



**HANKISON**



**Compressed**

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**Air Filters**

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**HF Series**

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# Efficient, economical, reliable: Hankison High Performance Compressed Air Filters - with Application Guide

For users worldwide, Hankison filters are synonymous with cost-efficient treatment of compressed air. 50 years of successful work have created a reliable relation to our customers and the industry using compressed air during their production procedure.

This close relationship and the exchange of experience have been the cause to develop and create a new filter generation meeting all the expectations of our customers.

## Compressed air - should be dry and clean!

A typical compressed air system is contaminated with abrasive, solid particles such as dust, dirt, rust and scale, compressor lubricants, condensed water droplets and acidic condensates, oil and hydrocarbon vapors. These contaminants have to be removed in order to prevent damage on pneumatic equipment. Many special applications need clean and pure air - such as food industry or pharmaceutical companies.

The purity, down to 0.001 ppm w/w can consistently be provided by a combination of filters.

## HANKISON-Compressed Air Filters meet all the expectations.

### Benefits from HANKISON Filters:

- Modular connections - allow housing to be connected in series easily, while saving space
- Bayonet head - 1/8" turn easy access (through 1" connection)
- Corrosion resistant cores - for added structural integrity
- Silicone free
- Stainless steel guarantees low resistance to flow - long element life
- No tie rods - push on elements for easy change

- Seam welded for extra strength
- New matrix blended fiber media
- Piston type element to housing seal keeps unfiltered air from by-passing element
- Large effective surface area - improves capture rate - ensures high efficiency
- Large open area minimizes pressure drop
- Coated open cell foam sleeve resists chemical attack from oils and acids
- Chemically resistant end caps bound to media with specially formulated adhesive
- Withstands temperatures to 66°C.

## New modular housings for flows through 1325 m<sup>3</sup>/h

- Enlarged flow paths reduce pressure drop - saving running costs.
- Manufactured from top quality aluminium, zinc, and steel
- Chromated and epoxy powder painted (interior and exterior) for added durability and corrosion resistance
- Guaranteed working pressure to 16 bar



Modular connections allow housing to be connected in series easily.

### Filter Monitor:

- Specify the pressure drop to suit your application
- saving operating costs
- Never change an element too early or late
- Warning features



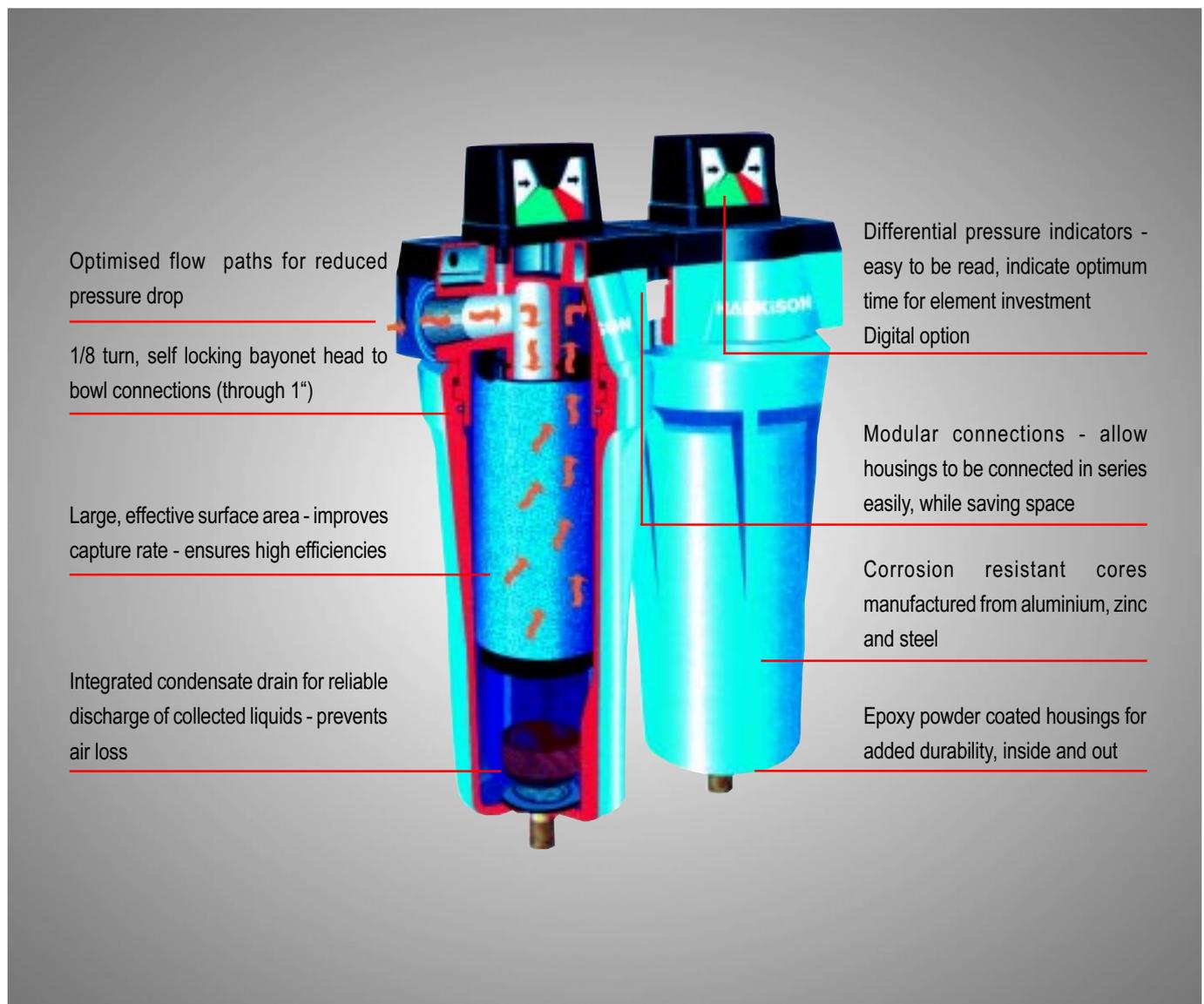
Optimize your filter with the new Hankison Filter Monitor

# Let Hankison give you the compressed air quality you require!

## Easy to operate

- ✓ New differential pressure indicators - indicates optimum time for element change - maximizing your element investment while minimizing pressure drop
- ✓ Colour coded elements for easy identification
- ✓ Slide indicator (up to HF-20)
- ✓ Economical - changes colour when filter element requires replacement
- ✓ Internal automatic drains - pilot operated, pneumatically actuated, reliably discharges collected liquids
- ✓ Viton seals of condensate drain are totally compatible with synthetic lubricants
- ✓ Inlet screen at condensate drain for additional protection
- ✓ Discharge fitting threaded to facilitate drain line connection
- ✓ 1/8 turn bayonet head to bowl connections for easy access (through 1" connection)
- ✓ Push on elements make element replacement quick and easy
- ✓ If housing is not depressurized before disassembly, escaping air gives audible warning
- ✓ Captive O-Ring

**+ Installation**  
**+ Operation**  
**+ Service**



## 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 utilising the latest media innovations and manufacturing techniques... resulting in increased performance, 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 world wide technical and service support, Hankison offers a new systemised solution for your compressed air quality needs.



Filter sizes from HF-54 and larger are available with two different vessels. The standard filter vessels are equipped with a large handhole which can be opened with only one screw in order to change the filter elements.

The second filter vessel type offers an even easier access to the filter elements by unscrewing all but one of the flange screws. The remaining screw turns the flange cover aside and allows access to the filter elements. The compressed air inlet and outlet are equipped with welded flanges which reduce the pressure drop and the danger of leakage. The filters are certified to CE, other certification i.e. GL, ABS, DNV and UDT are available.

## Air Quality/Pressure Drop Table

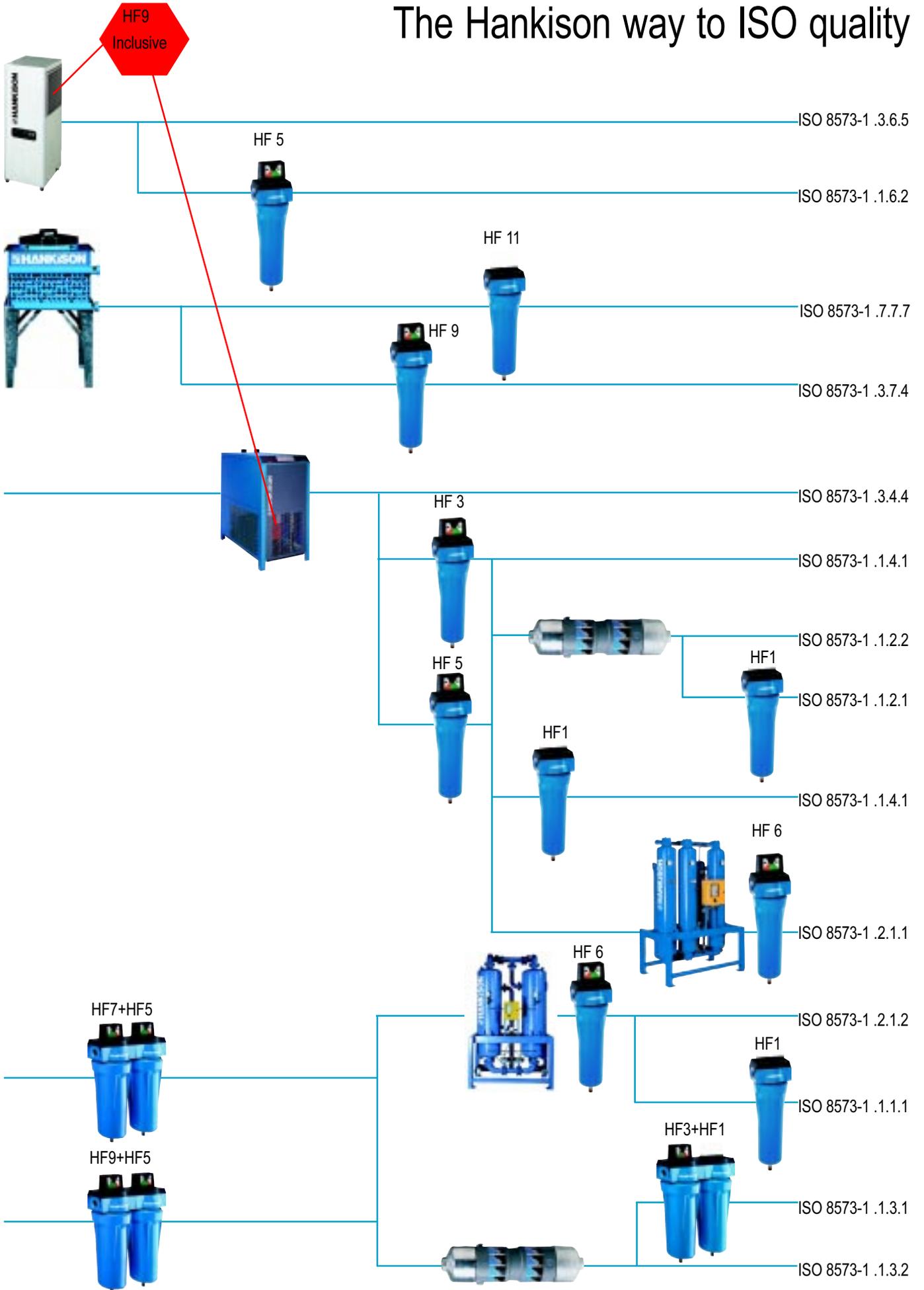
Grade	Solid Particles Down to micron	Remaining Oil Content ppm by weight	Pressure Drop at Rated Conditions	
			Dry	Wet
HF9	3	5	0.07	0.11
HF7	1	1	0.07	0.14
HF6	1	N.A.	0,07	N.A.
HF5	0.01	0.01	0.07	0.21
HF3	0.01	0.001	0.14	0.42
HF1	0.01	0.003	0.07	N.A.

## Air Quality: to ISO 8573-1: 1995

Class	Dust content		Water content		Oil content mg/m <sup>3</sup>
	µm	mg/m <sup>3</sup>	DTP	g/m <sup>3</sup>	
1	0,1	0,1	-70	0,003	0,01
2	1	1	-40	0,12	0,1
3	5	5	-20	0,88	1
4	15	8	3	6	5
5	40	10	7	7,8	25
6	--	--	10	9,4	--
7	--	--	not specified		--

Recommendation: For all types of compressors

# The Hankison way to ISO quality



# The solution for dry and clean air: The two stage filtration



## Hankison Filter Grade 9

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

## The two stage filtration:

1. stage: Two stainless steel orifice tubes provide 10 micron mechanical separation
2. stage: In depth fiber media captures solid and liquid particles to 3 microns



## Hankison Filter Grade 7

For removal of liquid water and oil; removes solid particles to 1 micron (1.0 ppm w/w maximum remaining oil content)  
Corrosion resistant inner and outer cores

## The two stage filtration:

1. stage: Captures larger particles with alternate layers of fiber media and media screen
2. stage: Coalesces aerosols and captures solid particles with multiple layers of epoxy bonded, blended fiber media



## Hankison Filter Grade 6

For removal of dust and solid particles to 1 micron

Corrosion resistant inner and outer cores

## The two stage filtration:

1. stage: Captures larger particles with alternate layers of fiber media and media screen
2. stage: Captures solid particles with multiple layers of epoxy bonded, blended fiber media



## Hankison Filter Grade 5

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

Corrosion resistant inner and outer cores

## The two stage filtration:

1. stage: Multiple layers of fiber media and media screen remove larger particles, prefiltering the air for the second stage
2. stage: Multiple layers of bonded, blended fiber media for fine coalescence  
Outer coated, open cell foam sleeve



## Hankison Filter Grade 3

For coalescing ultra-fine oil aerosols; removes solid particles to 0,01 micron (0,001 ppm w/w maximum remaining oil content)

Corrosion resistant inner and outer cores

## The two stage filtration:

1. stage: Coated, open cell foam sleeve acts as prefilter and flow disperser
2. stage: Multiple layers of matrix blended fiber media for ultra-fine coalescence  
Outer coated, open cell foam sleeve



## Hankison Filter Grade 1

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 (as a vapor))

Corrosion resistant inner and outer cores

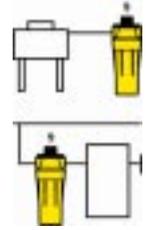
## The two stage filtration:

1. stage: A stabilized bed of finely divided carbon particles removes the majority of the oil vapour
2. stage: Multiple layers of fiber media with bonded microfine carbon particles remove the remaining oil vapour  
Outer coated, open cell foam sleeve prevents fiber migration  
Designed for 1000 hour life at rated conditions

**CAGI, Pneurop und ISO-Performance Data: Where used:**

ISO 8573-1.3.7.5 Quality Class-  
Solids: Class 3, Oil Content: Class 5  
Maximum inlet liquid load: 25,000 ppm w/w

Downstream of aftercoolers



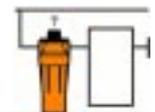
At point-of-use if no aftercooler/separater used upstream  
(heavily contaminated air)

ISO 8573-1.2.7.4 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

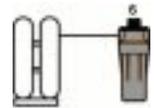


At point-of-use if aftercooler/separater installed upstream



ISO 8573-1.2.7.7 Quality Class-  
Solids: Class 2

Downstream of pressure-swing (heatless) desiccant dryers



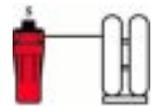
*No liquid should be present at filter inlet!*

Downstream of activated carbon towers

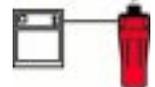


ISO 8573-1.1.7.2 Quality Class-  
Solids: Class 1, Oil Content: Class 2  
Maximum inlet liquid load: 1,000 ppm w/w

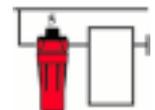
Upstream of desiccant or membrane dryers



Downstream of refrigerated dryers



At point-of-use (may be used if light liquid load is present)

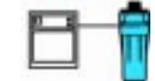


ISO 8573-1.1.7.1 Quality Class-  
Solids: Class 1, Oil Content: Class 1  
Maximum inlet liquid load: 100 ppm w/w

Upstream of desiccant or membrane dryers; use a filter No. 7 as a prefilter if heavy liquid loads are present

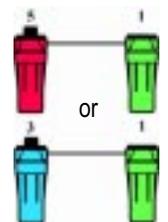


Downstream of refrigerated dryers



ISO 8573-1.1.7.1 Quality Class-  
Solids: Class 1, Oil Content: Class 1

Downstream of high efficiency oil removal filters



*No liquid should be present at filter inlet - use a high efficiency oil removal filter (grade 5) upstream of Filter grade 1 to prevent liquid oil contamination*

(Breathing air applications)\*

\*) Does not remove carbon monoxide or other toxic gases!

Model		Capacity [m³/h]	Conn.	Working Pressure max.	Dimensions [mm]		Weight kg	Replacement Elements		
Filter No.	Filter Housing				Height	Width		Filter No.	Filter	Quantity reqd.
<b>Modular Type Housing</b>										
HF 9-	-12	35	3/8"	16	207	105	1,9	E 9-	-12	
	-16	60	1/2"	16	281	105	3,7		-16	
	-20	105	1/2"	16	340	105	3,9		-20	
	-24	170	3/4"	16	389	133	4,4		-24	
	-28	290	1"	16	497	133	4,8		-28	
HF 7-	-32	425	1-1/2"	16	579	164	4,6	E 7-	-32	1
	-36	640	1-1/2"	16	693	164	5,1		-36	
HF 6-	-40	825	2"	16	789	194	11,9	E 6-	-40	
	-44	1060	2-1/2"	16	935	194	13,7		-44	
HF 5-	-48	1325	2-1/2"	13	1091	194	15,5	E 5-	-48	
	<b>Pressure Vessel</b>									
HF 3-	-52	1110	DN80	16	1025	350	28,4	E 3-	PV	1
	-54	1700	DN80	16	1045	400	37,0		-54	2
HF 1-	-56	2125	DN80	16	1045	400	37,4	E 1-	PV	2
	-60	3185	DN100	16	1085	440	48,4		PV	3
	-64	4250	DN100	16	1105	535	64,4		PV	4
	-68	5310	DN100	16	1105	535	65,4		PV	5
	-72	8490	DN150	16	1215	600	118,4		PV	8
	-76	11670	DN150	16	1245	720	171,4		PV	11
	-80	14850	DN150	16	1265	750	224,4	PV	14	

Working conditions: Max. temperature 66°C, min. pressure including automatic condensate drain: 1,4 bar  
 Filter HF 1 and HF 6 do not require a condensate drain!  
 Pressure vessel filters do not include drains. We recommend the following condensate drains:

Size of Filter	Recommended Condensate Drain
HFX-52	Snap Trap 504
HFX-54-72	Trip-L-Trap 505
HFX-76-80	Trip-L-Trap 506

**Modular housing filters now with GL-certification!**

**Sizing:**

To find the maximum flow at pressures other than 7 bar, multiply the flow (from the above table) 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.

Min. working pressure													
bar	2	3	4	5	6	7	8	10	12	14	17	19	21
Multiplier	0,38	0,52	0,63	0,75	0,88	1,00	1,13	1,38	1,65	1,87	2,28	2,54	2,74

*Global Leader in Efficiently Treating Compressed Air*

