

# **272/372 Series**

# **Reverse Flow Pressure Filters**



# 272/372 Series

# Features/Applications for High Pressure Hydraulic Filters 272 Series

Pressures to 6,000 PSI

Disposable or

Recleanable Elements

Flows to 65 GPM

Reverse Flow

Microglass Elements - 3 to 20 Micron Absolute

# **Specifications**

# High Prssure Hydraulic Filters - 200 Series

Flow Rating: 65 GPM

# **Pressure Rating:**

Operating Pressure

(Maximum)6000 PSIProof Pressure9000 PSIBurst Pressure12000 PSI

Fatique Pressure

(Maximum) 0-4000-0 PSI

@3,000,000 Cycles

Fluid Temperature: -40°F to +212°F

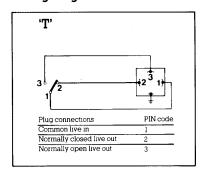
**Construction:** 

Head Nodular Iron
Bowl Extruded Steel
Indicators Consult Factory
Elements Consult Factory

Weight: S.A.E. or Flange Ports Manifold Ports

Length 1 20 Lbs. 24 Lbs. Length 2 22 Lbs. 26 Lbs.

### Wiring Diagrams:



#### **Electrical Ratings:**

Hirschman Connector without Lamps: **T** - 250 or 110 VAC or 28 VDC Max.



# High Performance New Generation 272 Series Filters



A rugged modular design for applications to 6000 PSI and 65 GPM. Parker's high pressure filters are specified worldwide for industrial, mobile, marine and mining applications.

Parker's high pressure filters are the finest you can buy. Here is why:

#### TruTell combined bypass valve and indicator.

- 1. High performance, low hysteresis bypass valve assures quick return to the closed position following cold starts or other short-term bypass conditions. Result: the best filter performance and protection for your system. The location of the bypass valve is 90° to the flow stream, which prevents unwanted valve operation and helps cushion the effect of system shocks (when compared with in-line valve location).
- 2. The bypass condition is indicated by the appearance of a red band under the transparent dome. The indicator has 360° visibility for easy viewing. Several other indicator options are shown below.

#### Microglass Media Offering

3. Microglass III represents a leap forward in the performance obtainable in hydraulic and lube filter elements. The unique multi-layer design combines high efficiencies with exceptional dirt holding capacities for performance that is unequalled in the industry today. With Microglass III, you do not have to make a compromise between efficiency and capacity; you can have both.

#### Other Features

- 4. Port options include SAE straight thread, SAE 3000 or 6000 PSI flanges or manifold mount.
- 5. Bowl-into-head assembly provides positive sealing and easier servicing.
- 6. A rugged, low pressure drop reverse flow valve is available.
- 7. For complete information, see design features section.



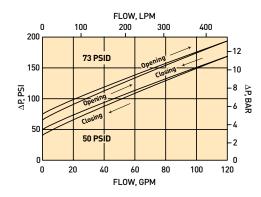
- (A) 272 Series length 2
- (B) 272 Series length 2 manifold mounting
- (C) 272 Series length 1 with visual latching indicator
- (D) 272 Series length 1 with dual electrical and visual indicators

# TrueTell Bypass Valve/Clogging Indicator

Over 30 years of testing valves of different configurations led to the combined TruTell bypass valve and indicator. This design produces the best all around characteristics for stability, low hysteresis, minimal leakage and reliability.

A bypass valve that closes quickly and completely is important because a filter in bypass offers no system protection, especially from large particles that can cause catastrophic failure.

The TruTell bypass valve and indicator assembly is a precision machined design from which hysteresis effects have been virtually eliminated. See curve.





### 272/372 Series

#### Point 1

Competitive bypass valve designs with significantly different areas between the open and closed position or high friction sliding seals have high hysteresis. As a result these bypass valves do not close as quickly as they should and a large percentage of the fluid continues to bypass the filter element completely after a cold start up (usually anything below 68°F).

#### Point 2

Most competitive bypass valves dramatically limits filter assembly performance even with a good element in the filter housing. The TruTell design forces as much fluid as possible through the element even when partially open.

#### Point 3

The TruTell bypass valve location is very important. Our valve and indicator combination is situated near the outlet port at right angles to the flow path. In this position it monitors only element differential pressure. Undesirable leakage and premature bypass associated with in line valve locations are eliminated. This location also helps cushion the effect of system shocks that pass through in-line bypass valves virtually unaffected.

#### Point 4

Our TruTell Bypass valve is magnetically coupled to the indicator. This assures no false warning that element bypass will ever occur. If the indicator actuates, an impending or bypass condition exists period. Unless the indicator is coupled to the bypass valve, it is impossible to accurately indicate bypass valve position under all operating conditions.

#### Point 5

Parker offers the widest selection of indicator types in the industry.

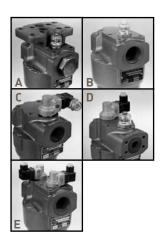
#### Visual types include:

- A. A 360° visibility non-latching type
  B. A 360° visibility latching type (For remote locations or flow on demand systems, or where systems must be shut down to inspect the filter.)

Electrical indicators include:

- C. Visual electrical
- D. Electrical and Visual
- Dual electrical

For electrical indicator connector options see Box 4 on page 126.



# Microglass Media High Performance

#### Multi-Pass Test Results to ISO 4572 (Time Weighted Average)

			Filtration Rating							
Filt	er Type	Media	Code	β <sub>x</sub> >200	$\beta_3$	β <sub>6</sub>	β <sub>10</sub>	β <sub>12</sub>	$\beta_{20}$	$\beta_{25}$
5	300psi	02QX	FF	3	≥200 99.5	>1000 99.9	>3000 99.97	>5000 99.98	INF	INF
5	High Collapse	10QX	10	15	3 66.66	<b>12</b> 91.66	<b>50</b> 98.0	<b>75</b> 98.67	>2000 99.95	>5000 99.98
					Filtration Rating					
Filt	er Type	Media	Code	β <sub>x</sub> >200	$\beta_3$	β <sub>6</sub>	$\beta_{10}$	$\beta_{12}$	$\beta_{20}$	$\beta_{25}$
		GDH3	20	3	≥100 99.0	>300 99.67	>1500 99.93	>2000 99.95	>5000 99.98	INF
7	290psi	GDH6	21	6	12 91.7	≥100 99.0	>1000 99.9	>2000 99.95	>5000 99.98	INF
ŕ	Collapse	GDH10	22	10	<b>8</b> 87.5	<b>22</b> 95.4	100 99.0	≥200 99.5	>5000 99.98	INF
		GDH20	23	20	-	2 50.0	<b>8</b> 87.5	<b>20</b> 95.0	≥100 99.0	≥200 99.5

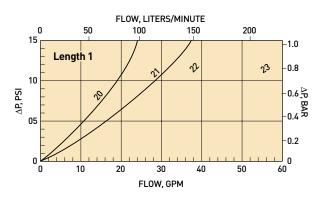
Element efficiency in percent Element Beta ratio B

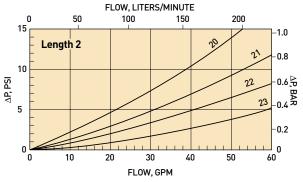


# Flow/Pressure Drop Curves

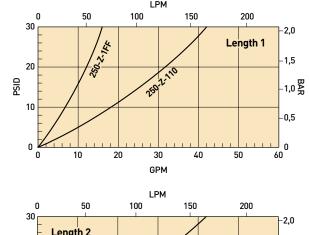
#### Disposable Elements - 272 Series

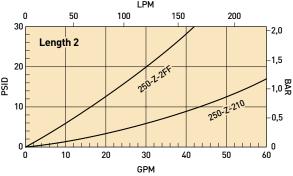
#### For Bypass Equipped Housings (290 psid min. collapse)





# For Non-bypass Housings (3000 psid min. collapse)





Fluid Conditions: Viscosity 140 SSU (30 cSt) and SP. Gr. 0.88

**Note:** Element  $\Delta P$  is directly proportional to viscosity.

# **Find Filter Assembly Pressure Drop**

Filter assembly  $\Delta P$  is equal to the sum of element and housing pressure drops taken from the appropriate curves and adjusted for operating viscosity and specific gravity.

#### Example:

Filer Model: 272A-BV50-JZ222

Flow: 50 GPM

Viscosity: 225 SSU, Sp. Gr.: 1.0

Step 1. Correct element  $\Delta P$  for viscosity.

Element  $\Delta P = 6 \text{ psi x } 225SSU/140SSU = 9.6psi$ 

Step 2. Correct housing  $\Delta P$  for specific gravity.

Housing  $\Delta P = 15 \text{ psi x } 1.0/0.88 = 17.0 \text{ psi}$ 

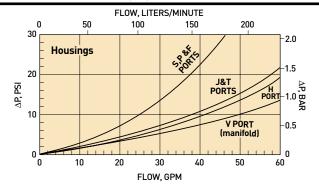
Step 3. Correct reverse flow

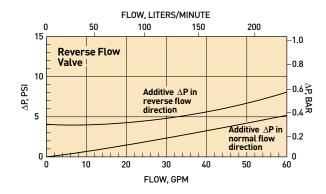
Valve  $\Delta P$  for specific gravity RFV  $\Delta P$  = 4 psi x 1.0/0.88 = 4.5 psi

Step 4. Calculate assembly

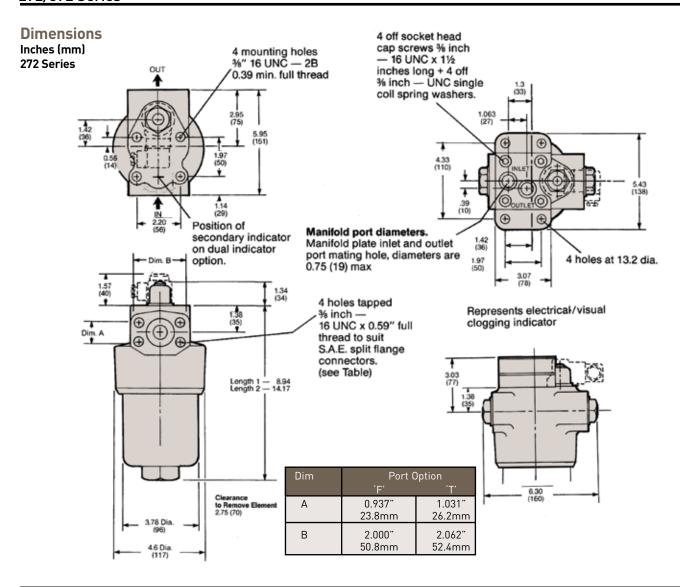
 $\Delta P$  = 9.6 psi + 17.0 psi + 4.5 psi = 31.1 psi

**NOTE:** Housing and reverse flow valve  $\Delta P$  are directly proportional to specific gravity.





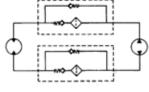


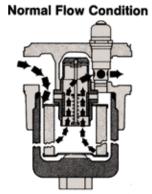


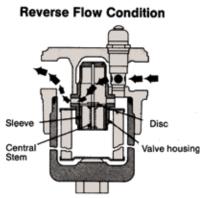
#### Reverse Flow Valve Better Three Ways

For hydrostatic drives and other systems where reverse flow is required a valve is incorporated which allows fluid to pass through the element in one direction but to bypass the element when flow is reversed. (See diagrams).

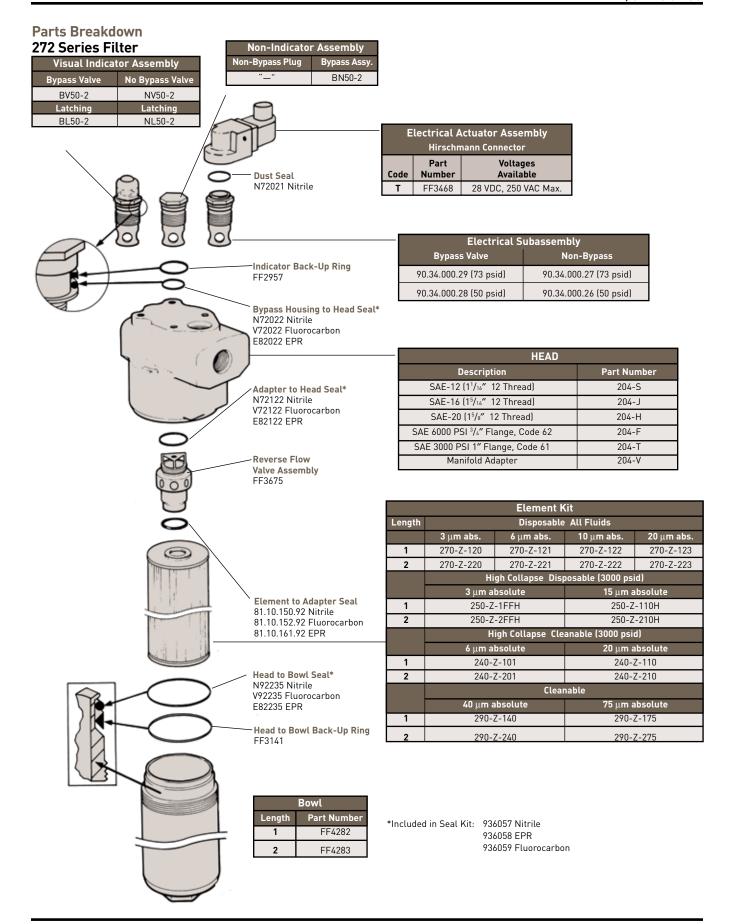
- Rugged one piece steel body design that is built to last.
   Unlike stamped metal or aluminum designs. Parker's
   Reverse Flow Valve (RFV) is a spool/ disc valve caged in a
   high strength machined steel body. This greatly reduces
   the risk of valve failure and resultant filter or component
   damage.
- 2. Low pressure drop the spool/disc design keeps system pressure losses at a minimum without sacrificing reliability.
- 3. Our modular design means easy change over or replacement. The reverse flow valve threads directly into the filter head, replacing the standard element adapter. For customers with more that one application or for system conversions, multiple applications from the dame hardware means less inventory.











272/372 Series

### **HOW TO ORDER 272 Series Filters:**

Select the desired symbol (in the correct position) to construct a model code.

#### Assembly Example:

STD	BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
2	7	2	A	BV50	S	Z	1	23

#### **Element Example:**

STD	BOX 1	STD	BOX 6	BOX 7	BOX 8	BOX 3
2	7	0	Z	1	23	Α

BOX 1: FILT	ER/ELEMENT TYPE Description
7	Microglass
5	Inorganic disposable High Strength Disposable

BOX 2: FILTE	R FLOW
Symbol	Description
2	With Reverse Flow Valve

BOX 3: SEALS Symbol	Description
Α	Nitrile
н	Fluorocarbon

Filter

Ser.

2

2

2

2

2

**BOX 5: PORT OPTIONS** 

Description

SAE-12 (1-1/16"-12 Thread)

SAE-16 (1-5/16"-12 Thread)

SAE-20 (1-5/8"-12 Thread)

3/4" SAE Flange, Code 62

1" SAE Flange, Code 61

Manifold Adaptor

Symbol

Н

F

Т

BOX 4: INDICATOR							
	BYPASS	NO BYPASS					
Indicator Type	INDICATION @ 73 PSID (5.0 BAR)	INDICATION @ 73 PSID (5.0 BAR)					
VISUAL	BV50	NV50					
VISUAL-LATCHING	BL50	-					
ELECTRICAL ( <b>T</b> ) 28 VDC, 110-250 VAC	BE50	NE50					

#### **Dual Indicator Codes:**

**BEE50** - Bypass with double electrical indicators **NEE50** - No bypass with double electrical indicators

BEV50 - Bypass with (1) mechanical visual (50 psid) and (1) electrical indicator (73 psid)
NEV50 - No bypass with (1) mechanical visual (50 psid) and (1) electrical indicator (73 psid)

Note: Dual Indicators are not available with Port Option "V"

BOX 6: ELEMENT TYPE								
Symbol	Element Types	Absolute Ratings Micron						
Z	All fluids	All ratings						

BOX 7: EL Symbol	EMENT LENGTH Description	Type
1 2	Length 1 Length 2	5, 7 5, 7

BOX 8: DEGREE OF FILTRATION Symbol Absolute Rating Type							
FF	3μ	5					
10	15μ	5					
20	3μ	7					
21	6μ	7					
22	10μ	7					
23	20μ	7					



# Applications/Features for High Pressure Hydraulic Filters 372 Series

Pressures to 6,000 PSI

Disposable or Recleanable Elements

Flows to 120 GPM

Reverse Flow

BetaMaze™ Elements - 3 to 20 Micron

**Absolute** 

# **Specifications**

High Pressure Hydraulic Filters — 372 Series

Max Flow Rating: 120 GPM

**Pressure Rating:** 

Operating Pressure

(Maximum)6000 PSIProof Pressure9000 PSIBurst Pressure12000 PSI

Fatique Pressure

(Maximum) 0-4000-0 PSI

@3,000,000 Cycles

Fluid Temperature: -40°F to +212°F

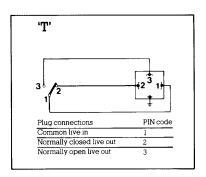
**Construction:** 

Head Nodular Iron
Bowl Extruded Steel
Indicators Consult Factory
Elements Consult Factory

Weight:

	S.A.E. or	Manifold
	Flange Ports	Ports
Length 1	31 Lbs.	36 Lbs.
Length 2	37.5 Lbs.	42.5 Lbs.
Length 3	44 Lbs.	49 Lbs.

### Wiring Diagrams:



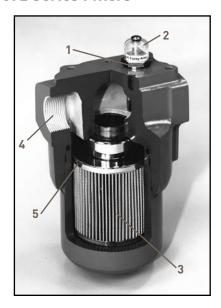
#### **Electrical Ratings:**

Hirschman Connector without Lamps: **T** - 250 or 110 VAC or 28 VDC Max.



272/372 Series

# **High Performance New Generation** 372 Series Filters



A rugged modular design for applications to 6000 PSI and 120 GPM. Parker's high pressure filters are specified worldwide for industrial, mobile, marine and mining applications.

Parker's high pressure filters are the finest you can buy. Here is why:

#### TruTell combined bypass valve and indicator.

- 1. High performance, low hysteresis bypass valve assures quick return to the closed position following cold starts or other short-term bypass conditions. Result: the best filter performance and protection for your system. The location of the bypass valve is 90° to the flow stream, which prevents unwanted valve operation and helps cushion the effect of system shocks (when compared with in-line valve location).
- 2. The bypass condition is indicated by the appearance of a red band under the transparent dome. The indicator has 360° visibility for easy viewing. Several other indicator options are shown below.

#### Microglass Media Offering

3. Microglass III represents a leap forward in the performance obtainable in hydraulic and lube filter elements. The unique multi-layer design combines high efficiencies with exceptional dirt holding capacities for performance that is unequalled in the industry today. With Microglass III, you do not have to make a compromise between efficiency and capacity; you can have both.

#### Other Features

- 4. Port options include SAE straight thread SAE 3000 or 6000 PSI flanges or manifold mount.
- 5. Bowl-into-head assembly provides positive sealing and easier servicing.
- 6. A rugged, low pressure drop reverse flow valve is available.
- 7. For complete information, see design features section.



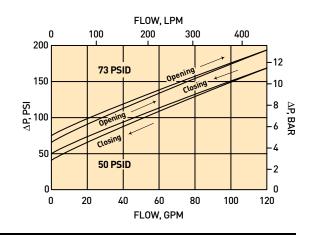
Over 30 years of testing valves of different configurations led to the combined TruTell bypass valve and indicator. This design produces the best all around characteristics for stability, low hysteresis, minimal leakage and reliability.

TruTell Bypass Valve/Clogging Indicator

A bypass valve that closes quickly and completely is important because a filter in bypass offers no system protection, especially from large particles that can cause catastrophic failure.

The TruTell bypass valve and indicator assembly is a precision machined design from which hysteresis effects have been virtually eliminated. See curve.

- (A) 372 Series length 3
- (B) 372 Series length 3 manifold mounting
- (C) 372 Series length 1 with dual electrical and visual indicators
- (D) 372 Series length 2 with visual electrical indicator





#### Point 1

Competitive bypass valve designs with significantly different areas between the open and closed position or high friction sliding seals have high hysteresis. As a result these bypass valves do not close as quickly as they should and a large percentage of the fluid continues to bypass the filter element completely after a cold start up (usually anything below 68°F).

#### Point 2

Most competitive bypass valves dramatically limits filter assembly performance even with a good element in the filter housing. The TruTell design forces as much fluid as possible through the element even when partially open.

#### Point 3

The TruTell bypass valve location is very important. Our valve and indicator combination is situated near the outlet port at right angles to the flow path. In this position it monitors only element differential pressure. Undesirable leakage and premature bypass associated with in line valve locations are eliminated. This location also helps cushion the effect of system shocks that pass through in-line bypass valves virtually unaffected.

#### Point 4

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#### Point 5

Parker offers the widest selection of indicator types in the industry.

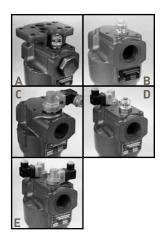
#### Visual types include:

- A. A 360° visibility non-latching type
- B. A 360° visibility latching type (For remote locations or flow on demand systems, or where systems must be shut down to inspect the filter.)

Electrical indicators include:

- C. Visual electrical
- D. Electrical and Visual
- E. Dual electrical

For electrical indicator connector options see Table 5 on back cover.



# Microglass Media High Performance

#### Multi-Pass Test Results to ISO 4572 (Time Weighted Average)

						•	•			
						F	iltration Ratin	g		
Filt	er Type	Media	Code	β <sub>x</sub> >200	$\beta_3$	β <sub>6</sub>	β <sub>10</sub>	$\beta_{12}$	$\beta_{20}$	$\beta_{25}$
5	300psi	02QX	FF	3	≥200 99.5	>1000 99.9	>3000 99.97	>5000 99.98	INF	INF
5	High Collapse	10QX	10	15	3 66.66	<b>12</b> 91.66	<b>50</b> 98.0	<b>75</b> 98.67	>2000 99.95	>5000 99.98
					Filtration Rating					
Filt	er Type	Media	Code	β <sub>x</sub> >200	$\beta_3$	β <sub>6</sub>	β <sub>10</sub>	$\beta_{12}$	$\beta_{20}$	$\beta_{25}$
		GDH3	20	3	≥100 99.0	>300 99.67	>1500 99.93	>2000 99.95	>5000 99.98	INF
7	290psi	GDH6	21	6	<b>12</b> 91.7	≥100 99.0	>1000 99.9	>2000 99.95	>5000 99.98	INF
ŕ	Collapse	GDH10	22	10	<b>8</b> 87.5	<b>22</b> 95.4	100 99.0	≥200 99.5	>5000 99.98	INF
		GDH20	23	20	-	2 50.0	<b>8</b> 87.5	20 95.0	≥100 99.0	≥200 99.5

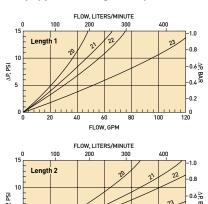
Element efficiency in percent Element Beta ratio  $\beta_{\star}$ 

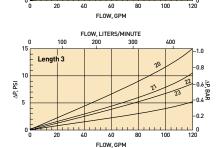


# Flow/Pressure Drop Curves

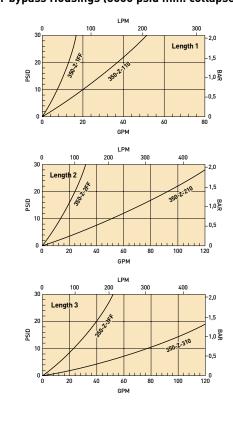
Disposable Elements - 372 Series

#### For Bypass Equipped Housings (290 psid min. collapse)





### For Non-bypass Housings (3000 psid min. collapse)



Fluid Conditions: Viscosity 140 SSU (30 cSt) and SP. Gr. 0.88 Note: Element ΔP is directly proportional to viscosity.

0.2

# **Find Filter Assembly Pressure Drop**

Filter assembly  $\Delta P$  is equal to the sum of element and housing pressure drops taken from the appropriate curves and adjusted for operating viscosity and specific gravity.

Example:

Filer Model: 372A-BV50-FL223

**Flow:** 120 GPM

Viscosity: 225 SSU, Sp. Gr.: 1.0

Step 1. Correct element  $\Delta P$  for viscosity.

Element  $\Delta P = 7 \text{ psi x } 225SSU/140SSU = 11.2psi$ 

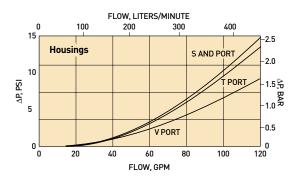
Step 2. Correct housing  $\Delta P$  for specific gravity. Housing  $\Delta P = 27$  psi x 1.0/0.88 = 30.7 psi

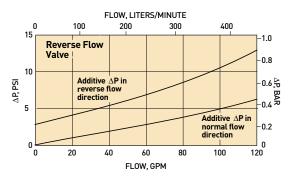
Step 3. Correct reverse flow valve  $\Delta P$  for specific gravity.

RFV  $\Delta P = 6 \text{ psi x } 1.0/.88 = 6.8 \text{ psi}$ 

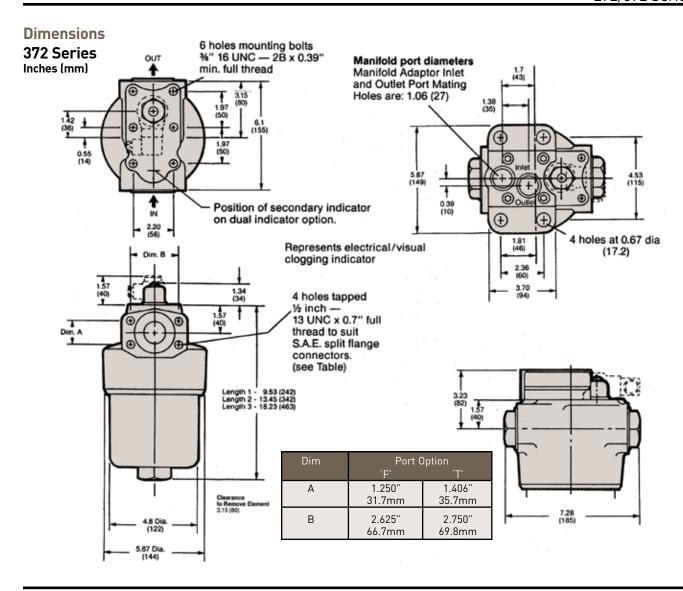
Step 4. Calculate assembly.

 $\Delta P = 11.2 \text{ psi} + 30.7 \text{ psi} + 6.8 \text{ psi} = 48.7 \text{ psi}$ 





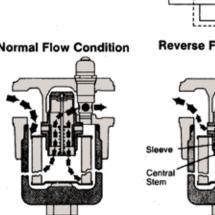


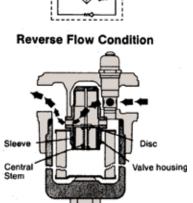


# Reverse Flow Valve — Better Three Ways

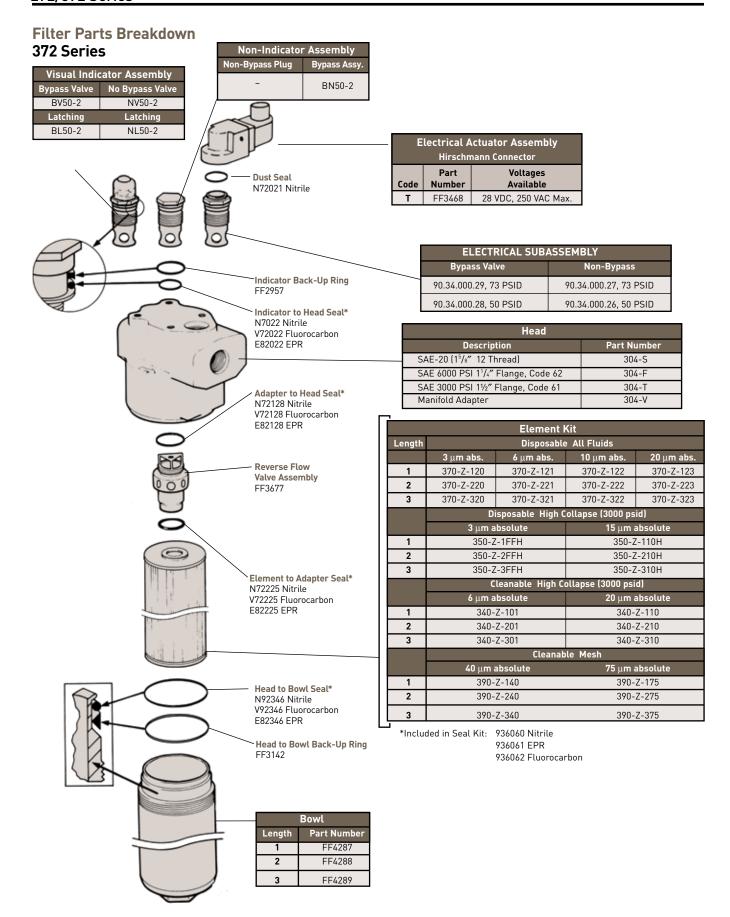
For hydrostatic drives and other systems where reverse flow is required a valve is incorporated which allows fluid to pass through the element in one direction but to by-pass the element when flow is reversed. (See diagrams).

- Rugged one piece steel body design that is built to last. Unlike stamped metal or aluminum designs. Parker's Reverse Flow Valve (RFV) is a spool/ disc valve caged in a high strength machined steel body. This greatly reduces the risk of valve failure and resultant filter or component damage.
- 2. Low pressure drop the spool/disc design keeps system pressure losses at a minimum without sacrificing reliability.
- Our modular design means easy change over or replacement. The
  reverse flow valve threads directly into the filter head, replacing
  the standard element adapter. For customers with more that one
  application or for system conversions, multiple applications from
  the dame hardware means less inventory.











### **HOW TO ORDER 372 Series Filters:**

Select the desired symbol (in the correct position) to construct a model code.

#### Example:

STD	BOX 1	BOX 2	вох з	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
3	7	2	Α	BV50	S	Z	1	23

#### **Element Example:**

	-		7	4	02	Λ
STD	B0X 1	STD	BOX 6	BOX 7	BOX 8	BOX 3

BOX 1: FILTE Symbol	R/ELEMENT TYPE Description
7	Microglass
5	Inorganic disposable High Strength Disposable

BOX 2: FILTER FLOW Symbol Description	
2 With Reverse Flow Valve	

BOX 3: SEALS Symbol	Description
Α	Nitrile
н	Fluorocarbon

BOX 4: INDICATOR				
Indicator Type	BYPASS INDICATION @ 73 PSID (5.0 BAR)	NO BYPASS INDICATION @ 73 PSID (5.0 BAR)		
VISUAL	BV50	NV50		
VISUAL-LATCHING	BL50	-		
ELECTRICAL ( <b>T</b> ) 28 VDC, 110-250 VAC	BE50	NE50		

BOX 5: PO Symbol	ORT OPTIONS Description
S	SAE-20 (1-5/8"-12 Thread)
F	S.A.E. 6000PSI 1-1/4" Flange
Т	S.A.E. 3000PSI 1-1/2" Flange
V	Manifold Adapter

#### **Dual Indicator Codes:**

**BEE50** - Bypass with double electrical indicators **NEE50** - No bypass with double electrical indicators

**BEV50** - Bypass with (1) mechanical visual (50 psid) and (1) electrical indicator (73 psid) NEV50 - No bypass with (1) mechanical visual (50 psid) and (1) electrical indicator (73 psid)

Note: Dual Indicators are not available with Port Option "V"

BOX 6: ELEMENT TYPE			
Symbol	Element Types	Absolute Ratings Micron	
Z	All fluids	All ratings	

BOX 7: ELEMENT LENGTH				
Symbol	Description	Туре		
1	Length 1	4, 5, 7, 9		
2	Length 2	4, 5, 7, 9		
3	Length 3	4, 5, 7,9		

BOX 8: DEGREE OF FILTRATION Symbol Absolute Rating Type				
FF	3μ	5		
10	15μ	5		
20	3μ	7		
21	3μ 6μ	7		
22	10μ	7		
23	20u	7		

# **Notes**

