

APROBAT,
DIRECTOR TEHNIC
(Stelian MAZILU)



**CAIET DE SARCINI nr. 17 PS/2025
pentru achizitionare elemente filtrante aferente filtrelor montate pe circuitele din
cadrul Centralei cu Ciclu Combinat - CTE Bucuresti VEST**

Cap.I Obiectul caietului de sarcini

1.1. Obiectul prezentului caiet de sarcini este achizitionarea urmatoarelor piese de schimb aferente circuitelor de ulei, aer atomizare, gaz, azot si aer instrumental din cadrul Centralei cu Ciclu Combinat din CTE Bucuresti VEST:

elemente filtrante aferente filtrelor montate pe circuitele din cadrul Centralei cu Ciclu Combinat - CTE Bucuresti VEST

Cap.II Scopul achizitiei produselor

2.1. Achizitia produselor din prezentul caiet de sarcini se face in vederea inlocuirii acestora in cadrul reparatiilor planificate la circuitele de ulei, gaz, azot si aer instrumental aferente agregatelor din dotarea Centralei cu Ciclu Combinat din CTE Vest (turbina cu gaz, turbina cu abur, compresor de gaz, EPA).

Cap. III Specificatia produselor ce urmeaza a se achizitiona

3.1. Specificatia pieselor de schimb ce urmeaza a se achizitiona si care fac obiectul prezentului caiet de sarcini este prezentata in anexa 1.

Cap. IV Materialele necesare realizarii produselor ce se achizitioneaza

4.1. Toate materialele necesare realizarii pieselor de schimb mentionate in anexa nr.1 sunt asigurate de producator.

Cap.V Termenul de livrare

5.1. Termenul de livrare pentru piesele de schimb care fac obiectul prezentului caiet de sarcini este conform anexei nr.1 (zile calendaristice de la data perfectarii contractului).

Cap.VI Cerinte tehnice impuse de autoritatea contractanta in faza de ofertare

Oferta tehnica va cuprinde date tehnice si informatii care sa dovedeasca ca produsele oferite indeplinesc toate conditiile tehnice descrise in anexele 2-14.

6.1. In oferta tehnica ofertantul va certifica furnizarea produselor solicitate in anexa nr.1.

6.2. In oferta tehnica se vor inscrie in mod obligatoriu informatii privind termenul de livrare al produselor oferite.

6.3. Se vor prezenta fisele tehnice ale produselor oferite, specificatii tehnice, codurile de producator, desene (sectiuni, cote de gabarit, definirea partilor componente, etc), orice alte informatii care contribuie la descrierea cat mai detaliata a produselor oferite.

Deoarece se impune achizitionarea de produse 100% compatibile (din toate punctele de vedere - dimensional, tehnic, design, etc.) cu cele din instalatie, in documentatie au fost specificate codul si fabricantul produselor. Daca se ofera produse cu alte coduri decat cele solicitate, ofertantul va face dovada ca producatorul a adoptat un alt sistem de codificare.

6.4. In cadrul ofertei tehnice se vor prezenta acte doveditoare care sa confirme ca produsele ce fac obiectul prezentului caiet de sarcini, sunt fabricate in sistemul de management al calitatii conform cu SR EN ISO 9001 editia in vigoare sau conform oricarui alt standard de calitate echivalent.

Cap.VII Cerinte tehnice impuse de autoritatea contractanta pe parcursul derularii contractului

7.1. Produsele livrate vor fi marcate corespunzator

7.2. Documentatia de executie este asigurata de producator.

7.3. Produsele executate trebuie sa corespunda documentatiilor tehnice de executie si de calitate, tuturor probelor si incercarilor finale prevazute in documentatiile proiectantului, caietului de sarcini si procedurilor de management al calitatii prevazute in manualul de calitate propriu in conformitate cu **SR EN ISO 9001** editia in vigoare.

7.4. Materialele din care se vor confectiona piesele de schimb trebuie sa fie in termenul de garantie. Este interzisa utilizarea materialelor care au depasit termenul de garantie acordat de furnizor sau care, fiind in termenul de garantie, s-au deteriorat datorita depozitarii necorespunzatoare.

7.5. Produsele livrate vor fi executate de personal calificat pe baza unor tehnologii elaborate in conformitate cu procedurilor de asigurare a calitatii conform manualului calitatii propriu producatorului.

7.6. Furnizorul isi va asuma intreaga responsabilitate pentru calitatea si performantele produselor furnizate.

7.7. Sa inlocuiasca fara plata produsele livrate cu deficiente si abateri de la documentatii, standarde, prescriptii tehnice, constatate la receptie sau in perioada de garantie.

Cap.VIII Receptia si controlul produselor ce se achizitioneaza.

8.1. Receptia produselor se face pe baza de receptie cantitativa efectuata la sediul beneficiarului.

8.2. Calitatea produselor este atestata de furnizor prin certificate de calitate si conformitate emise de producator etc, care insotesc produsele catre beneficiar.

8.3. Receptia cantitativa si calitativa la beneficiar se efectueaza in termen de 3 zile de la data primirii produselor, termen in care este convocat furnizorul in caz de neconformitati cantitative si calitative.

8.4. Se solicita garantie tehnica de 12 luni de la punerea in functiune, nu mai putin de 18 luni de la receptia produselor.

Cap.IX Conditii impuse privind ambalarea, conservarea, livrarea si transportul produselor

9.1. Produsele se vor livra cu ambalaj sau fara in functie de specificul acestora si conditiile impuse prin caietul de sarcini sau documentatii tehnice.

9.2. Furnizorul, pe cat posibil, va utiliza ambalaje biodegradabile.

9.3. Ambalarea si conservarea produselor livrate se face in asa fel incat acestea sa-si pastreze caracteristicile calitative pe toata perioada de garantie daca nu au fost introduse la montaj.

9.4. Marcajul se face conform standardelor, caietelor de sarcini, documentatiilor de executie ale furnizorului.

9.5. Livrarea produselor se face franco depozit beneficiar, la depozitul CTE Vest B-dul. Timisoara nr.106, sector 6 Bucuresti in zilele lucratoare, in intervalul orar 7-15, cu asigurarea mijloacelor de transport si suportarea cheltuielilor aferente de catre furnizor, livrarea fiind "franco - depozit beneficiar".

9.6. Fiecare transport va fi insotit obligatoriu de urmatoarele documente:

- aviz de expeditie, CMR

- certificat de calitate si declaratie de conformitate UE emise de producator ;
 - certificat de garantie;
 - instructiuni de conservare, depozitare, manipulare, emise de furnizor pe care achizitorul trebuie sa le respecte pentru a nu aduce prejudicii produselor livrate din necunoasterea lor, in limba romana ;
 - documentatie tehnica, documentatie de montaj
- 9.7. Riscul pentru eventualele pierderi sau deteriorari ale produselor pe timpul transportului, revine furnizorului.

Cap. X Alte clauze

- 10.1. Furnizorul este direct raspunzator de modul in care negociaza preturile cu subfurnizorii sai de materiale si de normele de consum pe care le foloseste la intocmirea calculatiei de pret.
- 10.2. Furnizorii isi vor intocmi oferta in baza prezentului caiet de sarcini si a precizarilor facute de catre ELCEN in documentatia procedurii de achizitie.
- 10.3. Anexele nr.1 - 14 fac parte integranta din prezentul caiet de sarcini.
- 10.4. Pentru evitarea oricaror confuzii in procesul de analiza detaliata a ofertelor, ofertantul va marca in mod distinct pe fisele tehnice/ specificatiile tehnice/schite/desene, pozitiile corespunzatoare din caietul de sarcini la care se refera.

Sef SCM-AC
Cristian Dumitru

Inginer Sef CTE VEST
Valentin RADU

Responsabil MC
Adelina NASTASE

Sef Sectie Ciclu Combinat
Costin ZISU

STMIU
Alexandra RADULESCU
Rodica CRISTEA



Lista de cantitati de produse

Nr. crt.	Denumire piese de schimb	UM	Cant	Termen de livrare
0	1	2	3	4
Lotul nr. 1 Producator SAI				
1	Element filtrant tip coalescent 486 pentru instalatie eliminare vapori de ulei, aferente turbinei cu gaz (50 buc/set) (cod General Electric 328A7187P003) Conform Anexa nr.2	set	1	60 zile
Lotul nr. 2 Producator INTERNORMEN				
1	Element filtrant cod 01.NR.1000.16VG.10.B.P filtru ulei ungere Compresor de gaz DNR1005.16VG.10.B.P-FD1.A (2 buc/set) Conform Anexa nr.3	set	1	60 zile
Lotul nr.3 Producator BOLL&KIRCH				
1	Element filtrant tip 1987475 pentru filtru duplex ulei ungere turbina cu abur BFD 220 630/990 100 10 GX Conform Anexa nr.4	buc	2	60zile
2	Element filtrant tip 1987461 pentru filtru duplex ulei ungere turbina cu abur tip BFD 100 260/350 25 02 GX Conform Anexa nr.5	buc	2	60 zile
Lotul nr.4 Producator MP FILTRI SpA				
1	Element filtrant tip HP 065 2 A 06 A N P01 pentru filtru circuit ulei hidraulic actionari by-pass turbina cu abur cod FHP 065 2 BAG 2 A 06 N, - Conform Anexa nr.6	buc	2	60 zile
2	Element filtrant tip MF 100 2 A 06 H B P01 pentru filtru circuit retur ulei hidraulic actionari by-pass turbina cu abur cod MPF 100 2 AG3 A06 HB - Conform Anexa nr.7	buc	2	60 zile
3	Element filtrant cod A8 L03 pentru filtru SA 115 G1 L03 A P01 aferent circuit recirculare ulei hidraulic actionari statii by-pass turbina cu abur - Conform Anexa nr.8	buc	1	60 zile
4	Element filtrant tip HP 065 1 A10 AH P01 aferent filtru circuit ulei hidraulic compresor de gaz tip FHP 065 1 BAG A10 H/V7 - Conform Anexa nr.9	buc	2	60 zile
Lotul nr.5 Producator DONALDSON				
1	Elemente filtrante cod V3045V1H15 (cod nou produs: P167181 Donaldson-OEM) pentru filtre tip H4405S1PN1H15 fabricant WESTERN FILTER montate pe circuitele de ulei aferente actionarilor hidraulice ale vanelor de reglare gaz -Turbina gaz -Conform Anexa nr.10	buc	4	60 zile
Lotul nr.6 Producator ADAMS				
1	Element filtrant: Poro Stone cod 121413 pentru filtru aer atomizare tip 3/4" GP-31 (Un set contine un element filtrant, 2 garnituri filtru. 1 garnitura capac) Conform Anexa nr.11	set	1	60 zile
Lotul nr.7 Producator FRANKE				
1	Elemente filtrante separator vapori ulei compresor de gaz cod MFK-032-39.4 (16 buc/set inclusiv garnituri fixare) Conform Anexa nr.12	set	1	60 zile
Lotul nr.8 Producator DOLLINGER				

1	Element filtrant cod: 49-BN-153X-N-63+garnitura capac cod D1204444+garnitura filtru cod D1204005pentru circuit principal aer atomizare si filtru gaz DLN aferent turbina gaz Conform Anexa nr.13	set	1	60 zile
Lotul nr.9.Producator PALL				
1	Elemente filtrante pt filtru ulei hidraulic turbina cu gaz cod: HC9601FCP13Z (cod General Electric 328A7168P001) Conform Anexa nr.14	buc	2	60 zile



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Element filtrant pentru instalatia de eliminare vapori de ulei aferente Turbina cu gaz

Element filtrant de forma cilindrica din fibra de sticla.

Fabricant:	SAI
Tip:	coalescent 486
Nr. desen GE:	91-133304
Cod GE:	328A7187P003
Material:	Fibra de sticla
Dimensiuni:	65(exterior)x52(interior)x477(lungime)
Setul contine	50 buc.



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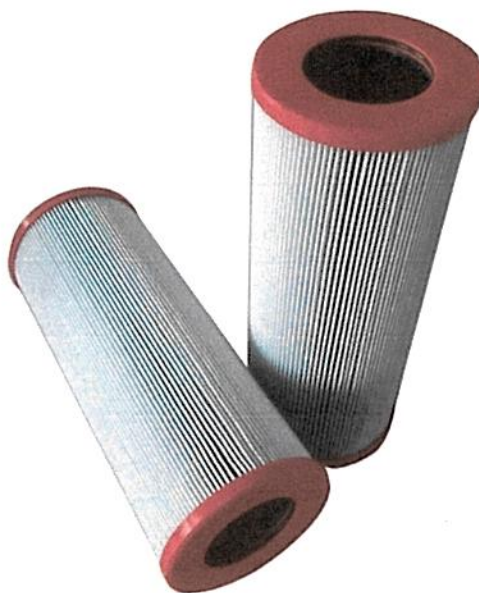
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**Element filtrant pentru filtru ulei ungere cod DNR.1005.16VG.10.B.P-FD1.A
Compresor de gaze**

Date tehnice

Fabricant:	Internormen
Cod filtru:	DNR.1005.16VG.10.B.P-FD1.A
Cod element filtrant:	01.NR.1000.16VG.10.B.P
Temperatura de functionare:	-10 °C...80 °C
Presiunea maxima de functionare:	16 bar
Diferenta de presiune maxima in functionare: :	10 bar

Un set contine 2 elemente filtrante



1. Type index:

1.1. Complete filter: (ordering example)
DNR. 3005. 10VG. 10. B. P. -, FS. B. -, AE

1	2	3	4	5	6	7	8	9	10	11	12
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1 series: QNR = duplex filter with standard return-line filter elements

2 nominal size: 1005, 2005, 3005, 4005 (1 level)
 2205, 4205, 6205, 8205 (2 levels)

3 filter material and filter fineness:

80 G = 80 µm, 40 G = 40 µm, 25 G = 25 µm stainless steel wire mesh,
 25 VG = 20 µm, 10 VG = 10 µm, 6 VG = 7 µm, 3 VG = 5 µm Interpor fleece (glass fibre)
 25 P = 25 µm, 10 P = 10 µm paper

4 resistance of pressure difference for filter element:

10 = ΔP 10 bar

5 filter element design:

B = both sides open

6 sealing material:

P = Nitrile (NBR), V = Viton (FPM)

7 filter element specification: (see catalog)

= standard, VA = stainless steel; IS06 = see sheet-no. 31601; IS07 = see sheet-no. 31602

8 connection:

FS = flange connection SAE 3000 PSI, only for DN 50-125

ED1 = flange connection DIN 2633, design C DIN 2526, only for DN 150-200

FD2 = flange connection DIN 2633, design E DIN 2526, only for DN 150-200

9 connection size:

filter nominal size	DNR 1005	DNR 2005	DNR 3005	DNR 4005	DNR 2205	DNR 4205	DNR 6205	DNR 8205
connection size	B-A-B	A-B-C-D	B-C-D-E	A-B-C-D	A-B-C-D	A-B-C-D-E	B-C-D-E	B-C-D-E

8 = DN 50; 9 = DN 65; A = DN 80; B = DN 100; C = DN 125; D = DN 150; E = DN 200

10 filter housing specification: (see catalog)

= standard

IS06 = see sheet-no. 31605

11 internal valve:

= without

S1 = with by-pass valve 3.5 bar

12 clogging indicator or clogging sensor:

= without

OP = visual, see sheet-no. 1628;

OE = visual-electrical, see sheet-no. 1628;

AE = visual-electrical, see sheet-no. 1609

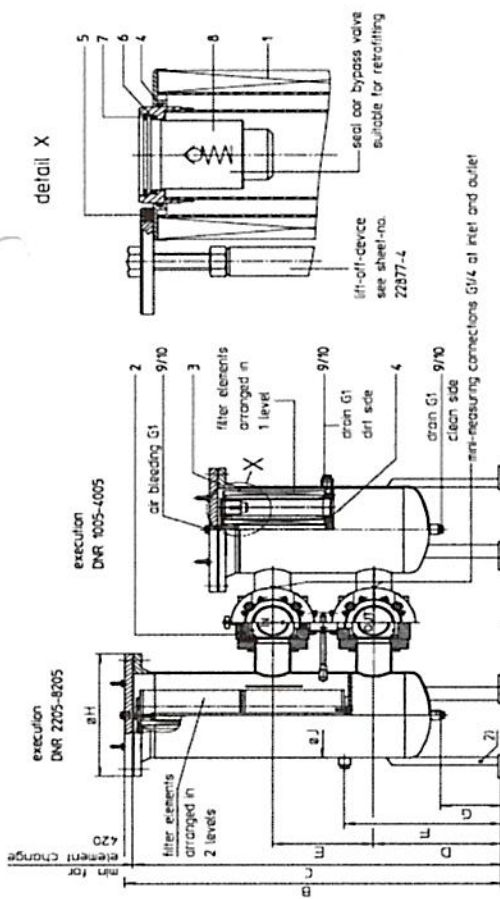
VS1 = electrical, see sheet-no. 1607

VS2 = electrical, see sheet-no. 1608

Sef Sectie Ciclu Combinat,

Costin ZISU

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Position I: filter 1 in operation
 Position II: filter 2 in operation
 Switch lever standard in the front
 1) On request: Switch lever backside opposite to inlet and outlet.
 Please specify on order I
 2) connection for the potential equalisation at inlet and outlet resp. filter housing, only for application in the explosive area

3. Dimensions:

type	DN	A	B	C	D	E	F	G	H	J	K	L	M	N	weight kg	volume tank
DNR 1005	50	610	915	850	365	175	463	180	340	219	74	70	18	330	180	2x 22.5 l
	65	560	915	850	365	270	463	180	340	219	90	70	18	330	200	2x 22.5 l
	80	585	925	860	375	290	473	180	340	219	100	70	18	330	210	2x 23.0 l
	100	630	955	930	390	365	503	180	340	219	127	70	18	330	230	2x 24.0 l
	125	670	1005	1070	500	290	643	180	340	219	142	70	18	330	510	2x 94.0 l
DNR 2005	100	810	1105	1070	500	365	643	240	580	406	127	90	22	550	520	2x 94.0 l
	125	870	1145	1110	500	395	683	240	580	406	142	90	22	550	540	2x 99.0 l
	150	900	1195	1160	500	440	733	240	580	406	177	90	22	550	560	2x 105.0 l
	175	940	1245	1210	500	480	773	240	580	406	177	90	22	550	580	2x 110.0 l
	200	980	1295	1260	500	520	813	240	580	406	177	90	22	550	600	2x 115.0 l

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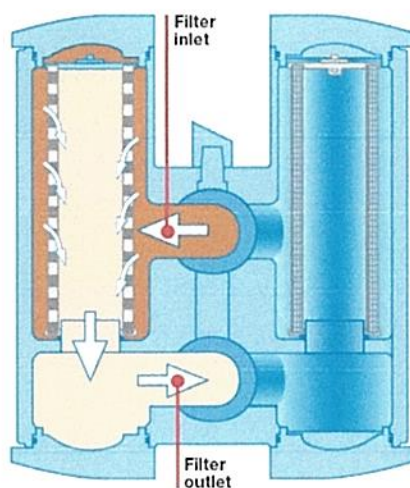


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**Element filtrant pentru filtru duplex ulei tip BFD 220 630/990 100 10 GX
circuit ulei ungere Turbina cu abur**

Date tehnice:

Fabricant:	BOLL&KIRCH
Tip:	BFD 220 630/990 100 10 GX
Element filtrant:	1987475
DN:	100
Material	otel inoxidabil
Temperatura de functionare	5 grd C...70 grd C
Presiunea maxima de functionare	16 bar



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FISA TEHNICA

**Element filtrant pentru filtru duplex ulei tip BFD 100 260/350 25 02 GX
circuit ulei ungere Turbina cu abur**

Date tehnice:

Fabricant:

BOLL&KIRCH

Tip:

BFD 100 260/350 25 02 GX

Element filtrant:

1987461

DN:

25

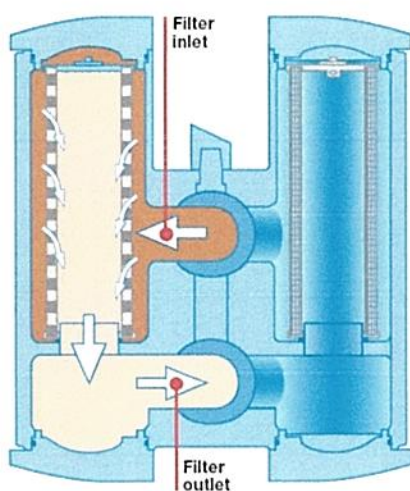
Material

otel inoxidabil

Temperatura de functionare

20 grd C...60 grd C

Presiunea maxima de functionare 16 bar



THE CONCEPT

A universal series, optimally variable

The requirements laid down for a modern double filter are optimised in the design of the new BFD as a result of the versatile concept. In addition, the BFD series combines the utmost levels of economy with operational safety, thanks to:

- Innovative detailed solutions
- Flexible, tailor-made modular construction
- Functionality that sets new standards.

With 60 variants and the available housing materials (ductile iron, cast steel or stainless steel), the BFD series provides a flexible filter solution. The flexibility of the BFD series is enhanced by compliance with the requirements of:

- AD 2000
- EN 13445
- PED DGRL 97/23/EG
- ASME SECT VIII DIV. 1
- API 614 and
- U-stamp.



BFD - Short Construction: NOMINAL WIDTHS AND HOUSING MATERIALS

In/Outlet	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
Ductile iron	PN 40	PN 40	PN 40	PN 40	PN 40	PN 40	PN 16	PN 16
Cast steel	PN 32	PN 32	PN 32	-	PN 32	PN 32	PN 16	PN 16
Cast stainless steel	PN 32	PN 32	PN 32	-	PN 32	PN 32	PN 16	PN 16

BFD Long Construction: NOMINAL WIDTHS AND HOUSING MATERIALS

In/Outlet	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
Ductile iron	PN 40	PN 40	PN 40	PN 40	PN 40	PN 40	PN 16	PN 16
Cast steel	PN 32	PN 32	PN 32	-	PN 32	PN 32	PN 16	PN 16
Cast stainless steel	PN 32	PN 32	PN 32	-	PN 32	PN 32	PN 16	PN 16

Approximate design in the case of $\Delta p^{design} = 0,35 \text{ bar}/5,1 \text{ psi}$ with glass fibre elements*

Volume flow	Viscosity	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
lpm/gpm (US)	30 cSt	65/17	190/50	245/65	480/127	715/189	1045/276	1870/494	2710/716
lpm/gpm (US)	40 cSt	60/16	175/46	225/59	430/114	650/172	935/247	1710/452	2450/647
lpm/gpm (US)	50 cSt	55/14	160/42	200/53	395/104	595/157	850/225	1580/417	2270/600

* in the case of star pleated elements with stainless steel mesh, approx. 30 % higher volume flow

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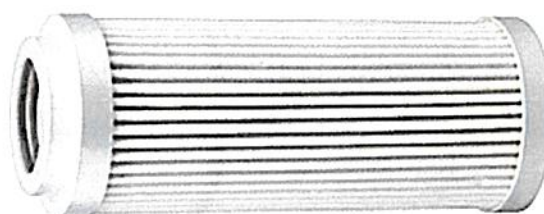
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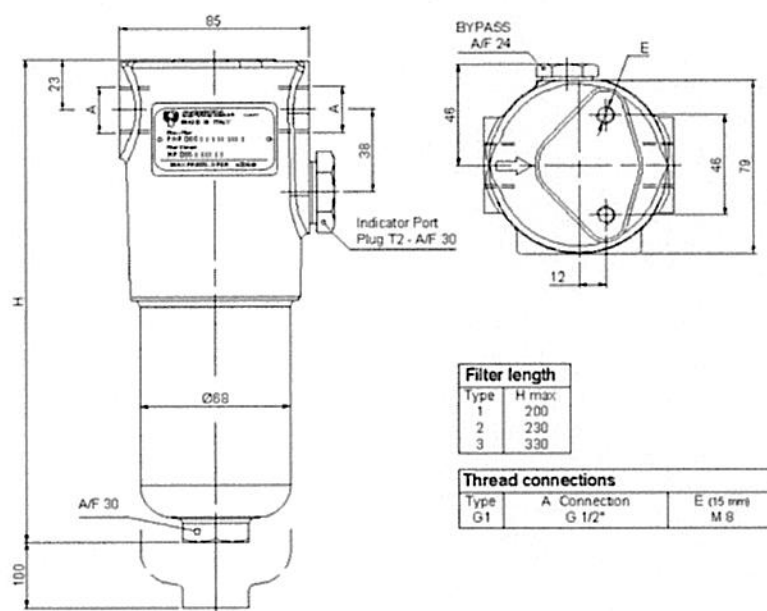
**Element filtrant pentru filtru ulei tip FHP 065 2 BAG2 A06 N circuit ulei hidraulic
actionare statii by-pass turbina abur**

Date tehnice:

Fabricant:	MP FILTRI SpA
Tip filtru:	FHP 065 2 BAG2 A06 N
Tip element filtrant:	HP 065 2 A06 A N P01
Material filtru:	fonta tratata la temperaturi inalte
Material element filtrant:	ABS Microfibre
Temperatura de functionare	-25 grd C...110grd C
Presiunea maxima de functionare	420 bar



FHP065



Description

FHP

FHP series filters are designed for high pressure applications and are suitable for in-line installation. Continued research and development on both the filter bodies and the filter elements has resulted in a product line with excellent pressure drop characteristics combined with a high filtration efficiency. The transverse by-pass valve is a standard feature with this range of product. (Non bypass for servo applications are also available).

A complete line of pressure differential visual and electrical indicators are available with this series of filters.

FHP series filters are suitable for flow rates to 120 gpm.

FHP series are specifically designed for mobile, and industrial power unit applications.

New

absolute filter elements
independently tested
in the following Institutes:

Institute of Filtration
(France)



KUNGL.
TEKNISKA
HÖGSKOLAN

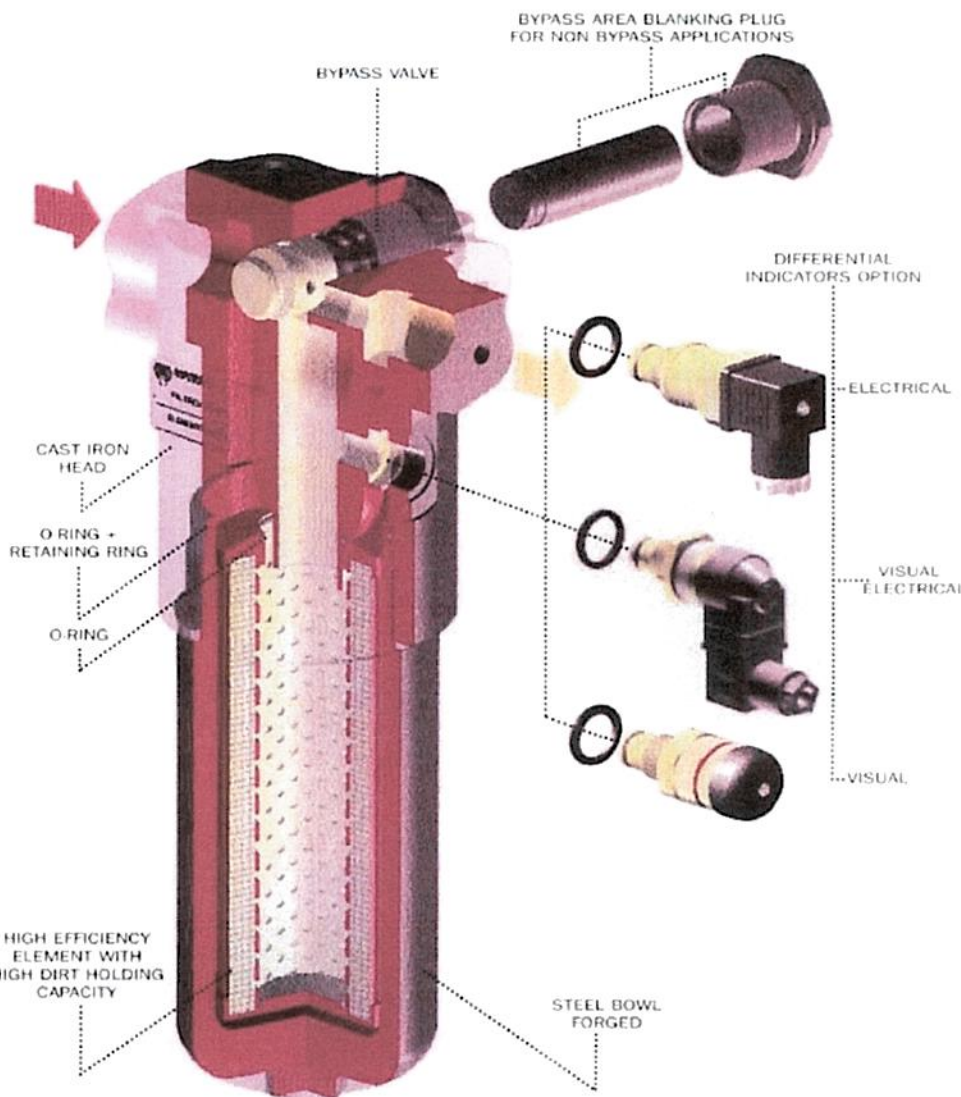
Royal Institute of Technology

Fluid Technologies Inc.
(Oklahoma)



UNI EN ISO 9001
N° 037/98

ITALCERT



FHP 05020/9.99/USA

Ordering information

FHP

065

2

B

A

G2

A06

N

Nominal sizes

065
135
320
321 - Top Outlet Port
325

Bowl lengths

FHP 065 = 1, 2, 3
FHP 135 = 1, 2
FHP 320 = 1, 2, 3, 4
FHP 321 = 1, 2, 3, 4 Filter elements HP 320 series
FHP 325 = 1, 2, 3, 4 Filter elements HP 320 series

Integral bypass valve

S Without bypass
B With bypass
W With reverse flow (Not available for FHP 065)
R With reverse flow + bypass

Seals

A Nitrile (Buna-N)
V Viton

Filter condition indicator

S With threaded hole only
T2 With plug
V7 Visual 75 psi
V8 Visual 100 psi
V9 Visual 145 psi
E7 Visual - electrical 75 psi
E8 Visual - electrical 100 psi
E9 Visual - electrical 145 psi
K7* Visual led - electrical 75 psi
K8* Visual led - electrical 100 psi
K9* Visual led - electrical 145 psi
N7 Electrical 75 psi
N8 Electrical 100 psi
N9 Electrical 145 psi

*For K visual-electrical indicator, specify the voltage (V: K71)

Collapse pressure series

N 300 psi
T 1160 psi
H 3045 psi

Filter elements

A03
A06 Inorganic microfiber Bx ≥200
A10
A25
M10
M25 Square wire mesh
M60
T10
T25 Stainless steel wire mesh

Port options

Type	065	135	320	321	325
G1	1/2" BSP	3/4" BSP	1 1/4" BSP	1 1/4" BSP	-
G2	3/4" BSP	1" BSP	1 1/2" BSP	1 1/2" BSP	-
G3	1/2" NPT	3/4" NPT	1 1/4" NPT	1 1/4" NPT	-
G4	3/4" NPT	1" NPT	1 1/2" NPT	1 1/2" NPT	-
G5	SAE 8	SAE 12	SAE 20	SAE 20	-
G6	SAE 12	SAE 16	SAE 24	SAE 24	-
F1	-	3/4" SAE 3000 PSI/M	1 1/4" SAE 3000 PSI/M	-	2" SAE 3000 PSI/M
F2	-	1" SAE 3000 PSI/M	1 1/2" SAE 3000 PSI/M	-	2" SAE 3000 PSI/LNC
F3	-	3/4" SAE 3000 PSI/LNC	1 1/4" SAE 3000 PSI/LNC	-	-
F4	-	1" SAE 3000 PSI/LNC	1 1/2" SAE 3000 PSI/LNC	-	-
F5	-	3/4" SAE 6000 PSI/M	1 1/4" SAE 6000 PSI/M	-	2" SAE 6000 PSI/M
F6	-	3/4" SAE 6000 PSI/LNC	1 1/4" SAE 6000 PSI/LNC	-	2" SAE 6000 PSI/LNC

HP

065

2

A06

A

N

Replacement element

MP Filtri - Filtration products will only be guaranteed if original MP Filtri replacement elements are used.

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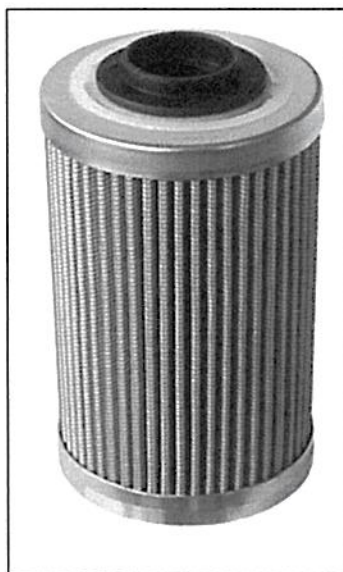
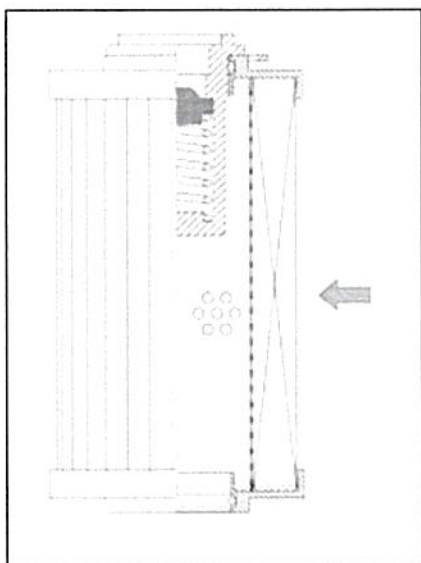
Costin ZISU

FISA TEHNICA

**Element filtrant pentru filtru ulei tip MPF 100 2 AG3 A06 H B circuit retur ulei hidraulic
actionari statii by-pass turbina abur**

Date tehnice:

Fabricant:	MP FILTRI SpA
Tip filtru:	MPF 100 2 AG3 A06 H B
Tip element filtrant:	MF 100 2 A06 H BP01
Diametru exterior:	2,7 inch
Diametru interior:	1,13 inch
Lungime:	5,1 inch
Temperatura de functionare:	-13 grd F...248 grd F
Grad de filtrare:	6 μ m



Description

MPF series filters are designed for return lines, and are installed semi-immersed in a reservoir.

Continued Research & Development on both the filter bodies and the filter elements has resulted in a product line with excellent pressure drop characteristics combined with a high filtration efficiency. The high flow rate bypass valves are a standard feature with this range of product.

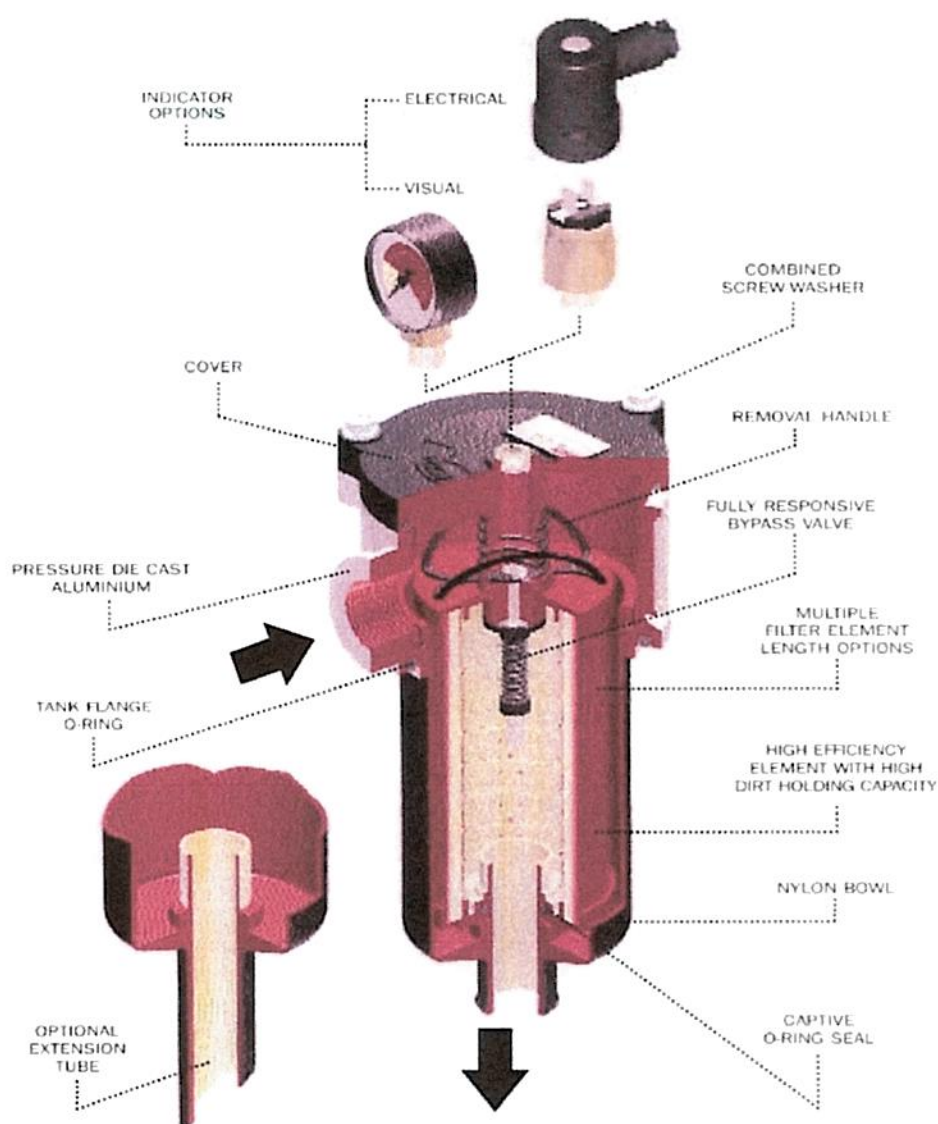
MPF filters within this range are suitable for flow rates up to 210 G.P.M.

MPF series are specifically designed for use in mobile applications, agricultural machinery and power units.

New

absolute filter elements independently tested in the following Institutes:

Institute of Filtration
(France)



MPF 02030/7.99/USA

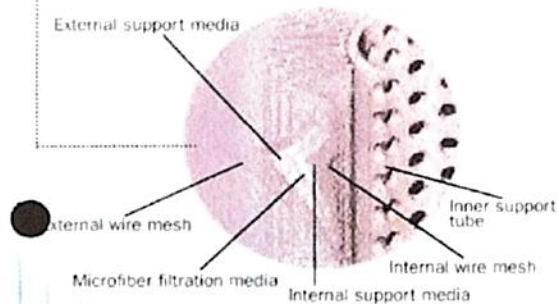
MP Filtri - Filtration technology

Filter element:

Materials

A Series

Inorganic microfiber



End caps:

Nylon

Support tube:

Galvanized steel

Support frames:

Galvanized steel with an epoxy coating

MP Filter elements - Conform to the following ISO standards

- ISO 2941 - Verification of collapse/burst resistance.
- ISO 2942 - Verification of fabrication integrity and determination of the first bubble point.
- ISO 2943 - Verification of material compatibility with fluids.
- ISO 3723 - Method for end load test.
- ISO 3724 - Verification of flow fatigue characteristics.
- ISO 3968 - Evaluation of pressure drop versus flow characteristics.
- ISO 4572 - Multi-pass method for evaluating filtration performance.

Element material Absolute filtration

A Series

Inorganic microfiber with acrylic support

Contamination retention

as per ISO 4572: Multi-pass test.

New improved $\beta \geq 200$ filter elements with greater efficiency and increased dirt holding capacity

Filter elements	Dimensions for β (μm) values				Filtration ratios			ΔP (psi)
	$\beta \geq 2$ (50%)	$\beta \geq 20$ (95%)	$\beta \geq 75$ (98.7%)	$\beta \geq 200$ (99.5%)	β_2	β_{10}	β_{100}	
A03	-	2	2.4	3	20	> 10,000	> 10,000	100
A06	-	3	4.6	6	8	> 2,000	> 10,000	100
A10	3	6	7.8	10	1.5	≥ 200	> 10,000	100
A25	13	19	22	25	-	> 1.5	> 35	100

N.B. Other materials giving different degrees of filtration are available on request.

Type MF	030-1	100-1	100-2	100-3	180-1	180-2	400-1	400-2	400-3	750-1
A03/A06	52	97	155	268	666	1162	735	1075	1358	1767
A10/A25	52	97	155	268	666	1162	735	1075	1358	1767

Values in sq in

Filtering area

Filter elements

"H"collapse $\Delta P = 145 \text{ PSI}$

Element material Nominal filtration

P Series

Resin - impregnated paper

M Series

Square wire mesh (filtration degree is defined in microns by the maximum diameter of a sphere corresponding to the mesh size)

Filtering area

Filter elements

"N"collapse pressure $\Delta P = 45 \text{ PSI}$

Type MF	030-1	100-1	100-2	100-3	180-1	180-2	400-1	400-2	400-3	750-1
P10/P25	63	158	258	294	620	1240	695	1015	1284	2085
M25	45	71.3	113	194	310	698	374	545	689	1124
M60	45	71.3	113	194	310	698	310	465	595	969
M90	45	71.3	113	194	310	698	310	465	595	853

Values in sq in

Ordering information

MPF

100

2

A

G3

A06

H

B

/XX

Nominal sizes

030
100
180
184 (use MF 180 filter element code)
400
750

Bowl lengths

MPF 030 = 1
MPF 100 = 1,2,3
MPF 180 184 = 1,2
MPF 400 = 1,2,3
MPF 750 = 1

Seals

A Nitrile (Buna N)
V Viton

Ports option

Type	MPF 030	MPF 100	MPF 180	MPF 184	MPF 400	MPF 750
G1	1/2" BSP	1/2" BSP	1 1/4" BSP	1 1/4" BSP	1 1/4" BSP	2" BSP
G2	-	3/4" BSP	-	2 Ports 1 1/4" BSP	1 1/2" BSP	-
G3	-	1" BSP	-	-	2" BSP	-
G4	1/2" NPT	1/2" NPT	1 1/4" NPT	1 1/4" NPT	1 1/4" NPT	2" NPT
G5	-	3/4" NPT	-	2 Ports 1 1/4" NPT	1 1/2" NPT	-
G6	-	1" NPT	-	-	2" NPT	-
G7	SAE 8	SAE 8	SAE 20	SAE 20	SAE 20	SAE 32
G8	-	SAE 12	-	2 Ports SAE 20	SAE 24	-
G9	-	SAE 16	-	-	SAE 32	-
F1	-	-	-	1 1/2" SAE 3000 PSI/M	-	2 SAE 3000 PSI/M
F2	-	-	-	1 1/2" SAE 3000 PSI/UNC	-	2 SAE 3000 PSI/UNC
F3	-	-	-	2x1 1/2" SAE 3000 PSI/M	-	-
F4	-	-	-	2x1 1/2" SAE 3000 PSI/UNC	-	-

Filter condition indicator

T With plug (std)
VR Visual
ER Electrical: N.O. contacts
EC Electrical: N.C. contacts
TS Filter plug (see page 10)
XX Extension tube (see page 10)

Bypass valve

B Bypass 25 psi

Seals (Filter elements)

B Nitrile (Buna - N)
V Viton

Collapse pressure series

N 45 psi (P/M series)
H 145 psi (A series, only)

Filter elements N series

P10 Resin impregnated paper Bx ≥ 2
P25
M25 Square wire mesh
M50
M90

Filter elements H series

A03
A06 Inorganic microfibre Bx ≥ 200
A10
A25

MF

100

2

A06

H

B

Replacement element

MP Filtri - Filtration products will only be guaranteed if original MP Filtri replacement elements are used

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FISA TEHNICA

**Element filtrant cod A8 L03 pentru filtru SA 115 G1 L03 A P01 aferent circuit
recirculare ulei hidraulic actionari statii by-pass turbina abur**

Date tehnice:

Fabricant:	MP FILTRI SpA
Tip filtru:	SA115-G1-L03A-P01
Tip element filtrant:	A8 L03
Material element filtrant:	celuloza impregnata cu rasina/sita metalica otel galvanizat
Rata filtrare:	3 μ m
Greutate:	0,400 kg



AIR BREATHING FILTERS



The comprehensive series of breather filters makes it possible to meet all market demands. Metal and plastic styles suitable for use on mobile equipment are available.

The function of breather filters is to intercept environmental contamination.

The correct use of breather filters ensures longer life of filter cartridges installed in the hydraulic circuit, and in applications where high level of contamination are present.

The use of breather filters calls for the simultaneous installation of plugs for filling and topping up fluids; it is recommended to use plugs complete with strainer for correct prefiltration of the fluid. If the filler plug is equipped with a filter, the filtration degree must be the same as that of the breather filter.

Temperature

- from -25° to +100°C

Compatibility

- NBR seals and Cork Gasket, compatible with:
Mineral oils to ISO 2943 - aqueous emulsions
Synthetic fluids, glycol water
- FPM seals, compatible with:
Synthetic fluids type HS HFDR HFDS HFDU

Series

SA

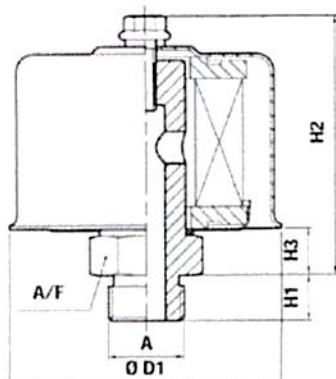
SA

Clogging indicator
option

SA (Materials)

- 1 - Screw: Galvanised Steel
 2 - Washer: Teflon
 3 - Cover: Steel
 4 - Filter element: Plastisol
 Galvanised steel mesh
 Resin impregnated cellulose
 5 - Ring: Galvanised Steel
 6 - Seal: NBR
 7 - Connection: Anodised Aluminium
 Galvanised Steel

Dimensions



Ordering information

Breather filter

SA

Example: SA

1	2	3	4	5
115	G1	L03	A	P01
075	G4	L10	A	P01

Filter element

Example:

1	3
A8	L03
A7	L10

1 - Size

Filter
036
053
075
115
145
185

Filter element

Filter element
A05
A5
A7
A8
A10
A11

3 - Filter element

L03
L10
S

Resin impregnated cellulose 10 µm
(036 excluded)

Resin impregnated cellulose 10 µm

Without

4 - Seal

A

NBR

5 - Options

P01

MP Standard

2 - Connection to reservoir

Type	G1	G2	G3	G4	G5	G6
036	G 1/4"	G 3/8"	G 1/2"	1/4" NPT	3/8" NPT	1/2" NPT
053	G 1/4"	G 3/8"	-	1/4" NPT	3/8" NPT	-
075	G 1/2"	G 3/4"	-	1/2" NPT	3/4" NPT	-
115	G 1"	-	-	1" NPT	-	-
145	G 1 1/2"	-	-	1 1/2" NPT	-	-
185	G 2 1/2"	-	-	2 1/2" NPT	-	-

Connection to reservoir "A"

Type	G1	G2	G3	G4	G5	G6	Weight (Kg)
036	G 1/4"	G 3/8"	G 1/2"	1/4" NPT	3/8" NPT	1/2" NPT	0,080
053	G 1/4"	G 3/8"	-	1/4" NPT	3/8" NPT	-	0,150
075	G 1/2"	G 3/4"	-	1/2" NPT	3/4" NPT	-	0,260
115	G 1"	-	-	1" NPT	-	-	0,400
145	G 1 1/2"	-	-	1 1/2" NPT	-	-	0,590
185	G 2 1/2"	-	-	2 1/2" NPT	-	-	1,220

Dimension

Type	D1	H1	H2	H3	A/F (mm)
036	36	13	36,5	9	22
053	53	13	52,5	7	22
075 G1		13			27
075 G2	75	17	68,5	11,5	32
075 G4		15			27
075 G5		20			32
115	115	17	80	11	38
145	145	25	115	13	55
185	185	25	164	23	80

Flow rate with Δp: 0,02 bar

Type	3 µm l/min	10 µm l/min
036	-	140
053	250	250
075	350	400
115	800	850
145	1800	1850
185	5300	5500

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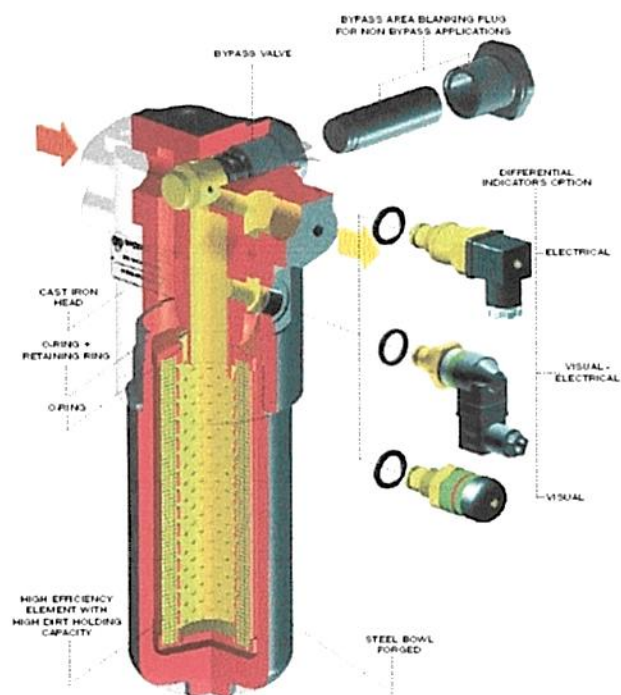
Sef Sectie Ciclu Combinat
 Costin ZISU

FISA TEHNICA

Element filtrant pentru filtru ulei tip FHP 065 1 BAG1 A10H /V7 circuit ulei hidraulic actionari turbina gaz si compresor gaz

Date tehnice:

Fabricant:	MP FILTRI SpA
Tip filtru:	FHP 065 1 BAG1 A10 H/V7
Tip element filtrant:	HP 065 1 A10 AH-P01
Material	fontă + otel tratate la temperaturi înalte
Temperatura de funcționare	-13°F...230°F
Presiunea maximă de funcționare	6000 psi
Tip V7:	by-pass setat la 75 psi



Description

FHP

FHP series filters are designed for high pressure applications and are suitable for in-line installation. Continued research and development on both the filter bodies and the filter elements has resulted in a product line with excellent pressure drop characteristics combined with a high filtration efficiency. The transverse by-pass valve is a standard feature with this range of product. (Non bypass for servo applications are also available).

A complete line of pressure differential visual and electrical indicators are available with this series of filters.

FHP series filters are suitable for flow rates to 120 gpm.

FHP series are specifically designed for mobile, and industrial power unit applications.

New

absolute filter elements independently tested in the following Institutes:

Institute of Filtration
(France)



KUNGL. TEKNISKA
HÖGSKOLAN

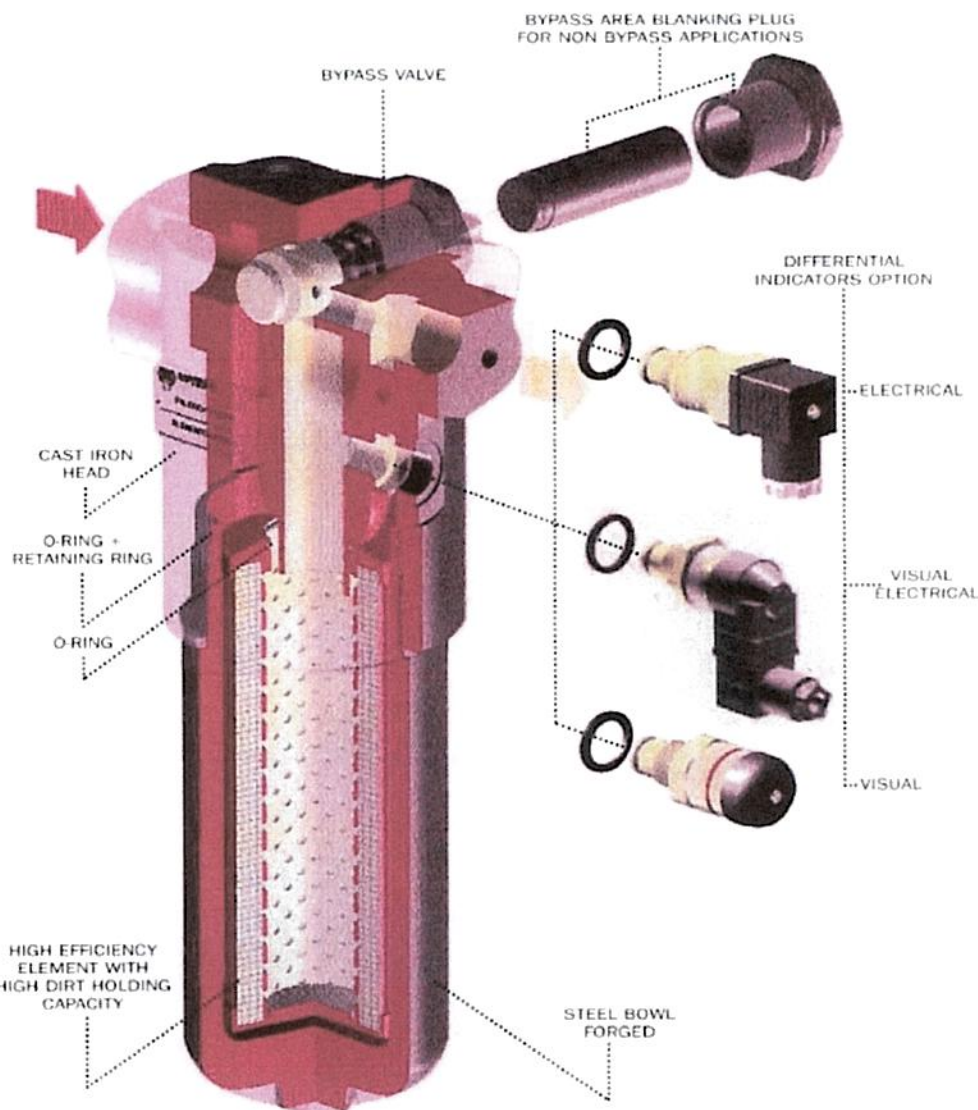
Royal Institute of Technology

Fluid Technologies Inc.
(Oklahoma)



UNI EN ISO 9001
N° 037/98

ITALCERT



Ordering information

FHP

65

1

B

A

G1

A10

H

V7

Nominal sizes

065
135
320
321 - Top Outlet Port
325

Bowl lengths

FHP 065 = 1, 2, 3
FHP 135 = 1, 2
FHP 320 = 1, 2, 3, 4
FHP 321 = 1, 2, 3, 4 Filter elements HP 320 series
FHP 325 = 1, 2, 3, 4 Filter elements HP 320 series

Integral bypass valve

S Without bypass
B With bypass
W With reverse flow (not available for FHP 065)
R With reverse flow + bypass

Seals

A Nitrile (Buna-N)
V Viton

Filter condition indicator

S With threaded hole only
T2 With plug
V7 Visual 75 psi
V8 Visual 100 psi
V9 Visual 145 psi
E7 Visual - electrical 75 psi
E8 Visual - electrical 100 psi
E9 Visual - electrical 145 psi
K7* Visual led - electrical 75 psi
K8* Visual led - electrical 100 psi
K9* Visual led - electrical 145 psi
N7 Electrical 75 psi
N8 Electrical 100 psi
N9 Electrical 145 psi

*For K visual-electrical indicator, specify the voltage (1: K7)

Collapse pressure series

N 300 psi
T 1160 psi
H 3045 psi

Filter elements

A03
A06 Inorganic microfiber Bx >200
A10
A25
M10
M25 Square wire mesh
M60
T10
T25 Stainless steel wire mesh

Port options

Type	065	135	320	321	325
G1	1/2" BSP	3/4" BSP	1 1/4" BSP	1 1/4" BSP	-
G2	3/4" BSP	1" BSP	1 1/2" BSP	1 1/2" BSP	-
G3	1/2" NPT	3/4" NPT	1 1/4" NPT	1 1/4" NPT	-
G4	3/4" NPT	1" NPT	1 1/2" NPT	1 1/2" NPT	-
G5	SAE 8	SAE 12	SAE 20	SAE 20	-
G6	SAE 12	SAE 16	SAE 24	SAE 24	-
F1	-	3/4" SAE 3000 PSI/M	1 1/4" SAE 3000 PSI/M	-	2" SAE 3000 PSI/M
F2	-	1" SAE 3000 PSI/M	1 1/2" SAE 3000 PSI/M	-	2" SAE 3000 PSI/M
F3	-	3/4" SAE 3000 PSI/UNC	1 1/4" SAE 3000 PSI/UNC	-	-
F4	-	1" SAE 3000 PSI/UNC	1 1/2" SAE 3000 PSI/UNC	-	-
F5	-	3/4" SAE 6000 PSI/M	1 1/4" SAE 6000 PSI/M	-	2" SAE 6000 PSI/M
F6	-	3/4" SAE 6000 PSI/UNC	1 1/4" SAE 6000 PSI/UNC	-	2" SAE 6000 PSI/UNC

HP

65

1

A10

A

H

Replacement element

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Sef Sectie Ciclu Combinat,
Costin ZISU

Costin ZISU

FISA TEHNICA

**Element filtrant pentru filtrele montate pe circuitele de ulei aferente actionarilor
hidraulice ale vanelor de reglare gaz-Turbina cu gaz**

Date tehnice:

Fabricant filtru:

WESTERN FILTER

Model filtru:

H4405S1PNV1H15 - DONALDSON

Cod element filtrant:

V3045V1H15

Presiunea de functionare:

4000 PSI



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FISA TEHNICA

Element filtrant pentru filtru aer atomizare turbina cu gaz tip $\frac{3}{4}$ " GP-31

Date tehnice:

Fabricant: ADAMS

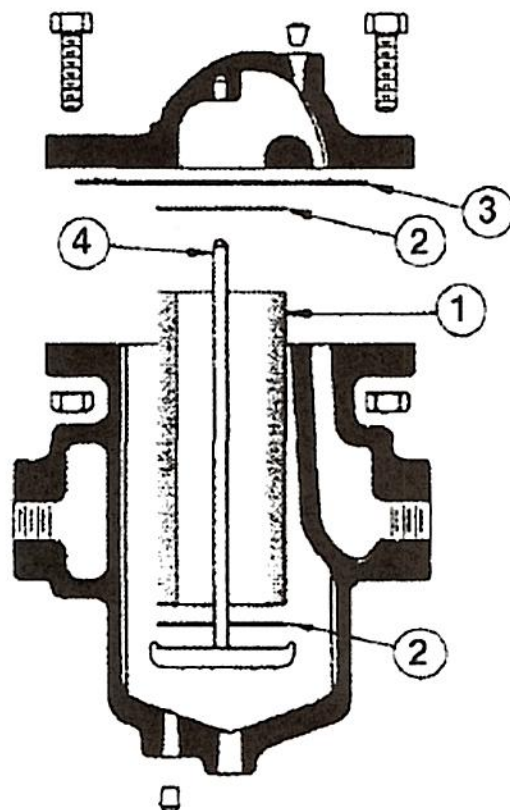
Tip: $\frac{3}{4}$ " GP-31

Tip element filtrant: 121413
Adams Poro-Stone tube

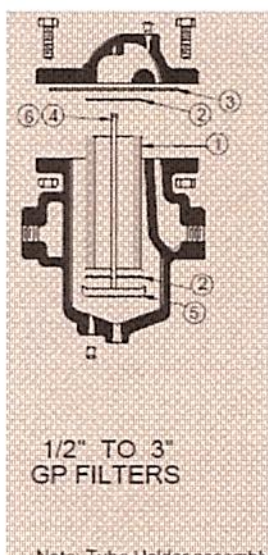
Grad de filtrare: 5 microni

Un set contine:

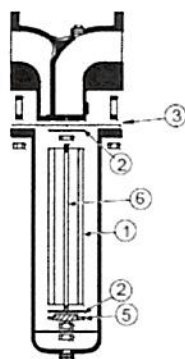
- | | |
|---------------------|------------------------|
| 1. element filtrant | part no.121413 (1 buc) |
| 2. garnitura filtru | part no.121808 (2 buc) |
| 3. garnitura capac | part no.121804 (1 buc) |



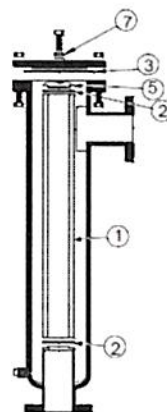
7) PARTS LIST FOR STANDARD GP GAS FILTERS



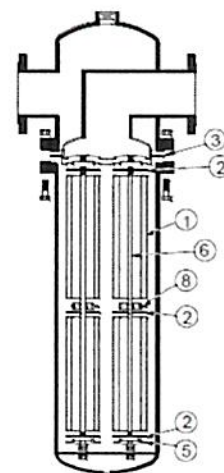
1/2" TO 3"
GP FILTERS



4" GP-508
150 PSIG
NONCODE ONLY



4" GP-508-HD
150 PSIG & 300 PSIG
ASME ONLY



6" GP-1527

Note: Tube Holder assembly is a one-piece part that consists of a closure plate and suspension rod. The 3" GP uses a separate closure plate and suspension rod.

PARTS LIST BY MODEL

	Poro-Stone Tube	Tube Gasket	Cover Gasket	Tube Holder Assembly	Tube Closure Plate	Tube Suspension Rod	Centering Screw Gasket
Item No.	1	2	3	4	5	6	7
1/2" GP-22	121413	121808	121804	49545-001			
3/4" GP-31	121413	121808	121804	49545-001			
1" GP-47	121414	121808	121804	49545-002			
1 1/2" GP-99	121821	121809	121805	49552-001			
2" GP-132	121822	121809	121805	49552-002			
3" GP-283	121958	122519	122518		50537-001	50536-001	
4" GP-508 150 PSIG Noncode Only	103509	122395	122522		15405-002	14359-001	
4" GP-508-HD 150 & 300 PSIG ASME Only	103509	122395	122393		101632		116414
6" GP-1527	103865	122395	122499		15405-002	26708-001	

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Valentin RADU



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Costin ZISU

FISA TEHNICA

Set elemente filtrante separator vapori ulei compresor de gaz

Date tehnice:

Fabricant:

FRANKE Filter

Tip elemente filtrante:

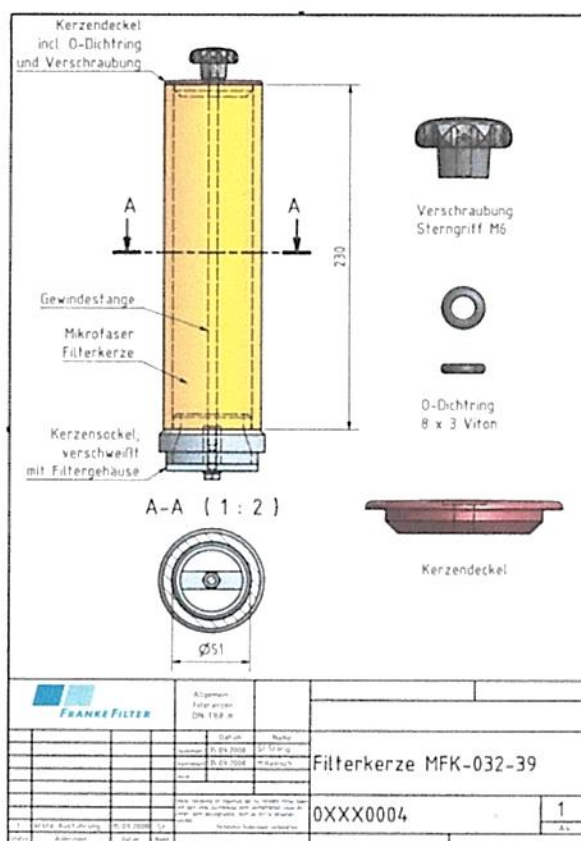
MFK-032-39.4

Material:

microfibra cu filtrare de pana la 0,1 μm

Un set contine

16 filtre + garnituri de fixare



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FISA TEHNICA

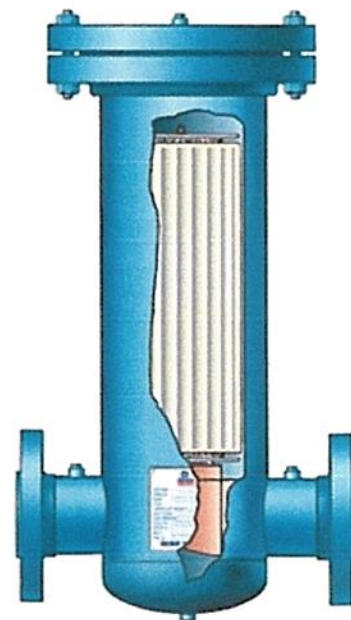
Element filtrant pentru filtru model GP-246-270 seria 300 (Sp) circuit principal aer atomizare/filtru gaz DLN turbina cu gaz

Date tehnice:

Fabricant:	DOLLINGER
Model filtru:	GP-246-270 seria 300 (Sp)
Part.No.:	49-BN-153X-N-63
Material filtrant	fiberloc 63
Eficienta de filtrare	99.9%
Grad de filtrare:	3 microni

Un set "elemente filtrante" contine :

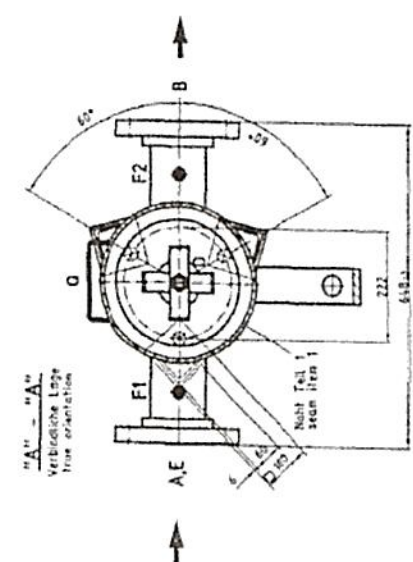
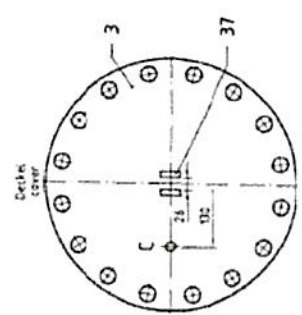
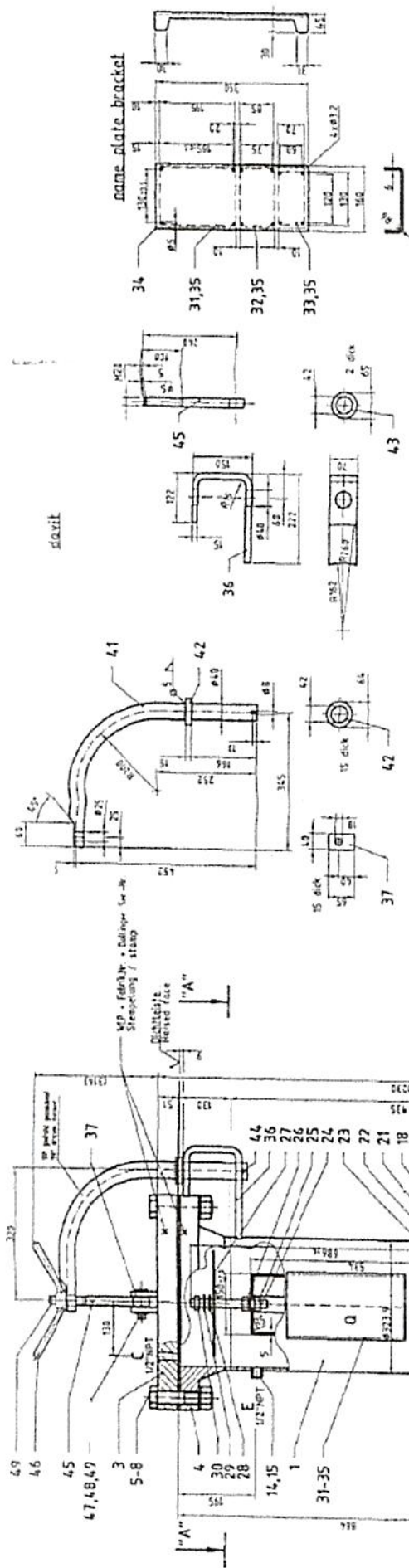
- | | |
|------------------------|--------------------------|
| 1. un element filtrant | part no. 49-BN-153X-N-63 |
| 2. o garnitura capac | part no. 1204444 |
| 3. o garnitura filtru | part no. 1204005 |



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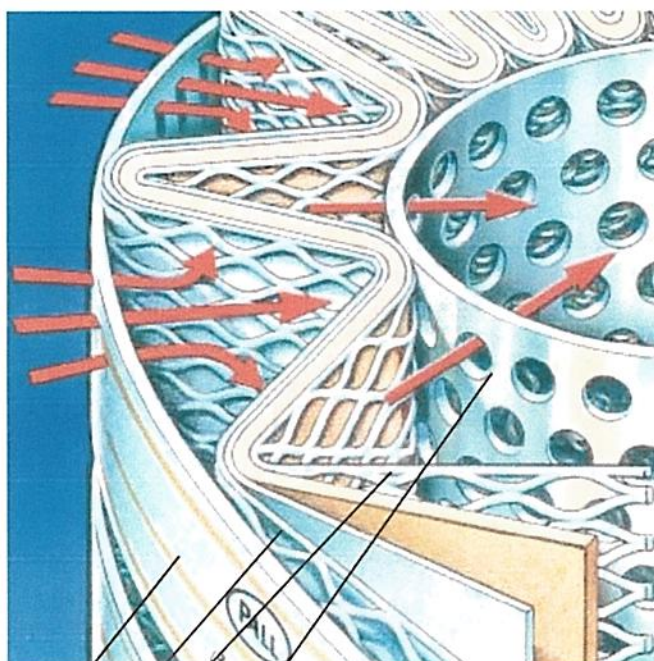
Customer: A.G.T.FRANCE
Purchase Order No.: 1021241610
DOLLINGER Reference: M/R 15604
E.G.T. Ref.: 91-449986 P004
E.G.T. Drawing No.: 91-31403619 Fig.3

[illegible][illegible]

Stutzenankerten an Bröckler anpassen und gerundet R.32
ALL NOZZLES TO BE FLUSH INSIDE AND HAVE EDGES BROWN R.32

FISA TEHNICA

Element filtrant pentru filtru ulei hidraulic tip HC9601FCP13Z Turbina cu gaz



Garniturile inelare, capacele de capat si zona interioara/ exteriora sunt realizate din metal rezistent la coroziune

Mediul filtrant este alcatuit din fibre inerte, anorganice, lipite în mod sigur într-o structura de pori fixa, conica, care pastreaza o eficienta ridicata de indepartare a particulelor pe toata durata de viata a elementului. Pori turnati raspandesc particulele prin toata adancimea mediului filtrant pentru o capacitate maxima de mentinere a murdariei.

Straturi suport din material plastic montate in amonte si aval prevazute cu canale de flux incorporate

Folie elicoidala pentru sustinere uniforma si rigida



Ultipor® III Filter Elements

High performance Pall Ultipor® III filters incorporate state-of-the-art design technology, including a unique patented "helical wrap" pleat support system and composite element structure for unsurpassed strength, performance and service life. The result is a cost-effective solution clearly superior to traditional filter designs.

Element Features:

1. An outer helical wrap tightly bonds to each pleat for uniform, rigid pleat spacing. This minimizes pleat flexing and possible media damage even under severe cold start or pressure surge

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DESCRIPTION | SPECIFICATIONS | PERFORMANCE | TYPE | USE | ORDERING INFORMATION | APPLICATION | SEGMENT

DESCRIPTION

Ultipor® III Filter Elements

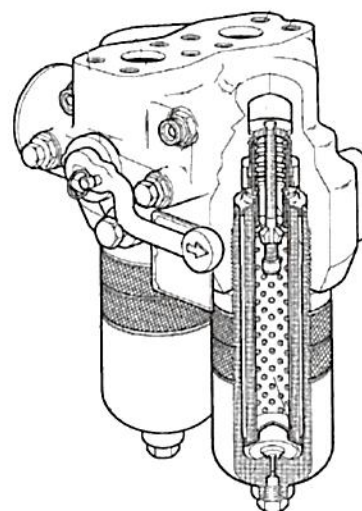
High performance Pall Ultipor® III filters incorporate state-of-the-art design technology, including a unique patented "helical wrap" pleat support system and composite element structure for unsurpassed strength, performance and service life. The result is a cost-effective solution clearly superior to traditional filter designs.

Element Features:

1. An outer helical wrap tightly bonds to each pleat for uniform, rigid pleat spacing. This minimizes pleat flexing and possible media damage, even under severe cold start or pressure surge conditions.
Benefit: Reliable, consistent performance and resistance to severe operating conditions.
2. Proprietary plastic upstream and downstream support layers have built-in flow channels to prevent media blind-off as pressure drop increases.
Benefit: Extended element life for lower maintenance costs.
3. Media is made up of inert, inorganic fibers securely bonded into a fixed, tapered pore structure that preserves high particle removal efficiency throughout the life of the element. Tapered pores spread particulate through the entire media depth for maximum dirt holding capacity.
Benefit: Consistent filter performance and extended service life.
4. O-ring seals, corrosion resistant end caps and a rugged metal inner core complete the element structure. Coreless Ultipor III elements have no metal components. End caps are reinforced polymer and the core is part of the filter housing. Thus the element is lightweight (60% lighter than traditional designs), crushable, and incinerable.
Benefit: Environmentally friendly product reduces disposal and maintenance costs.

Date tehnice

Fabricant: PALL
Tip: HC9601FCP13Z
Fluid de lucru: ulei hidraulic
Temperatura fluidului: -29 pana la 120°C
Presiune diferentiala de colaps: 210 bar
Rata filtrare: 3 µm
Tip etansare: fluorcarbon
Presiunea maxima de lucru: 450 bar
Debit: 340 l/min
Element filtrant cu protectie exterioara din otel carbon rezistent la agenti corozivi
Material filtrant "Ultipor III"



ORDERING INFORMATION

Filter Element Part Numbering

Example:

	HC	9600	F	KP	16	H
	1	2	3	4	5	6
1.	HC	Pall Hydraulic / Lube Filter Cartridge				
2.	9600	Filter Element Series (9601 for Dirt-Fuse, 9604 for Coreless)				
3.	F	Filter Cartridge ("S" for spin-on filter)				
4.	KP	Media Grade - 5 µm(c)				
5.	16	Nominal Length -16 inches	13 inches			
6.	H	Seal Material - Nitrile	Z* for Fluorocarbon)			

Inginer Sef CTE Bucuresti Vest
Valentin RADU



Sef Sectie Ciclu Combinat
Costin ZISU

