

# THF Series

Industrial High Efficiency Filters



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

**Titus**  
FILTERS

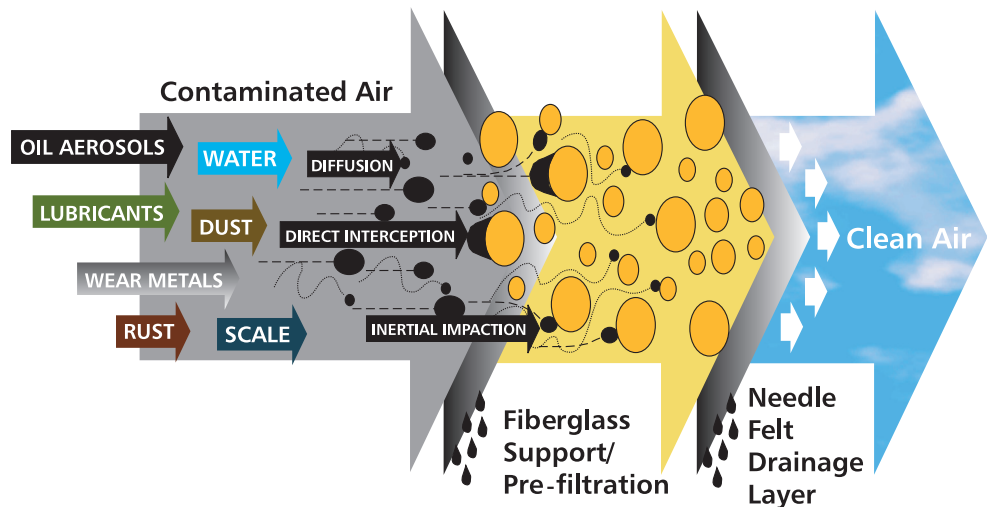
# Save energy dollars and protect your air system...

The Compressed Air Challenge™, a government/industry sponsored energy savings awareness program, estimates that \$1.5 billion dollars a year is spent in the US toward compressed air. Over 20% of this could be saved by better design and management of compressed air systems. Excessive filter pressure drop is a key target to achieve this goal.

The Titus Company's THF Industrial High Efficiency Filters can save energy dollars because they have a lower pressure drop throughout the Filter Element life, when compared to competitive filters using older element technology.

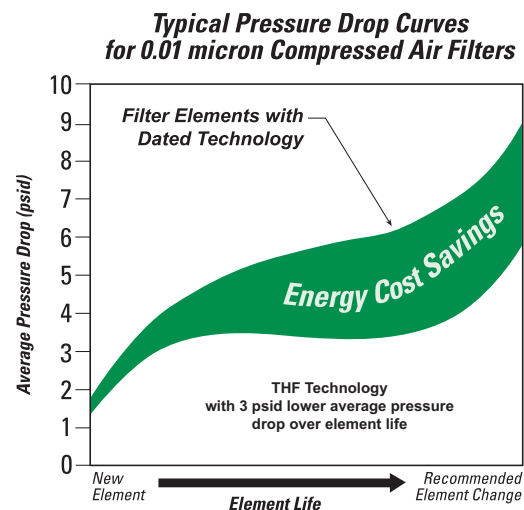
Don't be fooled by calculated savings from competitive de-mister filter modules. They do not have the efficiency of the Titus element, so tiny particulates flow downstream to pneumatic equipment, causing the wear and damage that a filter should prevent.

Your compressed air is contaminated! Airborne water vapor and dust are drawn into your compressor intake. The compressor adds oil aerosols, vapors and wear metals. Piping can add rust and scale.

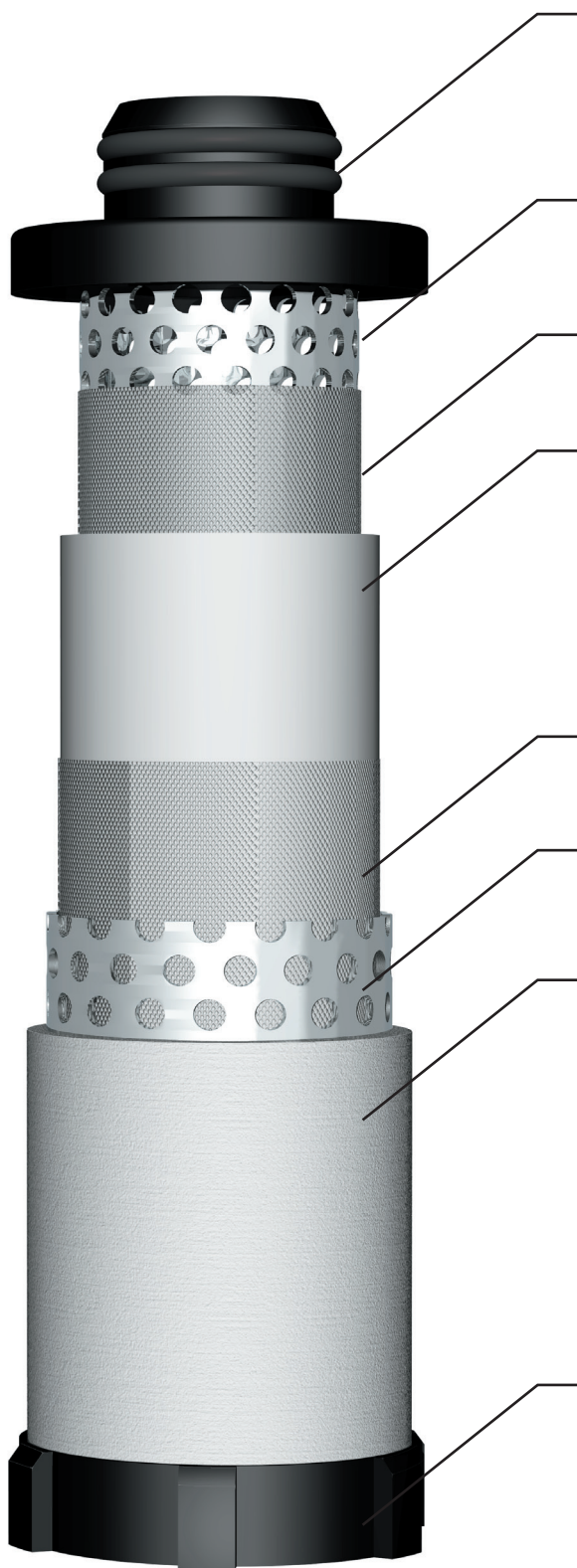


## Real Dollars Example:

With a 200 HP Air Compressor running 24 hours per day, at 93% motor efficiency, and an electrical cost of \$0.10/kW-HR, the 3 psid lower average pressure drop of a THF filter would represent an annual saving of over \$3,000! A system that has three filters can save up to \$9,000 per year.



# Introducing high technology filter elements



Push-Fit Design

## Unique push-fit, double o-ring seal

Filter element-to-head chamfered connection for ease of installation and removal; push-fit design eliminates tie rods.

## Stainless steel perforated support core

## Fiberglass inner support

Provides pre-filtration of larger particles.

## Deep bed multi-wrap Borosilicate glass microfiber

Large flow passages reduce high pressure drop and allow for a high dirt holding capacity. Wrap tension prevents channeled air flow.

## Fiberglass outer support

## Stainless steel perforated support core

## Polyester needle felt sleeve

Provides a unique coalescing action to quickly drain oil and will not crush like competitive foam socks. Ultrasonically welded down length which will not decay with age.

## No foam socks

Many other brands of filters include a foam sock that is vulnerable to lubricants, corrosives, heat, and decay.

## End cap

A durable and non-corrosive glass filled nylon which is attached to the element with a multi-part urethane resin. The element is then held in place by internal ribs within the filter housing for positive sealing.



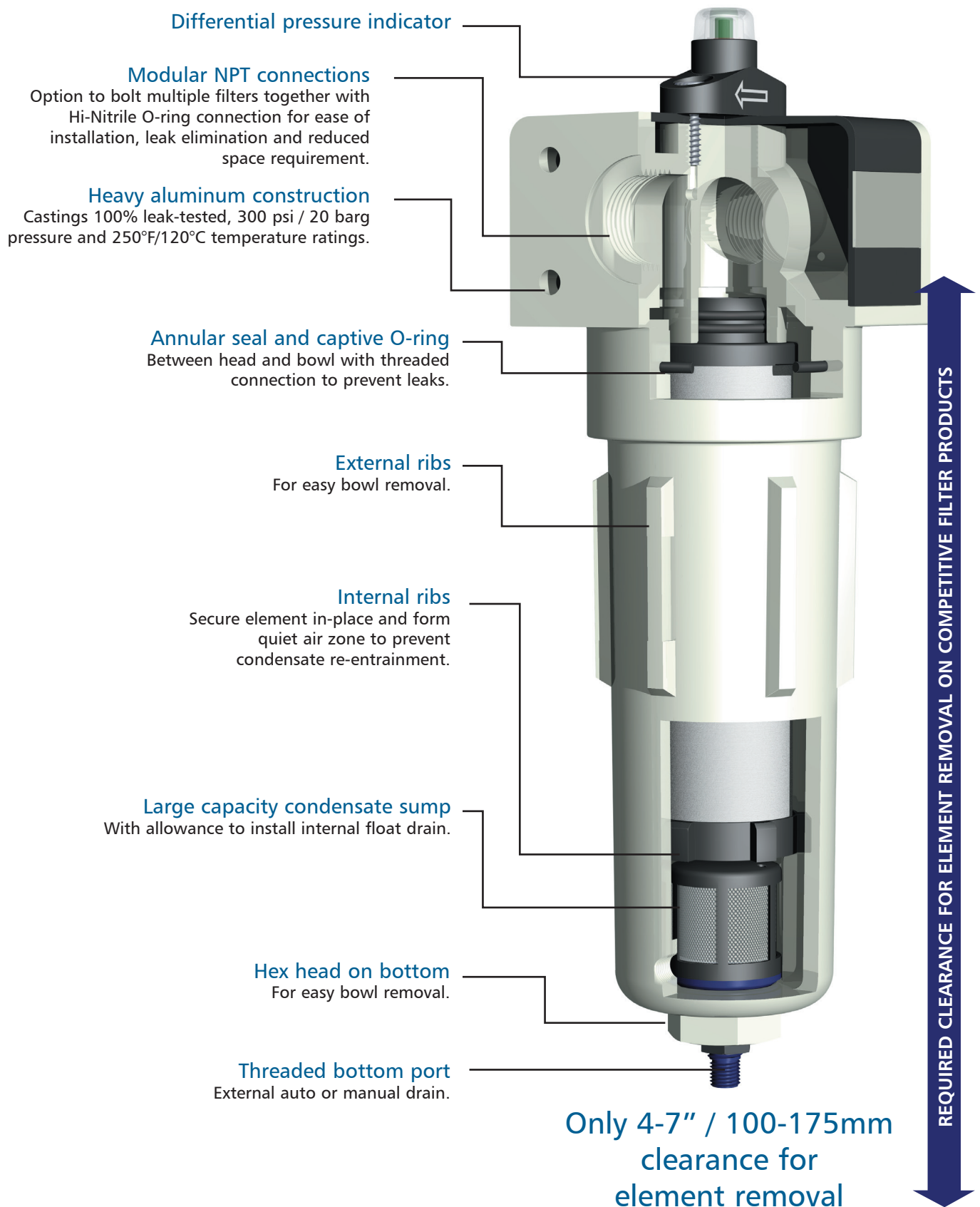
Suitable for temperatures up to 250°F/120°C  
Compatible with synthetic and mineral lubricants.

Low average pressure drop over life of element. Regular replacement suggested for best performance and energy cost savings.

## Low operating cost

REGULAR FILTER ELEMENT REPLACEMENT SAVES MONEY. IT MINIMIZES PRESSURE DROP AND ENSURES PROTECTION OF YOUR COMPRESSED AIR SYSTEM, PNEUMATIC EQUIPMENT, AND FINISHED PRODUCT.

# 21st century filtration



# Features and benefits

## Performance monitoring

- Easy indication of excessive pressure drop to reduce energy costs.

## Pop-up DP indicators (standard on THF20/30)

- Nylon pop-up is compatible with synthetic oils and lubricants.

## Delta-P gauge (standard on THF65 and above)

- DP gauge face is not pressurized.
- Unique magnetic sensor survives high impact.
- DP gauge can be remote or panel mounted.

## Remote contact DP alarm (optional)

- Dry contacts close at 6 psid / 400mbar to send a notification signal to a bell, light, or control panel.
- Can be field installed.

## Modular head design

- Multiple filters can be bolted together with O-ring seal.
- Minimizes threaded connections - leak points.
- Simplifies installation.
- Saves space.
- Modular mounting kits available with high tensile strength cap screws with nuts and O-ring.

## Side port (65-16100 scfm)

- Side mounting of external auto drain for low clearance applications.
- Can be used as a separate manual drain or as a vent line connection to an external demand drain mounted to bottom connection.

## Bottom drain adapter plate (1000-1500 scfm)

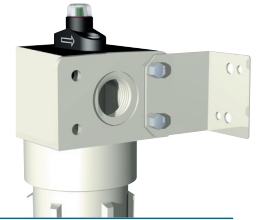
- Releases drain adapter for ease of float drain maintenance.
- Easy disconnect of external drain when element is changed.



# Accessories

## Mounting Brackets

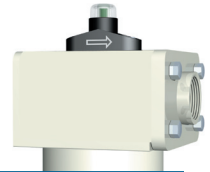
Allows convenient wall-mounting of single or multiple filters.



## Port Plates

Allows for easy change from standard port size to match larger pipe size and reduce pipe fittings.

Prevents costly oversizing of filters to pipe size.



## Connecting Kits

Allows linking of multiple filters in air system.

Available for models 15-1500 SCFM.



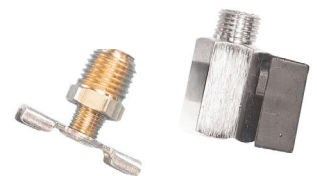
## Ring Spanner

Allows for easy bowl removal.



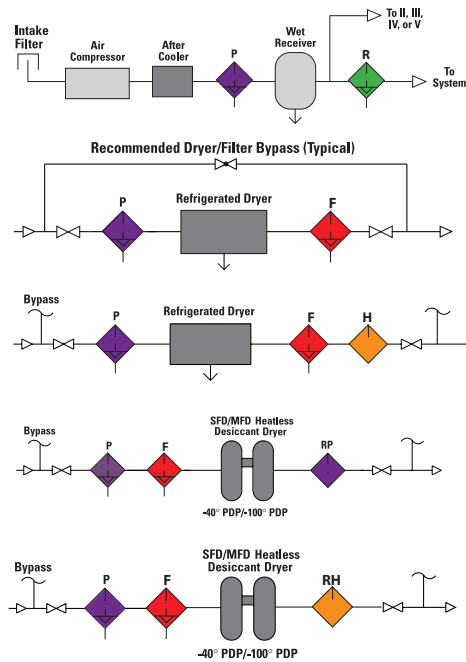
## Manual Drain Valves

Available for all models.





# Typical compressed air treatment systems



## Filter grade selection

- R** General purpose, coalescing and bulk contaminant removal; point-of-use.
- P** Pre-filtration to refrigerated dryer; higher efficiency, coalescing; point-of-use.
- F** High efficiency coalescing oil removal after refrigerated dryer; upstream of desiccant dryers.
- H** Oil vapors/odor/taste removal downstream of F filter.
- RP** Reverse Flow P afterfilter to heatless desiccant dryer.
- RH** Reverse Flow H Combination particulate/vapor removal.

## Large flow ASME and CRN code filter vessels

### Features and benefits

- Welded to ASME VIII construction.
- A side mounted differential pressure gauge is fitted as standard, this can be read clearly from either side.
- Same unique filtration media as in aluminum casting.
- Inlet/outlet tappings for DP reading.
- 2" to 12" flanges, up to 16100 scfm.
- Maximum working pressure 235 psig /16 barg and maximum temperature 250°F /120°C.
- Lifting lug.
- One element, common to all sizes.
- Stainless Steel tie rod connections.
- Stainless Steel distribution plate.
- Painted inside and out.
- Side drain port with dip tube for low clearance applications or for vent line to demand drains.
- A bottom drain port is standard to ease installation of demand drains and balance pipes.

## Compressed air purity classes ISO 8573-1

The ISO 8573 group of International Standards is used for the classification of compressed air. It also provides the test methods and analytical techniques for each type of contaminant. The table below summarizes the maximum contaminant levels specified in ISO 8573 Part 1 (2010) for the various compressed air quality classes. Each compressed air classification can be achieved by installing a specific filter grade or a combination of filter grades, depending upon required performance.

Purity Class	Particles				Water		Oil
	Maximum number of particles per cubic meter as a function of particle size, d <sup>a</sup>				Vapor	Liquid <sup>a</sup>	Total Oil <sup>a</sup>
	0.1µm < d ≤ 0.5µm	0.5µm < d ≤ 1.0µm	1.0µm < d ≤ 5.0µm	Mass Concentration Cp mg/m <sup>3</sup>	Pressure Dewpoint °C	Concentration Liquid Water Cw g/m <sup>3</sup>	Liquid, aerosol, vapor mg/m <sup>3</sup>
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤ 20 000	≤ 400	≤ 10	-	≤ -70	-	≤ 0.01
2	≤ 400 000	≤ 6 000	≤ 100	-	≤ -40	-	≤ 0.1
3	-	≤ 90 000	≤ 1 000	-	≤ -20	-	≤ 1
4	-	-	≤ 10 000	-	≤ +3	-	≤ 5
5	-	-	≤ 100 000	-	≤ +7	-	-
6	-	-	-	0 < Cp ≤ 5	≤ +10	-	-
7	-	-	-	5 < Cp ≤ 10	-	Cw ≤ 0.5	-
8	-	-	-	-	-	0.5 < Cw ≤ 5	-
9	-	-	-	-	-	5 < Cw ≤ 10	-
X	-	-	-	Cp > 10	-	Cw > 10	>5

Specification		R General Purpose Point-of-Use	P Pre-filtration / Coalescing	F High Efficiency	H Activated Charcoal	D Duplex
Particle removal	micron	5	1	0.01	0.01	0.01
Maximum carryover at 68°F /20°C	ppm	5	0.1	0.01	0.003	0.003
Recommended temperature	°F / °C	100 / 38	100 / 38	100 / 38	77 / 25	77 / 25
Maximum temperature	°F / °C	250 / 120	250 / 120	250 / 120	250 / 120	250 / 120
Pressure drop - clean and dry	psid / mbar	0.4 / 30	1.0 / 70	1.5 / 100	1 / 70	2 / 140
Pressure drop - oil saturated	psid / mbar	1.0 / 70	2.0 / 140	3.0 / 210	(see note)	3.0 / 210
Pressure drop - change element	psid / mbar	6.0 / 400	6.0 / 400	6.0 / 400	(see note)	(see note)
Element media		borosilicate microfiber multi-wrap			carbon impregnated paper	combined F&H
Housing material		high quality aluminum/ASME high carbon steel				
Maximum working pressure	psig / barg	300 / 20 (230 / 16 with internal float drain) /ASME code vessels 235 / 16				

Note: Activated charcoal filters must not operate in oil saturated conditions and will not remove certain types of gases including carbon monoxide and carbon dioxide. Change interval depends on application, please contact your distributor.

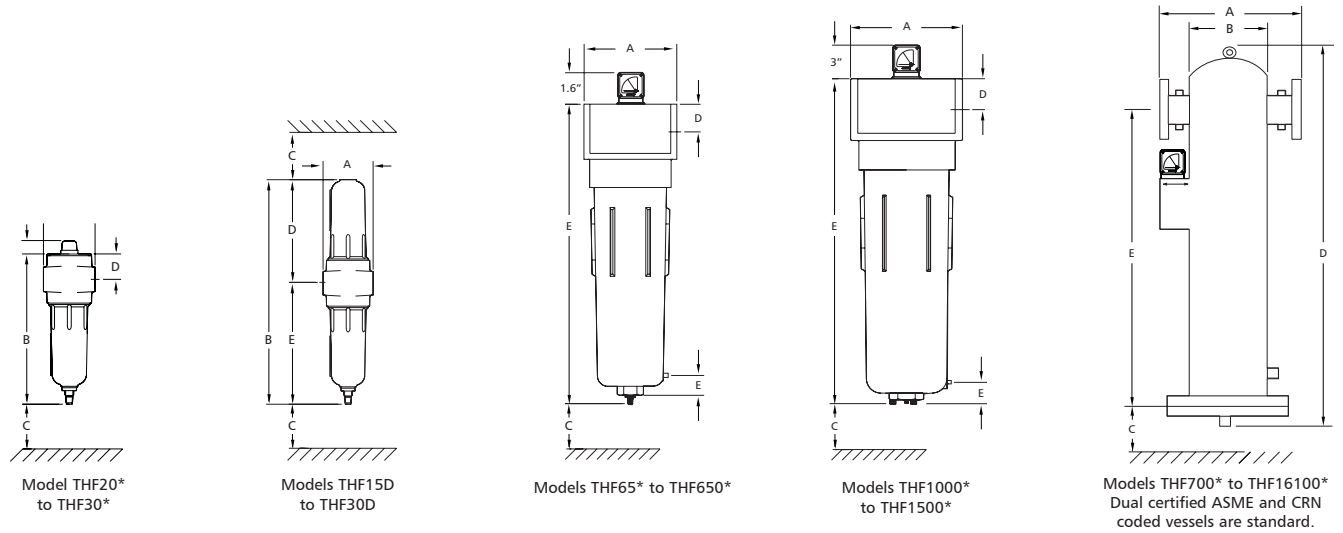
### Correction Factors

For maximum flow rate, multiply model flow rate shown in the top chart by the correction factor corresponding to the working pressure. See specifications for maximum pressure.

Operating Pressure (psig)	10	20	30	40	50	60	70	80	90	100	110	125	150	175	200	225	250	275	300
Correction Factor	0.32	0.45	0.55	0.64	0.71	0.78	0.84	0.90	0.95	1.00	1.05	1.12	1.22	1.32	1.41	1.49	1.57	1.65	1.72

Note: To reduce pressure drop by 50%, reduce flow rate by 30%.

# Dimensions



Aluminum housings

ASME & CRN code vessels

Model Number	Flow Rate		Dimensions (inches)					NPT Connections			Weight lbs	Replacement Element model
	SCFM	Nm <sup>3</sup> /h	A	B	C	D	E	In/Out	Side	Bottom**		
THF15D	15	25	3.00"	12.00"	4.00"	6.00"	7.00"	1/4"	N/A	1/4" MPT	2.0	THF15DE***
THF30D	30	51	3.00"	12.00"	4.00"	6.00"	7.00"	3/8"	N/A	1/4" MPT	2.0	THF30DE***
THF20*	20	34	3.00"	7.5"	4.00"	1.50"	N/A	1/4"	N/A	1/4" MPT	1.5	THF20 [ * ] E
THF30*	30	51	3.00"	7.50"	4.00"	1.50"	N/A	3/8"	N/A	1/4" MPT	1.5	THF30 [ * ] E
THF65*	65	110	4.50"	10.50"	6.00"	1.50"	1.25"	1/2"	1/4"	1/4" MPT	4.5	THF65 [ * ] E
THF75*	75	128	4.50"	10.50"	6.00"	1.50"	1.25"	3/4"	1/4"	1/4" MPT	4.5	THF75 [ * ] E
THF100*	100	170	4.50"	14.00"	6.00"	1.50"	1.25"	1"	1/4"	1/4" MPT	5.5	THF100 [ * ] E
THF150*	150	255	4.50"	14.00"	6.00"	1.50"	1.25"	1"	1/4"	1/4" MPT	5.5	THF150 [ * ] E
THF225*	225	382	5.75"	19.00"	6.50"	2.00"	1.50"	1 1/2"	1/2"	1/4"	12.0	THF225 [ * ] E
THF300*	300	510	5.75"	19.00"	6.50"	2.00"	1.50"	1 1/2"	1/2"	1/4"	12.0	THF300 [ * ] E
THF450*	450	765	5.75"	19.00"	6.50"	2.00"	1.50"	2"	1/2"	1/4"	12.0	THF450 [ * ] E
THF650*	650	1105	5.75"	26.75"	6.50"	2.00"	1.50"	2"	1/2"	1/4"	12.5	THF650 [ * ] E
THF1000*	1000	1700	9.00"	27.50"	7.00"	2.50"	1.50"	3"	1/2"	1/2"	32.0	THF1000 [ * ] E
THF1250*	1250	2125	9.00"	32.50"	7.00"	2.50"	1.50"	3"	1/2"	1/2"	33.5	THF1250 [ * ] E
THF1500*	1500	2550	9.00"	38.50"	7.00"	2.50"	1.50"	3"	1/2"	1/2"	35.5	THF1500 [ * ] E
THF700*	700	1190	12.50"	5.56"	32.00"	46.60"	37.60"	2" flg	1/2"	1/2"	92	THF700 [ * ] E (1 ea.)
THF1400*	1400	2380	18.00"	8.63"	32.00"	45.30"	38.30"	3" flg	1/2"	1/2"	215	THF700 [ * ] E (2 ea.)
THF2100*	2100	3570	18.00"	10.80"	32.00"	48.20"	38.40"	4" flg	1/2"	1/2"	326	THF700 [ * ] E (3 ea.)
THF2800*	2800	4760	20.00"	12.80"	32.00"	50.30"	39.30"	6" flg	1/2"	1/2"	439	THF700 [ * ] E (4 ea.)
THF3500*	3500	5950	20.00"	12.80"	32.00"	50.30"	39.30"	6" flg	1/2"	1/2"	439	THF700 [ * ] E (5 ea.)
THF4200*	4200	7140	20.00"	14.00"	32.00"	54.30"	40.40"	6" flg	1/2"	1"	536	THF700 [ * ] E (6 ea.)
THF5600*	5600	9520	24.00"	16.00"	32.00"	55.10"	40.60"	8" flg	1/2"	1"	647	THF700 [ * ] E (8 ea.)
THF7000*	7000	11900	28.00"	18.00"	32.00"	58.10"	42.60"	8" flg	1/2"	1"	778	THF700 [ * ] E (10 ea.)
THF8400*	8400	14280	28.00"	18.00"	32.00"	58.10"	42.60"	10" flg	1/2"	1"	778	THF700 [ * ] E (12 ea.)
THF9800*	9800	16660	28.00"	20.00"	32.00"	59.40"	42.80"	10" flg	1/2"	1"	936	THF700 [ * ] E (14 ea.)
THF11200*	11200	19040	33.00"	24.00"	32.00"	61.00"	43.20"	10" flg	1/2"	1"	1214	THF700 [ * ] E (16 ea.)
THF12600*	12600	21420	33.00"	24.00"	32.00"	61.00"	43.20"	10" flg	1/2"	1"	1214	THF700 [ * ] E (18 ea.)
THF16100	16100	27370	CF	CF	32.00"	CF	CF	12" flg	1/2"	1"	CF	THF700 [ * ] E (23 ea.)

\* Fill in element grade (R,P,F,H,RP,RH) to appropriate model number. \*\* Bottom drain, 1/8" NPT with mechanical float drain. \*\*\*Includes 1 ea. of F&H grade element.

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