



# International H-Series

## Compressed Air & Gas Filters

- Coalescing, Particulate & Hydrocarbon Adsorption
- Flows from 10 to 1600 SCFM (17 to 2822 m<sup>3</sup>/hr)
- 1/4" to 3" NPT, BSPF & BSPT Ports

Compressed Air  
and Gas Filters

*Bulletin 1300 - 993C/USA*



# Finite<sup>®</sup>

Do you have... product rejects? Increased maintenance expense?

Contaminants from your compressor going into point of use applications?

## Why filter compressed air and gas?

**S**ubmicronic contaminants in compressed air systems plug orifices of sensitive pneumatic instrumentation, wear out seals, erode system components, reduce the absorptive capacity of desiccant air/gas dehydrators, foul heat transfer surfaces, reduce air tool efficiency, and damage finished

products. The results include product rejects, lost production time and increased maintenance expense. For example, trace amounts of submicronic oil can cause serious fish eye blemishing in automotive finishing operations. Water left in air lines can freeze during exposure to cold temperatures, blocking flow

or rupturing pipes. Compressor lubricant not captured in a coalescing filter will eventually collect in pneumatic components, causing premature component repair or replacement. Environmental concerns will be raised if oily, compressed air is continually discharged into the atmosphere

## Why use Finite Filters?

### SAVE TIME AND MONEY

**Finite** Filter's International H-Series is the right solution for most compressed air/gas applications. Our filter elements are formed with our special UNI-CAST glass microfibers to enhance the depth-loading characteristics of each element's fiber matrix. This design provides lower pressure drops and less frequent change outs, saving you time and money.

### WE MEET YOUR NEEDS

With our wide variety of media, you can find a product to meet your specific requirements. This will avoid over-specifying filtration efficiency.

### IMPROVE OPERATION LIFE

We make liberal use of a special prefilter, prolonging operation life on some coalescers from 4 to 6 times.

### CONFIDENCE IN PERFORMANCE

Our filter housings have been specifically designed for coalescing filtration. Generous exit ports promote lower pressure drops and large remote sump areas prevent fluid re-entrainment. With Finite's H-Series product line, you can have confidence in performance.



## Finite's H-Series Offers...

- Coalescing, particulate and adsorption filter elements
- Optional indicators, gauges and drains
- Temperatures to 450° F (232° C)
- Pressures to 500 PSIG (34 bar)
- Connection sizes from 1/4" to 3" NPT, BSPF & BSPT
- Flows from 10 to 1600 SCFM (17-2822 m<sup>3</sup>/hr)

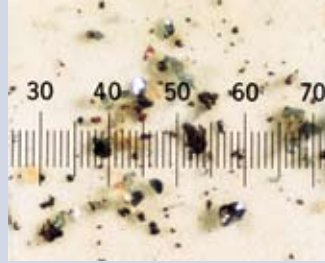
oil



water



solids



Actual pictomicrograph of particulate contaminants  
(Magnified 100x Scale: 1 division = 20 microns (µm))

The contaminants of greatest concern in precision compressed air systems are water, oil and solids. Water vapor is present in all compressed air; it becomes greatly concentrated by the compression process. While air dryer systems can be used effectively to remove water from compressed air, they will not remove the second major liquid contaminant – oil. Most oil comes from compressor lubrication carry-over, but even

the air produced by oil-free compressors has hydrocarbon contamination brought into the system through the intake.

The third contaminant found in compressed air is solid matter including dirt, rust and scale. Solid particulates, combined with aerosols of water and oil, can clog and shorten the life of air system components and can foul processes.



## Typical Applications

(See Pages 10-11 for application and air cleanliness schematics)

### Coalescing (Oil Removal)

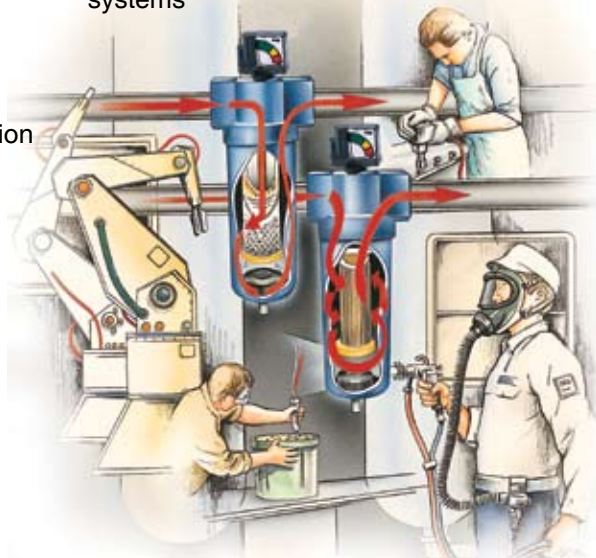
- Air dryer prefilter
- Paint spray booths
- Breathing air
- Tool protection
- Air valve protection
- Air cylinder protection
- Compressed air system protection

### Adsorber (Vapor Removal)

- Odor removal
- Breathing air
- Food packaging equipment
- High purity laboratory gases
- Hydrocarbon vapor removal

### Interceptor (Particulate Removal)

- Desiccant dryer afterfilter
- Prefilter for coalescer
- Systems with high concentrations of solid contaminant
- Particulate protection for non-lubricated systems



4 Steps to clean, dry compressed air!

Compressed Air and Gas Filters

Step 1

Determine your application, media grade, media type and end seals.  
Pages 10-13

Step 2

Choose your housing and replacement elements.  
Pages 14

Step 3

Choose your accessories. Find out what's standard or choose what's best for your application.  
Page 15

Step 4

How to Order. Build your own part number here!  
Page 16

# Does one of these applications describe your system?

describe your system?

From aeration in pharmaceutical and chemical processes to pneumatic power systems, the possibilities for applications are endless. Finite has some suggested air cleanliness standards that may fit your needs. Let one of Finite's application engineers find a system that is right for you.

## quality

International Standard ISO8573-1 is fast becoming the industry standard method for specifying compressed air cleanliness. The following diagrams describe various systems in terms of their corresponding ISO classification.

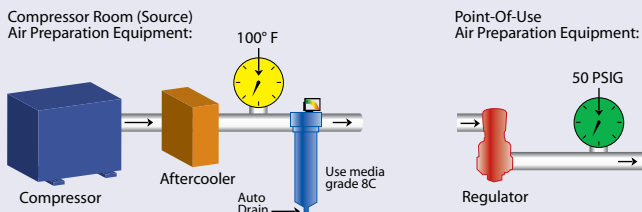
International ISO Standards Notification as specified in ISO8573 - 1					
Class	Solid		Water		Oil
	Maximum particle size	Maximum Concentration* ppm(mg/m <sup>3</sup> )	Maximum Pressure Dewpoint °F (°C)		Maximum Concentration** ppm(mg/m <sup>3</sup> )
1	0.1	0.08 (0.1)	-94 (-70)		0.008 (0.01)
2	1	0.8 (1)	-40 (-40)		0.08 (0.1)
3	5	4.2 (5)	-4 (-20)		0.83 (1)
4	15	6.7 (8)	37 (+3)		4.2 (5)
5	40	8.3 (10)	45 (+7)		21 (25)
6	-	-	50 (+10)		-

\* At 14.7 psi (1 bar) absolute pressure, +70°F (+20°C) and a relative humidity of 60%. It should be noted that at pressures above atmospheric, the contaminant concentration is higher.

Notes:

1. The quality of the air delivered by non-lubricated compressors is influenced by the quality of the intake air and the compressor design.

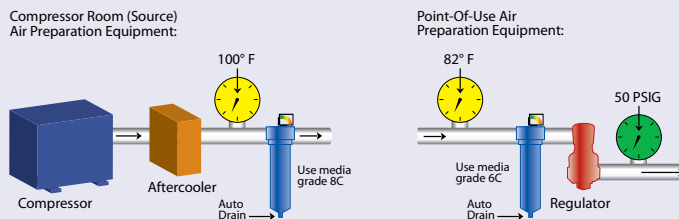
### ISO Class 2 3



Any compressor with aftercooler. Air intended for use with lubricated air tools, air motors, cylinders, shot blasting, non-frictional valves.

**OTHER SPECS MET:** Compressed Air & Gas Institute: CGA – G7.1 (Grades A & Ba1)

### ISO Class 1 1

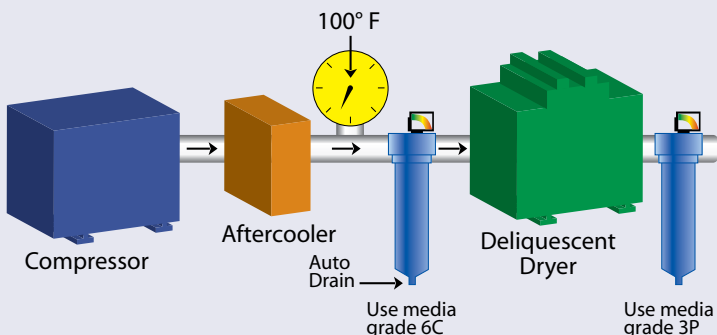


Any compressor with aftercooler and 2-stage coalescing. Air intended for use with lubricated control valves, cylinders and parts blow-down, etc.

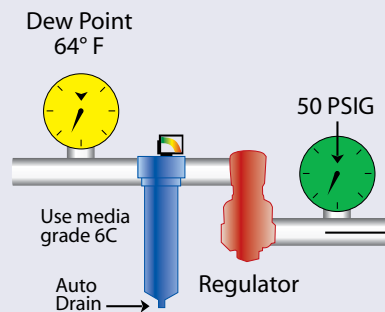
**OTHER SPECS MET:** Mil. Std. 282 H.E.P.A., U.S.P.H.S. 3A Accepted particles for milk

### ISO Class 1 1

Compressor Room (Source) Air Preparation Equipment:



Point-Of-Use Air Preparation Equipment:

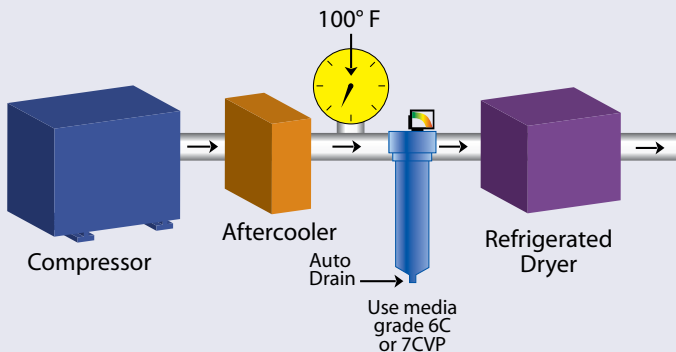


Any compressor with aftercooler, 2-stage coalescing and deliquescent dryer. Air intended for use with general pneumatic systems, body shop spray painting and components sensitive to high moisture content.

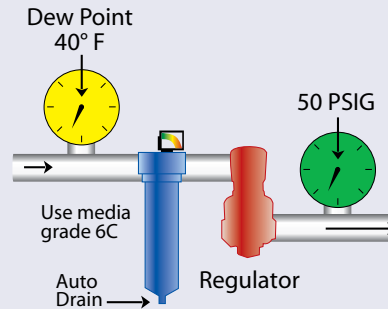
**OTHER SPECS MET:** Compressed Air & Gas Institute: CGA – G7.1 (Grade C)



Compressor Room (Source)  
Air Preparation Equipment:



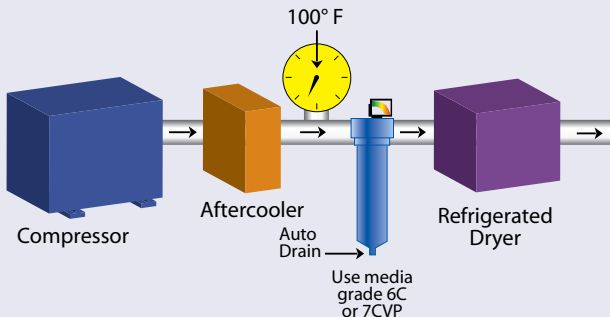
Point-Of-Use  
Air Preparation Equipment:



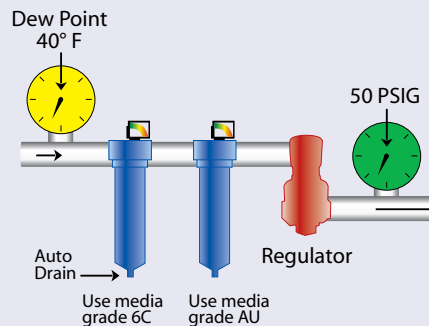
Any compressor with aftercooler, 2-stage coalescing and refrigerated dryer. Air intended for use with air-gauging, air conveyors, spray-painting, food processing, instrumentation, blow molding, cosmetics, film processing, bottling, pharmaceuticals, dairy, breweries, medical, robotics and close tolerance valves.

**SPECS MET:** CGA – G7.1 (Grades D & E), ISAS7.3 Fed. Std. 209 (Class 100)

Compressor Room (Source)  
Air Preparation Equipment:



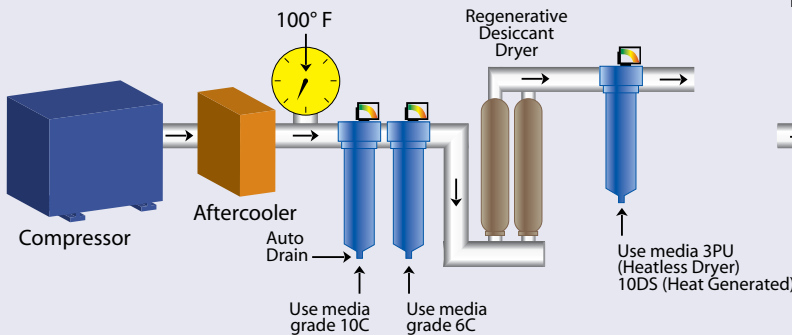
Point-Of-Use  
Air Preparation Equipment:



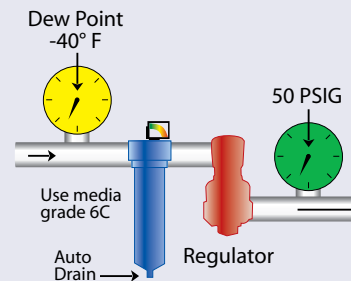
Any compressor with aftercooler, 2-stage coalescing, refrigerated dryer and carbon absorber. Air intended for use as industrial breathing air and decompression chambers. CAUTION: Always use high temperature synthetic lubricants and monitor (alarm for carbon monoxide concentrations exceeding 20ppm). This system will not eliminate toxic gases!

**OTHER SPECS MET:** O.S.H.A. 29CFR 1910.134

Compressor Room (Source)  
Air Preparation Equipment:



Point-Of-Use  
Air Preparation Equipment:



Any compressor with aftercooler, two-stage and double coalescing and a regenerative-type desiccant dryer. Air intended for use in applications involving rapid expansion of compressed air, critical instrumentation, high purity gases, computer chip drying, etc. CAUTION: This air is too dry for respiratory use.

**SPECS MET:** CGA – G7.1 (Grade F)

# Step 1

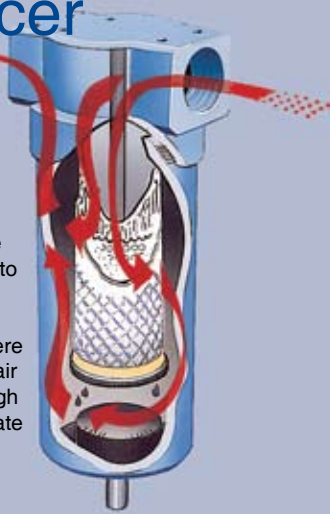
## Determine your application, media grade, media type and end seals.

Find your (or similar) application in the descriptions below, from the basic application circuits on the previous page, or consult a **Finite**® application engineer. Determine media grade, media type and end seal required. If your application requires a coalescing element, use the information listed below. For other media types, please see the following page.

## Coalescing (Liquid and Particulate Removal) Filter Media

### How does a coalescer work?

This filter housing cutaway depicts the coalescing process. Air enters the housing and flows through the filter media passing from the inside element surface to the outside. Coalesced liquid (water and oil) collects in the bowl where it is drained and clean air exits the housing through the outlet port. Particulate contaminants are captured and held in the media.



Media Grade  
Media Type  
End Seal

4

Coalescing elements are wrapped in color netting corresponding to media grades below, or will have the media grade printed on the element.

**APPLICATIONS:** Very high-efficiency coalescer; for elevated pressures up to **500 PSIG** (34 bar) or when removing aerosols from lighter weight gases. Protection of pneumatic systems and critical modulating systems such as flow and temperature controllers.

STANDARD

6

**APPLICATIONS:** General air coalescing applications when total removal of liquid aerosols and suspended fines is required in all pressure ranges. Protection of air dryers, air gauging, air logic, modulating systems, critical air conveying, most breathing air systems, etc.

7CVP

**APPLICATIONS:** High efficiency and very low pressure drop, even when wetted by oil and water, makes this pleated coalescing media an excellent choice for medium efficiency applications. Large surface area means long life and a high tolerance for heavy liquid aerosol contamination. Prefilter for refrigerated air dryer.

8

**APPLICATIONS:** Good air coalescing efficiency in combination with high flow rate and long element life. Protection of noncritical circuit components such as valves, cylinders, etc. Prefilter for refrigerated air dryer.

10

**APPLICATIONS:** Precoalescer or prefilter for Grade 6 to remove gross amounts of water and oil, or tenacious aerosols which are difficult to remove. Upgrading existing particulate equipment to coalescing without increase in pressure drop.

## Choose your media type

All of the elements below flow in to out.



**C:** Micro-glass coalescer  
Max. temp. 175°F.



**Q:** Micro-glass coalescer with built-in pleated prefilter  
Max. temp. 175°F.



**7CVP:** Micro-glass pleated coalescer  
Max. temp. 175°F.



**D:** High temperature micro-glass coalescer  
Max. temp. 450°F

## Media Specifications

Grade Designation	Coalescing Efficiency .3 to .6 Micron Particles	Maximum Oil Carryover <sup>1</sup> PPM w/w	Micron Rating	Pressure Drop (PSID) @ Rated Flow <sup>2</sup>	
				Media Dry	Media Wet With 10-20 wt. oil
4	99.995%	0.003	0.01	1.25	3-4
6	99.97%	0.008	0.01	1.0	2-3
7	99.5%	0.09	0.5	0.25	0.5 - 0.7
8	98.5%	0.2	0.5	0.5	1-1.5
10	95%	0.85	1.0	0.5	0.5

<sup>1</sup>Tested per ADF-400 at 40 ppm inlet.

<sup>2</sup>Add dry + wet for total pressure drop.

## Coalescer End Seals:

**Blank:** No end seals - Elements are self-sealing.

Standard on filters with 1/4" to 1" connection sizes.

**U:** Molded urethane, Standard on all filters with 1 1/4" to 3" connection sizes.

**S:** Molded silicone rubber end seals used for high-temperature elements up to **450°F** (232°C).

**V:** Fluorocarbon gasket bonded to metal end cap. Optional seal used for high temperature **450°F** (232°C) elements. Available on 1 1/4" NPT and larger. Standard on all 7CVP media.

## Water Separator Filter Media

Grade Designation	Filter Efficiency Rating	Pressure Drop (PSID) @ Rated Flow Media Dry
100WS	100µm	<0.25

### Water Separator End Seals:

**Blank:** Fluorocarbon gasket bonded to metal end cap. Standard on filters with 1 1/4" to 3" connection sizes.

**U:** Molded urethane. Standard on all filters with 1/4" to 1" connection sizes.

## 100WS

**APPLICATIONS:** Reduction and elimination of excess liquids in gas streams. Excellent prefiltration for coalescing grades 6 and 10 when extreme quantities of liquid contaminants are present.

### media type

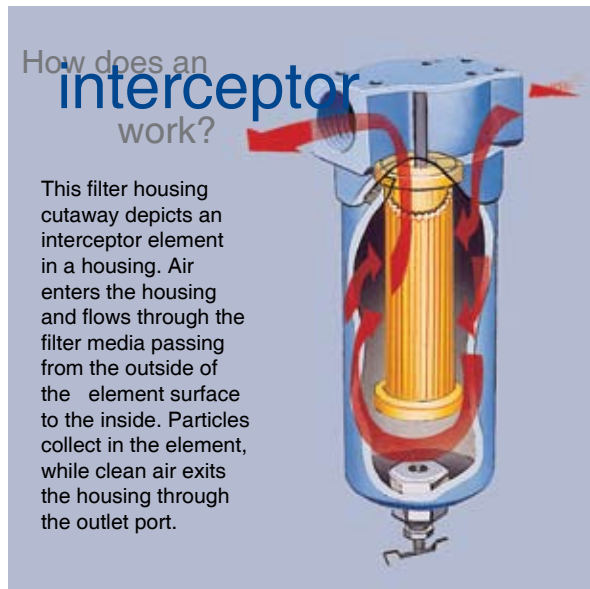


100WS: Rolled Stainless Steel Mesh (304 SS)

Element flows in to out.  
Max. temp. 175°F.

Compressed Air and Gas Filters

## Interceptor (Particulate Removal) Filter Media



This filter housing cutaway depicts an interceptor element in a housing. Air enters the housing and flows through the filter media passing from the outside of the element surface to the inside. Particles collect in the element, while clean air exits the housing through the outlet port.

## 3P U

**APPLICATIONS:** Particulate removal where very high dirt-holding capacity is required. Safety afterfilter for desiccant dryer, pore matched prefilter for coalescer or as general use for final instrument air protection.

### Media Specifications

Grade Designation	Filter Efficiency Rating	Pressure Drop (PSID) @ Rated Flow Media Dry
3P	3µm	0.25

### media type

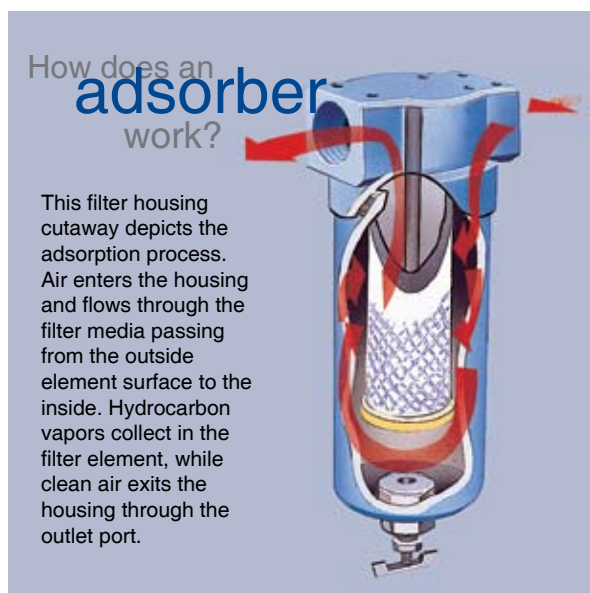


3P: Pleated Cellulose

Element flows out to in.  
Max. temp. 175°F.

**Standard Interceptor End Seals:** U = Molded urethane. Molded silicone rubber (S) and fluorocarbon (V) available - see How to Order on page 16.

## Adsorption (Vapor Removal) Filter Media



This filter housing cutaway depicts the adsorption process. Air enters the housing and flows through the filter media passing from the outside element surface to the inside. Hydrocarbon vapors collect in the filter element, while clean air exits the housing through the outlet port.

## A U

**APPLICATIONS:** Polishing gas stream of final trace amounts of hydrocarbon contaminants, usually 0.5 to 2 ppm inlet concentrations. Preparation for breathing air; hydrocarbon vapor removal.

### Media Specifications

Grade Designation	Oil Vapor Removal Efficiency	Pressure Drop (PSID) @ Rated Flow Media Dry
A	99%+	1

### media type



A: Activated Carbon

Element flows out to in.  
Max. temp. 175°F.

**Standard Adsorber End Seals:** U = Molded urethane. Molded silicone rubber (S) available - see How to Order on page 16.

# Step 2

## Determine your Housing.

Find your desired flow rate under the appropriate media grade column. For pressures other than 100 PSIG or temperatures other than 70°F, please see Alternate Housing Selection Chart, Step 2a, on following page.

Insert Port Type. See page 16 for options. For example: Insert "N" for an NPT Port.

### Housing Selection Chart

Rated Flows: SCFM @ 100 PSIG (m<sup>3</sup>/hr @ 7 bar)  
For other pressures, please see Step 2a on following page.

Housing Assembly	Port Size	Grade 4 Coalescer	Grade 6 Coalescer (Standard)	Grade 7CVP Coalescer	Grade 8 Coalescer	Grade 10 Coalescer	Grade 3PU Interceptor	Grade 100WS Water Separator	Grade A Adsorber
H_1S	1/4"	11 (19)	15 (26)	N/A	20 (34)	25 (43)	25 (43)	50 (85)	15 (26)
H_15S	3/8"	15 (26)	20 (34)	N/A	27 (46)	33 (56)	33 (56)	66 (112)	20 (34)
H_2S	1/2"	19 (32)	25 (43)	N/A	34 (58)	42 (71)	42 (71)	83 (141)	25 (43)
H_1L	1/4"	23 (39)	30 (51)	N/A	41 (68)	50 (85)	50 (85)	50 (85)	30 (51)
H_15L	3/8"	30 (51)	40 (68)	N/A	55 (94)	66 (112)	66 (112)	66 (112)	40 (68)
H_2L	1/2"	38 (65)	50 (85)	N/A	68 (116)	83 (141)	83 (141)	83 (141)	50 (85)
H_3S	3/4"	61 (104)	80 (136)	N/A	109 (185)	133 (226)	133 (226)	133 (226)	80 (136)
H_4S	1"	76 (129)	100 (170)	N/A	136 (231)	166 (282)	166 (282)	232 (394)	100 (170)
H_4L	1"	106 (180)	140 (238)	N/A	191 (325)	232 (394)	232 (394)	232 (394)	140 (238)
H_5S	1 1/4"	190 (323)	250 (425)	415 (706)	330 (461)	415 (706)	415 (706)	415 (706)	250 (425)
H_6S	1 1/2"	260 (442)	350 (595)	600 (1020)	465 (791)	600 (1020)	600 (1020)	600 (1020)	350 (595)
H_8E	2"	260 (442)	350 (595)	600 (1020)	465 (791)	600 (1020)	600 (1020)	600 (1020)	350 (595)
H_8S	2"	340 (578)	450 (765)	750 (1275)	600 (1020)	750 (1275)	750 (1275)	750 (1275)	450 (765)
H_8L	2"	470 (799)	625 (1063)	1035 (1760)	830 (1411)	1035 (1760)	1035 (1760)	1035 (1760)	625 (1063)
H_0L	2 1/2"	600 (1020)	800 (1360)	1330 (2261)	1060 (1802)	1330 (2261)	1330 (2261)	1330 (2261)	800 (1360)
H_12L	3"	750 (1275)	1000 (1700)	1660 (2822)	1330 (2261)	1660 (2822)	1660 (2822)	1660 (2822)	1000 (1700)

### Replacement Element Part Numbers

Insert Port Type. Port type does not affect element selection.

\*Insert selected media grade 4, 6, 8, 10.

Housing Assembly	Coalescer	Coalescer w/inner retainer	High Temperature	Coalescer w/ built-in prefilter	7CVP Pleated Coalescer	3PU Interceptor	100WS Water Separator	AU Adsorber
H_1S	*C10-025	*IU10-025	*DS10-025	*QU10-025	N/A	3PU10-025	100WSU10-025	AU10-025
H_15S	*C10-025	*IU10-025	*DS10-025	*QU10-025	N/A	3PU10-025	100WSU10-025	AU10-025
H_2S	*C10-025	*IU10-025	*DS10-025	*QU10-025	N/A	3PU10-025	100WSU10-025	AU10-025
H_1L	*C10-050	*IU10-050	*DS10-050	*QU10-050	N/A	3PU10-050	100WSU10-025	AU10-050
H_15L	*C10-050	*IU10-050	*DS10-050	*QU10-050	N/A	3PU10-050	100WSU10-025	AU10-050
H_2L	*C10-050	*IU10-050	*DS10-050	*QU10-050	N/A	3PU10-050	100WSU10-025	AU10-050
H_3S	*C15-060	*IU15-060	*DS15-060	*QU15-060	N/A	3PU15-060	100WSU15-060	AU15-060
H_4S	*C15-060	*IU15-060	*DS15-060	*QU15-060	N/A	3PU15-060	100WSU15-060	AU15-060
H_4L	*C15-095	*IU15-095	*DS15-095	*QU15-095	N/A	3PU15-095	100WSU15-060	AU15-095
H_5S	*CU25-130	*CU25-130	*DS25-130	*QU25-130	7CVP25-130	3PU25-130	100WS25-130	AU25-130
H_6S	*CU25-130	*CU25-130	*DS25-130	*QU25-130	7CVP25-130	3PU25-130	100WS25-130	AU25-130
H_8E	*CU25-130	*CU25-130	*DS25-130	*QU25-130	7CVP25-130	3PU25-130	100WS25-130	AU25-130
H_8S	*CU25-187	*CU25-187	*DS25-187	*QU25-187	7CVP25-187	3PU25-187	100WS25-187	AU25-187
H_8L	*CU25-235	*CU25-235	*DS25-235	*QU25-235	7CVP25-235	3PU25-235	100WS25-235	AU25-235
H_0L	*CU35-280	*CU35-280	*DS35-280	*QU35-280	7CVP35-280	3PU35-280	100WS35-280	AU35-280
H_12L	*CU35-280	*CU35-280	*DS35-280	*QU35-280	7CVP35-280	3PU35-280	100WS35-280	AU35-280



# Step 2a

# Alternate Housing Selection Chart

for applications with pressures other than 100 PSIG and 70°F (standard conditions)

Compressed Air and Gas Filters

## Converting Actual Application Conditions to Standardized Conditions

Because the required size of a filter is affected not only by flow, but also by operating pressure and operating temperature, it is necessary to convert those actual conditions to standardized conditions (100 PSIG and 70°F). The calculated adjusted flow rate can then be used to choose the appropriate filter in the chart on page 14. When using the chart, choose the closest flow rate from the appropriate media grade column.

### Equation:

$$\begin{array}{|c|} \hline \text{Flow} \\ \hline \text{Actual System Flow Rate (SCFM)} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{Pressure} \\ \hline \frac{(100 \text{ PSIG} + 14.7 \text{ PSIG})}{(\text{System Pressure (PSIG)} + 14.7 \text{ PSIG})} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{Temperature} \\ \hline \frac{(\text{System Temp } ^\circ\text{F} + 460^\circ\text{F})}{(70^\circ\text{F} + 460^\circ\text{F})} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{Specific Gravity} \\ \hline \sqrt{\text{specific gravity}} \\ \hline \end{array}
 =
 \begin{array}{|c|} \hline \text{Adjusted Flow Rate} \\ \hline \text{Adjusted Flow Rate (At 100 PSIG and 70°F)} \\ \hline \end{array}$$

**Example:** For grade 6C filter, with an actual flow rate of 60 SCFM, an actual pressure of 50 PSIG and an actual temperature of 175°F, the equation would go as follows:

system pressure = 50

system temperature = 175

$$\frac{(100\text{PSIG} + 14.7 \text{ PSIG})}{(50 \text{ PSIG} + 14.7 \text{ PSIG})}$$

$$\frac{(175 \text{ }^\circ\text{F} + 460^\circ\text{F})}{(70^\circ\text{F} + 460^\circ\text{F})}$$

$$\frac{(114.7)}{(64.7)} = 1.77$$

$$\frac{(635)}{(530)} = 1.19$$

Note: Take the square root of your specific gravity. If this is for a compressed air application, skip this step because the specific gravity of air equals one. Please consult **Finite**® if you do not know your specific gravity.

Now go to the chart on page 14, look down the media grade 6 column for a flow of 126.4 SCFM, you will see the correct housing is the HN4L.

$$60 \text{ SCFM} \times 1.77 \times 1.19 \times 1 = 126.4 \text{ SCFM}$$

## Pre-Installed Accessory Options

### Step 3








Choose your accessories.

Consult **Finite**® when choosing pre-installed accessories for special gases.

Accessory Designator	Auto Drain	DPI Indicator	DPG Gauge	High Temp	DP Ports	Fluorocarbon O-rings	No Accessories	Pressure/Temp		Pressure/Temp	
								PSIG	Degrees°F	bar	Degrees°C
A								250	175°	17	79°
D								250	175°	17	79°
G								500	175°	34	79°
J								250	450°	17	232°
N								500	175°	34	79°
P								250	175°	17	79°
V								500	175°	34	79°
W								250	175°	17	79°
X								250	175°	17	79°
Y								250	175°	17	79°

### Pre-installed Accessories

### Other Compatible Accessories

							
Designator	D, W	A, W, X, Y	G, Y				
Temp.	175° F (79° C)	175° F (79° C)	175° F (79° C)	210° F (99° C)	140° F (60° C)	125° F (52° C)	175° F (79° C)
Pressure	250 PSIG (17 Bar)	250 PSIG (17 Bar)	500 PSIG (34 Bar)	300 PSIG (20 Bar)	250 PSIG (17 Bar)	150 PSIG (10 Bar)	250 PSIG (17 Bar)
Port Size	N/A	N/A	N/A	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT

<sup>1</sup>Note: AD-12 requires 10 PSIG to seal. <sup>2</sup>Note: Other timed drain valves can be found on page 183.

Mounting brackets available: BK-M (1/4" - 1/2" connections); BK-3 (3/4" - 1" connections).

# Step 4

# How to Order

Use the steps below to build your own part number.  
For any permutation not mentioned below, please consult factory at 1-800-521-4357.

Compressed Air and Gas Filters

## Step 2 or 2a

<b>H</b>	<b>N</b>	<b>1</b> <b>2</b>	<b>L</b> - <b>6</b>
<b>Series Name</b>	<b>Port Type</b>	<b>Port (Connection) Size</b>	<b>Bowl</b>
N - NPT F - BSPF S - SAE* T - BSPT	N - NPT F - BSPF S - SAE* T - BSPT	1 - 1/4" 15 - 3/8" 2 - 1/2" 3 - 3/4" 4 - 1" 5 - 1 1/4" 6 - 1 1/2" 8 - 2" 0 - 2 1/2" 12 - 3"	S - Standard L - Long E - Economy (short bowl)*

\*Short bowl is only available on 2" connection size  
  
Note: Bowl length is determined by the flow rate required. See page 14, Housing Selection Chart, for flow rates.

## Step 1

<b>6</b>	<b>C</b>	<b>U</b>
<b>Element Grade</b>	<b>Element Type</b>	<b>End Seal</b>
4 6 8 10	C	Blank = No end seal, Standard on 1/4" to 1" connection sizes U = Urethane, Standard on 1 1/4" to 3" connection sizes S = Molded Silicone Rubber V = Fluorocarbon, Available 1 1/4" to 3" connections only
	Q	U = Urethane, Standard all connection sizes S = Molded Silicone Rubber V = Fluorocarbon, Available 1 1/4" to 3" connections only
	D	S = Molded Silicone Rubber, Standard on all conn. sizes V = Fluorocarbon, Available 1 1/4" to 3" conn. sizes only
7CVP	Blank	= Fluorocarbon, Standard on all 7CVP elements; elements available 1 1/4" to 3" connections only
	I	U = Urethane, Standard on 1/4" to 1" connection sizes
3P	U	= Urethane, Standard on all connection sizes S = Molded Silicone Rubber V = Fluorocarbon, Available 1 1/4" to 3" connections only
100WS	U	= Urethane, Standard on 1/4" to 1" connection sizes Blank = Fluorocarbon, Standard on 100WS elements 1 1/4" to 3" connections only
	A	U = Urethane, Standard on all connection sizes S = Molded Silicone Rubber

## Step 3

<b>G</b>
<b>Accessory Designator for preinstalled accessories</b>
A - Auto Drain D - DPI Indicator G - DPG Gauge (Standard on 3/4" & up) J - High Temperature (450°F) N - No Accessories P - 1/8" Differential (3/4" & up) Sensing Ports V - Fluorocarbon O-rings W - A + D X - A + P Y - A + G
Note: For max. pressures and temperatures related to Accessories, please see chart on previous page.

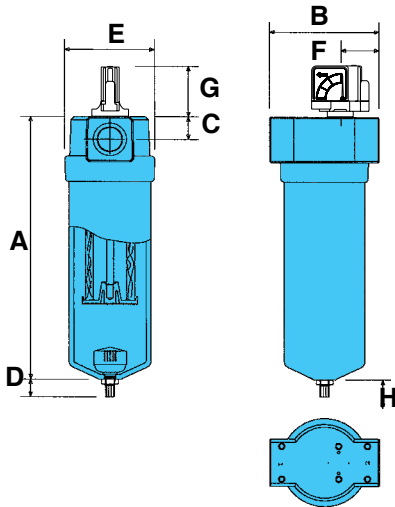
### Examples on How to Order

<p><b>Example 1:</b> <b>HN12L-6CUY</b></p> <p><b>What am I ordering?</b> An H-Series, with a 3" NPT connection, long bowl, standard grade 6 coalescing element with urethane end seals, an auto drain and a standard DPG gauge.</p>	<p><b>Example 2:</b> <b>HN15L-8CA</b></p> <p><b>What am I ordering?</b> An H-Series, with a 3/8" NPT connection, long bowl, grade 8 coalescing element without end seals and an auto drain.</p>	<p><b>Example 3:</b> <b>HN8S-7CVPG</b></p> <p><b>What am I ordering?</b> An H-Series, with a 2" NPT connection, standard bowl, a 7CVP coalescing element, with the standard fluorocarbon end seals and standard DPG gauge.</p>	<p><b>Example 4:</b> <b>HN8E-10DVJ</b></p> <p><b>What am I ordering?</b> An H-Series, with a 2" NPT connection, economy short bowl, grade 10 high-temp coalescing element, with the standard fluorocarbon end seals and "J" as an accessory. This high temperature option converts all materials to be capable of handling temperatures of 450°F.</p>	<p><b>Example 5:</b> <b>HN2S -AUN</b></p> <p><b>What am I ordering?</b> An H-Series, with a 1/2" NPT connection, short bowl, adsorber element, with the standard urethane end seals and no accessories.</p>
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# Drawings, Dimensions & Specifications

## 1/4" to 1" Housings



### Specifications

Max. Pressure: **500 PSIG** (34 bar)  
 Safety Factor: Max. operating to burst 4:1  
 Max. Temp.: **175°F** (79°C) with option to **450°F** (232°C)  
 Seals: Nitrile Std./Fluorocarbon optional  
 Materials: Aluminum - 380 Die cast heads;  
 6061 Drawn bowls  
 Coatings: Chromated heads and bowls;  
 Powder painted exterior  
 Design: In-line threaded bowl to head

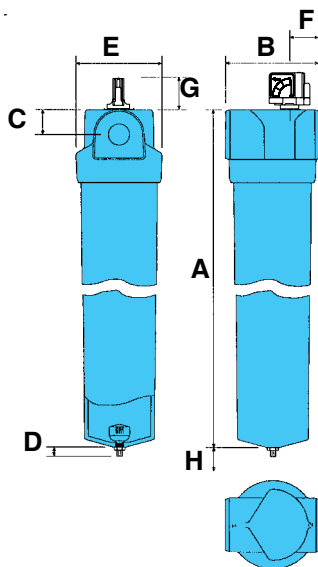
*Note: Manual Drain Port is 1/8" FNPT when tee valve is removed from drain bushing.*

Model	A	B	C	D	E	F	G	H*	Sump (ml)	Weight
H_1S	6.80 (172)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	2.99 (76)	150	1.49 (.68)
H_15S	6.80 (172)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	2.99 (76)	150	1.47 (.66)
H_2S	6.80 (172)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	2.99 (76)	150	1.44 (.65)
H_1L	9.19 (233)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	5.51 (140)	140	1.89 (.86)
H_15L	9.19 (233)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	5.51 (140)	140	1.87 (.85)
H_2L	9.19 (233)	3.12 (79)	.63 (16)	.79 (20)	2.98 (76)	1.56 (39.5)	2.6 (66)	5.51 (140)	140	1.85 (.84)
H_3S	10.86 (276)	4.65 (118)	.96 (24)	.79 (20)	3.68 (93.5)	1.73 (44)	2.6 (66)	6.5 (165)	270	3.56 (1.61)
H_4S	10.86 (276)	4.65 (118)	.96 (24)	.79 (20)	3.68 (93.5)	1.73 (44)	2.6 (66)	6.5 (165)	270	3.29 (1.49)
H_4L	14.36 (365)	4.65 (118)	.96 (24)	.79 (20)	3.68 (93.5)	1.73 (44)	2.6 (66)	10.00 (254)	270	4.11 (1.86)

Special Note: Dimensions are in **inches** (millimeters); weight is in **pounds** (kilograms).

\* Clearance required to remove bowl.

## 1 1/4" to 3" Housings



### Specifications

Max. Pressure: **500 PSIG** (34 bar)  
 Safety Factor: Max. operating to burst 4:1  
 Max. Temp.: **175°F** (79°C) with option to **450°F** (232°C)  
 Seals: Nitrile Std./Fluorocarbon optional  
 Materials: Aluminum - 356 Sand cast heads;  
 6061 Drawn bowls  
 Coatings: Chromated heads and bowls;  
 Powder painted exterior  
 Design: In-line threaded bowl to head

*Note: Manual Drain Port is 1/8" FNPT when tee valve is removed from drain bushing.*

Model	A	B	C	D	E	F	G	H*	Sump (ml)	Weight
H_5S	18.23 (463)	6.0 (152)	1.65 (42)	.83 (21)	5.67 (144)	1.85 (47)	2.6 (66)	13.50 (343)	440	12.11 (5.49)
H_6S	18.23 (463)	6.0 (152)	1.65 (42)	.83 (21)	5.67 (144)	1.85 (47)	2.6 (66)	13.50 (343)	440	11.97 (5.43)
H_8E	18.23 (463)	6.0 (152)	1.65 (42)	.83 (21)	5.67 (144)	1.85 (47)	2.6 (66)	13.50 (343)	440	11.97 (5.43)
H_8S	24.23 (617)	6.0 (152)	1.65 (42)	.83 (21)	5.67 (144)	1.85 (47)	2.6 (66)	19.25 (489)	530	14.00 (6.35)
H_8L	29.23 (742)	6.0 (152)	1.65 (42)	.83 (21)	5.67 (144)	1.85 (47)	2.6 (66)	24.02 (610)	620	15.99 (7.25)
H_0L	35.70 (907)	8.0 (203)	2.4 (61)	.83 (21)	7.24 (184)	2.36 (60)	2.6 (66)	28.50 (724)	880	35.00 (15.87)
H_12L	35.70 (907)	8.0 (203)	2.4 (61)	.83 (21)	7.24 (184)	2.36 (60)	2.6 (66)	28.50 (724)	880	34.14 (15.48)

Special Note: Dimensions are in **inches** (millimeters); weight is in **pounds** (kilograms).

\* Clearance required to remove bowl.

# Notes:



[www.finitefilter.com](http://www.finitefilter.com)

[finitefilter@parker.com](mailto:finitefilter@parker.com)



# Maintenance Bulletin - International H-Series

(1/4" to 1" NPT, BSPF, BSPT Sizes only)

MB-141

Compressed Air  
and Gas Filters

## INSTALLATION

Finite H-Series filters should be installed in a level pipeline, mounted vertically, the bowl downward with one bowl length clearance for element removal. The filter should be installed at the highest pressure point available, and as near as possible to the equipment to be protected and have a drip leg immediately upstream. The coalescers and particulate filters should be visible and easily accessible for periodic draining and maintenance.

The filters should be piped in accordance with the instruction tags, flow arrows or "IN" and "OUT." Should these tags become unreadable, install the coalescer so that flow passes through the filter tube from inside-to-outside. Plumb particulate and adsorber filters so that flow passes through the filter from outside-to-inside. The various filter locations relative to other equipment should be as follows (unless specific instructions are given to the contrary): (1) COALESCERS and WATER SEPARATORS are placed before the dryer. (2) The INTERCEPTOR (Particulate) goes ahead of the COALESCER when pre-filtration is required. (3) The INTERCEPTOR is installed downstream of desiccant dryers to prevent desiccant migration. (4) The ADSORBER is always preceded by a COALESCER.

When Coalescer or Interceptor differential pressure reaches clogged condition (6-10 PSID) replace element immediately. DO NOT ATTEMPT TO CLEAN FILTER TUBE. System contamination can result. DO NOT ATTEMPT TO RESEAT A FILTER TUBE. New serrated indentations can be formed causing leakage. DO NOT BY-PASS THE COALESCER unless the by-pass line is also filtered.

## OPERATION

Air coalescing is a continuous, balanced, steady-state process occurring at or below rated flow, which depends on two factors for high performance: (1) The bowl must be kept free of waste liquid build-up and (2) The element must be replaced when the differential pressure reaches 6-10 psid, 12 psid Maximum. Differential pressure can be sensed at the inlet and outlet ports by two gauges, or by Finite's DPI-13 differential pressure indicator, DPG-15 differential pressure gauge, or by observing system characteristics.

Bowl draining is accomplished by opening the manual drain valve (standard on all housings), at least once every 8 hours depending on the liquid load. The Finite Auto-Drain AD-12 is a useful tool that replaces manual draining. Finite's timed drain valve can be used to drain the bowl automatically.

A Finite coalescer, under normal system conditions, will operate for 6 to 12 months before reaching its Maximum differential pressure. A "PU" series Interceptor, or a "QU" series coalescing element with a pleated prefilter can be employed ahead of the coalescer to increase its life. The interceptor should be replaced when its differential pressure reaches 8 - 10 psid.

Finite coalescers are designed for nominal operation with 10-20 wt. oil. Any viscosity increase over that of 20 wt. oil must be offset by a proportionate oversizing of the filter element. Consult your Finite representative.

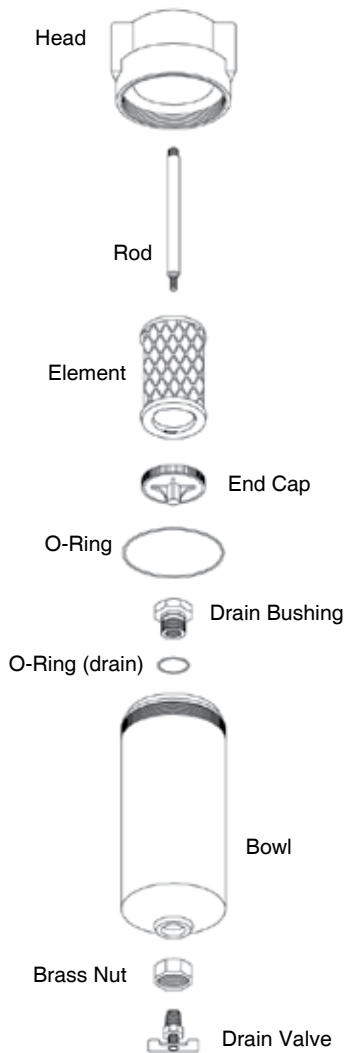
## TROUBLESHOOTING CHART

Problem	Probable Cause	Solution
Too High Initial Pressure Drop	Air flow Excessive for housing size. Filter media grade too fine.	Install larger filter. Install coarser element.
	Too much oil/water from compressor.	Pre-coalesce with grade 10 - oversize housing.
Premature Clogging (Air Flow Drops Off)	Lubricant improperly selected for compressor, causing varnish or carbonizing of lubricant.	Change oil, consult with lubricant supplier.
	Excessive inlet particulate contamination.	Prefilter with Interceptor.
	Excessive lubricants present on element caused by either high lubricant viscosity or very high inlet aerosol level.	Prefilter with Grade 10 and oversize coalescer to compensate.
	Oil/water emulsion forming on element.	Remove water by drip leg, aftercooler. Install mechanical separator upstream.
Oil Present Downstream of Filter	Ice forming or oil viscosity too high due to Excessively low unit temperature.	Raise temperature.
	Bowl not properly drained of waste liquids.	Drain regularly, use auto drain.
	Element not sealing.	Replace element.
	Filter piped backwards.	See "INSTALLATION"; Re-pipe.
	Filter being by-passed by valving.	Close valve.
	Contaminated air entering system from second source downstream.	Change pipe or relocate filter.
	Oil vapors condensing downstream.	Install an adsorber.
	Excessive inlet oil level.	Precoalesce with Grade 10 and possibly oversize.
	Element damaged, chemically attacked or not installed in housing.	Change and consult distributor or factory for other than neutral pH.
Oil present in pre-contaminated downstream piping.	Clean piping.	
Excessive flow surges.	Relocate filter, pre-coalesce with grade 10 and oversize coalescers.	

# Assembly Drawing/Parts List

1/4" to 1" NPT/BSPF/BSPT

Compressed Air  
and Gas Filters



Part Name Port Size	H_1S 1/4"	H_15S 3/8"	H_2S 1/2"	H_1L 1/4"	H_15L 3/8"	H_2L 1/2"	H_3S 3/4"	H_4S 1"	H_4L 1"
Head - NPT	41508	41509	41510	41508	41509	41510	41511		41512
Head (DPI) - NPT*	41513	41514	41515	41513	41514	41515	41516		41517
Head (P Ports) NPT							41518		41519
Head - BSPF	41429	41430	41431	41429	41430	41431	41432		41433
Head (DPI) - BSPF*	41439	41440	41441	41439	41440	41441	41442		41443
Head (P Ports) BSPF							41450		41451
Head - BSPT							41540		41541
Head (DPI) - BSPT*							41544		41545
Head (P Ports) BSPT							41548		41549
Elements:									
□C		□C10-025			□C10-050		□C15-060		□C15-095
□CU		□CU10-025			□CU10-050		□CU15-060		□CU15-095
□IU		□IU10-025			□IU10-050		□IU15-060		□IU15-095
□DS		□DS10-025			□DS10-050		□DS15-060		□DS15-095
□QU		□QU10-025			□QU10-050		□QU15-060		□QU15-095
3PU		3PU10-025			3PU10-050		3PU15-060		3PU15-095
100WSU		100WSU10-025			100WSU10-025		100WSU15-060		
AU		AU10-025			AU10-050		AU15-060		AU15-095
Rod		40076			40077		45068		45069
End Cap					45076				45077
End Cap (high temp)					41359				41038
O-Ring					76143				76235
O-Ring (high temp)					76143V				76235V
Brass Drain Bushing					23054				
O-Ring (drain)					76114V				
Bowl Only		41520			41521		41522		41523
Bowl Assy. w/Manual Drain		41529			41530		41531		41532
Brass Nut					23041				
Drain Valve					70010				
Manual Drain Kit (includes Drain Valve, Brass Nut, Brass Drain Bushing and O-Ring) EBD-12									

□=insert grade 2, 4, 6, 8 or 10

\* DPI-13 or DPG-15 Differential pressure indicator required.

## Optional Accessories

### Differential Pressure Indicator Options

(When installed - Max. Operating pressure = 250 PSIG @ 175°F)  
DPI-13 includes all parts listed out below plus a base plate (41117) for remote mounting.

Also available:

**Kit 2095** (DPI hole block off kit)

**Kit 2003** (contains all DPI-13 parts listed below)

Also available DPI-13 Spare Parts:

Cap Screws - (2) 70005



Bracket - 40894



Shell - 40605



Spring - 40006



Piston - 40604



Diaphragm - 41569



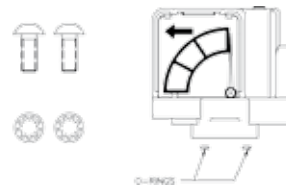
### Automatic Drain Valve AD-12



(When installed - Max. Operating Pressure = 250 PSIG @ 175°F)

### Differential Pressure Gauge DPG-15

(When installed - Max. Operating Pressure = 500 PSIG @ 175°F)



Note: DPG-15 comes with two o-rings and two screws (shown above) for mounting.

### Mounting Brackets

**BK-M**  
(1/4" - 1/2")

**BK-3**  
(3/4" - 1")

# Maintenance Bulletin - International H-Series

(1 1/4" to 3" NPT, BSPF, BSPT Sizes only)

MB-143

Compressed Air  
and Gas Filters

## INSTALLATION

Finite H-Series filters should be installed in a level pipeline, mounted vertically, the bowl downward with one bowl length clearance for element removal. The filter should be installed at the highest pressure point available, and as near as possible to the equipment to be protected and have a drip leg immediately upstream. The coalescers and particulate filters should be visible and easily accessible for periodic draining and maintenance. Filters should be piped according to these instructions also following the flow direction label on the filters.

Filters up to and including 2" connection sizes flow as follows:

- Coalescers/WS:** from port 1 to port 2
- Interceptors:** from port 2 to port 1
- Adsorbers:** from port 2 to port 1.

Filters with connection sizes 2 1/2" and 3" flow as follows:

- Coalescers/WS:** from port 1 to port 2
- Interceptors:** from port 1 to port 2
- Adsorbers:** from port 1 to port 2.

The following are recommended filter locations relative to other compressed air equipment (unless specific instructions are given to the contrary):

- (1) COALESCERS and WATER SEPARATORS (WS) (liquid removal) are placed before the dryer.
- (2) The INTERCEPTOR (particulate removal) should be installed ahead of the COALESCER when prefiltration is required.
- (3) The INTERCEPTOR (particulate removal) can also be installed downstream of desiccant dryers to prevent desiccant migration.
- (4) The ADSORBER (vapor removal) is always preceded by a COALESCER.

When Coalescer or Interceptor differential pressure reaches clogged condition (6-10 PSID) replace element immediately. DO NOT ATTEMPT TO CLEAN FILTER TUBE. System contamination can result. DO NOT BY-PASS THE COALESCER unless the by-pass line is also filtered.

## OPERATION

Air coalescing is a continuous, balanced, steady-state process occurring at or below rated flow, which depends on two factors for high performance: (1) The bowl must be kept free of waste liquid buildup and (2) The element must be replaced when the differential pressure reaches 6-10 psid, 12 psid Maximum. Differential pressure can be sensed at the inlet and outlet ports by two gauges, or by Finite's DPI-13 differential pressure indicator, DPG-15 differential pressure gage, or by observing system characteristics.

Bowl draining is accomplished by opening the manual drain valve (standard on all housings), at least once every 8 hours depending on the liquid load. The Finite Auto-Drain AD-12 is a useful tool that replaces manual draining. Finite has an assortment of electrically timed drain valves that can be used to drain the bowl automatically.

A Finite coalescer, under normal system conditions, will operate for 6 to 12 months before reaching its Maximum differential pressure. A "PU" series Interceptor, or a "QU" series coalescing element with a pleated prefilter can be employed ahead of the coalescer to increase its life. The interceptor should be replaced when its differential pressure reaches 8 - 10 PSID.

Finite coalescers are designed for nominal operation with 10-20 wt. oil. Any viscosity increase over that of 20 wt. oil must be offset by a proportionate oversizing of the filter element. Consult your Finite representative.



## DANGER

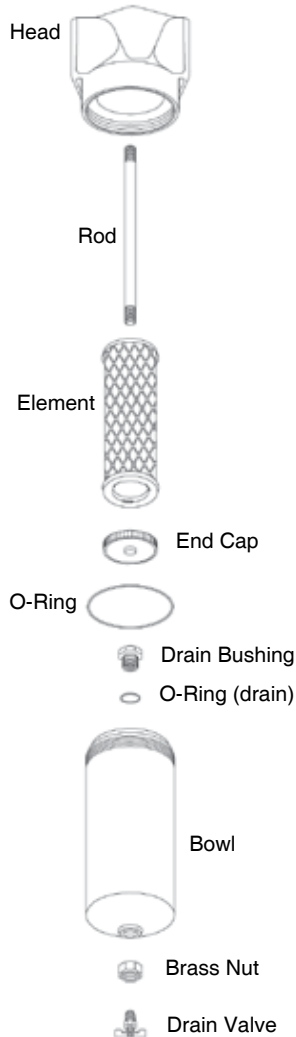
Filter housings must be depressurized before performing any maintenance activities.

## TROUBLESHOOTING CHART

Problem	Probable Cause	Solution
Too High Initial Pressure Drop	Air flow Excessive for housing size. Filter media grade too fine.	Install larger filter. Install coarser element.
	Too much oil/water from compressor.	Precoalesce with grade 10 - oversize housing.
Premature Clogging (Air Flow Drops Off)	Lubricant improperly selected for compressor, causing varnish or carbonizing of lubricant.	Change oil, consult with lubricant supplier.
	Excessive inlet particulate contamination.	Prefilter with Interceptor.
	Excessive lubricants present on element caused by either high lubricant viscosity or very high inlet aerosol level.	Prefilter with Grade 10 and oversize coalescer to compensate.
	Oil/water emulsion forming on element.	Remove water by drip leg, aftercooler. Install mechanical separator upstream.
Oil Present Downstream of Filter	Ice forming or oil viscosity too high due to Excessively low unit temperature.	Raise temperature.
	Bowl not properly drained of waste liquids.	Drain regularly, use auto drain.
	Element not sealing.	Replace element.
	Filter piped backwards.	See "INSTALLATION"; Re-pipe.
	Filter being by-passed by valving.	Close valve.
	Contaminated air entering system from second source downstream.	Change pipe or relocate filter.
	Oil vapors condensing downstream.	Install an adsorber.
Excessive inlet oil level.	Precoalesce with Grade 10 and possibly oversize.	
Element damaged, chemically attacked or not installed in housing.	Element damaged, chemically attacked or not installed in housing.	Change and consult distributor or factory for other than neutral pH.
	Oil present in precontaminated downstream piping.	Clean piping.
	Excessive flow surges.	Relocate filter, precoalesce with grade 10 and oversize coalescers.

## Assembly Drawing/Parts List

1 1/4" to 3" NPT/BSPF/BSPT



Part Name Port Size	H_5S 1 1/4"	H_6S 1 1/2"	H_8E 2"	H_8S 2"	H_8L 2"	H_OL 2 1/2"	H_12L 3"
Head - NPT	41328	41329	41330	41330	41330	41331	41332
Head (DPI) - NPT*	41333	41334	41335	41335	41335	41336	41337
Head, Δ P Ports NPT	41338	41339	41340	41340	41340	41341	41342
Head - BSPF	41434	41435	41436	41436	41436	41437	41438
Head (DPI), BSPF	41444	41445	41446	41446	41446	41447	41448
Head, Δ P Ports BSPF	41452	41453	41454	41454	41454	41455	41456
Head - BSPT	41478	41479	41480	41480	41480	41481	41482
Head (DPI) - BSPT*	41488	41489	41490	41490	41490	41491	41492
Head, Δ P Ports BSPT	41498	41499	41500	41500	41500	41501	41502
Head (DPI) - SAE32	N/A	N/A	42106	42106	42106	N/A	N/A
Elements:							
□CU		□CU25-130	□CU25-187	□CU25-235	□CU35-280		
□DV		□DV25-130	□DV25-187	□DV25-235	□DV35-280		
□QU		□QU25-130	□QU25-187	□QU25-235	□QU35-280		
7CVP		7CVP25-130	7CVP25-187	7CVP25-235	7CVP35-280		
3PU		3PU25-130	3PU25-187	3PU25-235	3PU35-280		
100WS		100WS25-130	100WS25-187	100WS25-235	100WS35-280		
AU		AU25-130	AU25-187	AU25-235	AU35-280		
Rod		41347	41348	41349	41585		
End Cap			45079		45080		
End Cap (high temp)			41040		45080		
O-Ring			76246		75046		
O-Ring (high temp)			76246V		75046V		
Brass Drain Bushing			23054				
O-Ring (drain)			76114V				
Bowl Only		41464	41465	41466	41467		
Bowl Assy. w/Manual Drain		41533	41534	41535	41536		
Brass Nut			23041				
Drain Valve			70010				
Manual Drain Kit (includes Drain Valve, Brass Nut, Brass Drain Bushing and O-Ring) EBD-12							

□=insert grade 2, 4, 6, 8 or 10

\* DPI-13 or DPG-15 Differential pressure indicator required.

## Optional Accessories

### Differential Pressure Indicator Options

(When installed - Max. Operating pressure = 250 PSIG @ 175°F)  
DPI-13 includes all parts listed out below plus a base plate (41117) for remote mounting.

Also available:

**Kit 2095** (DPI hole block off kit)

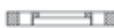
**Kit 2003** (contains all DPI-13 parts listed below)

Also available DPI-13 Spare Parts:

Cap Screws - (2) 70005



Bracket - 40894



Shell - 40605



Spring - 40006



Piston - 40604



Diaphragm - 41569



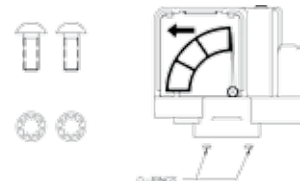
### Automatic Drain Valve AD-12



(When installed - Max. Operating Pressure = 250 PSIG @ 175°F)

### Differential Pressure Gauge DPG-15

(When installed - Max. Operating Pressure = 500 PSIG @ 175°F)



Note: DPG-15 comes with two o-rings and two screws (shown above) for mounting.