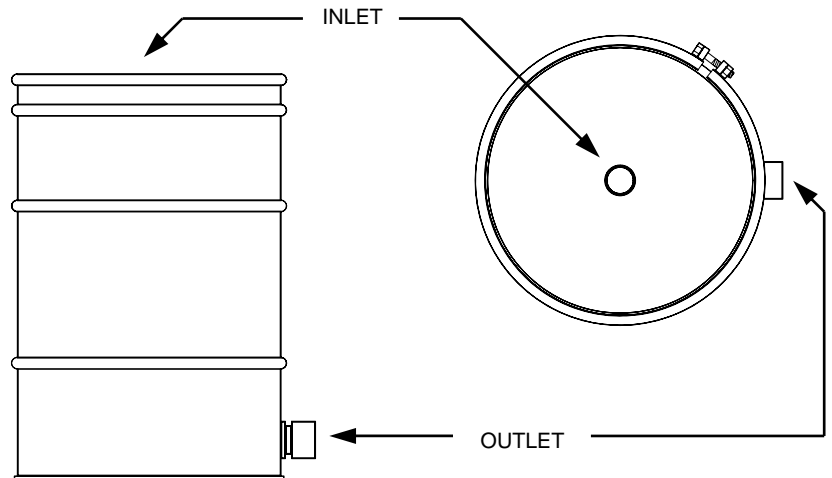
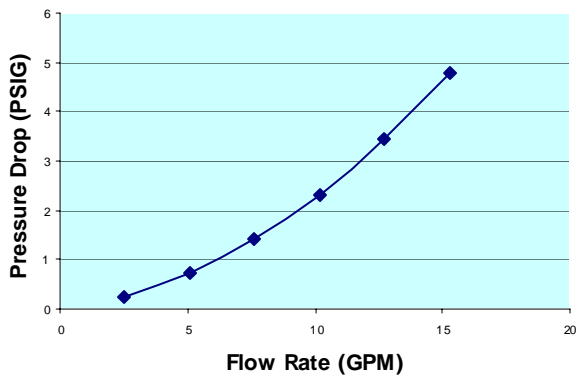


## WS SERIES FILTERS MODEL WS-30

The WS-30 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30)



### WS-30 SPECIFICATIONS

Overall Height	2'6"	Vessel/Internal Piping Materials	CS / SCH 40 PVC
Diameter	18"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	12 PSIG / 140° F
GAC Fill (lbs)	100	Cross Sectional Bed Area	1.8 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	135/325	Bed Depth/Volume	1.8 FT / 3.3 FT <sup>3</sup>

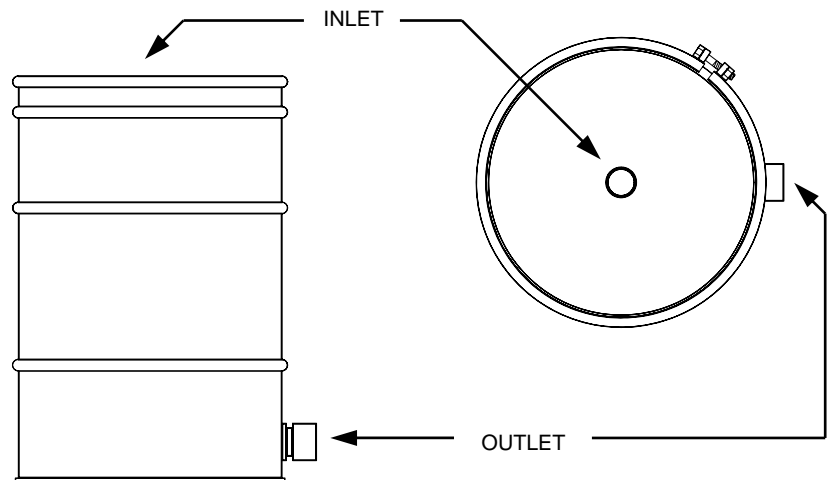
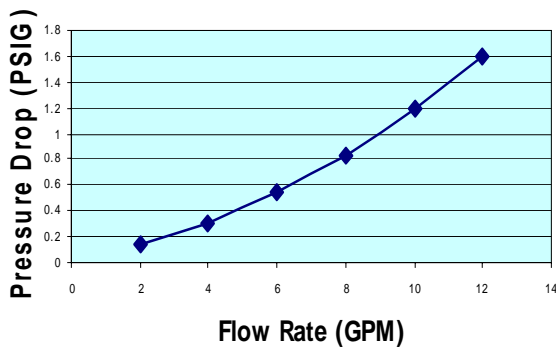
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## WS SERIES FILTERS MODEL WS-55

The WS-55 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-55 SPECIFICATIONS

Overall Height	2'10"	Vessel/Internal Piping Materials	CS / SCH 40 PVC
Diameter	23"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	12 PSIG / 140° F
GAC Fill (lbs)	200	Cross Sectional Bed Area	2.8 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	250/595	Bed Depth/Volume	2.4 FT / 6.6 FT <sup>3</sup>

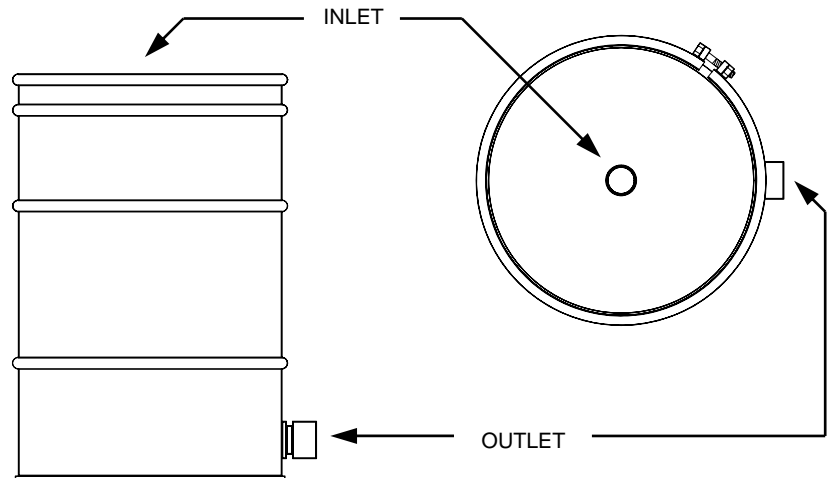
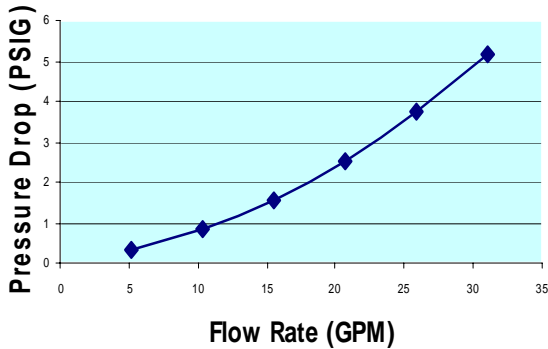
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## WS SERIES FILTERS MODEL WS-85

The WS-85 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-85 SPECIFICATIONS

Overall Height	3'3"	Vessel/Internal Piping Materials	CS / SCH 40 PVC
Diameter	26"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	8 PSIG / 140° F
GAC Fill (lbs)	300	Cross Sectional Bed Area	3.7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	380/905	Bed Depth/Volume	2.7 FT / 10 FT <sup>3</sup>

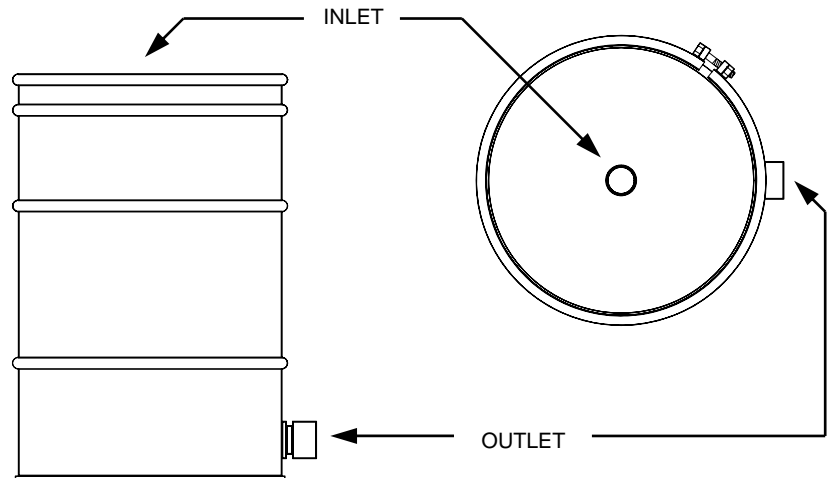
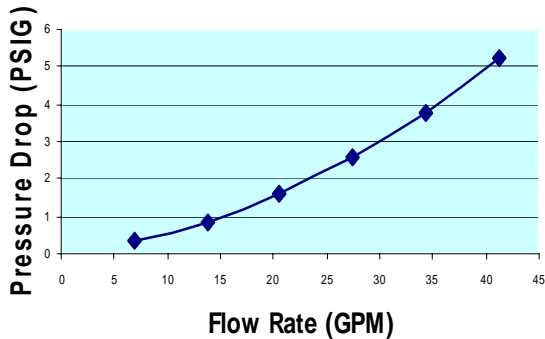
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## WS SERIES FILTERS MODEL WS-110

The WS-110 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-110 SPECIFICATIONS

Overall Height	3'7"	Vessel/Internal Piping Materials	CS / SCH 40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	3 PSIG / 140° F
GAC Fill (lbs)	400	Cross Sectional Bed Area	4.9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	500/1,170	Bed Depth/Volume	2.7 FT / 13 FT <sup>3</sup>

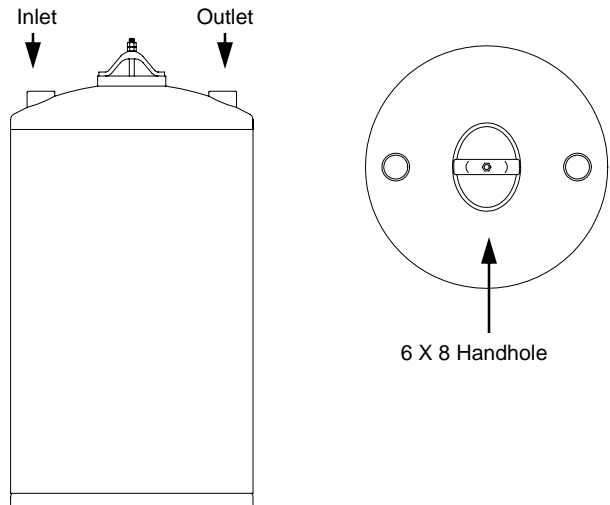
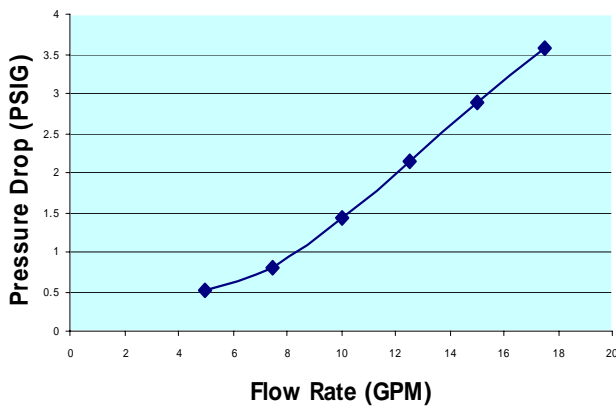
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## WS SERIES FILTERS MODEL WS-250

The WS-250 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled 8\*30 GAC)



### WS-250 SPECIFICATIONS

Overall Height	3'11"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	24"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	60 PSIG / 140° F
GAC Fill (lbs)	250	Cross Sectional Bed Area	3.1 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	415/850	Bed Depth/Volume	2.8 FT / 8.7 FT <sup>3</sup>

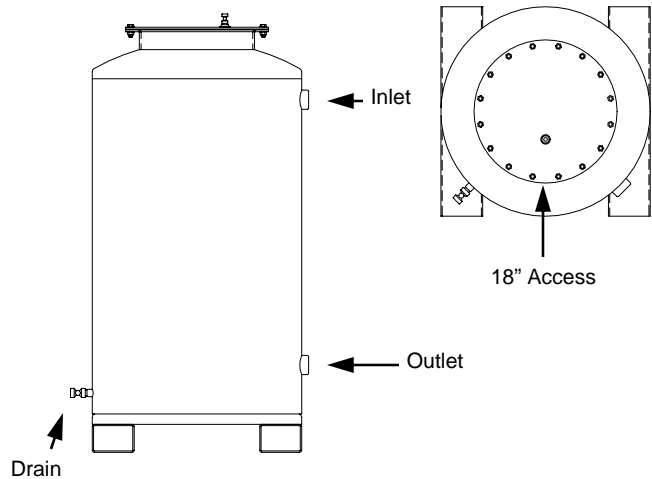
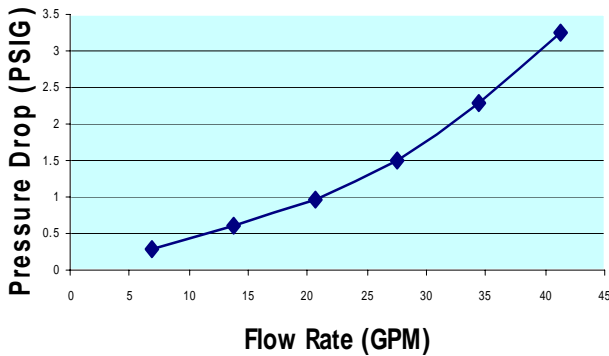
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## WS SERIES FILTERS MODEL WS-500

The WS-500 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



WS-500 SPECIFICATIONS			
Overall Height	5'3"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1/2" / 1/4"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	500	Cross Sectional Bed Area	4.9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	875/1,765	Bed Depth/Volume	3.4 FT / 16.7 FT <sup>3</sup>

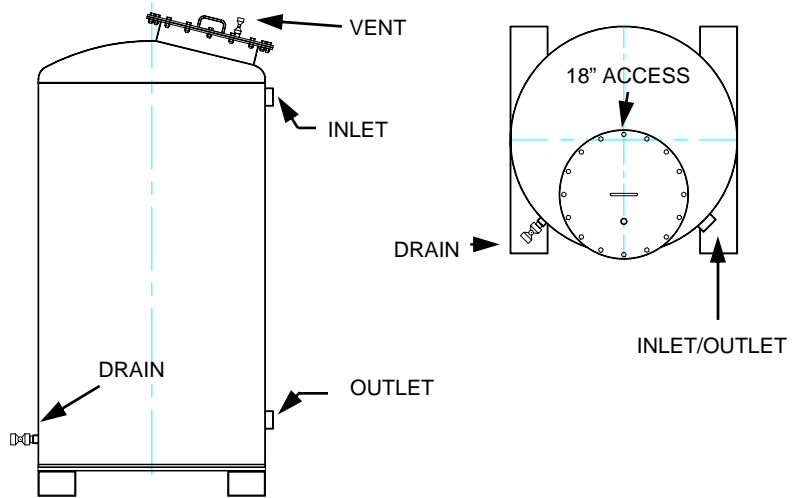
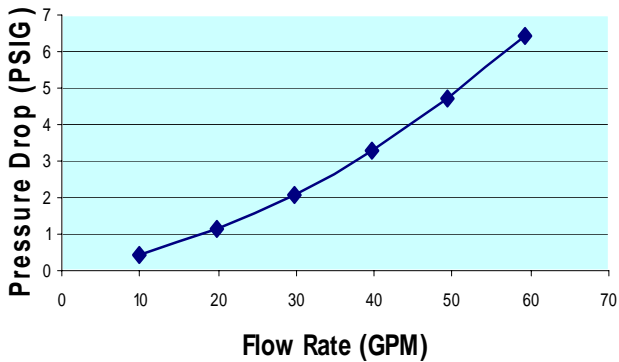
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## WS SERIES FILTERS MODEL WS-1000

The WS-1000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-1000 SPECIFICATIONS

Overall Height	6'5"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	36"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1/2" / 1/4"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	1,000	Cross Sectional Bed Area	7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,500/3,100	Bed Depth/Volume	5 FT / 33 FT <sup>3</sup>

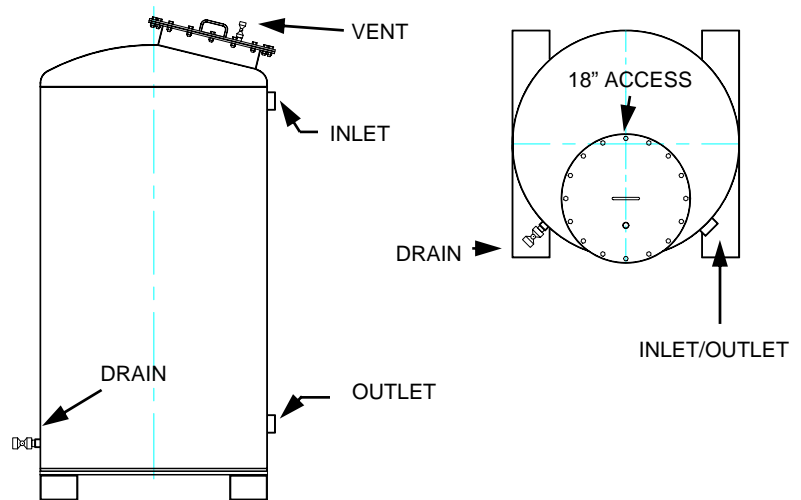
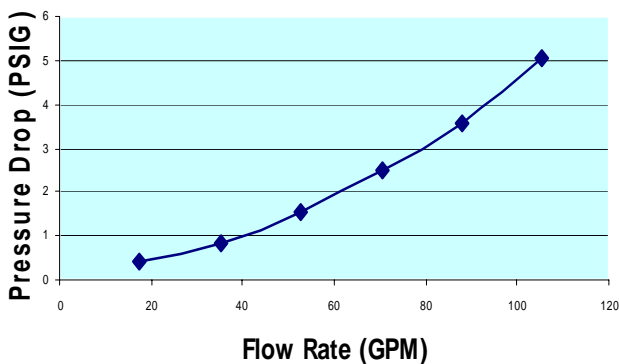
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## WS SERIES FILTERS MODEL WS-2000

The WS-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-2000 SPECIFICATIONS

Overall Height	7'7"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4" / 1/2"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	2000	Cross Sectional Bed Area	12.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	2,925/6,400	Bed Depth/Volume	5.5 FT / 68.7 FT <sup>3</sup>

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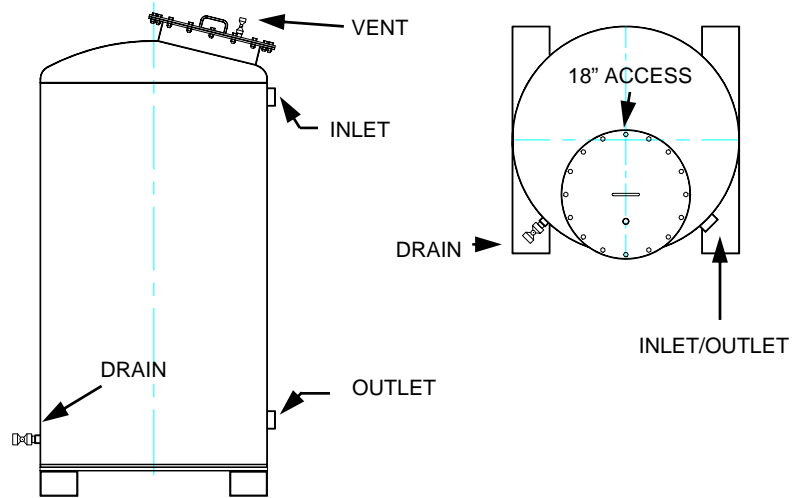
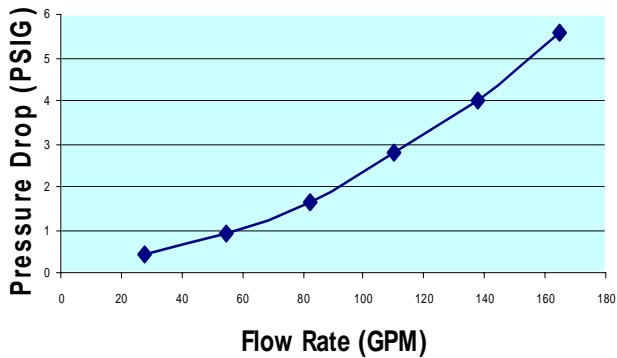


## WS SERIES FILTERS MODEL WS-3000

The WS-3000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-3000 SPECIFICATIONS

Overall Height	7'10"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	60"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1" / 1/2"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	3000	Cross Sectional Bed Area	19.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	4,375/9,875	Bed Depth/Volume	5.5 FT / 107 FT <sup>3</sup>

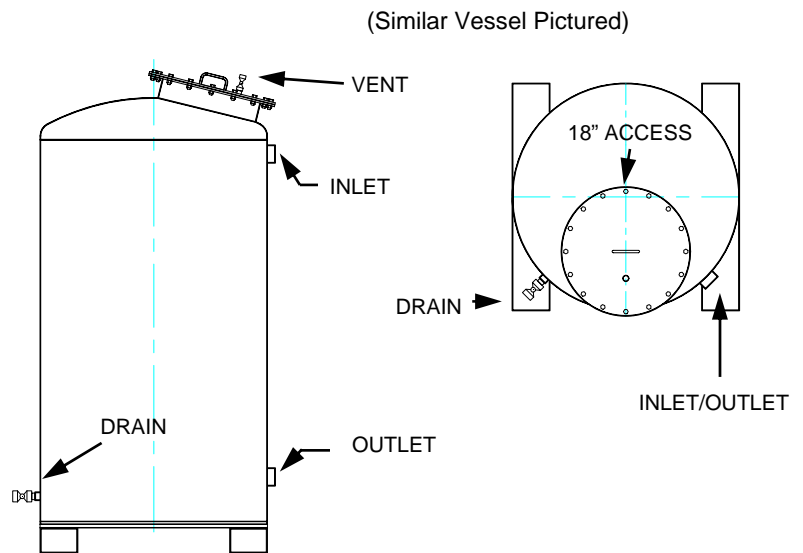
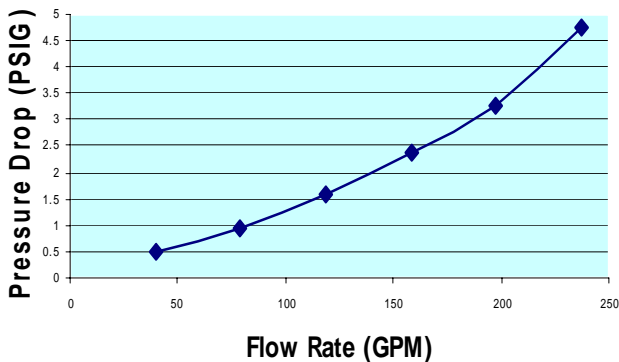
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## WS SERIES FILTERS MODEL WS-5000

The WS-5000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-5000 SPECIFICATIONS

Overall Height	9'0"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	72"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1 1/2" / 3/4"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	5000	Cross Sectional Bed Area	28 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	7,300/16,550	Bed Depth/Volume	6 FT / 168 FT <sup>3</sup>

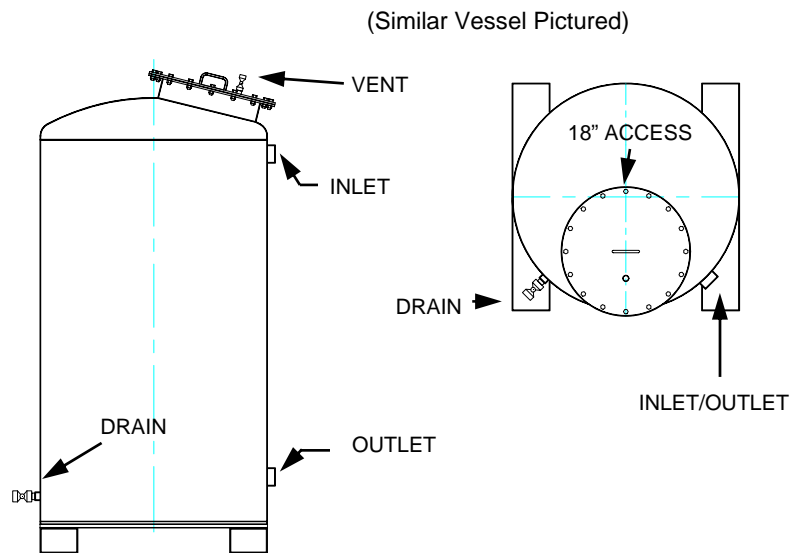
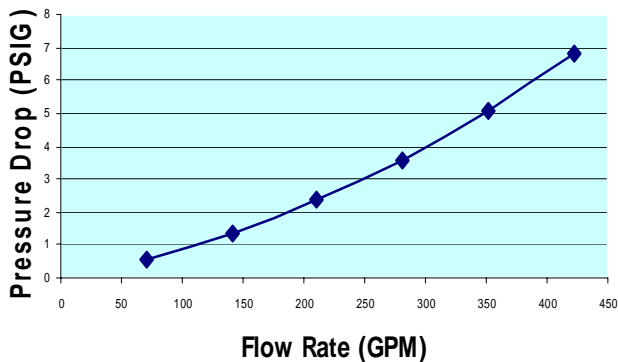
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## WS SERIES FILTERS MODEL WS-10000

The WS-10000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WS-10000 SPECIFICATIONS

Overall Height	9'4"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	96"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	2" / 1"	Maximum Pressure / Temp	40 PSIG / 140° F
GAC Fill (lbs)	10000	Cross Sectional Bed Area	50 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	13,150/29,050	Bed Depth/Volume	7 FT / 350 FT <sup>3</sup>

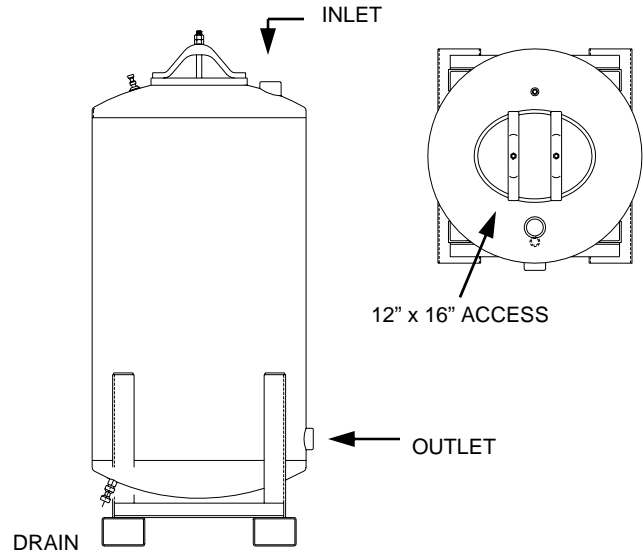
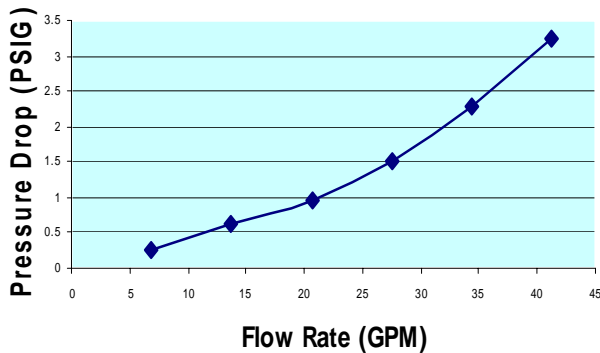
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## WS SERIES FILTERS MODEL HPWS-500

The HPWS-500 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 9'30)



### HPWS-500 SPECIFICATIONS

Overall Height	5'11"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1/2" / 1/4"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	500	Cross Sectional Bed Area	4.9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	850/1,770	Bed Depth/Volume	3.4 FT / 16.7 FT <sup>3</sup>

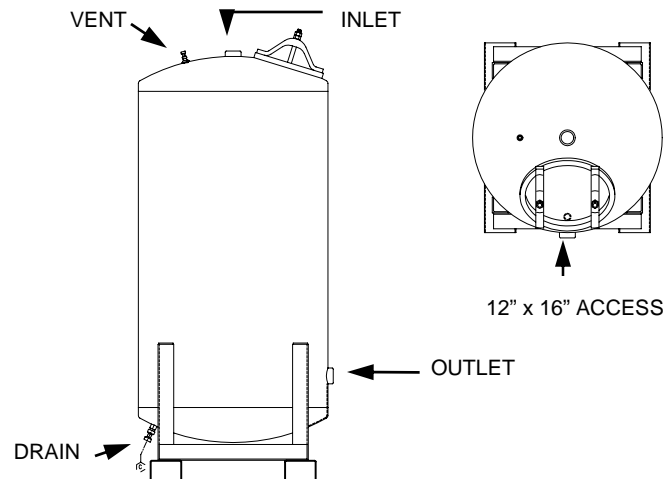
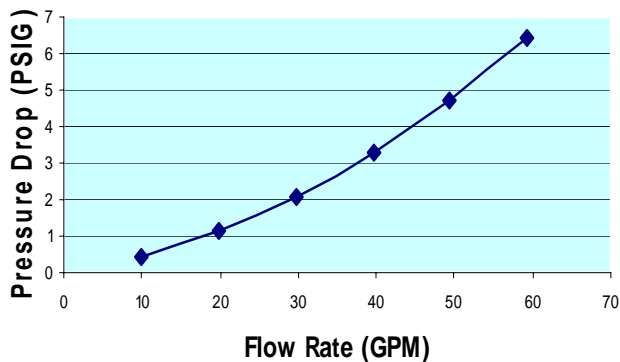
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## WS SERIES FILTERS MODEL HPWS-1000

The HPWS-1000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-1000 SPECIFICATIONS

Overall Height	7'2"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	36"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1/2" / 1/4"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	1,000	Cross Sectional Bed Area	7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,535/3,295	Bed Depth/Volume	5 FT / 33 FT <sup>3</sup>

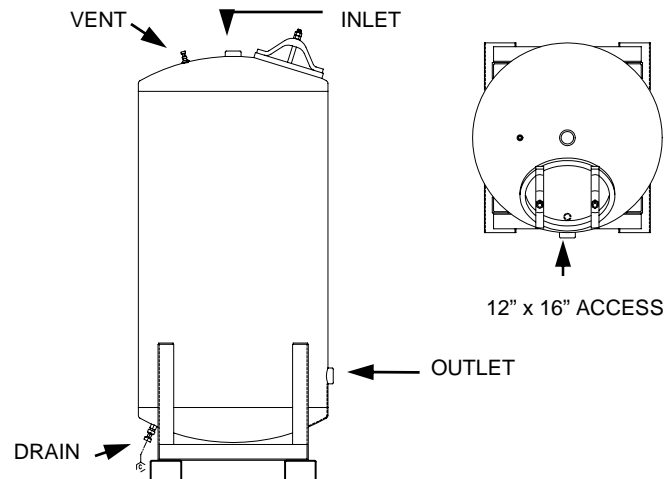
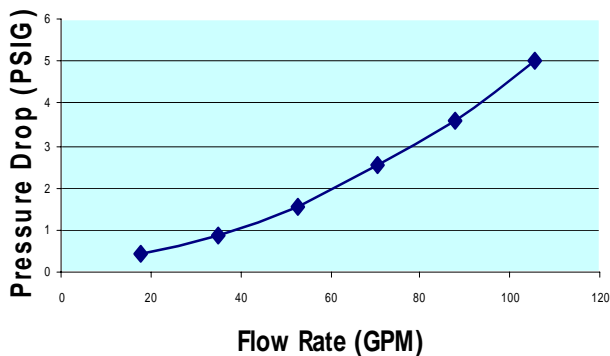
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## WS SERIES FILTERS MODEL HPWS-2000

The HPWS-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-2000 SPECIFICATIONS

Overall Height	8'6"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4" / 1/2"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	2,000	Cross Sectional Bed Area	12.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	3,020/6,775	Bed Depth/Volume	5.5 FT / 68.7 FT <sup>3</sup>

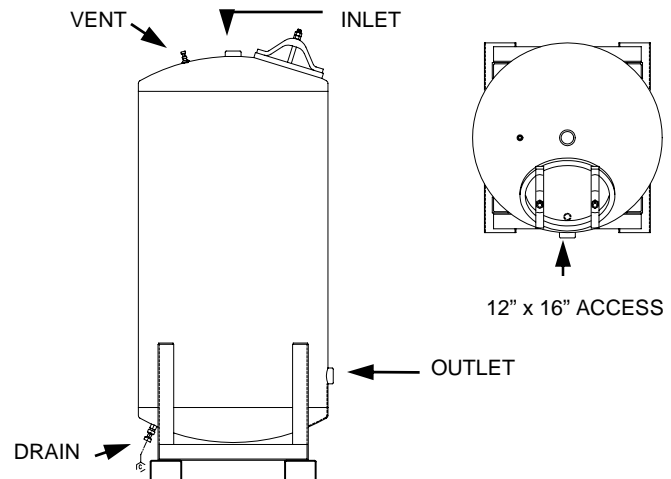
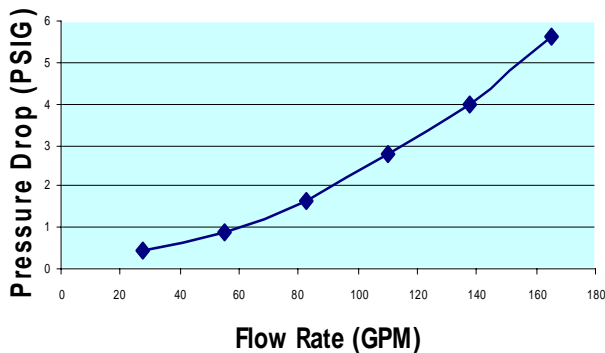
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## WS SERIES FILTERS MODEL HPWS-3000

The HPWS-3000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-3000 SPECIFICATIONS

Overall Height	8'11"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	60"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1" / 1/2"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	3,000	Cross Sectional Bed Area	19.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	3,525/10,635	Bed Depth/Volume	5.5 FT / 107 FT <sup>3</sup>

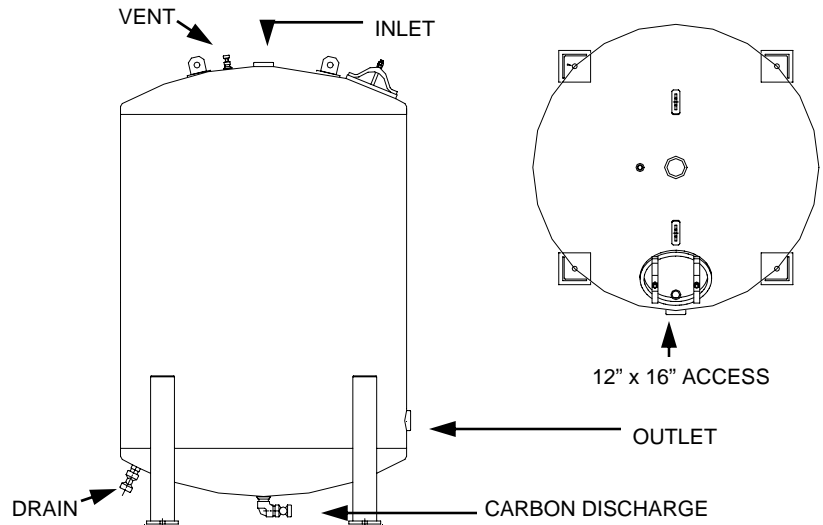
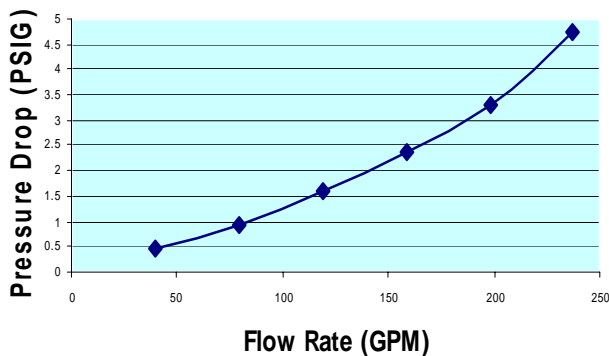
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## WS SERIES FILTERS MODEL HPWS-5000

The HPWS-5000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-5000 SPECIFICATIONS

Overall Height	9'11"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	72"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	1 1/2" / 3/4"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	5,000	Cross Sectional Bed Area	28 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	7,490/17,860	Bed Depth/Volume	6 FT / 168 FT <sup>3</sup>

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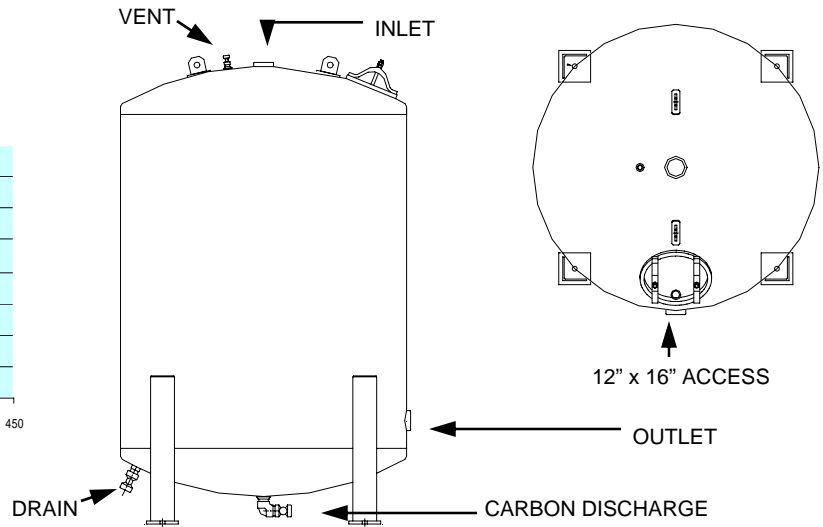
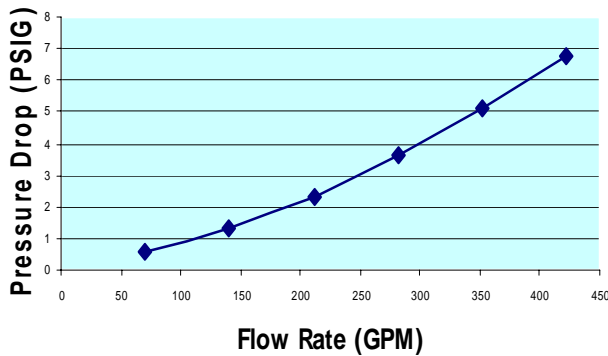


## WS SERIES FILTERS MODEL HPWS-10000

The HPWS-10000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-10000 SPECIFICATIONS

Overall Height	10'9"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	96"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6" FLNG	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	2" / 1"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	10,000	Cross Sectional Bed Area	50 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	13,800/31,115	Bed Depth/Volume	7 FT / 350 FT <sup>3</sup>

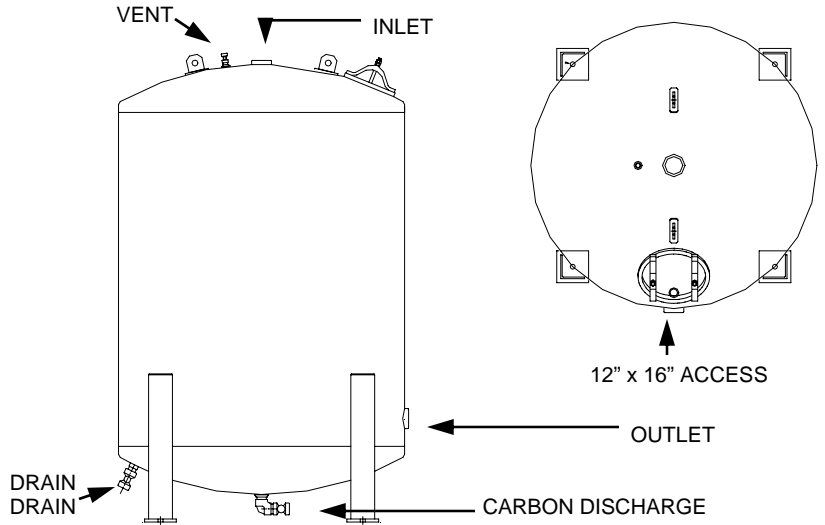
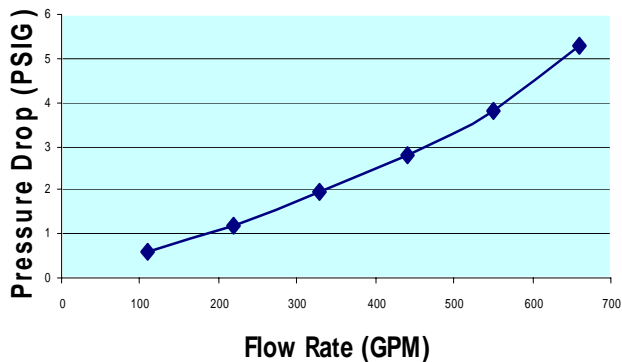
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## WS SERIES FILTERS MODEL HPWS-20000

The HPWS-20000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### HPWS-20000 SPECIFICATIONS

Overall Height	15'10"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	120"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	8" FLNG	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	2" / 1"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	20,000	Cross Sectional Bed Area	78 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	27,250/68,320	Bed Depth/Volume	7 FT / 350 FT <sup>3</sup>

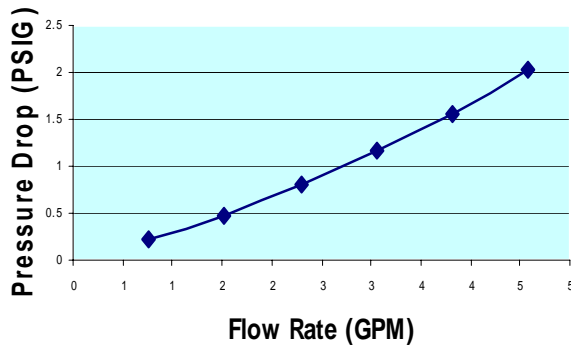
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## WS SERIES FILTERS MODEL WSHP-50

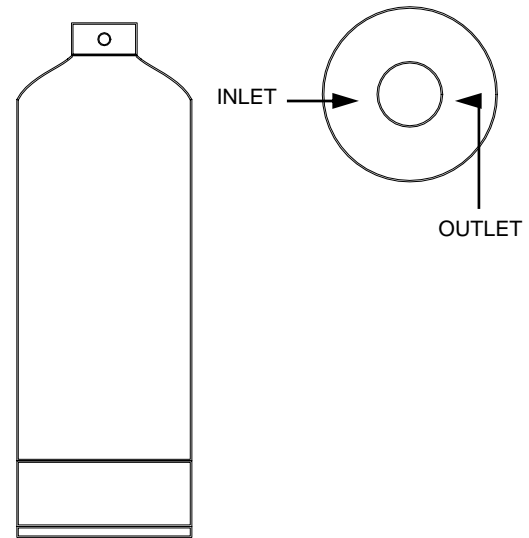
The WSHP-50 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled 8\*30 GAC)



(Similar Vessel Pictured)



### WSHP-50 SPECIFICATIONS

Overall Height	3'11"	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	10"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3/4"	External Coating	Polyethylene
Drain / Vent (FNPT)	NA	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	50	Cross Sectional Bed Area	0.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	60/155	Bed Depth/Volume	3.1 FT / 1.7 FT <sup>3</sup>

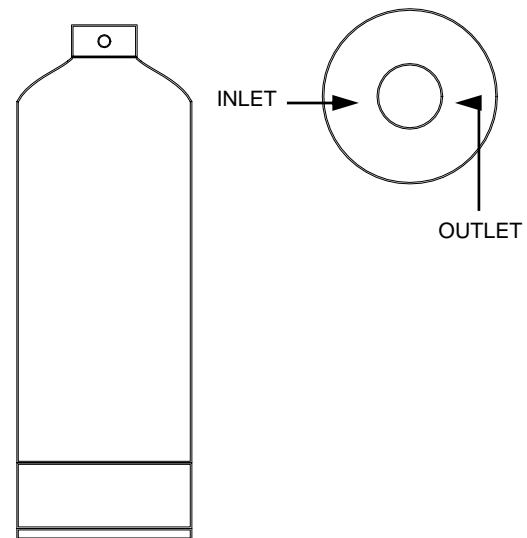
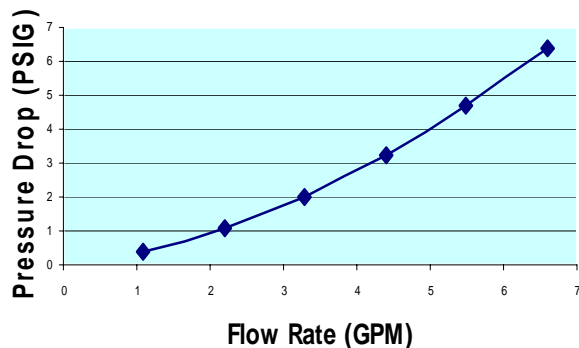
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## WS SERIES FILTERS MODEL WSHP-100

The WSHP-100 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WSHP-100 SPECIFICATIONS

Overall Height	4'7"	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	12"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3/4"	External Coating	Polyethylene
Drain / Vent (FNPT)	NA	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	100	Cross Sectional Bed Area	0.7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	130/245	Bed Depth/Volume	4.7 FT / 3.3 FT <sup>3</sup>

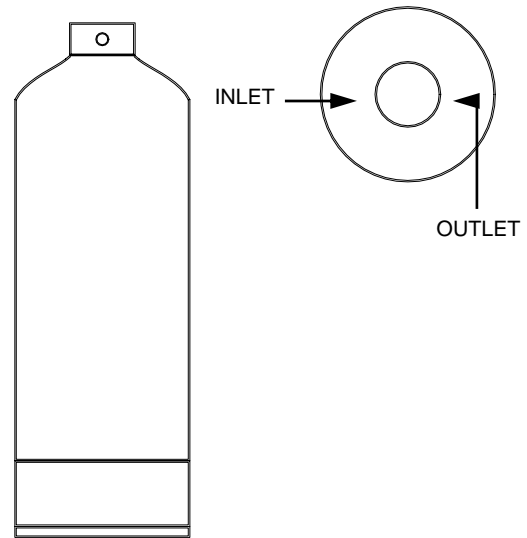
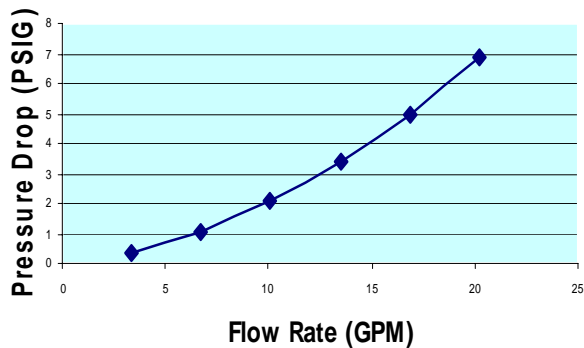
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## WS SERIES FILTERS MODEL WSHP-200

The WSHP-200 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(AS Filled - 8\*30 GAC)



### WSHP-200 SPECIFICATIONS

Overall Height	4'	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	22"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	1"	External Coating	Polyethylene
Drain / Vent (FNPT)	NA	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	200	Cross Sectional Bed Area	1.3 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	235/520	Bed Depth/Volume	5 FT / 6.5 FT <sup>3</sup>

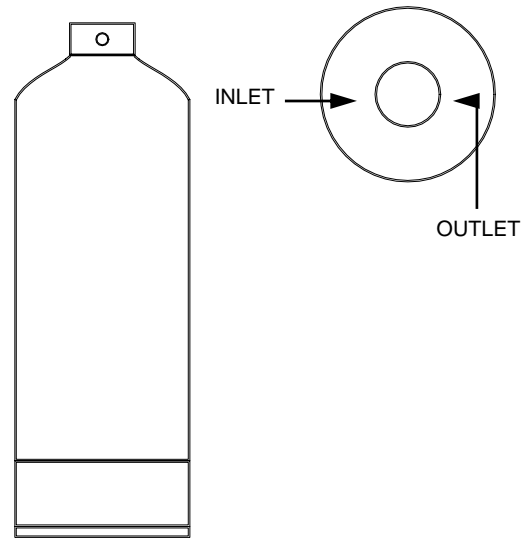
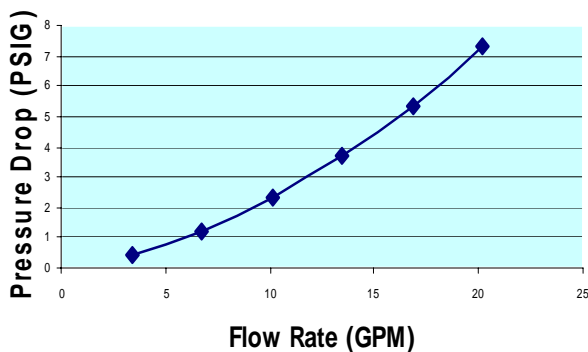
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## WS SERIES FILTERS MODEL WSHP-300

The WSHP-300 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WSHP-300 SPECIFICATIONS

Overall Height	6'	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	21"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	1"	External Coating	Polyethylene
Drain / Vent (FNPT)	NA	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	300	Cross Sectional Bed Area	2.3 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	380/905	Bed Depth/Volume	4.3 FT / 10 FT <sup>3</sup>

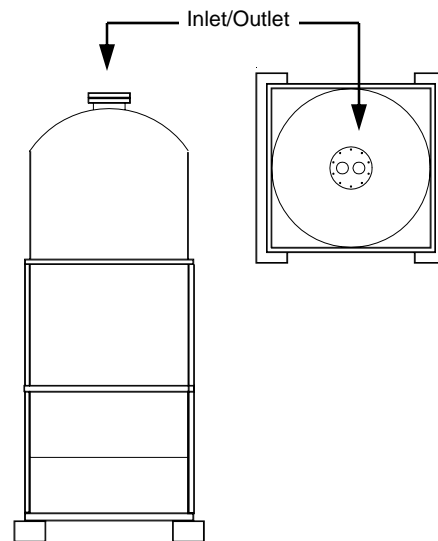
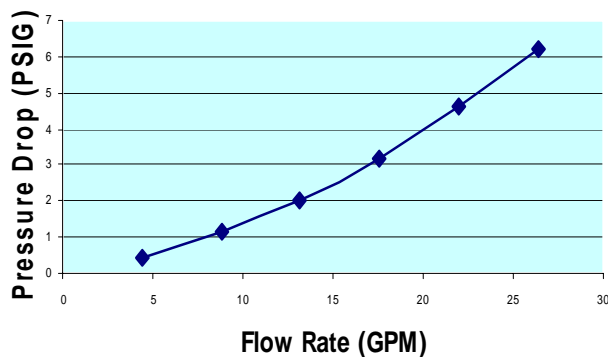
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## WS SERIES FILTERS MODEL WSHP-500

The WSHP-500 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled - 8\*30 GAC)



### WSHP-500 SPECIFICATIONS

Overall Height	7'2"	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Polyethylene
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	500	Cross Sectional Bed Area	4.7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	650/2065	Bed Depth/Volume	3.5 FT / 17 FT <sup>3</sup>

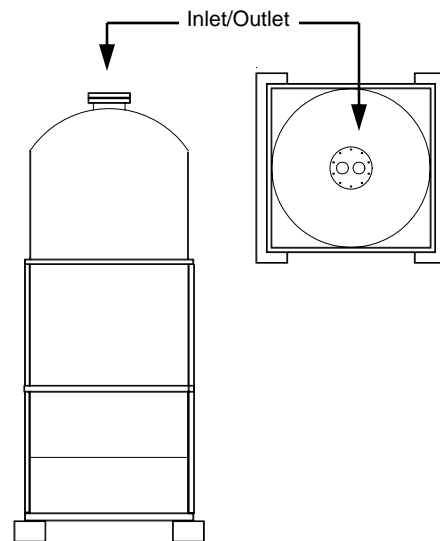
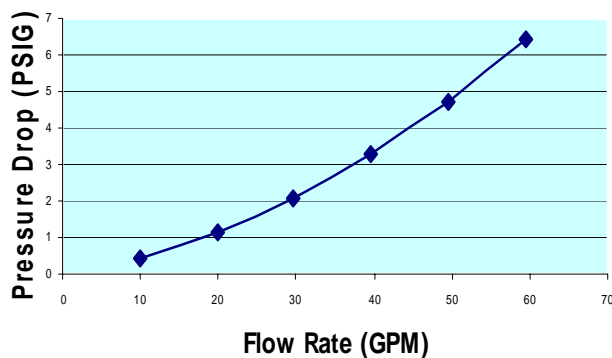
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## WS SERIES FILTERS MODEL WSHP-1000

The WSHP-1000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP GRAPH**  
(As Filled 8\*30 GAC)



### WSHP-1000 SPECIFICATIONS

Overall Height	7'5"	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	36"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Polyethylene
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	1000	Cross Sectional Bed Area	6.7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,225/3,020	Bed Depth/Volume	5 FT / 33 FT <sup>3</sup>

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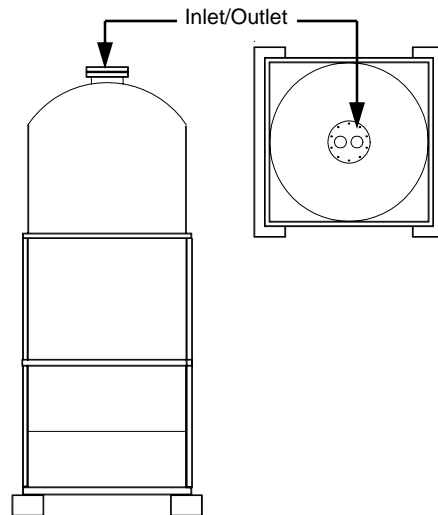
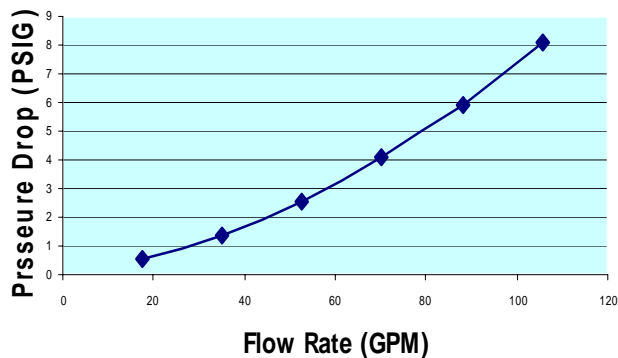


## WS SERIES FILTERS MODEL WSHP-2000

The WSHP-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

**PRESSURE DROP CHART**  
(As Filled - 8\*30 GAC)



### WSHP-2000 SPECIFICATIONS

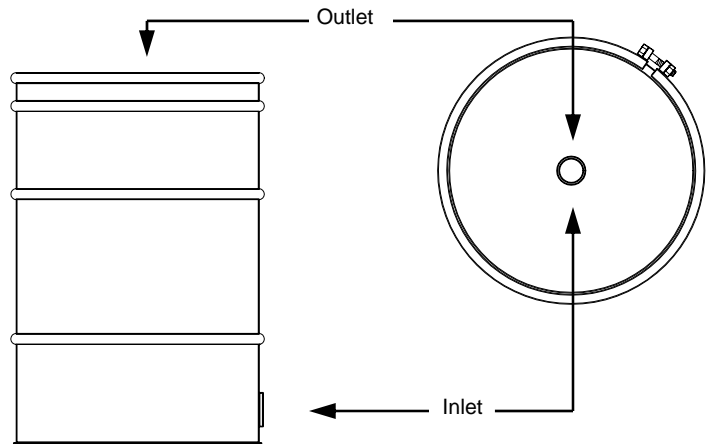
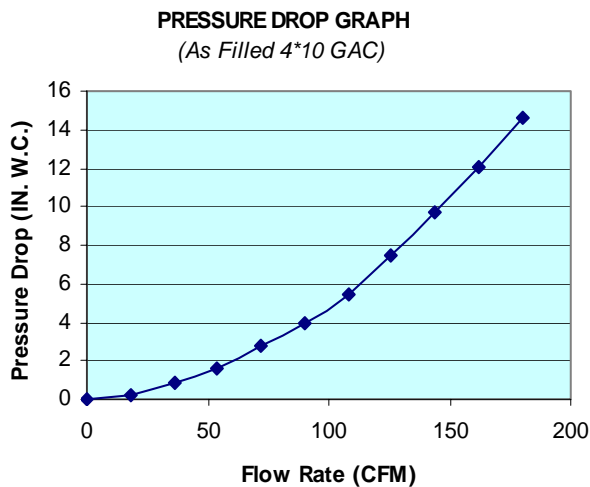
Overall Height	8'1"	Vessel/Internal Piping Materials	Polyethylene/SCH40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Polyethylene
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	125 PSIG / 120° F
GAC Fill (lbs)	2000	Cross Sectional Bed Area	12.2 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	2,350/5,330	Bed Depth/Volume	5.5 FT / 66 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-30

The VS-30 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



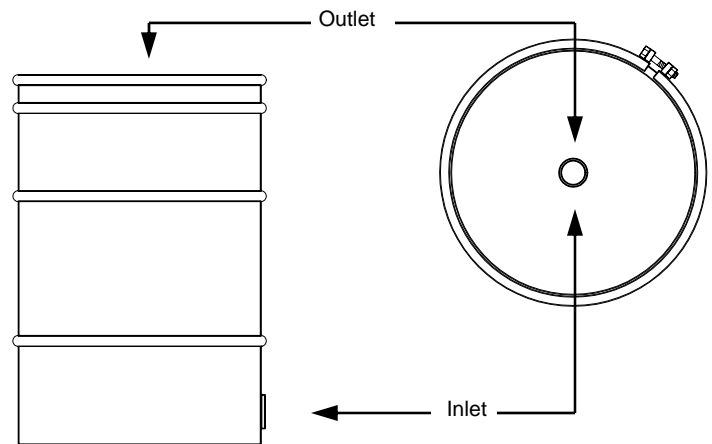
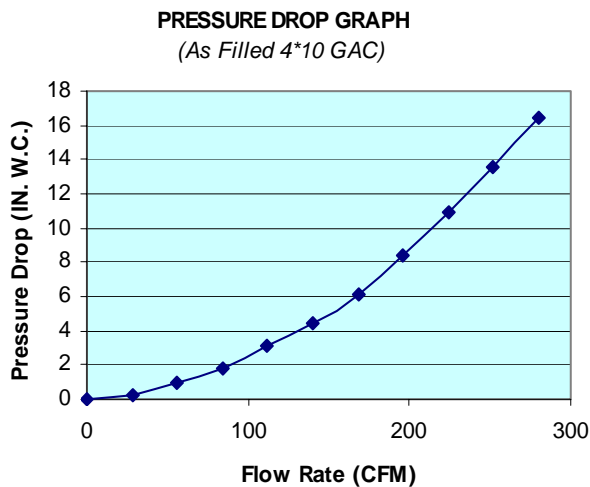
VS-30 SPECIFICATIONS			
Overall Height	2'6"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Diameter	18"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	4 PSIG / 250° F
GAC Fill (lbs)	100	Cross Sectional Bed Area	1.8 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	135/160	Bed Depth/Volume	1.8 FT / 3.3 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-55

The VS-55 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



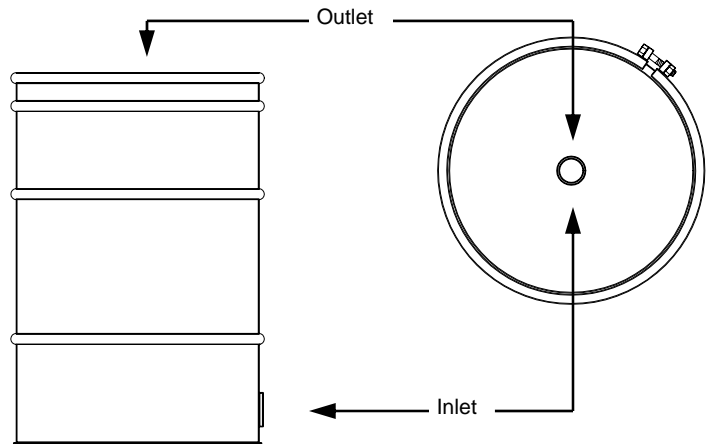
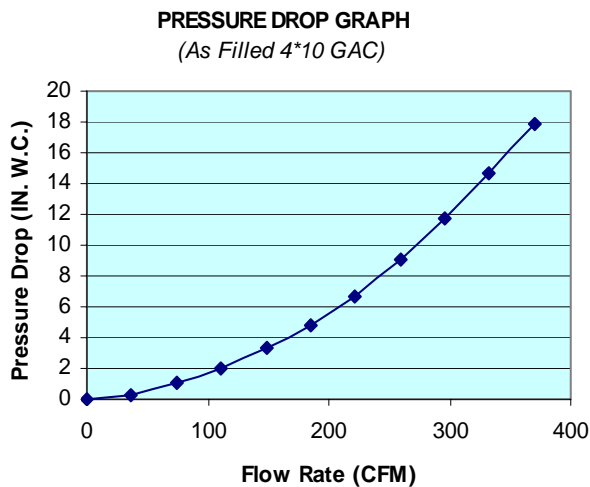
VS-55 SPECIFICATIONS			
Overall Height	2'10"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Diameter	23"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	4 PSIG / 250° F
GAC Fill (lbs)	175	Cross Sectional Bed Area	2.8 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	225/300	Bed Depth/Volume	2.2 FT / 6.3 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-85

The VS-85 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



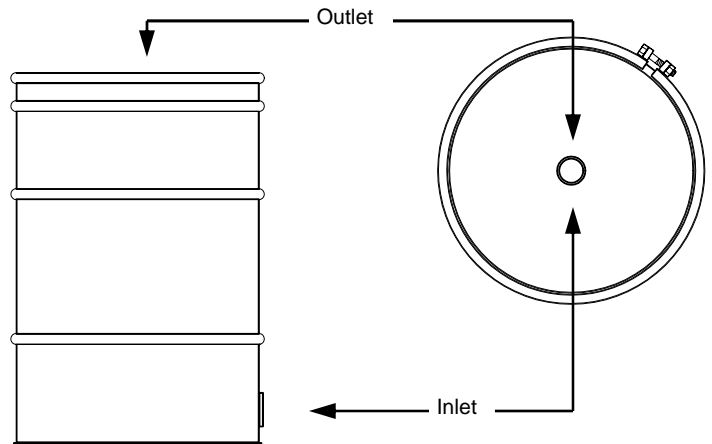
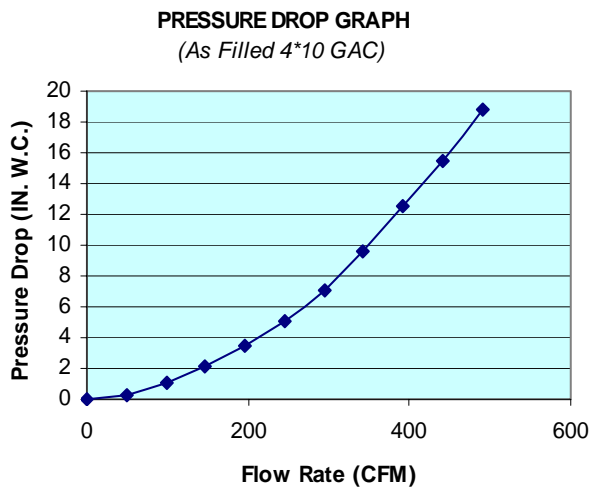
VS-85 SPECIFICATIONS			
Overall Height	3'3"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Diameter	28"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	4 PSIG / 250° F
GAC Fill (lbs)	250	Cross Sectional Bed Area	3.7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	325/455	Bed Depth/Volume	2.4 FT / 8.9 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-110

The VS-110 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



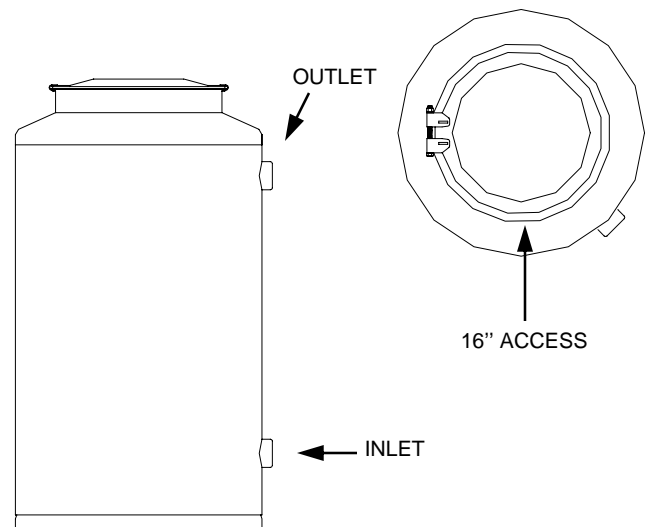
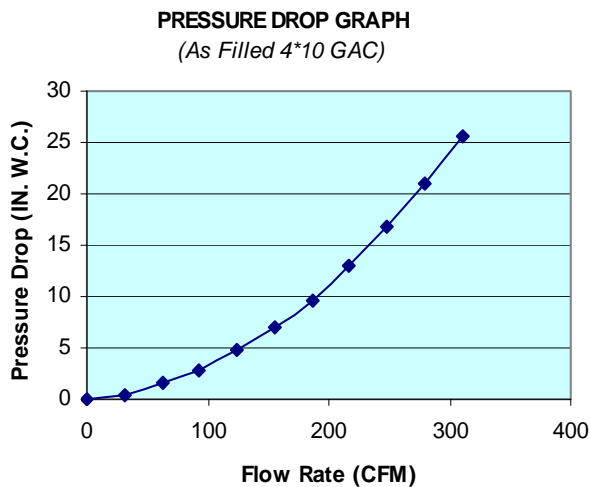
VS-110 SPECIFICATIONS			
Overall Height	3'7"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Diameter	32"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	4 PSIG / 250° F
GAC Fill (lbs)	350	Cross Sectional Bed Area	4.9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	450/600	Bed Depth/Volume	2.6 FT / 12.5 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-250

The VSV-250 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



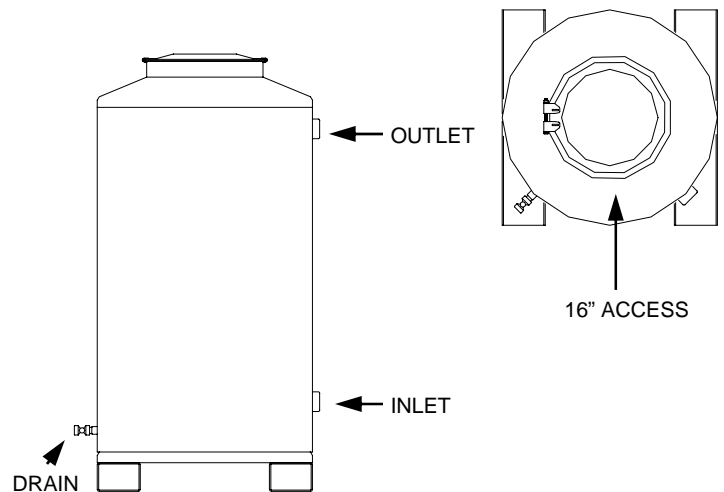
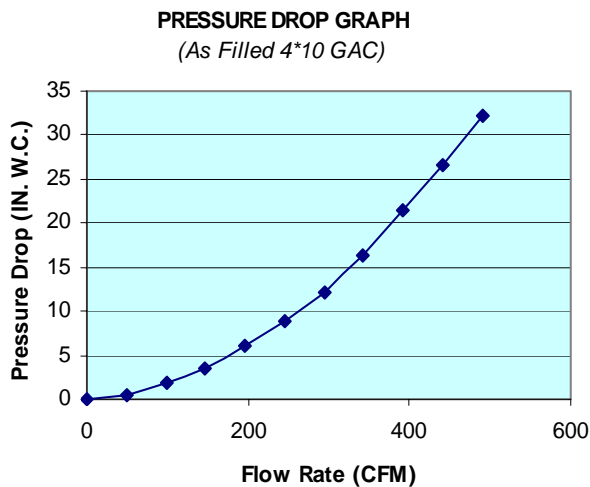
VSV-250 SPECIFICATIONS			
Overall Height	3'11"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	24"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	10 PSIG / 140° F
GAC Fill (lbs)	250	Cross Sectional Bed Area	3.1 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	415/475	Bed Depth/Volume	2.9 FT / 8.9 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-500

The VSV-500 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



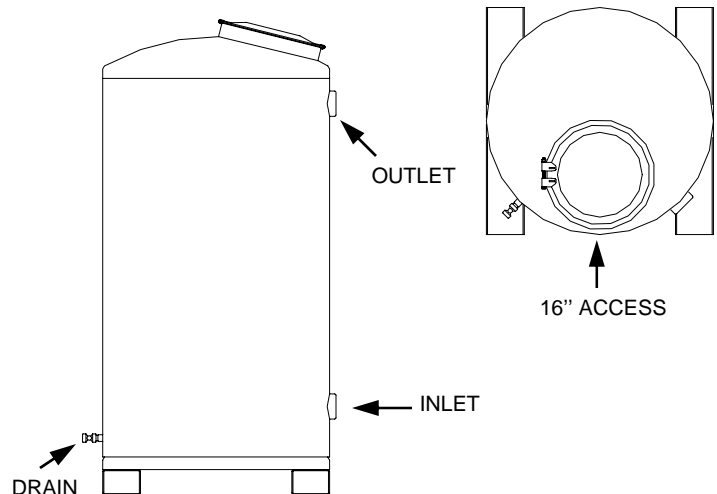
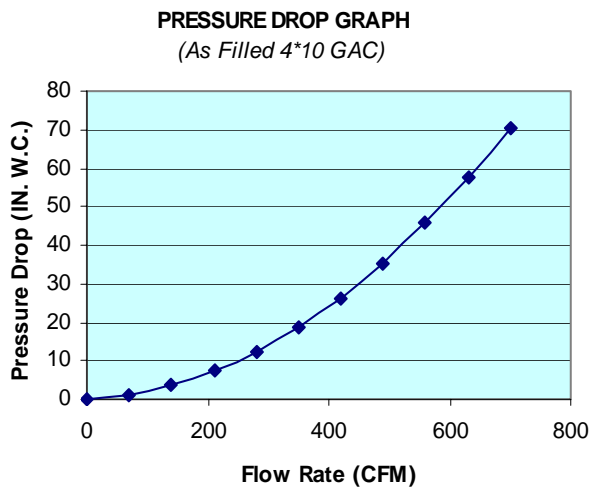
VSV-500 SPECIFICATIONS			
Overall Height	5'3"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	2"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	1/2"	Maximum Pressure / Temp	10 PSIG / 140° F
GAC Fill (lbs)	500	Cross Sectional Bed Area	4.9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	875/1,000	Bed Depth/Volume	3.6 FT / 17.9 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-1000

The VSV-1000 filter is a media filter vessel designed to treat vapor streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



### VSV-1000 SPECIFICATIONS

Overall Height	6'5"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	36"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	1/2"	Maximum Pressure / Temp	10 PSIG / 140° F
GAC Fill (lbs)	1000	Cross Sectional Bed Area	7 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,500/1,750	Bed Depth/Volume	5 FT / 35 FT <sup>3</sup>

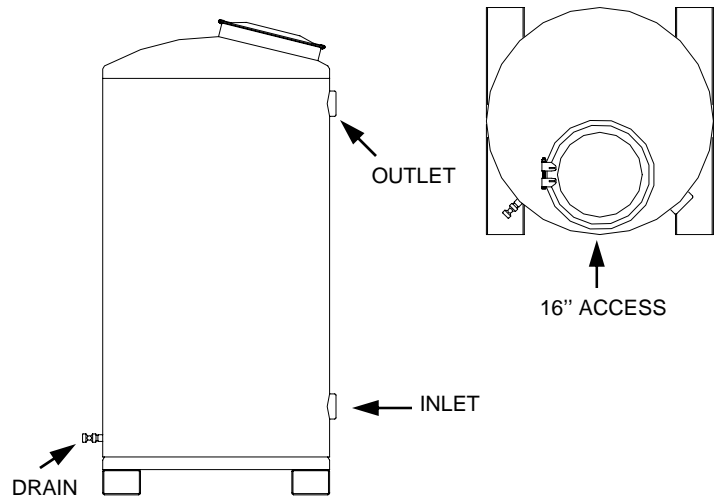
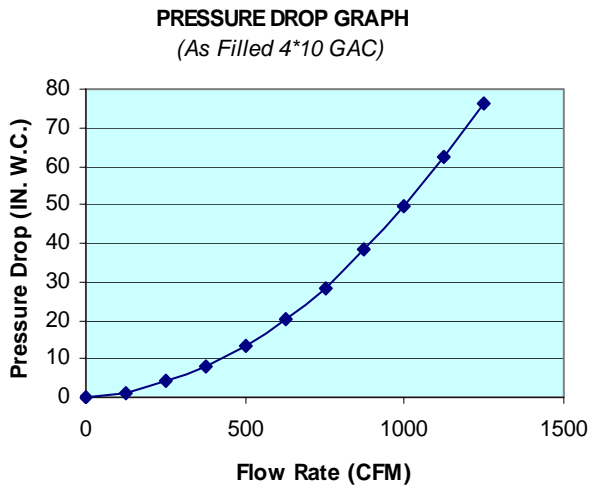
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## VS SERIES FILTERS MODEL VSV-2000

The VSV-2000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



### VSV-2000 SPECIFICATIONS

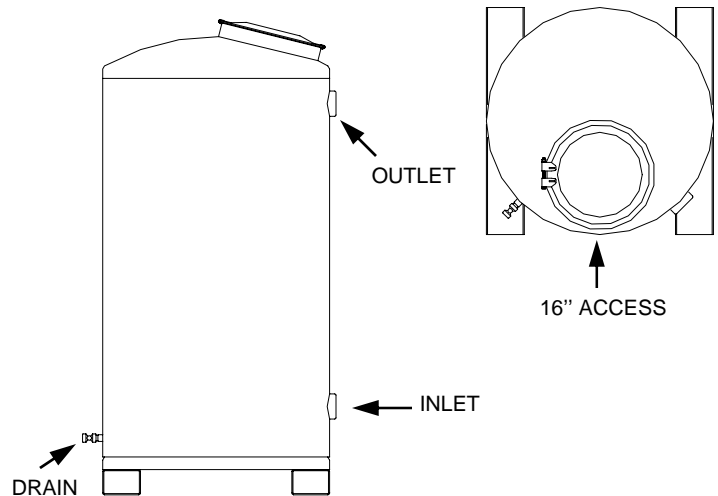
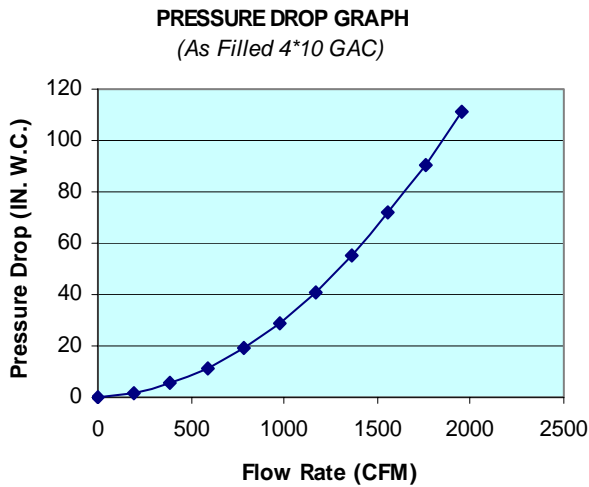
Overall Height	7'7"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	3/4"	Maximum Pressure / Temp	10 PSIG / 140° F
GAC Fill (lbs)	2000	Cross Sectional Bed Area	12.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	2,925/3,425	Bed Depth/Volume	5.7 FT / 71 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-3000

The VSV-3000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



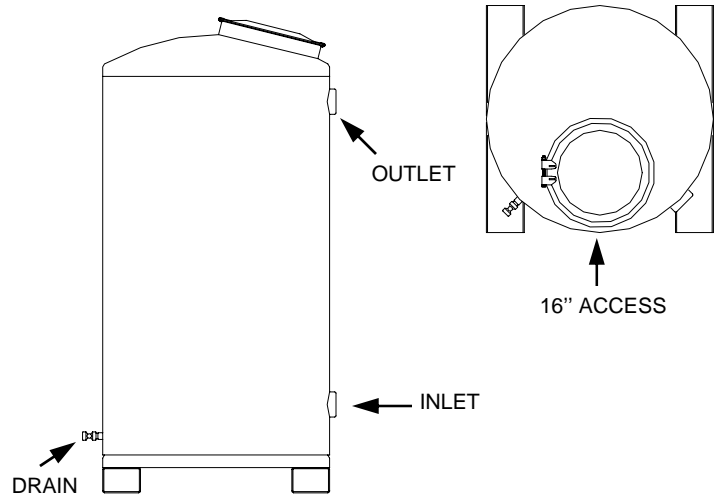
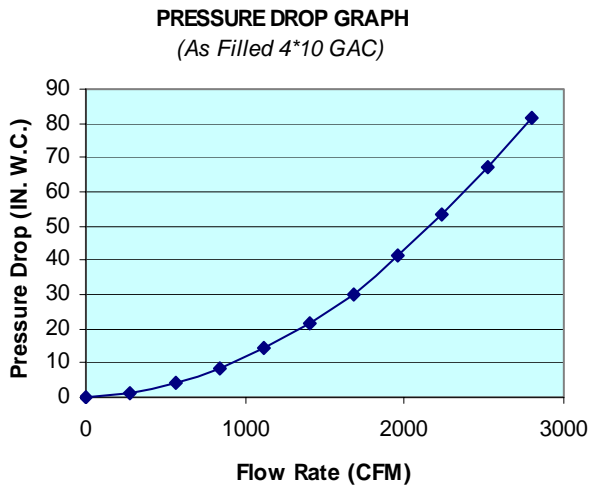
VSV-3000 SPECIFICATIONS			
Overall Height	7'10"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	60"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	1"	Maximum Pressure / Temp	10 PSIG / 140° F
GAC Fill (lbs)	3000	Cross Sectional Bed Area	19.5 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	4,375/5,125	Bed Depth/Volume	5.5 FT / 107 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-5000

The VSV-5000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



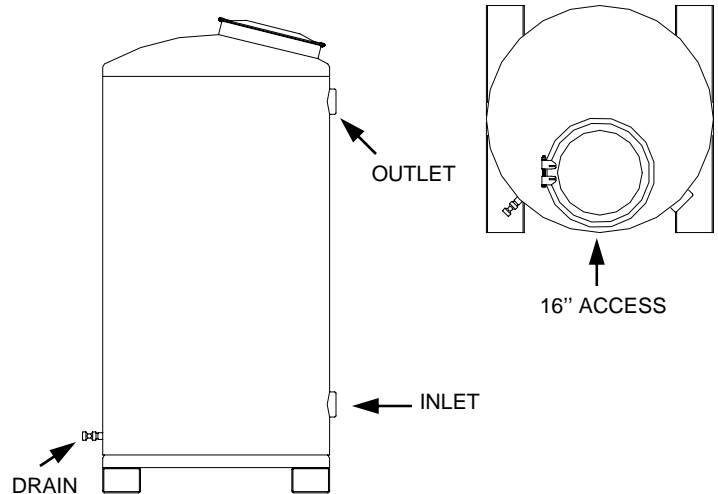
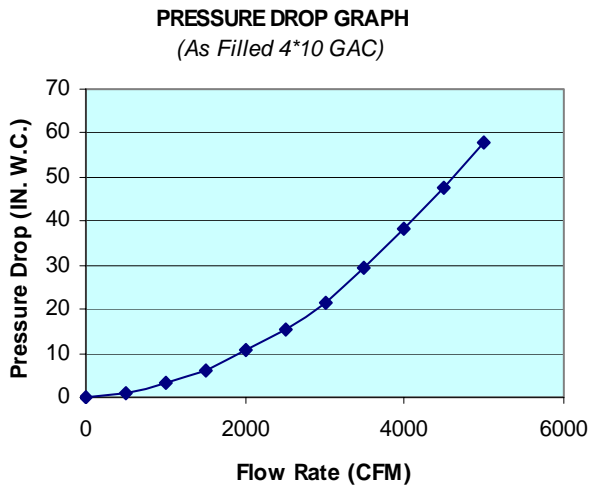
VSV-5000 SPECIFICATIONS			
Overall Height	9'0"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	72"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	1 1/2"	Maximum Pressure / Temp	8 PSIG / 140° F
GAC Fill (lbs)	5000	Cross Sectional Bed Area	28 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	7,300/8,500	Bed Depth/Volume	6.4 FT / 179 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VSV-10000

The VSV-10000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



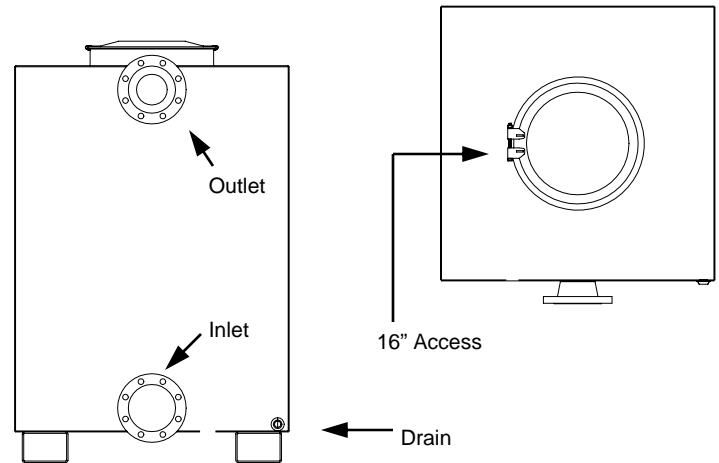
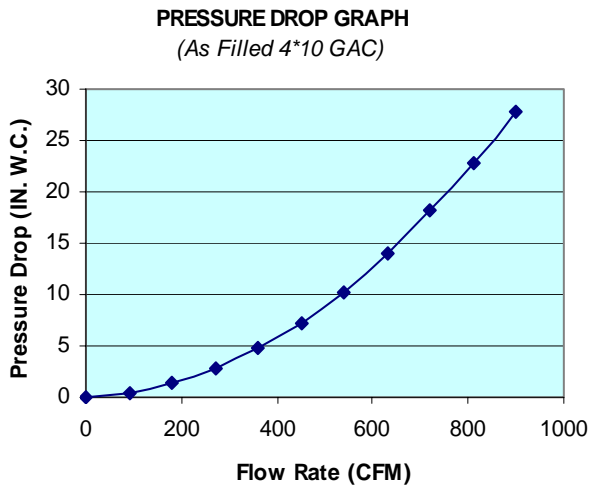
VSV-10000 SPECIFICATIONS			
Overall Height	9'4"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	96"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6"	External Coating	Urethane Enamel
Drain / Vent (FNPT)	2"	Maximum Pressure / Temp	8 PSIG / 140° F
GAC Fill (lbs)	10000	Cross Sectional Bed Area	50 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	13,150/15,00	Bed Depth/Volume	7.1 FT / 357 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-500

The VS-500 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



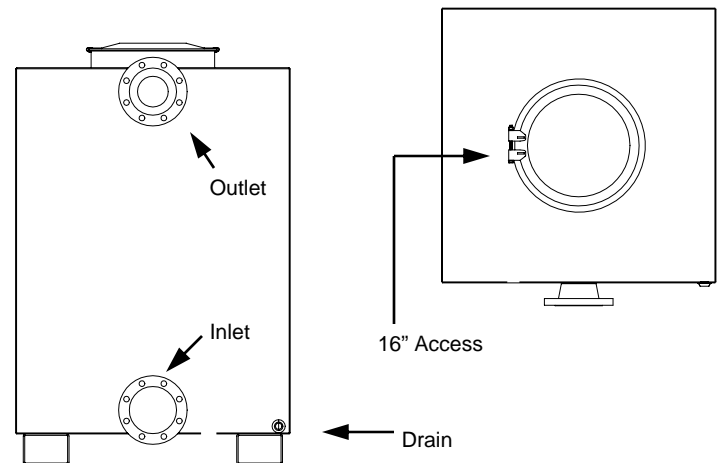
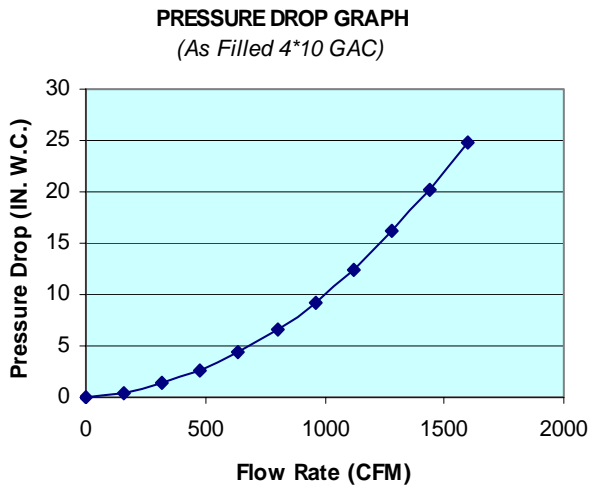
VSV-500 SPECIFICATIONS			
Overall Height	4'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	3' X 3'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	4"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	1/2"	Maximum Pressure / Temp	3 PSIG / 250° F
GAC Fill (lbs)	500	Cross Sectional Bed Area	9 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	900/1,025	Bed Depth/Volume	2 FT / 18 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-1000

The VS-1000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



### VSV-1000 SPECIFICATIONS

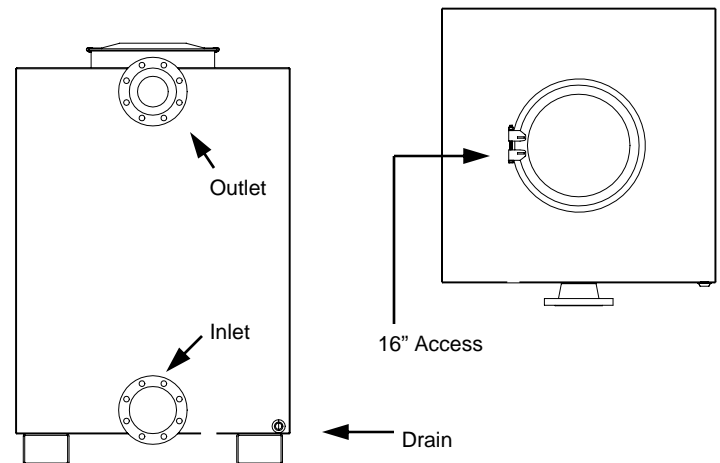
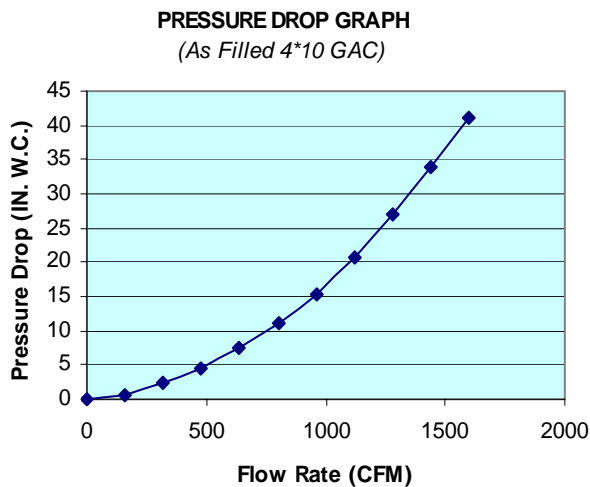
Overall Height	4'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	4' x 4'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	6"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	1/2"	Maximum Pressure / Temp	3 PSIG / 250° F
GAC Fill (lbs)	1000	Cross Sectional Bed Area	16 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,450/1,600	Bed Depth/Volume	2.2 FT / 36 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-2000

The VS-2000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



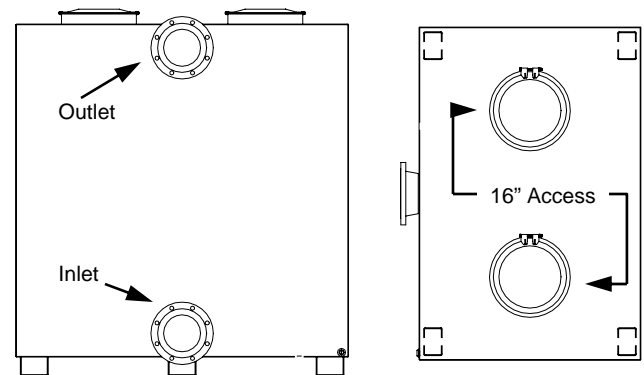
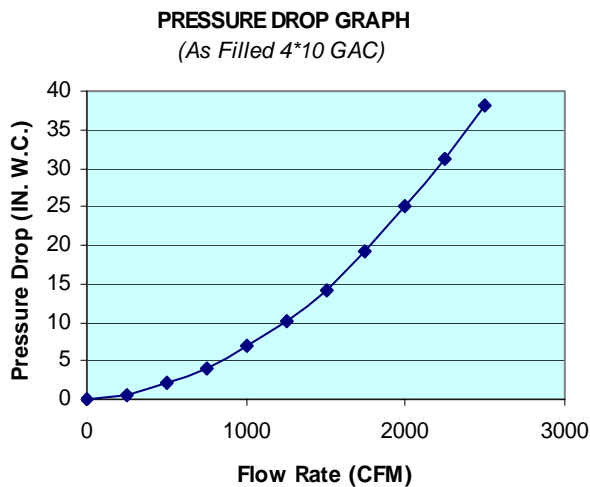
VSV-2000 SPECIFICATIONS			
Overall Height	6'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	4' x 4'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	6"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	1/2"	Maximum Pressure / Temp	3 PSIG / 250° F
GAC Fill (lbs)	2000	Cross Sectional Bed Area	16 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	2,650/3,200	Bed Depth/Volume	4.5 FT / 71 FT <sup>3</sup>

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## VS SERIES FILTERS MODEL VS-3000

The VS-3000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



VSV-3000 SPECIFICATIONS			
Overall Height	6'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	5' x 5'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	8"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	3/4"	Maximum Pressure / Temp	3 PSIG / 250° F
GAC Fill (lbs)	3000	Cross Sectional Bed Area	25 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	4,500/5,150	Bed Depth/Volume	4.3 FT / 107 FT <sup>3</sup>

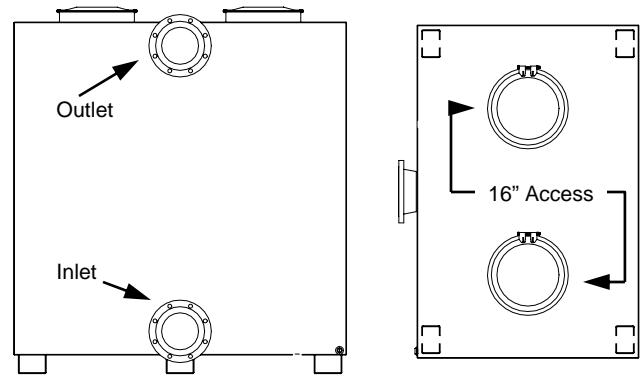
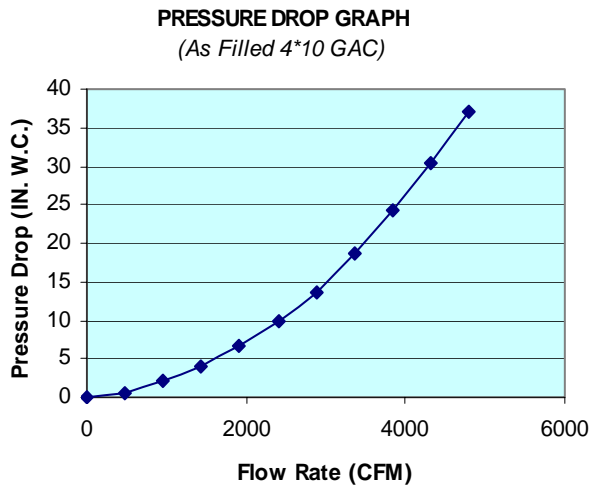
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## VS SERIES FILTERS MODEL VS-5000

The VS-5000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment



VSV-5000 SPECIFICATIONS			
Overall Height	6'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	6' x 8'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	10"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	3/4"	Maximum Pressure / Temp	2 PSIG / 250° F
GAC Fill (lbs)	5000	Cross Sectional Bed Area	48 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	7,100/8,200	Bed Depth/Volume	3.7 FT / 179 FT <sup>3</sup>

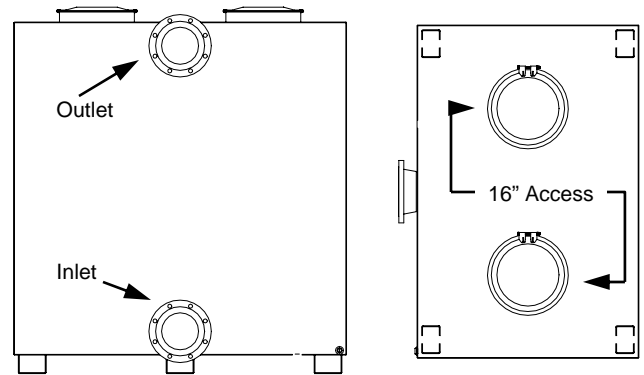
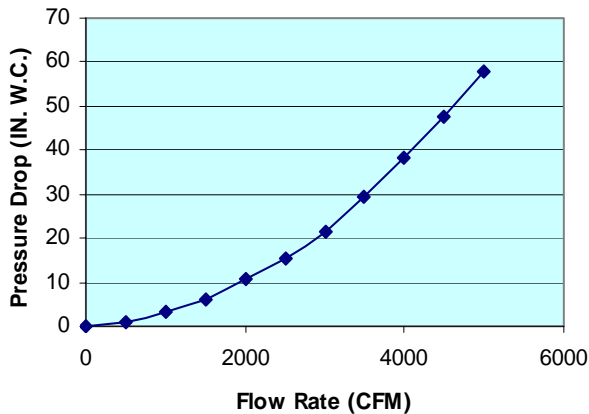
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## VS SERIES FILTERS MODEL VS-10000

The VS-10000 filter is a media filter vessel designed to treat vapor streams where pressure drop is a strong concern. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. The sturdy construction makes these filter vessels ideal for long term treatment units. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Pilot Study
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4\*10 GAC)



### VSV-10000 SPECIFICATIONS

Overall Height	7'8"	Vessel/Internal Piping Materials	CS/ CS (False Floor)
Footprint	8' x 10'	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (150# FLNG)	12"	External Coating	Epoxy Mastic (Light Grey)
Drain / Vent (FNPT)	3/4"	Maximum Pressure / Temp	1 PSIG / 250° F
GAC Fill (lbs)	10000	Cross Sectional Bed Area	80 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	14,500/17,000	Bed Depth/Volume	4.5 FT / 357 FT <sup>3</sup>

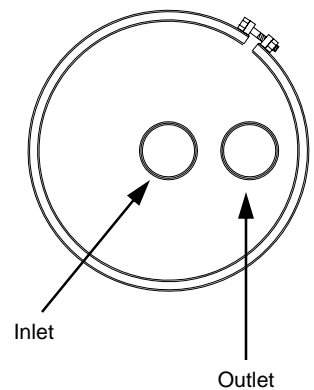
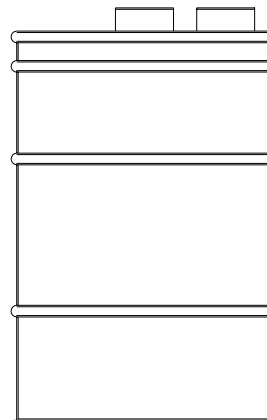
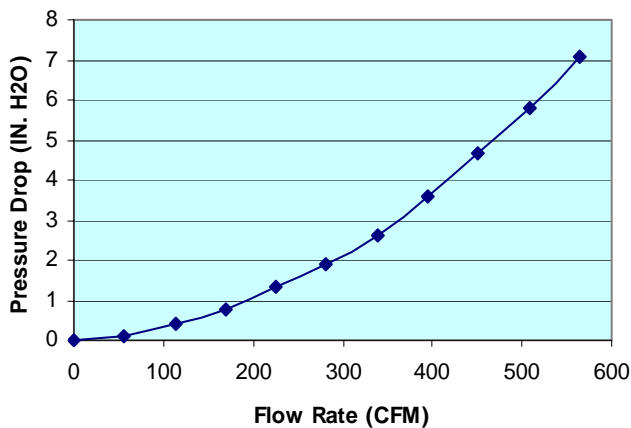
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## VS SERIES FILTERS MODEL VSR-140

The VSR-140 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4\*10 GAC)



VSR-140 SPECIFICATIONS			
Overall Height	3'2"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	23"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4" FNPT	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	140	Cross Sectional Bed Area	5.6 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	200/225	Bed Depth/Volume	7.25 IN / 5 FT <sup>3</sup>

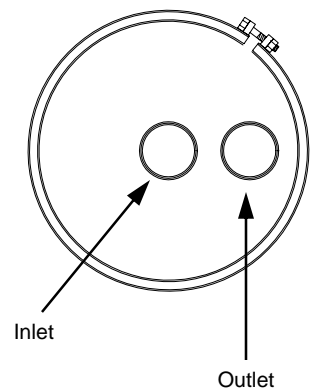
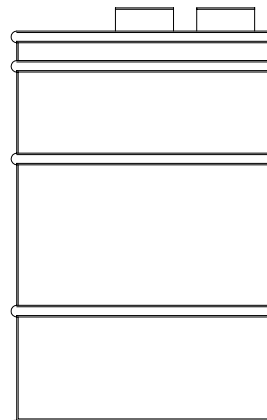
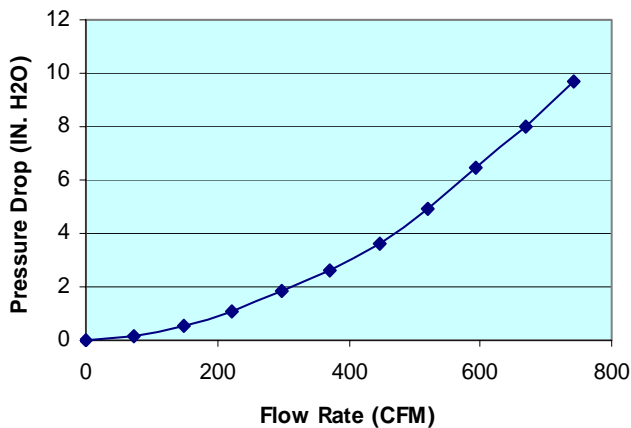
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15 Carroll Drive • Bluffton, South Carolina 29910  
Phone: 843.836.1804 • Fax: 843.836.1805

## VS SERIES FILTERS MODEL VSR-170

The VSR-170 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4\*10 GAC)



### VSR-170 SPECIFICATIONS

Overall Height	3'2"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	23"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	4" FNPT	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	170	Cross Sectional Bed Area	6 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	230/265	Bed Depth/Volume	8.25 IN / 6 FT <sup>3</sup>

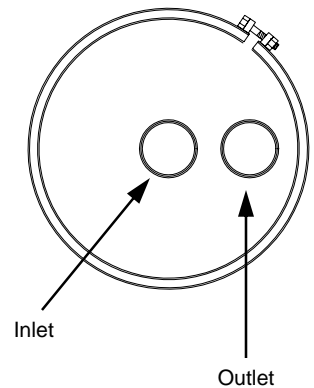
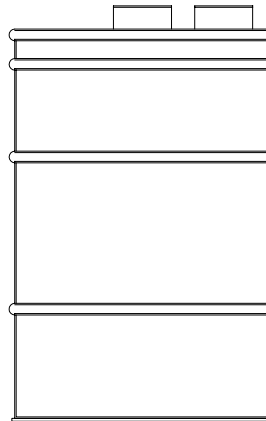
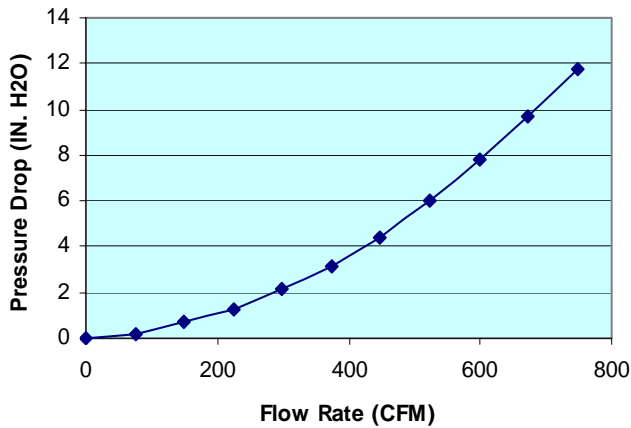
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## VS SERIES FILTERS MODEL VSR-225

The VSR-225 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4\*10 GAC)



VSR-225 SPECIFICATIONS			
Overall Height	3'7"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	26"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6" FNPT	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	225	Cross Sectional Bed Area	6 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	300/350	Bed Depth/Volume	8.25 IN / 8 FT <sup>3</sup>

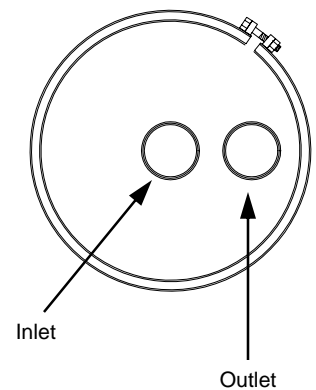
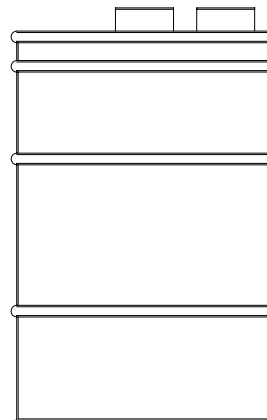
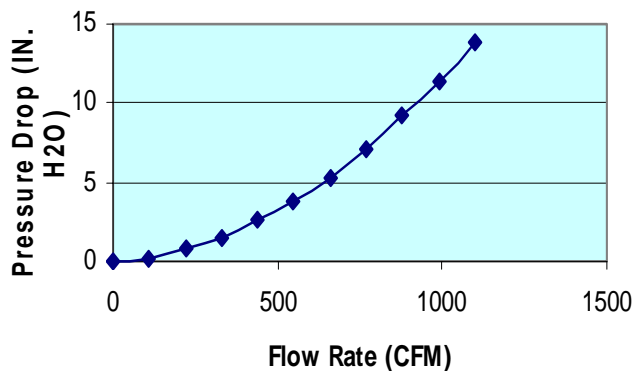
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## VS SERIES FILTERS MODEL VSR-400

The VSR-400 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4\*10 GAC)



VSR-400 SPECIFICATIONS			
Overall Height	3'11"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	30"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	6" FNPT	External Coating	Urethane Enamel
Drain / Vent (FNPT)	OPT	Maximum Pressure / Temp	2 PSIG / 150° F
GAC Fill (lbs)	400	Cross Sectional Bed Area	8.8 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	500/575	Bed Depth/Volume	11.7 IN / 14.25 FT <sup>3</sup>

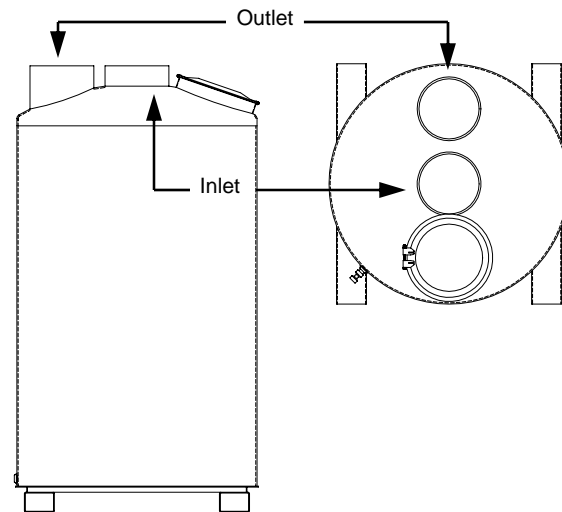
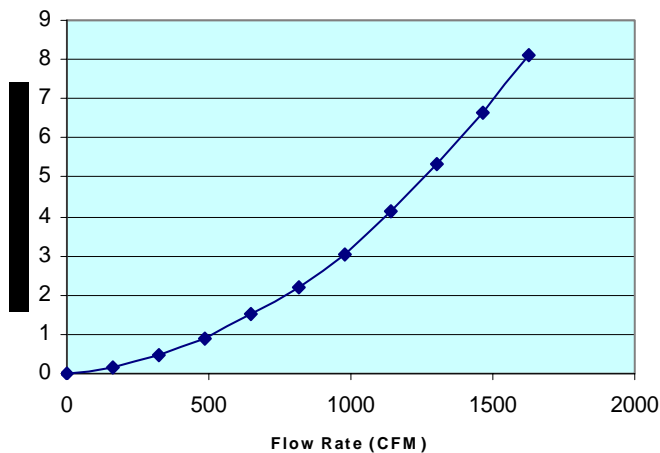
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## VS SERIES FILTERS MODEL VSR-700

The VSR-700 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4"10 GAC)



### VSR-700 SPECIFICATIONS

Overall Height	6'1"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	36"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	8" PE	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4"/OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	700	Cross Sectional Bed Area	16 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	1,300/1,425	Bed Depth/Volume	12 IN / 25 FT <sup>3</sup>

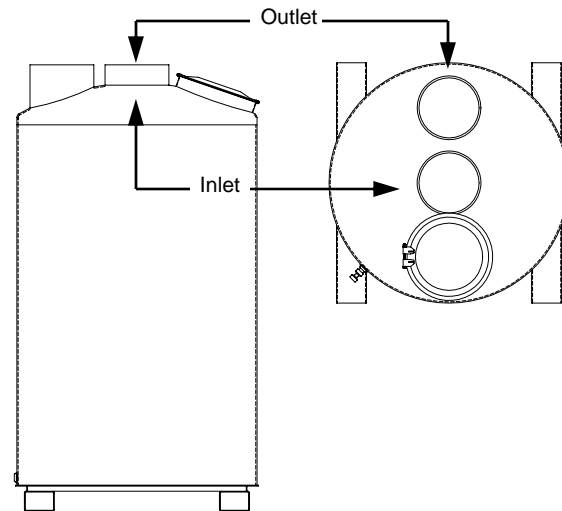
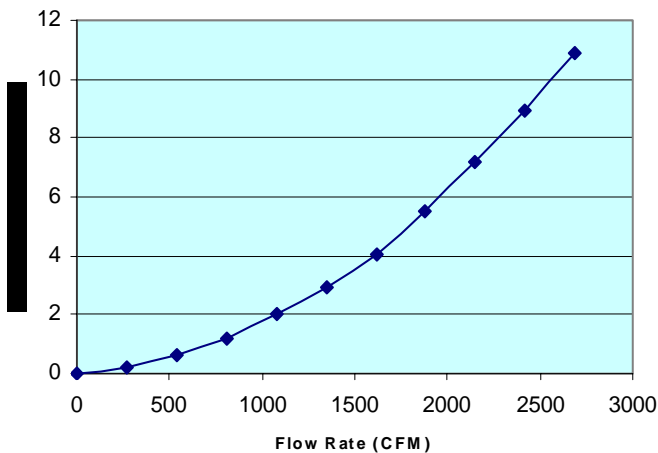
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## VS SERIES FILTERS MODEL VSR-1600

The VSR-1600 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment

**PRESSURE DROP GRAPH**  
(As Filled 4"10 GAC)



### VSR-1600 SPECIFICATIONS

Overall Height	7'1"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	12" PE	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4"/OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	1,600	Cross Sectional Bed Area	28.75 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	2,700/3,050	Bed Depth/Volume	17 IN / 57 FT <sup>3</sup>

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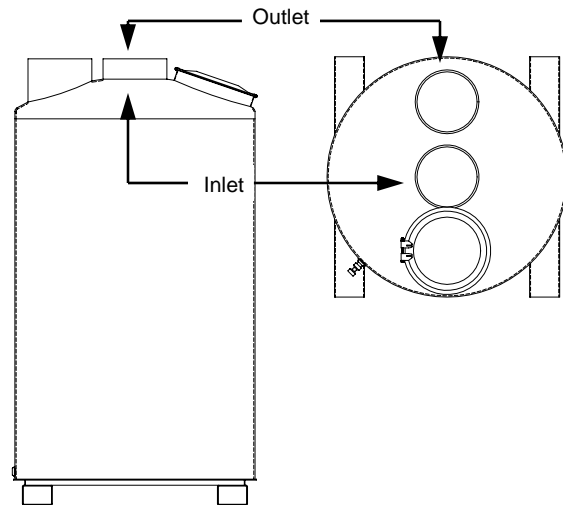
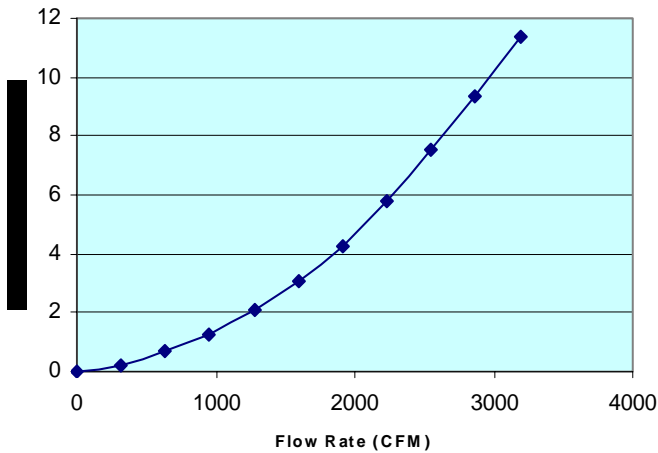
## VS SERIES FILTERS MODEL VSR-2600

The VSR-2600 filter is a radial flow filter vessel designed to treat vapor streams where pressure drop is a strong concern. With the radial design in certain applications the user can obtain higher flow rates than could be obtained in similar upflow filters. Some applications include:

- Soil Vapor Extraction Treatment
- Air Stripper Off Gas Treatment
- Odor Removal System
- Storage Tank Purge Vapor Treatment
- Industrial Process Treatment



**PRESSURE DROP GRAPH**  
(As Filled 4"10 GAC)



### VSR-700 SPECIFICATIONS

Overall Height	7'2"	Vessel/Internal Piping Materials	CS/ SCH 40 PVC
Diameter	60"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	16" PE	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4"/OPT	Maximum Pressure / Temp	6 PSIG / 150° F
GAC Fill (lbs)	2,600	Cross Sectional Bed Area	48 FT <sup>2</sup>
Shipping / Operational Weight (lbs)	4,050/4,500	Bed Depth/Volume	21 IN / 93 FT <sup>3</sup>

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## FILTRATION MEDIA ANTHRACITE

### GENERAL DESCRIPTION

Crushed anthracite makes an excellent medium density filtration media. Because of its fractured shape, some of the sediment penetrates deeper into the bed. When compared to equivalent filter sands, this means longer filter runs and less head loss. Backwash rates are also reduced.

Anthracite, because of its unique density, can be used in multi-media filters. At 56 lbs./sq. ft. it will hydraulically lassify and remain above heavier media such as filter sand or Manganese Greensand providing a prefiltration layer.

Physical Properties:	
Color	Black
Density	56 lbs./cu. ft.
Sphericity	0.6
Hardness	3.0 - 3.8 (Moh's Scale)
Acid Solubility	<1%
Caustic Solubility	<1%
Apparent Specific Gravity	1.65

Physical Properties by Product:	#1 Anthracite	#2 Anthracite	#3 Anthracite
Product	#1 Anthracite	#2 Anthracite	#3 Anthracite
Part #	A8029	A8030	A2031
Effective Size	0.6 - 0.8 mm	0.85 - 0.95 mm	1.7 - 2.0 mm
Uniformity Coefficient	1.5	1.6	1.5
Mesh Size	14 x 30	10 x 20	4 x 12
Back Wash Rate	12 - 18 gpm/sq. ft.	18 - 25 gpm/sq. ft.	use air scour
Bed Depth	24 - 36 in., 10 - 18 in. in multi-bed filters	24 - 36 in., 10 - 18 in. in multi-bed filters	24 - 36 in., 10 - 18 in. in multi-bed filters
Backwash Bed Expansion	35 - 50% of bed depth	35 - 50% of bed depth	35 - 50% of bed depth
Service Flow Rate gpm/ft2	5 GPM/ft2 or higher	5 GPM/ft2 or higher	5 GPM/ft2 or higher

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## FILTRATION MEDIA **BIRM®**

### GENERAL DESCRIPTION

Birm is an efficient and economical method of removing dissolved iron and manganese compounds from raw water supplies. It may be either gravity fed or pressurized water treatment systems. Birm acts as an insoluble catalyst to enhance the reaction between dissolved oxygen (D.O.) and the iron compounds. The physical characteristics of Birm provide an excellent filter media which is easily cleaned by backwashing to remove the precipitant. Birm is not consumed in the iron removal operation and therefore offers a tremendous economic advantage over many other iron removal methods.

Birm is furnished in two grades, regular and fine. Regular is generally recommended for industrial, municipal, and most domestic installations. Fine is recommended on domestic installations where backwash rates are limited. Birm may also be used for manganese removal with the same dependability as iron removal.

Physical Properties - Regular Birm:	
Color	Black
Density	47- 50 lbs./cu. ft.
Effective Size	0.61 mm
Uniformity Coefficient	1.72

Physical Properties - Fine Birm:	
Color	Black
Density	47- 50 lbs./cu. ft.
Effective Size	0.49 mm
Uniformity Coefficient	2.14

Conditions For Operation:	
Alkalinity should be greater than two times the combined sulfate and chloride concentration.	
pH	6.8+
Dissolve Oxygen content must be equal to at least 15% of the iron (and manganese) content	
Bed Depth	30 - 36 in.
Backwash Rate	Regular Birm: 10 - 20 gpm/sq. ft. Fine Birm: 8 - 10 gpm/sq. ft.
Backwash Expansion Rate	35 - 50% of bed depth
Service Flowrate	3.5 - 5 gpm/sq. ft. intermittent flow rates and/or favorable local conditions may allow higher flow rates

BIRM IS A REGISTERED TRADEMARK OF CLACK CORPORATION

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## FILTRATION MEDIA

### 8\*30 RE-ACTIVATED CARBON

### 4\*10 RE-ACTIVATED CARBON

#### GENERAL DESCRIPTION

Select Re-Activated carbon from domestic sources is quality screened during our purchasing process for activity, density and fines. The use of re-activated carbon is recommended as a lower cost alternative for most sites where drinking water quality is not necessary. In many cases our re-activated carbon meets and exceeds imported virgin carbon. In addition all carbon either sold by itself or installed in our filtration units is traced by lot number to the installation or sale.

<b>8*30 (Liquid Phase) Standard Specifications:</b>	<b>Standard</b>	<b>Value</b>
Iodine Number	ASTM D-4607	800 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30 US Mesh
Ash		10% Maximum
Total Surface Area (N <sub>2</sub> BET)		1050 Minimum
Pore Volume (cc/g)		0.75

<b>4*10 (Vapor Phase) Standard Specifications:</b>	<b>Standard</b>	<b>Value</b>
Carbon Tetrachloride Activity Level	ASTM D-3467	40 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	4x10 US Mesh
Ash		10% Maximum
Total Surface Area (N <sub>2</sub> BET)		1050 Minimum
Pore Volume (cc/g)		0.75

<b>Packaging</b>		
50 Pound Bags	50 Pound Drums	Bulk Tanker
1,000 Pound Bulk Sacks	200 Pound Drums	

## FILTRATION MEDIA

### 8\*30 VIRGIN CARBON

### 4\*10 VIRGIN CARBON

#### GENERAL DESCRIPTION

Select virgin carbon is quality screened during our purchasing process for activity, density and fines. The use of virgin carbon is recommended where drinking water quality is necessary. All carbon either sold by itself or installed in our filtration units is traced by lot number to the installation or sale.

<b>8*30 (Liquid Phase) Standard Specifications:</b>	<b>Standard</b>	<b>Value</b>
Iodine Number	ASTM D-4607	1200 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30 US Mesh
Ash		10% Maximum
Total Surface Area (N <sub>2</sub> BET)		1050 Minimum
Pore Volume (cc/g)		0.75

<b>4*10 (Vapor Phase) Standard Specifications:</b>	<b>Standard</b>	<b>Value</b>
Carbon Tetrachloride Activity Level	ASTM D-3467	60 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	4x10 US Mesh
Ash		10% Maximum
Total Surface Area (N <sub>2</sub> BET)		1050 Minimum
Pore Volume (cc/g)		0.75

<b>Packaging</b>		
50 Pound Bags	50 Pound Drums	Bulk Tanker
1,000 Pound Bulk Sacks	200 Pound Drums	

## FILTRATION MEDIA EC-100 ®

### GENERAL DESCRIPTION

EC-100 is a granular, organically modified clay filtration medium for water treatment systems. A blend of bentonite and anthracite treated with a quaternary amine, EC-100 removes mechanically emulsified oil and grease, large molecular weight chlorinated hydrocarbons and heavy metals.

EC-100 used as a pre-treatment to liquid carbon filtration systems can provide longer run times than with carbon alone and therefore decreased operational costs.

Physical Properties - EC-100:	
Color	Grey/Tan/Black
Density	61 lbs./cu. ft.
Effective Size	8 x 30 U.S. Mesh Size
Moisture	8% Max
Water Retention Drained	10%

Conditions For Operation:	
Hydraulic Loading	2-5 gpm/sq. ft.
Support Bed	2" Over Underdrain Required (Gravel or Anthracite)
Backwash Expansion	20% of Bed Depth
Bed Depth	36 in.
Retention Time	7-10 Minutes

EC100 IS A REGISTERED TRADEMARK OF BIOMEN, INC.

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## FILTRATION MEDIA FILTER LITE

### GENERAL DESCRIPTION

Filter-Lite granules have irregular surface characteristics WSfording maximum removal of suspended matter throughout the filter bed. Filter-Lite can be applied to systems designed for either pressure or gravity flow.

Filter-Lite has many outstanding advantages over the more common granular filter medias used for suspended solids removal. Substantial savings can be realized, when designing a system using Filter-Lite, because equipment can be smaller, requiring less square foot area. Filter-Ag is a lightweight substance, which means additional savings in backwash rates. Filter-Lite typically removes the normal suspended solids, down to the 20-40 micron

<b>Physical Properties:</b>	
Color	Light Grey
Density	24 - 26 lbs./cu. ft.
Effective Size	0.57 mm
Uniformity Coefficient	1.66

<b>Conditions For Operation:</b>	
Max. Temperature	140° F (60° C)
Bed Depth	24 - 36 in.
Backwash Rate	8 - 10 gpm/sq. ft.
Backwash Expansion Rate	35 - 50% of bed depth
Service Flow	5 gpm/sq. ft., although considerably higher rates are often used

<b>Advantages:</b>	
There is less pressure loss though a bed of Filter-Ag than most other filter medias.	
Light weight requires lower backwash rates than those required for other filter media.	
High service rates result in lower equipment costs and a savings in space.	
High dirt removal capacity results in longer filter run, with a substantial savings in labor costs, backwash water and time out service.	

## FILTRATION MEDIA MANGANESE GREENSAND

### GENERAL DESCRIPTION

Manganese Greensand is formulated from a glauconite greensand which is capable of removing iron, manganese, and hydrogen sulfide from water through oxidation and filtration. Soluble iron and manganese are oxidized and precipitated by contact with higher oxides of manganese on the greensand granules. The hydrogen sulfide is eliminated by oxidation to sulfate and an insoluble precipitate. Precipitates are then filtered and removed by backwashing. When the oxidizing capacity power of the Manganese Greensand bed is exhausted, the bed has to be regenerated with a weak potassium permanganate (KMnO<sub>4</sub>) solution thus restoring the oxidation capacity of the bed.

Two to four ounces of potassium permanganate, in solution, /cu ft. of Manganese Greensand is sufficient for normal regeneration. It is advisable to vigorously backwash and regenerate the bed when it is placed in service and before its oxidation capacity is totally exhausted. To operate the bed W/Ster its oxidation capacity is exhausted may reduce its service life.

Capacity/cu. ft.:	
Iron Alone	550 gr. (10,000 gal. of water containing 1 ppm iron/cu. ft.)
Iron and Manganese	400 gr. (7,000 gal. of water containing 1/2 ppm iron and 1/2 ppm manganese/cu. ft.)
Hydrogen Sulfate	175 gr. (3,000 gal. water containing 1 ppm hydrogen sulfide/cu. ft.)

Physical Properties:	
Color	Black
Density	85 lbs./cu. ft.
Effective Size	0.30 - 0.35 mm
Uniformity Coefficient	1.6
Mesh Size	16 - 60
Attrition Loss Per Year	2%

Conditions For Operation:	
Raw Water pH	6.2 - 8.8
Bed Depth	30 in.
Freeboard	35 - 50%
Service Flow Rate	5 gpm/sq. ft., 8 - 10 gpm/sq. ft. intermittent flow possible
Backwash Flow Rate	8 - 12 gpm/sq. ft.
Max. Temperature Raw Water	80°F. - 26.7°C.
Max. Practical Limit if Iron or Manganese in Raw water	15 ppm
Max. Practical Limit of Hydrogen Sulfide (H <sub>2</sub> S)	5 ppm

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## FILTRATION MEDIA MTBE REMOVAL CARBON

### GENERAL DESCRIPTION

**MTBE REMOVAL CARBON** is designed specifically for the removal of methyl tert-butyl ether (MTBE) from groundwater. It is available as a coal based or coconut shell based product. The pore structure of MTBE is designed for increased capacity for trace and weakly adsorbed organics such as MTBE. Studies have shown that its capacity for MTBE significantly exceeds that of standard carbon. As the cost of MTBE exceeds standard GAC we recommend the use of traditional GAC filters upstream when other more easily adsorbed compounds are present.

Standard Specifications:	Standard	Value
Iodine Number	ASTM D-4607	900 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30, 12x40 US Mesh
Ash	ASTM D-2866	5% Maximum
Apparent Density	ASTM D-2866	.45~.56 g/cm <sup>3</sup>
Ball Pan Hardness	ASTM D-3802	95 Minimum

Packaging		
50 Pound Bags	50 Pound Drums	Bulk Tanker
1,000 Pound Bulk Sacks	200 Pound Drums	

## FILTRATION MEDIA FILTER SAND

### GENERAL DESCRIPTION

Filter Sand is a naturally occurring, river washed, glacial deposit products. Its excellent chemical properties - high in silica content and low in soluble calcium, magnesium and iron compounds - meet AWWA-B100-89 specifications. Precision sizing and uniform grading to close limits meet the rigid specifications of professional engineers throughout the United States, Canada and overseas.

**Purpose** - Filter Sand is graded specifically for water filtration plants. It can be used in municipal, industrial or residential applications.

Physical Properties:	
Color	Light tan to reddish brown
Density	100 lbs./cu. ft.
Effective Size	0.45 - 0.55 mm
Uniformity Coefficient	1.6 or less
Acid Solubility	0.3 - 1.6%
Specific Gravity	2.65 - 2.75

Conditions For Operation:	
Bed Depth	18 - 30 in.
Backwash Rate	15 - 20 gpm/sq. ft.
Backwash Expansion	35 % of bed depth
Service Flowrate	Municipal: 1.5 - 2 gpm/sq. ft. Industrial: 3 gpm/sq. ft. Domestic: 5 gpm/sq. ft.

## **FILTER SERVICES**

### Change-Out Services Fixed Media Beds

MAE2 offers long term support options for filtration products. With Change-Out teams In Atlanta, Boston, Denver, and Indianapolis we will be on site when you need us. Our equipment consists of Chevy 3500HD Flatbed Trucks with heavy duty 16' flatbed trailers. Our GCWR is 26,000 Lbs. with a 12,000 Lb. tare weight. With equipment on-board we have the capability to perform a 4,000 lb liquid phase change-out and a 6,000 lb vapor phase change-out fully self con-tained. We can perform significantly larger change-outs with the support of contract carriers.

#### **On-Site Change-out Service**

We come to your site and vacuum the spent media from the filter to be serviced. The spent media is either loaded into our receiving hoppers (non-hazardous) or 55 gal drums (hazardous). Internals and linings are inspected and fresh media is then placed back into the filter.

If the media is non-hazardous it is taken away at the time of service by our crew. If the media is hazardous a certified carrier is used to transport the media to the hazardous waste treatment facility.

All non-hazardous media is consolidated at our facility in Anderson, In. Usually the media is transferred into super-sacks and sent to a carbon regenerator via van semi truck.

#### **In-House Service**

All return hoppers, vessels, drums, etc. are sorted and consolidated in our spent carbon receiving area. We can service any manufacture's filter unit at our facility. The spent media is removed, vessel is inspected and refilled.



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## PACKAGED FILTRATION SYSTEMS

### GENERAL DESCRIPTION

Packaged Filtration Skids consist of one or more liquid or vapor units connected together via a piping manifold. Any of our units may be used and the available arrangements are limitless.

All systems are designed by our in-house engineering team to uniquely meet your process requirements.

Some advantages of packaged systems include:

- Quick site installation & setup
- More efficient design
- More economical than on-site fit-up
- Improved system performance



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## ROLL-OFF STYLE VAPOR FILTERS

### GENERAL DESCRIPTION

Roll-Off Vapor Filters are essentially large VS filters mounted to a roll-off chassis for ease of handling. These filters may be readily moved from point to point at a site and transported to the spent carbon reactivation facility for low cost regeneration.

All systems are designed by our in-house engineering team to uniquely meet your process requirements. In addition we can custom build the filter for handling by any roll-off vehicle or intermodal carrier.



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