



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



Stainless Steel FRLs

Air Preparation Units

Catalogue PDE2504TCUK June 2016



ENGINEERING YOUR SUCCESS.

Stainless Steel FRLs



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 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.

SALE CONDITIONS

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered into by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).

PF504 Filter - Miniature.....4 - 5

PF501 Coalescing Filter - Miniature.....6 - 7

PR354, PR364 Regulator - Miniature8 - 9

PB548, PB558 Filter / Regulator - Miniature10 - 11

PF10 Filter - Standard12 - 13

PF11 Coalescing Filter - Standard14 - 15

PR10, PR11 Regulator - Standard.....16 - 17

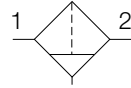
PB11, PB12 Filter / Regulator - Standard18 - 19

PL10 Lubricator - Standard20 - 21

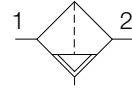
PF504 Filter – Miniature



Symbols



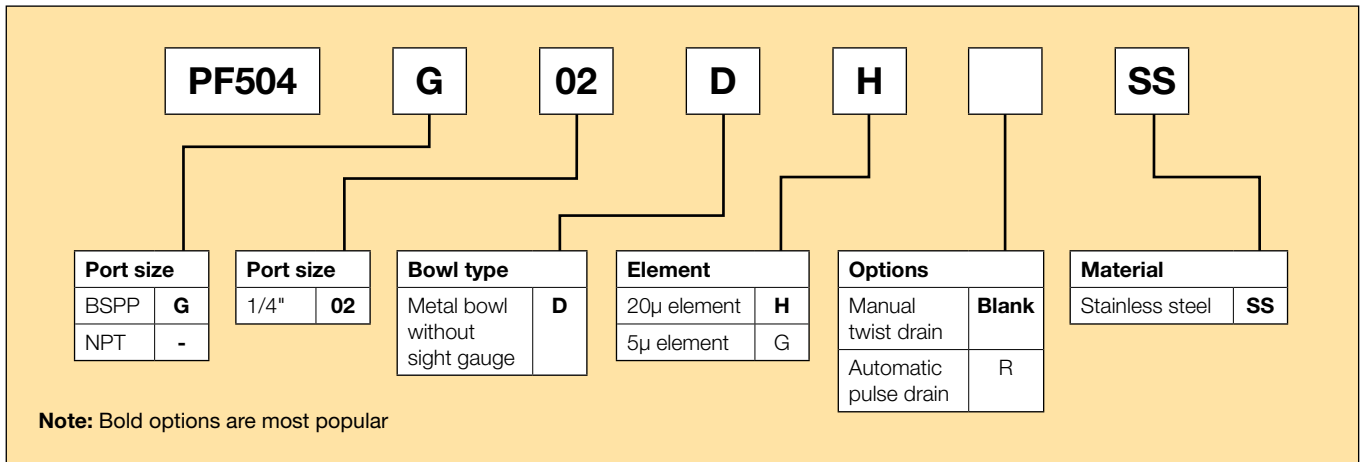
Manual drain



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 dm³/s[§]
- 1/8" female threaded drain

Options:



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

§ dm³/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Specifications

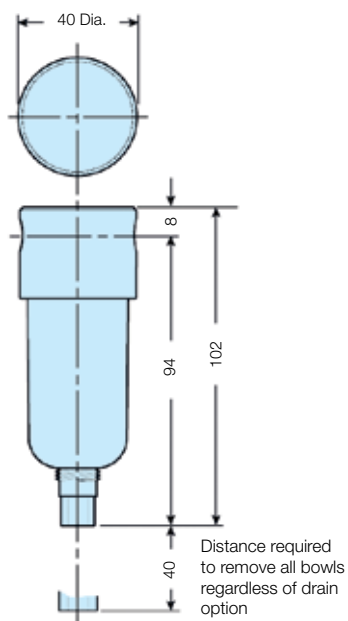
Bowl capacity	29 cm ³	
Filter rating	20 micron	
Sump capacity	12 cm ³	
Port threads	G1/4	
Operating temperature	Manual twist drain	-18°C to 82°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain	0 to 20.7 bar
	Automatic pulse drain	0 to 12 bar
Weight	274 g	

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

Materials of Construction

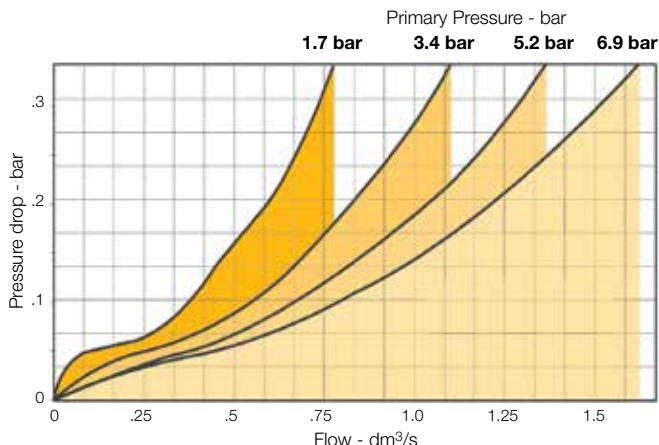
Body	316 Stainless steel
Bowl	316 Stainless steel
Deflector	Acetal
Drain	316 Stainless steel
Element holder	Acetal
Filter element	Polyethylene
Seals	Flouorocarbon

Dimensions (mm)



Flow Charts

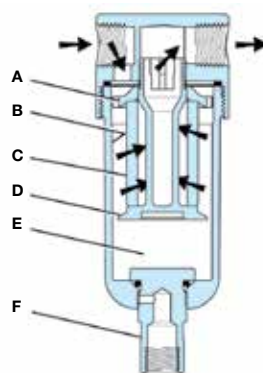
**Flow Characteristics - 1/4 Inch Ports
PF504-02DHSS**



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

Operation



First Stage Filtration:

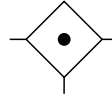
Air enters at inlet port and flows through deflector plate (A) which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall (B) by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle (D) separates 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.

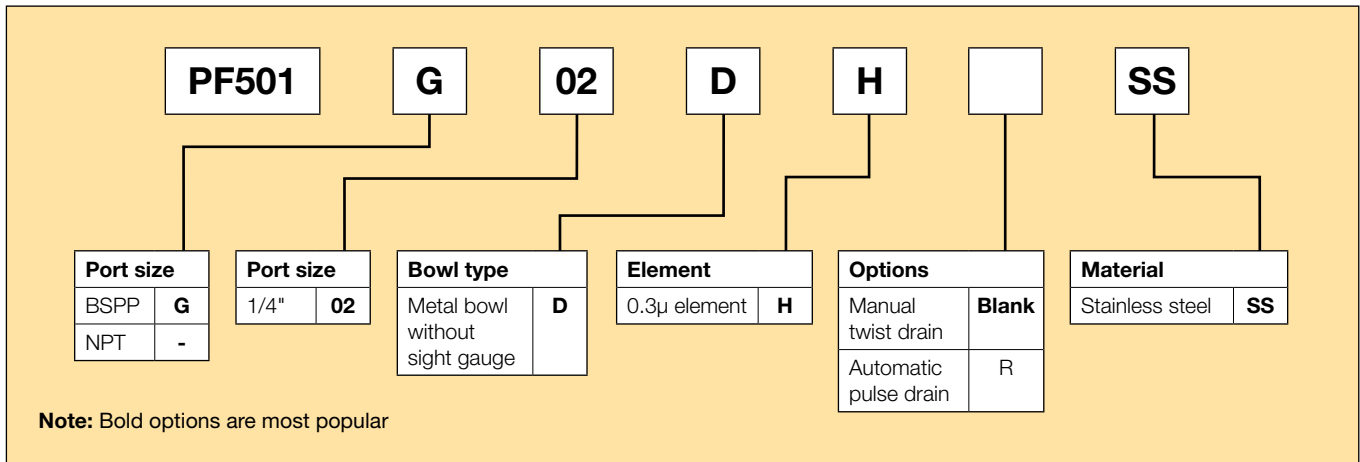
PF501 Coalescing Filter – Miniature

Symbol



- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" - 755 dm³/s[§]
- 1/8" female threaded drain

Options:



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

§ dm³/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Specifications

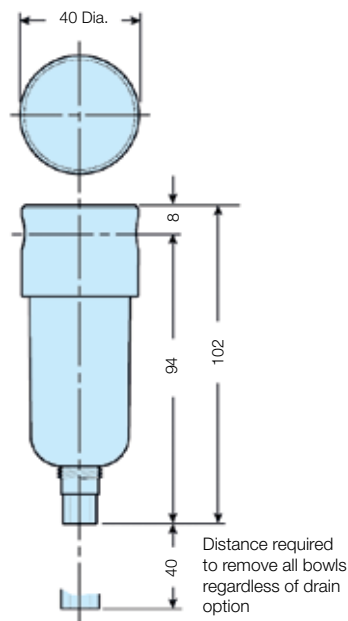
Bowl capacity	29 cm ³	
Filter rating	0.3 micron	
Sump capacity	12 cm ³	
Port threads	G1/4	
Operating temperature	Manual twist drain	-18°C to 82°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain	0 to 20.7 bar
	Automatic pulse drain	0 to 12 bar
Weight	275 g	

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

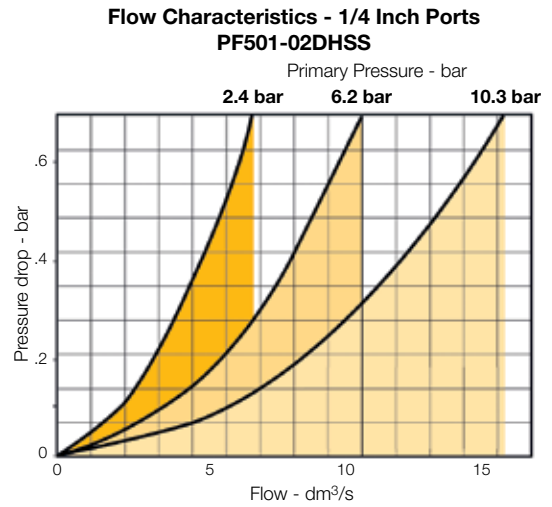
Materials of Construction

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

Dimensions (mm)



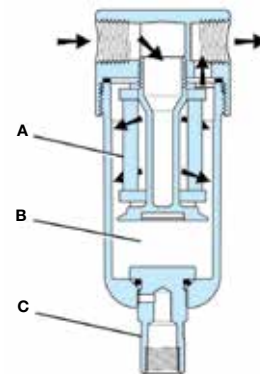
Flow Charts



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

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.

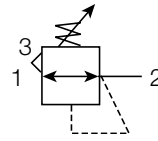
PR354, PR364 Regulator – Miniature

Symbol



PR364

PR354



- 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 dm³/s[§]

Options:

PR364		G		02		C			SS		
Series		Port size		Port size		Pressure range		Options		Material	
Stainless steel	PR354	BSPP	G	1/4"	02	0 - 1.7 bar	A	Relieving	Blank	Stainless steel	SS
Standard knob	PR364	NPT	-			0 - 4.1 bar	B	Non-Relieving	K		
						0 - 8.5 bar	C				

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

§ dm³/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.

Specifications

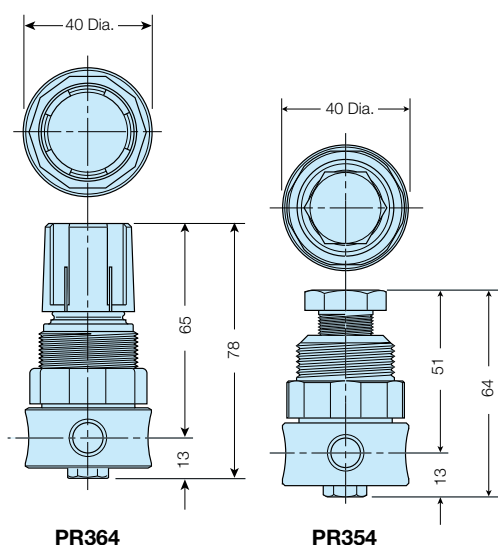
Gauge port	G1/4	
Operation	Flourocarbon diaphragm	
Port threads	G1/4	
Operating temperature	PR354	-18°C to 82°C
	PR364	-18°C to 66°C
Max supply pressure	PR354	0 to 20.7 bar
	PR364	0 to 20.7 bar
Weight	230 g	

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

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

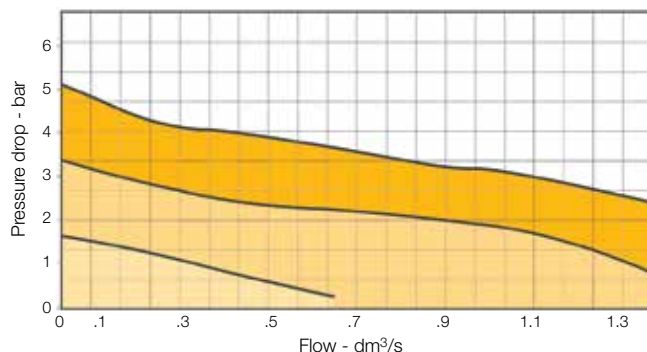
Dimensions (mm)



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

Flow Charts

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



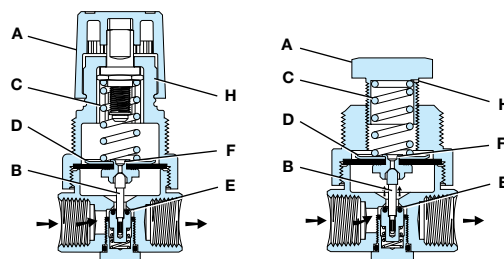
CAUTION: REGULATOR PRESSURE ADJUSTMENT –

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

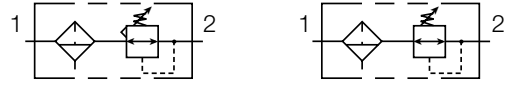
R354 Bonnet Kit	0.3 micron	CKR354YSS
R364 Bonnet Kit	Knob included	CKR364YSS
Gauge - 0 to 10 bar	BSPP	M1/4G40S-10
	NPT	K4520N14160SS
Panel Mount Bracket (Stainless)		161X57-SS
Panel Mount Nut	Stainless	R05X51SS
	Plastic	R05X51-P
Pipe Nipple	1/4" NPT 316 Stainless Steel	616Y28-SS
	1/4" BSPT 316 Stainless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

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.)

PB548, PB558 Filter / Regulator – Miniature 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 dm³/s[§]
- 1/8" female threaded drain

Options:

PB548	G	02	D	H	C		SS
Series	Bowl type		Element		Pressure range		Material
Standard knob PB548	Metal bowl D	20µ element H	0 - 1.7 bar A	Stainless steel SS			
Stainless steel PB558	Metal bowl without sight gauge	5µ element G	0 - 4.1 bar B				
			0 - 8.5 bar C				
Port size	Port size						Options
BSPP G	1/4" 02					Relieving Blank	
NPT -						Non-Relieving K	
						Auto Pulse Drain R	

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

[§] dm³/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.

Specifications

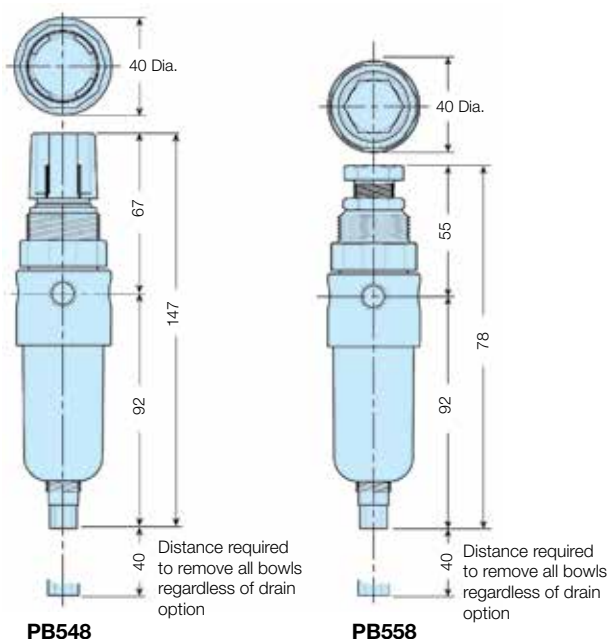
Bowl capacity	29 cm ³	
Filter rating	20 micron	
Gauge port	G1/4	
Operation	Flourocarbon diaphragm	
Port threads	G1/4	
Operating temperature	PB548	-18°C to 82°C
	PB558	-18°C to 66°C
	Auto Pulse Drain	0°C to 66°C
Max supply pressure	PB548	0 to 20.7 bar
	PB558	0 to 20.7 bar
	Auto Pulse Drain	0 to 12 bar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

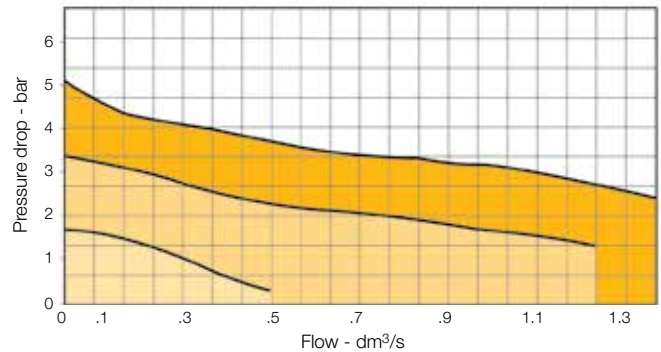
Dimensions (mm)



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

Flow Charts

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



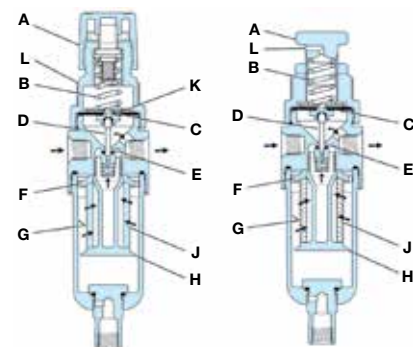
CAUTION: REGULATOR PRESSURE ADJUSTMENT -

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

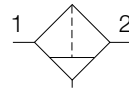


Turning the adjusting knob clockwise applies a load to control spring (B) which forces diaphragm (C) and valve poppet assembly (D) to move downward allowing filtered air to flow through the seat area (E) created between the poppet assembly and the seat. "First stage filtration". Air pressure supplied 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)

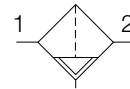
PF10 Filter – Standard



Symbols



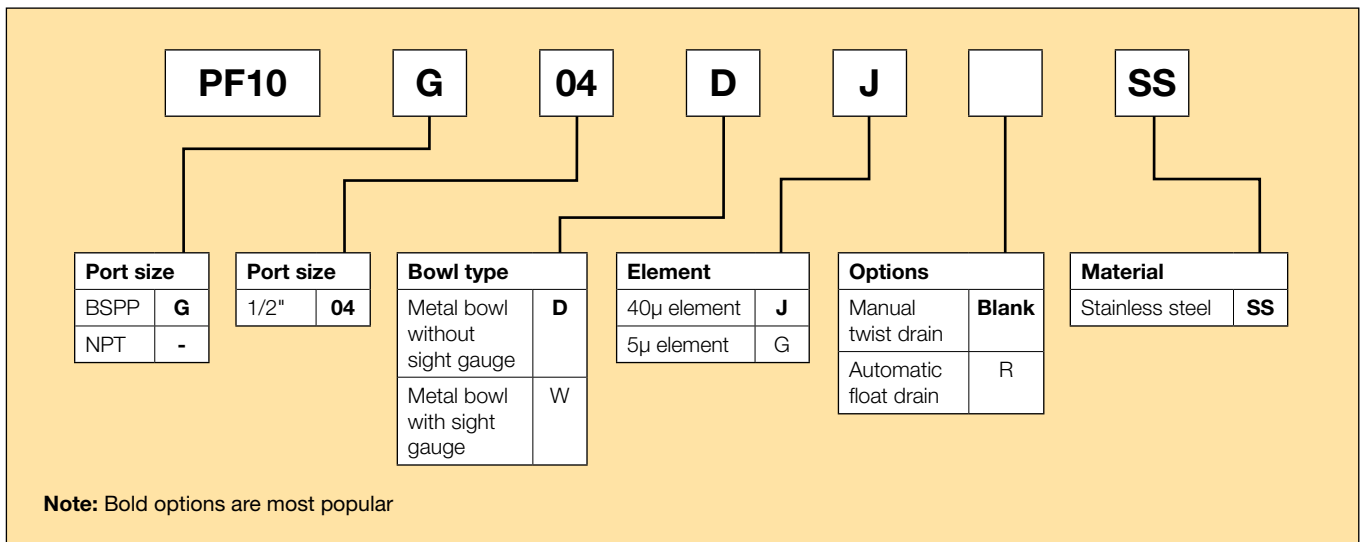
Manual drain



Auto drain

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 34 dm³/s[§]
- 1/8" female threaded drain

Options:



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

[§] dm³/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Specifications

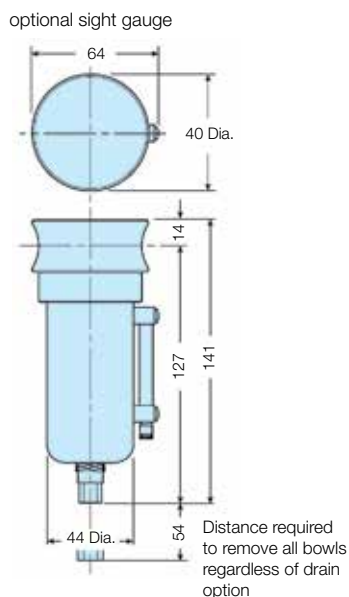
Bowl capacity	118 cm ³	
Filter rating	40 micron	
Sump capacity	50 cm ³	
Port threads	G1/2	
Operating temperature	Manual twist drain (D)	-18°C to 82°C
	Manual twist drain (W)	-18°C to 66°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain (D)	0 to 20.7 bar
	Manual twist drain (W)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

Materials of Construction

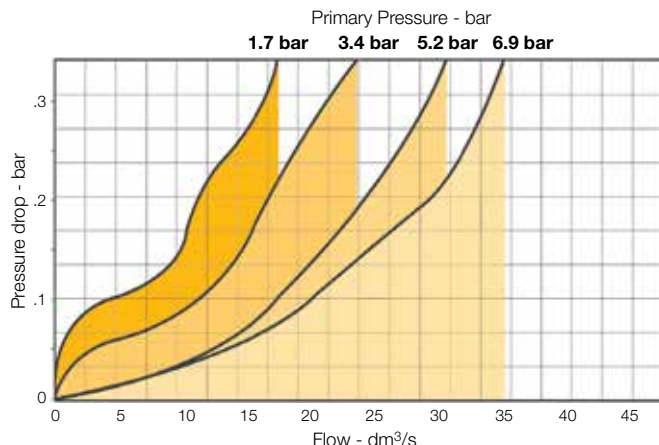
Body	316 Stainless steel	
Bowl	316 Stainless steel	
Deflector	Acetal	
Drain	316 Stainless steel	
Element holder	Acetal	
Filter element	Polyethylene	
Seals	Flourocarbon	
Sight gauge	Isoplast	

Dimensions (mm)



Flow Charts

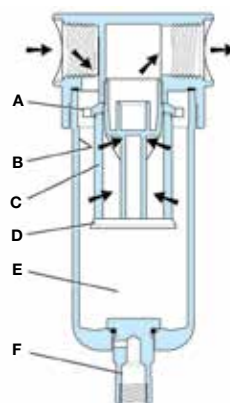
**Flow Characteristics - 1/2 Inch Ports
PF10-04DJSS**



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

Operation



First Stage Filtration:

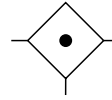
Air enters at inlet port and flows through deflector plate (A) which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall (B) by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle (D) separates 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.

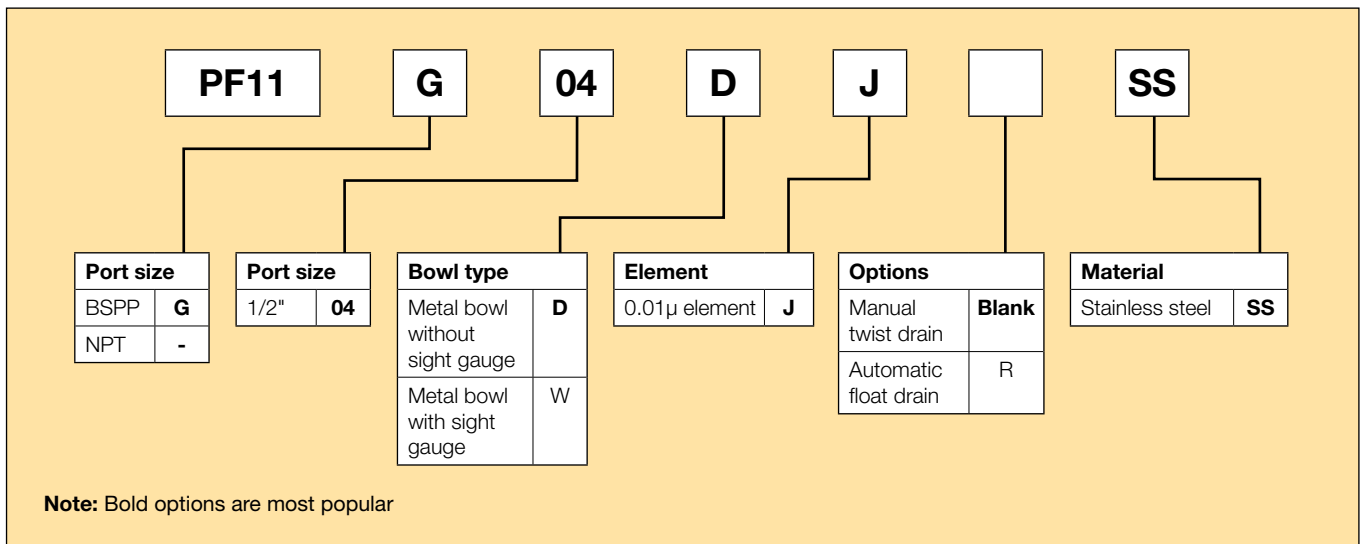
PF11 Coalescing Filter – Standard

Symbols



- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 21 dm³/s[§]
- 1/8" female threaded drain
- High efficiency 0.01µm filtration
- Removes liquid aerosols and sub micron particles

Options:



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

[§] dm³/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Specifications

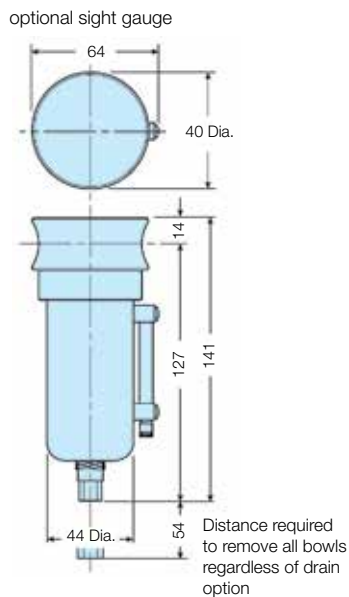
Bowl capacity	118 cm ³	
Filter rating	0.01 micron	
Sump capacity	50 cm ³	
Port threads	G1/2	
Operating temperature	Manual twist drain (D)	-18°C to 82°C
	Manual twist drain (W)	-18°C to 66°C
	Automatic pulse drain	0°C to 66°C
Max supply pressure	Manual twist drain (D)	0 to 20.7 bar
	Manual twist drain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

Materials of Construction

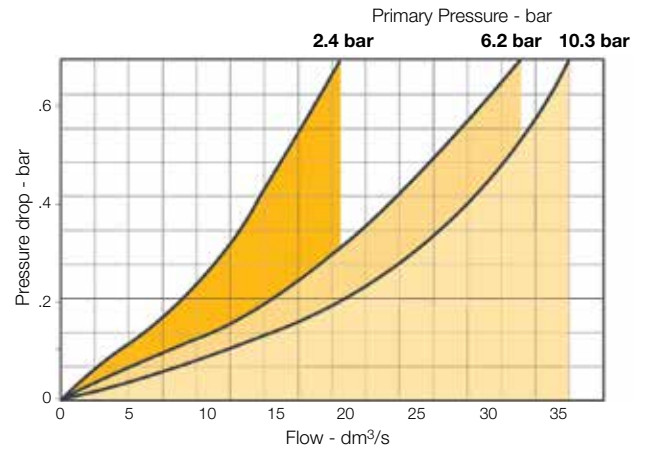
Body	316 Stainless steel	
Bowl	316 Stainless steel	
Drain	316 Stainless steel	
Element holder	Acetal	
Filter element	Borosilicate Fiber	
Seals	Flourocarbon	
Sight gauge	Isoplast	

Dimensions (mm)



Flow Charts

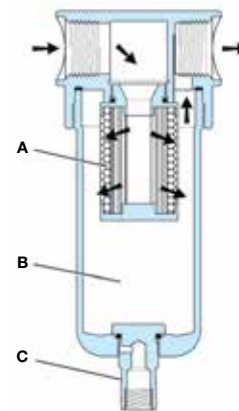
**Flow Characteristics - 1/2 Inch Ports
PF11-04DJSS**



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

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

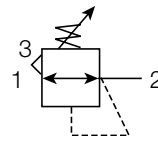
Symbol



PR11



PR10



- 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" – 37.75 dm³/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

[§] dm³/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.

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	

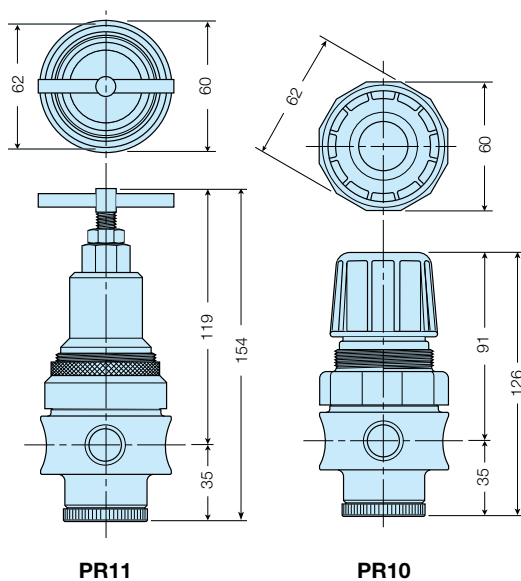
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

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

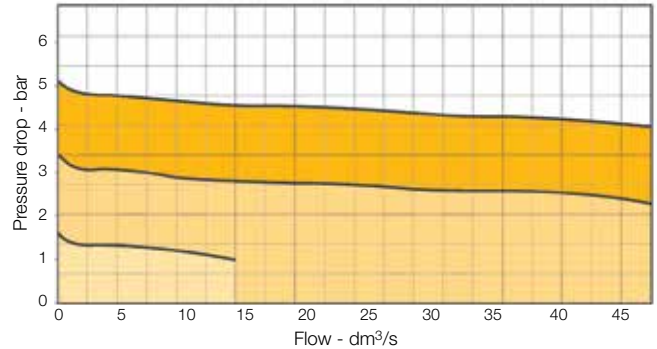
Dimensions (mm)



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

Flow Charts

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



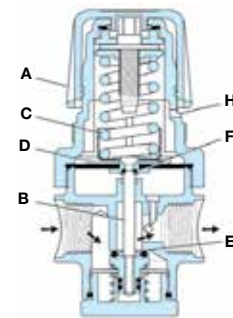
CAUTION: REGULATOR PRESSURE ADJUSTMENT -

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.)

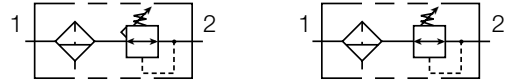
PB11, PB12 Filter / Regulator – Standard

Symbols



PB12

PB11



- 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 dm³/s[§]
- 1/8" female threaded drain

Options:

PB11	G	04	D	J	C		SS
Series		Bowl type	Element	Pressure range		Material	
Standard knob PB11		Metal bowl without sight gauge D	40µ element J	0 - 4.1 bar B		Stainless steel SS	
Stainless steel PB12		Metal bowl with sight gauge W	5µ element G	0 - 8.5 bar C			
				0 - 17 bar D			
Port size		Port size				Options	
BSPP G		1/2" 04				Relieving Blank	
NPT -						Non-Relieving K	
						Auto Float Drain R	
						Low Temp.* L	

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

§ dm³/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.

Specifications

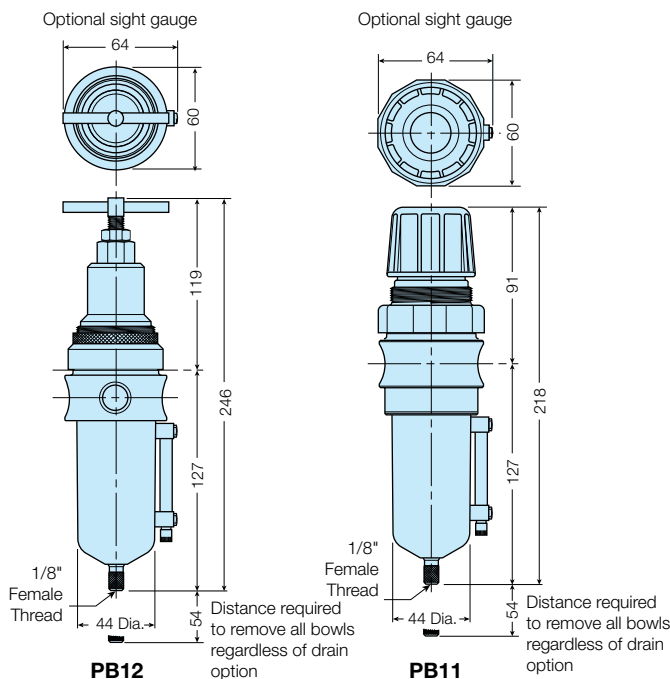
Bowl capacity	118 cm ³	
Filter rating	40 micron	
Gauge port	G1/4	
Operation	Fluorocarbon diaphragm	
Port threads	G1/2	
Operating temperature	PB11 (Metal bowl D or W)	-18°C to 66°C
	PB12 (Metal bowl D)	-18°C to 82°C
	PB12 (Metal bowl W)	-18°C to 66°C
	Auto Float Drain	0°C to 66°C
Option "L" minimum operating 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	Fluorocarbon
Sight gauge	Isoplast

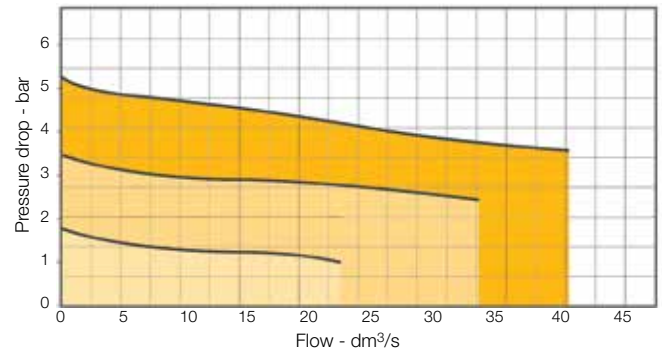
Dimensions (mm)



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

Flow Charts

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

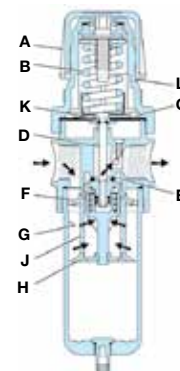


CAUTION: REGULATOR PRESSURE ADJUSTMENT -
 The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, 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

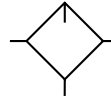
Operation



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.)

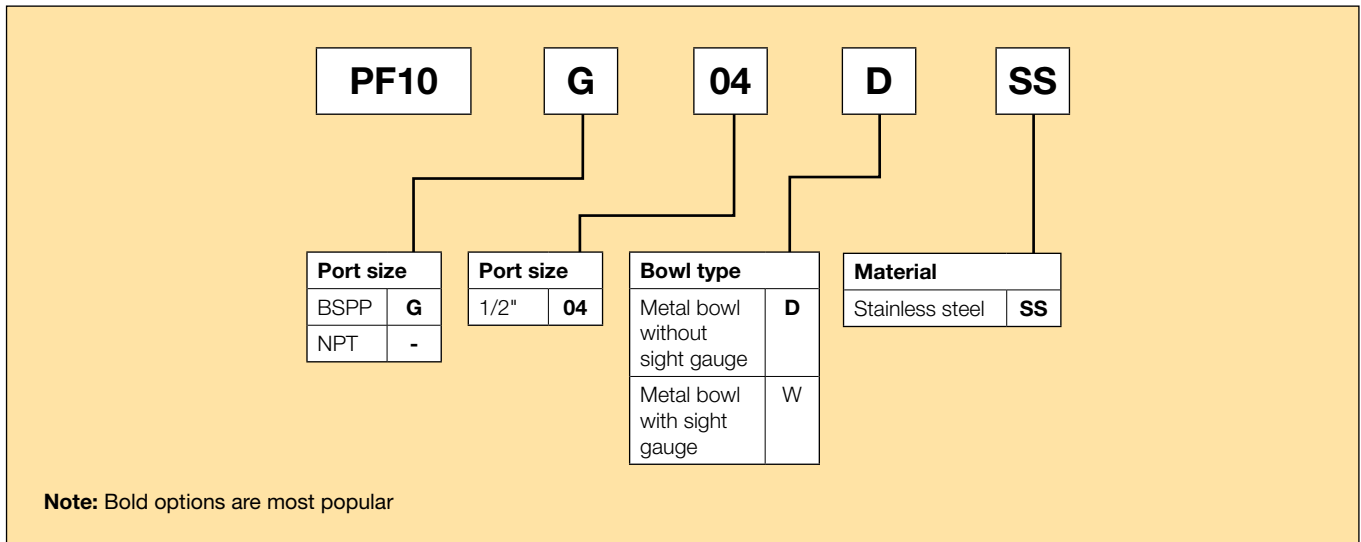
PL10 Lubricator – Standard

Symbols



- Stainless steel construction handles most corrosive environments
- Fillable under pressure
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 47 dm³/s[§]
- 1/8" female threaded drain

Options:



Port size	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	BSPG 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	BSPG 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

§ dm³/s = Flow at 6.2 bar and a 0.3 bar pressure drop

Specifications

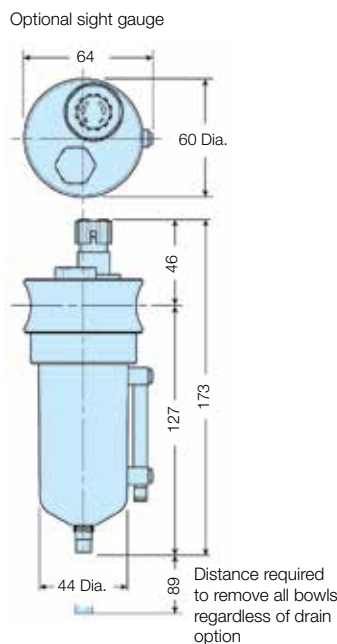
Bowl capacity	118 cm ³	
Port threads	G1/2	
Operating temperature	Metal bowl (D)	-18°C to 66°C
	Metal bowl (W)	-18°C to 66°C
Max supply pressure	Metal bowl (D)	0 to 20.7 bar
	Metal bowl (W)	0 to 17.2 bar
Weight	850 g	

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

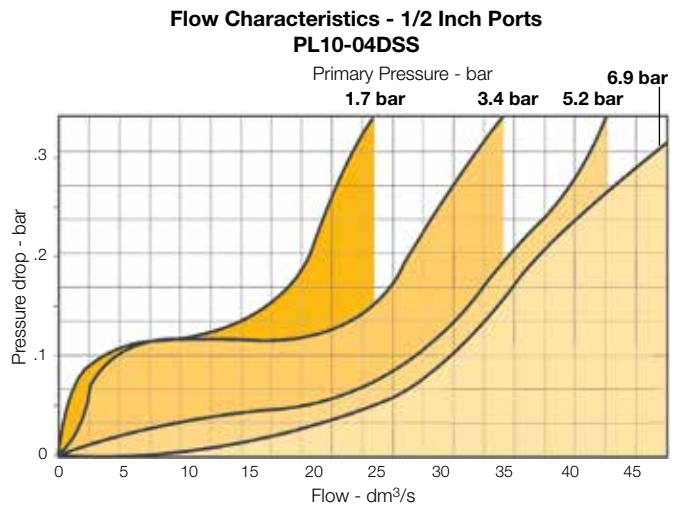
Materials of Construction

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

Dimensions (mm)



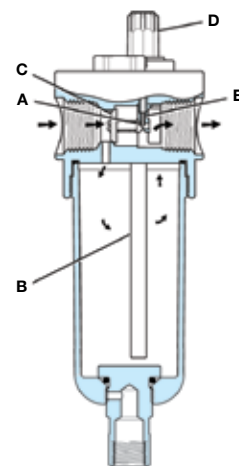
Flow Charts



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

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.

Parker Worldwide

Europe, Middle East, Africa

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

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

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

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@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, Athens
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

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@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, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@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

European 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)

Parker Hannifin Ltd.

Tachbrook Park Drive
Tachbrook Park,
Warwick, CV34 6TU
United Kingdom
Tel.: +44 (0) 1926 317 878
Fax: +44 (0) 1926 317 855
parker.uk@parker.com
www.parker.com

