



**AIR CHEM  
SYSTEMS, INC.**

## **ACSH Horizontal 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 SCRUBBER DESIGN**

**Air Chem Systems Inc.** manufactures an extensive line of scrubbers in both the horizontal and vertical arrangements.

The **ACSH Series** of horizontal scrubbers have a lower profile than vertical scrubbers and are well suited for roof mounted installations and when mounted on a common skid with the required fan makes a system that is easy to install and service.

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.

Some absorption applications may require lower air velocity 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.

The **ACSH Series** scrubbers are limited to six (6) feet of packing depth. If additional packing depth is required to meet a required efficiency, use of an **ACS Vertical Scrubber** is recommended.

## **STANDARD COMPONENTS**

**ACSH Horizontal Scrubbers** are constructed of fiberglass-reinforced plastic (FRP) and include an interior lining of premium grade, vinyl ester resin for maximum corrosion resistance.

The **ACS Horizontal Series** Model Numbers H11 through H99 have an integral liquid reservoir and pump deck. The packing depth will vary from three (3) feet to six (6) feet depending on chemistry and removal efficiency requirements. All manifolds are constructed of Schedule 80 PVC.

The demister packing depth on **ACS** Models H45 and below will have a 12-inch packing depth of random type, polypropylene packing media. **ACS** Models H55 and above will have chevron type profile blades.



## **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 consists of 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 **ACSH Scrubber System** are fans, stacks, ductwork, hoods, etc. (*See additional sections in this catalog for these optional components*).



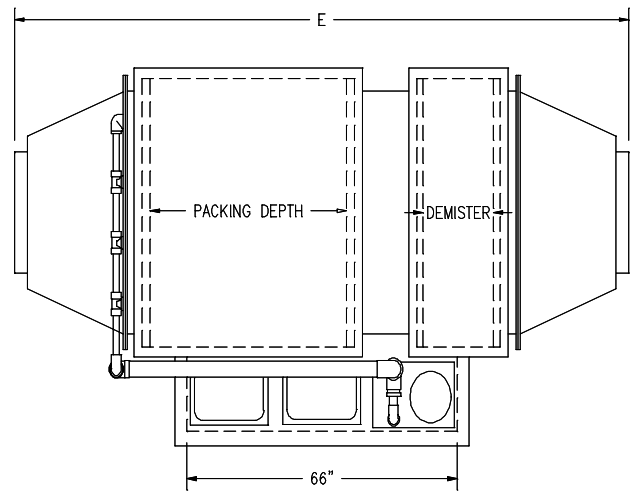
**ACSH SERIES I HORIZONTAL SCRUBBER**

ACSH MODE L #	PD (FT)	MA X. CFM	A	B	C	D	E	F	G	H	APPRO X. DRY WT.	APPROX. OPER. WT.
H11 -		700	12	12	42	36	125	30	24	18	375	1580
H12 -		1400	12	24	42	48	125	42	24	18	448	2148
H22 -		2300	24	24	54	48	125	42	30	18	534	2224
H23 -		3500	24	36	54	60	125	54	30	18	698	2868
H33 -		5000	36	36	66	60	125	54	36	18	867	3037
H34 -		6500	36	48	66	72	125	66	36	18	1103	3853

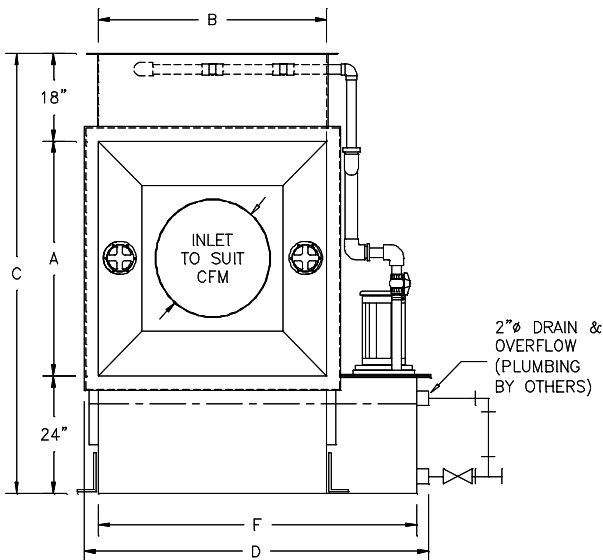
**STANDARD EQUIPMENT**

R = RECIRCULATION MANIFOLD  
W = CITY WATERFILL / BLOWDOWN MANIFOLD

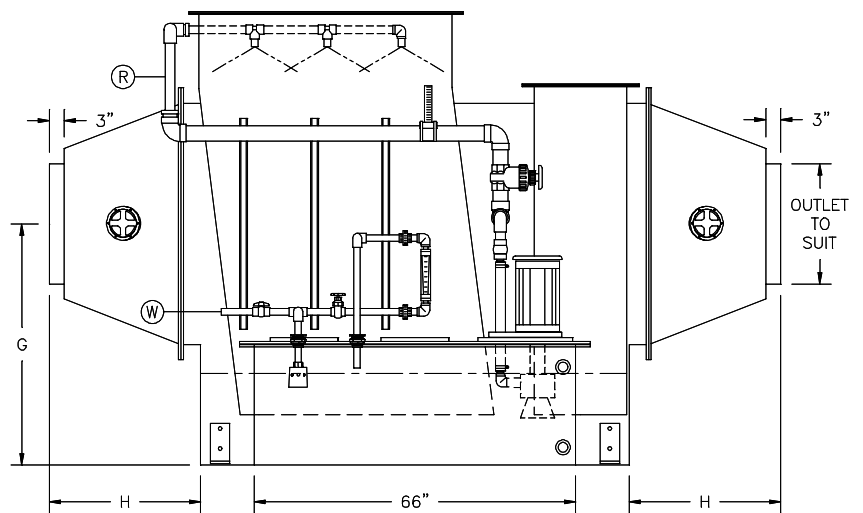
All scrubbers come with tiedowns .



PLAN



SIDE ELEVATION



ELEVATION



**ACSH SERIES II HORIZONTAL SCRUBBER  
MODEL NUMBERS 44 THRU 99**

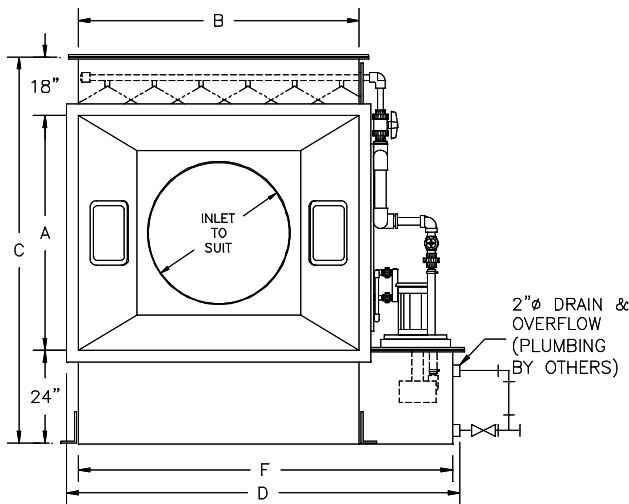
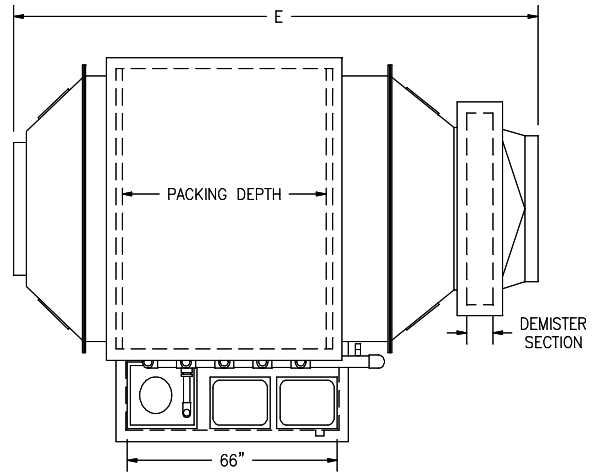
ACSH MODE L #	PD (F T)	MAX. CFM	A	B	C	D	E	F	G	H	APPRO X. DRY WT.	APPROX. OPER. WT.
H44 -		8500	48	48	78	72	125	66	42	18	1419	4069
H45 -		10500	48	60	78	84	131	78	42	21	1704	4839
H55 -		13000	60	60	90	84	131	78	48	21	2027	5162
H56 -		15500	60	72	90	96	137	90	48	24	2404	6004
H66 -		18000	72	72	102	96	137	90	54	24	2813	6428
H67 -		21000	72	84	102	108	141	102	54	26	3229	7329
H77 -		24500	84	84	114	108	141	102	60	26	3713	7813
H78 -		28000	84	96	114	120	147	114	60	29	4159	8739
H88 -		31500	96	96	126	120	147	114	66	29	4582	9162
H89 -		36000	96	108	126	132	151	126	66	31	5049	10109
H99 -		40000	108	108	138	132	151	126	72	31	5499	10559

**STANDARD EQUIPMENT**

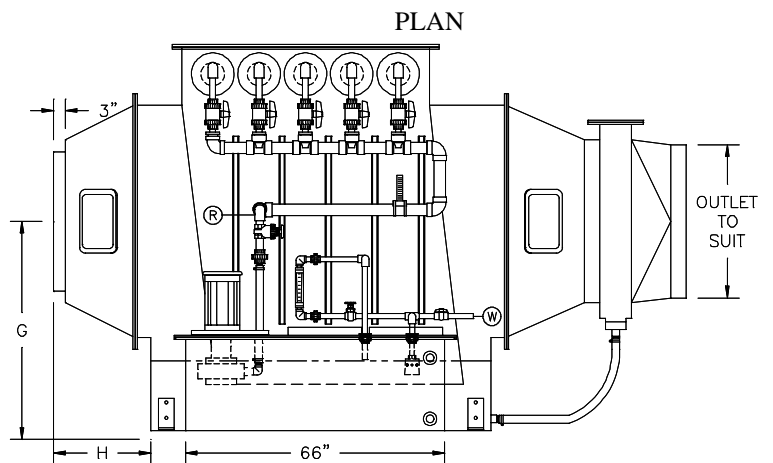
R = RECIRCULATION MANIFOLD  
W = CITY WATERFILL / BLOWDOWN MANIFOLD

All scrubbers come with tiedowns .

- NOTES:**
1. The model number indicates the cross-sectional dimension of the scrubber in feet followed by the packing depth (PD) in feet required to achieve the removal efficiency desired.
  2. The horizontal scrubbers can have the pump deck either on the left side (as shown) or on the right side when viewed from the discharge end.
  3. **AIR CHEM SYSTEMS** will also custom fabricate if our standard scrubbers do not fit your application. Please contact **Air Chem Systems, Inc.** with your specific requirements.



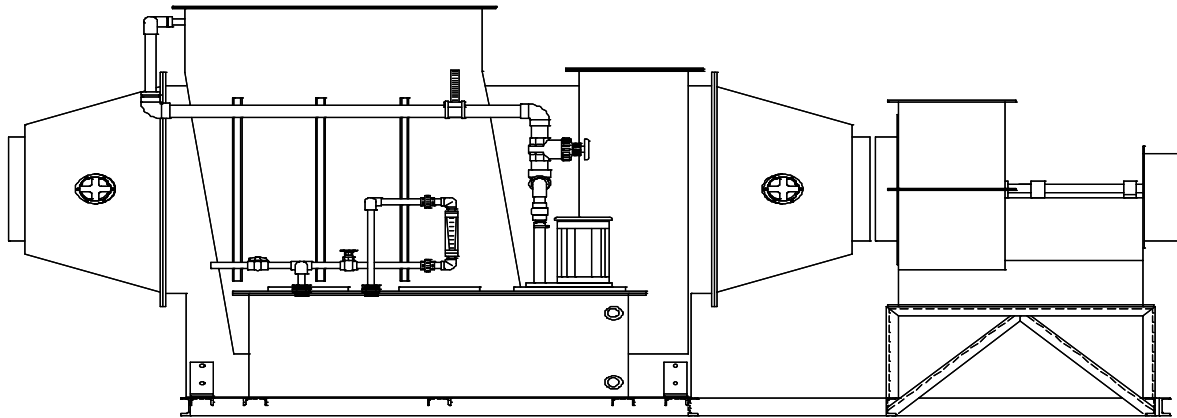
SIDE ELEVATION VIEW



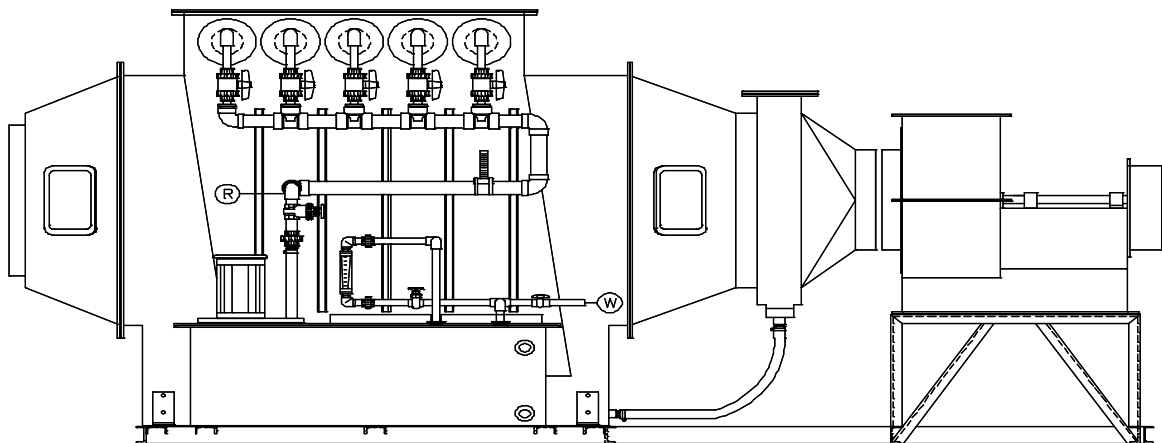
ELEVATION



## ACSH HORIZONTAL SCRUBBERS SYSTEMS



Typical Series I system with fan and skid



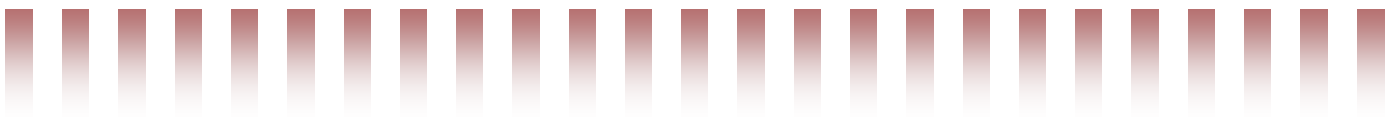
Typical Series II system with fan and skid



## **OPTIONAL EQUIPMENT**

- **Stand-by Pumps:** Provides back-up water flow in the event of pump failure.
- **pH, ORP, Conductivity Systems:** To include controller or monitor, sensors and inline sensor manifolds.
- **Magnehelic Gauge:** Measures pressure differential across the packing and/or demister to detect fouling of the packing.
- **Pressure Gauges:** Measures pump outlet pressure. Included if two or more pumps are required to maintain flow.
- **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 socket, PVC or threaded FRP points of connection (POC).
- **Mesh Pad Type Demisters:** Used for smaller particulate size removal efficiency.
- **Common Skid:** Common steel skid for scrubber and fan.





**Hoods**

**Scrubbers**

**Duct & Fittings**

**Air Strippers**

**Radial Fans**

**Centrifugal Fans**

**Special Systems**

**Process Tanks**

**Inline Fans**

**Storage Tanks**

**Odor Control**

**Ventilation Systems**

**Chrome Systems**

**SOx Systems**

**NOx Systems**

**Dampers**

**Custom Fabrication**



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Control & Industrial Equipment**

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