



Pall Corporation

# UH239

## UH239 Series Filters

ULTIPLEAT® SRT HIGH PRESSURE FILTERS

Port Size 1¼" and 1½"



### Features

- Patented Ultipleat (laid-over pleat) filter medium pack
- Coreless, cageless element configuration
- Pall Stress-Resistant Technology (SRT) Media
- In-to-out filter element flow path
- Flows to 350 L/min (92 US gpm)
- Pressures to 420 bar (6100 psi)
- Port size 1¼" and 1½"

### Notes and Specifications

#### Filter Housing

- **Maximum Working Pressure:**  
420 bar (6100 psi)
- **Rated Fatigue Pressure:**  
0-240 bar (0-3500 psi) per NFPA T2.06.01R2-2001 CAT C/90/\* (1 million cycles), verified by testing at 0-280 bar (0-4050 psi) for 1 million cycles.  
Contact Pall for applications with higher pressures at lower cycles
- **Typical Burst Pressure:**  
1500 bar (21,750 psi)
- **Fluid Compatibility:**  
Compatible with all petroleum oils, water glycols, water-oil emulsions and most synthetic hydraulic and lubrication fluids
- **Temperature Range:**  
Fluorocarbon Seals:  
-29 °C to 120 °C (-20 °F to 250 °F)  
60 °C (140 °F) maximum temperature in HWCF or water glycol fluids
- **Bypass Valve Setting:**  
4.5 bard (65 psid)
- **Indicator Pressure Setting:**  
3.5 bard (50 psid)
- **Materials of Construction:**  
Head and Cover: Ductile Cast Iron  
Tube: Carbon steel

#### Filter Element

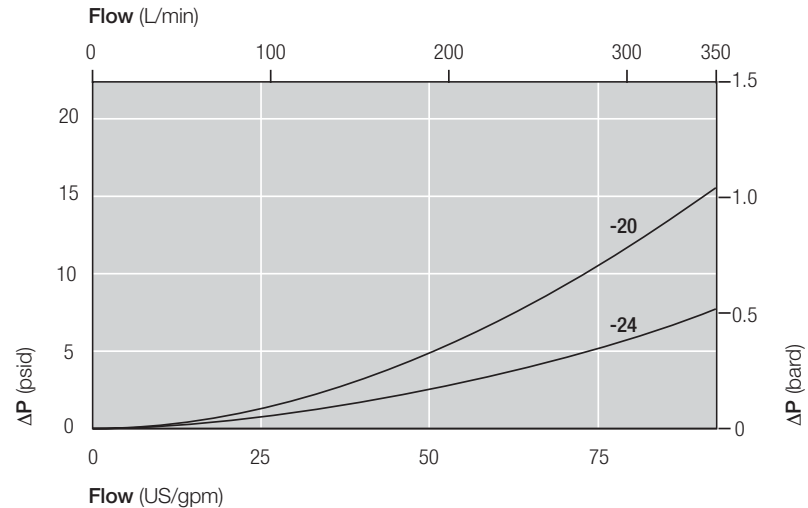
- **Filter Element Burst Pressure:**  
10 bard (150 psid)
- **Ultipleat SRT Element Construction:**  
Inorganic fibers impregnated and bonded with epoxy resins. Polymer endcaps. Anti-static media

The 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. Suitable for use with Group 2 fluids only. Consult Sales for other fluid gas group suitability.

### Pressure Drop Information

#### Housing pressure drop using fluid with 0.9 S.G.

Housing pressure drop is directly proportional to specific gravity.



#### Element Pressure Drop

Multiply actual flow rate times factor in table below to determine pressure drop with fluid at 32 cSt (150 SUS), 0.9 S.G. Correct for other fluids by multiplying new viscosity in cSt/32 (SUS/150) x new S.G./0.9. Note: factors are per 1000 L/min and per 1 US gpm.

#### 219 Series Filter Elements — bard/1000 L/min (psid/US gpm)

Length Code	AZ	AP	AN	AS	AT
13	5.95 (0.327)	2.52 (0.139)	1.70 (0.093)	1.05 (0.058)	0.80 (0.044)
20	3.95 (0.217)	1.68 (0.092)	1.13 (0.062)	0.70 (0.038)	0.53 (0.029)

#### Sample ΔP calculation

UH239 Series 13" length housing with C24 (1½" BSP) threaded port using an UE219 filter element with AN grade media. Operating conditions 300 L/min flow rate using a hydraulic fluid of 50 cSt and specific gravity (S.G.) 1.2.

#### Total Filter ΔP

$$\begin{aligned}
 &= \Delta P_{\text{housing}} + \Delta P_{\text{element}} \\
 &= (0.4 \times 1.2/0.9) \text{ bard (housing)} \\
 &+ ((300 \times 1.70/1000) \times 50/32 \times 1.2/0.9) \text{ bard (element)} \\
 &= 0.53 \text{ bard (housing)} + 1.06 \text{ bard (element)} \\
 &= \mathbf{1.59 \text{ bard (23.1 psid)}}
 \end{aligned}$$

# UH239 Series Filters

## Ordering Information

For new installations, select one complete part number from each section below

### Section 1

#### Housing P/N:

Note: Pall Ultipleat SRT filter housings are supplied without filter elements or warning devices fitted. Never operate the filter unless a filter element is fitted and all warning device ports are sealed.

UH 239 C  ++  ZG 1  
Table 1      Table 2

Note: Z indicates fluorocarbon seals are standard. Other options are available; contact Pall. The suffix '1' at the end of the Housing P/N designates 1 indicator port fitted with a plug.

#### Seal Kit P/N:

#### UH 239 SKZ

\*Other seal material options are available; Contact Pall.

Table 1: Housing Port Options

Code	Port	Max. Operating Pressure
A20	1¼" SAE J1926 straight thread	420 bar (6100 psi)
A24	1½" SAE J1926 straight thread	
C20	1¼" BSP ISO 228 threads	
C24	1½" BSP ISO 228 threads	
E20	1¼" Flange J518C code 62 with ½"-13 UNC holding bolts	414 bar (3000 psi)
G20	1¼" ISO 6162 split flange with M12 x 1.75 holding bolts	400 bar (5800 psi)

\* Maximum operating pressure 400 bar

Table 2: Filter Housing Length Options

Code	Length (in)*
13	13
20	20

\* Nominal length

### Section 2

#### Element P/N:

UE 219   Z  
Table 1      Table 2

Note: Z indicates fluorocarbon seals are standard. Other options are available; contact Pall.

Table 1: Filter Element Options

Code	$\beta_{x(c)} \geq 1000$ based on ISO 16889	CST Rating*
AZ	3	08/04/01
AP	5	12/07/02
AN	7	15/11/04
AS	12	16/13/04
AT	22	17/15/08

\* CST: Cyclic Stabilization Test to determine filter rating under stress conditions, based on SAE ARP4205

Table 2: Filter Element Length Options

Code	Length (in)*
13	13
20	20

\* Nominal length

### Section 3 (At least one Differential Pressure Indicator or 'B' type blanking plug must be ordered)

#### Differential Pressure Indicator P/N:

Note: Two Differential Pressure Indicators can be fitted on this housing

RC  091 Z     
Table 1      Table 2      Table 3      Table 4

Note: If no differential pressure indicator is selected, 'B' type blanking plug (P/N HC9000A104Z) must be ordered separately and fitted to replace the plastic shipping plug.

Note: Z indicates fluorocarbon seals are standard. Other options are available; contact Pall.

Table 1: Differential Pressure Indicator Options\*

Code	Indicator	'H' Dim.
778NZ	'P' type Visual indicator with thermal lockout	21mm (0.83in)
860MZ	'D' type Visual indicator with no thermal lockout	21mm (0.83in)
861CZ	'L' type Electrical switch (SPDT) with 6" leads	38mm (1.50in)
861CZ	'M' type Electrical switch (SPDT) with DIN43650 connector and matching cap	78mm (3.07in)
861CZ	'R' type Electrical switch (SPDT) and neon light indicator with DIN43650 connector and cap	89mm (3.50in)
771BZ	'S' type Electrical switch (SPDT) with 3-pin MS connector	57mm (2.24in)

\* Other options available on application.

Table 2: Differential Pressure Indicator Material

Code	Indicator
Omit	Aluminium Alloy Indicator: use at operating pressures < 200 bar (< 3000 psi)
SS	Stainless Steel Indicator: use at operating pressures > 200 bar (> 3000 psi)

Table 3: 'M' & 'R'-Type Indicator Codes\*

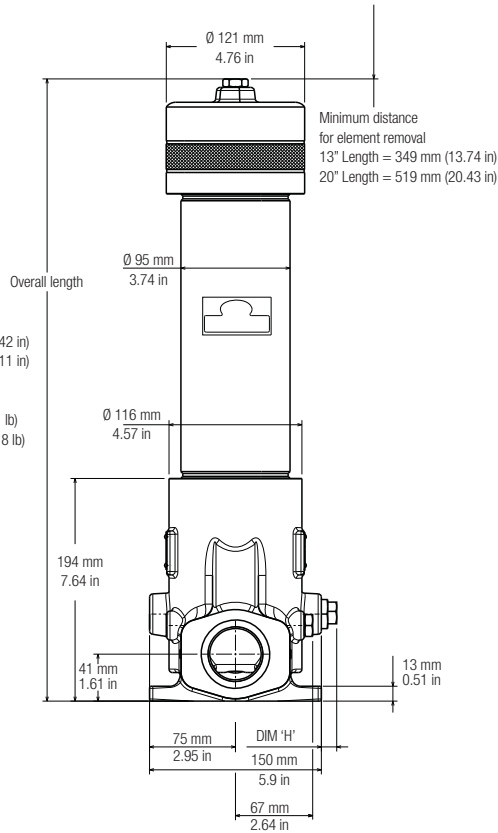
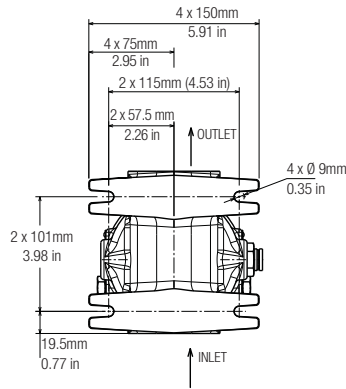
Code	Option
YM	'M' option
YR	'R' option

\* Use only if 'R' or 'M' Indicator is selected from Table 1

Table 4: 'R' Indicator Options

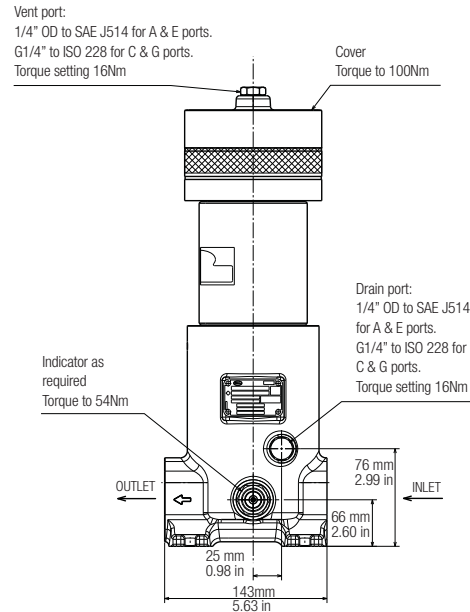
Code	Option
110AC	110V AC
220AC	220V AC
24DC	24V DC

\* Use only if 'R' Indicator is selected from Table 1



Overall Length  
13" Length = 544 mm (21.42 in)  
20" Length = 714 mm (28.11 in)

Empty Weight  
13" Length = 25.9 kg (57.1 lb)  
20" Length = 34.1 kg (75.18 lb)



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