BULLETIN: VB-5000-94

PVC BLOWER-SCRUBBER

VIRON®

INTERNATIONAL

VIRON® BLOWER SCRUBBER

VBS-SERIES

The **VIRON**® Blower-Scrubber is used in many industrial applications. Its uses include the cleaning of fumes from plating, anodizing, steel pickling, printed circuit board plating, semi-conductor clean rooms, corrosive dust particulate, 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 15,000 CFM. 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 with over 30 years of experience in manufacturing, we can solve your toughest corrosive fume problems.

STANDARD DESIGN PARAMETERS:

1. High Efficiency
2. Easy Maintenance
3. Minimum Operating Cost
4. Structural Integrity

STANDARD FEATURES OF A VIRON® BLOWER-SCRUBBER

- **Scrubber Housing** - PVC - Chemical Resistant PVC Simona Versadur 250 or equal.

- **Packing Material** - Loose fill polypro packing material as manufactured by **VIRON**® Tri-Pak #2 or or equal. The standard velocity through the packing is 500 FPM. The standard packing depth will range from 12" to 60". Upon appropriate applications **VIRON**® can increase the packing depth to accomplish higher efficiencies.

- **Moisture Eliminator Packing** - PVC material as manufactured by **VIRON**® Model #VVE-3025 or equal. The standard velocity through the packing is 800 FPM.

- **Spray Nozzles** - PVC material as manufactured by Bete Fog # NCM-0707W or equal. Each nozzle sprays approximately 12 GPM at 20 psi of pump pressure.

- **Spray Header** - All spray headers are PVC Schedule 80 pipe, sized for the appropriate flow with true union type ball valves to facilitate removal without having to shut down the recirculation system.

- **Recirculation Pumps** - All pumps are CPVC material Penguin P Series 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.

- **Recirculation Rate** - Most **VIRON**® Blower-Scrubbers have a recirculation rate of between 2 to 10 GPM per square foot of open surface packing area. The recirculation rate for **VIRON's** standard units is 4 GPM per square foot of open surface packing area.

- **Self-Contained Recirculation Units** - The sump pump type recirculation pump is mounted on 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 the liquid. The sump pumps inherent design prevents any scrubber liquid from spilling on the floor. This type of unit is used primarily in the warm southern climates where freezing is rare or where the unit is installed inside of a building.

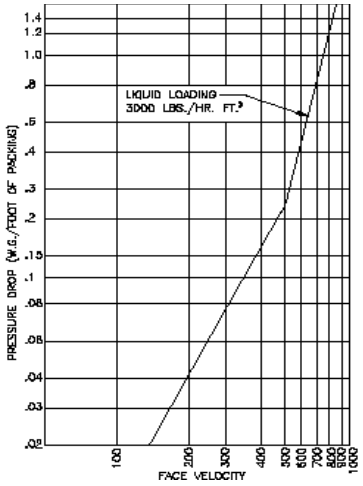
- **Remote Recirculation Units** - The recirculation pump is mounted to a separate tank which holds the recirculated water. This type of unit is used primarily in cold winter regions where freezing is common. It may also be used when the scrubber is on the roof and the customer wishes to visually monitor the recirculation flow. Some of the many advantages are: less roof weight, no threat of freezing because remote tank is located inside the building, and no scrubber heaters required.

- **Optional Equipment:**
  - Y-Strainer
  - Flow Meter
  - Solenoid Valves
  - Magnehelic Gauges
  - Neutralizing Chemical Control System
  - pH Monitor with Probe
  - Pressure Gauges
  - Float Valves
  - Sump Heater with Controls
  - Special Lifting Lugs
  - Special Hold Down Lugs
  - Pressure Switch

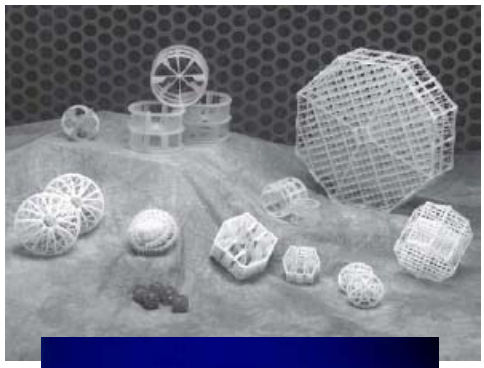
VIRON® COLUMN PACKING MATERIAL

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

Tri-Packs® is 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 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. This is where Tri-Packs excels over its competitors. Since Tri-Packs is geometric with structural uniformity, it allows all surfaces to become wet while eliminating nesting and channeling.

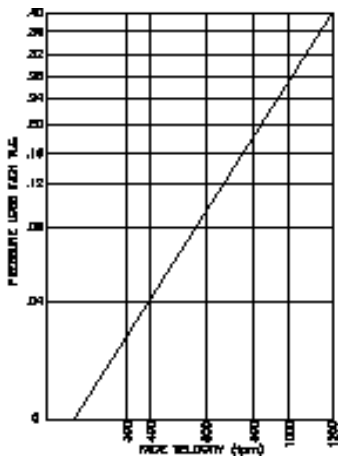


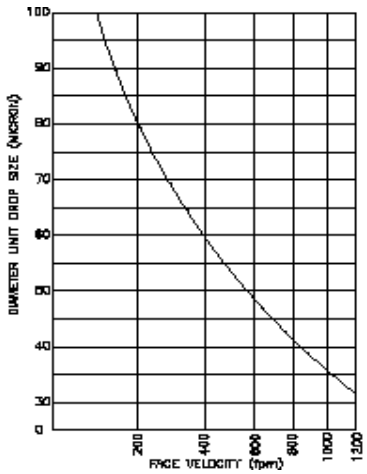
The more surface area that is wet, the more active surface is available for producing higher efficiency. The packing's other advantage results from a high void area and minimum blockage. Both are critical because having a high void area allows the liquid to cascade through the column with minimum effort 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 the air through the column.

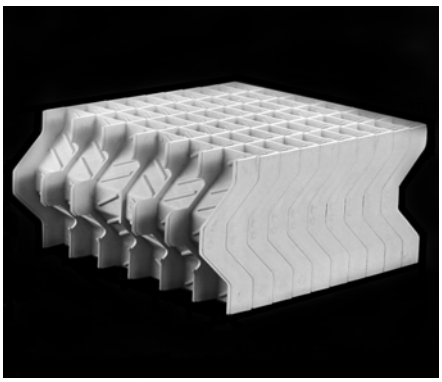


VIRON® MODEL VVE-3025 MIST ELIMINATOR BLADES

The **VIRON**® mist eliminator blade is an impingement-type separator designed for vertical process gas flow. The blade is designed to operate with velocities from 400 to 1200 feet per minute. In this velocity range, droplet sizes of 32 micron and larger can be removed with an efficiency rate of up to 99.9 percent. The angular shape of the blade is arranged to provide a channel for the process gas to follow. The diagram below demonstrates how the process gas flows through the channels. The moisture laden air is then pushed through a series of zig-zag patterns. Since the moisture cannot follow the deflections of the multiblend course, the pressure of the air flow forces the moisture against the walls of the Chevron shaped blades. As more moisture is forced against the walls, water droplets form. As these droplets become larger, they begin to drop down toward the bottom of the scrubber through low velocity zones designed into the blade. After the droplets fall from the blade, they return to the bottom of the scrubber where they are collected.

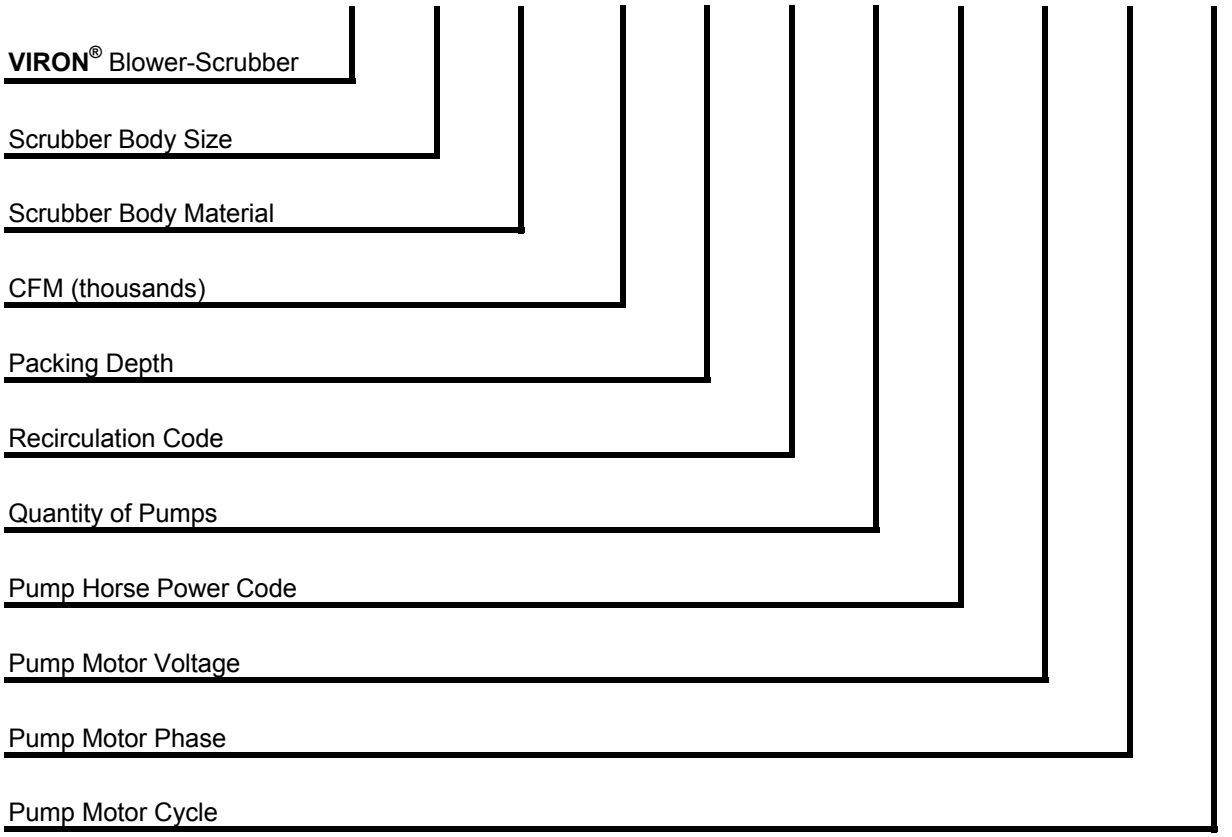






SELECTION GUIDE

VIRON® MODEL CODE: **VBS 60 PVC 8 24 R 1 F 460 3 60**



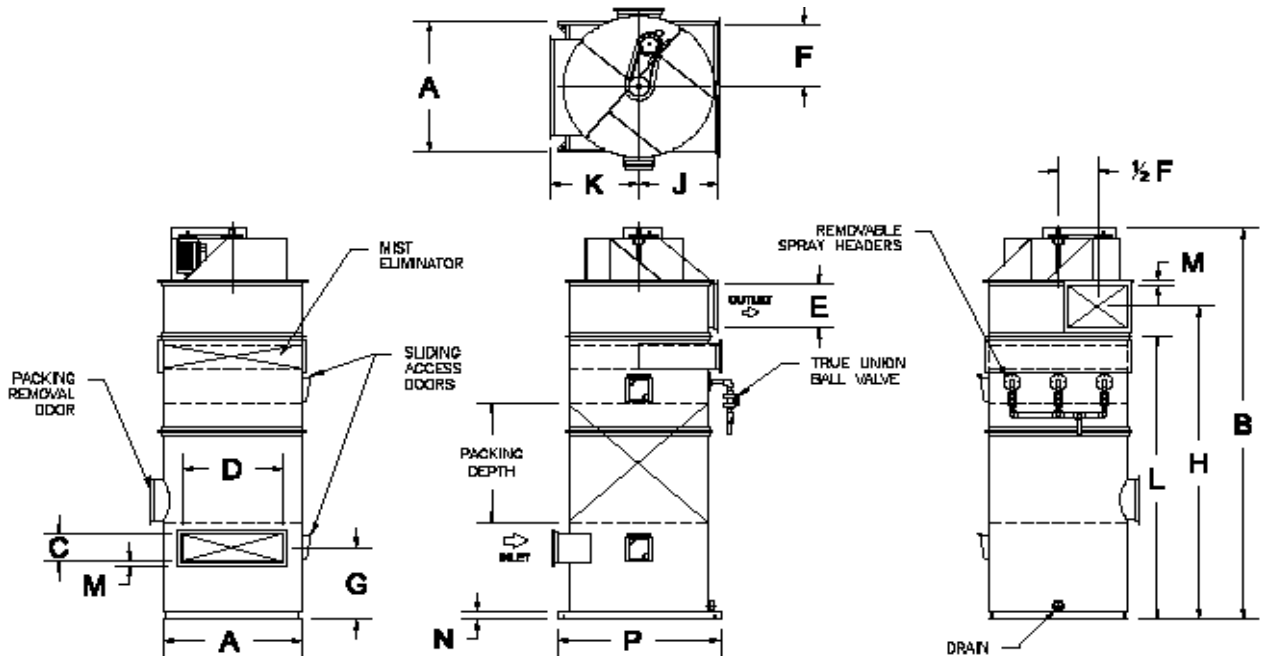
RECIRCULATION CODE

SELF-CONTAINED RECIRCULATION UNITS	**S**
REMOTE RECIRCULATION UNITS	**R**

PUMP HORSEPOWER CODE

HORSEPOWER	**1/2**	**3/4**	**1**	**1-1/2**	**2**	**3**	**5**	**7-1/2**	**10**	**15**	**20**	**25**
CODE LETTER	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**M**

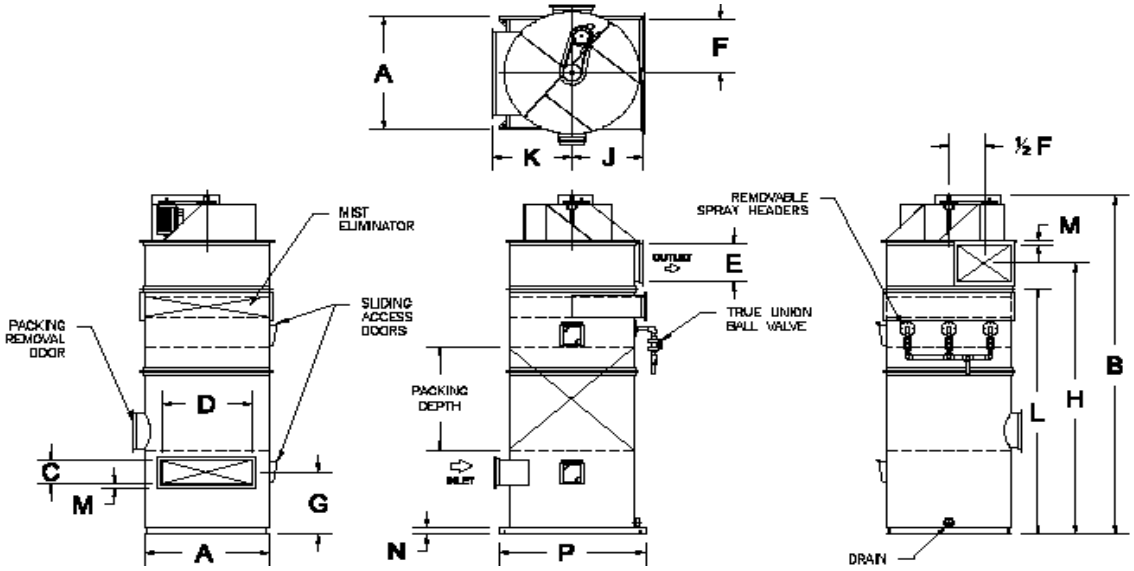
SELF-CONTAINED RECIRCULATION UNIT



Model Series No.	CFM	FAN SIZE	HP	BHP	TOTAL SP	A	B					C	D	E	F	G
							12" PACK	24" PACK	36" PACK	48" PACK	60" PACK	INLET		OUTLET		
VBS-18	500	806	3/4	.60	3-1/2	18	87	99	111	123	135	6"Ø		4-1/2	6-3/4	20
VBS-25	1000	112	1-1/2	1.11	3-1/2	25	96	108	120	132	144	10"Ø		9-3/4	12-3/4	22
VBS-30	2000	113	3	2.20	3-1/2	30	101	113	125	137	149	14"Ø		10-3/4	14	24
VBS-36	3000	115	3	2.96	3-1/2	36	104	116	128	140	152	16"Ø		11-3/4	15-5/8	25
VBS-42	4000	116	5	4.90	3-1/2	42	107	119	131	143	155	18"Ø		13-1/8	17-1/8	26
VBS-48	5000	118	5	4.95	3-1/2	48	112	124	136	148	160	20"Ø		14-1/2	19	27
VBS-52	6000	120	7-1/2	6.06	3-1/2	52	105	117	129	141	153	11	36	15-7/8	20-7/8	23-1/2
VBS-56	7000	122	7-1/2	6.82	3-1/2	56	111	123	135	147	159	12	44	17-5/8	23-1/4	24
VBS-60	8000	124	7-1/2	7.46	3-1/2	60	115	127	139	151	163	12	46	19-1/2	25-1/2	24
VBS-66	10000	127	10	9.45	3-1/2	66	121	133	145	157	169	14	48	21-1/2	28-1/8	26
VBS-72	12000	127	15	12.52	3-1/2	72	128	140	152	164	176	16	50	21-1/2	28-1/8	27
VBS-76	15000	130	20	15.20	3-1/2	76	137	149	162	174	186	18	50	23-3/4	31-1/4	30

Model Series No.	CFM	12" Remote or Self Contained							12" Pack Remote						24"-60" Or Self Contained						
		Pump HP Self Contained	Pump HP Remote	No. of Pumps	Total GPM	No. of Nozzles	Spray Header Size	No. of Spray Headers	Scrubber Drain Size	Tank Size (Dia.)	Tank Size (Height)	No. of Gallons	Tank Overflow	Tank Drain	Pump HP Self Contained	Pump HP Remote	No. of Pumps	Total GPM	No. of Nozzles	Spray Header Size	No. of Spray Headers
VBS-18	500	1/2	1-1/2	1	1-1/2	1	1-1/2	1	2	16	42	31	3	1	1/2	1-1/2	1	4	1	1-1/2	1
VBS-25	1000	1/2	1-1/2	1	3	1	1-1/2	1	2	16	42	31	3	1	1/2	1-1/2	1	8	1	1-1/2	1
VBS-30	2000	1/2	1-1/2	1	6	2	1-1/2	1	2	20	42	48	3	1	3/4	2	1	16	2	1-1/2	1
VBS-36	3000	3/4	1-1/2	1	9	2	1-1/2	1	2	20	42	48	3	1	3/4	2	1	24	2	1-1/2	1
VBS-42	4000	3/4	2	1	12	2	1-1/2	1	2	20	42	48	3	1	3/4	2	1	28	4	1-1/2	2
VBS-48	5000	3/4	2	1	15	2	1-1/2	1	3	24	48	82	4	1	1-1/2	3	1	42	4	1-1/2	2
VBS-52	6000	3/4	2	1	18	4	1-1/2	2	3	24	48	82	4	1	1-1/2	3	1	48	6	1-1/2	2
VBS-56	7000	3/4	2	1	21	4	1-1/2	2	3	24	48	82	4	1	1-1/2	3	1	56	8	1-1/2	2
VBS-60	8000	3/4	2	1	24	4	1-1/2	2	3	24	48	82	4	1	1-1/2	3	1	64	9	1-1/2	3
VBS-66	10000	1-1/2	2	1	30	6	1-1/2	2	3	24	48	82	4	1	2	3	1	80	12	1-1/2	3
VBS-72	12000	1-1/2	2	1	36	6	1-1/2	2	3	36	48	183	4	1	2	5	1	100	12	1-1/2	3
VBS-76	15000	1-1/2	3	1	45	6	1-1/2	2	3	36	48	183	4	1	1-1/2	3	2	126	15	1-1/2	3

REMOTE RECIRCULATION UNIT



H					J	K	L					M	N	P		Self-Contained	
12" PACK	24" PACK	36" PACK	48" PACK	60" PACK			12" PACK	24" PACK	36" PACK	48" PACK	60" PACK			Self Contained	Remote	Overflow	Drain
67	79	91	103	115	14	17	57	69	81	93	105	1-1/2	2	48	30	2	2
72-1/2	84-1/2	96-1/2	108-1/2	120-1/2	17-1/2	20-1/2	61	73	85	97	109	1-1/2	2	55	37	2	2
77	89	101	113	125	20	23	65	77	89	101	113	1-1/2	2	60	42	2	2
79-1/2	91-1/2	103-1/2	115-1/2	127-1/2	23	26	67	79	91	103	115	1-1/2	2	66	48	2	2
82	94	106	118	130	26	29	69	81	93	105	117	1-1/2	2	72	54	2	2
85	97	109	121	133	29	32	71	83	95	107	119	1-1/2	2	78	60	2	2
77-1/2	89-1/2	101-1/2	113-1/2	125-1/2	31	34	63	75	87	99	111	1-1/2	3	82	64	2	2
79	91	103	115	127	33	36	64	76	88	100	112	1-1/2	3	86	68	2	2
81	93	105	117	129	35	38	64	76	88	100	112	2	3	90	72	2	2
83	95	107	119	131	38	41	67	79	91	103	115	2	4	96	78	2	2
87	99	111	123	135	41	44	69	81	93	105	117	2	4	102	84	2	2
93	105	117	129	141	43	46	73	85	97	109	121	2	6	106	88	2	2

24"-60" Pack Remote						Self-Contained Recirculation Weights									
						Operating					Shipping				
Scrubber Drain Size	Tank Size (Dia.)	Tank Size Height	No. of Gallons	Tank Overflow	Tank Drain	12"	24"	36"	48"	60"	12"	24"	36"	48"	60"
2	20	42	48	3	2	842	875	908	941	974	730	763	796	829	862
2	20	42	48	3	2	955	997	1039	1081	1123	830	872	914	956	998
2	24	48	82	3	2	1070	1119	1168	1217	1266	955	1004	1053	1102	1151
3	24	48	82	4	2	1202	1265	1328	1391	1454	1073	1136	1199	1262	1325
3	24	48	82	4	2	1342	1412	1482	1552	1622	1261	1331	1401	1471	1541
3	36	48	183	4	2	1705	1789	1873	1957	2041	1610	1694	1778	1862	1946
3	36	48	183	4	2	1948	2039	2130	2221	2312	1830	1921	2012	2103	2194
4	36	48	183	4	2	2153	2251	2349	2447	2545	2024	2132	2230	2328	2426
4	36	48	183	6	2	2548	2653	2758	2863	2968	2414	2519	2624	2729	2834
4	42	48	251	6	2	3038	3157	3276	3395	3514	2892	3011	3130	3249	3368
6	42	48	251	6	2	3798	3924	4050	4176	4302	3642	3768	3894	4020	4146
6	48	48	328	6	2	4148	4281	4414	4547	4680	3980	4113	4246	4379	4512

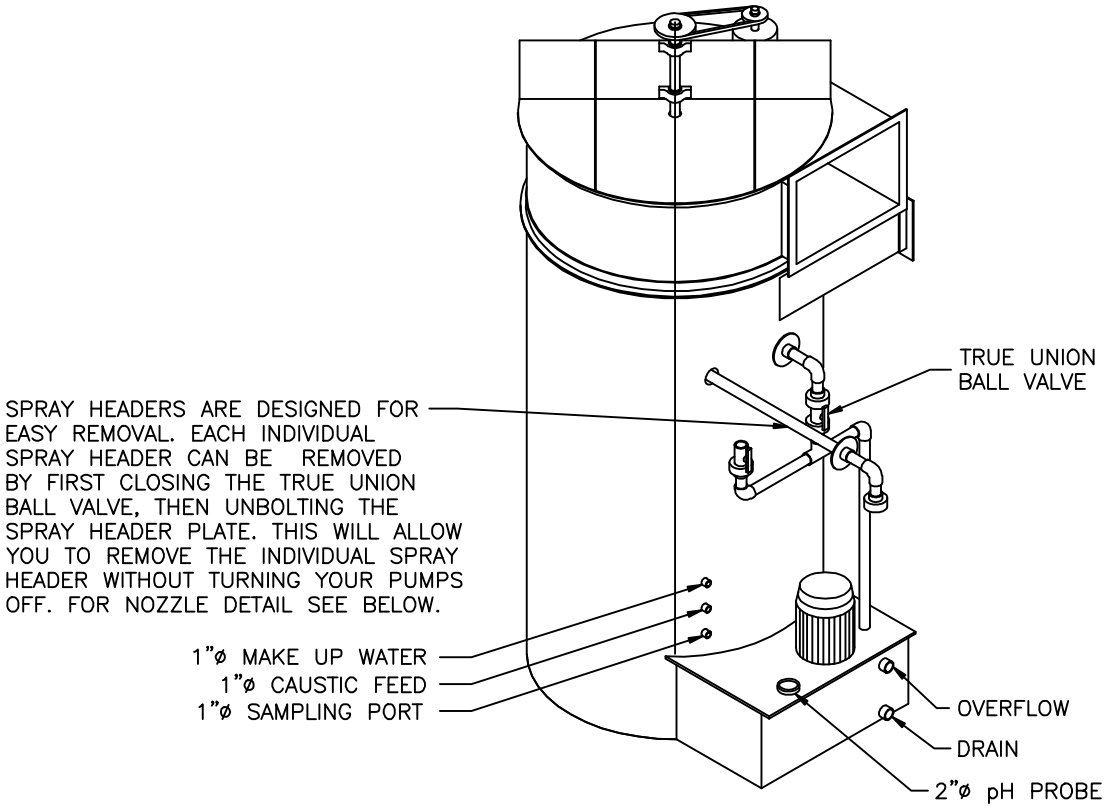
Note: Scrubber body is designed for 500 FPM velocity with mist eliminator section designed for 800 FPM.

Make-up (input) water is designed for 5% of recirculated GPM - overflow will vary depending on evaporation rate but should not exceed 3%.

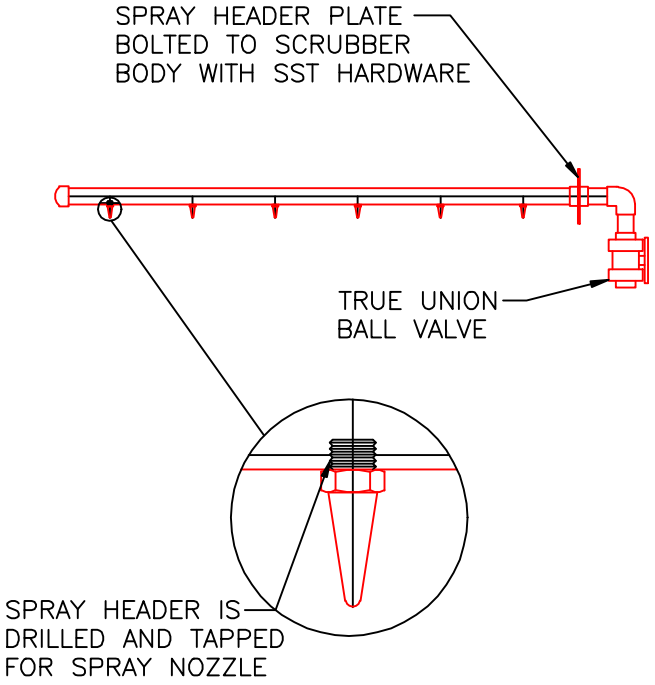
Remote recirculation sumps are designed for 60' total head.

Viron® Spray Header Detail Illustrations

STANDARD SPRAY HEADER AND PIPING

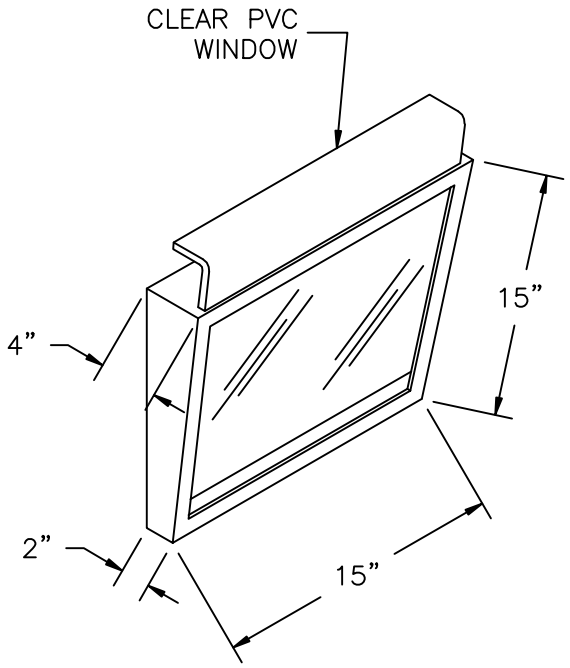


STANDARD SPRAY HEADER

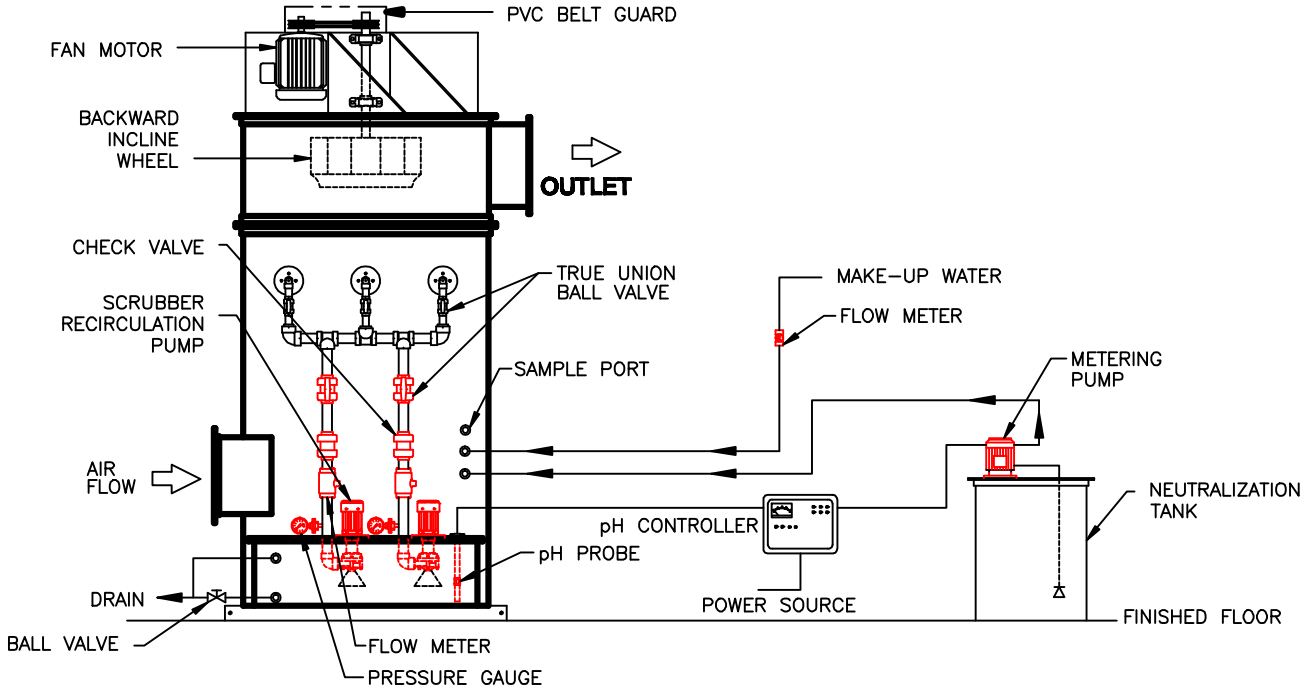


NOZZLE DETAIL

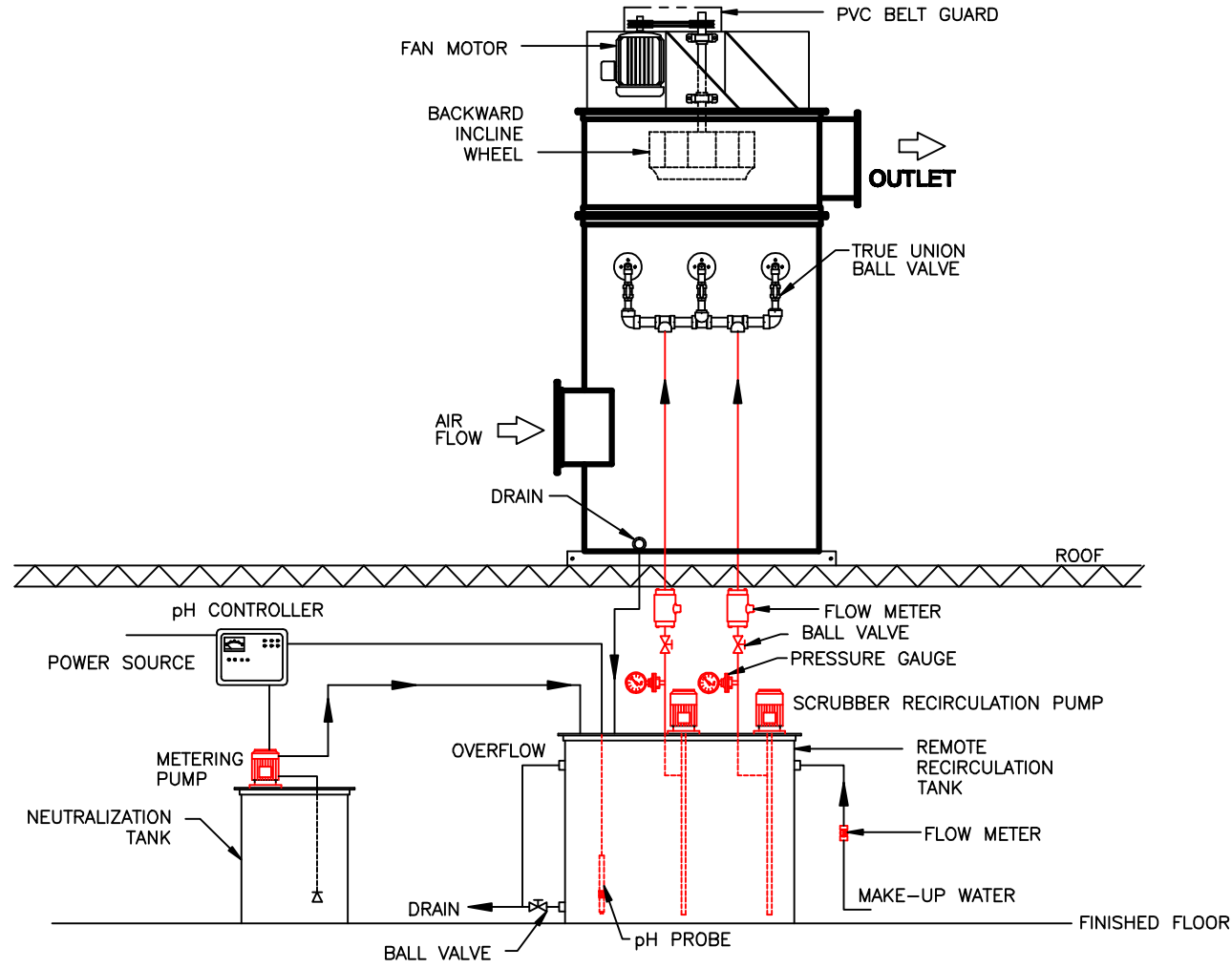
STANDARD SLIDING ACCESS DOOR



SELF-CONTAINED RECIRCULATION FLOW DIAGRAM



REMOTE RECIRCULATION FLOW DIAGRAM



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°
ACIDS				
Acetic 20-30%	E	G	G	L
Acetic 30-60%	E	E	G	L
Benzene	U	U	U	U
Benzene Sulfonic 10%	E	E	E	E
Benzoic	E	E	E	E
Boric	E	E	E	E
Butyric 20%	G	U	L	U
Carbonic	E	E	E	E
Chloracetic	E	L	E	U
Chromic 10%	E	E	E	E
Chromic 25%	E	L	G	L
Citric	E	E	E	E
Fluoroboric	E	E	E	E
Fluorosilicic	E	E	E	E
Formic	E	U	E	U
Glucose	E	E	E	E
Hydrobromic 20%	E	E	E	G
Hydrochloric 0-25%	E	G	E	G
Hydrochloric 25-40%	E	E	E	G
Hydrocyanic	E	E	E	E
Hydrofluoric 10%	E	L	E	G
Hydrofluorosilicic 30%	E	G	G	L
Hypochlorous 20%	E	E	E	E
Lactic 28%	E	E	E	E
Maleic	E	E	E	E
Nitric 10,35,40%	E	G	G	L
Nitric 20%	E	L	G	L
Nitric (vapor) 60%	E	L	G	U
Nitrous Oxide	E	E	E	E
Oleic	E	E	E	E
Oxalic	E	E	E	G
Perchloric 10%	E	L	G	L
Phosphoric 0-25%	E	G	E	G
Phosphoric 25-75%	E	E	E	G
Phosphorus (yellow)	E	G	G	L
Picric	U	U	U	U
Silicic	E	E	E	E
Stearic	E	E	G	G
Sulfamic (see Benzene Sulfonic 10%)	E	E	E	E
Sulfuric 0-75%	E	E	E	G
Sulfuric 75-90%	E	E	L	L
Sulfuric 95%	E	G	U	U
Sulfurous	E	E	E	E
Tannic	E	E	E	E
Tartaric	E	E	E	E
ALCOHOLS				
Amyl	E	E	L	U
Benzol	U	U	U	U
Butyl	E	G	L	U
Ethyl 0-98%	E	E	E	E
Methyl	E	E	E	E
GASES AND VAPORS				
Ammonia, Dry	E	E	E	E
Ammonia, Wet	L	U	–	–
Bromine	U	U	U	U
Carbon Dioxide	E	E	E	E
Carbon Monoxide	E	E	E	E
Chlorine, Dry	G	G	G	G
Fluorine	L	U	U	U
Hydrogen	E	E	E	G
Hydrogen Sulfide	E	E	E	E
Sulfur Dioxide, Wet	G	U	L	U
Sulfur Troxide, Dry	E	E	E	G

ENVIRONMENT	Type I 70°	Type I 140°	Type II 70°	Type II 140°
ALKALIES				
Ammonium Bifluoride	E	E	E	E
Ammonium Carbonate	E	E	E	E
Ammonium Fluoride 25%	E	L	U	U
Ammonium Hydroxide 28%	E	E	E	E
Barium Carbonate	E	E	E	E
Calcium Hydroxide	E	E	E	E
Magnesium Carbonate	E	E	E	E
Potassium Bicarbonate	E	E	E	E
Potassium Carbonate	E	E	E	E
Potassium Hydroxide 10, 20, 35%	E	E	E	E
Sodium Bicarbonate	E	E	E	E
Sodium Carbonate	E	E	E	E
Sodium Hydroxide 10,35%	E	E	E	E
Sodium Sulfide	E	E	E	E
Trisodium Phosphate	E	E	E	E
SALTS				
Aluminum Chloride	E	E	E	E
Aluminum Nitrate	E	E	E	E
Aluminum Sulfate	E	E	E	E
Ammonium Chloride	E	E	E	E
Ammonium Nitrate	E	E	E	E
Ammonium Persulfate	E	E	E	E
Ammonium Sulfate	E	E	E	E
Aniline	U	U	U	U
Aniline Sulfate, saturated	U	U	U	U
Antimony Trichloride	E	E	E	E
Barium Chloride	E	E	E	E
Barium Sulfide	E	E	E	E
Calcium Chlorate	E	E	E	E
Calcium Chloride	E	E	E	E
Calcium Sulfate	E	E	E	E
Copper Chloride	E	E	E	E
Copper Cyanide	E	E	E	E
Copper Fluoride 2%	E	E	E	E
Copper Sulfate	E	E	E	E
Ferric Chloride	E	E	E	E
Ferric Nitrate	E	E	E	E
Ferric Sulfate	E	E	E	G
Ferrous Chloride	E	E	E	E
Lead Acetate	E	E	E	E
Magnesium Chloride	E	E	E	E
Magnesium Hydroxide	E	E	E	E
Magnesium Sulfate	E	E	E	E
Mercuric Chloride	E	E	G	G
Mercurous Nitrate	E	E	G	G
Nickel Chloride	E	E	E	E
Nickel Nitrate	E	E	E	E
Nickel Sulfate	E	E	E	E
Potassium Chloride	E	E	E	E
Potassium Dichromate 40%	E	E	E	E
Potassium Ferricyanide	E	E	E	E
Potassium Nitrate	E	E	E	E
Potassium Permanganate 10%	E	E	G	G
Potassium Persulfate	E	E	E	E
Potassium Sulfate	E	E	E	E
Silver Nitrate	E	E	E	E
Sodium Acetate	E	E	E	E
Sodium Bisulfate	E	E	E	E
Sodium Chloride	E	E	E	E
Sodium Chlorate	E	G	G	L
Sodium Cyanide	E	E	E	E
Sodium Dichromate	E	E	E	G

ENVIRONMENT	Type I 70°	Type I 140°	Type II 70°	Type II 140°
SALTS (cont'd.)				
Sodium Ferricyanide	E	E	E	E
Sodium Fluoride	E	E	E	E
Sodium Nitrate	E	E	E	E
Sodium Nitrite	E	E	E	E
Sodium Sulfate	E	E	E	E
Sodium Sulfite	E	E	E	E
Stannic Chloride	E	E	E	E
Stannous Chloride	E	G	E	G
Zinc Chloride	E	E	E	E
Zinc Nitrate	E	E	E	E
Zinc Sulfate	E	E	E	E
SOLVENTS				
Acetone	U	U	U	U
Benzene	U	U	U	U
Carbon Bisulfide	U	U	U	U
Carbon Tetrachloride	L	U	U	U
Chlorobenzene	U	U	U	U
Ethyl Acetate	U	U	U	U
Ethyl Chloride	U	U	U	U
Ethylene Glycol	E	E	E	E
Heptane	E	G	L	U
Hexane	E	L	U	U
Methyl Ethyl Ketone	U	U	U	U
Naphtha	E	E	E	G
Trichloroethylene	U	U	U	U
Toluene	U	U	U	U
Xylene	U	U	U	U
BLEACHES				
Calcium Chlorate	E	E	E	E
Calcium Hypochlorite	E	E	E	E
Chlorine Water	E	E	E	E
Hydrogen Peroxide 30%	E	E	E	G
Hydrogen Peroxide 50%	E	E	E	L
Sodium Chlorate	E	G	G	L
Sodium Hypochlorite	E	E	E	E
OTHERS				
Aluminum Hydroxide	E	E	E	E
Ammonium Phosphate	E	E	–	–
Aqua Regia	E	L	L	U
Glycerine	E	E	E	E
Kerosene	E	E	E	E
Photographic Solutions	E	E	E	E
Tetrahydrofurane	U	U	U	U
Sodium Xylene Sulfonate	–	–	–	–
Sorbitol Solution	–	–	–	–
Urea	E	E	E	E
Urea-Ammonium-Nitrate	E	E	E	E
PLATING SOLUTIONS				
Brass	E	E	E	E
Cadmium	E	E	E	E
Chromium	E	G	G	G
Copper	E	E	E	E
Gold	E	E	E	E
Judium	E	E	E	E
Lead	E	E	E	E
Nickel	E	E	E	E
Rhodium	E	E	E	E
Silver	E	E	E	E
Tin	E	E	E	E
Zinc	E	E	E	G

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

- # 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 therof 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.

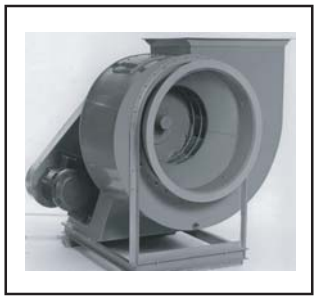
VIRON® will not approve for payment any repair made outside its factory without prior written consent of its Owosso, Michigan office. The foregoing shall constitute our sole and exclusive warranty and our sole and exclusive liability and is in lieu of all other warranties, whether written, oral, implied 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 MERCHANTABLE 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 therof which give rise to the claim and shall terminate one year after shipment of said products and parts.

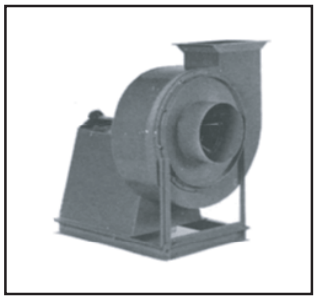
IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, OR WARRANTY, OR TORT, OR ALLEGED NEGLIGENCE, DEFECTS, INCORRECT ADVICE OR OTHER CAUSES, SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, including but not limited to loss of profits or revenue, loss of use of the equipment 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.



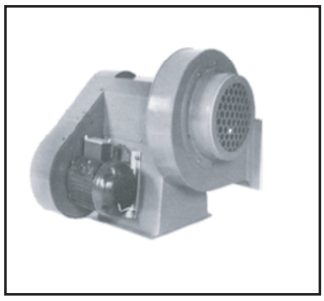
Centrifugal Fan
VCF-100

Inline Centrifugal Fan
VIF-200

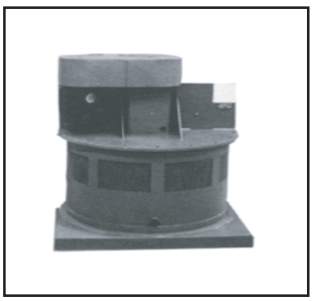


Radial Blower
VRB-600

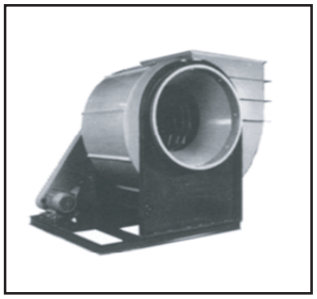
Lab Blower
VLB-700



PushBlower
VPB-800

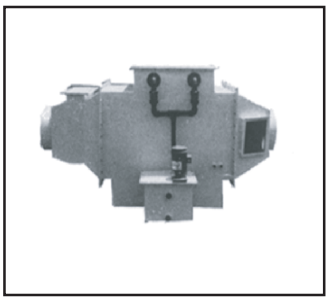


Roof Ventilator
VRV-900



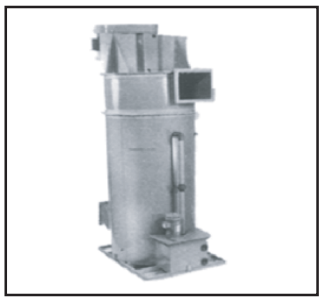
Centrifugal Fan
VCB-1100

Gravity Relief Ventilator
VGR-1300



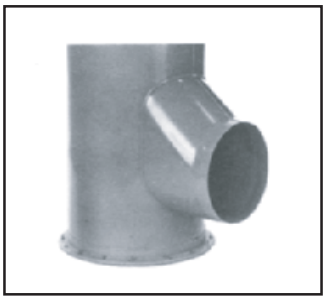
Horizontal Scrubber
VHS-Series

Vertical Scrubber
VVS-Series



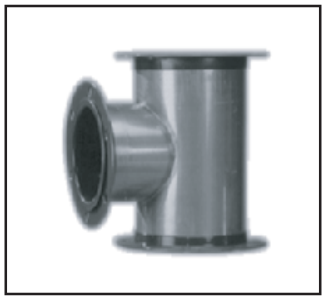
Blower-Scrubber
VBS-Series

VIRO-CHROME 9000®
VCS-Series

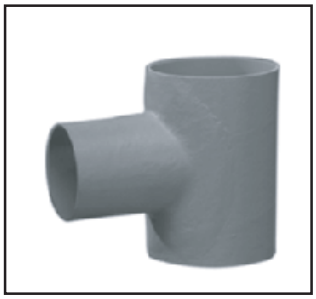


VI-A-DUC®
FM Approved PVC Duct

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

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