



Platinum Natural Gas Solutions

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THE HIGHEST STANDARD IN MEASUREMENT AND REGULATION



# T-TYPE & IN-LINE FILTERS

HAM-LET H-600 | H-600R | H-600 CNG



Platinum Natural Gas Solutions

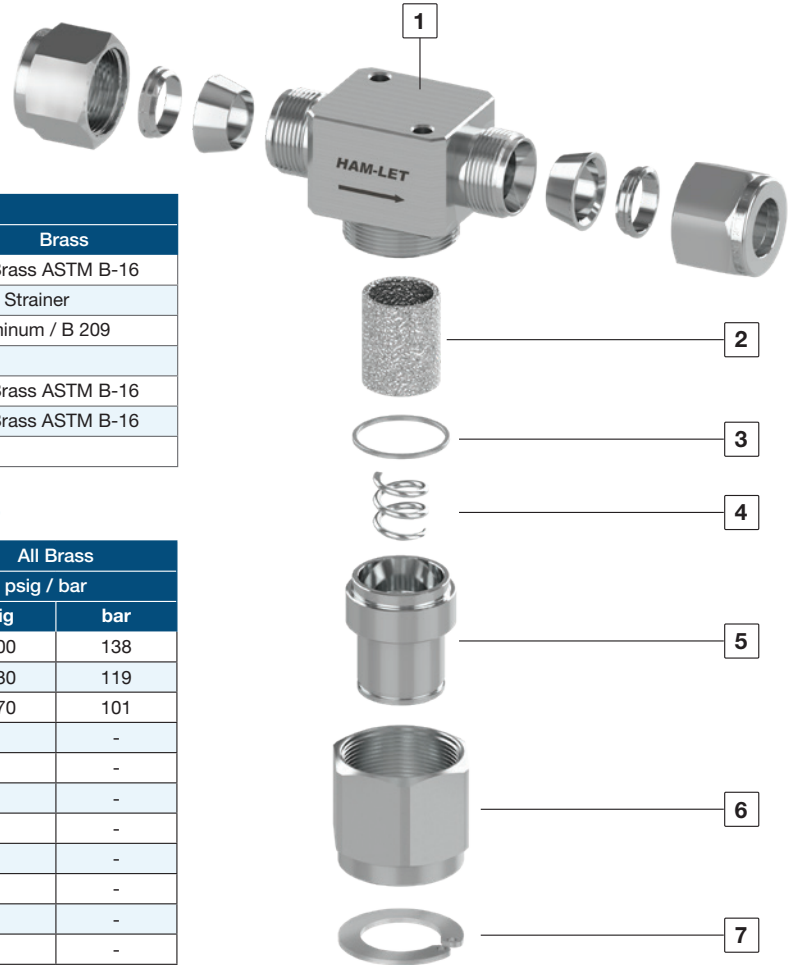


## H-600R FEATURES

- Bar stock 316 SST. or brass construction
- On-line maintenance
- High-pressure characteristics 6000 psi (413 bar) in 316 SST. and 2000 psi (137 bar) in brass
- LET-LOK® Ends, Male & Female NPT and HTC® Face Seal
- Replaceable sintered filtration elements are available in 0.1, 0.5, 2, 7, 15, 40, 60, 90, µm.
- Replaceable strainer filtration elements are available in 140, 230, 440µm
- ECE R110 approved for CNG / NGV as an option

## GENERAL

The H-600R Series is a T-type filtration device which protects system components from fluid particles and contaminants. The H-600R provides easy on-line maintenance without disassembling it from the system.



## T-TYPE FILTER MATERIALS OF CONSTRUCTION

No.	Components	Qty	Material	
			316 St. St.	Brass
1	Body	1	SST ASTM A-479	Brass ASTM B-16
2	Filtration Element	1	316 SST (Sintered) / Strainer	
3	Gasket Ring	1	316 SST (Silver Plated)	Aluminum / B 209
4	Spring	1	SST 302	
5	Insert	1	SST ASTM A-479	Brass ASTM B-16
6	Nut	1	316 SST (Silver Plated)	Brass ASTM B-16
7	Locking Ring	1	SST 304	

## T-TYPE FILTERS PRESSURE TEMPERATURE RATING

Temperature °F (°C)		All 316 SST		All Brass	
		Allowed Working Pressure, psig / bar			
Min.	Max.	psig	bar	psig	bar
-20 (-28)	100 (37)	6000	414	2000	138
	200 (93)	5160	356	1730	119
	300 (148)	4660	321	1470	101
	400 (204)	4280	295	-	-
	500 (260)	3980	274	-	-
	600 (315)	3760	259	-	-
	650 (343)	3700	255	-	-
	700 (371)	2600	248	-	-
	750 (398)	3520	243	-	-
	800 (426)	3460	239	-	-
850 (454)	3380	233	-	-	
900 (482)	3280	223	-	-	

**NOTE:** The maximum allowed working pressure that is marked on the valve may be limited according to the pressure limitations that are recommended by the tubing / piping standards (Reference: LET-LOK tube fittings General Information).

## T-TYPE FILTERS FOR THE CNG/NGV PRESSURE TEMPERATURE RATING

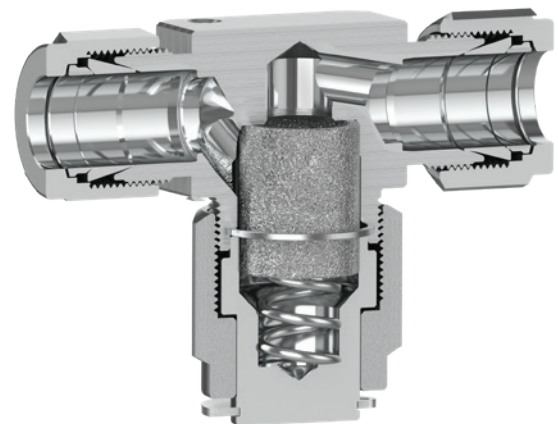
Temperature °F (°C)		All 316 SST	
		Allowed Working Pressure, psig / bar	
Min.	Max.	psig	bar
-40 (-40)	248 (120)	3770	260

## T-TYPE FILTERS FILTRATION AREA

	Connection Size	Sintered Element	Strainer Element
		in <sup>2</sup> (mm <sup>2</sup> )	in <sup>2</sup> (mm <sup>2</sup> )
T-type Filters	1/8", 1/4", 3mm, 6mm	1.3 (830)	1.0 (640)
	3/8", 1/2", 8-12mm	2 (1280)	1.7 (1090)

## DIFFERENTIAL PRESSURE RATING

Differential Pressure Rating	
Sintered Element	Strainer Element
1000 psi (bar)	



## CLEANING & PACKAGING

Every H-600 Series valve is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184). Oxygen Clean & Lubricant-Free Cleaning and packaging, in accordance with Special Cleaning and Packaging (procedure 8185), is available as an option.

## TESTING

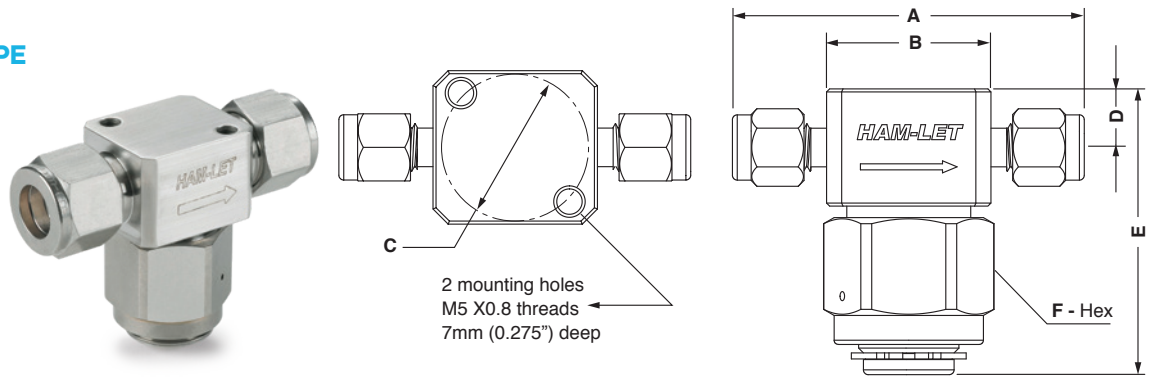
The H-600 and H-600R series design has been tested for proof and burst. Each H-600 and H-600R filter is factory tested for proper assembly with Nitrogen at 1000 psig (68 bar). No detectable leakage is allowed during shell test.

## T-TYPE FILTERS, PRESSURE DROP

Nominal Element Pore Size $\mu\text{m}$	Inlet Pressure, psig (bar)						Pressure Drop, psig (bar)					
	5 (0.34)		10 (0.68)		15 (1.0)		10 (0.68)		50 (3.4)		100 (6.8)	
	Air Flow						Water Flow					
	std ft3/min	std L/min	std ft3/min	std L/min	std ft3/min	std L/min	US gal/min	L/min	US gal/min	L/min	US gal/min	L/min
	<b>Connection Size: 1/8", 3MM</b>						<b>Connection Size: 1/8", 3MM</b>					
0.5	0.04	1.1	0.06	1.7	0.12	3.4	0.004	0.15	0.17	0.6	0.29	1.1
2	0.2	5.7	0.4	11.3	0.6	17.0	0.008	0.3	0.24	0.9	0.4	1.5
7	0.5	14.2	0.9	25.5	1.2	34.0	0.1	0.4	0.3	1.1	0.48	1.8
15	0.8	22.7	1.3	36.8	1.5	42.5	0.12	0.5	0.36	1.4	0.58	2.2
40	1.6	45.3	2.0	56.6	2.2	62.3	0.14	0.53	0.4	1.5	0.6	2.3
60	1.7	48.1	2.2	62.3	2.4	68.0	0.15	0.6	0.5	1.9	0.6	2.3
90	1.8	51.0	2.2	62.3	2.6	73.6	0.2	0.8	0.5	1.9	0.6	2.3
140, 230, 440	1.8	51.0	2.3	65.1	2.6	73.6	0.2	0.8	0.5	1.9	0.7	2.6
	<b>Connection Size: 1/4", 6MM</b>						<b>Connection Size: 1/4", 6MM</b>					
0.5	0.12	3.4	0.26	7.4	0.48	13.6	0.004	0.15	0.17	0.6	0.29	1.1
2	0.6	17.0	1.14	39.6	2.3	65.1	0.24	0.9	0.86	3.3	1.3	4.9
7	1.2	34.0	2.9	82.1	4.7	133.1	0.4	1.5	1.3	4.9	2	7.6
15	1.4	39.6	2.9	82.1	4.7	133.1	0.5	1.9	1.3	4.9	2.1	7.9
40	2.3	65.0	4.7	133	7.4	210	0.65	2.45	2.0	7.6	3.1	11.8
60	3.1	87.8	5.9	167.1	8.5	240.7	0.8	3.0	2.7	10.2	3.9	14.8
90	4.1	116.1	7.5	212.4	10	283.2	1.1	4.2	3.4	12.9	4.9	18.5
140, 230, 440	4.7	133.1	8.8	249.2	12	339.8	1.2	4.5	4.2	15.9	5.6	21.2
	<b>Connection Size: 3/8", 1/2", 8-12MM</b>						<b>Connection Size: 3/8", 1/2", 8-12MM</b>					
0.5	0.36	10.2	0.86	24.4	1.6	45.3	0.09	0.3	0.4	1.5	0.76	2.9
2	1.4	39.6	2.8	79.3	4	113.3	0.26	1.0	1.1	4.2	1.6	6.1
7	1.8	51.0	4.2	118.9	6.8	192.6	0.64	2.4	2.2	8.3	3.5	13.2
15	1.8	51.0	4.9	138.8	7.9	223.7	0.84	3.2	2.6	9.8	4.1	15.5
40	4.2	119	9.1	257.5	14	396	1.3	4.9	4.2	15.9	5.9	22.3
60	5.1	144.4	10	283.2	15	424.8	1.5	5.7	4.8	18.2	6.7	25.4
90	6.1	172.7	11	311.5	16	453.1	1.7	6.4	5.5	20.8	7.6	28.8
140, 230, 440	7.2	203.9	14	396.4	20	566.3	2.4	9.1	7.2	27.3	10	37.9

Outlet is open to atmosphere.

## H-600R T-TYPE



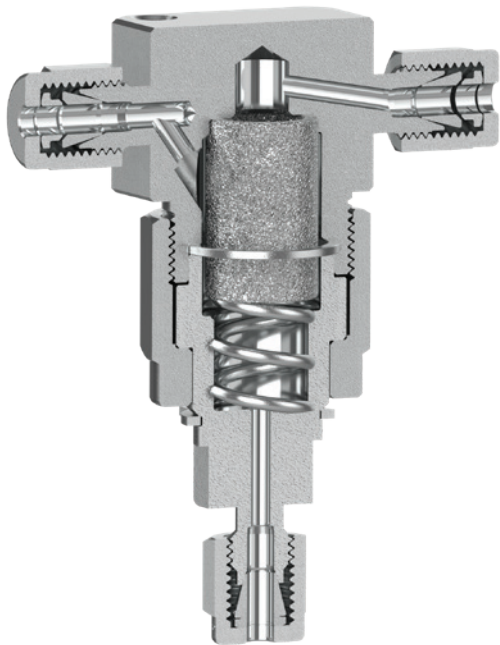
### T-TYPE STANDARD CONFIGURATION DIMENSIONS

Orifice		Connection Size		A		B		C		D		E		F	
mm	inch	Inlet	Outlet	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
2.39	0.094	1/8" LET-LOK	1/8" LET-LOK	57.6	2.27	27.1	1.07	25.4	1.00	9.80	0.39	47.4	1.87	25.4	1.00
4.41	0.174	1/4" LET-LOK	1/4" LET-LOK	62.8	2.47	26.8	1.06	25.4	1.00	9.80	0.39	47.4	1.87	25.4	1.00
5.41	0.213	3/8" LET-LOK	3/8" LET-LOK	72.2	2.84	33.6	1.32	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
6.35	0.250	1/2" LET-LOK	1/2" LET-LOK	77.3	3.04	33.4	1.31	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
4.41	0.174	6MM LET-LOK	6MM LET-LOK	62.4	2.46	26.8	1.06	25.4	1.00	9.80	0.39	47.6	1.87	25.4	1.00
5.41	0.213	8MM LET-LOK	8MM LET-LOK	72.2	2.84	35.2	1.39	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
6.35	0.250	10MM LET-LOK	10MM LET-LOK	72.5	2.85	33.3	1.31	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
6.35	0.250	12MM LET-LOK	12MM LET-LOK	77.3	3.04	33.4	1.31	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
4.41	0.174	1/8" Female NPT	1/8" Female NPT	50.7	2.00	25.4	1.00	25.4	1.00	9.80	0.39	47.6	1.87	25.4	1.00
4.41	0.174	1/4" Female NPT	1/4" Female NPT	54.2	2.13	25.4	1.00	25.4	1.00	9.80	0.39	47.6	1.87	25.4	1.00
4.41	0.174	1/4" Male NPT	1/4" Male NPT	54.2	2.13	25.4	1.00	25.4	1.00	9.80	0.39	47.6	1.87	25.4	1.00
6.35	0.250	3/8" Male NPT	3/8" Male NPT	60.4	2.38	31.7	1.25	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
6.35	0.250	1/2" Male NPT	1/2" Male NPT	70.0	2.76	31.7	1.25	28.8	1.13	11.6	0.46	56.0	2.20	28.6	1 1/8
4.41	0.174	1/4" Male Face Seal	1/4" Male Face Seal	58.8	2.31	27.2	1.07	25.4	1.00	9.80	0.39	47.6	1.87	25.4	1.00

Dimensions are for reference only and subject to change without notice.

## H-600R SERIES BYPASS/PURGE

(Please see ordering information)



## H-600 FEATURES

- Bar stock 316 SST or brass construction
- Moderate pressure characteristics 3000 psi (206 bar) in 316 SST and 1000 psi (68 bar) in Brass
- LET-LOK® Ends, Male & Female NPT, and HTC® Face-Seal Bead
- Replaceable sintered filtration elements are available in 0.1, 0.5, 2, 7, 15, 40, 60, 90, µm.
- Replaceable strainer filtration elements are available in 140, 230, 440µm.

## GENERAL

The H-600 Series is an In-Line filtration device. It can be installed in a system to protect the system components from fluid particles and contaminants.

### IN-LINE FILTER MATERIALS OF CONSTRUCTION

No.	Qty	Qty	Material	
			316 St. St.	Brass
1	Body	1	SST ASTM A-479	Brass ASTM B-16
2	Filtration Element	1	316 SST	
3	Spring	1	316 SST	
4	Gasket Ring	1	316 SST (Silver-Plated)	Aluminum / B 209
5	End	1	SST ASTM A-479	Brass ASTM B-16
6	Front Ferrule	2	SST ASTM A-276	Brass ASTM B-16
7	Back Ferrule	2	SST ASTM A-276	Brass ASTM B-16
8	Nut	2	SST ASTM A-276	Brass ASTM B-16

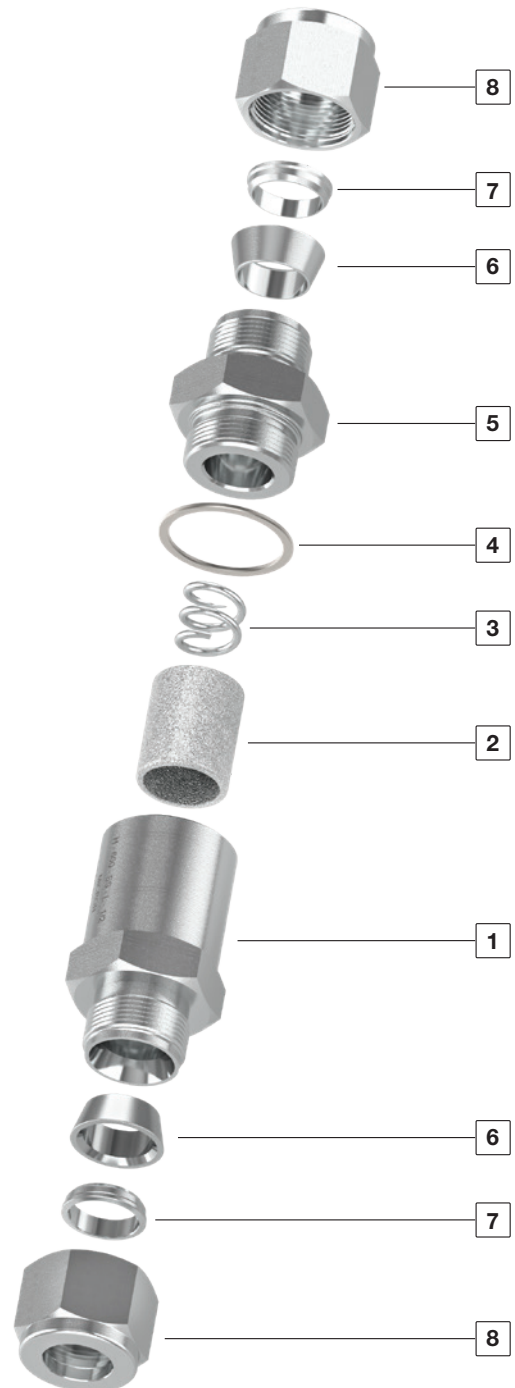
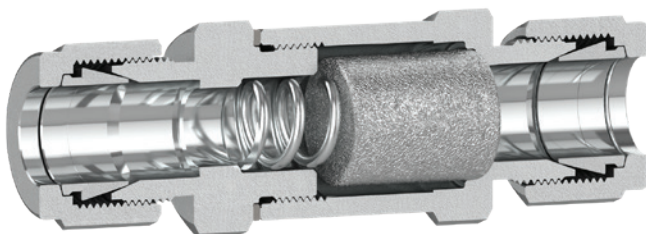
### IN-LINE FILTER PRESSURE TEMPERATURE RATING

Connection Size		1/8", 1/4", 3mm, 6mm	3/8", 1/2", 8-12mm		All		
Material Temp. °F (°C)		316 SST		316 SST		Brass	
		Allowed Working Pressure, psig / bar					
Min.	Max.	psig	bar	psig	bar	psig	bar
-20 (-28)	100 (37)	3000	207	2500	172	1000	69
	200 (93)	2580	178	2150	148	780	54
	300 (148)	2330	161	1940	134	680	47
	400 (204)	2140	148	1780	123	-	-
	500 (260)	1990	137	1660	114	-	-
	600 (315)	1880	130	1560	108	-	-
	650 (343)	1845	127	1540	106	-	-
	700 (371)	1800	124	1500	103	-	-
	750 (398)	1760	121	1460	101	-	-
	800 (426)	1725	119	1440	99	-	-
	850 (454)	1690	117	1410	97	-	-
	900 (482)	1640	113	1360	94	-	-

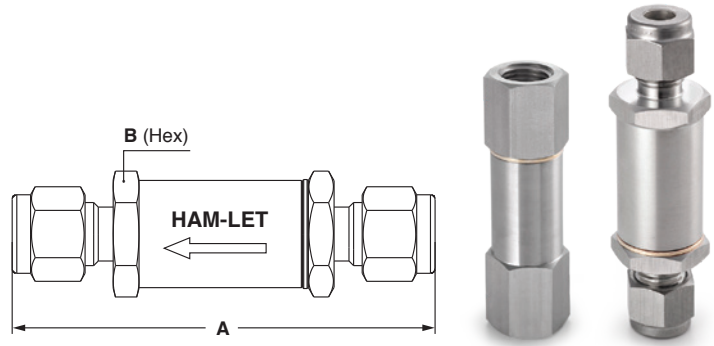
**NOTE:** The maximum allowed working pressure that is marked on the valve may be limited according to the pressure limitations that are recommended by the tubing / piping standards (Reference: LET-LOK tube fittings General Information).

### IN-LINE FILTRATION AREA

	Connection Size	Sintered Element	Strainer Element
		in <sup>2</sup> (mm <sup>2</sup> )	in <sup>2</sup> (mm <sup>2</sup> )
In-Line Filters	1/8", 3mm	0.55 (350)	-
	1/4", 6mm	1.3 (830)	1.0 (640)
	3/8", 1/2", 8-12mm	2 (1280)	1.7 (1090)



## H-600 IN-LINE



### IN-LINE FILTER STANDARD CONFIGURATION DIMENSIONS

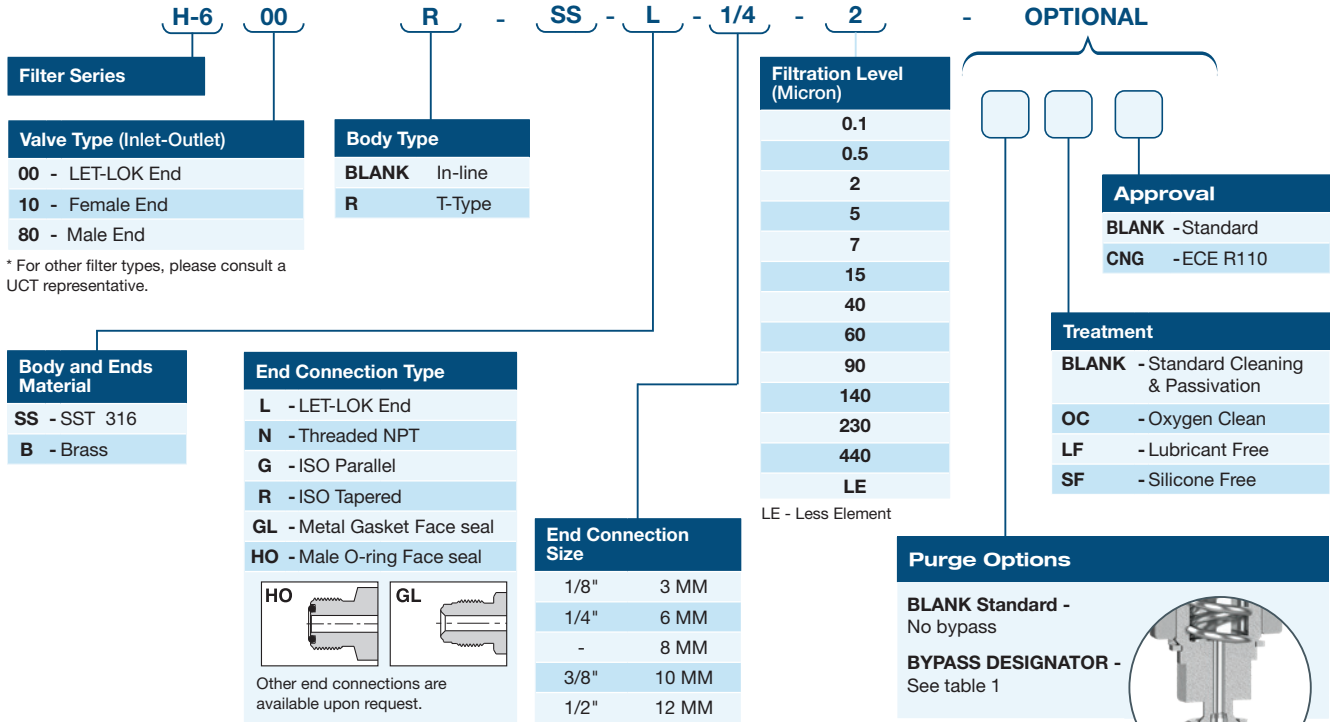
Orifice		Connection Size		A		B (Hex)	
mm	inch	Inlet	Outlet	mm	inch	mm	inch
2.39	0.094	1/8" LET-LOK	1/8" LET-LOK	57.5	2.26	14.4	9/16
4.75	0.187	1/4" LET-LOK	1/4" LET-LOK	74.7	2.94	19.05	3/4
7.14	0.281	3/8" LET-LOK	3/8" LET-LOK	81.4	3.20	25.4	1
10.30	0.406	1/2" LET-LOK	1/2" LET-LOK	88.5	3.48	25.4	1
2.39	0.094	3MM LET-LOK	3MM LET-LOK	57.5	2.26	14.4	9/16
4.75	0.187	6MM LET-LOK	6MM LET-LOK	74.9	2.95	19.05	3/4
6.40	0.252	8MM LET-LOK	8MM LET-LOK	80.1	3.15	25.4	1
7.90	0.311	10MM LET-LOK	10MM LET-LOK	81.9	3.22	25.4	1
2.39	0.094	1/8" Female NPT	1/8" Female NPT	55.0	2.17	14.4	9/16
4.75	0.187	1/4" Female NPT	1/4" Female NPT	73.0	2.87	19.05	3/4
10.30	0.406	1/2" Female NPT	1/2" Female NPT	85.5	3.36	26.69	1 1/16
4.75	0.187	1/4" Male NPT	1/4" Male NPT	68.2	2.69	19.05	3/4
9.50	0.374	3/8" Male NPT	3/8" Male NPT	71.1	2.8	25.4	1
4.75	0.187	1/4" Male Face Seal	1/4" Male Face Seal	71.5	2.81	19.05	3/4
10.3	0.406	1/2" Male Face Seal	1/2" Male Face Seal	78.4	3.08	25.4	1

### IN-LINE FILTER PRESSURE DROP

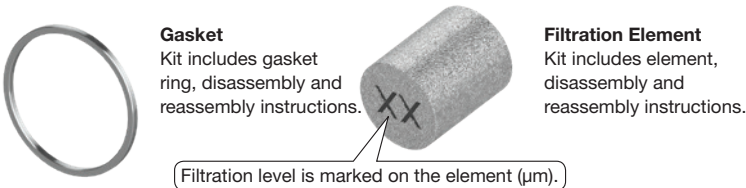
Nominal Element Pore Size $\mu\text{m}$	Inlet Pressure, psig (bar)						Pressure Drop, psig (bar)					
	5 (0.34)		10 (0.68)		15 (1.0)		10 (0.68)		50 (3.4)		100 (6.8)	
	Air Flow						Water Flow					
	std ft3/min	std L/min	std ft3/min	std L/min	std ft3/min	std L/min	US gal/min	L/min	US gal/min	L/min	US gal/min	L/min
	<b>Connection Size: 1/8", 3MM</b>						<b>Connection Size: 1/8", 3MM</b>					
0.5	0.04	1.1	0.06	1.7	0.12	3.4	0.01	0.03	0.04	0.15	0.12	0.5
2	0.2	5.7	0.4	11.3	0.6	17.0	0.08	0.3	0.24	0.9	0.4	1.5
7	0.5	14.2	0.9	25.5	1.2	34.0	0.1	0.4	0.3	1.1	0.48	1.8
15	0.8	22.7	1.3	36.8	1.5	42.5	0.12	0.5	0.36	1.4	0.58	2.2
60	1.7	48.1	2.2	62.3	2.4	68.0	0.15	0.6	0.5	1.9	0.6	2.3
90	1.8	51.0	2.2	62.3	2.6	73.6	0.2	0.8	0.5	1.9	0.7	2.6
	<b>Connection Size: 1/4", 6MM</b>						<b>Connection Size: 1/4", 6MM</b>					
0.5	0.12	3.4	0.26	7.4	0.48	13.6	0.04	0.2	0.17	0.64	0.29	1.1
2	0.6	17.0	1.4	39.6	2.3	65.1	0.24	0.9	0.68	3.25	1.3	4.9
7	1.2	34.0	2.9	82.1	4.7	133.1	0.4	1.5	1.3	4.92	2	7.6
15	1.4	39.6	2.9	82.1	4.7	133.1	0.5	1.9	1.3	4.92	2.1	7.9
40	2.2	62.3	4.7	133	7.3	206.5	0.75	2.8	2.6	9.84	4.1	15.5
60	3.1	87.8	5.9	167.1	8.5	240.7	0.9	3.4	3.3	12.49	4.6	17.4
90	4.1	116.1	7.5	212.4	10	283.2	1.2	4.5	4.2	15.89	6.1	23.1
140, 230, 440	4.7	133.1	8.8	249.2	12	339.8	1.7	6.4	5.6	21.19	7.8	29.5
	<b>Connection Size: 3/8", 1/2", 8-12MM</b>						<b>Connection Size: 3/8", 1/2", 8-12MM</b>					
0.5	0.36	10.2	0.86	24.4	1.6	45.3	0.09	0.34	0.4	1.5	0.76	2.9
2	1.4	39.6	2.8	79.3	4	113.3	0.26	1.0	1.1	4.1	1.6	6.1
7	1.8	51.0	4.2	118.9	6.8	192.6	0.64	2.4	2.2	8.3	3.5	13.2
15	1.8	51.0	4.9	138.8	7.9	223.7	0.84	3.2	2.6	9.8	4.1	15.5
40	4.2	119	9.1	257.5	14	396	1.5	5.67	5.9	22.3	9.1	34.4
60	5.1	144.4	10	283.3	15	424.8	2	7.5	6.7	25	10	37.9
90	6.1	172.7	11	311.5	16	453.1	2.3	8.7	7.6	28	11	41.6
40, 140, 200	7.2	203.9	14	396.4	20	566.3	4.8	18	15	56	19	71.9

Outlet is open to atmosphere.

# H-600 IN-LINE FILTER & H-600R T-TYPE FILTER - ORDERING INFORMATION



## SPARE KIT



Series	End Connection Size	Filtration Element Kit Ordering Number		Gasket Ring Kit Ordering Number	
		Stainless & Brass Filters	Stainless Filters	Brass Filters	Brass Filters
H-600	1/8", 3MM	Z-600-FK-1/8-XX	Z-600-GK-1/8	Z-600-GK-1/8-B	
	1/4", 6MM	Z-600-FK-1/4-XX	Z-600-GK-1/4	Z-600-GK-1/4-B	
	3/8", 1/2" 8MM, 10MM, 12MM	Z-600-FK-1/2-XX	Z-600-GK-1/2	Z-600-GK-1/2-B	
H-600R	1/8", 1/4", 3MM, 6MM	Z-600-FK-1/4-XX	Z-600R-GK-1/4	Z-600R-GK-1/4-B	
	3/8", 1/2" 8MM, 10MM, 12MM	Z-600-FK-1/2-XX	Z-600R-GK-1/2	Z-600R-GK-1/2-B	

XX - Means filtration level.

Filtration kit ordering example: 2micron Filtration Element Kit for H-600R 3mm: Z-600-FK-1/4-2

Gasket kit ordering example: Gasket Kit for H-600 3mm: Z-600-GK-1/8

For Oxygen and Lubricant-Free service, add OC designator to the end of the kit ordering number: Z-600-GK-1/8 OC

Table 1:

### H600-R T-TYPE SERIES BYPASS/PURGE Port enables sampling or purging.

Series	Valve End Connection Size	Bypass/Purge Port End Connection	Overall Height in (mm)	Desig.
H-600R	1/8", 1/4", 3mm, 6mm	1/8" LET-LOK	2.36 (60.0)	B1
		1/8" Female NPT	2.08 (53.0)	B2
		1/4" LET-LOK	2.81 (71.5)	B3
	3/8", 1/2", 8mm, 10mm, 12mm	1/8" Female NPT	2.46 (62.5)	B4
		1/4" LET-LOK	3.15 (80.0)	B5
		3/8" LET-LOK	3.19 (81.0)	B6
		1/2" LET-LOK	3.42 (87.0)	B7

### Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.





# HAM-LET VENT PROTECTOR FITTINGS



**Platinum Natural Gas Solutions**



## DESCRIPTION

Vent Protector Fitting (VEP) are used to protect tube outlets and instruments exposed to atmospheric pressure.

## CLEANING & PACKAGING

Every VEP is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184).

## TESTING

The VEP design has been tested for Proof, Burst and Leakage. Every VEP is factory tested for proper assembly.

## MATERIALS OF CONSTRUCTION

No.	Components	Qty	Material
1	Vent Fitting Filter Body	1	SST 316
2	Vent Fitting Filter Grid 40 Mesh	1	SST 316
3	Spring Clip 20 DIN472	1	SST

## METHOD OF OPERATION

The end of the fitting has a filter screen of 40 mesh, made of 316 St.St. This screen prevents foreign objects, such as insects, from entering the system and causing damage.

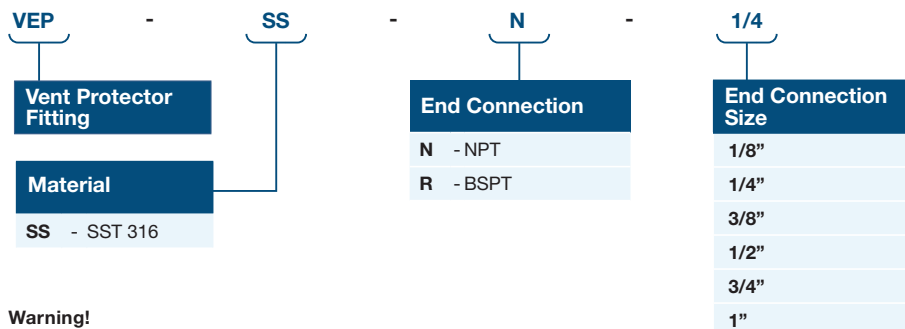
This fitting is available in 316 SS in sizes from 1/8" to 1".

The threads are NPT, BSPT or others, according to request.

## STANDARD CONFIGURATION DIMENSIONS

Description	T Thread	L		L1		D Min Opening		F	
		in	mm	in	mm	in	mm	in	mm
VEP-SS-N-1/8	1/8	0.56	14.22	0.38	9.65	0.19	4.82	1/2	12.7
VEP-SS-N-1/4	1/4	0.78	19.81	0.56	14.22	0.28	7.11	9/16	14.3
VEP-SS-N-1/2	1/2	1.03	26.16	0.75	19.05	0.50	12.7	7/8	22.2
VEP-SS-N-3/8	3/8	0.81	20.57	0.56	14.22	0.41	10.41	11/16	17.5
VEP-SS-N-3/4	3/4	1.06	26.92	0.75	19.05	0.72	18.28	1-1/16	27.0
VEP-SS-N-1"	1	1.34	34.03	0.94	23.87	0.88	22.35	1-3/8	34.9

## ORDERING INFORMATION



### Warning!

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