



VIRON® VIR-TI-CAL™ SCRUBBER

PVC

Fiberglass

PolyPro

TECHNICAL BULLETIN



VIRON®

INTERNATIONAL
CORPORATION

989-723-8255

**Complete System Solutions for
Moving Corrosive Air**

www.vironintl.com

VIRON® VIR-TI-CAL™ Scrubber



The VIRON® VIR-TI-CAL™ Scrubber is used in many industrial applications. Its uses include the cleaning of fumes from plating, anodizing, steel pickling, WWTP, printed circuit board plating, semi-conductor clean rooms, and corrosive odor control units. When looking through this catalog it will become apparent that VIRON® manufactures many standard units ranging in size from 500 CFM to 100,000 CFM. Scrubbers, with capacity requirements lower than 500 CFM, are available upon request. In addition to our standard sizes, VIRON® will also, upon request, quote and manufacture custom scrubbers. Our engineering staff is available to discuss your upcoming projects and we have been solving your toughest corrosive fume problems since 1971.

Standard Design Parameters

1. High Efficiency
2. Easy Maintenance
3. Minimum Operating Costs
4. Structural Integrity
5. First Quality "FQ" is VIRON's commitment to our customers
6. Complete System Solutions

Standard Features of a VIRON® VIR-TI-CAL™ Scrubber

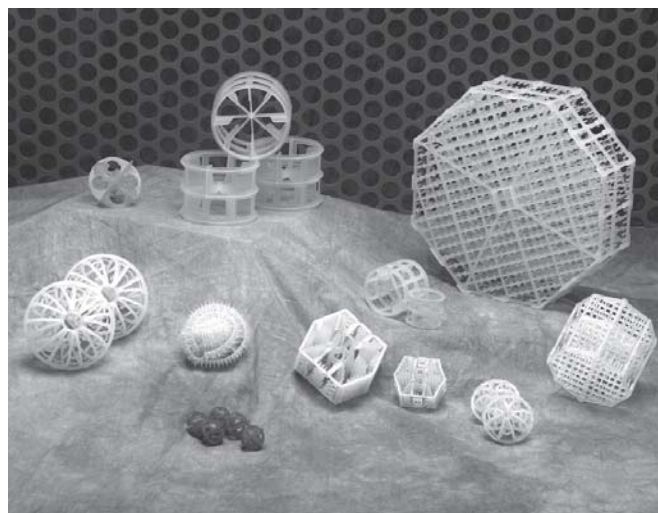
- **Scrubber Housing** - FRP - Chemical resistant FRP - vinyl ester VER 9300, or as specified. Inner corrosion barrier is reinforced with surface veil for maximum chemical resistance.
- **Packing Material** - loose fill polypro packing material- Lantec Lanpac®, Jaeger Tri-Packs®, or equal. The velocity through the packing to be 400-600 FPM. The standard packing depth will range from 12" to 180". In specific applications VIRON® can increase the packing depth to accomplish higher efficiencies.
- **Mist Eliminator Packing** - Polypro material as manufactured by VIRON® model #VVE-3025 or equal. The velocity through the mist eliminator will vary by type.
- **Mesh Pads** - are available.
- **Spray Nozzles** - PVC design material. Each nozzle sprays approximately 7-50 GPM at 10 psi of pump pressure.
- **Troughs** - are available.
- **Spray Header** - All spray headers are to be PVC schedule 80 pipe, sized for the appropriate flow with true union type ball valves to facilitate removal without having to shut the recirculation system down.*
- **Recirculation Pumps** - All pumps are CPVC material as standard unless otherwise specified. These pumps are sump pump type without seals and have the capability to run dry for a short period of time without damage. FRP, SST, and Polypro pumps are available. Horizontal or vertical designs are available.
- **Recirculation Rate** - Most VIRON® VIR-TI-CAL™ Scrubbers have a recirculation rate of between 2 to 15 GPM per square foot of open surface packing area. The recirculation rate of VIRON's standard units is 4 GPM per square foot of open surface packing area.
- **Self-contained Recirculation Units** - The sump recirculation pump is mounted on the top of the scrubber sump which is attached to the side of the scrubber housing. The pump motor is bolted to the top of the sump keeping the motor above the highest point of liquid. The sump pump's inherent design prevents any scrubber liquid from spilling on the floor. This type of unit is used primarily in southern climates where freezing is rare and where the unit is installed inside the building.
- **Remote Recirculation Units** - The recirculation pump is mounted to a separate tank which holds the recirculated water. This type of unit is used primarily in cold winter regions where freezing is customary. It may also be used when the scrubber is on the roof and the customer wishes to visually monitor the recirculation flow. Some of the advantages are: less roof weight, no freezing because remote tank is located inside of building and no scrubber heaters are required.
- **Some of our many Available System Components** -
 - Fans
 - Ducts
 - Dampers
 - Specialty Scrubbers
 - Louvers and Grilles
 - Y-Strainer
 - Flow Meter
 - Solenoid Valves
 - Magnehelic Gauges
 - Neutralizing Chemical Control Systems
 - pH Monitor with Probe
 - Pressure Gauges
 - Float Valves
 - Sump Heater with Controls
 - Special Lifting Lugs
 - Special Hold Down Lugs
 - Pressure Switch
 - Expansion Joints
 - Air Strippers

* As an option, VIRON® can provide CPVC or Polypro piping for your recirculation needs.

Viron® Column Packing Material

VIRON® uses many different kinds of packing material in its scrubbers. The type and style depend on the application and the efficiency desired. The most popular packings among our customers are the Jaeger Tri-Packs®, Lantec Lanpac® and Rauschert.

The packing is typically Polypropylene, a hollow, spherical column packing constructed of a unique network of ribs, struts and drip rods. It is most distinguished from other column packing in its unusually high ACTIVE surface area, for gas liquid contacting. The liquid used to wet the packing is from the scrubber pump recirculation system. This liquid is pumped over the packing and sprayed through nozzles to cover the entire area inside the scrubber housing. This allows the liquid to cover all of the packing area. Since packing is geometric with structural uniformity, it allows all surfaces to become wet while eliminating nesting and channeling.



1", 2", 3.5" Packing by Jaeger Tri-Packs®, Lantec Lanpac®, and Rauschert Packing.

The more surface area that is wet, the more active surface is available for producing higher efficiency. The packing's other advantage results from a high void area and minimal blockage. Both are critical because having a void area allows the liquid to cascade through the column with minimum effort and still be able to wet the whole packing structure. Blockage or channeling results when packing nests, causing areas to remain dry and provides open areas for contaminants to pass through. Dry areas will cause a loss of efficiency. Blockage also increases the static pressure of a column, and as static pressure increases, so do the energy requirements to move air through the column.

Viron® Mist Eliminators: Blades • Packing • Pads



Blades Available in PVC



Packing Available in Polypro, Kynar, and CPVC



Mesh Pad Available in Polypro and Kynar

Viron® Scrubber Options



Float Valve



Pressure Gauge



Metering Pump



Conductivity System Controller



Mixer



Rotameter



Level Controller



Sump Heater



Magnehelic Gauge



Basket Strainer



Check Valve



Make-Up Flowmeter



Pumps: CPVC, PP, KYNAR, SST, FRP



Pump Inlet Strainer



Sight Glass

Viron® Scrubber Options



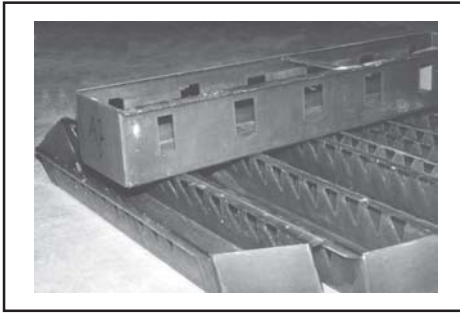
Digital Flowmeter



Solenoid Valves



Dual Redundant Pumps



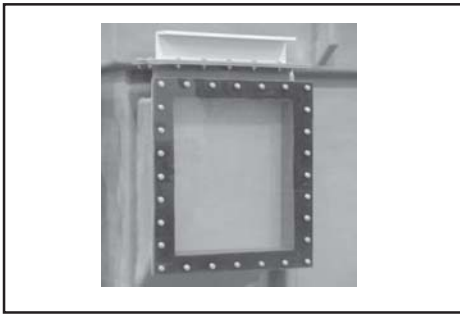
Troughs



pH System Controller



Secondary Containment-Rain Covers



Inspection Port



Manways



Chemical Day Tanks



Control Panels w/Remote Tank



Mist Eliminator-Mesh Pad



Lifting Lugs



Y-Strainer



Photohelic Gauge



Hold Down Lugs

Viron[®] Spray Header Detail Illustrations

STANDARD SPRAY HEADER AND PIPING

SPRAY HEADERS ARE DESIGNED FOR EASY REMOVAL. EACH INDIVIDUAL SPRAY HEADER CAN BE REMOVED BY FIRST CLOSING THE TRUE UNION BALL VALVE, THEN UNBOLTING THE SPRAY HEADER PLATE. THIS WILL ALLOW YOU TO REMOVE THE INDIVIDUAL SPRAY HEADER WITHOUT TURNING YOUR PUMPS OFF. FOR NOZZLE DETAIL SEE BELOW.

1"Ø MAKE UP WATER
1"Ø CAUSTIC FEED
1"Ø SAMPLING PORT

TRUE UNION BALL VALVE

OVERFLOW

DRAIN

2"Ø pH PROBE

STANDARD SPRAY HEADER

SPRAY HEADER PLATE BOLTED TO SCRUBBER BODY WITH SST HARDWARE



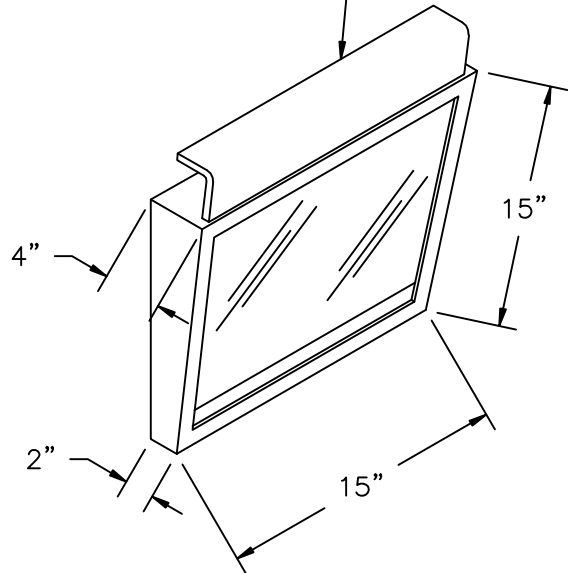
TRUE UNION BALL VALVE

SPRAY HEADER IS DRILLED AND TAPPED FOR SPRAY NOZZLE

NOZZLE DETAIL

STANDARD SLIDING ACCESS DOOR

CLEAR PVC WINDOW



Viron® Scrubber Selection Guide

Viron® Model Code:	VVS-	4860-	FRP-	10-	24-	R-	2-	C-	460-	3-	60
Viron® Vertical Model											
Scrubber Body Size											
Scrubber Body Material*											
CFM (thousands)											
Packing Depth											
Recirculation Code**											
Quantity of Pumps											
Pump Horse Power Code***											
Pump Motor Voltage											
Pump Motor Phase											
Pump Motor Cycle											

***Scrubber Body Material**

FRP = Fiberglass Reinforced Plastic

PVC = Poly Vinyl Chloride

PP = Polypropylene

PVC/FRP = Poly Vinyl Chloride with FRP Overlay (Dual Laminate)

****Recirculation Code**

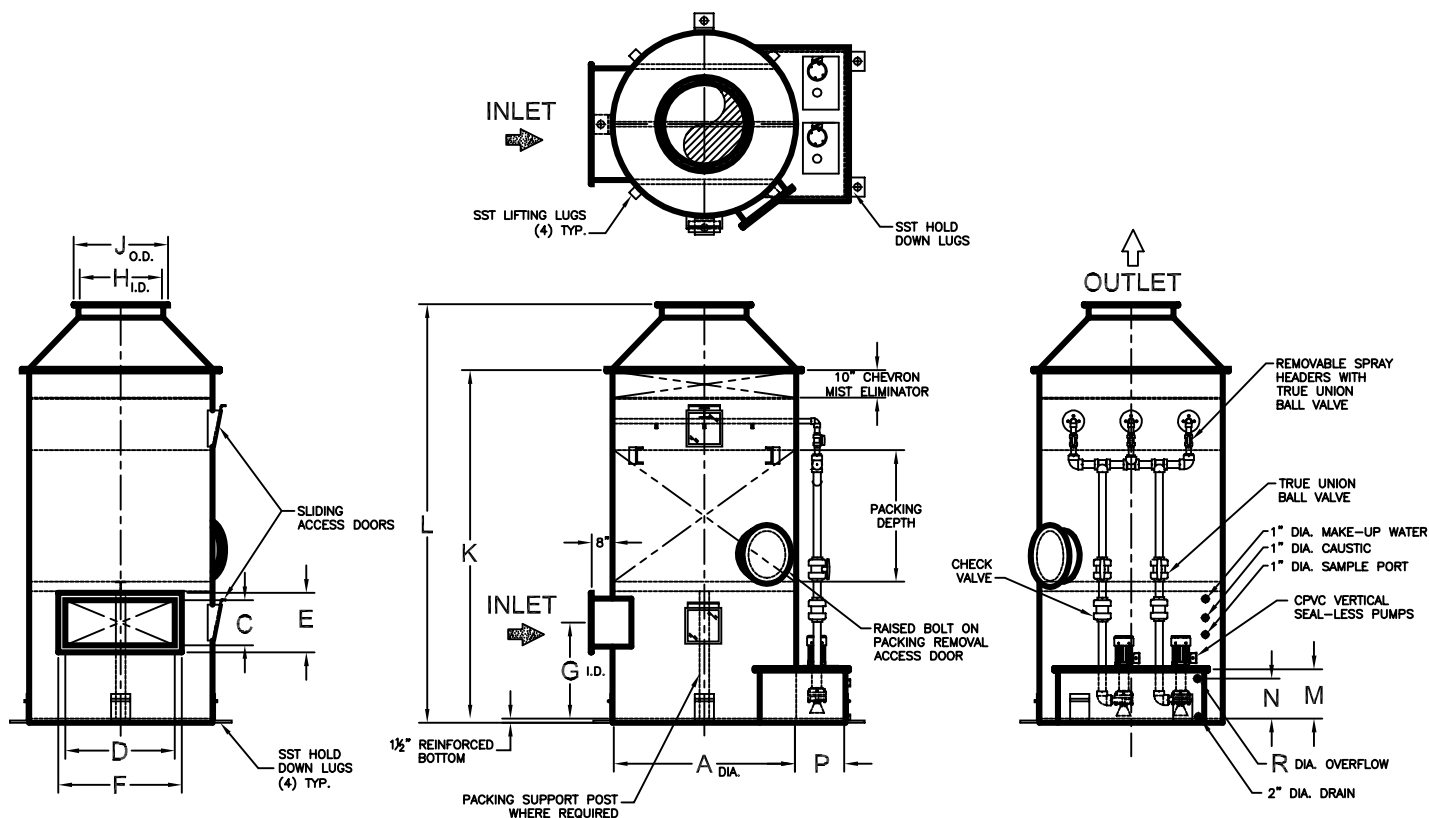
S = Self-Contained Recirculation Units

R = Remote Recirculation Units

*****Pump Horse Power Code**

Horse Power	.5	.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Code Letter	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T

Viron® Round FRP Self-Contained Recirculation Unit



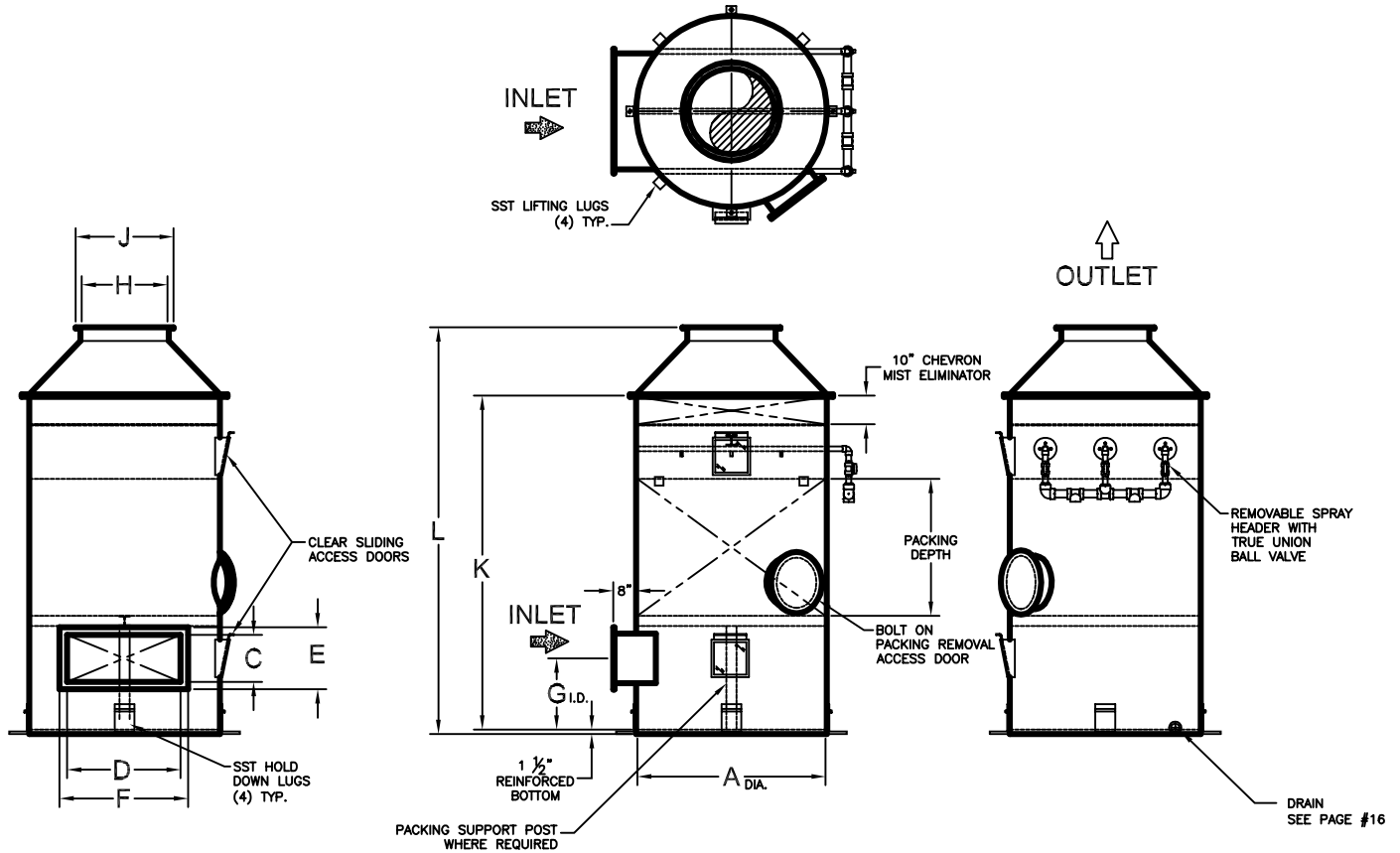
THESE DIMENSIONS ARE GUIDELINE DIMENSIONS ONLY. CERTIFIED DRAWINGS ARE SUPPLIED WITH SUBMITTAL PACKAGES.

MODEL SERIES NO.	CFM	K ID						L OD												M ID	N ID	P ID	R OVERFLOW						
		A ID	C ID	D OD	E OD	F OD	G ID	H ID	J OD	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK					36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK
WS-14	500	14	8 DIA	12 3/8 DIA	29	8	12 3/8	79	91	103	115	127	139	163	187	93	105	117	129	141	153	177	201	18	13	18	2		
WS-20	1000	20	10 DIA	14 3/8 DIA	30	10	14 3/8	81	93	105	117	129	141	165	189	95	107	119	131	143	155	179	203	18	13	18	2		
WS-28	2000	28	14 DIA	18 3/8 DIA	32	14	18 3/8	85	97	109	121	133	145	169	193	101	113	125	137	149	161	185	209	18	13	18	2		
WS-34	3000	34	16 DIA	20 3/8 DIA	33	16	20 3/8	87	99	111	123	135	147	171	195	105	117	129	141	153	165	189	213	18	13	18	2		
WS-40	4000	40	18 DIA	22 3/8 DIA	34	18	22 3/8	89	101	113	125	137	149	173	197	109	121	133	145	157	169	193	217	18	13	18	2		
WS-42	5000	42	20 DIA	24 3/8 DIA	35	20	24 3/8	91	103	115	127	139	151	175	199	111	123	135	147	159	171	195	219	18	13	18	2		
WS-48	6000	48	14	30	20	36	32	22	26 3/8	85	97	109	121	133	145	169	193	107	119	131	143	155	167	191	215	18	13	18	2
WS-54	8000	54	18	32	24	38	34	24	28 3/8	89	101	113	125	137	149	173	197	113	125	137	149	161	173	197	221	18	13	18	2
WS-60	10000	60	20	36	26	42	35	26	30 3/8	91	103	115	127	139	151	175	199	117	129	141	153	165	177	201	225	18	13	18	2
WS-66	12000	66	20	42	26	48	35	30	34 3/8	91	103	115	127	139	151	175	199	117	129	141	153	165	177	201	225	18	13	18	2
WS-72	14000	72	20	48	26	54	35	32	36 3/8	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2
WS-78	16000	78	20	54	26	60	35	34	38 3/8	91	103	115	127	139	151	175	199	121	133	145	157	169	181	205	229	18	13	18	2
WS-84	18000	84	22	60	28	66	36	36	40 3/8	93	105	117	129	141	153	177	201	125	137	149	161	173	185	209	233	18	13	18	2
WS-84	20000	84	22	60	28	66	36	38	42 3/8	93	105	117	129	141	153	177	201	125	137	149	161	173	185	209	233	18	13	18	2
WS-96	22000	96	22	72	28	78	36	40	44 3/8	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2
WS-96	24000	96	22	72	28	78	36	42	46 3/8	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2
WS-108	26000	108	24	84	32	92	37	42	46 3/8	95	107	119	131	143	155	179	203	137	149	161	173	185	197	221	245	18	13	18	2
WS-108	28000	108	24	84	32	92	37	48	54 3/8	95	107	119	131	143	155	179	203	137	149	161	173	185	197	221	245	18	13	18	2
WS-108	30000	108	24	84	32	92	37	48	54 3/8	95	107	119	131	143	155	179	203	137	149	161	173	185	197	221	245	18	13	18	2
WS-120	36000	120	28	96	36	104	39	54	60 3/8	99	111	123	135	147	159	183	207	141	153	165	177	189	201	225	249	18	13	18	2
WS-120	40000	120	28	96	36	104	39	54	60 3/8	99	111	123	135	147	159	183	207	141	153	165	177	189	201	225	249	18	13	18	2
WS-132	45000	132	28	108	36	116	39	60	66 3/8	99	111	123	135	147	159	183	207	143	155	167	179	191	203	227	251	18	13	18	2
WS-144	50000	144	32	112	40	120	41	60	66 3/8	103	115	127	139	151	163	187	211	153	165	177	189	201	213	237	261	18	13	18	3
WS-144	55000	144	32	112	40	120	41	66	72 3/8	103	115	127	139	151	163	187	211	153	165	177	189	201	213	237	261	18	13	18	3
WS-168	60000	168	36	130	48	142	49	66	72 3/8	115	127	139	151	163	175	199	223	175	187	199	211	223	235	259	283	24	19	24	3
WS-168	70000	168	36	130	48	142	49	72	78 3/8	115	127	139	151	163	175	199	223	175	187	199	211	223	235	259	283	24	19	24	3
WS-192	80000	192	36	150	48	162	49	76	82 3/8	115	127	139	151	163	175	199	223	181	193	205	217	229	241	265	289	24	19	24	3
WS-192	90000	192	42	150	54	162	52	80	86 3/8	122	134	146	158	170	182	206	230	188	200	212	224	236	248	272	296	24	19	24	3
WS-192	100000	192	48	150	60	162	55	84	90 3/8	128	140	152	164	176	188	212	236	194	206	218	230	242	254	278	302	24	19	24	3

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. SELF CONTAINED PUMP SIZES BASED ON 40' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
8. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Round FRP Remote Recirculation Unit



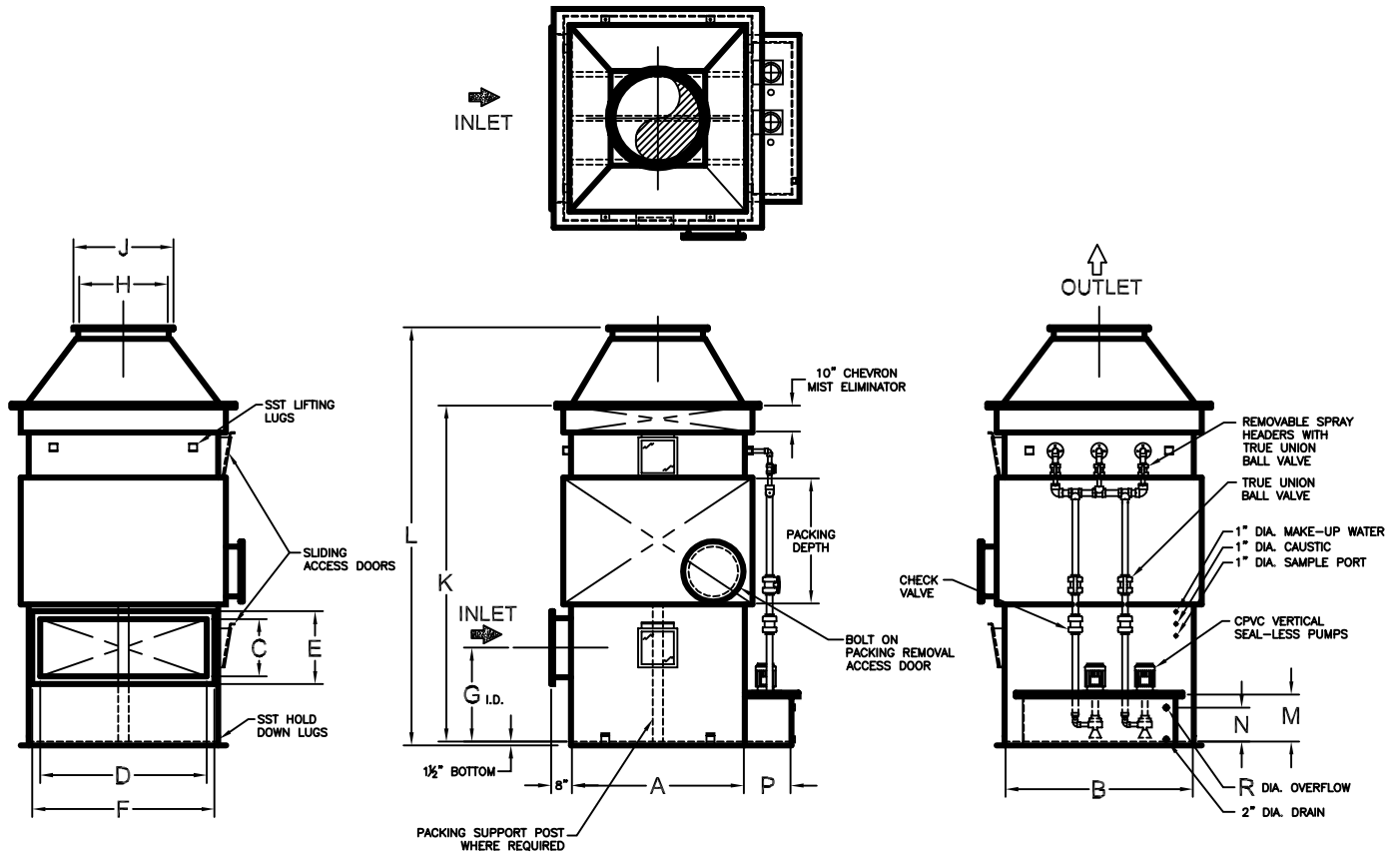
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MODEL SERIES NO.	CFM	K ID							L OD																	
		A ID	C ID	D OD	E INLET	F INLET	G INLET	H OUTLET	J OUTLET	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	
WS-14	500	14	8 DIA	12 3/8 DIA	19	8	12 3/8	69	81	93	105	117	129	153	177	83	95	107	119	131	143	155	167	179	191	
WS-20	1000	20	10 DIA	14 3/8 DIA	20	10	14 3/8	71	83	95	107	119	131	155	179	85	97	109	121	133	145	157	169	181	193	
WS-28	2000	28	14 DIA	18 3/8 DIA	22	14	18 3/8	75	87	99	111	123	135	159	183	91	103	115	127	139	151	163	175	187	199	
WS-34	3000	34	16 DIA	20 3/8 DIA	23	16	20 3/8	77	89	101	113	125	137	161	185	95	107	119	131	143	155	167	179	191	203	
WS-40	4000	40	18 DIA	22 3/8 DIA	24	18	22 3/8	79	91	103	115	127	139	163	187	99	111	123	135	147	159	171	183	195	207	
WS-42	5000	42	20 DIA	24 3/8 DIA	25	20	24 3/8	81	93	105	117	129	141	165	189	101	113	125	137	149	161	173	185	197	209	
WS-48	6000	48	14	30	20	36	22	22	26 3/8	75	87	99	111	123	135	159	183	97	109	121	133	145	157	169	181	193
WS-54	8000	54	18	32	24	38	24	24	28 3/8	79	91	103	115	127	139	163	187	103	115	127	139	151	163	175	187	199
WS-60	10000	60	20	36	26	42	25	26	30 3/8	81	93	105	117	129	141	165	189	107	119	131	143	155	167	179	191	203
WS-66	12000	66	20	42	26	48	25	30	34 3/8	81	93	105	117	129	141	165	189	107	119	131	143	155	167	179	191	203
WS-72	14000	72	20	48	26	54	25	32	36 3/8	81	93	105	117	129	141	165	189	109	121	133	145	157	169	181	193	205
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WS-84	18000	84	22	60	28	66	26	36	40 3/8	83	95	107	119	131	143	167	191	115	127	139	151	163	175	187	199	211
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WS-96	22000	96	22	72	28	78	26	40	44 3/8	83	95	107	119	131	143	167	191	119	131	143	155	167	179	191	203	215
WS-96	24000	96	22	72	28	78	26	42	46 3/8	83	95	107	119	131	143	167	191	119	131	143	155	167	179	191	203	215
WS-108	26000	108	24	84	32	92	27	42	46 3/8	85	97	109	121	133	145	169	193	127	139	151	163	175	187	199	211	223
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WS-108	30000	108	24	84	32	92	27	48	54 3/8	85	97	109	121	133	145	169	193	127	139	151	163	175	187	199	211	223
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WS-120	40000	120	28	96	36	104	29	54	60 3/8	89	101	113	125	137	149	173	197	131	143	155	167	179	191	203	215	227
WS-132	45000	132	28	108	36	116	29	60	66 3/8	89	101	113	125	137	149	173	197	133	145	157	169	181	193	205	217	229
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WS-168	60000	168	36	130	48	142	39	66	72 3/8	105	117	129	141	153	165	189	213	165	177	189	201	213	225	237	249	261
WS-168	70000	168	36	130	48	142	39	72	78 3/8	105	117	129	141	153	165	189	213	165	177	189	201	213	225	237	249	261
WS-192	80000	192	36	150	48	162	39	76	82 3/8	105	117	129	141	153	165	189	213	171	183	195	207	219	231	243	255	267
WS-192	90000	192	42	150	54	162	42	80	86 3/8	112	124	136	148	160	172	196	220	178	190	202	214	226	238	250	262	274
WS-192	100000	192	48	150	60	162	45	84	90 3/8	118	130	142	154	166	178	192	206	184	196	208	220	232	244	256	268	280

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. REMOTE PUMP SIZING BASED ON 60' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. SEE PAGE #16 FOR REMOTE TANK SIZING.
8. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
9. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Rectangular FRP Self-Contained Recirculation Unit

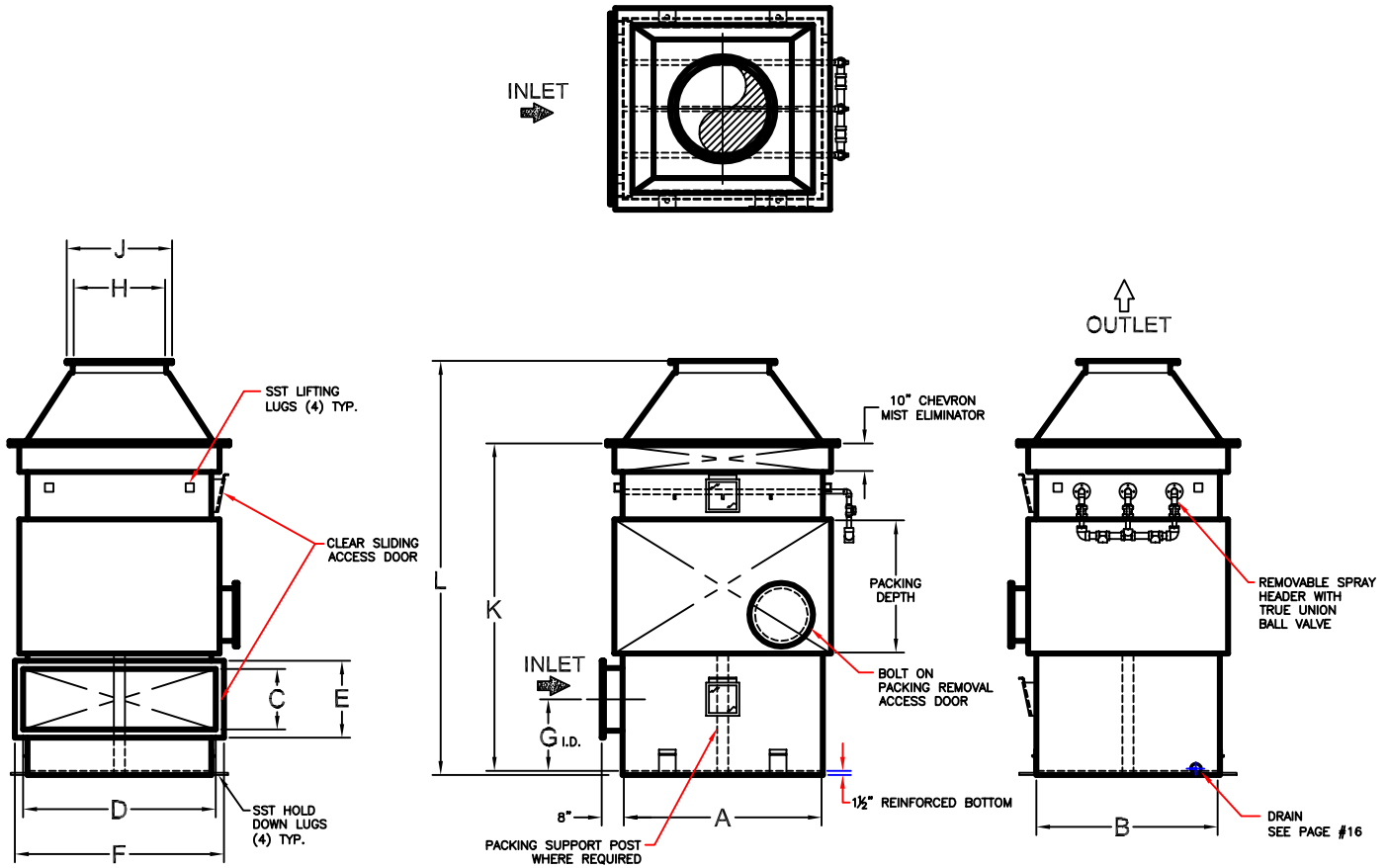


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MODEL SERIES NO.	CFM	K ID										L OD								M ID	N ID	P ID	R							
		A ID	B ID	C INLET ID		D INLET OD		E INLET ID	F INLET OD	G INLET ID	H INLET OD	J INLET OD	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK					120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK
WS-1212	500	12	12	8 DIA		12 3/8 DIA		31	8	12 3/8	79	91	103	115	127	139	163	187	93	105	117	129	141	153	177	201	18	13	18	2
WS-1224	1000	12	24	10 DIA		14 3/8 DIA		32	10	14 3/8	81	93	105	117	129	141	165	189	97	109	121	133	145	157	181	205	18	13	18	2
WS-2424	2000	24	24	14 DIA		18 3/8 DIA		34	14	18 3/8	85	97	109	121	133	145	169	193	101	113	125	137	149	161	185	209	18	13	18	2
WS-2436	3000	24	36	16 DIA		20 3/8 DIA		35	16	20 3/8	87	99	111	123	135	147	171	195	103	115	127	139	151	163	187	211	18	13	18	2
WS-3636	4000	36	36	18 DIA		22 3/8 DIA		36	18	22 3/8	89	101	113	125	137	149	173	197	105	117	129	141	153	165	189	213	18	13	18	2
WS-3642	5000	36	42	20 DIA		24 3/8 DIA		37	20	24 3/8	91	103	115	127	139	151	175	199	109	121	133	145	157	169	193	217	18	13	18	2
WS-3648	6000	36	48	12 44		18 50		33	22	26 3/8	83	95	107	119	131	143	167	191	103	115	127	139	151	163	187	211	18	13	18	2
WS-4848	8000	48	48	14 44		20 50		34	24	28 3/8	85	97	109	121	133	145	169	193	105	117	129	141	153	165	189	213	18	13	18	2
WS-4860	10000	48	60	14 56		20 62		34	26	30 3/8	85	97	109	121	133	145	169	193	109	121	133	145	157	169	193	217	18	13	18	2
WS-6060	12000	60	60	16 56		22 62		35	30	34 3/8	87	99	111	123	135	147	171	195	111	123	135	147	159	171	195	219	18	13	18	2
WS-6066	14000	60	66	16 62		22 68		35	32	36 3/8	87	99	111	123	135	147	171	195	111	123	135	147	159	171	195	219	18	13	18	2
WS-6672	16000	66	72	16 68		22 74		35	34	38 3/8	87	99	111	123	135	147	171	195	113	125	137	149	161	173	197	221	18	13	18	2
WS-7272	18000	72	72	18 68		24 74		36	36	40 3/8	89	101	113	125	137	149	173	197	115	127	139	151	163	175	199	223	18	13	18	2
WS-7278	20000	72	78	18 76		24 82		36	38	42 3/8	89	101	113	125	137	149	173	197	115	129	141	153	165	177	201	225	18	13	18	2
WS-7884	22000	78	84	20 78		26 84		37	40	44 3/8	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2
WS-8484	24000	84	84	22 78		28 84		38	42	46 3/8	93	105	117	129	141	153	177	201	121	133	145	157	169	181	205	229	18	13	18	2
WS-8490	26000	84	90	22 84		28 90		38	42	46 3/8	93	105	117	129	141	153	177	201	125	137	149	161	173	185	209	233	18	13	18	2
WS-8496	28000	84	96	22 88		28 94		38	48	54 3/8	93	105	117	129	141	153	177	201	125	137	149	161	173	185	209	233	18	13	18	2
WS-9096	30000	90	96	24 88		30 94		39	48	54 3/8	95	107	119	131	143	155	179	203	127	139	151	163	175	187	211	235	18	13	18	2
WS-96108	36000	96	108	24 98		32 106		39	54	60 3/8	95	107	119	131	143	155	179	203	129	141	153	165	177	189	213	237	18	13	18	2
WS-96120	40000	96	120	24 110		32 118		39	54	60 3/8	95	107	119	131	143	155	179	203	135	147	159	171	183	195	219	243	18	13	18	2
WS-108120	45000	108	120	28 110		36 118		41	60	66 3/8	99	111	123	135	147	159	183	207	139	151	163	175	187	199	223	247	18	13	18	2
WS-120120	50000	120	120	32 110		44 122		43	60	66 3/8	103	115	127	139	151	163	187	211	143	155	167	179	191	203	227	251	18	13	18	3
WS-120132	55000	120	132	32 120		44 132		43	66	72 3/8	105	117	129	141	153	165	189	213	147	159	171	183	195	207	231	255	18	13	18	3
WS-120144	60000	120	144	32 130		44 142		43	66	72 3/8	105	117	129	141	153	165	189	213	153	165	177	189	201	213	237	261	18	13	18	3
WS-120168	70000	120	168	32 150		44 162		49	72	78 3/8	111	123	135	147	159	171	195	219	167	179	191	203	215	227	251	275	24	19	24	3
WS-144168	80000	144	168	36 150		48 162		51	76	82 3/8	115	127	139	151	163	175	199	223	171	183	195	207	220	232	256	280	24	19	24	3
WS-144180	90000	144	180	38 160		50 172		52	80	86 3/8	117	129	141	153	165	177	201	225	177	189	201	213	226	238	262	286	24	19	24	3
WS-156180	100000	156	180	42 160		54 172		54	84	90 3/8	121	133	145	157	169	181	205	229	191	203	215	227	239	251	275	299	24	19	24	3

- NOTE:
1. CHART BASED ON 500 FPM VELOCITY.
 2. SELF CONTAINED PUMP SIZES BASED ON 40' OF HEAD UNLESS OTHERWISE SPECIFIED.
 3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
 4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
 5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
 6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
 7. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
 8. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Rectangular FRP Remote Recirculation Unit



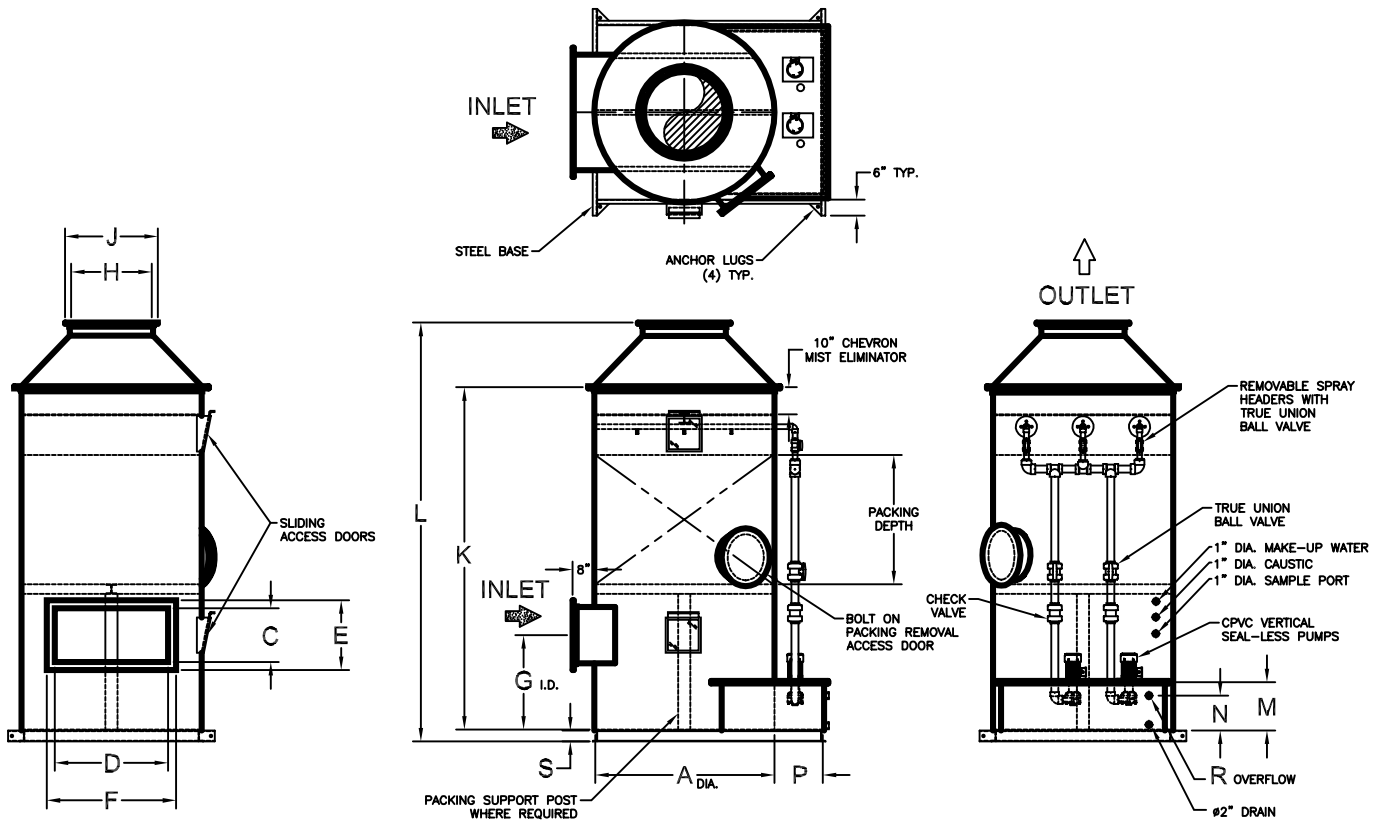
THESE DIMENSIONS ARE GUIDELINE DIMENSIONS ONLY. CERTIFIED DRAWINGS ARE SUPPLIED WITH SUBMITTAL PACKAGES.

MODEL SERIES NO.	CFM	K ID										L OD													
		A ID	B ID	C ID	D E F OD INLET		G ID	H ID	J ID	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK
WS-1212	500	12	12	8 DIA	12 3/8 DIA		19	8	12 3/8	69	81	93	105	117	129	153	177	83	95	107	119	131	143	167	191
WS-1224	1000	12	24	10 DIA	14 3/8 DIA		20	10	14 3/8	71	83	95	107	119	131	155	179	87	99	111	123	135	147	171	195
WS-2424	2000	24	24	14 DIA	18 3/8 DIA		22	14	18 3/8	75	87	99	111	123	135	159	183	91	103	115	127	139	151	175	199
WS-2436	3000	24	36	16 DIA	20 3/8 DIA		23	16	20 3/8	77	89	101	113	125	137	161	185	93	105	117	129	141	153	177	201
WS-3636	4000	36	36	18 DIA	22 3/8 DIA		24	18	22 3/8	79	91	103	115	127	139	163	187	95	107	119	131	143	155	179	203
WS-3642	5000	36	42	20 DIA	24 3/8 DIA		25	20	24 3/8	81	93	105	117	129	141	165	189	99	111	123	135	147	159	183	207
WS-3648	6000	36	48	12 44	18 50		21	22	26 3/8	73	85	97	109	121	133	157	181	93	105	117	129	141	153	177	201
WS-4848	8000	48	48	14 44	20 50		22	24	28 3/8	75	87	99	111	123	135	159	183	95	107	119	131	143	155	179	203
WS-4860	10000	48	60	14 56	20 62		22	26	30 3/8	75	87	99	111	123	135	159	183	99	111	123	135	147	159	183	207
WS-6060	12000	60	60	16 56	22 62		23	30	34 3/8	77	89	101	113	125	137	161	185	101	113	125	137	149	161	185	209
WS-6066	14000	60	66	16 62	22 68		23	32	36 3/8	77	89	101	113	125	137	161	185	101	113	125	137	149	161	185	209
WS-6672	16000	66	72	16 68	22 74		23	34	38 3/8	77	89	101	113	125	137	161	185	103	115	127	139	151	163	187	211
WS-7272	18000	72	72	18 68	24 74		24	36	40 3/8	79	91	103	115	127	139	163	187	105	117	129	141	153	165	189	213
WS-7278	20000	72	78	18 76	24 82		24	38	42 3/8	79	91	103	115	127	139	163	187	105	117	129	141	153	165	189	213
WS-7884	22000	78	84	20 78	26 84		25	40	44 3/8	81	93	105	117	129	141	165	189	109	121	133	145	157	169	193	217
WS-8484	24000	84	84	22 78	28 84		26	42	46 3/8	83	95	107	119	131	143	167	191	111	123	135	147	159	171	195	219
WS-8490	26000	84	90	22 84	28 90		26	42	46 3/8	83	95	107	119	131	143	167	191	115	127	139	151	163	175	199	223
WS-8496	28000	84	96	22 88	28 94		26	48	54 3/8	83	95	107	119	131	143	167	191	115	127	139	151	163	175	199	223
WS-9096	30000	90	96	24 88	30 94		27	48	54 3/8	85	97	109	121	133	145	169	193	117	129	141	153	165	177	201	225
WS-96108	36000	96	108	24 98	32 104		27	54	60 3/8	85	97	109	121	133	145	169	193	119	131	143	155	167	179	203	227
WS-96120	40000	96	120	24 110	32 118		27	54	60 3/8	85	97	109	121	133	145	169	193	125	137	149	161	173	185	209	233
WS-108120	45000	108	120	28 110	36 118		29	60	66 3/8	89	101	113	125	137	149	173	197	129	141	153	165	177	189	213	237
WS-120120	50000	120	120	32 110	44 122		31	60	66 3/8	93	105	117	129	141	153	177	201	133	145	157	169	181	193	217	241
WS-120132	55000	120	132	32 120	44 132		31	66	72 3/8	95	107	119	131	143	155	179	203	137	149	161	173	185	197	221	245
WS-120144	60000	120	144	32 130	44 142		31	66	72 3/8	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251
WS-120168	70000	120	168	32 150	44 162		37	72	78 3/8	101	113	125	137	149	161	185	209	157	169	181	192	205	217	241	265
WS-144168	80000	144	168	36 150	48 162		39	76	82 3/8	105	117	129	141	153	165	189	213	161	173	185	197	210	222	246	270
WS-144180	90000	144	180	38 160	50 172		40	80	86 3/8	107	119	131	143	155	167	191	215	167	179	191	203	216	228	252	276
WS-156180	100000	144	196	42 160	54 172		42	84	90 3/8	111	123	135	147	159	171	195	219	179	191	203	215	227	239	263	287

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. REMOTE PUMP SIZING BASED ON 60' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. SEE PAGE #16 FOR REMOTE TANK SIZING.
8. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
9. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® PVC Self-Contained Recirculation Unit



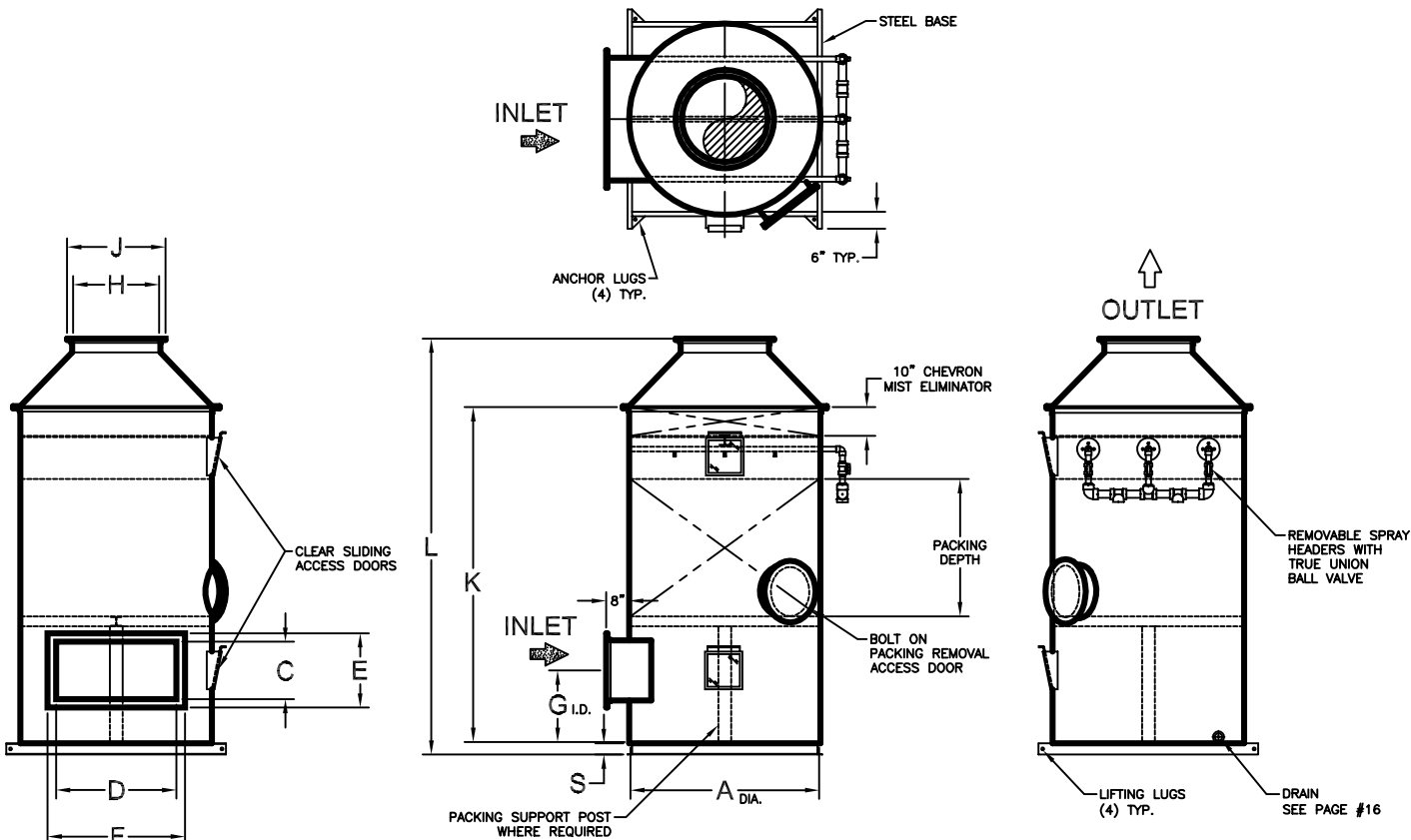
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MODEL SERIES NO.	CFM	A		C		D		E		F		G		H		J		K ID								L OD								M	N	P	R	S
		ID	INLET	ID	INLET	OD	INLET	OD	INLET	OD	INLET	OD	INLET	OD	INLET	OD	INLET	OD	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	ID	ID	ID	OVERFLOW
WS-14	500	14	8 DIA	12 3/8 DIA	29	8	12 3/8	79	91	103	115	127	139	163	187	93	105	117	129	141	153	177	201	18	13	18	2	2										
WS-20	1000	20	10 DIA	14 3/8 DIA	30	10	14 3/8	81	93	105	117	129	141	165	189	95	107	119	131	143	155	179	203	18	13	18	2	2										
WS-28	2000	28	14 DIA	18 3/8 DIA	32	14	18 3/8	85	97	109	121	133	145	169	193	101	113	125	137	149	161	185	209	18	13	18	2	2										
WS-34	3000	34	16 DIA	20 3/8 DIA	33	16	20 3/8	87	99	111	123	135	147	171	195	106	118	130	142	154	166	190	214	18	13	18	2	3										
WS-40	4000	40	18 DIA	22 3/8 DIA	34	18	22 3/8	89	101	113	125	137	149	173	197	110	122	134	146	158	170	194	218	18	13	18	2	3										
WS-42	5000	42	20 DIA	24 3/8 DIA	35	20	24 3/8	91	103	115	127	139	151	175	199	112	124	136	148	160	172	196	220	18	13	18	2	3										
WS-48	6000	48	14	30 1/8	34 3/8	32	22	26 3/8	85	97	109	121	133	145	169	193	109	121	133	145	157	169	193	217	18	13	18	2	4									
WS-54	8000	54	18	32 1/8	36 3/8	34	24	28 3/8	89	101	113	125	137	149	173	197	115	127	139	151	163	175	199	223	18	13	18	2	4									
WS-60	10000	60	20	36 1/8	40 3/8	35	26	30 3/8	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2	4									
WS-66	12000	66	20	42 1/8	48 1/8	35	30	36 1/8	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2	4									
WS-72	14000	72	20	48 1/8	54 1/8	35	32	38 1/8	91	103	115	127	139	151	175	199	123	135	147	159	171	183	207	231	18	13	18	2	6									
WS-78	16000	78	20	54 1/8	60 1/8	35	34	40 1/8	91	103	115	127	139	151	175	199	125	137	149	161	173	185	209	233	18	13	18	2	6									
WS-84	18000	84	22	60 1/8	66 1/8	36	36	42 1/8	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2	6									
WS-84	20000	84	22	60 1/8	66 1/8	36	38	44 1/8	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2	6									
WS-96	22000	96	22	72 1/8	78 1/8	36	40	46 1/8	93	105	117	129	141	153	177	201	135	147	159	171	183	195	219	243	18	13	18	2	8									
WS-96	24000	96	22	72 1/8	78 1/8	36	42	48 1/8	93	105	117	129	141	153	177	201	135	147	159	171	183	195	219	243	18	13	18	2	8									
WS-108	26000	108	24	84 1/8	90 1/8	37	42	48 1/8	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8									
WS-108	28000	108	24	84 1/8	90 1/8	37	48	54 1/8	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8									
WS-108	30000	108	24	84 1/8	90 1/8	37	48	54 1/8	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8									
WS-120	36000	120	28	96 1/8	102 1/8	39	54	60 1/8	99	111	123	135	147	159	183	207	147	159	171	183	195	207	231	255	18	13	18	2	8									
WS-120	40000	120	28	96 1/8	102 1/8	39	54	60 1/8	99	111	123	135	147	159	183	207	147	159	171	183	195	207	231	255	18	13	18	2	8									
WS-132	45000	132	28	108 1/8	114 1/8	39	60	66 1/8	99	111	123	135	147	159	183	207	151	163	175	187	199	211	235	259	18	13	18	2	10									
WS-144	50000	144	32	112 1/8	118 1/8	41	60	66 1/8	103	115	127	139	151	163	187	211	161	173	185	197	209	221	245	269	18	13	18	3	10									
WS-144	55000	144	32	112 1/8	118 1/8	41	66	72 1/8	103	115	127	139	151	163	187	211	161	173	185	197	209	221	245	269	18	13	18	3	10									
WS-168	60000	168	36	130 1/8	136 1/8	49	66	72 1/8	127	139	151	163	175	187	211	235	197	209	221	233	245	257	281	305	24	19	24	3	12									
WS-168	70000	168	36	130 1/8	136 1/8	49	72	78 1/8	127	139	151	163	175	187	211	235	197	209	221	233	245	257	281	305	24	19	24	3	12									
WS-192	80000	192	36	150 1/8	156 1/8	49	76	82 1/8	127	139	151	163	175	187	211	235	203	215	227	239	251	263	287	311	24	19	24	3	12									
WS-192	90000	192	42	150 1/8	156 1/8	52	80	86 1/8	134	146	158	170	182	194	218	242	210	222	234	246	258	270	294	318	24	19	24	3	12									
WS-192	100000	192	48	150 1/8	156 1/8	55	84	90 1/8	140	152	164	176	188	200	224	248	216	228	240	252	264	276	300	324	24	19	24	3	12									

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. SELF CONTAINED PUMP SIZES BASED ON 40' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
8. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® PVC Remote Recirculation Unit



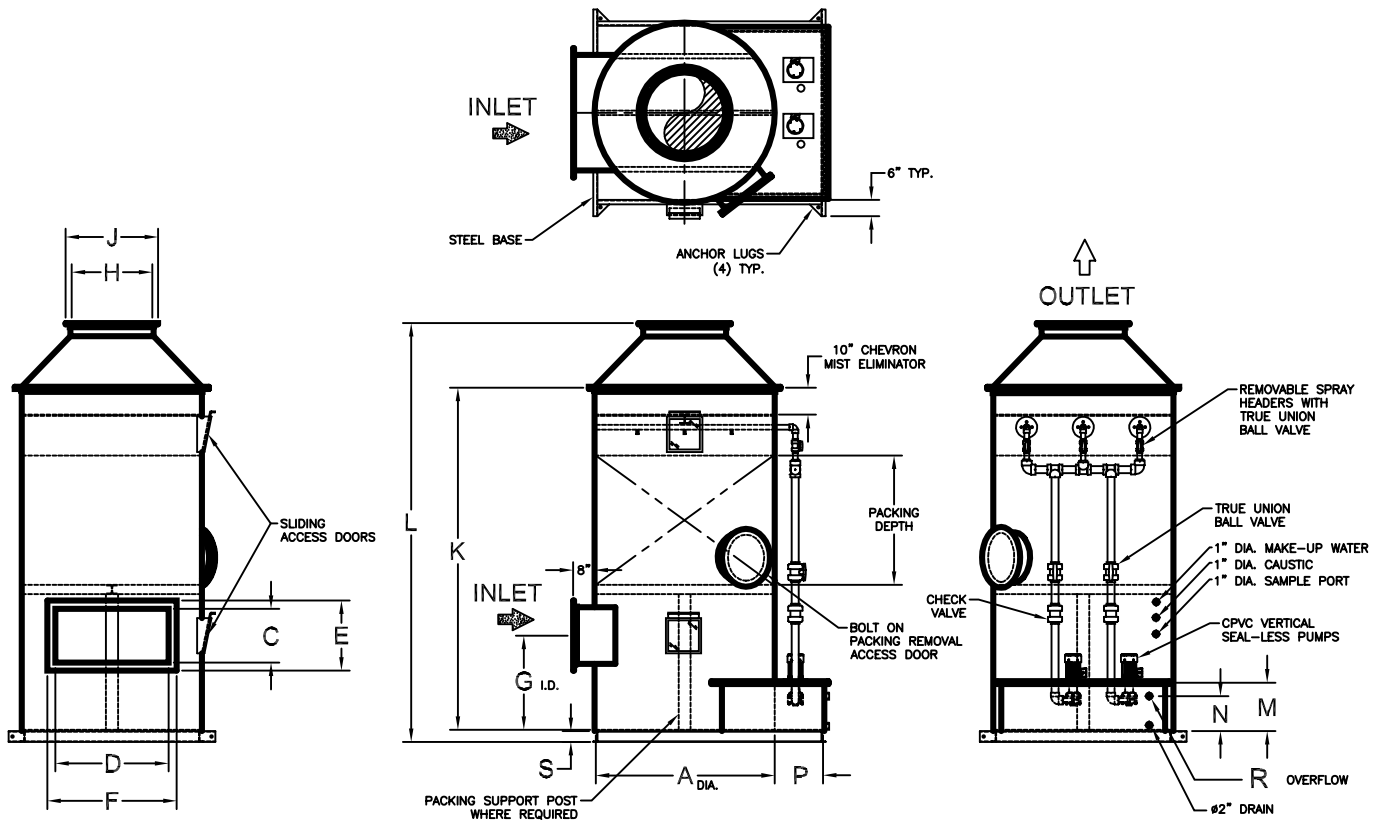
THESE DIMENSIONS ARE GUIDELINE DIMENSIONS ONLY. CERTIFIED DRAWINGS ARE SUPPLIED WITH SUBMITTAL PACKAGES.

MODEL SERIES NO.	CFM	K ID										L OD								S						
		A ID	C ID INLET	D OD INLET	E ID INLET	F ID INLET	G ID INLET	H ID INLET	J ID INLET	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK		36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK
WS-14	500	14	8 DIA	12 3/8 DIA	19	8	12 3/8	69	81	93	105	117	129	153	177	83	95	107	119	131	143	167	191	2		
WS-20	1000	20	10 DIA	14 3/8 DIA	20	10	14 3/8	71	83	95	107	119	131	155	179	85	97	109	121	133	145	169	193	2		
WS-28	2000	28	14 DIA	18 3/8 DIA	22	14	18 3/8	75	87	99	111	123	135	159	183	91	103	115	127	139	151	175	199	2		
WS-34	3000	34	16 DIA	20 3/8 DIA	23	16	20 3/8	77	89	101	113	125	137	161	185	96	108	120	132	144	156	180	204	3		
WS-40	4000	40	18 DIA	22 3/8 DIA	24	18	22 3/8	79	91	103	115	127	139	163	187	100	112	124	136	148	160	184	208	3		
WS-42	5000	42	20 DIA	24 3/8 DIA	25	20	24 3/8	81	93	105	117	129	141	165	189	102	114	126	138	150	162	186	210	3		
WS-48	6000	48	14	30	18 3/8	34 3/8	22	22	26 3/8	75	87	99	111	123	135	159	183	99	111	123	135	147	159	183	207	4
WS-54	8000	54	18	32	22 3/8	36 3/8	24	24	28 3/8	79	91	103	115	127	139	163	187	105	117	129	141	153	165	189	213	4
WS-60	10000	60	20	36	24 3/8	40 3/8	25	26	30 3/8	81	93	105	117	129	141	165	189	109	121	133	145	157	169	193	217	4
WS-66	12000	66	20	42	26 1/2	48 1/2	25	30	36 1/2	81	93	105	117	129	141	165	189	109	121	133	145	157	169	193	217	4
WS-72	14000	72	20	48	26 1/2	54 1/2	25	32	38 1/2	81	93	105	117	129	141	165	189	113	125	137	149	161	173	197	221	6
WS-78	16000	78	20	54	26 1/2	60 1/2	25	34	40 1/2	81	93	105	117	129	141	165	189	115	127	139	151	163	175	199	223	6
WS-84	18000	84	22	60	28 1/2	66 1/2	26	36	42 1/2	83	95	107	119	131	143	167	191	119	131	143	155	167	179	203	227	6
WS-84	20000	84	22	60	28 1/2	66 1/2	26	38	44 1/2	83	95	107	119	131	143	167	191	119	131	143	155	167	179	203	227	6
WS-96	22000	96	22	72	28 1/2	78 1/2	26	40	46 1/2	83	95	107	119	131	143	167	191	125	137	149	161	173	185	209	233	8
WS-96	24000	96	22	72	28 1/2	78 1/2	26	42	48 1/2	83	95	107	119	131	143	167	191	125	137	149	161	173	185	209	233	8
WS-108	26000	108	24	84	30 1/2	90 1/2	27	42	48 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	217	241	8
WS-108	28000	108	24	84	30 1/2	90 1/2	27	48	54 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	217	241	8
WS-108	30000	108	24	84	30 1/2	90 1/2	27	48	54 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	217	241	8
WS-120	36000	120	28	96	34 3/4	102 3/4	29	54	60 1/2	89	101	113	125	137	149	172	197	137	149	161	173	185	197	221	245	8
WS-120	40000	120	28	96	34 3/4	102 3/4	29	54	60 1/2	89	101	113	125	137	149	172	197	137	149	161	173	185	197	221	245	8
WS-132	45000	132	28	108	34 3/4	114 3/4	29	60	66 1/2	89	101	113	125	137	149	172	197	141	153	165	177	189	201	225	249	10
WS-144	50000	144	32	112	38 3/4	118 3/4	31	60	66 1/2	93	105	117	129	141	153	177	201	151	163	175	187	199	211	235	259	10
WS-144	55000	144	32	112	38 3/4	118 3/4	31	66	72 1/2	93	105	117	129	141	153	177	201	151	163	175	187	199	211	235	259	10
WS-168	60000	168	36	130	42 3/4	136 3/4	39	66	72 1/2	105	117	129	141	153	165	189	213	175	187	199	211	223	235	259	283	12
WS-168	70000	168	36	130	42 3/4	136 3/4	39	72	78 3/4	105	117	129	141	153	165	189	213	175	187	199	211	223	235	259	283	12
WS-192	80000	192	36	150	42 3/4	156 3/4	39	76	82 3/4	105	117	129	141	153	165	189	213	181	193	205	217	229	241	265	289	12
WS-192	90000	192	42	150	48 3/4	156 3/4	42	80	86 3/4	112	124	136	148	160	184	208	232	188	200	212	224	236	248	272	296	12
WS-192	100000	192	48	150	54 3/4	156 3/4	45	84	90 3/4	118	130	142	154	166	190	214	238	194	206	218	230	242	254	278	302	12

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. REMOTE PUMP SIZING BASED ON 60' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. SEE PAGE #16 FOR REMOTE TANK SIZING.
8. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
9. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Polypro Self-Contained Recirculation Unit



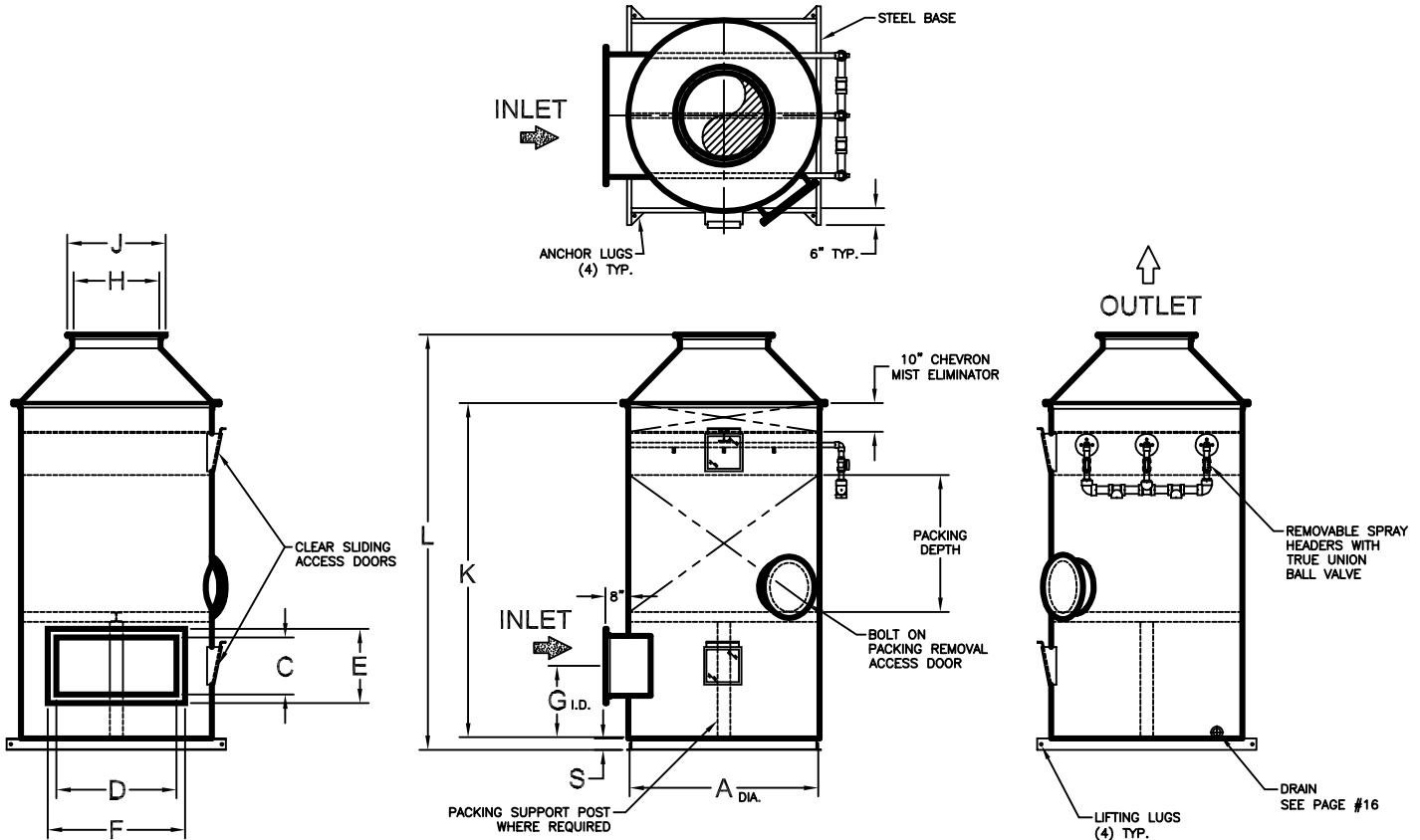
THESE DIMENSIONS ARE GUIDELINE DIMENSIONS ONLY. CERTIFIED DRAWINGS ARE SUPPLIED WITH SUBMITTAL PACKAGES.

MODEL SERIES NO.	CFM	K ID																L OD								M ID	N ID	P ID	R OVERFLOW	S BASE HEIGHT
		A ID	C INLET	D INLET	E INLET	G INLET ID	H OUTLET	J OUTLET	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK						
WS-14	500	14	8 DIA	12 3/8 DIA	29	8	12 3/8	79	91	103	115	127	139	163	187	93	105	117	129	141	153	177	201	18	13	18	2	2		
WS-20	1000	20	10 DIA	14 3/8 DIA	30	10	14 3/8	81	93	105	117	129	141	165	189	95	107	119	131	143	155	179	203	18	13	18	2	2		
WS-28	2000	28	14 DIA	18 3/8 DIA	32	14	18 3/8	85	97	109	121	133	145	169	193	101	113	125	137	149	161	185	209	18	13	18	2	2		
WS-34	3000	34	16 DIA	20 3/8 DIA	33	16	20 3/8	87	99	111	123	135	147	171	195	106	118	130	142	154	166	190	214	18	13	18	2	3		
WS-40	4000	40	18 DIA	22 3/8 DIA	34	18	22 3/8	89	101	113	125	137	149	173	197	110	122	134	146	158	170	194	218	18	13	18	2	3		
WS-42	5000	42	20 DIA	24 3/8 DIA	35	20	24 3/8	91	103	115	127	139	151	175	199	112	124	136	148	160	172	196	220	18	13	18	2	3		
WS-48	6000	48	14 30	18 3/8 34 3/8	32	22	26 3/8	85	97	109	121	133	145	169	193	109	121	133	145	157	169	193	217	18	13	18	2	4		
WS-54	8000	54	18 32	22 3/8 36 3/8	34	24	28 3/8	89	101	113	125	137	149	173	197	115	127	139	151	163	175	199	223	18	13	18	2	4		
WS-60	10000	60	20 36	24 3/8 40 3/8	35	26	30 3/8	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2	4		
WS-66	12000	66	20 42	26 1/2 48 1/2	35	30	36 1/2	91	103	115	127	139	151	175	199	119	131	143	155	167	179	203	227	18	13	18	2	4		
WS-72	14000	72	20 48	26 1/2 54 1/2	35	32	38 1/2	91	103	115	127	139	151	175	199	123	135	147	159	171	183	207	231	18	13	18	2	6		
WS-78	16000	78	20 54	26 1/2 60 1/2	35	34	40 1/2	91	103	115	127	139	151	175	199	125	137	149	161	173	185	209	233	18	13	18	2	6		
WS-84	18000	84	22 60	28 1/2 66 1/2	36	36	42 1/2	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2	6		
WS-84	20000	84	22 60	28 1/2 66 1/2	36	38	44 1/2	93	105	117	129	141	153	177	201	129	141	153	165	177	189	213	237	18	13	18	2	6		
WS-96	22000	96	22 72	28 1/2 78 1/2	36	40	46 1/2	93	105	117	129	141	153	177	201	135	147	159	171	183	195	219	243	18	13	18	2	8		
WS-96	24000	96	22 72	28 1/2 78 1/2	36	42	48 1/2	93	105	117	129	141	153	177	201	135	147	159	171	183	195	219	243	18	13	18	2	8		
WS-108	26000	108	24 84	30 1/2 90 1/2	37	42	48 1/2	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8		
WS-108	28000	108	24 84	30 1/2 90 1/2	37	48	54 1/2	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8		
WS-108	30000	108	24 84	30 1/2 90 1/2	37	48	54 1/2	95	107	119	131	143	155	179	203	143	155	167	179	191	203	227	251	18	13	18	2	8		
WS-120	36000	120	28 96	34 3/4 102 3/4	39	54	60 3/4	99	111	123	135	147	159	183	207	147	159	171	183	195	207	231	255	18	13	18	2	8		
WS-120	40000	120	28 96	34 3/4 102 3/4	39	54	60 3/4	99	111	123	135	147	159	183	207	147	159	171	183	195	207	231	255	18	13	18	2	8		
WS-132	45000	132	28 108	34 3/4 114 3/4	39	60	66 3/4	99	111	123	135	147	159	183	207	151	163	175	187	199	211	235	259	18	13	18	2	10		
WS-144	50000	144	32 112	38 3/4 118 3/4	41	60	66 3/4	103	115	127	139	151	163	187	211	161	173	185	197	209	221	245	269	18	13	18	3	10		
WS-144	55000	144	32 112	38 3/4 118 3/4	41	66	72 3/4	103	115	127	139	151	163	187	211	161	173	185	197	209	221	245	269	18	13	18	3	10		
WS-168	60000	168	36 130	42 3/4 136 3/4	49	66	72 3/4	127	139	151	163	175	187	211	235	197	209	221	233	245	257	281	305	24	19	24	3	12		
WS-168	70000	168	36 130	42 3/4 136 3/4	49	72	78 3/4	127	139	151	163	175	187	211	235	197	209	221	233	245	257	281	305	24	19	24	3	12		
WS-192	80000	192	36 150	42 3/4 156 3/4	49	76	82 3/4	127	139	151	163	175	187	211	235	203	215	227	239	251	263	287	311	24	19	24	3	12		
WS-192	90000	192	42 150	48 3/4 156 3/4	52	80	86 3/4	134	146	158	170	182	194	218	242	210	222	234	246	258	270	294	318	24	19	24	3	12		
WS-192	100000	192	48 150	54 3/4 156 3/4	55	84	90 3/4	140	152	164	176	188	200	224	248	216	228	240	252	264	276	300	324	24	19	24	3	12		

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. SELF CONTAINED PUMP SIZES BASED ON 40' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
8. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Polypro Remote Recirculation Unit



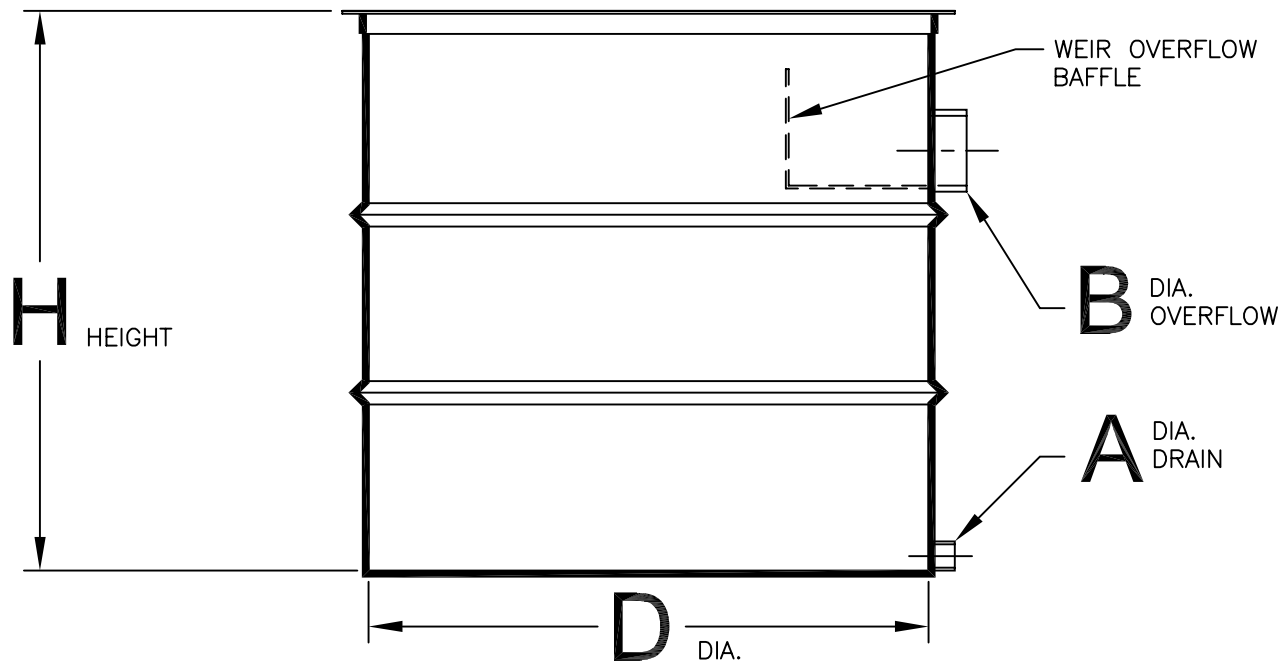
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MODEL SERIES NO.	CFM	K ID																L OD								S BASE HEIGHT	
		A ID	C ID INLET	D ID INLET	E OD INLET	F OD INLET	G Ø INLET	H ID OUTLET	J OD OUTLET	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK	12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	72" PACK	96" PACK	120" PACK		
WS-14	500	14	8 DIA	12 3/8 DIA	19	8	12 3/8	69	81	93	105	117	129	153	177	83	95	107	119	131	143	155	167	179	191	2	
WS-20	1000	20	10 DIA	14 3/8 DIA	20	10	14 3/8	71	83	95	107	119	131	155	179	85	97	109	121	133	145	157	169	181	193	2	
WS-28	2000	28	14 DIA	18 3/8 DIA	22	14	18 3/8	75	87	99	111	123	135	159	183	91	103	115	127	139	151	163	175	187	199	2	
WS-34	3000	34	16 DIA	20 3/8 DIA	23	16	20 3/8	77	89	101	113	125	137	161	185	96	108	120	132	144	156	168	180	192	204	3	
WS-40	4000	40	18 DIA	22 3/8 DIA	24	18	22 3/8	79	91	103	115	127	139	163	187	100	112	124	136	148	160	172	184	196	208	3	
WS-42	5000	42	20 DIA	24 3/8 DIA	25	20	24 3/8	81	93	105	117	129	141	165	189	102	114	126	138	150	162	174	186	198	210	3	
WS-48	6000	48	14	30	18 3/8	34 3/8	22	22	26 3/8	75	87	99	111	123	135	159	183	99	111	123	135	147	159	171	183	207	4
WS-54	8000	54	18	32	22 3/8	36 3/8	24	24	28 3/8	79	91	103	115	127	139	163	187	105	117	129	141	153	165	177	189	213	4
WS-60	10000	60	20	36	24 3/8	40 3/8	25	26	30 3/8	81	93	105	117	129	141	165	189	109	121	133	145	157	169	181	193	217	4
WS-66	12000	66	20	42	26 1/2	48 1/2	25	30	36 1/2	81	93	105	117	129	141	165	189	109	121	133	145	157	169	181	193	217	4
WS-72	14000	72	20	48	26 1/2	54 1/2	25	32	38 1/2	81	93	105	117	129	141	165	189	113	125	137	149	161	173	185	197	221	6
WS-78	16000	78	20	54	26 1/2	60 1/2	25	34	40 1/2	81	93	105	117	129	141	165	189	115	127	139	151	163	175	187	199	223	6
WS-84	18000	84	22	60	28 1/2	66 1/2	26	36	42 1/2	83	95	107	119	131	143	167	191	119	131	143	155	167	179	191	203	227	6
WS-84	20000	84	22	60	28 1/2	66 1/2	26	38	44 1/2	83	95	107	119	131	143	167	191	119	131	143	155	167	179	191	203	227	6
WS-96	22000	96	22	72	28 1/2	78 1/2	26	40	46 1/2	83	95	107	119	131	143	167	191	125	137	149	161	173	185	197	209	233	8
WS-96	24000	96	22	72	28 1/2	78 1/2	26	42	48 1/2	83	95	107	119	131	143	167	191	125	137	149	161	173	185	197	209	233	8
WS-108	26000	108	24	84	30 1/2	90 1/2	27	42	48 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	205	217	241	8
WS-108	28000	108	24	84	30 1/2	90 1/2	27	48	54 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	205	217	241	8
WS-108	30000	108	24	84	30 1/2	90 1/2	27	48	54 1/2	85	97	109	121	133	145	169	193	133	145	157	169	181	193	205	217	241	8
WS-120	36000	120	28	96	34 3/4	102 3/4	29	54	60 1/2	89	101	113	125	137	149	172	197	137	149	161	173	185	197	209	221	245	8
WS-120	40000	120	28	96	34 3/4	102 3/4	29	54	60 1/2	89	101	113	125	137	149	172	197	137	149	161	173	185	197	209	221	245	8
WS-132	45000	132	28	108	34 3/4	114 3/4	29	60	66 1/2	89	101	113	125	137	149	172	197	141	153	165	177	189	201	213	225	249	10
WS-144	50000	144	32	112	38 3/4	118 3/4	31	60	66 1/2	93	105	117	129	141	153	177	201	151	163	175	187	199	211	223	235	259	10
WS-144	55000	144	32	112	38 3/4	118 3/4	31	66	72 1/2	93	105	117	129	141	153	177	201	151	163	175	187	199	211	223	235	259	10
WS-168	60000	168	36	130	42 3/4	136 3/4	39	66	72 1/2	105	117	129	141	153	165	189	213	175	187	199	211	223	235	247	259	283	12
WS-168	70000	168	36	130	42 3/4	136 3/4	39	72	78 3/4	105	117	129	141	153	165	189	213	175	187	199	211	223	235	247	259	283	12
WS-192	80000	192	36	150	42 3/4	156 3/4	39	76	82 3/4	105	117	129	141	153	165	189	213	181	193	205	217	229	241	253	265	289	12
WS-192	90000	192	42	150	48 3/4	156 3/4	42	80	86 3/4	112	124	136	148	160	184	208	232	188	200	212	224	236	248	260	272	296	12
WS-192	100000	192	48	150	54 3/4	156 3/4	45	84	90 3/4	118	130	142	154	166	190	214	238	194	206	218	230	242	254	266	278	302	12

NOTE:

1. CHART BASED ON 500 FPM VELOCITY.
2. REMOTE PUMP SIZING BASED ON 60' OF HEAD UNLESS OTHERWISE SPECIFIED.
3. THE SCRUBBER BODY MAY BE SHIPPED IN TWO (2) OR MORE PIECES DUE TO OVERALL HEIGHT.
4. SCRUBBER DIMENSIONS DO NOT SHOW ANY EXTERNAL STIFFENERS.
5. ORIENTATION OF ALL EXTERNAL COMPONENTS CAN BE ROTATED TO FIT YOUR REQUIREMENTS.
6. PACKING TO BE SHIPPED LOOSE AND INSTALLED BY OTHERS.
7. SEE PAGE #16 FOR REMOTE TANK SIZING.
8. PUMP SELECTIONS FOR 7 1/2 HP AND LOWER ARE CPVC CONSTRUCTION.
9. CONSULT VIRON ENGINEERING FOR RECIRCULATION RATE AND SIZING OF PUMPS.

Viron® Remote Recirculation Tank



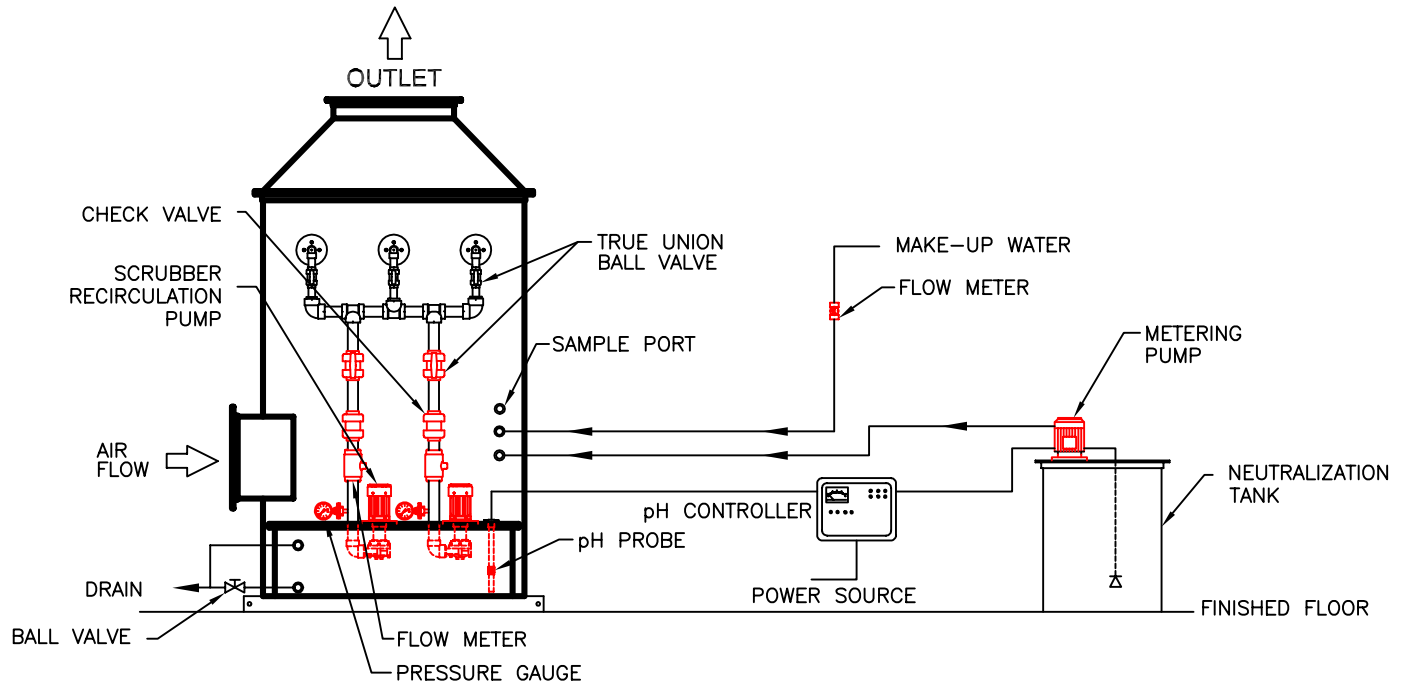
SCRUBBER RECIRCULATION RATE GPM	TANK CAPACITY	D	H	A	B	MATERIAL OF CONSTRUCTION
25	70	24	42	2	4	PVC
50	160	36	42	2	4	PVC
75	225	42	42	2	6	PVC
100	300	48	48	2	6	PVC
150	430	54	48	2	8	PVC
200	600	60	54	2	8	PVC
250	725	66	54	2	8	PVC
300	900	66	66	2	8	PVC
350	1050	72	66	2	8	FRP
400	1180	72	72	2	10	FRP
500	1600	84	72	2	10	FRP
600	1800	84	84	3	10	FRP
700	2100	84	96	3	10	FRP
800	2400	96	84	3	12	FRP
900	2700	96	96	3	12	FRP
1000	3000	96	102	3	12	FRP
1200	3600	108	96	3	12	FRP
1400	4200	120	90	3	14	FRP
1600	4800	120	104	3	14	FRP
1800	5400	120	120	3	14	FRP
2000	6000	120	132	3	14	FRP

REMOTE SCRUBBER DRAIN
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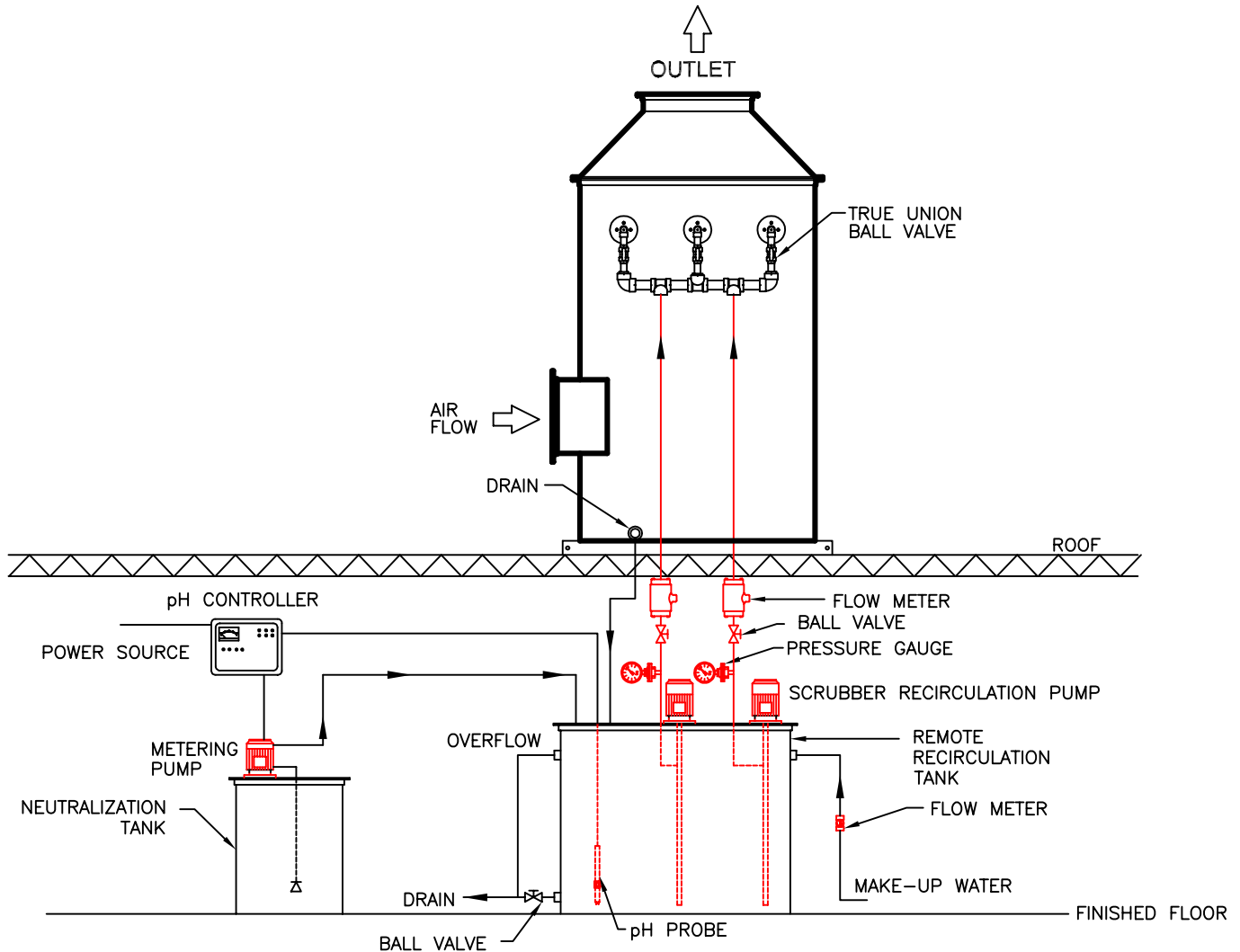
- NOTE:
1. FRP NOZZLES WILL BE NPT TYPE. PVC NOZZLES WILL BE SCHEDULE 80 SOCKET TYPE.
 2. SECONDARY CONTAINMENT MAY BE REQUIRED. PLEASE CONSULT FACTORY.
 3. RECIRCULATION PUMPS TO BE INSTALLED ON A STEEL FRAME AND MOUNTED ON TOP OF THE TANK.
 4. ALL TANKS ARE OPEN TOP.
 5. CUSTOMER TO SUPPLY A SOLID, CONTINUOUSLY SUPPORTED BASE FOR THE INSTALLATION OF THE REMOTE TANK.

Viron® Neutralizing Chemical Control System Illustrations

SELF-CONTAINED RECIRCULATION FLOW DIAGRAM



REMOTE RECIRCULATION FLOW DIAGRAM



Viron® Schematic Symbols Key

PIPING AND INSTRUMENTATION SYMBOLS

—○—○— SOFTWARE LINK SIGNAL

--A-- ANALOG SIGNAL (4 TO 20 MADC etc.)

---- DISCRETE SIGNAL (ON/OFF etc.)

—|—|— FLANGED CONNECTION

~ FLEXIBLE CONNECTION

—▷— CONCENTRIC REDUCER

⊗ BALL VALVE

—|—|— BLAST GATE

—▷— CHECK VALVE

—|— DIAPHRAGM VALVE

○ MECHANICAL FLOAT VALVE

—|—|— SOLENOID VALVE

—|—|— PRESSURE REGULATOR

—|—|— BASKET STRAINER

—|—|— PRESSURE GAUGE ISOLATOR

—|—|— SIGHT GLASS

—|—|— FLOW METER

—|—|— FLOW SENSOR

—|—|— MOTOR

—|—|— ELECTRIC/PNEUMATIC DAMPER ACTUATOR

—|—|— MOTORIZED DAMPER

—|—|— PROGRAMMABLE LOGIC CONTROLLER INPUT/OUTPUT

—|—|— DISCRETE LOGIC INTERLOCK

—|—|— FIELD MOUNTED DEVICE

—|—|— BACKDRAFT DAMPER

—|—|— LINE STRAINER

—|—|— METERING PUMP

—|—|— EXHAUST STACK

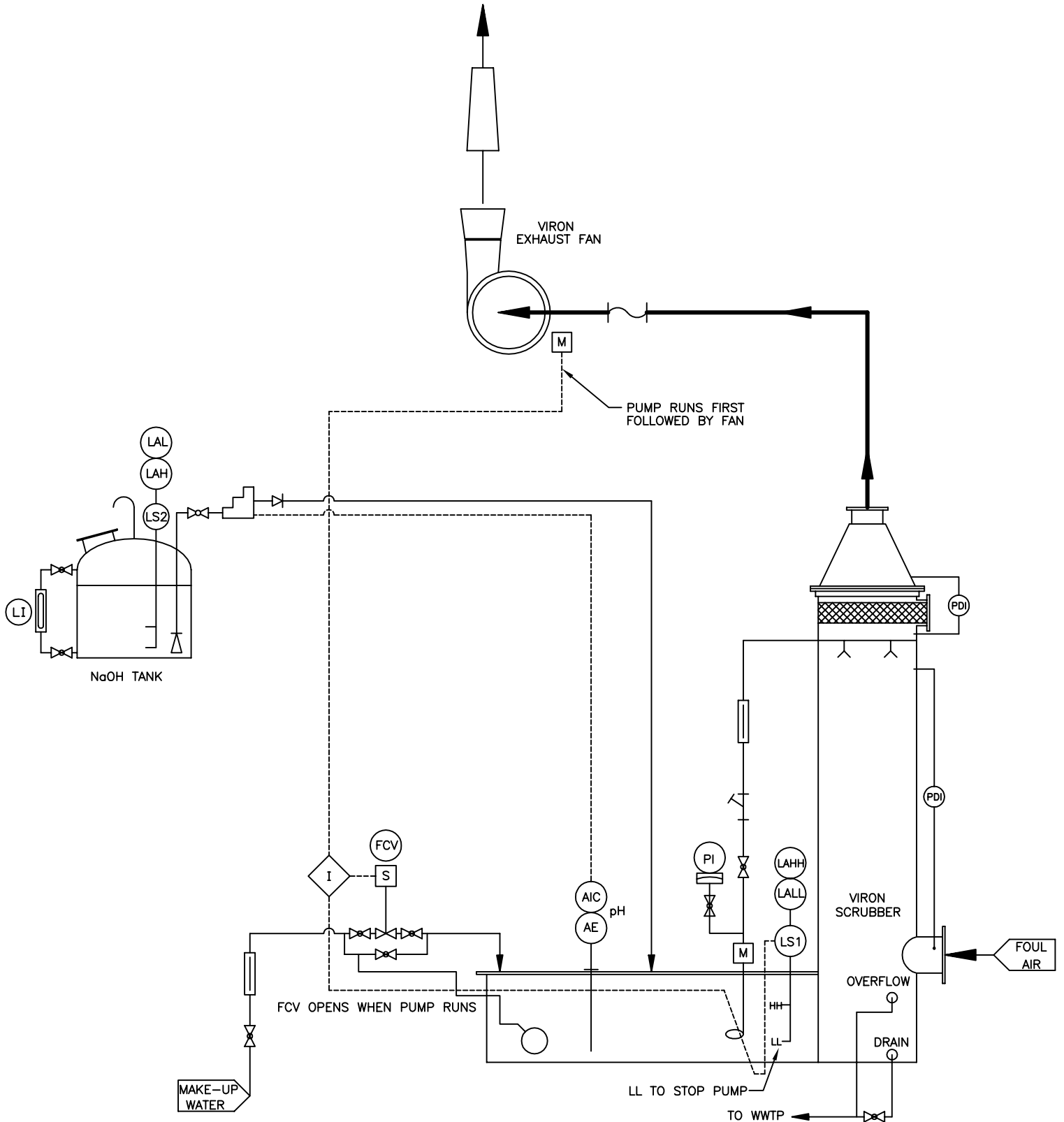
—|—|— REMOVABLE MIST ELIMINATOR

—|—|— BIOCIDES TANK

DEVICE ABBREVIATION LIST

AA	ANALYTICAL ALARM	LALL	LEVEL ALARM LOW—LOW
AC	ANALYTICAL CONTROLLER	LI	LEVEL INDICATOR
AE	ANALYTICAL ELEMENT	LS	LEVEL SWITCH
AS	ANALYTICAL STATUS	LT	LEVEL TRANSMITTER
AY	ANALYTICAL SIGNAL CONVERTER	LY	LEVEL SIGNAL CONVERTER
AIT	ANALYTICAL ALARM TRANSMITTER	PAH	PRESSURE ALARM HIGH
AIC	ANALYTICAL INDICATING CONTROLLER	PAL	PRESSURE ALARM LOW
FAL	FLOW ALARM—LOW	PC	PRESSURE CONTROLLER
FC	FLOW CONTROLLER	PDI	PRESSURE DIFFERENTIAL INDICATOR
FCV	FLOW CONTROL VALVE	PDT	PRESSURE DIFFERENTIAL TRANSMITTER
FI	FLOW INDICATOR	PDZ	DAMPER CONTROLLER
FIT	FLOW INDICATING TRANSMITTER	PI	PRESSURE INDICATOR
FQI	FLOW QUANTITY INDICATOR	PIC	PRESSURE INDICATING CONTROLLER
FQIT	FLOW QUANTITY INDICATING TRANSMITTER	PT	PRESSURE TRANSMITTER
FS	FLOW SENSOR	PRG	PRESSURE REGULATOR
FY	FLOW SIGNAL CONVERTER	QI	STATUS INDICATOR
HC	HAND CONTROL	QL	STATUS INDICATOR LIGHT
HS	HAND SWITCH	QS	FAULT INDICATOR
HSI	HAND SWITCH INDICATOR	TC	TEMPERATURE CONTROLLER
IG	CURRENT INDICATOR	TET	TEMPERATURE ELEMENT TRANSMITTER
IS	CURRENT SWITCH	TIC	TEMPERATURE INDICATING CONTROLLER
KY	TIMER/COUNTER	XV	SOLENOID VALVE
LAH	LEVEL ALARM HIGH	ZC	DAMPER CONTROL
LAHH	LEVEL ALARM HIGH—HIGH	ZI	POSITION INDICATOR
LAL	LEVEL ALARM LOW	ZS	POSITION SWITCH

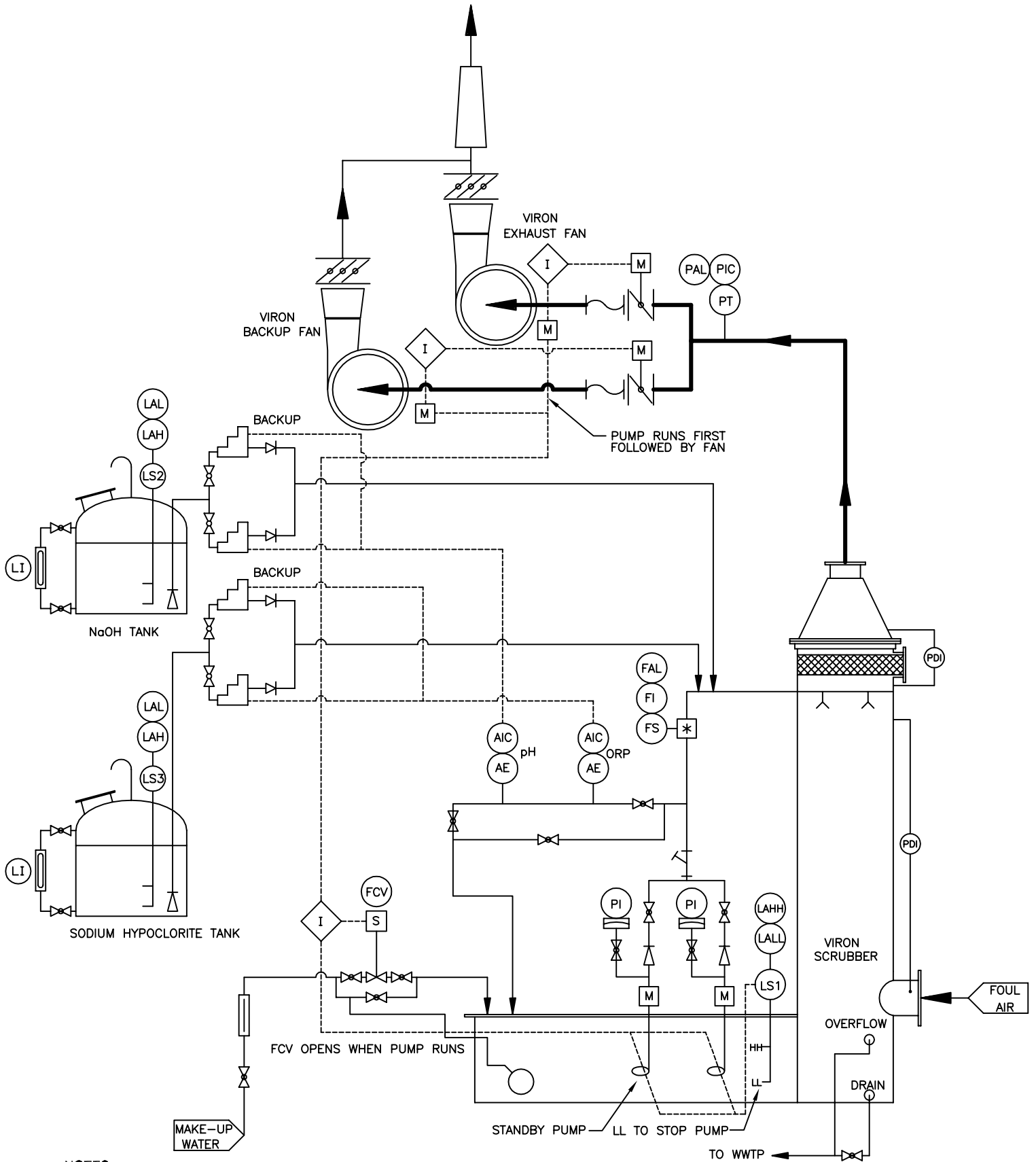
METAL FINISHING AND ANODIZING SCRUBBER SYSTEM SCHEMATIC



NOTES:

1. TYPICAL SCRUBBER LAYOUT.
2. ALL ITEMS SHOWN ARE OPTIONAL.
3. CONTROL PANELS ARE AVAILABLE UPON REQUEST.

H₂S SCRUBBER SYSTEM SCHEMATIC

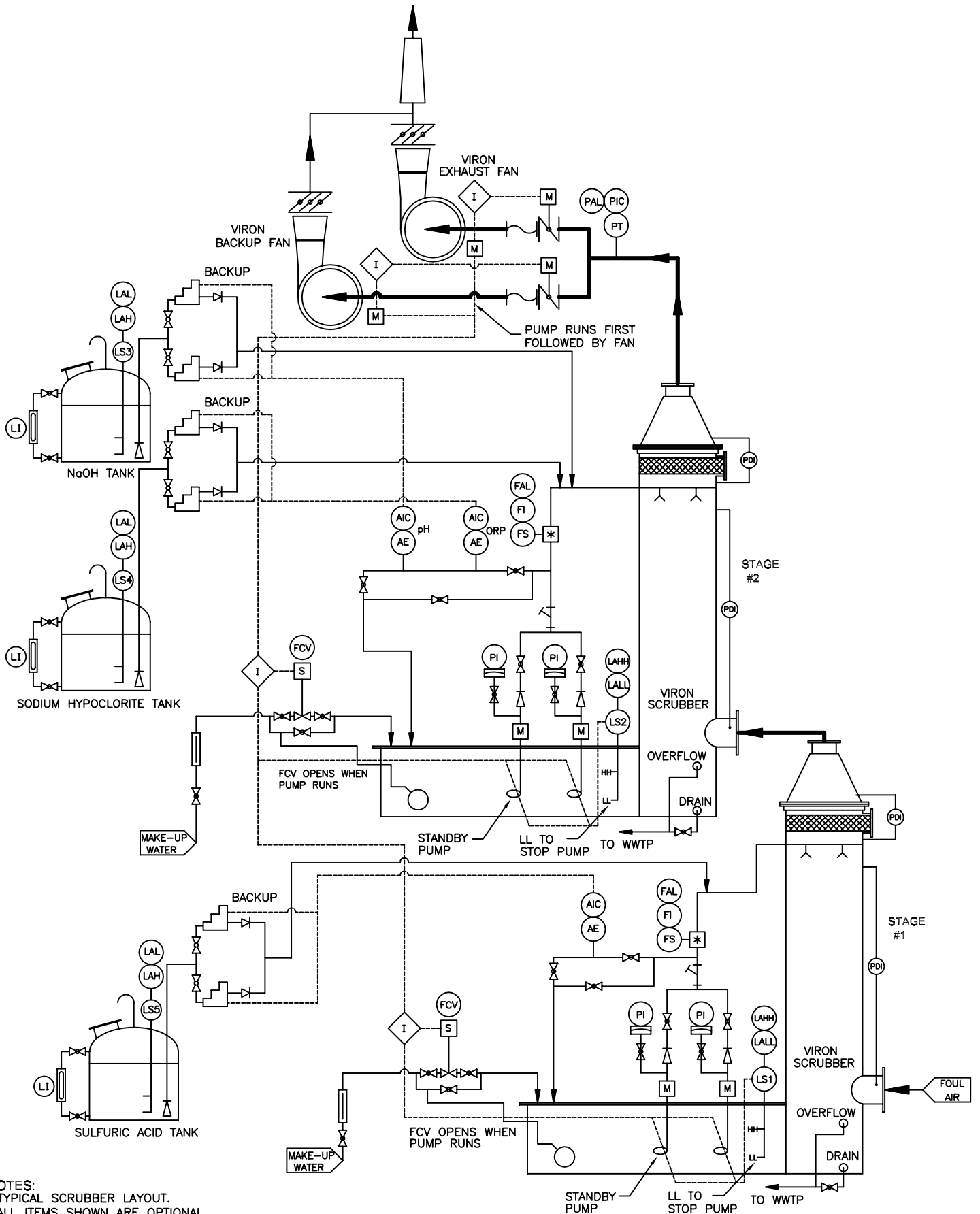


NOTES:

1. TYPICAL SCRUBBER LAYOUT.
2. ALL ITEMS SHOWN ARE OPTIONAL.
3. CONTROL PANELS ARE AVAILABLE UPON REQUEST.

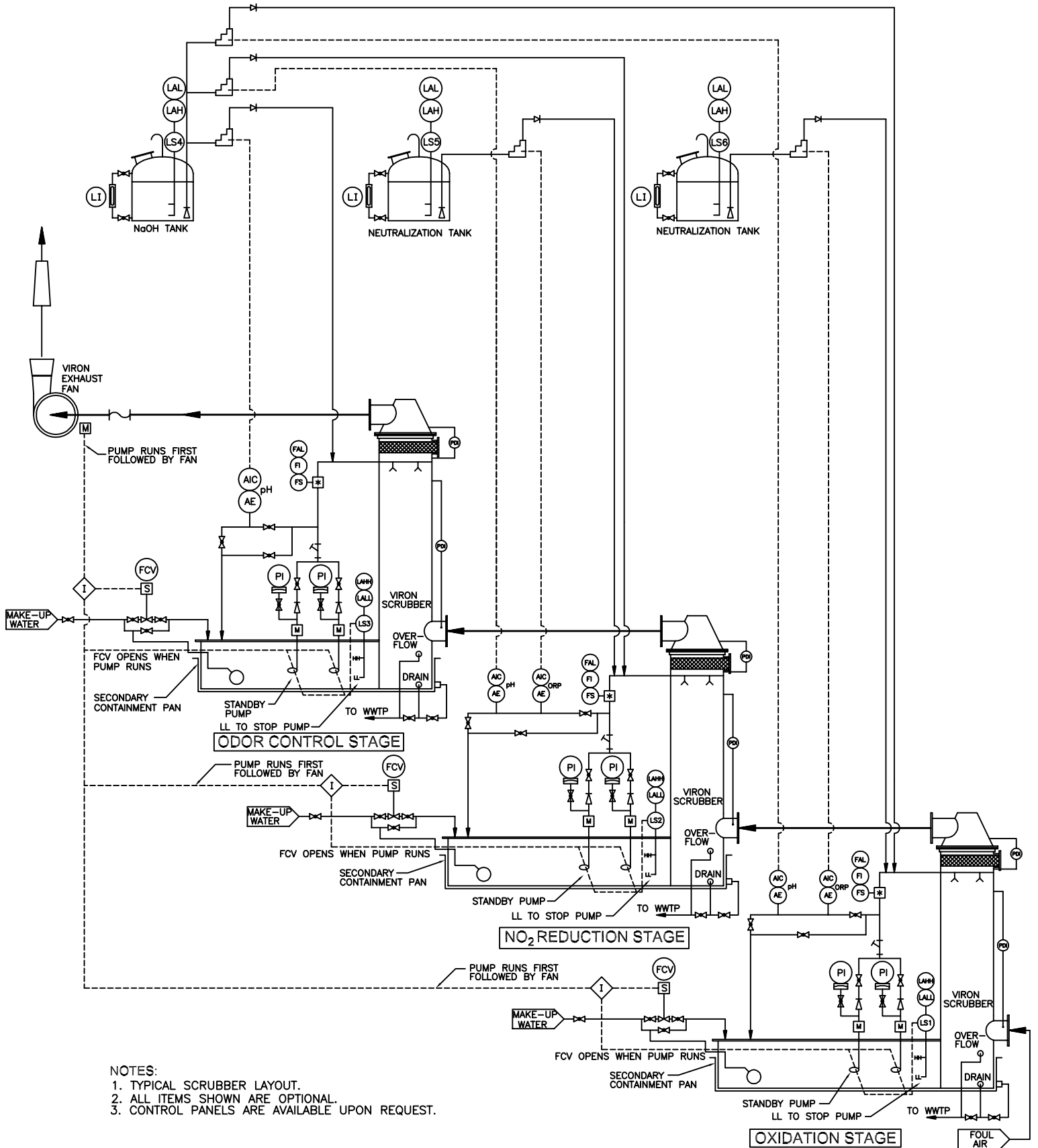
Viron® Scrubber System Schematic

AMMONIA AND H₂S SCRUBBER SYSTEM SCHEMATIC



- NOTES:
 1. TYPICAL SCRUBBER LAYOUT.
 2. ALL ITEMS SHOWN ARE OPTIONAL.
 3. CONTROL PANELS ARE AVAILABLE UPON REQUEST.

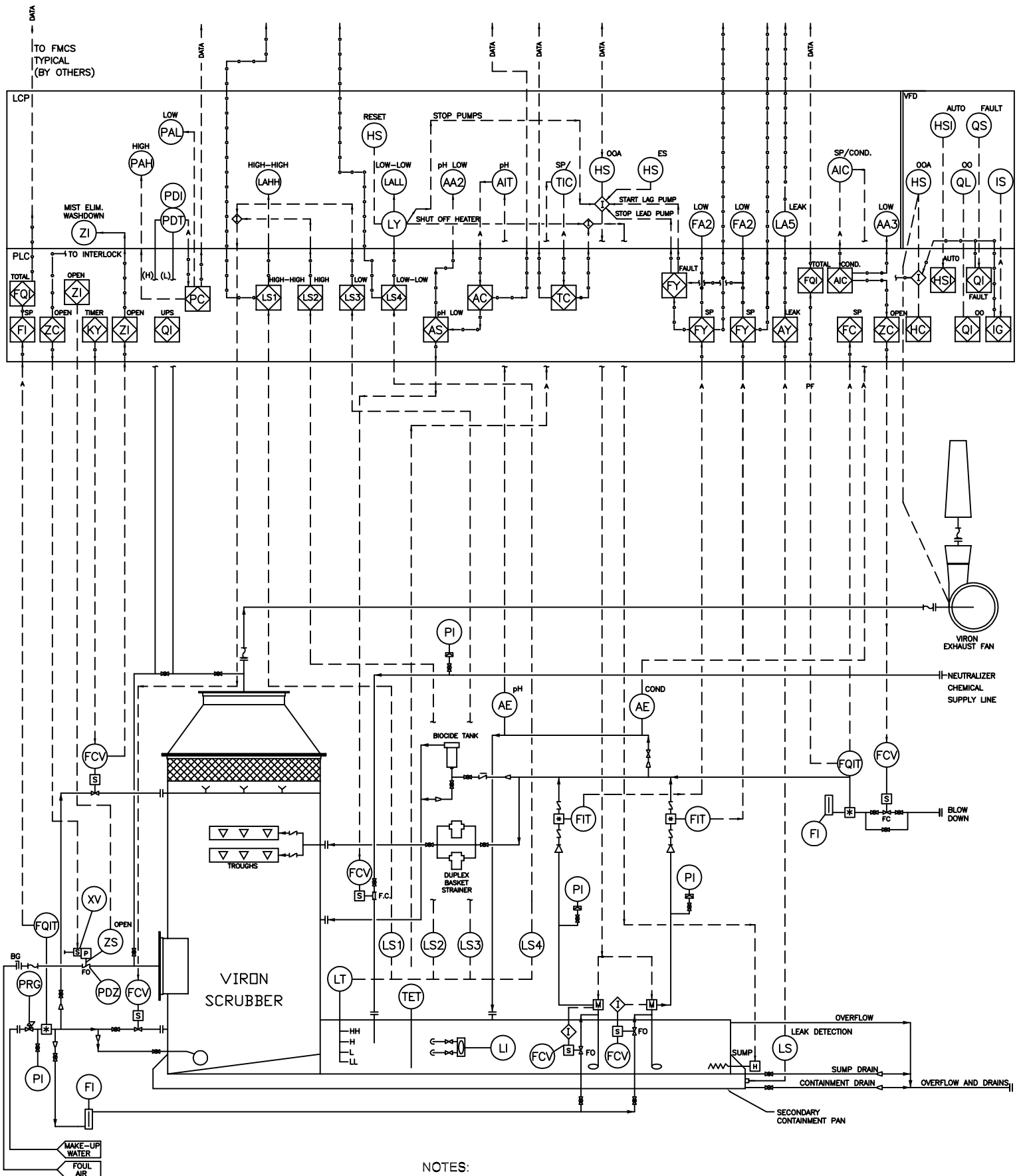
NOx SCRUBBER SYSTEM SCHEMATIC



- NOTES:
1. TYPICAL SCRUBBER LAYOUT.
 2. ALL ITEMS SHOWN ARE OPTIONAL.
 3. CONTROL PANELS ARE AVAILABLE UPON REQUEST.

Viron[®] Scrubber System Schematic

SEMI CONDUCTOR SYSTEM SCHEMATIC



NOTES:

1. TYPICAL SCRUBBER LAYOUT.
2. ALL ITEMS SHOWN ARE OPTIONAL.
3. CONTROL PANELS ARE AVAILABLE UPON REQUEST.

Viron® Fiberglass Corrosion Table

This table may be used as a guide for ventilating gases and vapors from processes where chemicals shown are used.

Maximum temperatures shown.

N.R. = NOT RECOMMENDED

F = FUMES ONLY

S = SURFACING MAT

ENVIRONMENT	°F	ENVIRONMENT	°F	ENVIRONMENT	°F
ACIDS		GASES (cont'd)		SALTS (cont'd)	
Acetic to 10%	200	Hydrogen Sulfide	200	Potassium Persulfate	140
Acetic to 50%	150	Sulfur Dioxide, Dry	200	Potassium Sulfate	200
Acrylic	100	Sulfur Dioxide, Wet	170	Silver Nitrate	170
Benzene Sulfonic to 25%	170	Sulfur Trioxide, Dry	120	Sodium Acetate	200
Benzene Sulfonic 25% up	80	Sulfur Trioxide, Wet	120	Sodium Bisulfate	200
Benzoic	200			Sodium Chloride	200
Boric	200	ALKALIES		Sodium Chlorite	120
Butyric to 50%	200	Ammonium Bicarbonate	150	Sodium Cyanide	200
Butyric 50% up	80	Ammonium Carbonate	120	Sodium Dichromate	170
Carbonic	200	Ammonium Hydroxide to 5%	150	Sodium Ferricyanide	200
Chloracetic to 25%	170	Ammonium Hydroxide to 10%	120	Sodium Fluoride	150
Chloracetic 25% to 50%	150	Ammonium Hydroxide to 29%	80	Sodium Nitrate	200
Chromic to 5%	120	Aqueous Ammonia 5%	150	Sodium Nitrite	200
Chromic 5% up	N.R.	Barium Carbonate	200	Sodium Silicate PH Less Than 12	150
Citric	200	Barium Hydroxide to 10%	140	Sodium Sulfate	200
Fluoboric	S 170	Calcium Hydroxide	170	Sodium Sulfite	170
Fluosilicic up to 32%	S 90	Magnesium Carbonate	200	Stannic Chloride	200
Formic	F 200	Potassium Bicarbonate	170	Stannous Chloride	200
Gluconic to 50%	170	Potassium Carbonate	150	Zinc Chloride	200
Hydrobromic to 50%	150	Potassium Hydroxide to 50%	120	Zinc Nitrate	200
Hydrochloric to 15%	*200	Sodium Bicarbonate	170	Zinc Sulfite	170
Hydrochloric to 37%	*150	Sodium Carbonate to 35%	150		
Hydrochloric	*F 200	Sodium Hydroxide to 10%	N.R.	SOLVENTS	
Hydrocyanic to 10%	150	Sodium Hydroxide to 50%	N.R.	Acetone to 10%	F 180
Hydrofluoric to 10%	S 150	Sodium Sulfide	150	Benzene	80
Hydrofluosilicic up to 30%	140	Trisodium Phosphate	140	Carbon Disulfide	80
Hypochlorous to 20%	170			Carbon Tetrachloride	F 140
Lactic	200	SALTS		Chlorobenzene	N.R.
Maleic	170	Aluminum Chloride	200	Ethyl Acetate	F 100
Nitric to 5%	150	Aluminum Potassium Sulfate	200	Ethyl Chloride	F 90
Nitric above 5%	N.R.	Aluminum Sulfate	200	Ethylene Dibromide	100
Nitric (vapor)	F 105	Ammonium Chloride	200	Ethylene Glycol	200
Nitrous to 10%	105	Ammonium Nitrate	200	n-Heptane	200
Oleic	200	Ammonium Persulfate to 25%	170	Hexane	140
Oxalic	200	Ammonium Persulfate, saturated	150	Methyl Ethyl Ketone	80
Perchloric	F 150	Ammonium Sulfate	200	Naphtha	200
Phosphoric	170	Aniline Sulfate to 25%	200	Naphthalene	200
Phosphoric, super	150	Aniline Sulfate, saturated	170	Tetrachloroethylene	80
Phosphoric (vapor)	F 200	Antimony Trichloride	170	Toluene	80
Phthalic	200	Barium Chloride	200	Xylene	80
Picric to 10%	80	Barium Sulfide	170		
Silicic	200	Calcium Chlorate	200	BLEACHES	
Stearic	200	Calcium Chloride	200	Calcium Chlorate	200
Sulfamic, See	190	Calcium Sulfate	200	Calcium Hypochlorite	200
Benzene Sulfonic up to 25%	170	Copper Chloride	200	Chlorine Dioxide up to 15%	170
Sulfuric to 25%	190	Copper Cyanide	200	Chlorine Water	170
Sulfuric to 50%	140	Copper Fluoride	150	Hydrogen Peroxide to 10%	120
Sulfuric to 70%	80	Copper Oxychloride	150	Hydrogen Peroxide to 30%	80
Sulfuric to 98% (Oleum)	N.R.	Copper Sulfate	200	Sodium Chlorate	120
Sulfurous to 10%	170	Ferric Chloride	200	Sodium Hypochlorite	F 170
Tannic	200	Ferric Nitrate	170		
Tartaric	200	Ferric Sulfate	200	OTHERS	
Trichloroacetic to 50%	170	Ferrous Chloride	200	Aluminum Chlorohydroxide	200
		Ferrous Nitrate	200	Ammonium Phosphate	200
ALCOHOLS		Ferrous Sulfate	200	Aqua Regia	F 80
Amyl	170	Lead Acetate	200	Detergents	150
Benzyl	100	Magnesium Chloride	200	Glycerine	200
Butyl	140	Magnesium Hydroxide	170	Kerosene	200
Ethyl	80	Magnesium Sulfate	200	Photographic Solutions	90
Methyl	80	Mercuric Chloride	200	Perchloroethylene	80
		Mercurous Chloride	200	Sodium Tetraborate	200
GASES AND VAPORS		Nickel Chloride	200	Sodium Tripolyphosphate	200
Ammonia, Dry	170	Nickel Nitrate	200	Sodium Xylene Sulfonate	150
Ammonia, Wet	150	Nickel Sulfate	200	Sorbitol Solution	200
Bromine	100	Potassium Chloride	200	Urea	140
Carbon Dioxide	200	Potassium Dichromate	70	Urea-Ammonium-Nitrate	120
Carbon Monoxide	200	Potassium Ferricyanide	200	8-8-8 Fertilizer	120
Chlorine	200	Potassium Nitrate	200	Shell D-D	N.R.
Fluorine	N.R.	Potassium Permanganate	80	Steam, Etc.	180
Hydrogen Fluoride, Wet	150				

NOTE: Except where prefixed by "F" the resin manufacturers figures are for immersion and the resistance is higher where exposure to fumes only is required.

*Special hardware recommended; contact factory.

Viron® PVC Corrosion Table

This table may be used as a guide for ventilating gases and vapors from processes where chemicals shown are used.
Maximum temperatures shown.

ENVIRONMENT	Type I 70°	Type I 140°	Type II 70°	Type II 140°	ENVIRONMENT	Type I 70°	Type I 140°	Type II 70°	Type II 140°	ENVIRONMENT	Type I 70°	Type I 140°	Type II 70°	Type II 140°
ACIDS					ALKALIES					SALTS (cont'd.)				
Acetic 20-30%	E	G	G	L	Ammonium Bifluoride	E	E	E	E	Sodium Ferricyanide	E	E	E	E
Acetic 30-60%	E	E	G	L	Ammonium Carbonate	E	E	E	E	Sodium Fluoride	E	E	E	E
Benzene	U	U	U	U	Ammonium Fluoride 25%	E	L	U	U	Sodium Nitrate	E	E	E	E
Benzene Sulfonic 10%	E	E	E	E	Ammonium Hydroxide 28%	E	E	E	E	Sodium Nitrite	E	E	E	E
Benzoic	E	E	E	E	Barium Carbonate	E	E	E	E	Sodium Sulfate	E	E	E	E
Boric	E	E	E	E	Calcium Hydroxide	E	E	E	E	Sodium Sulfite	E	E	E	E
Butyric 20%	G	U	L	U	Magnesium Carbonate	E	E	E	E	Stannic Chloride	E	E	E	E
Carbonic	E	E	E	E	Potassium Bicarbonate	E	E	E	E	Stannous Chloride	E	G	E	G
Chloroacetic	E	L	E	U	Potassium Carbonate	E	E	E	E	Zinc Chloride	E	E	E	E
Chromic 10%	E	E	E	E	Potassium Hydroxide					Zinc Nitrate	E	E	E	E
Chromic 25%	E	L	G	L	10, 20, 35%	E	E	E	E	Zinc Sulfate	E	E	E	E
Citric	E	E	E	E	Sodium Bicarbonate	E	E	E	E					
Fluoroboric	E	E	E	E	Sodium Carbonate	E	E	E	E	SOLVENTS				
Fluorosilicic	E	E	E	E	Sodium Hydroxide 10,35%	E	E	E	E	Acetone	U	U	U	U
Formic	E	U	E	U	Sodium Sulfide	E	E	E	E	Benzene	U	U	U	U
Glucose	E	E	E	E	Trisodium Phosphate	E	E	E	E	Carbon Bisulfide	U	U	U	U
Hydrobromic 20%	E	E	E	G						Carbon Tetrachloride	L	U	U	U
Hydrochloric 0-25%	E	G	E	G	SALTS					Chlorobenzene	U	U	U	U
Hydrochloric 25-40%	E	E	E	G	Aluminum Chloride	E	E	E	E	Ethyl Acetate	U	U	U	U
Hydrocyanic	E	E	E	E	Aluminum Nitrate	E	E	E	E	Ethyl Chloride	U	U	U	U
Hydrofluoric 10%	E	L	E	G	Aluminum Sulfate	E	E	E	E	Ethylene Glycol	E	E	E	E
Hydrofluorosilicic 30%	E	G	G	L	Ammonium Chloride	E	E	E	E	Heptane	E	G	L	U
Hypochlorous 20%	E	E	E	E	Ammonium Nitrate	E	E	E	E	Hexane	E	L	U	U
Lactic 28%	E	E	E	E	Ammonium Persulfate	E	E	E	E	Methyl Ethyl Ketone	U	U	U	U
Maleic	E	E	E	E	Ammonium Sulfate	E	E	E	E	Naphtha	E	E	E	G
Nitric 10,35,40%	E	G	G	L	Aniline	U	U	U	U	Trichloroethylene	U	U	U	U
Nitric 20%	E	L	G	L	Aniline Sulfate, saturated	U	U	U	U	Toluene	U	U	U	U
Nitric (vapor) 60%	E	L	G	U	Antimony Trichloride	E	E	E	E	Xylene	U	U	U	U
Nitrous Oxide	E	E	E	E	Barium Chloride	E	E	E	E					
Oleic	E	E	E	E	Barium Sulfide	E	E	E	E	BLEACHES				
Oxalic	E	E	E	G	Calcium Chlorate	E	E	E	E	Calcium Chlorate	E	E	E	E
Perchloric 10%	E	L	G	L	Calcium Chloride	E	E	E	E	Calcium Hypochlorite	E	E	E	E
Phosphoric 0-25%	E	G	E	G	Calcium Chloride	E	E	E	E	Chlorine Water	E	E	E	E
Phosphoric 25-75%	E	E	E	G	Calcium Sulfate	E	E	E	E	Hydrogen Peroxide 30%	E	E	E	G
Phosphorus (yellow)	E	G	G	L	Copper Chloride	E	E	E	E	Hydrogen Peroxide 50%	E	E	E	L
Picric	U	U	U	U	Copper Cyanide	E	E	E	E	Sodium Chlorate	E	G	G	L
Silicic	E	E	E	E	Copper Fluoride 2%	E	E	E	E	Sodium Hypochlorite	E	E	E	E
Stearic	E	E	G	G	Copper Sulfate	E	E	E	E					
Sulfamic (see Benzene Sulfonic 10%)	E	E	E	E	Ferric Chloride	E	E	E	E	OTHERS				
Sulfuric 0-75%	E	E	E	G	Ferric Nitrate	E	E	E	E	Aluminum Hydroxide	E	E	E	E
Sulfuric 75-90%	E	E	L	L	Ferric Sulfate	E	E	E	G	Ammonium Phosphate	E	E	-	-
Sulfuric 95%	E	G	U	U	Ferrous Chloride	E	E	E	E	Aqua Regia	E	L	L	U
Sulfurous	E	E	E	E	Lead Acetate	E	E	E	E	Glycerine	E	E	E	E
Tannic	E	E	E	E	Magnesium Chloride	E	E	E	E	Kerosene	E	E	E	E
Tartaric	E	E	E	E	Magnesium Hydroxide	E	E	E	E	Photographic Solutions	E	E	E	E
					Magnesium Sulfate	E	E	E	E	Tetrahydrofurane	U	U	U	U
ALCOHOLS					Mercuric Chloride	E	E	G	G	Sodium Xylene Sulfonate	-	-	-	-
Amyl	E	E	L	U	Mercurous Nitrate	E	E	G	G	Sorbitol Solution	-	-	-	-
Benzol	U	U	U	U	Nickel Chloride	E	E	E	E	Urea	E	E	E	E
Butyl	E	G	L	U	Nickel Nitrate	E	E	E	E	Urea-Ammonium-Nitrate	E	E	E	E
Ethyl 0-98%	E	E	E	E	Nickel Sulfate	E	E	E	E					
Methyl	E	E	E	E	Potassium Chloride	E	E	E	E	PLATING SOLUTIONS				
					Potassium Dichromate 40%	E	E	E	E	Brass	E	E	E	E
GASES AND VAPORS					Potassium Ferricyanide	E	E	E	E	Cadmium	E	E	E	E
Ammonia, Dry	E	E	E	E	Potassium Nitrate	E	E	E	E	Chromium	E	E	G	G
Ammonia, Wet	L	U	-	-	Potassium Permanganate 10%	E	E	G	G	Copper	E	E	E	E
Bromine	U	U	U	U	Potassium Persulfate	E	E	E	E	Gold	E	E	E	E
Carbon Dioxide	E	E	E	E	Potassium Sulfate	E	E	E	E	Judium	E	E	E	E
Carbon Monoxide	E	E	E	E	Silver Nitrate	E	E	E	E	Lead	E	E	E	E
Chlorine, Dry	G	G	G	G	Sodium Acetate	E	E	E	E	Nickel	E	E	E	E
Fluorine	L	U	U	U	Sodium Bisulfate	E	E	E	E	Rhodium	E	E	E	E
Hydrogen	E	E	E	G	Sodium Chloride	E	E	E	E	Silver	E	E	E	E
Hydrogen Sulfide	E	E	E	E	Sodium Chlorate	E	G	G	L	Tin	E	E	E	E
Sulfur Dioxide, Wet	G	U	L	U	Sodium Cyanide	E	E	E	E	Zinc	E	E	E	G
Sulfur Troxide, Dry	E	E	E	G	Sodium Dichromate	E	E	E	G					

KEY: E = Excellent G = Good L = Limited U = Unsuitable

Viron® Scrubber Data Sheet

FAX: 989-723-8417

Project Name: _____
Contact Person: _____
City: _____
State: _____ Zip Code: _____
Phone: _____ Fax: _____
E-Mail: _____

Job No.: _____ Date: _____
Quotation Due Date: _____
Viron® Representative: _____
Contact Person: _____
Phone: _____ Fax: _____
E-Mail: _____

Scrubber Type

- VHS-Horizontal Unit VCM-Mist Eliminator Unit
 VVS-Vertical Unit VTS-Tank Scrubber Unit
 VBS-Blower-Scrubber Unit

Material

- PVC Polypro Fiberglass PVC/FRP Overlay

Performance

Capacity (ACFM): _____
Chemical to be removed: _____
Scrubber Loading Rate (Lbs./Hr. Input): _____
Chemical Temperature (Degrees Fahrenheit): _____
Scrubber Location: Inside Outside
 Self-Contained Remote
Required Removal Efficiency: _____
Mist Eliminator Removal Efficiency: _____

Recirculation Pump Data

Number of Pumps Requested: _____
Pump Horse Power: _____
Scrubber Pump GPM: _____
Material: CPVC Polypro FRP OSST
Type: Vertical Horizontal
Enclosure: TEFC Mill & Chem. Duty Other
 Expl. Proof

Optional Equipment

- Line Strainers In Recirculation Line
 Inlet Water Flowmeter
 Recirculation Rotameter
 Magnehelic Gauge
 Chemical Neutralization System: pH ORP OTDS
 Pressure Gauge
 Float Valve
 Sump Heater
 Back Up Recirculation Pump
 Other

 Other

 Other

Additional
Viron® Products
to consider:
Hoods
Ductwork
Dampers
Fans
High Plume Stacks



VIRON® INTERNATIONAL CORP.

505 HINTZ ROAD
OWOSSO, MI 48867-9603
989-723-8255
FAX: 989-723-8417

EMAIL: info@vironintl.com
WEB: www.vironintl.com

- **LIMITED WARRANTY**

VIRON[®] INTERNATIONAL warrants to the dealers and owners its VIRON[®] products and parts to be free from defects in workmanship and material under normal use and services for one (1) year after the date of shipment by VIRON[®] to the first retail purchaser or first user: if and only if VIRON[®] is notified in writing of the defect within fourteen (14) days from date that the defect is discovered. Written notice of defects discovered within the final fourteen (14) days of the warranty period must be sent to VIRON[®] via facsimile or first class mail prior to the expiration of the warranty period otherwise this warranty shall be void. Our obligation under this warranty is expressly limited to repairing or replacing at our option, without cost at our factory any part or parts thereof which shall be returned to and received by VIRON[®] within such warranty period with transportation charges both to and from VIRON[®] prepaid, and which our examination shall disclose to our satisfaction to have been defective. In the event a defect is discovered within the final seven days of the warranty period, the returned goods must be received by VIRON[®] at VIRON[®]'s facility within seven days following expiration of the warranty period. Any request for repair or replacement should be directed to VIRON[®] INTERNATIONAL, Owosso, MI.

If examined equipment is found not to be defective or for some other reason not to be within the warranty coverage, seller's service time expended on and off location will be charged to the purchaser. This warranty gives you specific legal rights which vary from state to state. FAILURE TO PAY THE INVOICE IN FULL WILL RESULT IN VOIDING ANY AND ALL WARRANTIES.

- **LIMITATION OF WARRANTY AND LIABILITY**

This warranty does not apply to such VIRON[®] products and parts which in the sole judgment of VIRON[®] have failed as a result of faulty installation or abuse, or incorrect electrical connections or alterations, made by others, or use under abnormal operating conditions or misapplication of products and parts.

This warranty does not apply to damage resulting from shipment or storage of VIRON[®] products. Purchaser acknowledges that VIRON[®] products contain rotating parts that may be damaged by the forces of nature if not installed or put to their intended use within seven (7) days of delivery. THIS WARRANTY DOES NOT COVER COMPONENT PARTS THAT CARRY A SEPARATE WARRANTY FROM THE MANUFACTURER OF THE COMPONENT PART.

VIRON[®] will not approve for payment any repair made outside its factory without prior written consent of its Owosso, Michigan office. The foregoing shall constitute our sole and exclusive warranty and our sole and exclusive liability and is in lieu of all other warranties, whether written, oral, implied or statutory.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE PAGE HEREOF. SELLER DOES NOT WARRANT MERCHANTABILITY THAT SAID GOODS AND ARTICLES ARE OF MERCHANTABILITY QUALITY, OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE.

The liability of any seller on any claim of any kind, including contract, warranty, tort, or negligence, for any loss or damage arising out of or connected with or resulting from the sale and purchase of products and parts covered by any VIRON[®] proposal, acknowledgement, order, or from the performance or breach of any contract pertaining to such sale or purchase, or from the design, manufacture, sale, delivery, resale, installation, technical direction in installation, inspection, repair, operation or use of any products or parts covered by any VIRON[®] proposal, acknowledgement, order or furnished by seller, shall in no case exceed the price as paid by purchaser allocable to the products or parts thereof which give rise to the claim and shall terminate one year after shipment of said products and parts.

IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, OR WARRANTY, OR TORT, OR ALLEGED NEGLIGENCE, DEFECTS, INCORRECT ADVICE OR OTHER CAUSES, SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, including but not limited to loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of removal or reinstallation or any cost associated therewith, cost capital, cost of substitute equipment, facilities or services, down time cost, or claims of customers of the purchase of such damages.

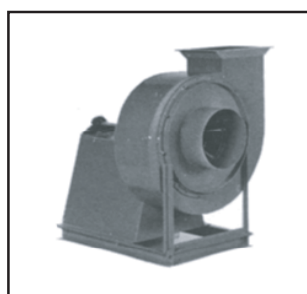
VIRON[®] neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its products and parts. Some states do not allow the exclusion or limitation of incidental or consequential damages, so all of the above limitations or exclusions may not apply to you.



Centrifugal Fan
VCF-100



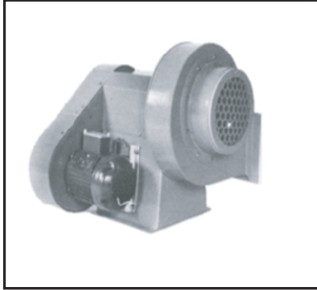
Inline Centrifugal Fan
VIF-200



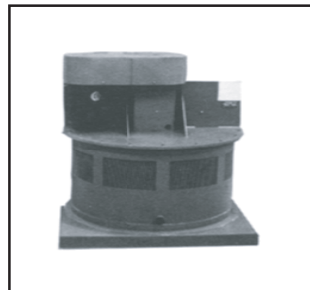
Radial Blower
VRB-600



Lab Blower
VLB-700



PushBlower
VPB-800



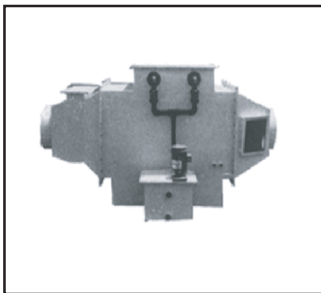
Roof Ventilator
VRV-900



Centrifugal Fan
VCB-1100



Gravity Relief Ventilator
VGR-1300



Horizontal Scrubber
VHS-Series



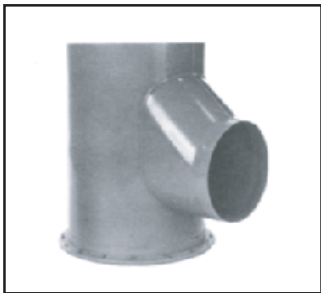
Vertical Scrubber
VVS-Series



Blower-Scrubber
VBS-Series



VIRO-CHROME 9000®
VCS-Series



VI-A-DUC®
FM Approved PVC Duct



VIRO-DUC®
FM Approved FRP Duct



SSTEELCOAT®
FM Approved Duct



FRP Duct
ICBO Approved



VI-A-TROL®
AMCA Approved Damper



PVC & FRP
Blastgates



FRP Parallel
Blade Damper



FRP Fixed Louver



VIRON® INTERNATIONAL CORP.

505 HINTZ ROAD
OWOSSO, MI 48867-9603
989-723-8255
FAX: 989-723-8417

EMAIL: info@vironintl.com
WEB: www.vironintl.com