

# **Suction Return Series**

***Tank Top Mounted Suction  
& Return Line Filters***

*Max 130 l/min - 10 bar*



***Global Filtration Technology***

# Tank Top Mounted Suction & Return Line Filters

## Suction Return Series

### TYPICAL APPLICATIONS

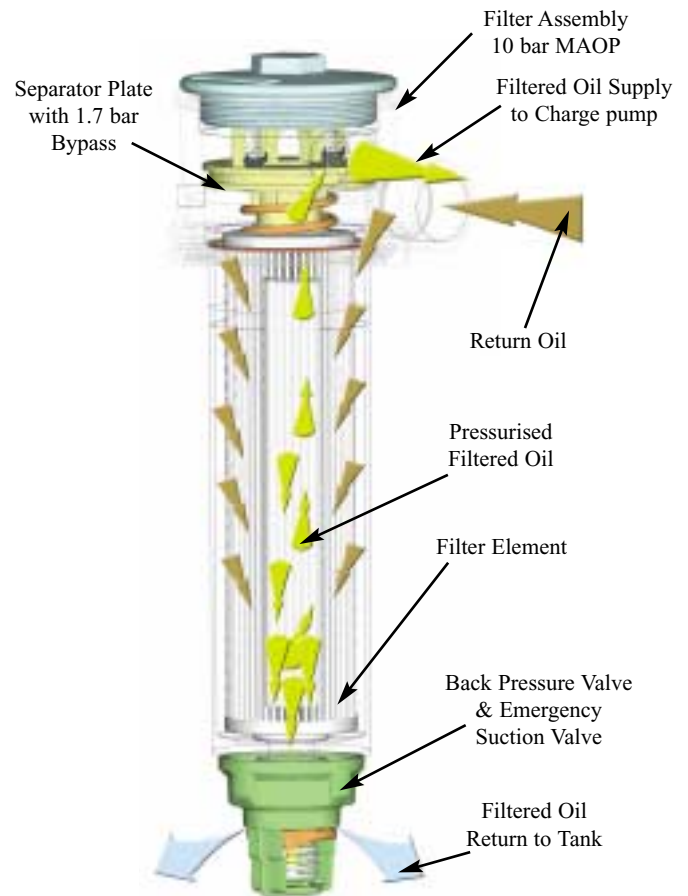
Mobile equipment with both open and closed hydraulic circuits e.g:

- Road Sweepers
- Road Rollers
- Fork Lift Trucks
- Loading Shovels
- Telescopic Handlers
- Dump Trucks
- Skid Steers
- Agricultural Harvesting Machines
- Mini Excavators

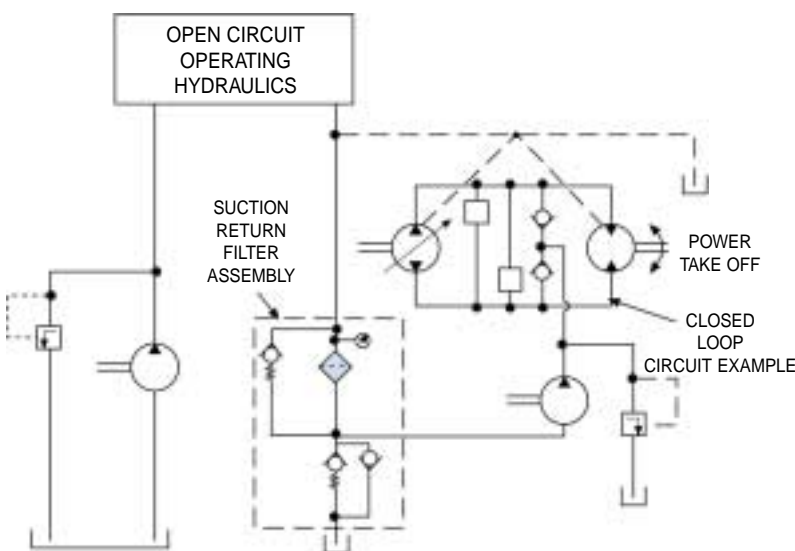
### The Parker Filtration Tank Top Mounted Suction & Return Line Filters.

A tank top return filter capable of feeding filtered oil under positive pressure to the suction side of the boost pump, thereby filtering both open and closed loop oil systems through one filter.

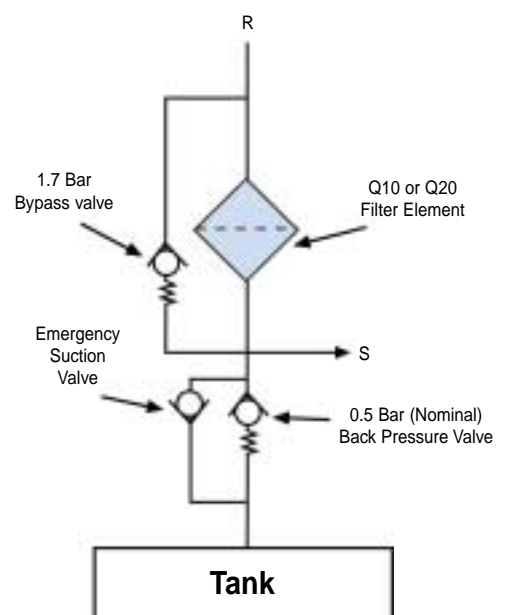
### OPERATIONAL DIAGRAM



### Circuit Application Example



### Suction Return Filter: Hydraulic Circuit



# Tank Top Mounted Suction & Return Line Filters

Suction Return Series

## SPECIFICATION

### Assembly:

Tank top mounted filters (2 or 4 hole fixing: 4 hole fixing ideal for plastic tank installation)

### Connections:

Return Port G1 (to BS 2779)  
Suction Port G<sup>3</sup>/<sub>4</sub> (to BS 2779)

### Operating Pressure:

Max 10 bar

### Seal Material:

Nitrile

### Operating Temperature Range:

-30° to +110°C

### Degree of Filtration:

Determined by multipass test according to ISO 16889

### Filtration Media:

Microglass III supported with epoxy coated metal wire. See Table 1 below.

- High dirt holding capacity.
- Low pressure drop.
- Extended service life.

### Element Collapse Rating:

20 bar ISO 2941

### Flow Fatigue Characteristics:

Filter media designed to optimise fatigue life.

### Bypass Valve System:

Return line: Main system bypass valve 1.7 bar (2.5 bar optional).\*  
Suction line: Back-pressure valve setting 0.5 bar (nominal).  
Anti-cavitation: Emergency suction valve fitted as standard.

### Construction:

Head Casting: Precision pressure die casting.  
Bowl: Cold drawn aluminium.  
Separator plate: Glass reinforced Nylon (high temperature resistant).  
Regulator assembly: Glass reinforced Nylon (high temperature resistant).

### Weight:

1.4 kg

\*For details contact Parker Filtration.

## SRA12\*\*\*NP1B10

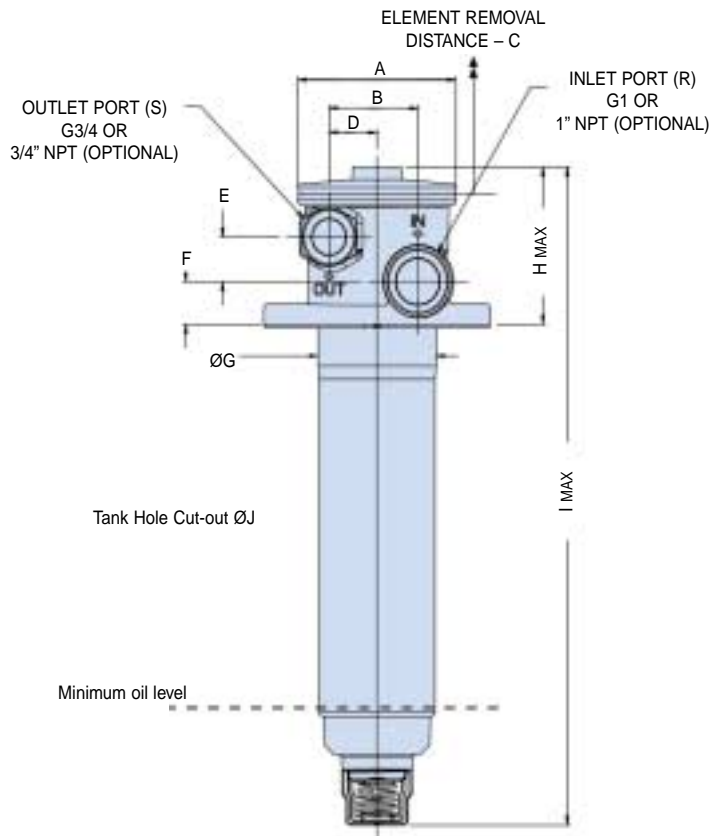
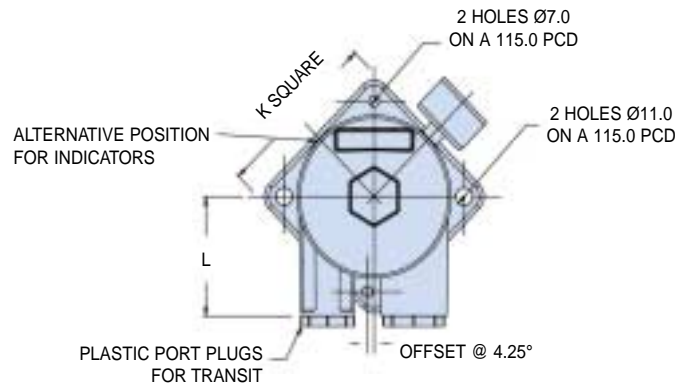


Table 1

Degree of Filtration							CODE
Typical filtration ratio β (ISO 16889) / particle size (µm(c))							
2	10	75	100	200	1000		
N/A	6	8.5	9	10	12		Q010
6	11	17	18	20	22		Q020



Dimensions mm (inches)	A	B	C	D	E	F	G	H	I	J	K	L
	98 (3.86)	55 (2.17)	310 (12.2)	29.75 (1.17)	26 (1.02)	25 (0.98)	73 (2.87)	92.8 (3.65)	385.3 (15.17)	75 to 76 (2.95 to 2.99)	105 (4.13)	72 (2.83)

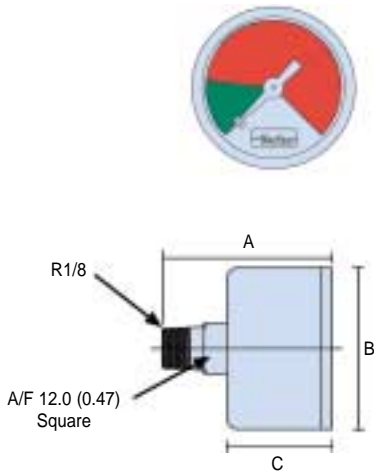
# Tank Top Mounted Suction & Return Line Filters

## Suction Return Series

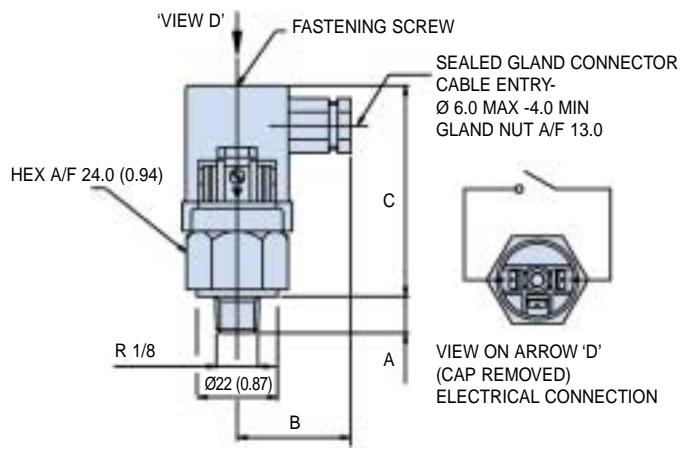
### INDICATOR DETAILS

#### Element Condition Indicators:

##### Visual Pressure Indicator Code V



##### Electrical Indicator Code E



Option	Description	Connection/Voltage	Wiring	A mm (inches)	B mm (inches)	C mm (inches)
V	Visual 10 bar (145psi) Pressure Gauge Part No. S.250016	N/A	N/A	40.5 (1.59)	38.6 (1.52)	24.8 (0.98)
E	Electrical Switch 10 bar (145psi) Part No. S.250018	<b>Max. operating voltage:</b> 48V AC/DC <b>Max. Current:</b> 0.5 Amp (resistive) 0.2 Amp (inductive)	Normally Open	10 (0.39)	60 (2.36)	31 (1.22)

Note: For full indicator specifications see Section 6.

#### E Option (Additional Technical Information)

Diaphragm pressure switch: R 1/8

Working temperature: -5°C to +60°C

Protection: IP54

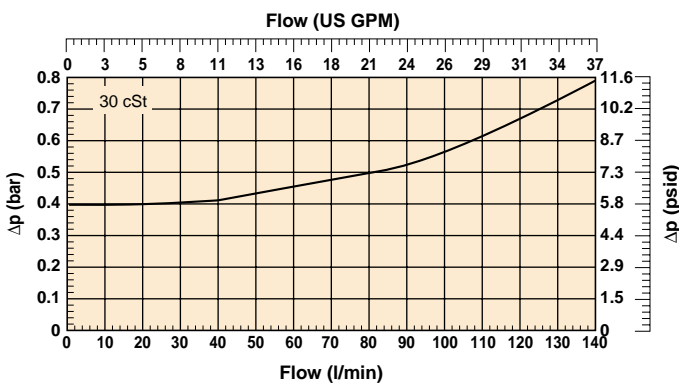
### PRESSURE DROP CURVES

The recommended level of the initial pressure drop is max 1 bar. (See filter selection example below).

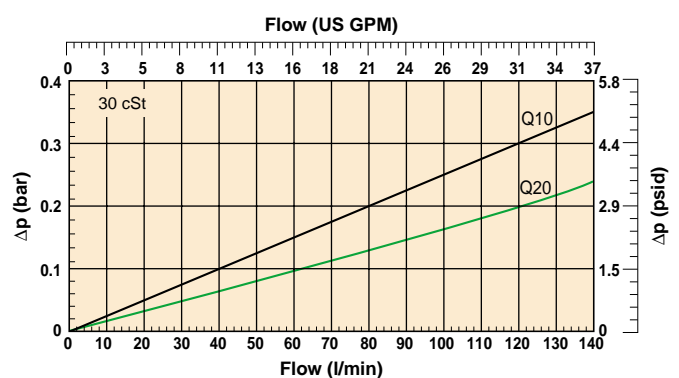
If the medium used has a viscosity different from 30 cSt, pressure drop over the filter can be estimated as follows :-

$$\text{The total } \Delta p = \text{Housing } \Delta p_h + (\text{Element } \Delta p_e \times \text{working viscosity}/30)$$

Filter Housing (Without Element)  $\Delta p$



Filter Elements Only  $\Delta p$



### PREFERRED PRODUCTS TABLE

#### Filter assemblies with Nitrile Seals as standard

Part Number	Return Flow (l/min)	Size	Length	Micron	Bypass Cracking Pressure	Indicator Ports	Ports		Replacement Element
							Return	Suction	
SRA12Q10NP1B10	110	1	2	Q10	1.7 bar	Plugged	G1	G3/4	SRR12Q10N
SRA12Q20NP1B10	130	1	2	Q20	1.7 bar	Plugged	G1	G3/4	SRR12Q20N

NOTE: Filter assemblies are sold as standard with plugged indicator ports  
**PLEASE ORDER INDICATORS SEPARATELY.** See table below:

#### Indicators

Option	Description	Indicator Position	Operation	Part Number
V	Visual colour coded pressure gauge	Left or Right Side	Set for 1.7 bar bypass	S.250016
E	Electrical pressure switch	Left or Right Side	Set for 1.7 bar bypass	S.250018

#### Suction Return Series Filter

This one filter assembly is designed to carry out two specific functions:-

- (1) Filter system return line oil.
- (2) Supply filtered oil under positive pressure to the closed loop hydrostatic circuits.

#### Principles of Operation

- (1) Return oil from both the open and closed circuits\* is fed into the Suction Return Series Filter at port 'R'.
- (2) The filtered oil is maintained at a nominal 0.5 bar by the unique back pressure valve assembly and fed into the closed loop hydrostatic circuit via port 'S'.
- (3) Surplus filtered oil is fed back to the tank via the back pressure valve assembly.
- (4) Emergency suction (anti-cavitation) valve: This valve is fitted as standard to ensure oil is always available to the closed loop system, even on emergency occasions when the return flows do not meet the flow demands of the closed loop circuit.

#### Additional Installation Guidance Notes

- (1) Return oil flow should always be greater than the oil flow rate demanded by the closed loop charge pump.
- (2) Oil level at all times should not fall below valve assembly at the base of the filter bowl.

#### Benefits

- (1) Only one filter is required to supply filtered oil to both open and closed loop circuits.
- (2) Feeding the closed loop circuit with filtered oil at a nominal pressure of 0.5 bar ensures excellent cold start characteristics, thus reducing the risk of cavitation.
- (3) Four hole mounting with gasket seal.
- (4) Microglass III filter elements ensure; low pressure drop, high dirt holding capacity and extended service life.

#### \*CAUTION:

Back pressure in pump and motor drain lines should always be kept at a minimum thus protecting shaft seals etc.

If case drain oils are to be fed through the return line filter please consult the pump/motor manufactures for details on maximum allowable back pressure.

Ensure filter elements are replaced when element condition indicators show that the bypass setting has been reached.

Failure to observe the above operation and guidance notes, or use of non genuine Parker specified filter elements could cause damage to the system. System designers should always ensure that adequate cooling capacity is available.