



Pall Corporation

# UR209

## UR209 Series



EN

UR209 Service Instructions

ENGLISH

service instructions

1372872

IM SI UR209

*Filtration. Separation. Solution.<sup>SM</sup>*

### 1 Specifications

#### Housing materials:

Head:	Die cast aluminium alloy, painted external surface (as standard)
Bowl:	Die cast aluminium alloy, painted external surface (as standard)
Bypass Valve:	Polyamide poppet, Steel seat and spring

#### Maximum operating pressure:

41 bar (600 psi)

#### Rated burst pressure:

113 bar (1650 psi)

#### Element burst pressure:

UE209 element 10 bard (150 psid) differential minimum

#### Operating temperature range:

-29°C to 120°C (-20°F to 250°F) with fluorocarbon seals for petroleum based and specified synthetic fluids  
60°C (140°F) maximum in HWCF, water-oil emulsion or water glycol

#### Bypass valve setting options:

1.7 ± 0.3 bard (25 ± 5 psid) cracking pressure  
4.5 ± 0.3 bard (65 ± 5 psid) cracking pressure  
Non bypass

#### CAUTION:

**Maximum surge flow should not exceed 1.3 times normal flow.**

#### Seals:

Fluorocarbon

The actual operating conditions should be checked by the user to ensure that the element, housing and all seals are compatible with the fluid and application, and are within local safety codes. Please contact Pall or an approved Pall distributor if further information is required.

### 2 Receipt of equipment

The filter housing, and any optional equipment, are packed individually for assembly by the customer. Unpack carefully and ensure optional items are not mislaid in packaging to be discarded.

### 3 General sources of information

- 3.1 For dimensions, operating parameters, assembly/element part number, ordering information, notes, performance data and specifications refer to datasheet IMUR209EN.
- 3.2 This equipment has been assessed in accordance with the guidelines laid down in the European Pressure Directive 97/23/EC and has been classified within sound engineering practice S.E.P. We hereby declare the equipment meets the requirements of article 3, section 3, thus meeting the directive requirements. Under the provisions of this directive the filter assembly is suitable for use with group 2 fluids only.
- 3.3 Where under reasonably foreseeable conditions, including external fires, the allowable limits could be exceeded, suitable protective devices must be installed by the customer within the connecting fluid system.

### 4 Installation of housing

- 4.1 The filter can be installed in any attitude, but for ease of servicing, it is recommended that it be installed vertically with the filter bowl pointing downwards.
- 4.2 The minimum clearance required for element removal is 69 mm (2.7") for all lengths.
- 4.3 The UR209 series housing is supplied without a filter element. For element installation and servicing procedures, refer to Section 7.

**NOTE:** The UR209 head is supplied with one machined differential pressure warning port fitted with a plastic shipping plug. If a differential pressure warning device is to be fitted, the plastic shipping plug should be removed and replaced by a visual or electrical warning device, torque tightened to 14 Nm (10 ft/lb).

- 4.4 Mount the filter assembly in position using four 3/8-16 ('A' and 'B' ports) or M10 x 1.5 ('C' ports) bolts in the holes on the head mounting pads. Torque bolts to 12-26 Nm (9-19 ft/lb).
- 4.5 Use a check valve downstream of the filter if there is a possibility of reverse flow.
- 4.6 Install the filter housing using additional piping/valving to allow complete filter assembly bypass if filter maintenance is required without system shutdown. This series is not available in a duplex or service bypass configuration.

**NOTE:** Piping supports should be provided as close as is practicable to the port connections in order to minimize external loads. This filter assembly must not be electronically isolated from the users earthing system. This filter assembly must be earthed by connecting the users earthing system to one of the inlet/outlet connections.

#### CAUTION:

**Reverse flow through filter element will cause damage.**

#### CAUTION:

**Do not operate the filter unless the warning device port is sealed.**

#### WARNING:

**USE FITTINGS OR ADAPTORS COMPATIBLE WITH PORTS SUPPLIED AS SHOWN BY PART NUMBER ON NAMEPLATE AND NOTED IN DATA SHEETS: USE OF INCORRECT FITTINGS OR ADAPTORS CAN CAUSE FILTER HOUSING OR MANIFOLD FAILURE RESULTING IN LOSS OF PRESSURE AND POSSIBLE SYSTEM FAILURE OR PERSONAL INJURY.**

- 4.7 Connect lines or hoses to housing inlet and outlet ports.

**NOTE:** Painting of the filter housing is optional. The coating on the filter housing is a suitable painting base. Cover the differential pressure warning device and nameplate if painting of the housing takes place.

### CAUTION:

Failure to bleed the filter housing adequately will increase the dissolved air content of the system fluid which will shorten fluid life and may cause other problems in the system.

- 4.8 Jog system and fill filter. Pressurize system fully and check for leaks; if leaks occur refer to Section 5.

## 5 Routine maintenance

- 5.1 **Pall** filters do not normally require special attention except for periodic monitoring of the differential pressure warning device. Schedule replacement of filter element every six months or sooner, and have ample supply of spare elements available.
- 5.2 If external leakage is noted, replace O-ring at leak. If leakage persists, check sealing surfaces for scratches or cracks; replace any defective parts.
- 5.3 Differential pressure devices actuate when the element needs changing or because of high fluid viscosity in 'cold start' conditions. If 'cold start' conditions exist, see Section 6.2 and 6.3.
- 5.4 A dirty system can quickly plug a new filter element, especially with Pall high efficiency filter media. It may require one or two initial element changes to stabilize element life. If element life is short or differential pressure is excessive, filter may be undersized; refer to the sizing and selection section of the product literature or contact your local Pall representative.
- 5.5 Make sure element change labels are clean and undamaged. Replace illegible labels with the appropriate new labels.

## 6 Differential Pressure Devices

Reference should be made to product literature for dimensions, operating parameters, part numbering, ordering information and specifications.

- 6.1 Differential pressure devices actuate when the element needs changing or because of high fluid viscosity in 'cold start' conditions.
- 6.2 If the differential pressure switch actuates during cold start, continue operating until the signal goes out as system warms to normal operating temperature. This feature can be used as 'warm up' indication in operating procedures. If the warning signal remains or appears when system is warm, replace the filter element.
- 6.3 Use of both positive indication and negative indication is recommended to effectively monitor filter element life.

**NOTE:** These electrical and visual Differential pressure devices (respectively, F5 and FD series) are very specific to the UR209 series.

### Electrical connections and ratings for F5 code electrical pressure switch options:

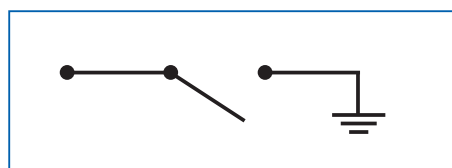
28 VDC = 3A (inductive),  
5A (resistive)

Amperage: 200mA maximum

### Circuit:

SPST Normally open circuit  
Ground through filter assembly to chassis

**Figure 1 - Switch Circuit Diagram**



### 7 Filter element servicing

During servicing, the external surfaces of the filter assembly must be cleaned to remove any dust deposits. Servicing must be conducted using suitable tools that do not present a hazard. Servicing must not be carried out when a potentially explosive atmosphere is present.

#### CAUTION:

**Filter elements should be replaced upon indication or at specified intervals, six months maximum. Failure to change the element will cause the filter to go on bypass.**

Refer to Service Parts List (Section 10) for item numbers for applicable replacement element series. Remove and replace element as follows:

- 7.1 Turn off and depressurize the system.

#### WARNING:

**FAILURE TO DEPRESSURISE THE FILTER BEFORE SERVICING ELEMENT COULD RESULT IN EXPLOSIVE LOSS OF FLUID, DAMAGE TO EQUIPMENT AND POSSIBLE PERSONAL INJURY.**

- 7.2 Unscrew and remove filter bowl (2) from head assembly (1), anti-clockwise when viewed from below. It may be necessary to use a 1" socket wrench on the hexagon to loosen the bowl initially.
- 7.3 Drain fluid from the bowl into a suitable waste container.
- 7.4 Element replacement (UE209 Series): Remove filter element (5) by turning clockwise (when viewed from below) and gently pulling the element from the filter head (1). Carefully inspect the interior surface (flow through the element is in-to-out) for visible contamination. Normally no dirt should show, but visible dirt or particles can be an early warning of system component failure. Discard both the filter element and its O-ring. The filter element is NOT CLEANABLE. Any attempt to clean the filter element can cause degradation of the filter medium and allow contaminated fluid to pass through the filter element.

#### WARNING:

**DO NOT ATTEMPT TO CLEAN OR RE-USE THE ELEMENT. ONLY USE GENUINE PALL REPLACEMENT FILTER ELEMENTS. USE OF SUBSTITUTE ELEMENTS MAY INVALIDATE PRODUCT WARRANTY.**

- 7.5 DO NOT run the system without a filter element installed. Check that the O-ring (3) between the head (1) and bowl (2) is not damaged. Use the replacement filter as indicated by the part number on the element endcap.

- 7.6 Lubricate element O-ring with clean system fluid. Reinstall element in the filter head (1) by engaging element and turning anti-clockwise until the element tabs lock into the filter head. Lightly lubricate head-to-bowl O-ring with clean system fluid and reassemble the until thread bottoms. Hand tighten only. O-ring sealing is not improved by over tightening

- 7.7 Bleed the system and check for leaks as per section 4.8.

- 7.8 After element change, ENSURE VISUAL INDICATOR IS RESET BY PUSHING IN THE RED BUTTON. Electrical differential pressure devices will reset automatically. When system reaches normal operating temperature, check that the switch has not actuated and/or the visual warning button has remained depressed. If visual indicator rises due to a cold start condition, reset again as per section 6.

### 8 Fluid sampling

Optimum sampling to verify fluid condition can be achieved by the use of sampling adaptors installed on the hydraulic system itself. For more information consult Pall or your local Pall distributor. Pall offers a fluid contamination analysis service - consult the Pall sales office.

### 9 Warranty, Limitation of Liability and Remedies

THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH RESPECT TO ANY OF THE PRODUCTS, NOR IS THERE ANY OTHER WARRANTY EXPRESS OR IMPLIED, EXCEPT AS PROVIDED FOR HEREIN.

For a period of twelve months from the date of delivery from Seller or three thousand hours of use, whichever occurs first (the "Warranty Period"), Seller warrants that products manufactured by Seller when properly installed and maintained, and operated at ratings, specifications and design conditions, will be free from defects in material and workmanship. By way of explanation and not limitation, the Seller does not warrant the service life of the filter element as this is beyond the Seller's control and depends upon the condition of the system into which the filter is installed.

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## RETURN LINE FILTERS

Seller's liability under any warranty is limited solely (in Seller's discretion) to replacing (FOB original ship point), repairing or issuing credit for products that become defective during the Warranty Period. Purchaser shall notify Seller promptly in writing of any claims and provide Seller with an opportunity to inspect and test the product claimed to be defective. Buyer shall provide Seller with a copy of the original invoice for the product, and prepay all freight charges to return any products to Seller's factory, or other facility designated by Seller. All claims must be accompanied by full particulars, including system operating conditions, if applicable.

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Seller shall not be liable for any product altered outside of the Seller's factory except by Seller or Seller's authorized distributor, and then, as to the latter, only for products which have been assembled by the distributor in accordance with Seller's written instructions. Nor shall Seller be liable for a product subjected to misuse, abuse, improper installation, application, operation, maintenance or repair, alteration, accident or negligence in use, storage transportation or handling.

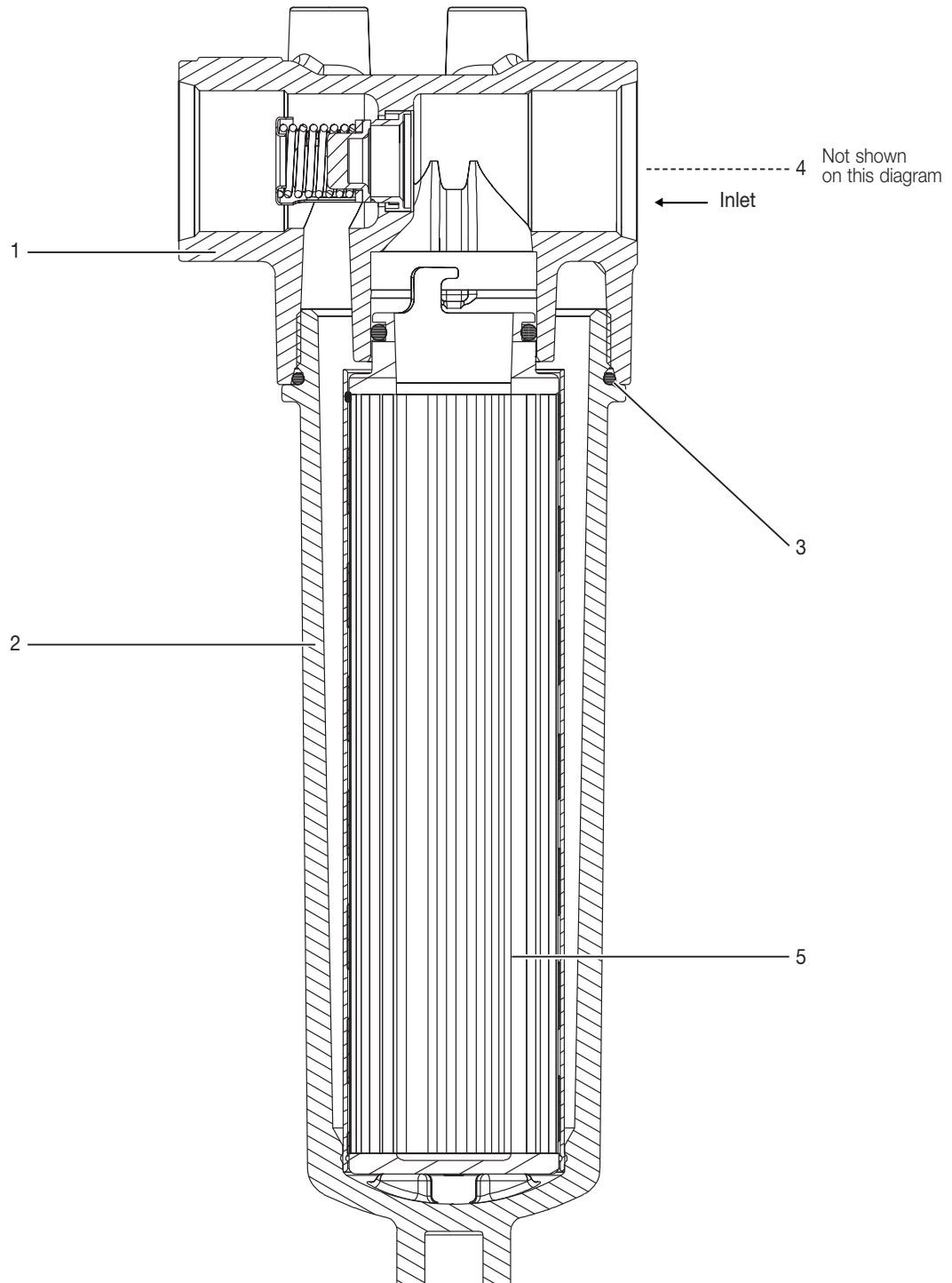
In no event will Seller be liable for any damages, incidental, consequential or otherwise, whether arising out of or in connection with the manufacture, packaging, delivery, storage, use, misuse, or non use of any of its products or any other cause whatsoever.

### 10 Parts List

List	Description	Catalog Number	Quantity
1	Filter Head		1
2	Bowl		1
3	O-ring (head-to-bowl)	UR209SKZ Seal Kit (fluorocarbon)	1
4	Indicator or port plug kit (not shown) FD series: Visual, 16 psid, Fluorocarbon Visual, 50 psid, Fluorocarbon F5 series: Electrical, 16 psid, Fluorocarbon Electrical, 50 psid, Fluorocarbon FB series: Blanking plug, Fluorocarbon	See product literature  1375888 1382233  1375887 1379743  1373772	1
5	Filter element	UE209**++Z See product literature	1

**Figure 1**

Refer to product literature



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