



HF SERIES

COMPRESSED AIR

FILTERS

Let Hankison Give You the Compressed Air Quality You Require

A typical compressed air system is contaminated with...abrasive solid particles such as dust, dirt, rust and scale...compressor lubricants (mineral or synthetic)...condensed water droplets and acidic condensates...and oil and hydrocarbon vapors.

If not removed, these contaminants increase pneumatic equipment maintenance costs, lead to instrument and control failure, contribute to poor product fit and finish and contaminate processes.

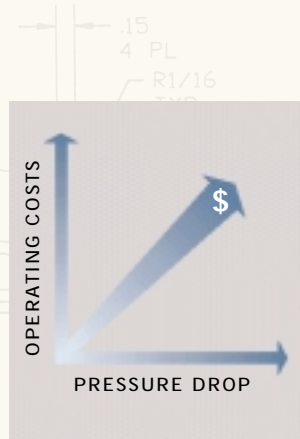
The right Hankison filter or filter system will remove these contaminants allowing your compressed air system to deliver the quality of air required by your application... whether it's plant air, instrument air, or medical air...helping to ensure consistent output quality while minimizing operating costs.

Cut the Cost of Compressed Air

Hankison filters remove more contaminants with less pressure drop. Compare the operating pressure drop of competitive brands and remember that for every extra 2 psi of pressure drop, power input needs to be increased by 1%.

From the Leader in Compressed Air Treatment...

Since Hankison first developed their coalescing filters in the 1970s, they have been a leader in filtration design. Now, as the result of a development effort involving extensive testing of the latest state-of-the-art materials, Hankison is able to offer a totally new line of filtration products. New filter elements have been designed utilizing the latest media innovations and manufacturing



techniques... resulting in increased performance, reduced size and lower operating pressure drop. Housings have been redesigned with larger flow areas to lower pressure drops and to allow easier installation, operation, and maintenance.

A systems approach has been used to allow for convenient matching of filter types to achieve the air quality you desire, while comprehensive third party testing guarantees performance to CAGI, ISO, and PNEUROP* standards.

With a greater selection of filter grades, more models to choose from, and worldwide technical and service support, Hankison offers a new systemized solution for your compressed air quality needs.



- * CAGI-Compressed Air and Gas Institute
- * ISO-International Standards Organization
- * PNEUROP-European Committee of Manufacturers of Compressors, Vacuum Pumps and Pneumatic Tools

Advanced Filter Housings Make Life a Little Easier

New Modular Housings for Flows through 780 scfm

- Enlarged flow paths reduce pressure drop
- Manufactured from top quality aluminum, zinc, and steel
- Chromated and epoxy powder painted (interior and exterior) for added durability and corrosion resistance
- 300 psig [21 kgf/cm²] maximum working pressure (tested to a 5:1 safety factor)

Easy to Install

- Modular connections - allow housings to be connected in series easily, while saving space
- Wall mounting bracket optional
- Can be mounted for left or right entry
- New space saving design reduces service clearances



Easy to Operate

New differential pressure indicators

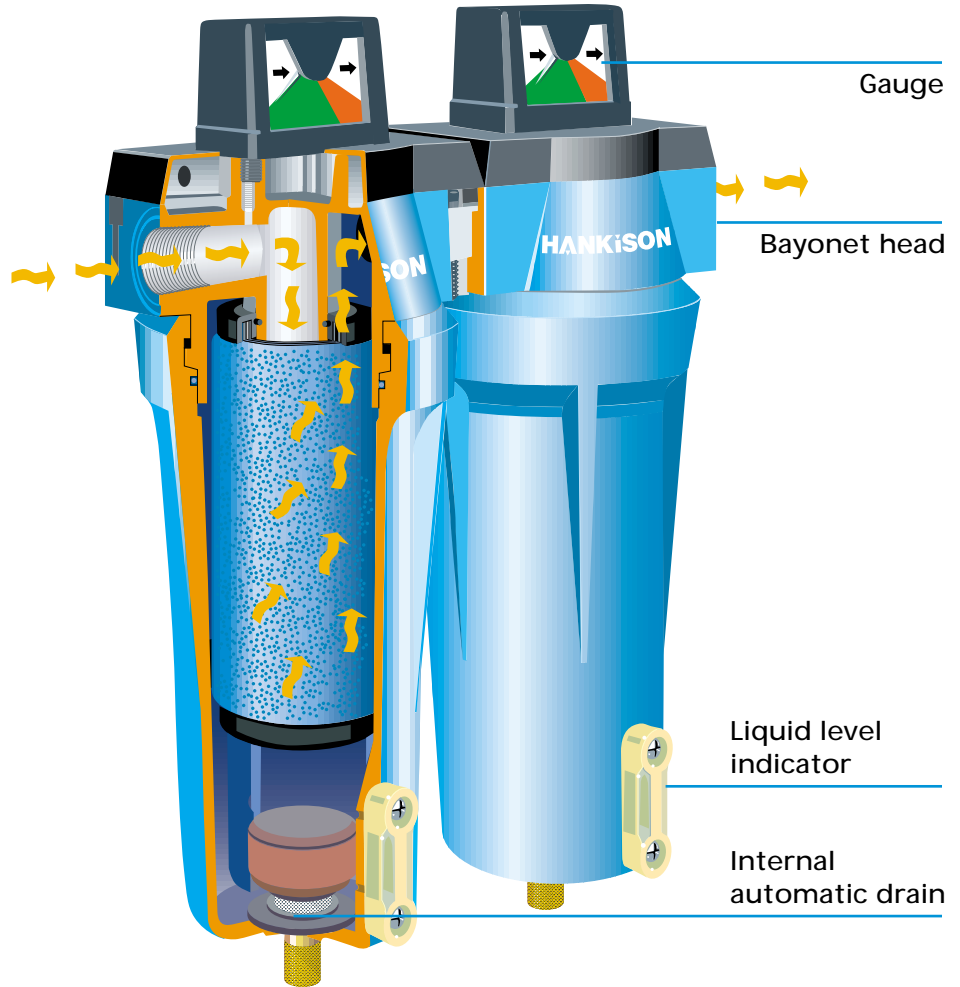
Indicates optimum time for element change-maximizing your element investment while minimizing pressure drop

Slide indicator

Economical-changes color when filter element requires replacement

Gauge

- Large easy to read gauge face
- Dual gauge faces allow housings to be mounted in any flow direction
- Can be mounted remotely
- Switch for remote indication available



Liquid level indicator

- Allows visual monitoring of liquid level and signals the need for preventative maintenance to avoid downstream contamination
- Manufactured from thermoset polyurethane, compatible with synthetic lubricants

Internal automatic drains

- Pilot operated, pneumatically actuated...reliably discharges collected liquids
- Viton seals...totally compatible with synthetic lubricants
- Inlet screen for additional protection
- Discharge fitting threaded to facilitate drain line connection

Easy to Maintain

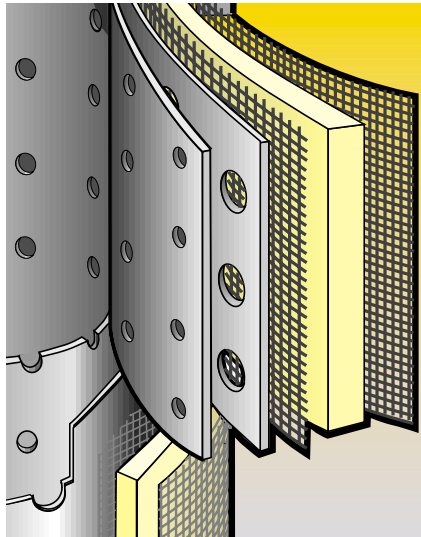
- 1/8 turn, self locking bayonet head to bowl connections (through 1")
- Push on elements make element replacement quick and easy
- If housing is not depressurized before disassembly, escaping air gives audible warning
- Captive o-ring
- Ribbed bowls allow use of C spanner
- Color coded elements for easy identification

Hankison Elements Offer Enhanced Performance and Low Pressure Drop

A choice of five elements allows you to design a system that delivers the air quality you require

- Push-on elements make element replacement easy
- Piston type element to housing seal keeps unfiltered air from by-passing element
- Corrosion resistant cores
 - Stainless steel for added structural integrity
 - Low resistance to flow
 - Seam welded for extra strength
- New "matrix blended fiber" media
 - Large, effective surface area - improves capture rate - ensures high efficiencies
 - Large open area minimizes pressure drop
- Coated, closed cell foam sleeve
 - Resists chemical attack from oils and acids
 - Ensures high efficiencies by preventing re-entrainment of coalesced liquids
- Chemically resistant end caps bound to media with specially formulated adhesive
- Silicone free
- Withstands temperatures to 150°F (66°C)

Grade 9 ■



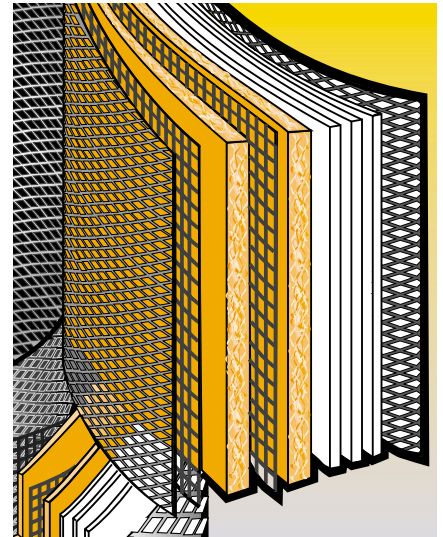
Separator/Filter

for bulk liquid removal plus a 3 micron coalescer (5ppm w/w maximum remaining oil content)⁽¹⁾

Two-stage filtration

- **First stage** - two stainless steel orifice tubes provide 10 micron mechanical separation
- **Second stage** - in-depth fiber media captures solid and liquid particles to 3 microns

Grade 7 ■



General purpose air line filter

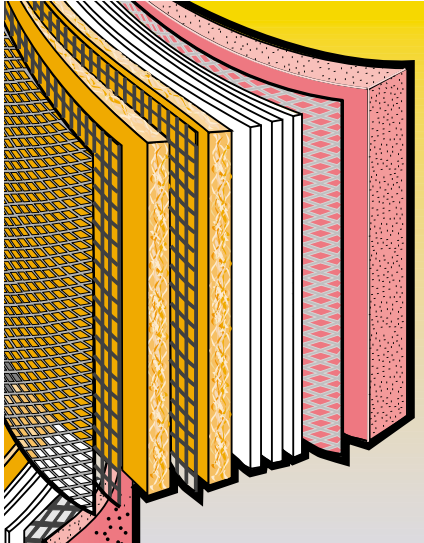
for removal of liquid water and oil; removes solid particles to 1 micron (1.0 ppm w/w maximum remaining oil content)⁽¹⁾

- Corrosion resistant inner and outer cores

Two stage filtration

- **First stage** - captures larger particles with alternate layers of fiber media and media screen
- **Second stage** - coalesces aerosols and captures solid particles with multiple layers of epoxy bonded, blended fiber media

Grade 5 ■



High efficiency oil removal filter

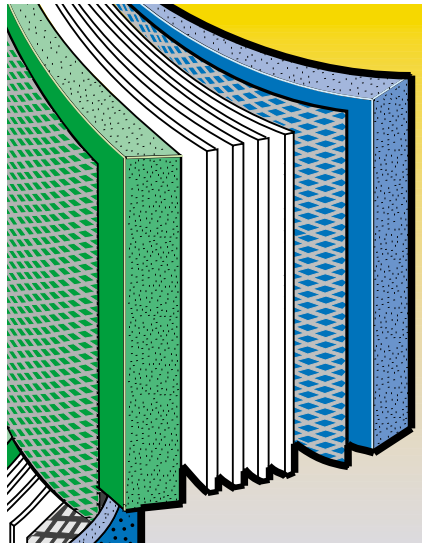
for coalescing fine water and oil aerosols; removes solid particles to 0.01 micron (0.01 ppm w/w maximum remaining oil content)⁽¹⁾

- Corrosion resistant inner and outer cores

Two stage filtration

- **First stage** - multiple layers of fiber media and media screen remove larger particles, pre-filtering the air for the second stage
- **Second stage** - multiple layers of bonded, blended fiber media for fine coalescence
- Outer coated, closed cell foam sleeve

Grade 3 ■



Ultra high efficiency oil removal filter

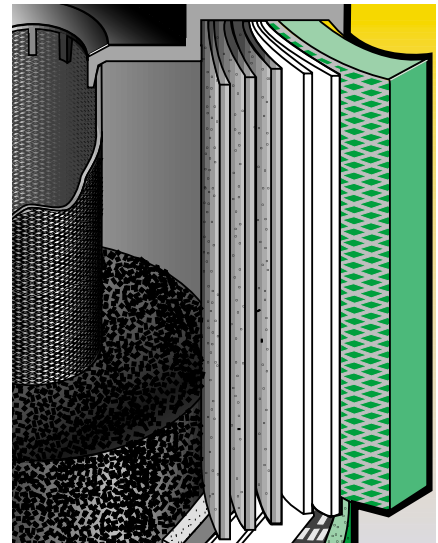
for coalescing ultra-fine oil aerosols; removes solid particles to 0.01 micron (0.001 ppm w/w maximum remaining oil content)⁽¹⁾

- Corrosion resistant inner and outer cores

Two stage filtration

- **First stage** - coated, closed cell foam sleeve acts as prefilter and flow disperser
- **Second stage** - multiple layers of matrix blended fiber media for ultra-fine coalescence
- Outer coated, closed cell foam sleeve

Grade 1 ■



Oil vapor removal filter

for removal of oil and hydrocarbon vapors normally adsorbable by activated carbon; removes solid particles to 0.01 micron (0.003 ppm w/w maximum remaining oil content)⁽²⁾

- Corrosion resistant inner and outer cores

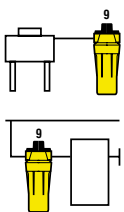
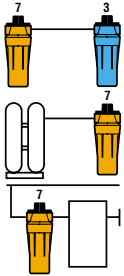
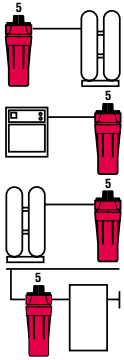
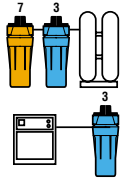
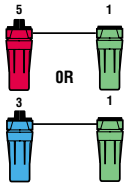
Two stage filtration

- **First stage** - a stabilized bed of finely divided carbon particles removes the majority of the oil vapor
- **Second stage** - multiple layers of fiber media with bonded microfine carbon particles remove the remaining oil vapor
- Multiple layers of fine media prevent particle migration
- Outer coated, closed cell foam sleeve prevents fiber migration
- Designed for 1000 hour life at rated conditions

⁽¹⁾ Filter efficiencies have been established in accordance with CAGI standard ADF400 and are based on 100°F (38°C) inlet temperature.

⁽²⁾ Filter efficiency has been established in accordance with CAGI standard ADF500 and is based on 100°F (38°C) inlet temperature.

Application Guide

Filter Type	Description	CAGI, PNEUROP, and ISO Performance Data	Where Used
Grade 9 ■ Separator/filter	Mechanical separator and 3 micron coalescer removes <ul style="list-style-type: none"> • Bulk liquid • Large particles 	Removes: Solids and liquids 3 microns and larger Remaining oil content 5 ppm w/w ISO 8573.1 Quality Class - Solids: Class 3, Oil Content: Class 5 Maximum inlet liquid load: 25,000 ppm w/w	Downstream of aftercoolers At point-of-use if no aftercooler/separator used upstream 
Grade 7 ■ Air Line Filter	General Purpose 1 micron coalescer for shop air operating <ul style="list-style-type: none"> • Tools • Motors • Cylinders 	Removes: Solids and liquids 1 micron and larger Remaining oil content 1 ppm w/w ISO 8573.1 Quality Class - Solids: Class 2, Oil Content: Class 4 Maximum inlet liquid load: 2,000 ppm w/w	Upstream of ultra high efficiency oil removal filters Downstream of pressure-swing (heatless) desiccant dryers At point-of-use if aftercooler/separator installed upstream 
Grade 5 ■ High Efficiency Oil Removal Filter	Fine coalescer for oil free air for industrial use <ul style="list-style-type: none"> • Painting • Injection molding • Instruments • Control valves 	Removes: Solids and liquids 0.01 micron and larger 99.99+% of oil aerosols; remaining oil content 0.01 ppm w/w ISO 8573.1 Quality Class - Solids: Class 1, Oil Content: Class 2 Maximum inlet liquid load: 1,000 ppm w/w	Upstream of desiccant or membrane dryers Downstream of refrigerated dryers Downstream of pressure-swing desiccant dryers for fine particulate removal At point-of-use (may be used if light liquid load is present) 
Grade 3 ■ Ultra High Efficiency Oil Removal Filter	Ultra fine coalescer for oil free air for critical applications <ul style="list-style-type: none"> • Where air contacts product • Conveying • Agitating • Electronics manufacturing • Nitrogen replacement 	Removes: Solids and liquids 0.01 micron and larger 99.999+% of oil aerosols; remaining oil content 0.001 ppm w/w ISO 8573.1 Quality Class - Solids: Class 1, Oil Content: Class 1 Maximum inlet liquid load: 100 ppm w/w	Upstream of desiccant or membrane dryers; use a Grade 7 as a prefilter if heavy liquid loads are present Downstream of refrigerated dryers 
Grade 1 ■ Oil Vapor Removal Filter	Activated carbon filter for odor free air for <ul style="list-style-type: none"> • Food and drug manufacturing • Breathing air • Gas processing 	Removes: Oil vapor: remaining oil content 0.003 ppm w/w (as a vapor) Solids 0.01 micron and larger ISO 8573.1 Quality Class - Solids: Class 1, Oil Content: Class 1 No liquid should be present at filter inlet - use a high efficiency oil removal filter upstream of Grade 1 filters to prevent liquid oil contamination	Downstream of high efficiency oil removal filters 

Air Quality/Pressure Drop Table

Grade	Solid Particles Down to	Remaining Oil Content	Pressure Drop at Rated Conditions psid [kgf/cm ²]	
	micron	ppm by weight	Dry	Wet
9	3	5	1 [0.07]	1.5 [0.11]
7	1	1	1 [0.07]	2 [0.14]
5	0.01	0.01	1 [0.07]	3 [0.21]
3	0.01	0.001	2 [0.14]	6 [0.42]
1	0.01	0.003	1 [0.07]	N.A.

ISO 8573.1 Quality Classes

Quality Classes	Solid Contaminants (maximum particle size in microns)	Maximum Pressure Dew Point °F [°C]	Maximum Oil Content (droplets, aerosols and vapor) ppm w/w [mg/m ³]
1	0.1	-94 [-70]	0.008 [0.01]
2	1	-40 [-40]	0.08 [0.1]
3	5	-4 [-20]	0.8 [1]
4	15	37.4 [3]	4 [5]
5	40	44.6 [7]	21 [25]
6	-	50 [10]	-

Model Number Configuration

HF

(1)

(2)

(3)

(4)

Filter Grade	
9	Separator/filter
7	Air Line Filter
5	High Efficiency Oil Removal Filter
3	Ultra High Efficiency Oil Removal Filter
1	Oil Vapor Removal Filter

Housing Number	Capacity		Connections	
	scfm	[m ³ /min] @ 100 psig, 7 kg/cm ²		
12	20	[0.57]	3 - 3/8" NPTF or 4 - 1/2" NPTF	3B - 3/8" BSP or 4B - 1/2" BSP
16	35	[1.00]		
20	60	[1.72]		
24	100	[2.9]	6 - 3/4" NPTF or 8 - 1" NPTF	6B - 3/4" BSP or 8B - 1 BSP
28	170	[4.9]		
32	250	[7.2]	8 - 1" NPTF or 10 - 1-1/4" NPTF or 12 - 1-1/2" NPTF	8B - 1 BSP or 10B - 1-1/4" BSP or 12B - 1-1/2" BSP
36	375	[11]		
40	485	[14]	16 - 2" NPTF or 20 - 2-1/2" NPTF	16B - 2" BSP or 20B - 2-1/2" BS
44	625	[18]		
48	780	[22]	20 - 2-1/2" NPTF	20B - 2-1/2" BSP
52	625	[18]	24 - 3" NPTM	80 - DN 80 Flange
54	1000	[29]		
56	1250	[36]	24 - 3" NPTM	80 - DN 80 Flange
60	1875	[54]		
64	2500	[72]	24 - 3" NPTM	80 - DN 80 Flange
68	3125	[89]	4F - 4" ANSI Flange	100 - DN 100 Flange
72	5000	[143]		
76	6875	[197]	6F - 6" ANSI Flange	150 - DN 150 Flange
80	8750	[250]	6F - 6" ANSI Flange	150 - DN 150 Flange
84	11875	[340]	8F - 8" ANSI Flange	200 - DN 200 Flange
88	16250	[465]	8F - 8" ANSI Flange	200 - DN 200 Flange
92	21250	[608]	10F - 10" ANSI Flange	250 - DN 250 Flange

Features	
D	Internal Drain
P	Slide Indicator
G	Differential Pressure Gauge
L	Liquid Level Indicator
S	Corrosion Proof Stainless Steel Cores
X	External Drain Adapter

- Step 1: Specify Filter Grade in space (1).
 Step 2: Specify Housing Number in space (2). Select housing that has sufficient flow capacity for your application.
 Step 3: Specify Connection Size in space (3).
 Step 4: Refer to chart below for Standard Features. If corrosion proof stainless steel cores are needed, indicate an S in space (4). Corrosion resistant stainless steel cores are standard.
- Example: A Grade 5 high efficiency oil removal filter with a capacity of 100 scfm and 3/4" NPTF connections would be configured as: HF5-24-6-DGL.

Standard Models

Model	Housing Number	Connection Sizes Available	Standard Features Grades				Maximum Pressure and Temperature		Height in [mm]	Width in [mm]	Weight lb [kg]	Replacement Element	
			9	7, 5, 3	1		Manual Drain	with D, L or X				No.	Qty Reqd
Modular Type Housings													
HF[Grade]-12-[Conn.]-[Features]	12	3, 3B, 4, 4B	D	D	NON E	300 psig	250 psig	8.15 [207]	4.13 [105]	4.2 [1.9]	E [Grade]-12	1	
HF[Grade]-16-[Conn.]-[Features]	16		P	P				11.05 [281]	4.13 [105]	8.1 [3.7]	E [Grade]-16		
HF[Grade]-20-[Conn.]-[Features]	20		L	L				13.40 [340]	4.13 [105]	8.5 [3.9]	E [Grade]-20		
HF[Grade]-24-[Conn.]-[Features]	24	6, 6B, 8, 8B	D G	D	NON E	21 kgf/cm ²	17.6 kgf/cm ²	15.32 [389]	5.25 [133]	6.3 [2.9]	E [Grade]-24	1	
HF[Grade]-28-[Conn.]-[Features]	28		L	G				19.57 [497]	5.25 [133]	6.9 [3.1]	E [Grade]-28		
HF[Grade]-32-[Conn.]-[Features]	32	8, 8B, 10, 10B, 12, 12B	G	L	NON E	150°F	150°F	22.80 [579]	6.44 [164]	10.2 [4.6]	E [Grade]-32	1	
HF[Grade]-36-[Conn.]-[Features]	36		L ⁽¹⁾	L				27.29 [693]	6.44 [164]	11.3 [5.1]	E [Grade]-36		
HF[Grade]-40-[Conn.]-[Features]	40	16, 16B, 20, 20B	G	D	NON E	66°C	66°C	31.08 [789]	7.63 [194]	28 [12.7]	E [Grade]-40	1	
HF[Grade]-44-[Conn.]-[Features]	44	20, 20B	G ⁽¹⁾	G				36.83 [935]	7.63 [194]	33 [15.0]	E [Grade]-44		
HF[Grade]-48-[Conn.]-[Features]	48							42.96 [1091]	7.63 [194]	38 [17.2]	E [Grade]-48		
Pressure Vessel													
HF[Grade]-52-[Conn.]-[Features]	52	24, 80	D G	D G	NON E	300 psig	300 psig	40.88 [1038]	10.25 [260]	36 [16.3]	E [Grade]-PV	1	
HF[Grade]-54-[Conn.]-[Features]	54	24, 80				225 psig	225 psig	48.00 [1219]	16.00 [406]	91 [41.3]	E [Grade]-54	2	
HF[Grade]-56-[Conn.]-[Features]	56					225 psig	225 psig	48.00 [1219]	16.00 [406]	91 [41.3]	E [Grade]-PV	2	
HF[Grade]-60-[Conn.]-[Features]	60	24, 80			NON E	15.8 kgf/cm ²	15.8 kgf/cm ²	49.00 [1245]	16.25 [413]	120 [54.4]	E [Grade]-PV	3	
HF[Grade]-64-[Conn.]-[Features]	64	4F, 100						52.25 [1327]	20.00 [508]	179 [81.2]	E [Grade]-PV	4	
HF[Grade]-68-[Conn.]-[Features]	68					52.25 [1327]	20.00 [508]	182 [82.6]	E [Grade]-PV	5			
HF[Grade]-72-[Conn.]-[Features]	72	6F, 150	G ⁽¹⁾	G ⁽¹⁾	NON E	150°F	150°F	54.63 [1387]	24.00 [610]	271 [123]	E [Grade]-PV	8	
HF[Grade]-76-[Conn.]-[Features]	76	6F, 150						62.56 [1589]	28.00 [711]	518 [235]	E [Grade]-PV	11	
HF[Grade]-80-[Conn.]-[Features]	80					62.56 [1589]	28.00 [711]	527 [239]	E [Grade]-PV	14			
HF[Grade]-84-[Conn.]-[Features]	84	8F, 200			NON E	66°C	66°C	69.13 [1756]	33.00 [838]	709 [322]	E [Grade]-PV	19	
HF[Grade]-88-[Conn.]-[Features]	88	8F, 200						67.94 [1726]	39.00 [991]	918 [416]	E [Grade]-PV	26	
HF[Grade]-92-[Conn.]-[Features]	92	10F, 250					70.94 [1802]	45.88 [1165]	1412 [640]	E [Grade]-PV	34		

(1) Drain plugs standard. Externally mounted auto drains available.

Sizing

To find the maximum flow at pressures other than 100 psig [7 kgf/cm²], multiply the flow (from table above) by the Correction Factor corresponding to the minimum pressure at the inlet of the filter. Do not select filters by pipe size; use flow rate and operating pressure.

Minimum Inlet Pressure	psig	20	30	40	60	80	100	120	150	200	250	300
		kgf/cm ²	1.4	2.1	2.8	4.2	5.6	7.0	8.4	10.6	14.1	17.6
Correction Factor		0.30	0.39	0.48	0.65	0.82	1	1.17	1.43	1.87	2.31	2.74

Hankison International - For over fifty years a leader in products to clean and dry compressed air

Hankison® products are lowering operating costs, reducing downtime, and helping to ensure product quality by providing cool, clean, dry compressed air in thousands of installations throughout the world.

Hankison products can be found in large and small manufacturing plants, in a variety of installations such as steel and textile mills, automotive and appliance assembly plants, and food, chemical and petro-

leum processing facilities. They can also be found supplying clean, dry air in mines, hospitals and ships. Hankison small refrigerated dryers are the standard in the HVAC industry. Wherever compressed air is used, Hankison air treatment equipment can improve air system productivity.

Since 1948, Hankison has invested in new product development and modern manufacturing techniques and equipment. These efforts have

resulted in innovative products and in the ability to manufacture to the highest standards.

Hankison International offers you not only products "designed for performance and built to last"...but technical assistance before the sale...ensuring that the right products are selected...and service support after the sale...allowing years of trouble-free operation.

Excellence in Design



Excellence in Manufacturing



Service Excellence



Production Facilities

- Washington, PA
- Newport, NC
- Dallas, TX
- Moers, Germany
- Seoul, Korea

MEMBER OF



MEETING GLOBAL STANDARDS



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FBB-100-NA-3