

# Series 957

957 Reduced Pressure Zone Assemblies

957RPDA Reduced Pressure Detector Assemblies



  
WATTS  
SILVEREAGLE®

Watts.com

 **WATTS®**

# Superior Backflow Protection from Watts

When it comes to protecting the health and safety of people, why choose anything but the best? The Series 957 SilverEagle® backflow prevention assemblies incorporate the latest design features to protect against contamina-

tion at health hazard cross-connections. The SilverEagle series is one of the most compact, the lightest and offers the most flexibility of any backflow assembly in the industry. Specify the valve with safety at its core!

## 957/957RPDA Features

- Available with quarter-turn ball valve shutoffs (2½" – 4")
- Most compact design in the industry
- Entire valve body and closure sleeve manufactured from 300 Series Stainless Steel
- Approved with gate valves or UL/FM butterfly valves
- Approved for horizontal, "N" pattern or "Z" pattern installations
- Utilizes groove connections for ease of installation & pipe alignment
- Independent torsion spring check modules allow ease of serviceability
- Compact design allows for small enclosures to be used
- Replaceable check disc rubber
- Bottom mounted cast stainless steel relief Valve



## 957/957RPDA

### Lay Length

Compare 4" Reduced Pressure Assembly w/ Shutoff Valves

| Backflow Assembly           | Lay Length (in) | % Longer Than Watts |
|-----------------------------|-----------------|---------------------|
| Watts 957                   | 33.7            |                     |
| Wilkins 375 W/OS&Y - BF 375 | 37.5            | 11%                 |

### Typical Flow Rates @ 15 FPS

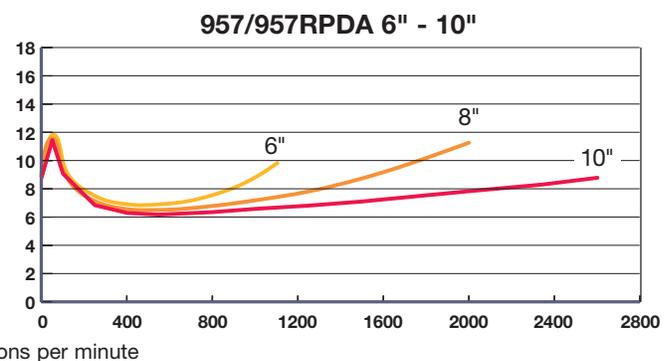
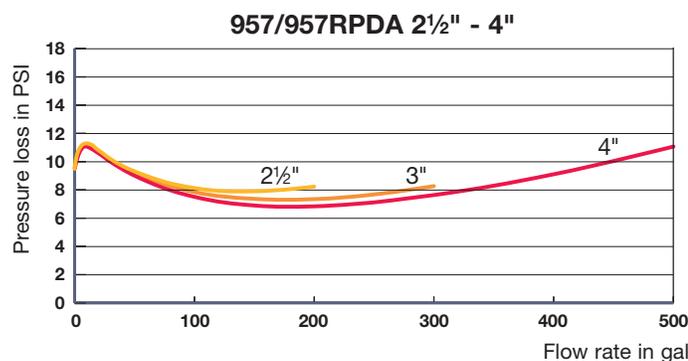
|     |         |     |          |
|-----|---------|-----|----------|
| 2½" | 224 GPM | 6"  | 1350 GPM |
| 3"  | 350 GPM | 8"  | 2400 GPM |
| 4"  | 500 GPM | 10" | 3700 GPM |

### Assembly Weight

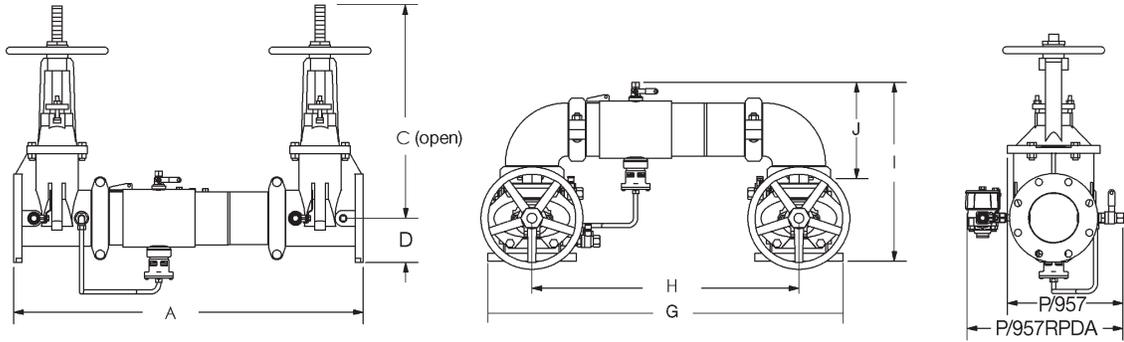
Compare 4" Reduced Pressure Assembly w/ Shutoff Valves

| Backflow Assembly           | Assembly Weight (lbs) | % Heavier than Watts |
|-----------------------------|-----------------------|----------------------|
| Watts 957                   | 87                    |                      |
| Wilkins 375 W/OS&Y - BF 375 | 288                   | 202%                 |

## Certified Flow Characteristics



## Dimensions & Weight



### With Gate Valves

### With UL/FM Butterfly Valves

| Size | C    | D    | H    | I    | P    |      | *Weight (lbs.) |      | G   | H    | I    | J    | P    |      | *Weight (lbs.) |      |     |
|------|------|------|------|------|------|------|----------------|------|-----|------|------|------|------|------|----------------|------|-----|
|      |      |      |      |      | RPZ  | RPDA | RPZ            | RPDA |     |      |      |      | RPZ  | RPDA | RPZ            | RPDA |     |
| 2½"  | 31"  | 16⅞" | 6½"  | 22"  | 15½" | 9⅞"  | 13⅜"           | 128  | 142 | 32½" | 23½" | 15½" | 9½"  | 11⅜" | 15⅜"           | 67   | 81  |
| 3"   | 31⅛" | 18⅞" | 6⅛"  | 22¾" | 17⅞" | 10½" | 14½"           | 148  | 162 | 34"  | 24½" | 16⅝" | 10⅛" | 12⅞" | 16⅞"           | 80   | 84  |
| 4"   | 33⅛" | 22¾" | 7"   | 24"  | 18½" | 11⅛" | 15⅝"           | 164  | 178 | 35⅝" | 26"  | 17⅞" | 10⅝" | 12⅞" | 16⅝"           | 87   | 101 |
| 6"   | 43½" | 30⅞" | 8½"  | 33¾" | 23⅜" | 15"  | 19"            | 298  | 312 | 46½" | 35⅜" | 20½" | 13½" | 15"  | 19"            | 160  | 174 |
| 8"   | 50"  | 37¼" | 9⅛"  | 40⅝" | 27⅜" | 17⅞" | 21⅝"           | 483  | 491 |      |      |      |      |      |                |      |     |
| 10"  | 57½" | 45¼" | 11⅜" | 50"  | 32½" | 20"  | 24"            | 783  | 797 |      |      |      |      |      |                |      |     |

### With Quarter-Turn Ball Valves

| Size | A    | C   | D   | G    | H    | I    | J    | P    | *Weight (lbs.) |     |
|------|------|-----|-----|------|------|------|------|------|----------------|-----|
|      |      |     |     |      |      |      |      |      | QT             | QTN |
| 2½"  | 27½" | 4⅞" | 6⅞" | 30¼" | 21½" | 16⅞" | 11⅞" | 11⅝" | 46             | 57  |
| 3"   | 28"  | 4⅞" | 6⅞" | 30¼" | 22¼" | 16⅞" | 11⅞" | 11⅝" | 56             | 67  |
| 4"   | 28¾" | 4⅞" | 6⅞" | 30¼" | 23½" | 18⅞" | 11⅞" | 11⅝" | 76             | 87  |

\*For "N" pattern weights consult ES-957/957 and ES-957RPDA/957NRPDA

## UL/FM Butterfly Valves or Quarter-Turn Ball Valves Available

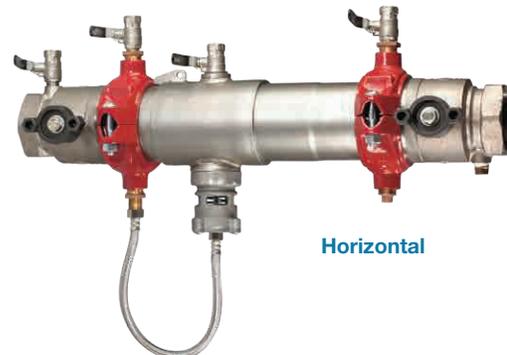


### Advantages of UL/FM Butterfly Valves

- Butterfly valves have built-in tamper switch wiring
- Backflow assembly is lighter & more compact
- Groove couplings allow ease of installation & pipe alignment
- All butterfly valves display flow indicator flag

### Advantages of Quarter-Turn Ball Valves

- Positive drip tight closure
- Fast quarter-turn operation
- Available 2½" – 4" sizes
- Available for "N" pattern, "Z" pattern and horizontal installations
- Low operating torque

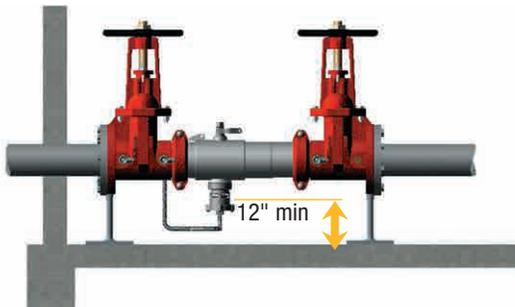


## Installation Guidelines

Most field problems occur because dirt or debris present in the system at the time of installation becomes trapped in the 1st check seating area resulting in a low or zero differential across the 1st check. **The system should be flushed before the backflow valve is installed.** If the system is not flushed until after the backflow assembly is installed, remove both check modules from the valve and open the inlet shutoff to allow water to flow for a sufficient time to flush debris from the water line. If debris in the water system continues to cause fouling, A strainer should be installed ahead of the backflow preventer to protect all internal components from unnecessary fouling.

**\*\*Caution:** Do not install a strainer ahead of the backflow preventer on seldom-used, emergency water lines (i.e. fire sprinkler lines). The

### 957/957RPDA Interior Installation

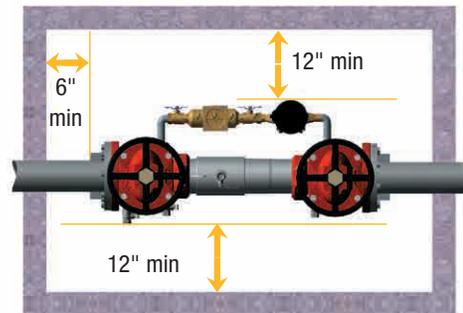


strainer mesh could potentially become clogged with debris present in the water and cause water blockage during an emergency.

Series 957 and 957RPDA may be installed in either a **horizontal, "N" pattern, or "Z" pattern** as long as the backflow assembly is installed in accordance with the direction of the flow arrow on the assembly and the local water authority approves the installation.

The assembly should be installed with adequate clearance around the valve to allow for inspection, testing, and servicing. Twelve inches should be the minimum clearance between the lower portion of the assembly and the floor or grade.

### Enclosure Installation



## Cutaway View – Full Flow Operation

### Normal Operation

In normal flowing operation the independent check valves will be open and the pressure differential relief valve located between the two check valves is closed. The relief valve will automatically open and close to maintain the zone pressure at least 2psi lower than the inlet pressure. If flow stops and one of the check valves is fouled the differential pressure relief valve will automatically open and discharge water to maintain the zone at a pressure of 2psi lower than the inlet pressure.

### Applications – Watts 957

Reduced Pressure Zone Assemblies (RP's) provide protection to the potable water system from contamination in accordance with national plumbing codes. RP's are used in health-hazard applications for protection against both back siphonage and backpressure.

### Characteristics and Materials

**Rated Working Pressure**  
175psi

**Temperature Range**  
33°F – 110°F

**Body Construction**  
300 Series Stainless Steel

**End Connections**  
Groove per AWWA C-606 (IPS) or  
Flange per ANSI B16.1, Class 125

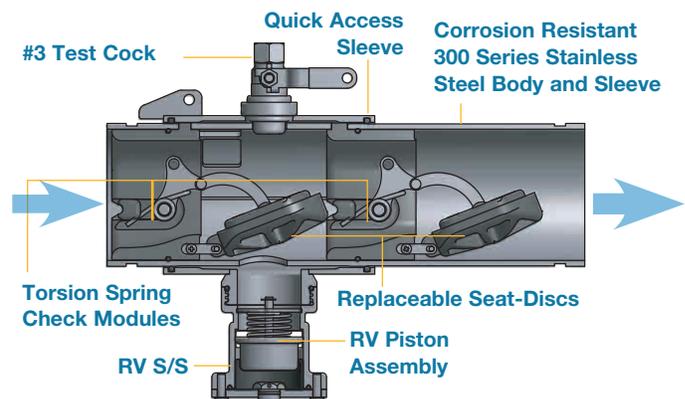
2½" – 4" sizes available  
with threaded QT ball valve  
shutoffs (957 Series)

### Applications – Watts 957RPDA

Reduced Pressure Detector Assemblies (RPDA's) are installed on fire protection systems connected to the public water supply in a health-hazard application. In addition to the features of the Watts 957, the Watts 957RPDA is used to monitor unauthorized use of water from the fire protection system.

### Specifications

The Reduced Pressure Zone Assembly shall consist of two independent torsion spring check modules, a differential pressure relief valve located between and below the two modules, drip tight inlet and outlet shutoff valves, and required test cocks. Both torsion spring check modules shall be contained within a sleeve housing constructed from 300 series stainless steel. Torsion spring checks shall have reversible elastomer discs and in operation shall produce drip tight closure against reverse flow caused by backpressure or backsiphonage. Assembly shall be a Watts 957/957RPDA.



USA: T: (978) 689-6066 • F: (978) 975-8350 • Watts.com  
Canada: T: (905) 332-4090 • F: (905) 332-7068 • Watts.ca  
Latin America: T: (52) 81-1001-8600 • Watts.com