Reservoir Vent Filters

Spin-on Air Filters & Adaptors

Introduction

Prevent Airborne Ingression

A key element of contamination control is reservoir vent filtration.

Reservoir vents are a common source of both water and particulate contamination from the atmosphere surrounding a hydraulic system.

Fluid contamination can increase:

- Equipment wear
- Cause corrosion
- Reduce fluid performance and life

Hydraulic components have become more complex and operate at higher pressures, flows and temperatures thus making fluid cleanliness a key to longer component life and system reliability. Vickers reservoir vent breathers make it easier to attain higher cleanliness levels, and can extend fluid filter life in the system.

Vickers Offers Hi-Tech Options

Vickers recognizes the variety of atmospheric conditions which hydraulic systems encounter, so we offer a complete line of vent filters to prevent airborne contamination.

Requirement	H2O-Gate	DIRT-Gate	V0211	V0191
Visual Indication*	●	●		
Particle Control	●	●	●	●
Water/Moisture Control	●			
Corrosion Resistant Housing	●	●		

* For systems where a visual indicator cannot be seen for inspection and subsequent action, Vickers recommends service for the vent filter after 500 hours of machine operation.

Contents

H_2O-Gate

Element Model Code BR110

Specifications

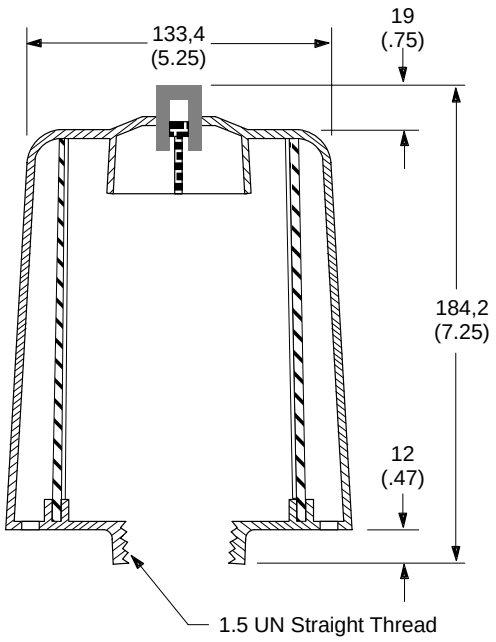
Housing Material - ABS Plastic
Temperatures - Up to 121° C (250° F)
Efficiency - 99% at 3 micron

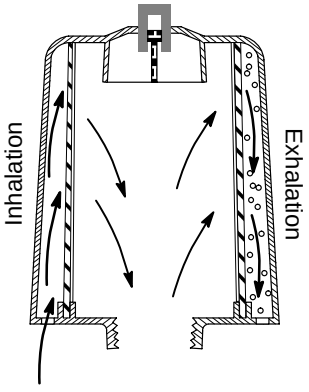
Features & Benefits

- Rugged ABS plastic housing can be exposed to temperatures as high as 121° C (250° F), and is corrosion resistant.
- Visual mechanical indicator, which triggers at ΔP 0,07 bar (1 psid) (during exhalation).
- Easy installation. Lightweight design requires only hand tightening.
- Low pressure drop across filter media reduces stress on reservoir and system components.
- Reversible flow-through media in the H_2O-Gate allows moisture to exit while filter regenerates its capacity to prevent moisture ingression.
- Plated steel core prevents filter media distortion.

Installation Dimensions

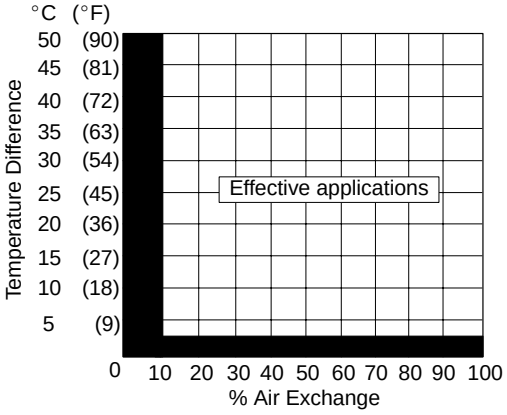
mm (inches)





Performs as a gate.

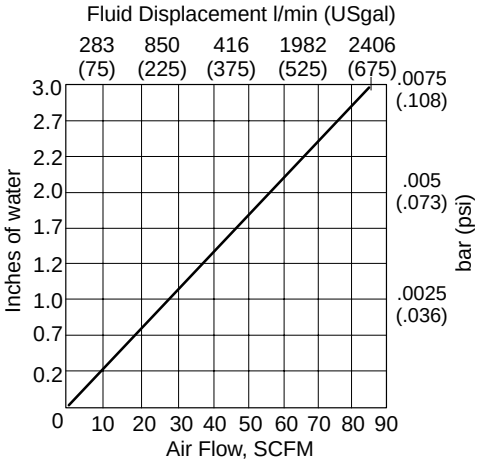
During the "inhalation" cycle, the H_2O-Gate proprietary media blocks the water vapor from entering the reservoir. During the "exhalation" cycle, the media allows the moisture in the reservoir air to exit. The moisture is blown off the media by the exiting air, restoring the media's water barrier capacity, and the moisture barrier mechanism is not affected by the amount of exposure to moisture. The reservoir air is maintained at a low relative humidity, and more importantly, at a lower dew point temperature than the ambient temperature.



Highly effective

In an operating system, the H_2O-Gate vent breather creates a moisture barrier when there is a 2°C (5°F) degree difference between reservoir and ambient temperature and when there is a 10% exchange of air volume above the fluid.

Pressure Drop



Low pressure drop across media.

The ΔP indicator triggers at ΔP 0,07 bar (1 psid) (during exhalation).

NOTE: Mobile systems may actuate the indicator due to vibrations, in which case the element should be changed after 500 hours of operation.

Element Model Code BR210

DIRT-Gate media is made of a strong graded matrix especially designed for removing airborne contamination. This media is pleated to maximize surface area (high dirt holding capacity) and provides high efficiency (99% at 2 micron) with very low pressure drop.

Specifications

Housing Material - ABS Plastic
Temperatures - Up to 121° C (250° F)
Efficiency - 99% at 2 micron

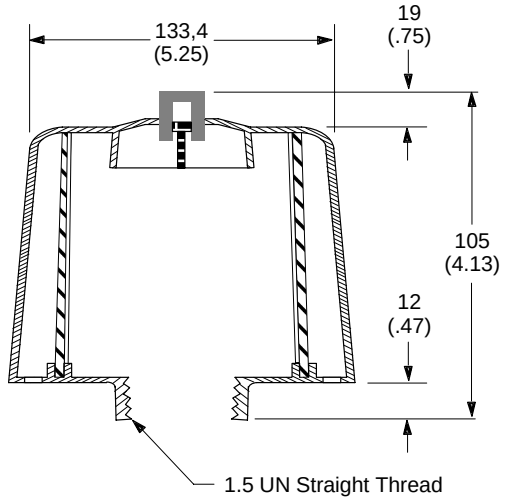
Features & Benefits

- Rugged ABS plastic housing can be exposed to temperatures as high as 121° C (250° F), and is corrosion resistant.
- Visual mechanical indicator, which triggers at 0,07 bar (1 psid) (during exhalation).
- Easy installation. Lightweight design requires only hand tightening.
- Low pressure drop across filter media reduces stress on reservoir and system components.
- Plated steel core prevents filter media distortion.

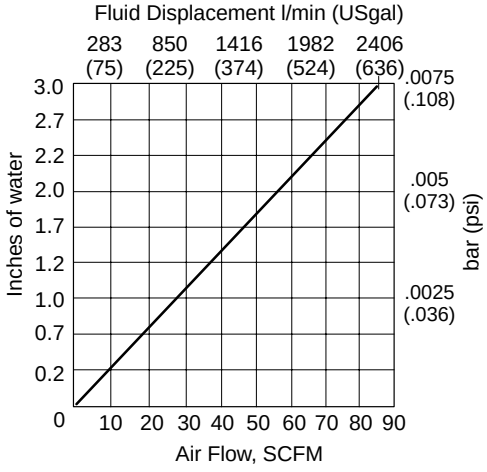
NOTE: Mobile systems may actuate the indicator due to vibrations, in which case the element should be changed after 500 hours of operation.

Installation Dimensions

mm (inches)



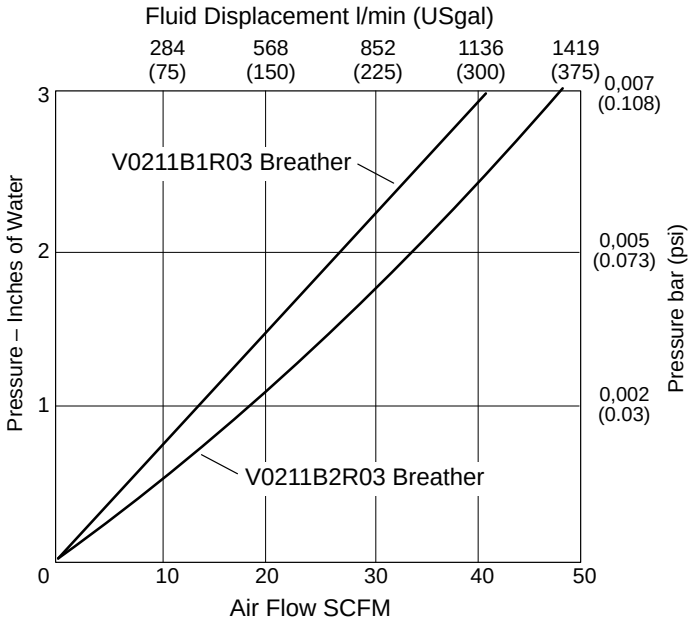
Pressure Drop



V0211 and V0191 Spin-on Elements

V0211 Series

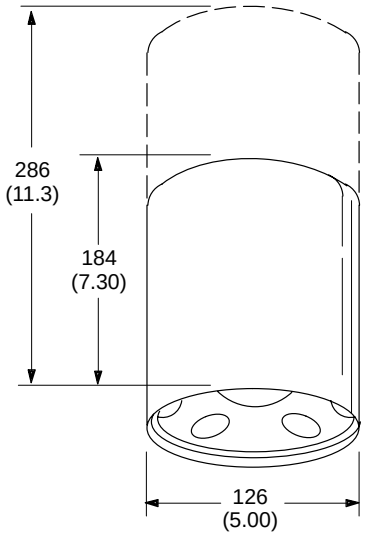
Pressure Drop



Element Model Code
V0211B*R03

Dimensions mm (inch)

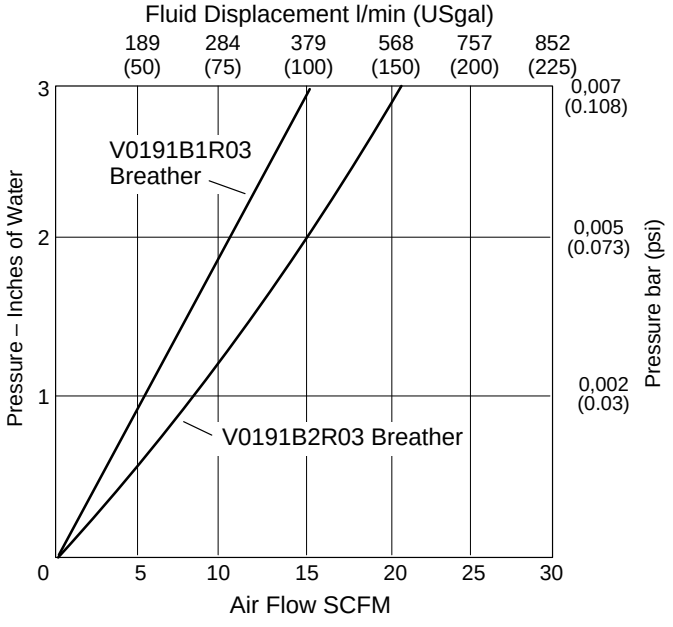
Element length
1 - 184 (7.30)
2 - 286 (11.3)



See pages 5 & 6 for available adaptor options.

V0191 Series

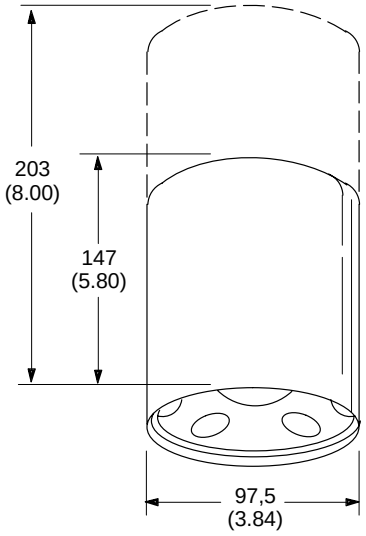
Pressure Drop



Element Model Code
V0191B*R03

Dimensions mm (inch)

Element length
1 - 147 (5.80)
2 - 203 (8.00)



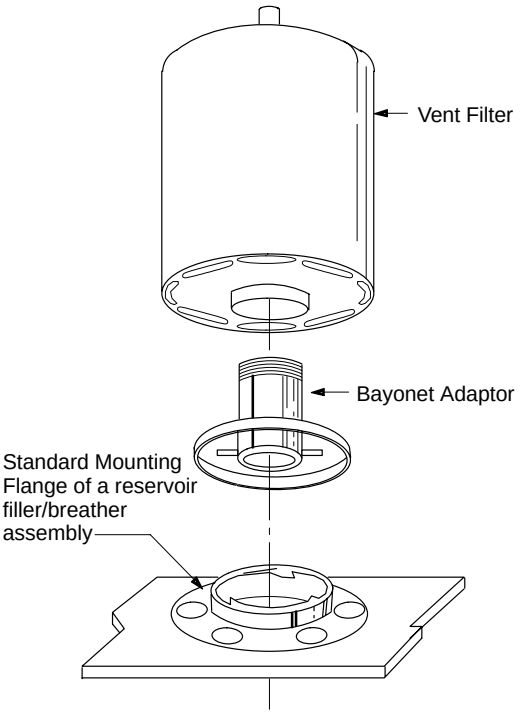
See pages 6 & 7 for available adaptor options.

Spin-On Vent Filter Adaptors

Models & Part Numbers

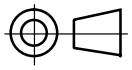
Part Number	Description	Vent Filters Applicable
924709	Bayonet, 0,40 bar (6 psi) check	V0211, BR110, BR210
930865	Bayonet, 0,20 bar (3 psi) check	V0211, BR110, BR210
924710	Bayonet, no check	V0211, BR110, BR210
P-077002	Threaded pipe	V0211, BR110, BR210
932182	Threaded pipe	V0191
932400	Bayonet, no check	V0191

Bayonet Adaptor Installation



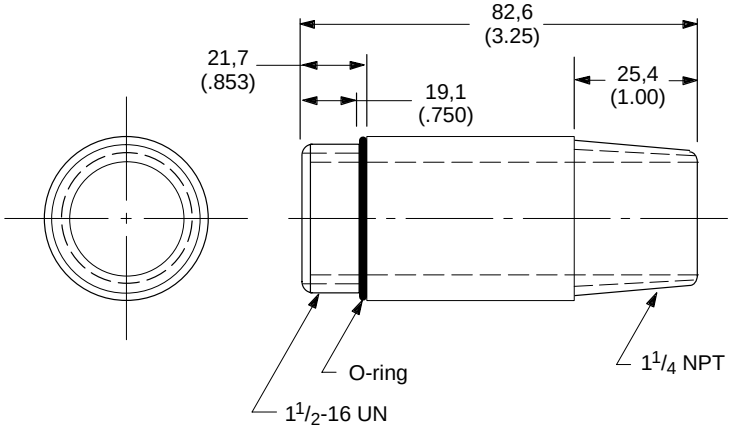
All Vickers Vent Filters are easily applied to reservoirs via Spin-On adaptors.

Threaded Pipe Adaptors Installation Dimensions



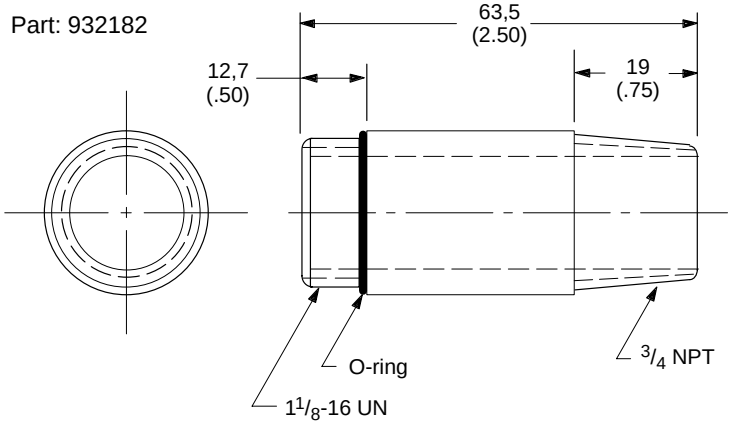
For V0211, BR110 & BR210

Part: P-077002



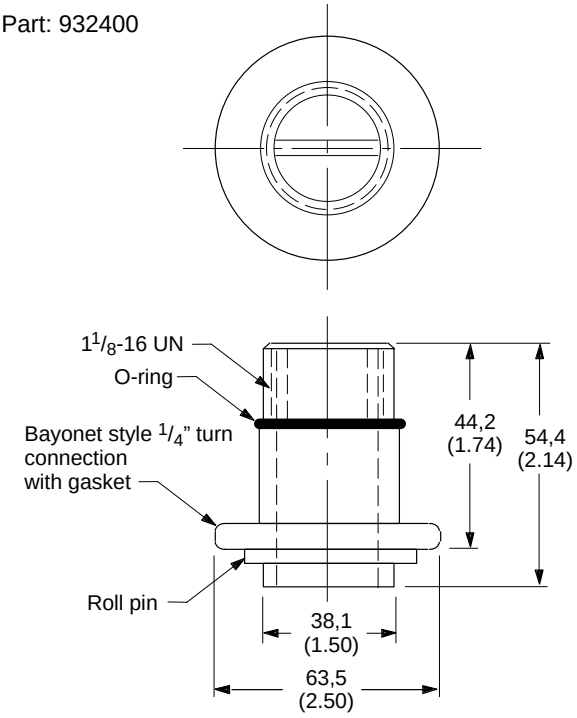
For V0191

Part: 932182



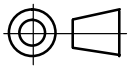
For V0191

Part: 932400



Bayonet Adaptors

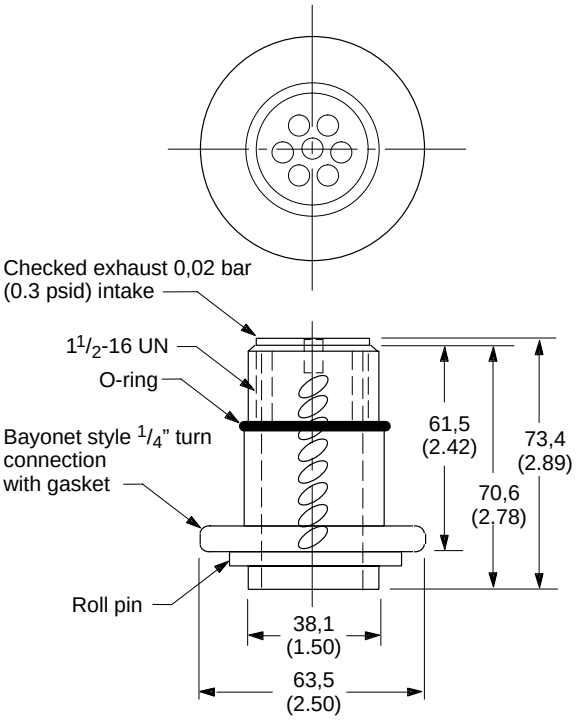
For V0211, BR110 & BR210



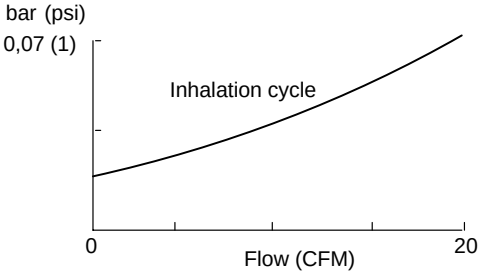
3rd angle projection

W/Pre-vent

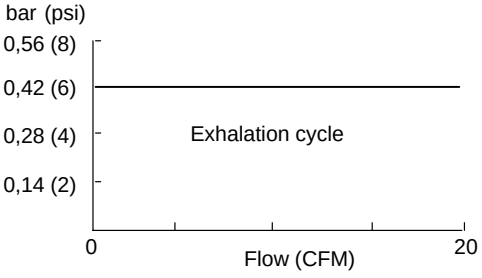
Part: 924709 0,40 bar (6 psid)
Part: 930865 0,20 bar (3 psid)



Bayonet Adapter with 0,4 bar (6 psid) Pressure Vent



Note: 20 CFM = 570 l/min

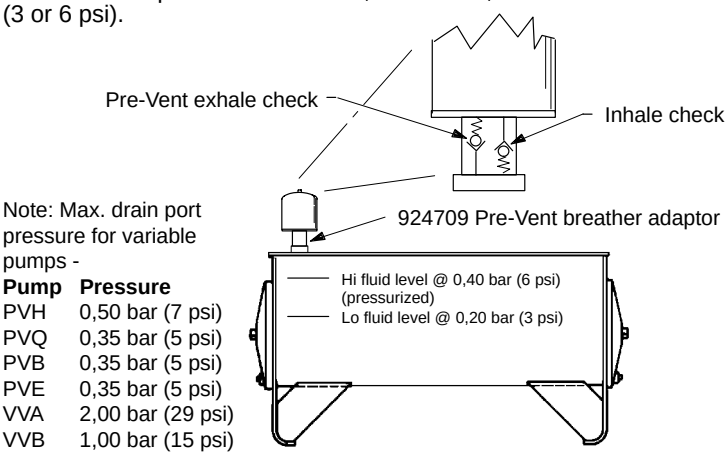


Pre-Vent Option

In a system where the fluid level drops and rises with cylinder actuation, the Pre-Vent feature minimizes the amount of air exchange through the vent filter.

As the oil level drops, air enters the reservoir and is cleaned as it passes through the vent filter. As the oil level begins to rise, the pressure-vent stops the air from escaping the reservoir, and the tank becomes pressurized up to a maximum of the pressure vent setting (either 0,20 bar or 0,40 bar (3 or 6 psi)). The next time the system cycles, and the oil level drops, the air inside the reservoir will expand to make up the difference in volume.

CAUTION: The reservoir tank and system must be designed to withstand a pressure of either 0,20 bar or 0,40 bar (3 or 6 psi).

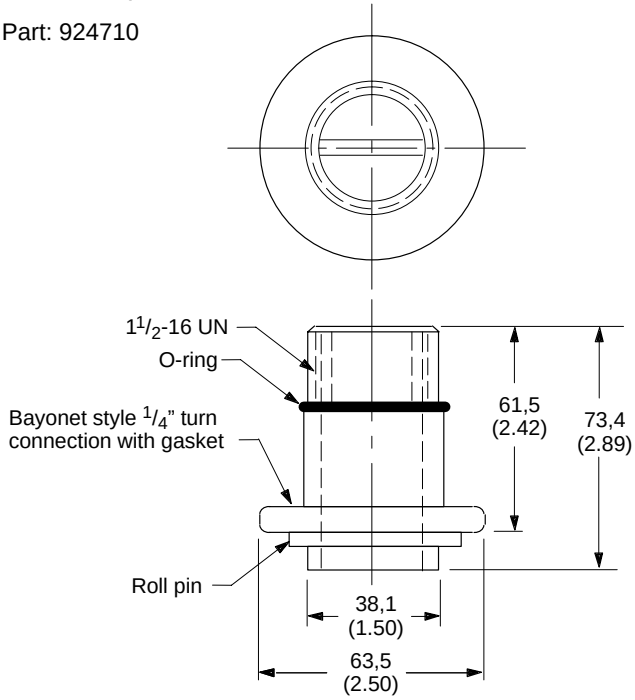


Note: Max. drain port pressure for variable pumps -

Pump	Pressure
PVH	0,50 bar (7 psi)
PVQ	0,35 bar (5 psi)
PVB	0,35 bar (5 psi)
PVE	0,35 bar (5 psi)
VVA	2,00 bar (29 psi)
VVB	1,00 bar (15 psi)

For V0211, BR110 & BR210

Part: 924710



Vickers® Recommended System Sampling Frequency Chart

Systems with target cleanliness 17/15/12 or lower

System Pressure	< 140 bar (2000 psi)	140 - 210 bar (2000 - 3000 psi)	> 210 bar (3000 psi)
8 hours or less operation per day	4 months	3 months	3 months
Over 8 hours of operation per day	3 months	2 months	2 months

Systems with target cleanliness 18/16/13 or higher

System Pressure	< 140 bar (2000 psi)	140 - 210 bar (2000 - 3000 psi)	> 210 bar (3000 psi)
8 hours or less operation per day	6 months	4 months	4 months
Over 8 hours of operation per day	4 months	3 months	2 months

Initial commissioning or major rebuild

Large system (2000 liters (530 USgal) or more) and systems with servovalves

- Sample fluid before start-up
- Sample fluid during first day running
- Sample fluid after one week
- Sample fluid after one month operation

Other systems

- Sample during first day running
- Sample after one month operation

Systems in distress or immediately after a maintenance event

(i.e. increased heat, erratic operation, unusual sound etc.)

- Immediate