



**CIRCLE SEAL CONTROLS, INC.**  
 A division of CIRCOR International, Inc.

## 900 Series 0 to 6,000 PSIG Manual Shutoff Valves

### Features

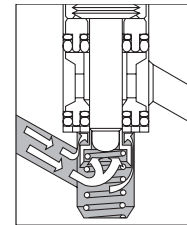
- Zero leakage
- Protected o-ring
- Full flow passages
- Freedom from wire drawing
- Panel mount standard
- Hand wheel or toggle handle

### Technical Data

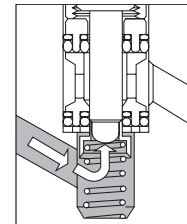
Body Construction Material:	• 316 or 303 Stainless Steel
Stem Materials:	• 316, 303 or 17-4 PH Stainless Steel
Gland Nut Materials:	• Brass or 17-4 PH Stainless Steel
O-Ring Materials:	• Buna N, Neoprene or Viton®
Spring Material:	• 302 Stainless Steel
Handle Materials:	• Hand Wheel – die cast zinc, color blue • Toggle – Forged steel, cadmium plated
Leakage:	• Internal – zero • External – zero
Operating Pressure:	• 0 to 6,000 PSIG (414 BAR)
Proof Pressure:	• 9,000 PSIG (621 BAR)
Burst Pressure:	• Over 24,000 PSIG (1655 BAR)
Temperature Range:	• -40° F to +350° F (-40° C to +177° C) Based on o-ring material, see "How to Order".
Connection Sizes:	• 1/4 inch to 3/8 inch
Actuating Force:	• 900 Series – 20 inch pounds • T900 Series – 20 pounds

NOTE: Proper filtration is recommended to prevent damage to sealing surfaces.

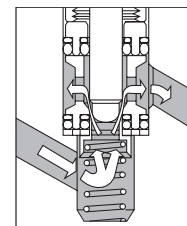
### How It Works



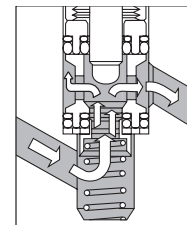
**CLOSED**  
 O-ring seal on smooth finish of stem provides leak tight shutoff. Pressure on o-ring increases sealing effectiveness.



**OPENING**  
 As stem is withdrawn, floating sleeve moves into position protecting the o-ring. Flow starts after 1-1/2 turns of the handle.



**THROTTLING**  
 O-ring is protected by sleeve. Throttling is controlled across tapered section of the stem.



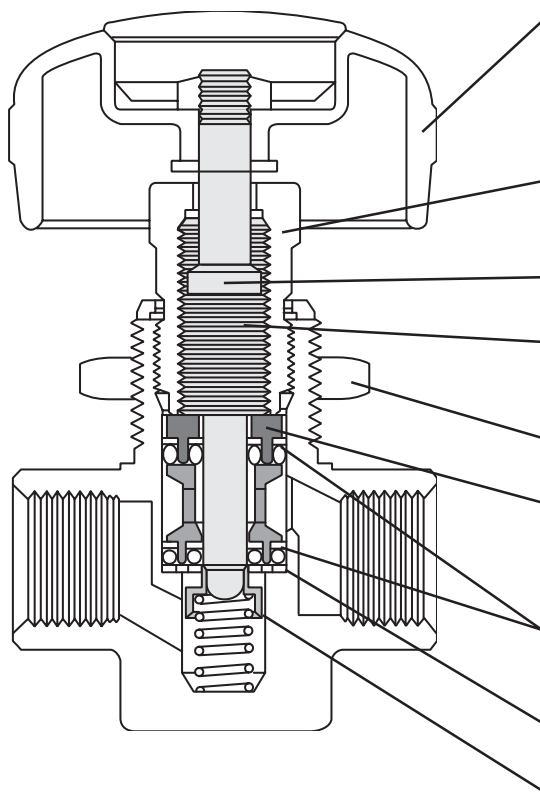
**FULL OPEN**  
 Stem is withdrawn permitting full flow with minimum pressure drop.

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# 900 Series

## 0 to 6,000 PSIG

### Engineering Features—Standard Design



**HANDLE SECURED** with jam nut for easy removal and replacement when valve is panel mounted. No flow for approximately 1-1/2 turns of handle, then approximately 4-1/2 turns from full closed to full open.

**GLAND NUT** requires no adjustment. O-rings provide leak proof seal.

**STAINLESS STEEL STEM** provides corrosion and wear resistance.

**STEM THREADS** are completely removed from flow path to permit "lifetime" lubrication and to avoid contamination of fluid.

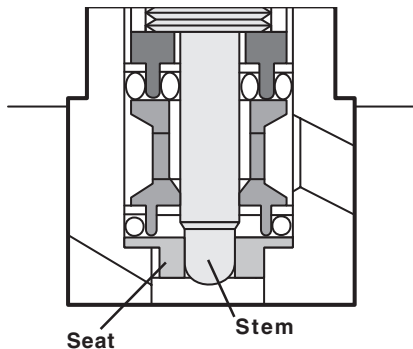
**PANEL MOUNT** is standard.

**SPACER** limits stem travel so that it bottoms on a non-critical stop. No matter how tightly the handle is wrenched, the seat cannot be damaged.

**TEFLON® SPIRAL BACK-UP RINGS** are virtually frictionless which protects o-ring seal from wear or extrusion.

**O-RING SEAL** provides positive, leak-tight shutoff.

**FLOATING SLEEVE** protects o-ring from extrusion and cutting action of liquid flow.



#### N, B, A900 Series DESIGN DETAIL

Stem, seat and seal combine to provide accurate metering, full flow in either direction, and zero leakage shutoff.

N900 Series valves are for general use. B900 (Kel-F seat) or A900 (Teflon® seat) should be used for fluids not compatible with Nylon or for service over 250° F.

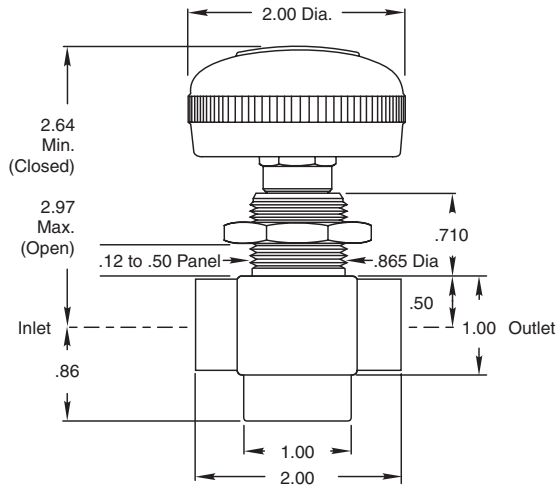
Kel-F or Teflon® seat eliminates the need for o-ring seal and floating sleeve.

# 900 Series

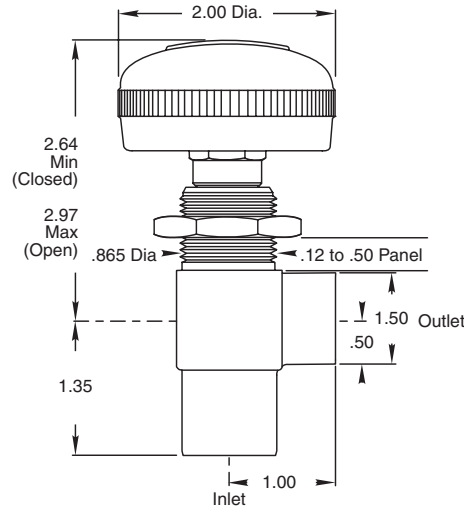
## 0 to 6,000 PSIG

### Dimensions (inches)

**900 SERIES**  
Handwheel Actuated

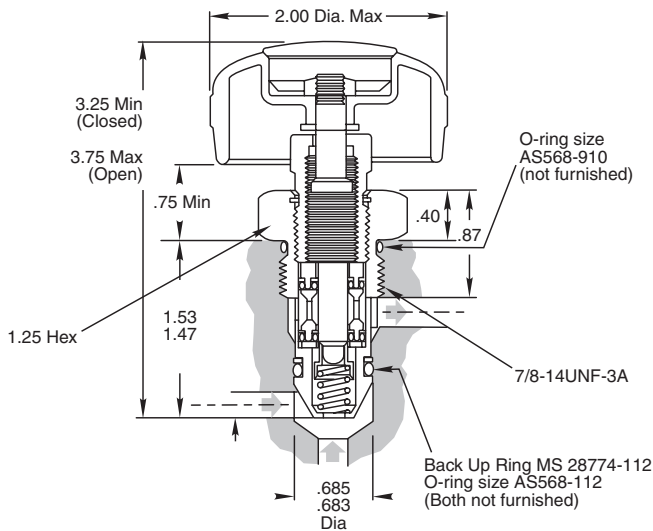


**R900 SERIES**  
Right Angle



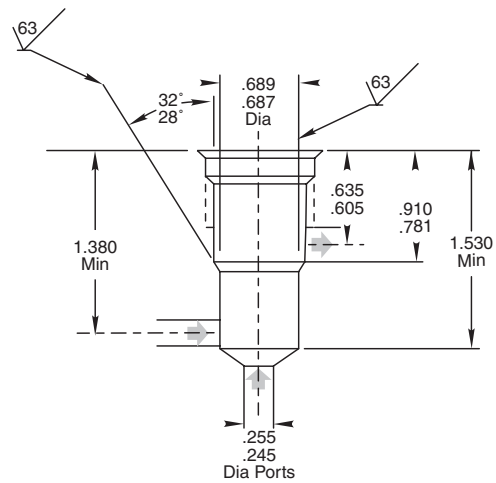
Prefix part number for 900, R900, Y900 and Z900 Series with N, B or A if bi-directional flow capability is required.

**C900 SERIES**  
Manifold Mounted



C900 Series – inlet size .203, outlet size .250.  
O-ring seals for manifold cavity are furnished by customer.

**C900 SERIES**  
Manifold Mounted Cavity



Cavity per AND10050-10 or SAE 5/8 straight thread connection (7/8-14UNF-3B) except as shown.

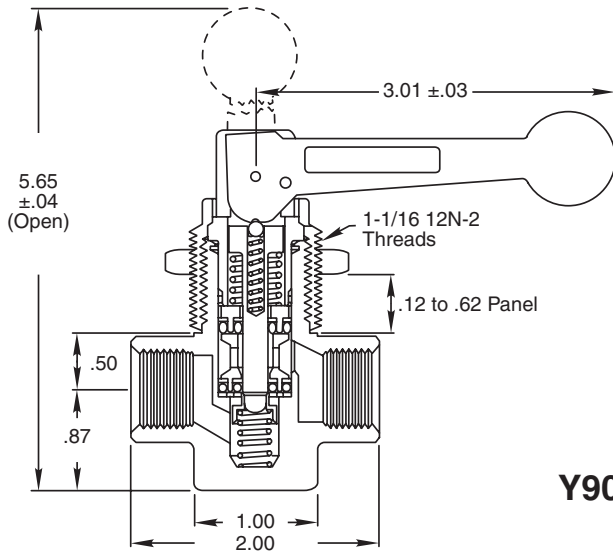
# 900 Series

## 0 to 6,000 PSIG

Dimensions (inches)

### T900 SERIES

Toggle Actuated



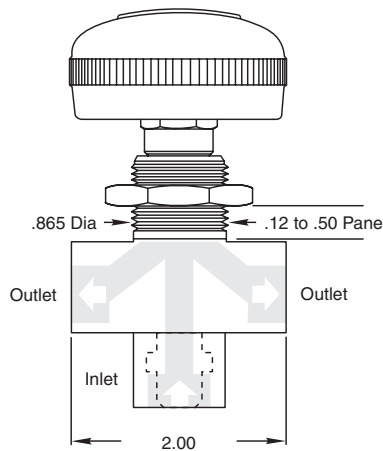
Spring and ball detent positively position handle open or closed. Holes are provided in toggle cam and clevis to permit locking valve closed against tampering.

Handle arc is 90°. Valve is open when handle is parallel with stem, closed when handle is in a plane parallel with body. Closed position of handle may be positioned (360°) as required by "cracking" gland nut, positioning handle and retightening gland nut.

Stem and seat design permit rapid actuation of the toggle handle with a minimum of opening and closing shock to the system.

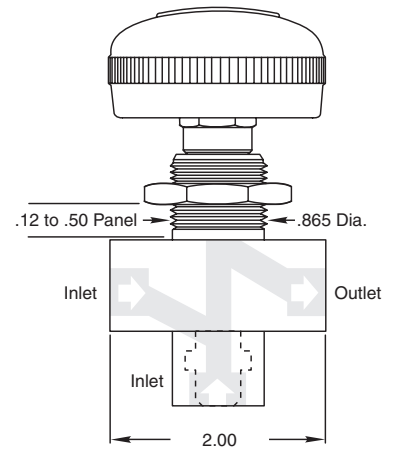
### Y900 SERIES

Triport



### Z900 SERIES

Triport



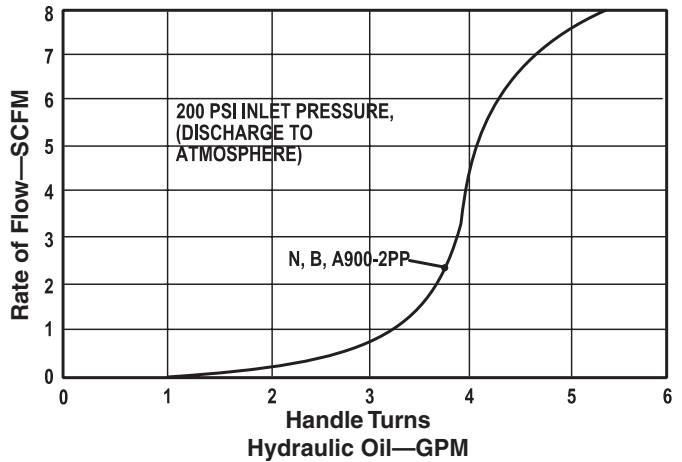
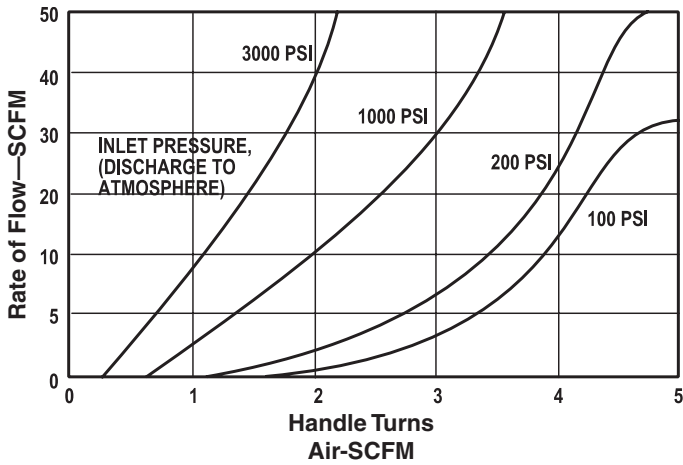
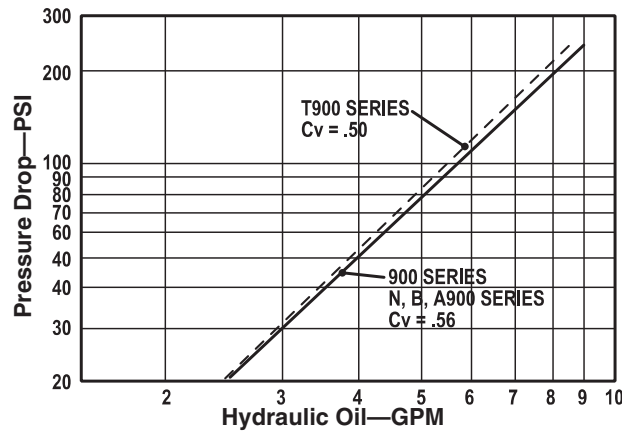
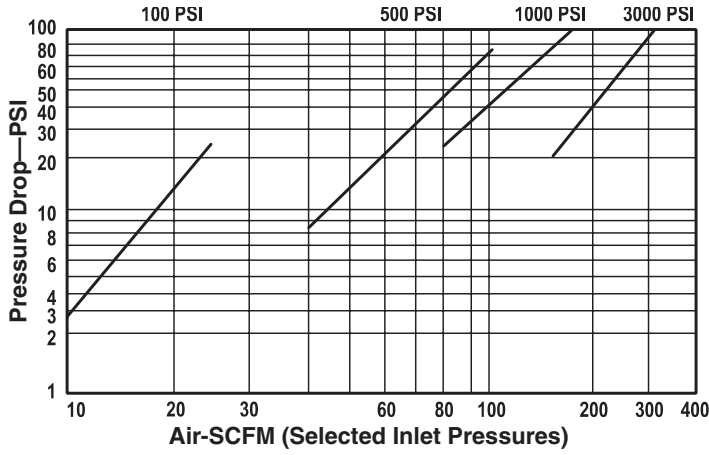
### Y900 & Z900 Series Part Numbers

Part No.	Inlet	Outlet
Y900-2PPP	1/4" Female Pipe	1/4" Female Pipe
Z900-2PPP		
Y900-4BBB	1/4" Female Tube	1/4" Female Tube
Z900-4BBB		
Y900-6BBB	3/8" Female Tube	3/8" Female Tube
Z900-6BBB		
Y900-4T6BB	1/4" Male Tube	3/8" Female Tube
Z900-4T6BB		
Y900-6TBB	3/8" Male Tube	3/8" Female Tube
Z900-6TBB		

# 900 Series

## 0 to 6,000 PSIG

### Typical Flow Curves, 900 & T900 Series



# 900 Series

## 0 to 6,000 PSIG

### How to Order

**NY 9 49 T - 2 PP (T)**

**SEAT VARIATION & OPERATING PRESSURE**

(Not Available with T900 series)

**N** – Nylon      0 to 6,000  
**B** – Kel-F        0 to 6,000 gas  
                           0 to 3,000 liquid  
**A** – Teflon®     0 to 2,000

**BODY VARIATION**

**C** – Manifold Mounted  
**R** – Right Angle  
**T** – Toggle Actuated  
**Y** – Triport (1 inlet; 2 outlets)  
**Z** – Triport (2 inlets; 1 outlet)

**BASIC MODEL NUMBER**

900 Series

**O-RING MATERIAL & TEMPERATURE RANGE**

**49** – Buna N     -65° F to +250° F  
**33** – Neoprene   -40° F to +300° F  
**52** – Viton®     -20° F to +400°  
 F

**SPECIAL CHARACTERISTIC**

**(T)** – 17-4 PH Stainless Steel Gland Nut  
 (Not available with T900 Series)

**CONNECTIONS**

**P** – Female Pipe  
**B** – Female Tube, AND10050  
 (MS33649 Available upon request)

**PORT SIZE**

Tube	Pipe
<b>2</b> – N/A	1/4"
<b>3</b> – N/A	3/8"
<b>4</b> – 1/4"	N/A
<b>6</b> – 3/8"	N/A

**MATERIAL**

**T** – 303 Stainless Steel\*

\* Body – 900, T900 (Forging)  
 Body – C900, Y900, Z900 (Bar Stock)  
 Body – R900 (316 Stainless Steel Forging)

### Repair Kits

In normal service the only part(s) which may require replacement is(are) the seal(s). A repair kit may be ordered by placing a K/ in front of the complete part number, (i.e. K/949T-2PP).

Teflon® is a registered trademark of DuPont. Viton® is a registered trademarks of DuPont Dow Elastomers.

Please consult your Circle Seal Controls Distributor or our factory for information on special connections, materials, larger sizes, o-rings, operating pressures and temperature ranges.

**For Your Safety**

*It is the sole responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation and maintenance of these products. Material compatibility product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.*