



Pall Corporation

G410

G410 Series Versalon™ Filters

service instructions



EN

G410 Service Instructions

EN

M&ESIG410EN

Filtration. Separation. Solution.SM

G410

VERSALON HIGH PRESSURE FILTERS

G410 Series

service instructions

1 Specifications

Housing materials:

Head: SG iron to BSEN1563 or equivalent
Bowl: Carbon steel to BS970 or equivalent
Bypass Valve Stainless steel and polyamide

Maximum operating pressure:

420 bar (6,090 psi)

Rated fatigue pressure

0-240 bar (0 - 3,480 PSI) per NFPA T2.6.1 R2-2001 CAT C/90

Proof pressure:

630 bar (9,135 psi)

Typical burst pressure:

1500 bar (21,750 psi)

Element collapse pressure:

G300 element 10 bard (145 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 50 °C (120 °F) maximum in HWCF, water-oil emulsion or water glycol

Bypass valve setting options:

4.5 ± 0.5 bard (65 ± 7 psid) differential minimum.

CAUTION:

Maximum surge flow should not exceed 1.3 times normal flow.

Seals:

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 distributor if further information is required.

2 Receipt of equipment

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

3 General sources of information

- For dimensions, operating parameters, assembly/element part number, ordering information, notes, performance data and specifications refer to M&EG410EN
- 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

- 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.
- The minimum clearance required for element removal is 150 mm (6") for all lengths.
- Threaded differential pressure devices, when fitted, must be torque tightened up to 38 ft/lb or 54 Nm. Visual indicators should be clearly visible when assembly is installed.

NOTE: The G410 head is supplied, if selected, with one or two machined differential pressure warning ports fitted with a plastic shipping plug.

CAUTION:

Never operate the filter unless the warning device port is sealed.

- Mount the filter assembly in position using four 3/8"-16-UNC 2B ('A' ports) or M10 x 1.5 ('C' ports) bolts in the holes on the head mounting pads. Torque bolts to 9-19 ft/lb or 12-26 Nm.
- Use a check valve downstream of the filter if there is a possibility of reverse flow.
- 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.

CAUTION:

Reverse flow through filter element will cause damage.

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 user's earthing system. This filter assembly must be earthed by connecting the user's earthing system to one of the inlet/outlet connections.

WARNING:

USE FITTINGS OR ADAPTORS COMPATIBLE WITH SPECIFIED PORTS SUPPLIED: 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.

- Connect lines or hoses to housing inlet and outlet ports. The Inlet Port is always on the opposite side to the Indicator Port or Pad. See page 5 for details.

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.

- Bleed filters. Open plug at top of filter (if fitted), one and a half turns. Jog filter and fill filter until all air bleeds through, then tighten the plug. Pressurize system fully

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.

5 Routine maintenance

- 5.1 Pall filters do not normally require special attention except for periodic monitoring of the differential pressure warning device. If no such device is fitted, a specified scheduled time period for replacement must be adopted.
- 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 replacement filter elements are stored clean & undamaged and that a supply of replacement elements is available.

6 Differential pressure devices

Reference should be made to product literature (M&EG410EN) 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 visual indicator is fitted and actuates during 'cold start' (button changes from white to red), it will automatically reset when the normal operating conditions are reached. If indicator actuates after resetting, replace element.
- 6.3 If the electrical switch actuates (e.g. red light comes on) during cold start, continue operating until the signal (red light) goes out as system warms to normal operating conditions. This feature can be used as 'warm up' indication in operating procedures. If the warning remains or appears when system is warm, replace the filter element.

All electrical pressure switches have automatic reset.

- 6.4 If electrical differential device is fitted the use of both positive indication (green light) and negative indication (red light for dirty element) is recommended to effectively monitor filter element life.

Electrical connections and ratings for "C" and "U" (normally closed) differential pressure switch options:

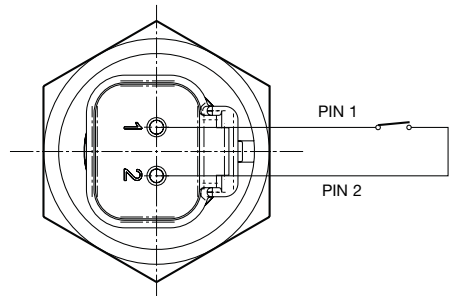
The switch is wired normally closed. Using normally closed configuration allows for the detection of damaged or broken cables or disconnection.

All electrical pressure switches have automatic reset.

Maximum Voltage 48V DC or peak AC

Switching Current 0.5A max

If switch is to be connected to an inductive load or load where surge current or in rush current flows, then protective circuitry may be required to lengthen the life of the switch contacts.



7 Filter element installation / 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 also 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 is recommended. Failure to change the element will cause the filter to go on bypass.

Refer to Product Datasheet (TRG410TEN) 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 the filter bowl assembly (2) from head (1) counter-clockwise when viewed from below.
- 7.3 Filter element replacement (G300 Series): Remove filter element (5), if already fitted by turning clockwise by ¼ turn and pulling down, and carefully inspect the interior surface (flow through the element is out-to-in) 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.
- 7.4 To replace the filter element, Lubricate element O-ring with clean system fluid, align arrows on filter element end cap to arrows on the filter head. Push up and rotate anti-clockwise through ¼ turn to a stop. Use the replacement filter element as indicated by the part number on the filter element end cap.

WARNING:

DO NOT ATTEMPT TO CLEAN OR RE-USE THE ELEMENT.

- 7.5 DO NOT run the system without a filter element installed. Check that the O-ring between the bowl (2) and head (1) is not damaged. Replace if damaged. It is recommended that the o-ring head-to-bowl seal is changed at each element service.
- 7.6 Lightly lubricate head-to-bowl O-ring with clean system fluid and reassemble the housing until thread bottoms. The bowl should be torque tightened to 74 ft/lb or 100 Nm. 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 DIFFERENTIAL PRESSURE DEVICE IS RESET; both visual and electrical switches reset automatically. When system reaches normal operating conditions, check that the electrical switch has not actuated and/or the visual warning button has returned to white.

8 Fluid Sampling

Optimum sampling to verify fluid condition can be achieved by the use of sampling adaptors installed in place of or in combination with the differential pressure device. 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.

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.

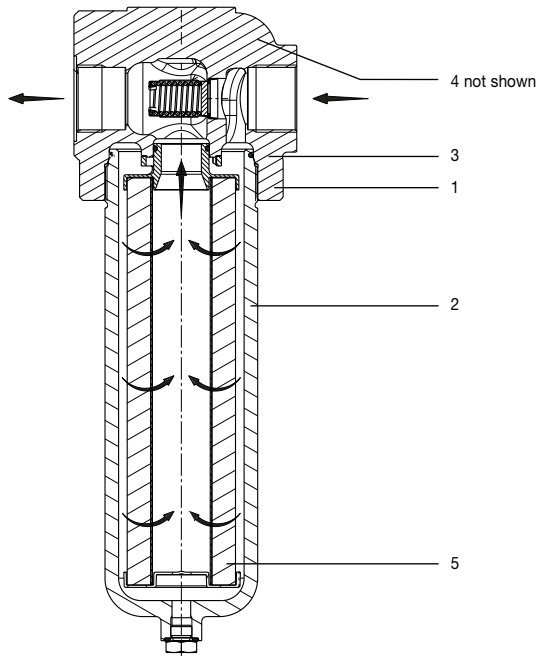
Seller shall not be liable for any product altered outside of the Seller's factory except by Seller or Seller's authorized distributor, and then, as to the latter, only for products which have been assembled by the distributor in accordance with Seller's written instructions. Nor shall Seller be liable 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	Part Number	Quantity
1	Head		1
2	Bowl		1
3	O-ring (head-to-bowl)	G400SKZ	1
4	Indicator	If fitted See product literature	1
5	Filter element	G300 series See product literature	1

Note: All product data can be found at www.pall.com

Figure 2 - G410 section drawing



G410

VERSALON HIGH PRESSURE FILTERS

G410 Series

service instructions



Pall Corporation

25 Harbor Park Drive
Port Washington, NY 11050
+1 800 289 7255 toll free US
+1 516 484 3600 telephone

Portsmouth - UK
+44 (0)23 9233 8000 telephone
+44 (0)23 9233 8811 fax




**Better Lives.
Better Planet...**

Visit us on the Web at www.pall.com

Pall Corporation has offices and plants throughout the world. For Pall representatives in your area, please go to www.pall.com/contact

Because of technological developments related to the products, systems, and/or services described herein, the data and procedures are subject to change without notice. Please consult your Pall representative or visit www.pall.com to verify that this information remains valid.

© Copyright 2013, Pall Corporation. Pall, Versalon and  are trademarks of Pall Corporation.

® Indicates a trademark registered in the USA.

Filtration. Separation. Solution.SM and *Better Lives. Better Planet* are service marks of Pall Corporation.