



**AIR CHEM  
SYSTEMS, INC.**

## **ACSV Vertical Scrubber**



**AIR CHEM SYSTEMS, INC.** manufactures an extensive line of air pollution control equipment for the electronic, metal finishing, plating, sewage treatment, and other industries that generate nonflammable corrosive fumes and odors.

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## **ACS VERTICAL SCRUBBER**

**AIR CHEM SYSTEMS, INC.** manufactures an extensive line of scrubbers in both the horizontal and vertical arrangements.

The **ACSV Series** of vertical scrubbers can be configured to take up less floor space than the horizontal series when used with an inline fan mounted on top of the scrubber or a centrifugal type fan mounted on an adjacent roof. The latter arrangement is the preferred arrangement as access to the fan for serviceability is much easier with less stress on the scrubber tower.

This type of scrubber with water only, functions as a fume scrubber to remove particulates, acid and caustic mist out of the influent air stream. With the addition of other reactive chemicals these scrubbers function as absorption scrubbers to neutralize other chemicals such as hydrochloric acid gasses, ammonia and odors.

Due to the theoretical unlimited packing depth capability, very high removal efficiencies can be achieved.

The **ACSV Series** scrubber is also used in specialty chemical removal systems such as NO<sub>x</sub>, SO<sub>x</sub> and odor control. Due to the lower air velocity requirements necessary to increase dwell time for these systems, the scrubber model selected will have a maximum CFM of less than that indicated on Page 5.

## **STANDARD COMPONENTS**

**ACSV** vertical scrubbers are constructed of fiberglass reinforced plastic (FRP), including an interior lining of premium grade vinyl ester resin for maximum corrosion resistance.

The **ACS** vertical series Model Nos. ACSV1.5 through ACSV9.5 has an integral liquid reservoir and pump deck with an in-tank CPVC pump with voltage requirements of 230/460/60/3.

The **ACS** vertical series Model Nos. ACSV10.0 through ACSV12.0 are equipped with horizontal pumps with voltage requirements of 230/460/60/3.



## **STANDARD COMPONENTS**

- The recirculation manifold consists of an in-tank CPVC pump (voltage requirements are 230/460V – 60 Hz – 3-phase), flowmeter and a throttling gate valve to control the liquid flow rate. The distribution nozzles are of PVC or polypropylene, 120° full cone, non-clogging type with access ports or removable spray lines for serviceability. A pressure gauge is added where two or more pumps are required to maintain a pump pressure balance.
- A blowdown manifold is installed to provide a continuous bleed-off of solution to prevent the saturation of the recirculated liquid by the contaminants and chemical additives. This manifold is piped internally into the overflow/drain manifold system (*provided by others*) routed to your clarifier or other waste treatment system.
- The makeup water manifold is provided with an adjustable float valve to maintain liquid level. The point of connection (P.O.C.) is a 1" PVC, plain end (PE) fitting.
- The 2" diameter drain and overflow P.O.C. are FRP threaded couplings for field plumbing to waste treatment.
- Level switch manifold is provided for pump shutdown at low liquid level.
- Hold down lugs.

The scrubber is the primary chemical treatment component for your ventilation system. Other components to an **ACSV Scrubber System** are fans, stacks, ductwork, hoods, etc. (*See additional sections in this catalog for these optional components*).

**AIR CHEM SYSTEMS** will also custom fabricate if the required standard scrubber does not fit your application. If this is the case, contact **Air Chem Systems, Inc.** for more information.



**ACSV SERIES I VERTICAL SCRUBBER  
MODEL NUMBERS 1.0 THRU 3.5**

ACSV Model #	PD (FT)	Max CFM	A	B	C	D	E	G	Approx. Dry Wt.	Approx. Oper. Wt.
V1.0-		350	12	36	36	79	6	6	225	1350
V1.5-		800	18	42	42	81	8	8	240	1400
V2.0-		1450	24	48	48	83	12	10	400	1765
V2.5-		2250	30	54	54	84	14	14	500	2060
V3.0-		3250	36	60	60	86	16	16	590	2565
V3.5-		4500	42	66	72	88	20	18	675	3115

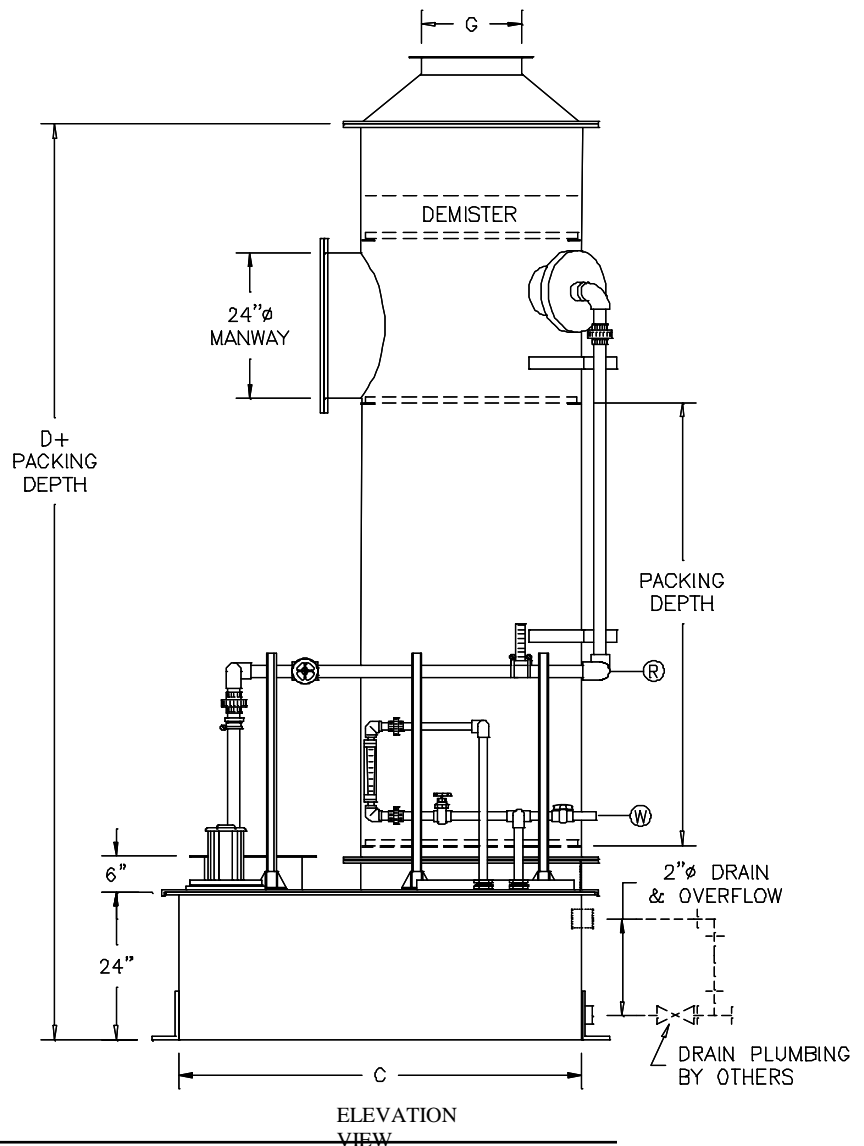
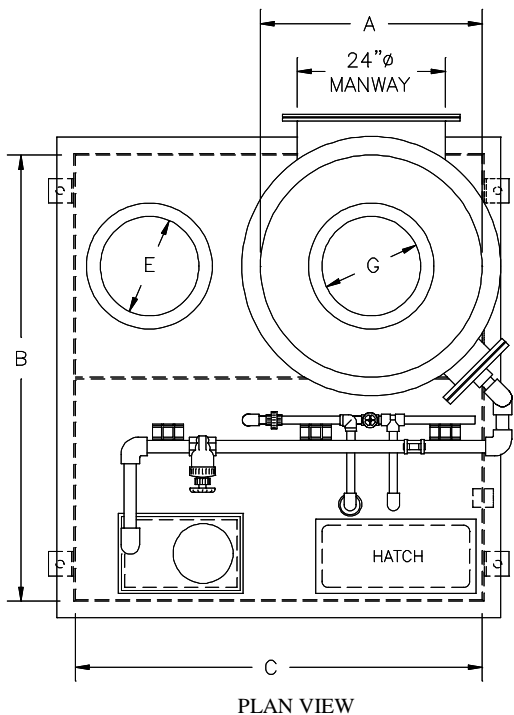
**STANDARD EQUIPMENT**

R = RECIRCULATION MANIFOLD  
W = CITY WATERFILL / BLOWDOWN MANIFOLD

All scrubbers come with tiedowns .

**Notes**

1. The Model number indicates the tower diameter (A) followed by the packing Depth (PD) in feet, required to achieve the removal efficiency desired.
2. All inlet and outlets have duct flange dimensions.
3. The tower locations on the Series I scrubber can be located either on the right (as shown) or on the left side when viewed from the front.
4. **AIR CHEM SYSTEMS** will also custom fabricate if the required standard scrubber does not fit your application. Please contact **Air Chem Systems, Inc.** for more information





**ACSV SERIES II VERTICAL SCRUBBER  
MODEL NUMBERS 4.0 THRU 9.5**

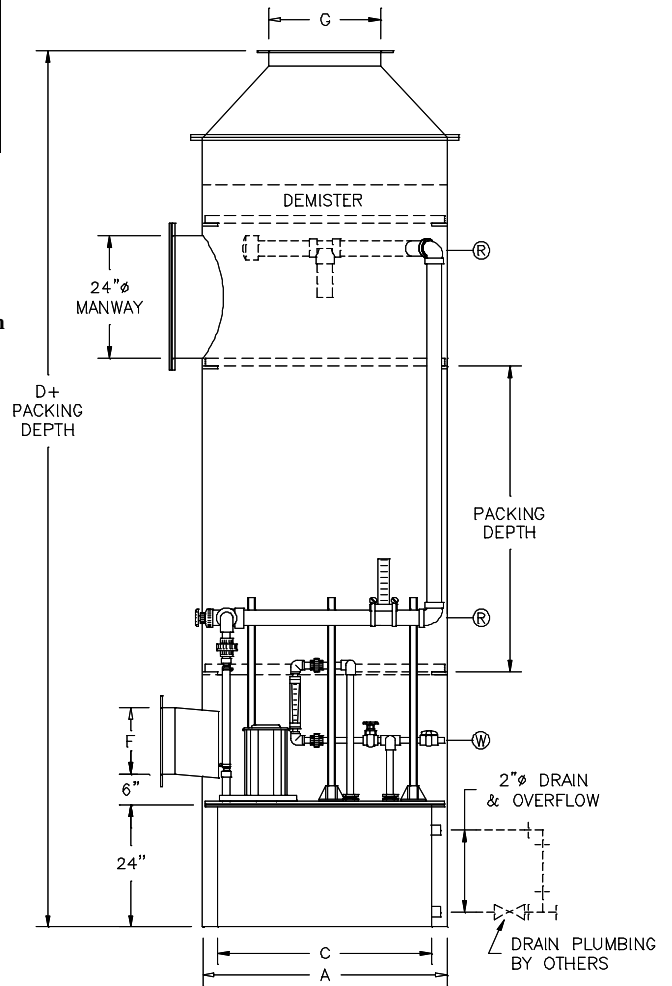
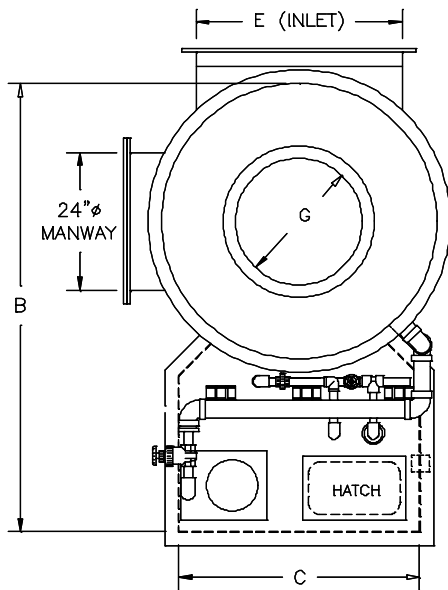
ACSV Model #	PD (FT )	Max CFM	A	B	C	D	E	F	G	Approx. Dry Wt.	Approx. Oper. Wt.
V4.0-		5750	48	72	42	106	36	13	22	770	2190
V4.5-		7250	54	78	48	109	42	15	24	935	2570
V5.0-		9000	60	84	54	113	48	16	26	1115	3075
V5.5-		11000	66	90	60	116	54	18	30	1125	3400
V6.0-		13000	72	96	66	118	60	19	32	1375	3950
V6.5-		15250	78	102	72	121	72	21	36	1565	4650
V7.0-		17750	84	108	78	136	78	22	36	2000	5450
V7.5-		20254	90	114	84	139	84	23	42	2240	6050
V8.0-		23000	96	120	90	142	90	24	42	2400	6600
V8.5-		26500	102	126	96	146	96	25	48	2700	7300
V9.0-		30000	108	132	102	150	102	29	48	3200	8300
V9.5-		33500	114	138	108	155	108	30	54	3700	9300

**Notes**

1. The model number indicates the tower diameter (A) followed by the Packing Dept (PD) in feet, required to achieve the removal efficiency desired.
2. The inlet can be located opposite the pump deck as shown or at right angles to the pump deck on either side.
3. **AIR CHEM SYSTEMS** will also custom fabricate if the required standard scrubber does not fit your application. Please contact **Air Chem Systems** for more information.

**STANDARD EQUIPMENT**

R = RECIRCULATION MANIFOLD  
W = CITY WATERFILL / BLOWDOWN MANI-FOLD





**ACSV SERIES III VERTICAL SCRUBBER  
MODEL NUMBERS 10.0 THRU 12.0**

ACSV Model #	PD (FT)	Max CFM	A	B	C	D	E	F	G	Approx. Dry Wt.	Approx. Oper. Wt.
V10.0-		37000	120	162	114	157	90	114	54	4000	10000
V11.0-		45000	132	174	126	164	120	120	60	4900	12000
V12.0-		55000	144	186	138	169	120	120	66	5600	13000

**STANDARD EQUIPMENT**

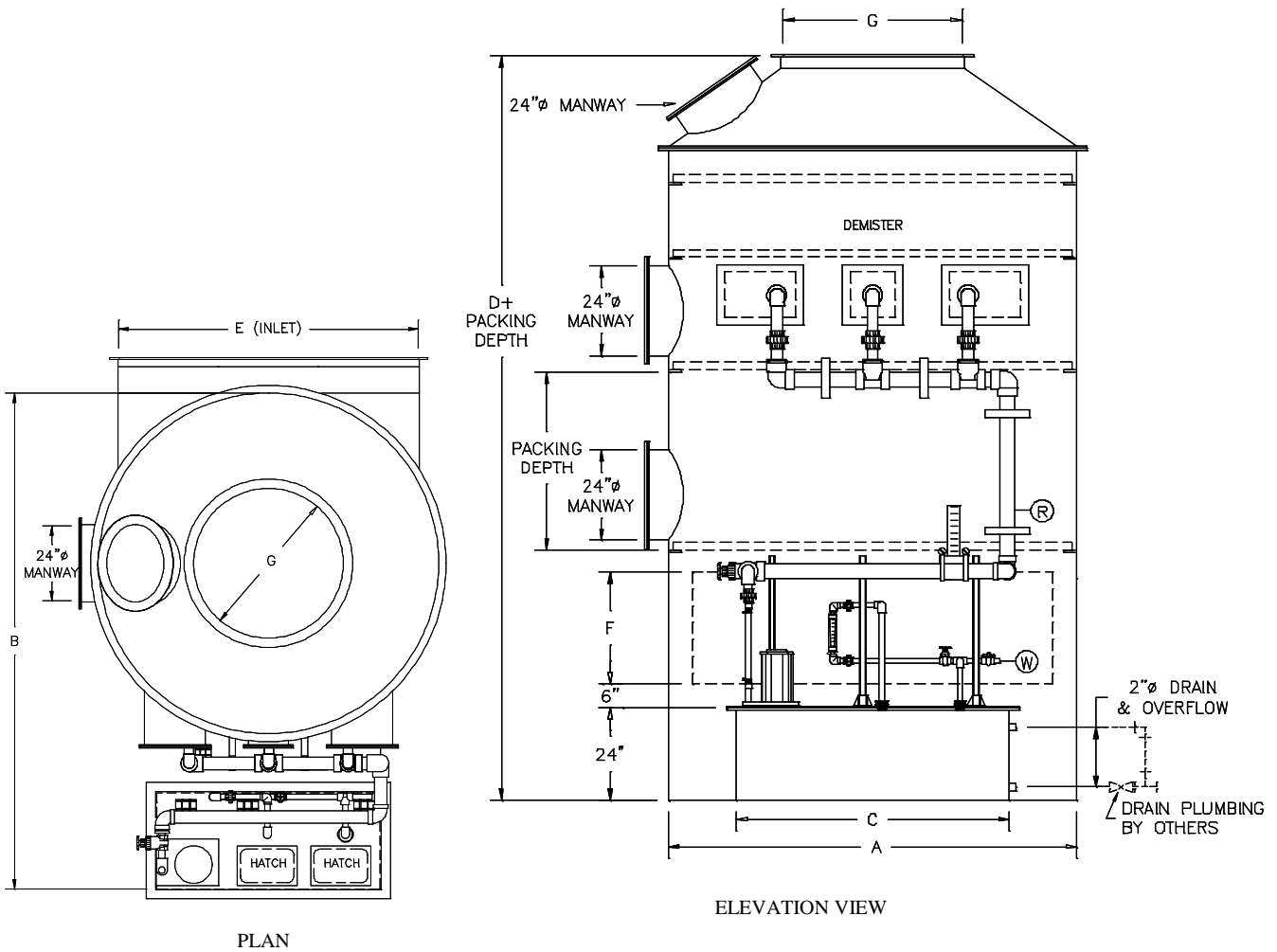
R = RECIRCULATION MANIFOLD

W = CITY WATERFILL / BLOWDOWN MANIFOLD

All scrubbers come with tiedowns (not shown).

**Notes**

1. The model number indicates the tower diameter (A) followed by the Packing Depth (PD) in feet required to achieve the removal efficiency desired.
2. The inlet can be located opposite to the pump deck as shown or at right angles to the pump deck on either side.
3. **AIR CHEM SYSTEMS** will also custom fabricate if the required standard scrubber does not fit your application. Please contact **Air Chem Systems** for more information.

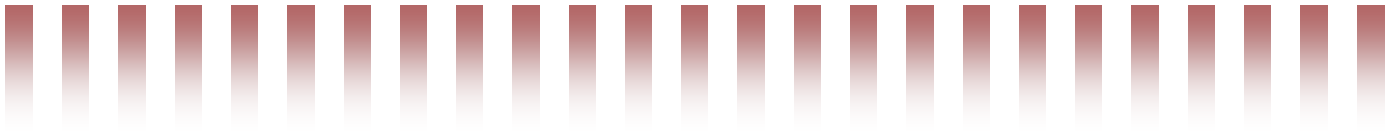




## OPTIONAL COMPONENTS

- **Stand-by Pumps:** Offered as back-up water flow in the event of pump failure.
- **pH, ORP, Conductivity Systems:** Sensor controller, pH sensor manifold to sample recirculation liquid at the bottom of the packing.
- **Magnehelic Gauge:** Measures the pressure differential across the packing and on the demister to detect fouling of the packing.
- **Pressure Gauges:** Measures pump outlet pressure. It is included if two or more pumps are required to maintain flow. The second pump is a stand-by pump.
- **Control Panel:** A NEMA-4X plastic control panel with starters, controls, on/off switches, alarms, and alternate mounting location for pH/ORP controller and magnehelic gauges.
- **Flanged Connections:** Offered in lieu of plain end sockets, PVC or threaded FRP point of connections (POC).
- **Additional Packing Access Manways or Ports:** Convenient especially in larger units to aid in the removal of the packing and demister media.





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Control & Industrial Equipment**

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