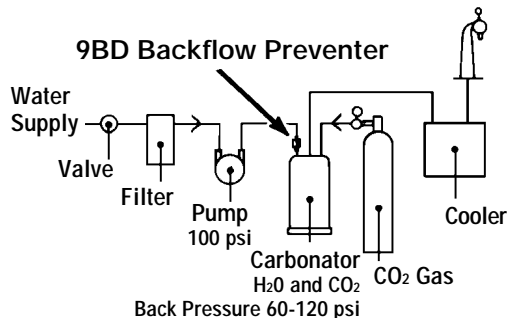
### STANDARDS

Designed to meet the requirements of New York City Health Code Section 81.47.  
 NSF Standard No. 25, Revised Items 4.35.2 and 4.35.3.

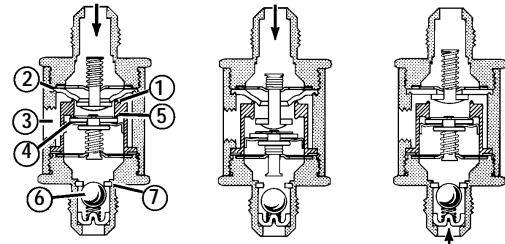
### APPROVALS

Approved by independent testing, completing over 2,000,000 successful pump cycles with positive backflow protection and trouble-free performance.  
 All rubber compounds comply with FDA food additive regulations.

### TYPICAL INSTALLATION



### HOW IT OPERATES



#### Static Pressure-No Flow

Primary disc (1) seats against diaphragm (2) with diaphragm (2) sealing off the atmospheric port (3). Secondary disc (4) seals against downstream seat (5). Ball check (6) seals against ball check seat (7). This is the normal position taken by the device when there is no demand on downstream equipment.

#### Valve Opened Flowing Under Pressure

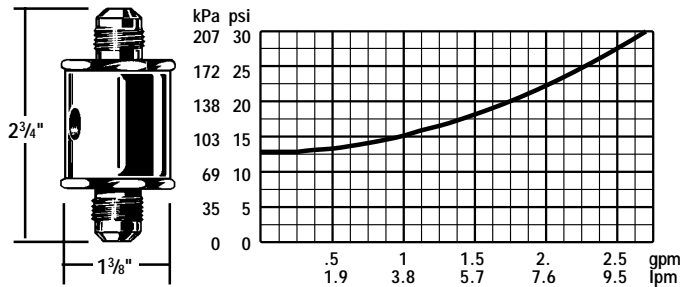
With flow through valve, primary disc opens away from diaphragm seal. Atmospheric port remains closed by deflection of diaphragm seal. Secondary disc opens away from downstream seat. Ball check opens away from ball check seat permitting flow of water through valve.

#### Valve Closed by Back Pressure in System

With a back pressure condition created, ball check seats firmly against ball check seat. Secondary disc seals tightly against downstream seat. Primary disc seals tightly against diaphragm. Atmospheric port is now open permitting air to enter air break chamber. In the event of fouling of downstream check valve, leakage of CO<sub>2</sub> gas would be vented to atmosphere through the vent port thereby safeguarding the potable water system from CO<sub>2</sub> gas contamination.

**This valve should only be used in areas where spillage of water could not cause damage. Install a vent discharge line to the vent outlet of 9BD and vent to a safe place of disposal with adequate ventilation where CO<sub>2</sub> discharge is not a hazard.**

### DIMENSIONS - CAPACITY



USA: 815 Chestnut St., No. Andover, MA 01845-6098; www.wattsreg.com  
 Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscca.com



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 Representative \_\_\_\_\_

# Model NLF9

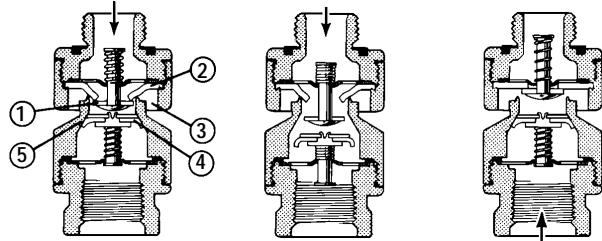
## Vacuum Breakers for Lab Faucets and In-Line Applications

Watts NLF9 is a patented backsiphonage preventer specially made for laboratory faucets where portable hoses can be attached. Its purpose is to prevent the flow of contaminated water back into the potable water supply and can be installed on new or existing faucets without plumbing changes.



NLF9  
 Size: 3/8" ASSE UPC SP®

### HOW IT OPERATES



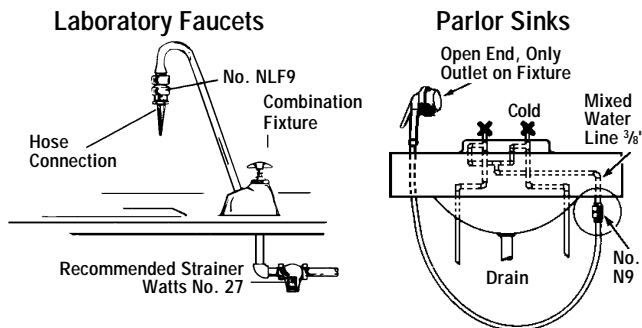
**Static Pressure-No Flow**  
 Illustration shows NLF9 under pressure but with no demand on downstream equipment. Primary check (1) seats against diaphragm (2) with diaphragm (2) sealing off the atmospheric ports (3). Secondary check (4) seals against downstream seat (5).

**Valve Opened Flowing Under Pressure**  
 With flow through valve, primary check opens away from diaphragm seal. Atmospheric ports remain closed by deflection of diaphragm seal. Secondary check opens away from downstream seat permitting flow of water through valve.

**Valve Closed By Back-Siphonage in System**  
 With a back-siphonage condition created, secondary check seals tightly against downstream seat. Primary check seals tightly against diaphragm. Atmospheric port is now open permitting air to enter air break chamber. In the event of fouling of downstream check valve, leakage would be vented to atmosphere through the vent port thereby safeguarding the potable water system from contamination.

### APPLICATIONS

NLF9 should be installed on every laboratory outlet where a hose can be attached. Its unique design provides full protection against all backsiphonage conditions. To prevent tampering, it is recommended that the NLF9 be secured to the laboratory faucet with Loctite. NLF9 is not designed for continuous pressure applications. For continuous pressure applications, use N9 Series or 3/8" 7 shown below.



### CONSTRUCTION

NLF9 is suitable for either hot or cold water service. It features brass construction and a primary check valve utilizing a soft disc which seats against a soft rubber mating part to ensure tight closing. A secondary check valve utilizes a soft disc-to-metal seating. NLF9 provides better-than-average flow rate and consequently lower pressure loss. Construction is brass body with polished chrome plating, stainless steel working parts and durable rubber diaphragm and disc.

### STANDARDS

ANSI/ASSE Standard 1035 - "Laboratory Faucet Vacuum Breakers"  
 CSA B64.8, UPC

### APPROVALS

ASSE, CSA and UPC

### PRESSURE/TEMPERATURE

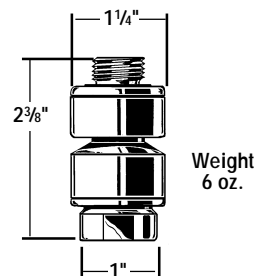
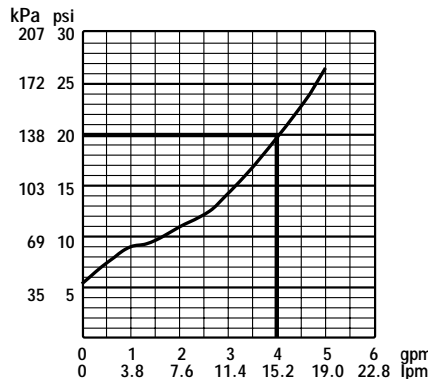
Maximum pressure: 150 psi (10.34 bars)  
 Maximum temperature: 140°F (60°C)

ES-9 0014

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### DIMENSIONS / WEIGHT / CAPACITY



# Model N9

Similar to NLF9 except furnished with 1/4" or 3/8" female inlet and outlet connections, for in-line continuous pressure applications.

Maximum pressure: 150 psi (10.34 bars)  
 Maximum temperature: 140°F (60°C)

N9  
 Sizes:  
 1/4", 3/8"

