

# **AIR PREPARATION**

316 Stainless Steel Filters & Regulators







# **ABOUT VERSA**



# More than 70 Years of Innovation and Expertise

Versa Products Co., Inc. (VERSA) is a global engineering and manufacturing company that specializes in solenoid, pilot, and manual actuated directional control valves and related components. Since 1949, VERSA has built a reputation on our products' quality, responsive customer service, and technical expertise. Our ongoing dedication to innovation and our field-proven products have positioned us as a driving force in fluid power and valve automation markets. Our continued focus on Real World Reliability has allowed us to develop a comprehensive line of product solutions for each application, even in the most challenging environments.



#### **Best-in-Class Service**

VERSA's commitment to continuous improvements in our products and operational capabilities ensures that we exceed our customers' expectations. With our company motto, "Get it Right, Fast!" we take pride in our 99% on-time product delivery performance and competitive lead times. With decades of experience, we have developed an indepth understanding of the needs of our customer markets, ensuring that we provide you with the right solution for your application. Our distribution partners are an extension of our brand, offering their expertise and support across the globe.



#### Maximum Performance

At VERSA, our products are engineered to ensure maximum productivity and uptime reliability even in the harshest environments. Our valves are fully ported and 100% tested before leaving the factory. VERSA stands behind its product performance by offering the industry's only 10-year warranty.



### **Integrated Product Solutions**

VERSA offers a comprehensive product portfolio allowing us the flexibility to provide the solution tailored to meet your application needs.

# **Key Markets**

- Oil & gas downstream, midstream and upstream
- Renewable energy bio-fuels, carbon capture, geothermal, hydrogen
- Chemical processing
- Mobile pneumatic
- Power generation
- Aerospace fuel storage and delivery
- Industrial controls













# **AR-316 SERIES Stainless Steel Regulator**

VERSA's AR-316 series of stainless steel regulators and filter regulators are designed to stand up to the harshest environments while providing accurate pressure regulation.

The proven 316 stainless steel housing, filter assemblies, and fluorocarbon diaphragm construction, make the AR-316 compatible with sour gas and adaptable to offshore environments. The AR-316 is NACE compliant, which meets sulfide stress cracking material requirements for NACE Standard MR0175. In the ARFB model, only the wetted parts are NACE compliant.

This quality instrument is economical to buy as well as operate. The AR-316 provides extremely stable and repeatable control of gas pressure.

#### **Features**

- · Built for harsh environments
- · Relieving or non-relieving
- Optional NACE configuration
- Mounting bracket available
- Tamper proof cap options

- Knob, T-bar options
- Low temperature seals available
- Two gauge ports for mounting versatility
- VMAP capable
- Gauges available
- Auto drain available

### **Component Overview**

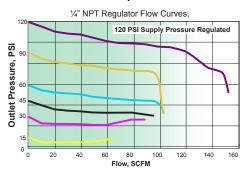
- Lock nut for securing set pressure
- 2 Stainless steel name plate
- 3 1/8" NPT threaded vent
- Investment cast 316L body- lighter weight, enhanced internal design for highest flow
- Manual drain (shown), auto drain available
- 6 Pressure adjusting bolt, optional hand knob available
- Panel nut, for bracket or panel mount of 1/4" 1/2". Mounting holes supplied on 1" units
- 8 1/4" NPT gauge ports (2), optional 2" or 2.5" gauges available dry or glycerin filled
- Filters, 25 micron standard, 5 or 40 micron and coalescing optional
- n Filter Bowl, optional extended volume filter bowl available



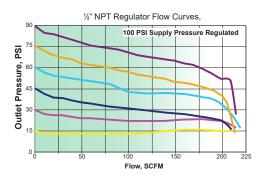
### **SPECIFICATIONS**

#### **Flow Rates**

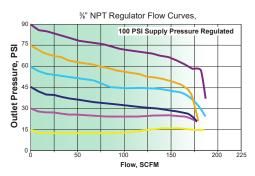
1/4" C<sub>v</sub> 2.1



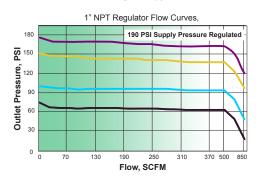
1/2" Cv 4.3



3%" Cv 3.3



1" Cv 11.0



# **Material Specifications**

PORT SIZE	
Inlet / Outlet	1/4", 3/8", 1/2" and 1" NPT
Gauge Ports (2)	1/4" NPT
Vent	1/8" NPT
Auto Drain (optional)	1/4" NPT
PRESSURE SUPPLY	
Supply Pressure Max	290 psi* (20.0 bar)*
	3-30 psi (0.21 - 2.1 bar)
Output Danges	6-60 psi (0.41 - 4.1 bar)
Output Ranges	10-100 psi (0.7 - 6.9 bar)
	15-150 psi (1.0 - 10.3 bar)
*With au	to drain 150 psi (10.3 bar) max

#### **EXHAUST CAPACITY**

1.0 SCFM (1.7 m<sup>3</sup>/hr) at down stream pressure of 10 psi (0.7 bar) above set point

#### **FILTER**

25 micron (5 & 40 optional) Coalescing filter (optional)

#### **MEDIA**

Filter

Pneumatic, inert and natural gas

#### **TEMPERATURE**

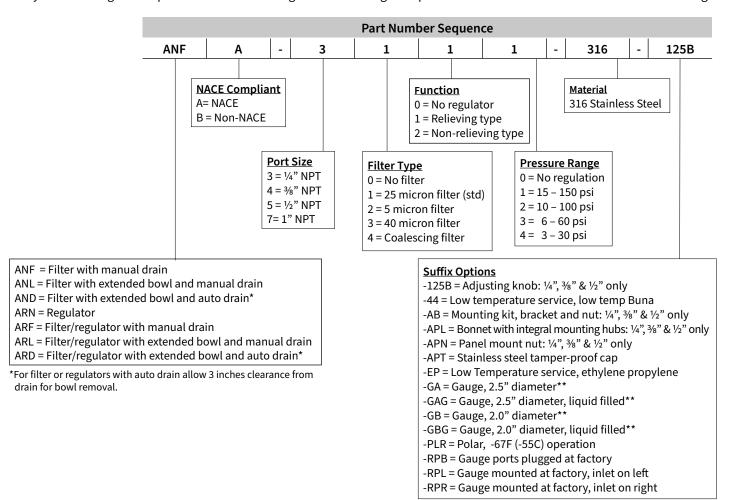
5°F to 180°F (-15°C to 82°C) std -60°F to 300°F (-51°C to 149°C) -EP -20°F to 200°F (-29°C to 93°C) -44

-67°F to 200°F (-55°C to 93°C) -PLR

#### **MATERIALS** Body, Bonnet, Filter Body 316L Stainless Steel Diaphragm, seals FKM (fluorocarbon) Valve spring Inconel Adjusting spring Inconel (ARFA) Stainless Steel (ARFB) Name plate 316 Stainless Steel 316 Stainless Steel (washable)

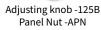
### **ORDERINGINFORMATION**

Every letter and digit in the product number has a significant meaning. The product number shown below indicates the following



<sup>\*\*</sup> When gauge is specified it is shipped loose along with a plug. For factory installed gauge see options above.







Mounting hubs -APL



-APT (AR-090-088A-316)

# FILTERELEMENTS/REPAIRKITS

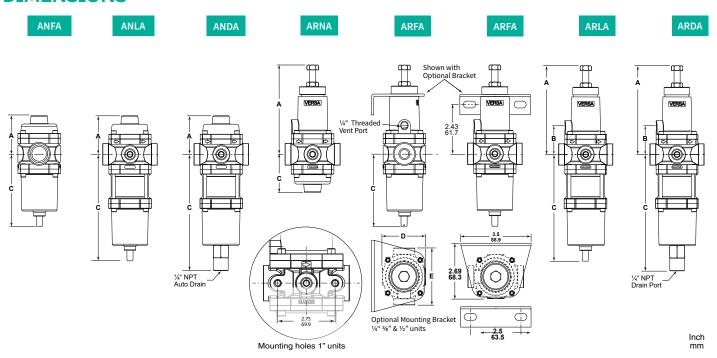
#### REPLACEMENT FILTER ELEMENTS

PART N	UMBER	DESCRIPTION				
1/4", 3/8" & 1/2"	1 Inch	DESCRIPTION				
AR-FK-05	AR7-FK-05	Filter kit, 5 micron				
AR-FK-5-EP	AR7-FK-5-EP	Filter kit, 5 micron, with EP seal				
AR-FK-25	AR7-FK-25	Filter kit, 25 micron				
AR-FK-40	AR7-FK-40	Filter kit, 40 micron				
AR5-090-CO	_	0.01 Micron Borosilicate filter				

#### REPAIR KITS

UMBER	DESCRIPTION
1 Inch	DESCRIPTION
AR7-RK-1	Regulator kit, relieving
AR7-RK-2	Regulator kit, non-relieving
ARD7-RK-1	Auto drain, kit, relieving
ARD7-RK-2	Auto drain, kit, non-relieving
	1 Inch AR7-RK-1 AR7-RK-2 ARD7-RK-1

# **DIMENSIONS**



TYPE	DESCRIPTION	PORT SIZE	WEI	GHT	,	A	E	3		С	Ι	)		E
	DESCRIPTION	(NPT)	lbs	kg	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
ANFA	Filter: Manual Drain	1/4" - 1/2"	2.2	1.0	1.87	45.8	_	_	3.58	90.9	2.13	54.1	2.75	69.9
ANLA	Filter: Bowl Extension, Manual Drain	1/4" - 1/2"	3.0	1.4	1.87	45.8	_	_	5.22	132.5	2.13	54.1	2.75	69.9
ANDA	Filter: Bowl Extension, Auto Drain	1/4" - 1/2"	3.0	1.4	1.87	45.8	_	_	5.75	140.9	2.13	54.1	2.75	69.9
ARNA	Regulator	1/4" - 1/2"	2.8	1.3	4.33	110	1.39	35.3	1.88	47.8	2.13	54.1	2.75	69.9
ARFA	Filter/Regulator: Manual Drain	1/4" - 1/2"	2.4	1.1	4.30	109.2	1.39	35.3	3.58	90.9	2.13	54.1	2.75	69.9
ARLA	Filter/Regulator: Bowl Extension, Manual Drain	1/4" - 1/2"	3.2	1.5	4.30	109.2	1.39	35.3	5.22	132.5	2.13	54.1	2.75	69.9
ARDA	Filter/Regulator: Bowl Extension, Auto Drain	1/4" - 1/2"	3.2	1.5	4.30	109.2	1.39	35.3	5.75	140.9	2.13	54.1	2.75	69.9
ANFA	Filter: Manual Drain	1"	6.6	3.0	1.70	43.18	_	_	5.19	131.8	3.50	88.9	4.13	104.8
ANDA	Filter: Bowl Extension, Auto Drain	1"	7.7	3.5	1.43	36.8	_	_	7.7	195.6	3.50	88.9	4.13	104.8
ARNA	Regulator: Manual Drain	1"	7.7	3.49	8.99	228.3	1.75	44.5	5.19	131.8	3.50	88.9	4.13	104.8
ARFA	Filter/Regulator: Manual Drain	1"	8.1	3.67	8.99	228.3	1.75	44.5	5.19	131.8	3.50	88.9	4.13	104.8
ARDA	Filter: Bowl Extension, Auto Drain	1"	7.7	3.49	1.70	43.18			7.41	188.7	3.50	88.9	4.13	104.8

<sup>1.36&</sup>quot; (35 mm) diameter hole. Maximum thickness is 0.25" (6 mm). Option -APN.

# **ARII-316 SERIES 316 Stainless Steel Filter Regulator**

VERSA's AR II-316 general-purpose stainless steel filter regulator is designed to stand up to the harshest environments while providing accurate pressure regulation.

The proven 316L stainless steel body, housing, filter assemblies, and fluorocarbon diaphragm construction make the ARII-316 compatible with sour gas and adaptable to offshore environments.

Model ARFC includes an optional Inconel spring which makes the ARII fully NACE compliant meeting sulfide stress cracking material requirements for NACE Standard MR0175. In the ARFD model only the flow path wetted parts are NACE compliant.

This quality instrument is economical to buy as well as operate. The ARII-316 provides extremely stable and repeatable control of gas pressure.

#### **Features**

- Reduced cost filter/ regulator option
- Combines options of individual components
- ¼" NPT

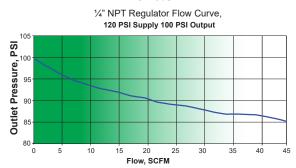
 Exhaust capacity of 1.0 SCFM (1.7 m3/hr) at down stream pressure of 10 psi (0.7 bar) above setpoint

### **Component Overview**

- Lock nut for securing set pressure
- Stainless steel name plate
- 3 1/8" NPT threaded vent, for piping away vent gases
- Investment cast 316L body- lighter weight, enhances internal design for highest flow
- Manual drain
- 6 Pressure adjusting bolt. Optional hand knob available
- 1/4" NPT Gauge Port (2) Gauges 2" or 2.5", dry or liquid filled
- 8 Filter bowl, 25 micron filter standard. 5 or 40 micron optional



# Flow Rates



### **SPECIFICATIONS**

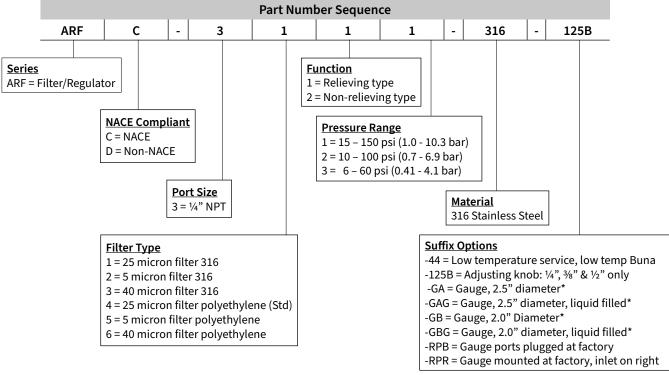
### **Material Specifications**

PORT SIZE				
Inlet / Outlet	1⁄4" NPT			
Gauge Ports (2)	1/4" NPT			
Vent	1/8" NPT			
PRESSURE SUPPLY				
Supply Pressure Max	290 psi (20 bar)			
	15-150 psi (1.0 -10.3 bar)			
Output Ranges	10-100 psi (0.7 - 6.9 bar)			
	6-60 psi (0.41 - 4.1 bar)			
MEDIA				
Air/Natural Gas				
EXHAUST CAPACITY				
1.0 SCFM (1.7 m <sup>3</sup> /hr) at down stream pressure of 10 psi (0.7 bar) above set point				

TEMPERATURE						
5°F to 302°F (-15°C to 150°C) (std) -18°F to 203°F (-28°C to 95°C) (-44) -67°F to 302°F (-55°C to 150°C) (-F)						
MATERIALS						
Body, Bonnet, Filter Housing	316L Stainless Steel					
Diaphragm/Seals	(Std) Silicone/FKM -44 Buna/Buna -F Fluorosilicone/Silicone					
Valve spring	302 stainless steel Inconel (NACE)					
Filter						
25 micron (5 & 40 optional)						
Polyethylene (PE)(std) 316 stainless steel (optional)						

### **ORDERINGINFORMATION**

Every letter and digit in the product number has a significant meaning. The product number shown below indicates the following:



<sup>\*</sup> When gauge is specified it is shipped loose along with a plug. For factory installed gauge see options above.

# **OPTIONS/REPAIRKITS**

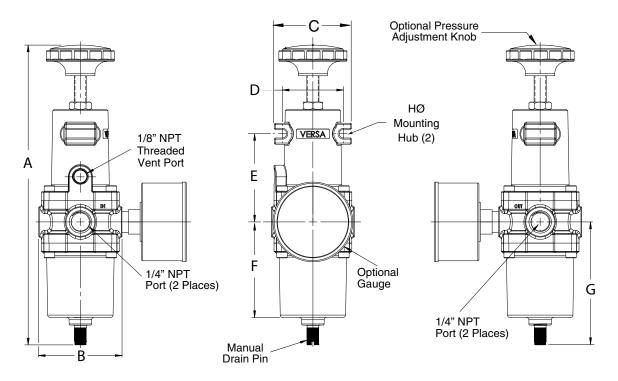
#### **REPAIR KITS**

PART NUMBER	DESCRIPTION	
ARC-RK-1	Repair kit (NACE)	
ARCN-RK-1	Repair kit	

#### REPLACEMENT FILTER ELEMENTS

PART NUMBER	DESCRIPTION
ARC-FK-05-316	Filter kit, 5 micron (stainless steel)
ARC-FK-25-316	Filter kit, 25 micron (stainless steel)
ARC-FK-40-316	Filter kit, 40 micron (stainless steel)
ARC-FK-05-316	Filter kit, 5 micron (polyethylene)
ARC-FK-25-316	Filter kit, 25 micron (polyethylene)
ARC-FK-40-316	Filter kit, 40 micron (polyethylene)

# **DIMENSIONS**



TYPE	PORT SIZE	WEI	GHT	1	A	E	3	(	2	I	)	i		i	=	(	3	Н	Ø
ITPE	(NPT)	lbs	kg	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
ARF	1/4"	2.4	1.1	7.71	196	2.38	60.5	1.98	50.3	1.57	39.9	2.27	57.6	2.42	61.5	3.16	80.3	0.25	6.4

# ARH-316 SERIES High Pressure Stainless Steel Regulator

VERSA's ARH-316 single-stage, high-pressure, non-relieving, regulator, is designed to accept up to 6000 psi input and reduce it to a working range of 10 to 500 psi, making the ARH-316 ideal for first cut natural gas high-pressure regulator.

The ARH-316 Series of stainless-steel regulators are designed to stand up to the harshest environments while providing highly accurate pressure regulation. The proven 316L stainless steel housing assembly and stainless-steel diaphragm make the ARH-316 the choice for installation on pipelines, offshore platforms, and sour gas media applications. The ARH-316 is NACE compliant, which meets sulfide stress cracking material requirements for NACE Standard MR0175.

This quality instrument is economical to buy as well as operate. The ARH-316 provides extremely stable and repeatable control of gas pressure.

#### **Features**

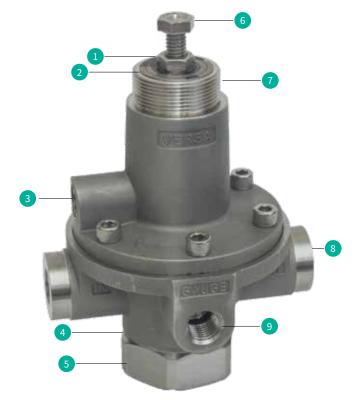
- · Built for harsh environments
- Max inlet pressure 6,000 psi
- Low temp seals available

- VMAP compatible
- ¼" NPT inlet port
- 40 Mesh filter

### **Component Overview**

- Lock nut for securing set pressure
- 2 Stainless steel name plate
- 1/4" NPT threaded vent
- Investment Cast 316L Body- lighter weight, enhanced internal design for highest flow
- Manual drain
- 6 Pressure adjusting bolt, optional hand knob available
- Optional panel nut, for bracket or panel mount
- 8 VMAP compatible hub
- 1/4" NPT gauge ports (2), optional 2" or 2.5" gauges available dry or glycerin filled

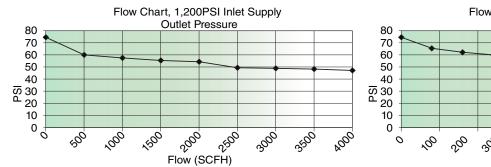
**WARNING.** Non-relieving regulators should have a pressure relief valve installed down stream of regulator on dead ended services. This device will prevent excessive build up of pressure protecting systems and components down stream of regulator.

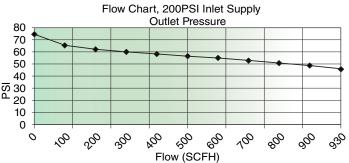


Shown: ARHB-3222-316 VMAP capable

### **SPECIFICATIONS**

#### **Flow Rates**





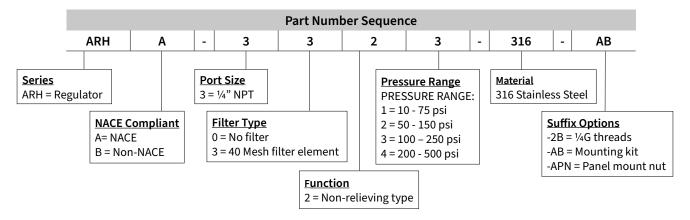
# **Material Specifications**

**MEDIA** 

PORT SIZE				
Inlet / Outlet	1/4" NPT			
Gauge ports (2)	1/4" NPT			
Vent	1/8" NPT			
PRESSURE				
Maximum supply pressure	6000 psi (414 bar) 1500 psi (VMAP configuration)			
	10-70 psi (0.7-5.2 bar)			
	50-150 psi (3.4-10.3 bar)			
Output ranges	100-250 psi (6.9-17.2 bar)			
	10-100 psi (0.7 - 6.9 bar)			
	200-500 psi (13.8-34.5 bar)			
EXHAUST CAPACITY				
1.0 SCFM (1.7 m3/hr) at down stream pressure of 10 psi (0.7 BAR) above setpoint				

Pneumatic/natural gas					
TEMPERATURE					
5°F to 180°F (-15°C to 82°C) std -60°F to 300°F (-51°C to 149°C) -EP -20°F to 200°F (-29°C to 93°C) -44					
MATERIALS					
Body, Bonnet, Filter Body	316L stainless steel				
Diaphragm	Stainless steel				
Seals	FKM (fluorocarbon) (standard) Ethylene Propylene (-EP) (optional) Nitrile (-44) (optional)				
Filter	40 Mesh				
Valve spring	Stainless steel or Inconel (NACE)				
Name plate	316 stainless steel				

### **ORDERING INFORMATION**



**WARNING.** Non-relieving regulators should have a pressure relief valve installed down stream of regulator on dead ended services. This device will prevent excessive build up of pressure protecting systems and components down stream of regulator.

# **OPTIONS/REPAIRKITS**

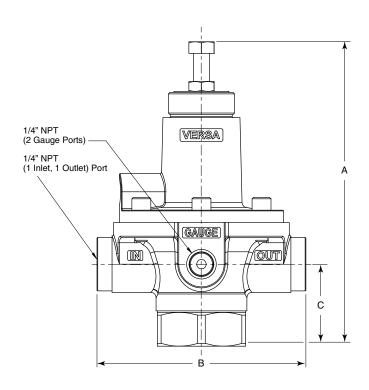
# **Options**

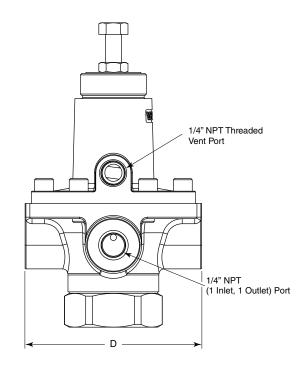
SUFFIX DETAIL	DESCRIPTION
-2B	G thread
-125B	Plastic adjusting knob (black)
-44	Low temperature service, low temp Buna
-AB	Mounting kit, bracket and nut
-APN	Panel mount nut
-EP	Low temperature service, ethylene propylene
-VA	Regulator for VMAP installation

# **Repair Kits**

PART NUMBER	DESCRIPTION
ARH-RK	Regulator kit, ¼"
ARH-RK-EP	Regulator kit, ¼", low temperature service, ethylene propylene
ARH-RK-44	Regulator kit, ¼", low temperature service, low temp Buna

# **DIMENSIONS**





	PORT	WEIGHT		,	4	ı	В	(	2		)
TYPE	SIZE (NPT)	lbs	kg	Inch	mm	Inch	mm	Inch	mm	Inch	mm
ARH	1/4"	8	3.6	6.03	153	4.14	105.2	1.63	41.3	3.5	88.9

**WARNING.** Non-relieving regulators should have a pressure relief valve installed down stream of regulator on dead ended services. This device will prevent excessive build up of pressure protecting systems and components down stream of regulator.

# AFH-316 High Pressure Filter



VERSA's AFH-316 Series high pressure filter is designed to accept up to 6000 psi input and is available in ¼" NPT inline mounting, ¼" NPT inline mounting with additional outlet port in the cap.

Proven 316L stainless steel housing assembly with two types of filter elements, polyethylene or 316 stainless steel, make the AFH-316 ideal for challenging applications such as pipelines, offshore platforms and sour gas media.

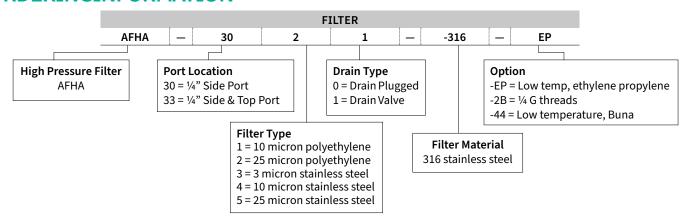
### **Material Specifications**

	110.00110.0
PORT SIZE	
Inlet / Outlet	1/4" NPT
PRESSURE SUPPLY	
Pressure Supply Max	0-6000 psi (0-414 bar) 0-4000 psi (0-275 bar) with purge valve 0-1600 psi (0-110 bar) option -VA
MEDIA	
Pneumatic/Natural Gas	
FLOW RATE	
0.073 Cv	
MAXIMUM DIFFERENTIAL	L PRESSURE
Polyethylene	20 psid
316 Stainless	200 psid
VOLUME	

FILTER TEMPERATURE					
Polyethylene	-4°F to 180°F (-20°C to 82°C) std -40°F to 180°F (-40°C to 82°C) -44 & -EP				
316 Stainless	4°F to 250°F (-20°C to 120°C) std -65°F to 250°F (-53°C to 120°C) -44 & -EP				
FILTER MICRONS					
Polyethylene	10 or 25				
316 Stainless	3, 10 or 25				
MATERIALS					
Body	316L Stainless steel				
Seals	FKM (fluorocarbon) (std) Ethylene Propylene (-EP) (optional) Nitrile (-44) (optional)				
Filter element	Polyethylene (PE)(std) 316 Stainless steel (optional)				

0.25 oz condensate capacity

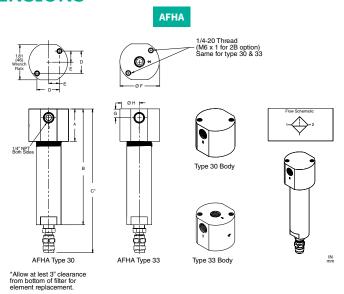
### **ORDERINGINFORMATION**



# **OPTIONS/REPAIRKITS/FILTERELEMENTS**

	Options	Repair Kits	Replacement Filter Elements			
SUFFIX	DESCRIPTION	KITS	ELEMENT	ELEMENT DESCRIPTION		
-2B	1/4" G threads	AFH-090-105-10-RK	AFH-090-105-10	10 micron polyethylene		
-EP	Low temperature service, ethylene propylene	AFH-090-105-25-RK	AFH-090-105-25	25 micron polyethylene		
-44	Low temperature service, low temp Buna	AFH-090-105-03-316-RK	AFH-090-105-03-316	3 micron 316 stainless steel		
-VA	Filter for VMAP installation	AFH-090-105-10-316-RK	AFH-090-105-10-316	10 micron 316 stainless steel		
		AFH-090-105-25-316-RK	AFH-090-105-25-316	25 micron 316 stainless steel		

# **DIMENSIONS**





Tuna	Port	We	ight		A	ı	3	(	С	[	)	ı	Ē	Ø	F	(	3	Н	Ø
Type	Size (NPT)	lbs	kg	Inch	mm	Inch	mm	In	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
AFHA	1/4"	1.8	0.81	1.36	41.4	5.83	148.1	7.24	183.9	1.15	29.2	0.57	14.3	2.0	50.8	0.44	11.1	1.0	25.4

# GaugeSpecifications



# **Material Specifications**

PORT SIZE					
¼"NPT connection (r	1/4"NPT connection (male thread) center back				
TEMPERATURES	TEMPERATURES				
Dry	-40°F to 200°F (-40°C to 93°C)				
Filled	-4°F to 150°F (-20°C to 66°C)				
MATERIALS					
Stainless steel case					

# **ORDERING INFORMATION**

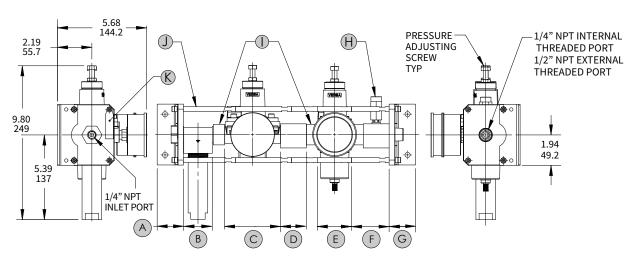
GAUGE PART NUMBER (GAUGE ONLY)						
PRESSURE RANGE	2 Inch (5	0.8 mm) Ø*	(63.5 mm) Ø*			
PRESSURE RAINGE	STANDARD	GLYCERINE FILLED	STANDARD	GLYCERINE FILLED		
0-100 psi (6.9 bar)	ARGB-100	ARGB-100G	ARG-100	ARG-100G		
0-160 psi (11 bar)	ARGB-160	ARGB-160G	ARG-160	ARG-160G		
0-200 psi (13.8 bar)	ARGB-200	ARGB-200G	ARG-200	ARG-200G		
0-400 psi (27.6 bar)	ARGB-400	ARGB-400G	ARG-400	ARG-400G		
0-1000 psi (69.9 bar)	ARGB-1000	ARGB-1000G	ARG-1000	ARG-1000G		

# **High Pressure Instrument Supply Systems**

VERSA's high pressure instrument supply system, can accommodate up to 6000 psi inlet pressure and is designed as a <u>VMAP</u> device. The combination of high pressure filter, regulator connected to a low pressure filter/regulator provides first and second cut reduction. Two ported adapters are provided for relief valve connection. One each, after the high and low pressure regulators (D & F on the drawing below). The same system can be custom configured with a variety of air prep components to meet application requirements.



# **SUPPLY SYSTEM COMPONENTS**



	HIGH PRESSURE INSTRUMENT SUPPLY SYSTEM COMPONENTS							
ITEM	TITLE	PART NUMBER						
A	Filter Adapter Plate Assy.	AFH-090-111L-316BS-VA-VBC						
B	Filter Assembly	AFHA-3320-316-VA ( <u>See page 13</u> )						
C	Regulator Assembly	ARHB-3323-316-GAG-VA ( <u>See page 10</u> )						
D	Adapter Assembly	4302-95-3-316-VA						
E	Regulator Assembly	ARFA-3111-316-GAG-VA ( <u>See page 3</u> )						
F	Adapter Assembly	4302-95-316-VA-4D						
G	Adapter Plate Assembly	AFH-090-111X-316BS-VA-VBC						
$\bigcirc$	Relief Valve	RV-3-316-120 (See ACCESSORIES Bulletin)						
	Adapter	V-4302-99D-316						
J	Tie Rod	AFH-090-110-316						
K	Metal Tag	P-2002-16-NV28A-SF (See Tag information)						

Consult factory for other available configurations.



### **CONTACT US:**

#### **VERSA**

22 Spring Valley Road Paramus, New Jersey 07652, USA Phone: 201-843-2400

#### **VERSA BV**

Prins Willem Alexanderlaan 1427 7321 GB Apeldoorn, Netherlands Phone: +31-55-368-1900

Email: sales@versa-valves.com Web: www.versa-valves.com



# **AIR PREPARATION**



