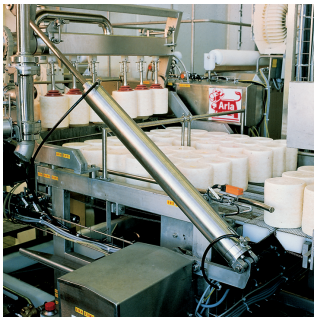
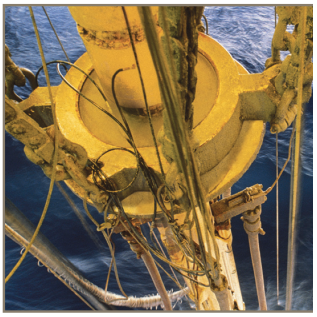


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Stainless Steel FRLs Air Preparation System

1/4" Body Ports

Catalogue PDE2504TCUK September 2020



Parker

ENGINEERING YOUR SUCCESS.

Stainless Steel FRLs

RoHS COMPLIANT

DECLARATION OF COMPLIANCE (ROHS)

European Directive 2011/65/EU – RoHS (Restriction us of certain Hazardous Substances in electrical and electronic equipment), restricts the use of the 6 substances in the manufacture of specified electrical equipment.

Lead: Product containing lead and its compound (except for applications of lead as an alloying element by weight in steel up to 0.35%, in aluminium up to 0.4% and in copper alloys up to 4% and in circuit board solder) must not exceed 0.1% by weight

Mercury: The concentration level must not exceed 0.1% by volume

Cadmium: The concentration level must not exceed 0.01% by volume

Hexavalent Chromiou:

This is a corrosive protective finish used on our product line. Where this finish is utilized the Chromate solution is Hexavalent (Chrome 6) free.

Polybrominated Biphenyls (PBB):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.

Polybrominated Diphenyl Esters (PBDE):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.

CE

Stainless Steel FRL products supplied by Parker Hannifin have been designed and manufactured in accordance with “sound engineering practice”, as defined by Article 3 of Pressure Equipment Directive 97/23/EC.

REACh Compliant

Stainless Steel FRL product range is in compliance with REACH to ensure continued compliance additions to the list of SVHC (Substance of Very High Concern) are reviewed periodically.

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

OFFER OF SALE

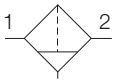
The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled “Offer of Sale”.

Table of Contents

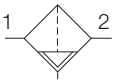
PF504 Filter - Miniature....4 - 5
PF501 Coalescing Filter - Miniature....6 - 7
PR354, PR364 Regulator - Miniature....8 - 9
PB548, PB558 Filter / Regulator - Miniature....10 - 11
PF10 Filter - Standard....12 - 13
PF11 Coalescing Filter - Standard....14 - 15
PR10, PR11 Regulator - Standard....16 - 17
PB11, PB12 Filter / Regulator - Standard....18 - 19
PL10 Lubricator - Standard....20 - 21

PF504 Filter – Miniature

Symbols



Manual drain



Auto drain

- Stainless steel construction handles most corrosive environments
- Fluorocarbon seals standard
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" - 10.85 dm^3/s§
- 1/8" female threaded drain

Options:

PF504 **G** **02** **D** **H** ( ) **SS**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/4"	**02**

Bowl type	
Metal bowl without sight gauge	**D**

Element	
20µ element	**H**
5µ element	G

Options	
Manual twist drain	**Blank**
Automatic pulse drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/4	BSPP Manual twist drain	**PF504G02DHSS**	20.7	102	40	40
G1/4	NPT Manual twist drain	**PF504-02DHSS**	20.7	102	40	40
G1/4	BSPP Automatic pulse drain	**PF504G02DHRSS**	12.0	102	40	40
G1/4	NPT Automatic pulse drain	**PF504-02DHRSS**	12.0	102	40	40

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Stainless Steel FRLs

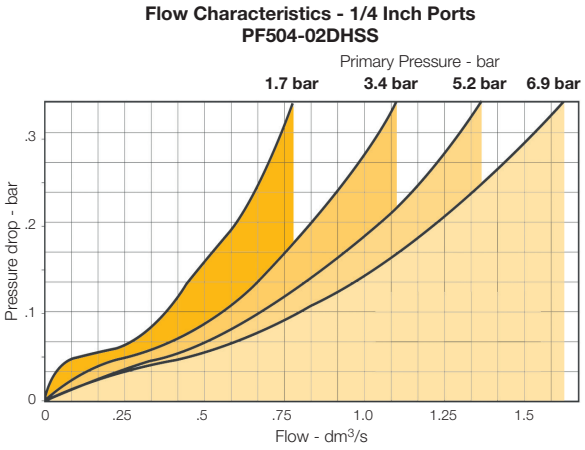
PF504 Series - 1/4 Inch Ports

Specifications

Bowl capacity		29 cm^3
Filter rating		20 micron
Sump capacity		12 cm^3
Port threads		G1/4
Operating temperature	Manual twist drain	-18°C to 82°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain	0 to 20.7 bar
	Automatic pulse drain	0 to 12 bar
Weight		274 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts



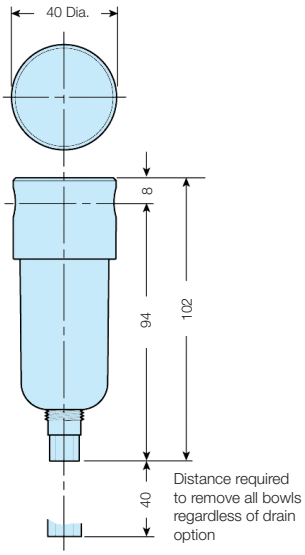
Materials of Construction

Body	316 Stainless steel
Bowl	316 Stainless steel
Deflector	Acetal
Drain	316 Stainless steel
Element holder	Acetal
Filter element	Polyethylene
Seals	Flourocarbon

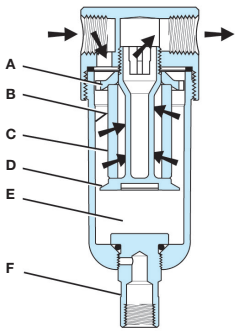
Accessories

Filter element kits	Particulate (5 micron)	**EK504VY**
	Particulate (20 micron)	**EK504Y**
Drain kits	Automatic pulse drain	**RK504SY-SS**
Manual twist drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Pipe nipple	1/4" NPT 316 Stainless Steel	**616Y28-SS**
	1/4" BSPT 316 Stainless Steel	**AC-2SS**

Dimensions (mm)



Operation



First Stage Filtration:

Air enters at inlet port and flows through deflector plate (A) which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall (B) by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle (D) separates the lower portion of the bowl into a “quiet zone” (E) where the removed liquid and particles collect, unaffected by the swirling air, and are therefore not reentrained into the flowing air.

Second Stage Filtration:

After liquids and large particles are removed in the first stages of filtration, the air flows through element (C) where smaller particles are filtered out. The filtered air then passes downstream. Collected liquids and particles in the “quiet zone” (E) should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve (F) slightly until the liquid begins to drain.

PF501 Coalescing Filter – Miniature

Symbol

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" - 755 $dm^3/s^{\S}$
- 1/8" female threaded drain

Options:

PF501	G	02	D	H		SS

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/4"	**02**

Bowl type	
Metal bowl without sight gauge	**D**

Element	
0.3µ element	**H**

Options	
Manual twist drain	**Blank**
Automatic pulse drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/4	BSPP Manual twist drain	**PF501G02DHSS**	20.7	102	40	40
G1/4	NPT Manual twist drain	**PF501-02DHSS**	20.7	102	40	40
G1/4	BSPP Automatic pulse drain	**PF501G02DHRSS**	12.0	102	40	40
G1/4	NPT Automatic pulse drain	**PF501-02DHRSS**	12.0	102	40	40

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Stainless Steel FRLs

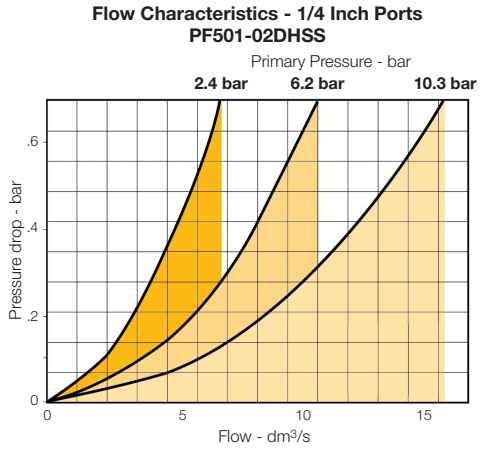
PF501 Series - 1/4 Inch Ports

Specifications

Bowl capacity		29 cm^3
Filter rating		0.3 micron
Sump capacity		12 cm^3
Port threads		G1/4
Operating temperature	Manual twist drain	-18°C to 82°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain	0 to 20.7 bar
	Automatic pulse drain	0 to 12 bar
Weight		275 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts



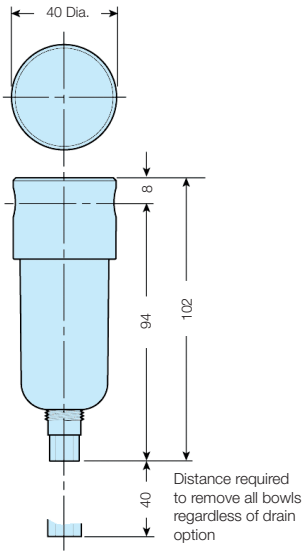
Materials of Construction

Body	316 Stainless steel
Bowl	316 Stainless steel
Drain	316 Stainless steel
Element holder	Acetal
Filter element	Borosilicate Fiber
Seals	Flourocarbon

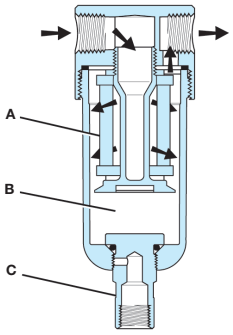
Accessories

Filter element kits	0.3 micron	**EKF501H**
Drain kits	Automatic pulse drain	**RK504SY-SS**
Manual twist drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Pipe nipple	1/4" NPT 316 Stainless Steel	**616Y28-SS**
	1/4" BSPT 316 Stainless Steel	**AC-2SS**

Dimensions (mm)



Operation



The contaminated air enters the element interior and is forced through a thick membrane (A) of "borosilicate" glass fibers coated with epoxy. Flow then passes through the element, and at this stage 99.97% of the sub micronic particles have been removed from the air stream. The tiny droplets coalesce together and are collected from the filter element by the outer drain layer.

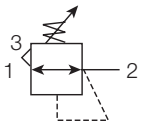
The clean, filtered air now passes through and out into the pneumatic system. The air line coalescing filter removes liquid aerosols and sub-micron particulate matter.

Collected liquids and particles in the "quiet zone" (B) should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve (C) slightly until the liquid begins to drain.

PR354, PR364 Regulator – Miniature

PR364 PR354

Symbol



- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" – 5.75 dm^3/s§

Options:

PR364 G 02 C [ ] SS

Series	
Stainless steel	**PR354**
Standard knob	**PR364**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/4"	**02**

Pressure range	
0 - 1.7 bar	A
0 - 4.1 bar	B
0 - 8.5 bar	**C**

Options	
Relieving	**Blank**
Non-Relieving	K

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/4	**PR364**	BSPP - Standard knob	**PR364G02CSS**	20.7	78	40	40
G1/4	**PR364**	NPT - Standard knob	**PR364-02CSS**	20.7	78	40	40
G1/4	**PR354**	BSPP - All metal	**PR354G02CSS**	20.7	64	40	40
G1/4	**PR354**	NPT - All metal	**PR354-02CSS**	20.7	64	40	40

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

⚠ Warning

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Stainless Steel FRLs

PR354, PR364 Series - 1/4 Inch Ports

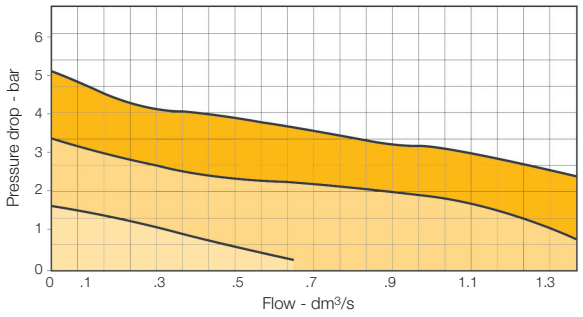
Specifications

Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/4
Operating temperature	PR354	-18°C to 82°C
	PR364	-18°C to 66°C
Max supply pressure	PR354	0 to 20.7 bar
	PR364	0 to 20.7 bar
Weight		230 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts

Flow Characteristics - 1/4 Inch Ports
6.9 bar Primary Pressure



CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

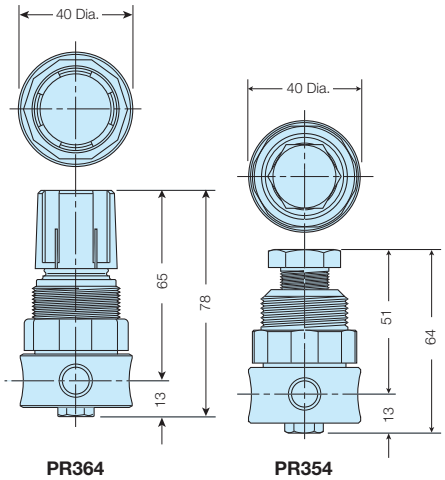
Materials of Construction

Adjustment mechanism / Springs	316 Stainless steel
Adjustment knob (PR354)	316 Stainless steel
Adjustment knob (PR364)	Polypropylene
Body	316 Stainless steel
Bonnet (PR354)	316 Stainless steel
Bonnet (PR364)	Acetal
Bottom plug	316 Stainless steel
Poppet	316 Stainless steel
Seals	Flourocarbon

Accessories

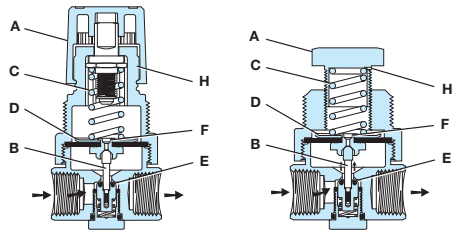
R354 Bonnet Kit	0.3 micron	**CKR354YSS**
R364 Bonnet Kit	Knob included	**CKR364YSS**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Panel Mount Bracket (Stainless)		**161X57-SS**
Panel Mount Nut	Stainless	**R05X51SS**
	Plastic	**R05X51-P**
Pipe Nipple	1/4" NPT 316 Stainless Steel	**616Y28-SS**
	1/4" BSPT 316 Stainless Steel	**AC-2SS**
Service Kit	Relieving	**RKR364YSS**
	Non-Relieving	**RKR364KYSS**

Dimensions (mm)



Note: 32mm dia. hole required for panel mounting.

Operation



With the adjusting knob (A) turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly (B) is closed. Turning the adjusting knob clockwise applies a load to control spring (C). This load causes the diaphragm (D) and the valve poppet assembly (B) to move downward allowing flow across the seat area (E) created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the diaphragm (D) and offsets the load of spring (C). As downstream pressure rises, poppet assembly (B) and diaphragm (D) move upward until the area (E) is closed and the load of the spring (C) and pressure under diaphragm (D) are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm (D). The load of control spring (C) now causes the poppet assembly to move downward opening seat area (E) allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening (E). Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm (D) to move upward against control spring (C), open vent hole (F), and vent the excess pressure to atmosphere through the hole in the bonnet (H). (This occurs in the relieving type regulator only.)

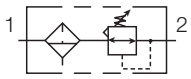
Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

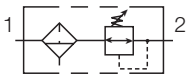
PB548, PB558 Filter / Regulator – Miniature

PB548

PB558

Symbols





- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156.
- High flow: 1/4" – 5.75 dm^3/s§
- 1/8" female threaded drain

Options:

PB548 G 02 D H C SS

Series	
Standard knob	**PB548**
Stainless steel	**PB558**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/4"	**02**

Bowl type	
Metal bowl without sight gauge	**D**

Element	
20µ element	**H**
5µ element	G

Pressure range	
0 - 1.7 bar	A
0 - 4.1 bar	B
0 - 8.5 bar	**C**

Options	
Relieving	**Blank**
Non-Relieving	K
Auto Pulse Drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/4	**PB548**	BSPP - Standard knob - Manual drain	**PB548G02DHCSS**	20.7	147	40	40
G1/4	**PB548**	BSPP - Standard knob - Auto drain	**PB548G02DHCRSS**	12.0	147	40	40
G1/4	**PB548**	NPT - Standard knob - Manual drain	**PB548-02DHCSS**	20.7	147	40	40
G1/4	**PB548**	NPT - Standard knob - Auto drain	**PB548-02DHCRSS**	12.0	147	40	40
G1/4	**PB558**	BSPP - All metal - Manual drain	**PB558G02DHCSS**	20.7	78	40	40
G1/4	**PB558**	BSPP - All metal - Auto drain	**PB558G02DHCRSS**	12.0	78	40	40
G1/4	**PB558**	NPT - All metal - Manual drain	**PB558-02DHCSS**	20.7	78	40	40
G1/4	**PB558**	NPT - All metal - Auto drain	**PB558-02DHCRSS**	12.0	78	40	40

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

⚠ Warning

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Stainless Steel FRLs

PB548, PB558 Series - 1/4 Inch Ports

Specifications

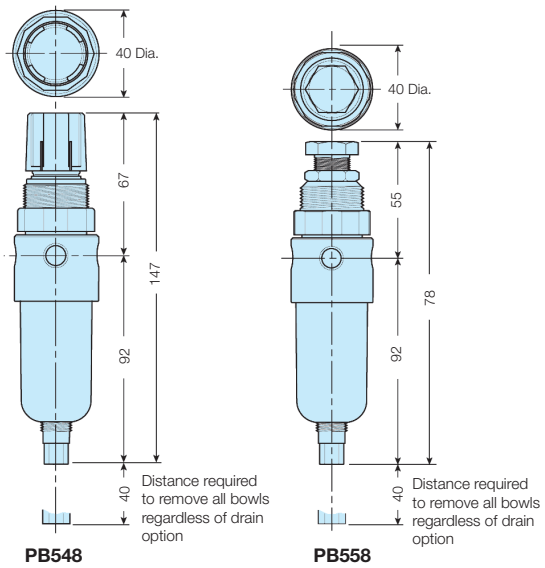
Bowl capacity		29 cm^3
Filter rating		20 micron
Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/4
Operating temperature	PB548	-18°C to 82°C
	PB558	-18°C to 66°C
	Auto Pulse Drain	0°C to 66°C
Max supply pressure	PB548	0 to 20.7 bar
	PB558	0 to 20.7 bar
	Auto Pulse Drain	0 to 12 bar
Sump capacity		12 cm^3
Weight		270 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Materials of Construction

Adjustment mechanism / Springs	316 Stainless steel
Adjustment knob (PB548)	Polypropylene
Adjustment knob (PB558)	316 Stainless Steel
Body	316 Stainless steel
Bonnet (PB548)	Acetal
Bonnet (PB558)	316 Stainless Steel
Bottom plug	316 Stainless steel
Poppet	316 Stainless steel
Seals	Flourocarbon

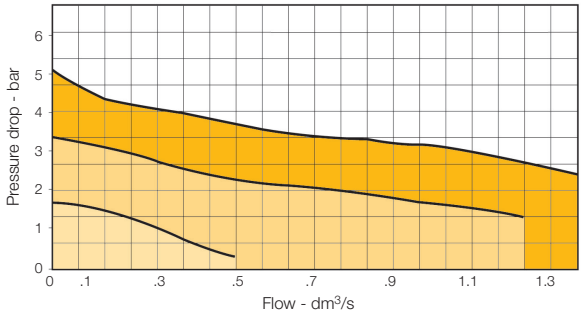
Dimensions (mm)



Note: 32mm dia. hole required for panel mounting.

Flow Charts

Flow Characteristics - 1/4 Inch Ports
6.9 bar Primary Pressure

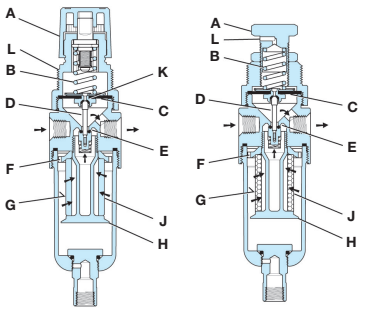


CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Accessories

Filter Element Kits	Particulate (5 micron)	**EK504VY**
	Particulate (20 micron)	**EK504Y**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Drain Kits	Automatic Pulse Drain	**RK504SY-SS**
Manual Twist Drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Panel Mount Bracket (Stainless)		**161X57-SS**
Panel Mount Nut	Stainless	**R05X51SS**
	Plastic	**R05X51-P**
Pipe Nipple	1/4" NPT 316 Stainless Steel	**616Y28-SS**
	1/4" BSPT 316 Stainless Steel	**AC-2SS**
Service Kit	Relieving	**RK549YSS**
	Non-Relieving	**RK548YSS**

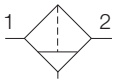
Operation



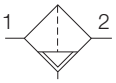
Turning the adjusting knob clockwise applies a load tocontrol spring (B) which forces diaphragm (C) and valve poppet assembly (D) to move downward allowing filtered air to flow through the seat area (E) created between the poppet assembly and the seat. “First stage filtration”. Air pressure supplied to the inlet port is directed through deflector plate (F) causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall (G) and down below the lower baffle (H) to the quiet zone. After liquids and large particles are removed in the first stage of filtration “second stage filtration” occurs as air flows through element (J) where smaller particles are filtered out and retained. The air flow now passes through seat area (E) to the outlet port of the unit. Pressure in the downstream line is sensed below the diaphragm (C) and offsets the load of spring (B). When downstream pressure reaches the set-point, poppet valve assembly (D) and diaphragm (C) move upward closing seat area (E). Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm (C) to move upward opening vent hole (K) venting the excess pressure to atmosphere through the hole in the bonnet (L). (This occurs in the standard relieving type filter/regulators only.)

PF10 Filter – Standard

Symbols



Manual drain



Auto drain

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 34 dm^3/s§
- 1/8" female threaded drain

Options:

PF10	G	04	D	J		SS

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/2"	**04**

Bowl type	
Metal bowl without sight gauge	**D**
Metal bowl with sight gauge	W

Element	
40µ element	**J**
5µ element	G

Options	
Manual twist drain	**Blank**
Automatic float drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	BSPP Manual twist drain - Metal bowl - Without sight gauge	**PF10G04DJSS**	20.7	141	64	60
G1/2	NPT Manual twist drain - Metal bowl - Without sight gauge	**PF10-04DJSS**	20.7	141	64	60
G1/2	BSPP Manual twist drain - Metal bowl - With sight gauge	**PF10G04WJSS**	17.2	141	64	60
G1/2	NPT Manual twist drain - Metal bowl - With sight gauge	**PF10-04WJSS**	17.2	141	64	60
G1/2	BSPP Automatic pulse drain - Metal bowl - Without sight gauge	**PF10G04DJRSS**	12.0	141	64	60
G1/2	NPT Automatic pulse drain - Metal bowl - Without sight gauge	**PF10-04DJRSS**	12.0	141	64	60
G1/2	BSPP Automatic pulse drain - Metal bowl - With sight gauge	**PF10G04WJRSS**	12.0	141	64	60
G1/2	NPT Automatic pulse drain - Metal bowl - With sight gauge	**PF10-04WJRSS**	12.0	141	64	60

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

PDE2504TCUK

Stainless Steel FRLs

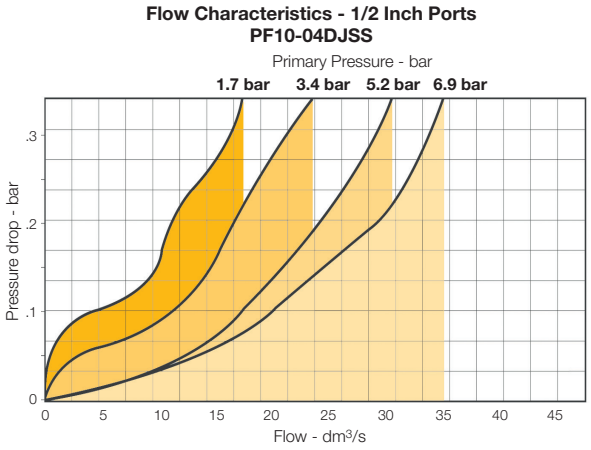
PF10 Series - 1/2 Inch Ports

Specifications

Bowl capacity		118 cm^3
Filter rating		40 micron
Sump capacity		50 cm^3
Port threads		G1/2
Operating temperature	Manual twist drain (D)	-18°C to 82°C
	Manual twist drain (W)	-18°C to 66°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain (D)	0 to 20.7 bar
	Manual twist drain (W)	0 to 17.2 bar
	Automatic pulse drain	0 to 12 bar
Weight		850 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts



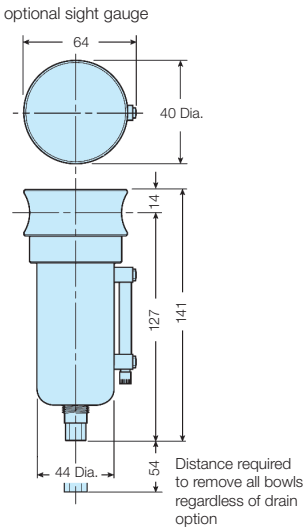
Materials of Construction

Body	316 Stainless steel
Bowl	316 Stainless steel
Deflector	Acetal
Drain	316 Stainless steel
Element holder	Acetal
Filter element	Polyethylene
Seals	Flourocarbon
Sight gauge	Isoplast

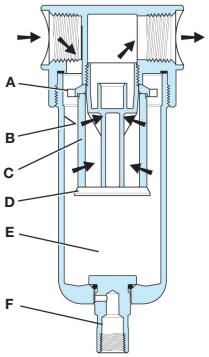
Accessories

Filter element kits	Particulate (40 micron)	**EK55J**
	Particulate (5 micron)	**EK55G**
Drain kits	Automatic float drain	**SA10MDSS**
Manual twist drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Pipe nipple	1/2" NPT 316 Stainless Steel	**616A28-SS**
	1/2" BSPT 316 Stainless Steel	**AC-4SS**

Dimensions (mm)



Operation



First Stage Filtration:

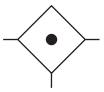
Air enters at inlet port and flows through deflector plate (A) which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall (B) by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle (D) separates the lower portion of the bowl into a “quiet zone” (E) where the removed liquid and particles collect, unaffected by the swirling air, and are therefore not reentrained into the flowing air.

Second Stage Filtration:

After liquids and large particles are removed in the first stages of filtration, the air flows through element (C) where smaller particles are filtered out. The filtered air then passes downstream. Collected liquids and particles in the “quiet zone” (E) should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve (F) slightly until the liquid begins to drain.

PF11 Coalescing Filter – Standard

Symbols



- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 21 $dm^3/s^{§}$
- 1/8" female threaded drain
- High efficiency 0.01µm filtration
- Removes liquid aerosols and sub micron particles

Options:

PF11	G	04	D	J		SS

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/2"	**04**

Bowl type	
Metal bowl without sight gauge	**D**
Metal bowl with sight gauge	W

Element	
0.01µ element	**J**

Options	
Manual twist drain	**Blank**
Automatic float drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	BSPP Manual twist drain - Metal bowl - Without sight gauge	**PF11G04DJSS**	20.7	141	64	60
G1/2	NPT Manual twist drain - Metal bowl - Without sight gauge	**PF11-04DJSS**	20.7	141	64	60
G1/2	BSPP Manual twist drain - Metal bowl - With sight gauge	**PF11G04WJSS**	17.2	141	64	60
G1/2	NPT Manual twist drain - Metal bowl - With sight gauge	**PF11-04WJSS**	17.2	141	64	60
G1/2	BSPP Automatic pulse drain - Metal bowl - Without sight gauge	**PF11G04DJRSS**	12.0	141	64	60
G1/2	NPT Automatic pulse drain - Metal bowl - Without sight gauge	**PF11-04DJRSS**	12.0	141	64	60
G1/2	BSPP Automatic pulse drain - Metal bowl - With sight gauge	**PF11G04WJRSS**	12.0	141	64	60
G1/2	NPT Automatic pulse drain - Metal bowl - With sight gauge	**PF11-04WJRSS**	12.0	141	64	60

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Stainless Steel FRLs

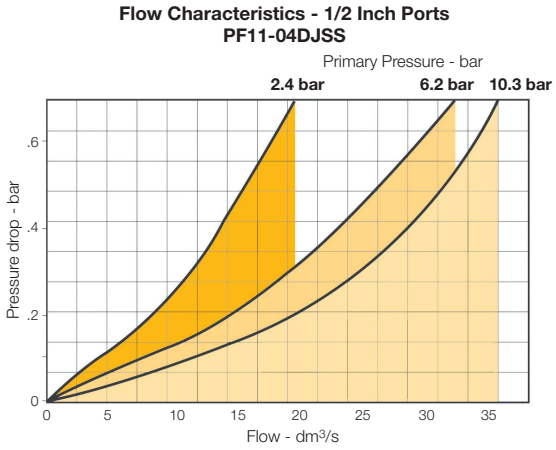
PF11 Series - 1/2 Inch Ports

Specifications

Bowl capacity		118 cm^3
Filter rating		0.01 micron
Sump capacity		50 cm^3
Port threads		G1/2
Operating temperature	Manual twist drain (D)	-18°C to 82°C
	Manual twist drain (W)	-18°C to 66°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain (D)	0 to 20.7 bar
	Manual twist drain (W)	0 to 17.2 bar
	Automatic pulse drain	0 to 12 bar
Weight		850 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts



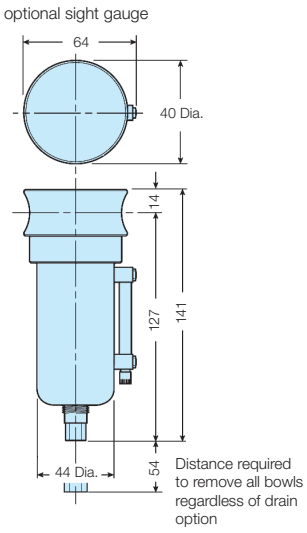
Materials of Construction

Body	316 Stainless steel
Bowl	316 Stainless steel
Drain	316 Stainless steel
Element holder	Acetal
Filter element	Borosilicate Fiber
Seals	Flourocarbon
Sight gauge	Isoplast

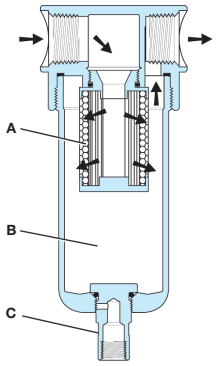
Accessories

Filter element kits	Particulate (0.01 micron)	**EKF71**
Drain kits	Automatic float drain	**SA10MDSS**
Manual twist drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Pipe nipple	1/2" NPT 316 Stainless Steel	**616A28-SS**
	1/2" BSPT 316 Stainless Steel	**AC-4SS**

Dimensions (mm)



Operation



The contaminated air enters the element interior and is forced through a thick membrane (A) of "borosilicate" glass fibers coated with epoxy. Flow then passes through the element, and at this stage 99.97% of the sub micronic particles have been removed from the air stream. The tiny droplets coalesce together and are collected from the filter element by the outer drain layer.

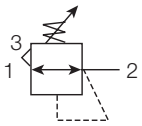
The clean, filtered air now passes through and out into the pneumatic system. The air line coalescing filter removes liquid aerosols and sub-micron particulate matter.

Collected liquids and particles in the "quiet zone" (B) should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve (C) slightly until the liquid begins to drain.

PR10, PR11 Regulator – Standard

PR11 PR10

Symbol



- Stainless steel construction handles most corrosive environments
- Large daphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156
- Low temperature version available
- High flow: 1/2" – 37.75 $dm^3/s^{\S}$

Options:

PR10	G	04	C		SS

Series		Port size		Port size		Pressure range		Options		Material	
Standard knob	**PR10**	BSPP	**G**	1/2"	**04**	0 - 4.1 bar	B	Relieving	**Blank**	Stainless steel	**SS**
Stainless steel tee handle	**PR11**	NPT	**-**			0 - 8.5 bar	**C**	Non-Relieving	K		
						0 - 17 bar	D	Low temp.	L		

Note: Bold options are most popular

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	**PR10**	BSPP - Standard knob	**PR10G04CSS**	20.7	126	62	60
G1/2	**PR10**	NPT - Standard knob	**PR10-04CSS**	20.7	126	62	60
G1/2	**PR11**	BSPP - Stainless steel tee handle	**PR11G04CSS**	20.7	154	62	60
G1/2	**PR11**	NPT - Stainless steel tee handle	**PR11-04CSS**	20.7	154	62	60

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

⚠ Warning

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Stainless Steel FRLs

PR10, PR11 Series - 1/2 Inch Ports

Specifications

Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/2
Operating temperature	PR10	-18°C to 66°C
	PR11	-18°C to 82°C
Option "L" minimum operating temperature		-40°C
Max supply pressure	PR10	0 to 20.7 bar
	PR11	0 to 20.7 bar
Weight		810 g

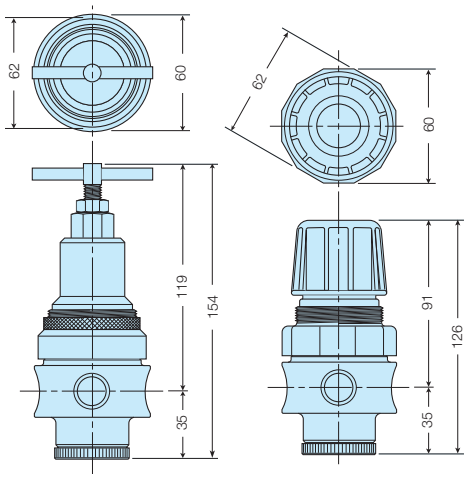
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Note: "Low Temperature" option is intended for applications where the ambient temperature may be down to -40° C/F. Air supply must be free of moisture to prevent ice formation and malfunction of units. These units contain EPDM seals. Make sure any oils in the airstream are compatible.

Materials of Construction

Adjustment mechanism / Springs	316 Stainless steel
Body	316 Stainless steel
Bonnet / Tee handle (PR11)	316 Stainless steel
Bonnet / Knob (PR10)	Acetal
Bottom plug	316 Stainless steel
Poppet	316 Stainless steel
Seals	Flourocarbon

Dimensions (mm)

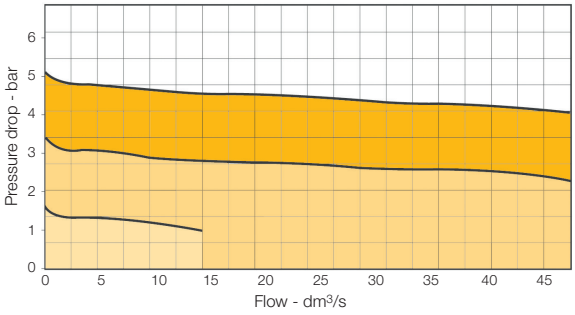


PR11 PR10

Note: 44mm dia. hole required for panel mounting.

Flow Charts

Flow Characteristics - 1/2 Inch Ports
6.9 bar Primary Pressure

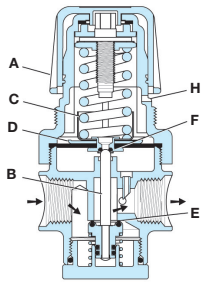


CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Accessories

R10 Bonnet Kit	Knob included	**CKR10YSS**
R11 Bonnet Kit		**CKR11YSS**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Panel Mount Bracket (Stainless)		**R10Y57-SS**
Panel Mount Nut	Stainless	**R10X51SS**
	Plastic	**R10X51-P**
Pipe Nipple	1/2" NPT 316 Stainless Steel	**616A28-SS**
	1/2" BSPT 316 Stainless Steel	**AC-4SS**
Service Kit	Relieving	**RKR10YSS**
	Non-Relieving	**RKR10KYSS**

Operation



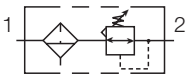
With the adjusting knob (A) turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly (B) is closed. Turning the adjusting knob clockwise applies a load to control spring (C). This load causes the diaphragm (D) and the valve poppet assembly (B) to move downward allowing flow across the seat area (E) created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the diaphragm (D) and offsets the load of spring (C). As downstream pressure rises, poppet assembly (B) and diaphragm (D) move upward until the area (E) is closed and the load of the spring (C) and pressure under diaphragm (D) are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm (D). The load of control spring (C) now causes the poppet assembly to move downward opening seat area (E) allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening (E).
Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm (D) to move upward against control spring (C), open vent hole (F), and vent the excess pressure to atmosphere through the hole in the bonnet (H). (This occurs in the relieving type regulator only.)

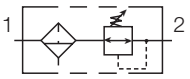
PB11, PB12 Filter / Regulator – Standard

PB12

PB11

Symbols





- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO-15156
- Low temperature version available
- High flow: 1/2" – 34 $dm^3/s^{\S}$
- 1/8" female threaded drain

Options:

PB11 G 04 D J C [ ] SS

Series	
Standard knob	**PB11**
Stainless steel	**PB12**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/2"	**04**

Bowl type	
Metal bowl without sight gauge	**D**
Metal bowl with sight gauge	W

Element	
40µ element	**J**
5µ element	G

Pressure range	
0 - 4.1 bar	B
0 - 8.5 bar	**C**
0 - 17 bar	D

Options	
Relieving	**Blank**
Non-Relieving	K
Auto Float Drain	R
Low Temp.*	L

Material	
Stainless steel	**SS**

Note: Bold options are most popular

* Manual drain without sight gauge only

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	**PB11**	BSPP - Standard knob - Manual drain	**PB11G04DJCSS**	20.7	218	64	60
G1/2	**PB11**	BSPP - Standard knob - Auto drain	**PB11G04DJCRSS**	12.0	218	64	60
G1/2	**PB11**	NPT - Standard knob - Manual drain	**PB11-04DJCSS**	20.7	218	64	60
G1/2	**PB11**	NPT - Standard knob - Auto drain	**PB11-04DJCRSS**	12.0	218	64	60
G1/2	**PB12**	BSPP - Tee handle - Manual drain	**PB12G04DJCSS**	20.7	246	64	60
G1/2	**PB12**	BSPP - Tee handle - Auto drain	**PB12G04DJCRSS**	12.0	246	64	60
G1/2	**PB12**	NPT - Tee handle - Manual drain	**PB12-04DJCSS**	20.7	246	64	60
G1/2	**PB12**	NPT - Tee handle - Auto drain	**PB12-04DJCRSS**	12.0	246	64	60

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

⚠ Warning

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Stainless Steel FRLs

PB11, PB12 Series - 1/2 Inch Ports

Specifications

Bowl capacity		118 cm^3
Filter rating		40 micron
Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/2
Operating temperature	PB11 (Metal bowl D or W)	-18°C to 66°C
	PB12 (Metal bowl D)	-18°C to 82°C
	PB12 (Metal bowl W)	-18°C to 66°C
	Auto Float Drain	0°C to 66°C
Option "L" minimum operating temperature		-40°C
Max supply pressure	PB11 (Metal bowl D or W)	0 to 20.7 bar
	PB12 (Metal bowl D)	0 to 20.7 bar
	PB12 (Metal bowl W)	0 to 20.7 bar
	Auto Float Drain	0 to 12 bar
Sump capacity		50 cm^3
Weight		1090 g

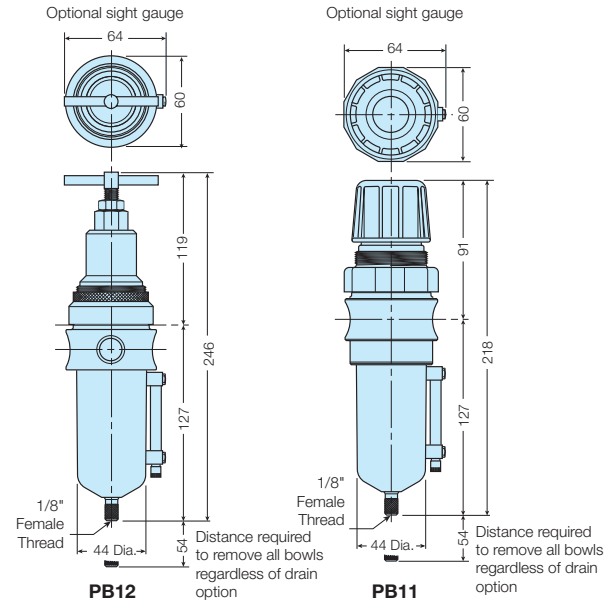
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Note: "Low Temperature" option is intended for applications where the ambient temperature may be down to -40° C/F. Air supply must be free of moisture to prevent ice formation and malfunction of units. These units contain EPDM seals. Make sure any oils in the airstream are compatible.

Materials of Construction

Adjustment mechanism / Springs	316 Stainless steel
Body	316 Stainless steel
Bonnet / Knob (PB11)	Acetal
Bonnet / Tee handle (PB12)	316 Stainless steel
Bottom plug	316 Stainless steel
Poppet	316 Stainless steel
Seals	Flourocarbon
Sight gauge	Isoplast

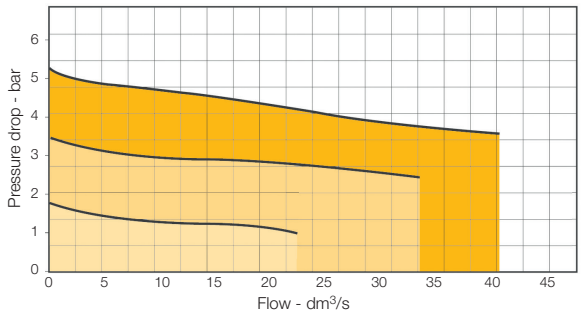
Dimensions (mm)



Note: 44mm dia. hole required for panel mounting.

Flow Charts

Flow Characteristics - 1/2 Inch Ports
6.9 bar Primary Pressure

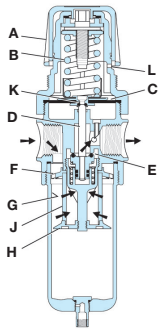


CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Accessories

Filter Element Kits	Particulate (40 micron)	**EKF10Y**
	Particulate (5 micron)	**EKF10VY**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Drain Kits	Automatic Float Drain	**SA10MDSS**
Manual Twist Drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Panel Mount Bracket (Stainless)		**R10Y57-SS**
Panel Mount Nut	Stainless	**R10X51SS**
	Plastic	**R10X51-P**
Pipe Nipple	1/2" NPT 316 Stainless Steel	**616A28-SS**
	1/2" BSPT 316 Stainless Steel	**AC-4SS**
Service Kit	Relieving	**RKR10YSS**
	Non-Relieving	**RKR10KYSS**

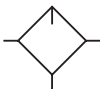
Operation



Turning the adjusting knob clockwise applies a load to control spring (B) which forces diaphragm (C) and valve poppet assembly (D) to move downward allowing filtered air to flow through the seat area (E) created between the poppet assembly and the seat. "First stage filtration". Air pressure supplied to the inlet port is directed through deflector plate (F) causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall (G) and down below the lower baffle (H) to the quiet zone. After liquids and large particles are removed in the first stage of filtration "second stage filtration" occurs as air flows through element (J) where smaller particles are filtered out and retained. The air flow now passes through seat area (E) to the outlet port of the unit. Pressure in the downstream line is sensed below the diaphragm (C) and offsets the load of spring (B). When downstream pressure reaches the set-point, poppet valve assembly (D) and diaphragm (C) move upward closing seat area (E). Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm (C) to move upward opening vent hole (K) venting the excess pressure to atmosphere through the hole in the bonnet (L). (This occurs in the standard relieving type filter/regulators only.)

PL10 Lubricator – Standard

Symbols



- Stainless steel construction handles most corrosive environments
- Fillable under pressure
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 47 $dm^3/s^{\S}$
- 1/8" female threaded drain

Options:

PL10 G 04 D SS

Port size	
BSPP	**G**
NPT	-

Port size	
1/2"	**04**

Bowl type	
Metal bowl without sight gauge	**D**
Metal bowl with sight gauge	W

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	BSPP Manual twist drain - Metal bowl - Without sight gauge	**PL10G04DSS**	20.7	173	64	60
G1/2	NPT Manual twist drain - Metal bowl - Without sight gauge	**PL10-04DSS**	20.7	173	64	60
G1/2	BSPP Manual twist drain - Metal bowl - With sight gauge	**PL10G04WSS**	17.2	173	64	60
G1/2	NPT Manual twist drain - Metal bowl - With sight gauge	**PL10-04WSS**	17.2	173	64	60

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop

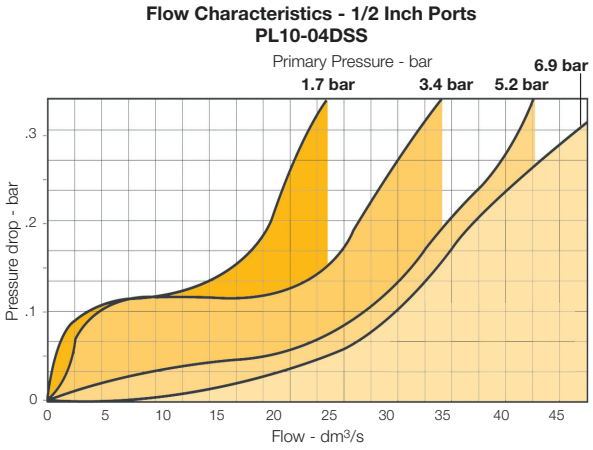
Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Specifications

Bowl capacity		118 cm^3
Port threads		G1/2
Operating temperature	Metal bowl (D)	-18°C to 66°C
	Metal bowl (W)	-18°C to 66°C
Max supply pressure	Metal bowl (D)	0 to 20.7 bar
	Metal bowl (W)	0 to 17.2 bar
Weight		850 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Flow Charts



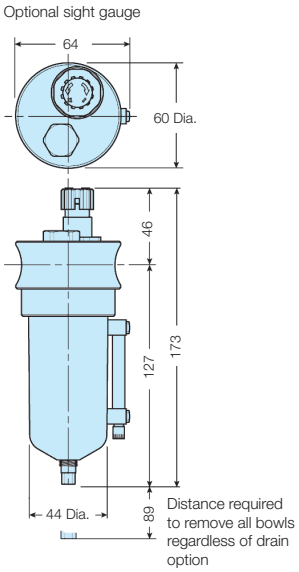
Materials of Construction

Body	316 Stainless steel
Bowl	316 Stainless steel
Dip tube	316 Stainless steel
Drain	316 Stainless steel
Fill plug	316 Stainless steel
Seals	Flourocarbon
Sight dome	Nylon
Sight gauge	Isoplast

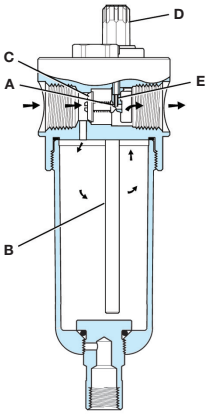
Accessories

Manual twist drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
Pipe nipple	1/2" NPT 316 Stainless Steel	**616A28-SS**
	1/2" BSPT 316 Stainless Steel	**AC-4SS**
Sight dome kit		**RKL10SS**

Dimensions (mm)



Operation



Air flowing through the unit goes through two paths. At low flow rates the majority of the air flows through the Venturi section (A). The rest of the air opens the check valve (C). The velocity of the air flowing through the Venturi section (A) creates a pressure drop. This lower pressure allows the oil to be forced from the reservoir through the pickup tube (B) and travels up to the metering screw (D). The rate of oil delivery is then controlled by adjusting the metering screw (D). Oil flows past the metering screw (D) and forms a drop in the nozzle tube (E). As the oil drops through the dome (F) and back into the Venturi section (A), it is broken up into fine particles. It is then mixed with the air flowing past the check valve (C) and is carried downstream. As the air flow increases the check valve (C) will open more fully. This additional flow will assure that the oil delivery rate will increase linearly with the increase of air flow.

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates,
Dubai
Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, St. Florian
Tel: +43 (0)7224 66201
parker.austria@parker.com

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/NL/LU – Benelux,
Hendrik Ido Ambacht
Tel: +31 (0)541 585 000
parker.nl@parker.com

BG – Bulgaria, Sofia
Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

CH – Switzerland, Etoy
Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Piraeus
Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs
Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IL – Israel
Tel: +39 02 45 19 21
parker.israel@parker.com

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty
Tel: +7 7273 561 000
parker.easteurope@parker.com

NO – Norway, Asker
Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Borås
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

US – USA, Cleveland
Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

CN – China, Shanghai
Tel: +86 21 2899 5000

HK – Hong Kong
Tel: +852 2428 8008

IN – India, Mumbai
Tel: +91 22 6513 7081-85

JP – Japan, Tokyo
Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

SG – Singapore
Tel: +65 6887 6300

TH – Thailand, Bangkok
Tel: +662 186 7000

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos
Tel: +55 800 727 5374

CL – Chile, Santiago
Tel: +56 2 623 1216

MX – Mexico, Toluca
Tel: +52 72 2275 4200

© 2020 Parker Hannifin Corporation. All rights reserved.

Catalogue PDE2504TCUK - V4 - September 2020

EMEA Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

US Product Information Centre
Toll-free number: 1-800-27 27 537

www.parker.com

Your local authorized Parker distributor