

# Chambergard™ Fast Vent Diffusers

*Reduce particles and vent times in  
load lock and transfer chambers*

Chambergard™ fast vent diffusers are the choice to reliably increase system throughput by minimizing load lock vent cycle time. These diffusers provide rapid venting to atmosphere without disturbing or adding particles to wafers in the chamber. They combine the flow characteristics of a diffuser with a high efficiency filter to increase efficiency and throughput. With our global infrastructure we can provide Chambergard fast vent diffusers to meet your needs worldwide.



## FEATURES & BENEFITS

<b>Industry-leading, patented, sintered nickel technology in a compact diffuser unit</b>	Provides superior performance in all applications
<b>Removal of particles greater than 0.0015 µm from incoming gas</b>	Minimizes defects on wafers
<b>Easy installation/retrofit into existing tools</b>	Minimizes downtime (including load lock chambers, cooling chambers, transfer chambers and process chambers)
<b>Manufactured, tested and packaged in a cleanroom</b>	Assures product cleanliness at time of installation
<b>Rapid vent, gentle flow to atmosphere</b>	Decreases cycle time, increases throughput and OEE
<b>Rated at 100,000 cycles before changeout</b>	Robust and efficient

## SPECIFICATIONS

Materials:

	FV-16ST	FV-25ST	FV-25LT	FV-40T	FV-NBLBW FV-NBMVCR FV-NBLMVCR	FV-NBLTBW
<b>Diffuser element</b>	Patented, sintered nickel membrane filter					
<b>Housing</b>	316L stainless steel					
<b>Surface finish internal</b>	≤32 μin Ra					
<b>O-ring</b>	Fluoroelastomer					None
<b>O-ring size</b>	2-117	2-123	2-224	2-117		
<b>O-ring groove ID</b>	20.3 mm (0.80")	29.8 mm (1.17")	44 mm (1.73")	20.3 mm (0.80")		
<b>O-ring groove OD</b>	26.4 mm (1.04")	35.9 mm (1.41")	52.1 mm (2.05")	26.4 mm (1.04")		
<b>O-ring groove depth</b>	1.9 mm (0.07")		2.6 mm (0.10")	1.9 mm (0.07")		

	FV-40D	FV-50DI	FV-100D	FV-75
<b>Diffuser element</b>	Patented, sintered nickel membrane filter			
<b>Housing</b>	316L stainless steel			
<b>Surface finish internal</b>	≤32 μin Ra			
<b>O-ring</b>	Fluoroelastomer			None
<b>O-ring size</b>	2-224	2-229	2-246	
<b>O-ring groove ID</b>	44 mm (1.73")	59.9 mm (2.36")	122.4 mm (4.82")	
<b>O-ring groove OD</b>	52.1 mm (2.05")	67.9 mm (2.67")	114.3 mm (4.50")	
<b>O-ring groove depth</b>	2.6 mm (0.10")			

## SPECIFICATIONS (CONTINUED)

### Connections:

	FV-16ST	FV-25ST	FV-25LT	FV-40T	FV-NBLBW FV-NBMVCR FV-NBLMVCR	FV-NBLTBW
<b>Inlet</b>	¼" VCR® compatible male gasket seal fitting				¼" VCR compatible male gasket seal fitting, or butt weld fitting	20 mm long by ¼" OD butt weld tube stub
<b>Outlet</b>	ISO NW-16	ISO NW-25		ISO NW-40	ISO NW-16	None
Bulkhead mounting compatible with standard ISO bulkhead clamps						

	FV-40D	FV-50DI	FV-100D	FV-75
<b>Inlet</b>	¼" VCR compatible male gasket seal fitting			¼" VCR compatible female gasket seal fitting
<b>Outlet</b>	ISO NW-40	ISO NW-50	ISO NW-100 bolt through	None
Bulkhead mounting compatible with standard ISO bulkhead clamps				

### Operating Conditions:

	FV-16ST	FV-25ST	FV-25LT	FV-40T	FV-NBLBW FV-NBMVCR FV-NBLMVCR	FV-NBLTBW
<b>Maximum inlet pressure with outlet to vacuum</b>	7 bar (100 psig)					
<b>Maximum differential pressure</b>	8 bar (115 psid)					
<b>Maximum operating temperature</b>	100°C (212°F) with O-ring					400°C (752°F) with no O-ring
<b>Warranty</b>	5 years or 100,000 cycles					

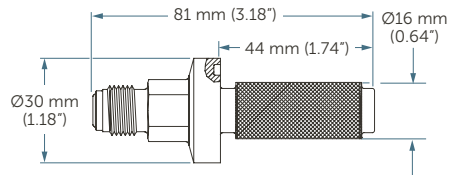
	FV-40D	FV-50DI	FV-100D	FV-75
<b>Maximum inlet pressure with outlet to vacuum @ 100°C (212°F) max.</b>	3 bar (45 psig)	2.5 bar (35 psig)	2.5 bar (35 psig)	1.4 bar (20 psig)
<b>Maximum differential pressure @ 100°C (212°F) max.</b>	4 bar (60 psid)	3 bar (45 psid)	3.5 bar (50 psid)	2.4 bar (35 psid)
<b>Maximum operating temperature</b>	100°C (212°F) with O-ring			400°C (752°F) with no O-ring
<b>Warranty</b>	5 years or 100,000 cycles			

### Performance:

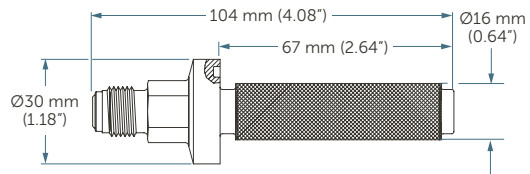
<b>Downstream cleanliness</b>	Cleanliness <0.03 particles/liter (<1 particle/ft³) >0.01 µm at rated flow ≥0.0015 µm
<b>Removal rating</b>	≥0.0015 µm
<b>Reliability</b>	100,000 cycle reliability at maximum rated inlet pressure at 25°C (77°F)

## DIMENSIONS

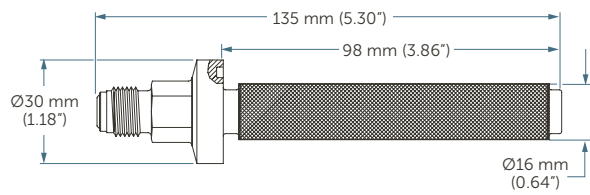
FV-16ST



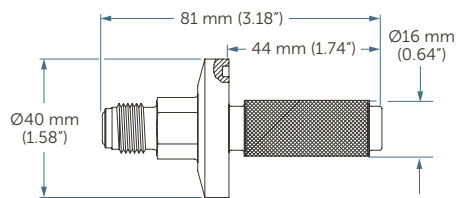
FV-NBMVCR



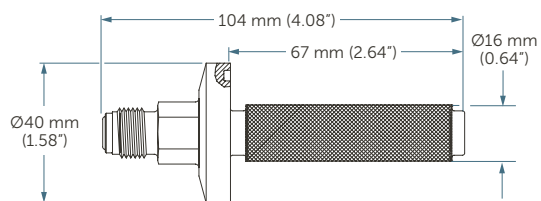
FV-NBLMVCR



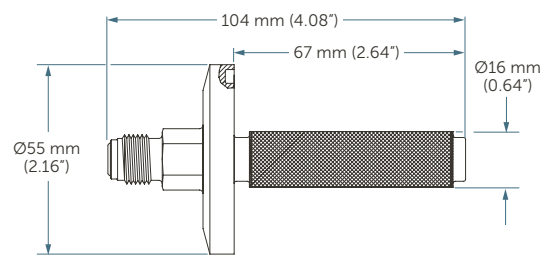
FV-25ST



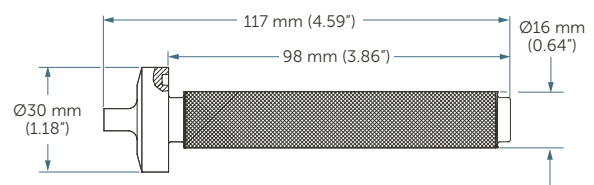
FV-25LT – ¼" VCR Fitting



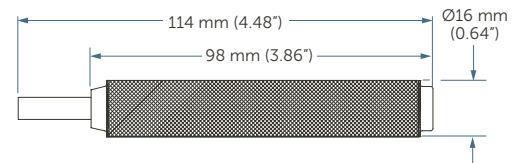
FV-40T



FV-NBLBW

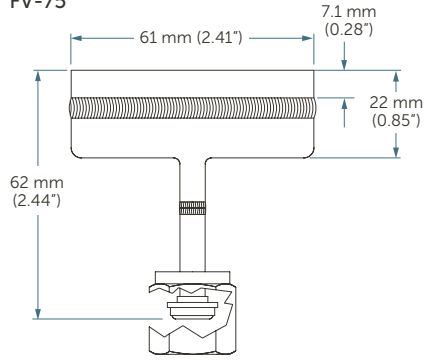


FV-NBLTBW

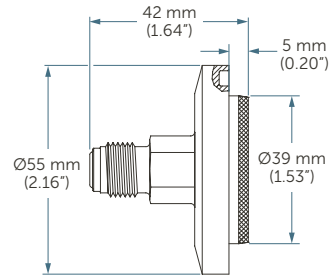


**DIMENSIONS (CONTINUED)**

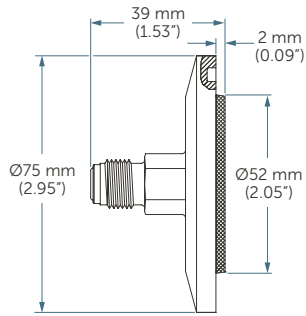
**FV-75**



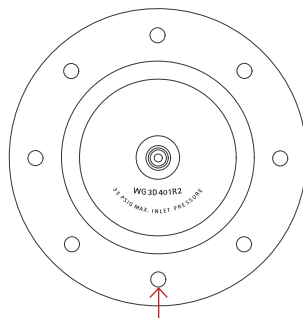
**FV-40D**



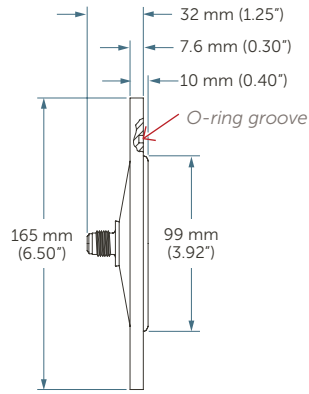
**FV-50DI**



**FV-100D**

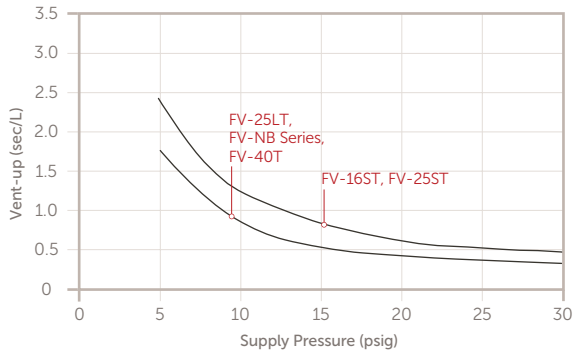


8.7 mm (0.344") dia  
8 through holes equally  
spaced on a 145.0 mm  
(5.709") dia bolt circle

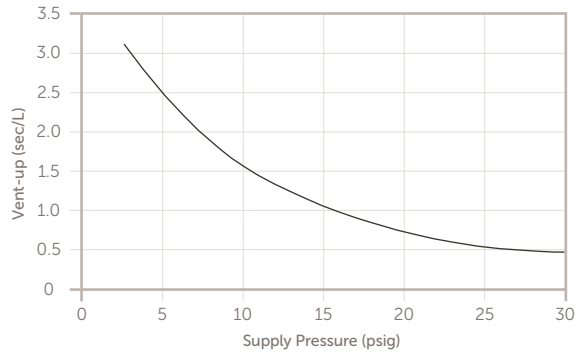


## PERFORMANCE DATA

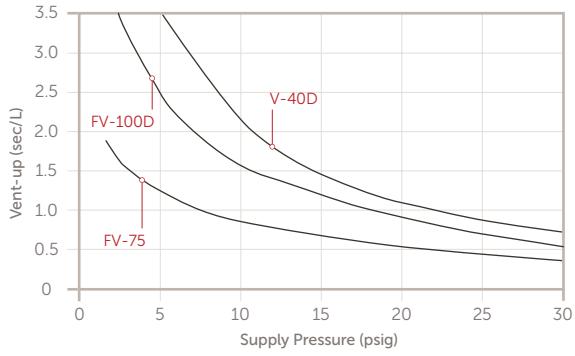
FV-16ST, FV-25ST, FV-25LT, FV-NB Series, FV-40T Vent-up Rate



FV-50DI Vent-up Rate



FV-40D, FV-75, FV-100D Vent-up Rate



## ORDERING INFORMATION

Part number	Product description
WG3D16TR2	FV-16ST Diffuser
WG3D25SR2	FV-25ST Diffuser
WG3D25LR2	FV-25LT Diffuser
WG3D40TR2	FV-40T Diffuser
WG3D40DR2	FV-40D Diffuser
WG3D50DR2	FV-50DI Diffuser
WG3D401R2 Connector Kit: P71917 (bolts and washers)	FV-100D Diffuser
WG3D35BW2	FV-NBLBW Diffuser
WG3D228R2	FV-NBMVCR Diffuser
WG3D350R2	FV-NBLMVCR Diffuser
WG3D3LBW2	FV-NBLTBW Diffuser
S12P134R5	FV-75 Diffuser

### FOR MORE INFORMATION

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