

SSTEELCOAT®
ROUND AND RECTANGULAR
VI-A-TROL®
CONTROL DAMPERS



VIRON®
INTERNATIONAL
CORPORATION

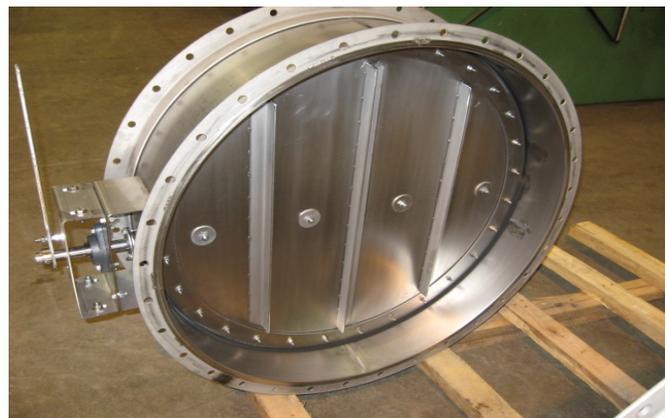
STAINLESS STEEL CONTROL DAMPERS



Viron® International Corporation is a leading designer and manufacturer of corrosion resistant ventilation equipment with over 50 years of experience. Our modern manufacturing facilities located in Michigan and Texas employ state-of-the-art equipment and the highest skilled workforce in the industry. Viron equipment consistently sets the bar for efficiency, durability, and low operating cost.

Viron® Vi-A-Trol® VCD Series heavy-duty air control dampers are engineered for ease of installation, minimal maintenance and exceptional performance. Our custom design philosophy ensures the best damper fit and function from general air balancing to full airflow isolation. They can be supplied with a variety of options including specialty resins, blade/shaft seal types, actuators, and flange patterns to meet your specific, unique system challenges.

All Viron SSteelcoat® dampers are fabricated using 300 series stainless steel material coated with ECTFE fluoropolymer resin to provide optimal chemical resistance in the most aggressive chemical fume environments. Viron® Vi-A-Trol® VCD dampers are routinely installed in semiconductor facilities, hospitals, university research labs, chemical processing plants, military facilities, metal finishing and waste water treatment plants.





VIRON® INTERNATIONAL CORPORATION

VI-A-TROL® VCD SERIES CONTROL DAMPERS

Viron® International Corporation certifies that the VCD Series Control Dampers shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information:

Air leakage is based on operation between 50° F and 104° F.

Tested for air leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.4

Tested for air performance in accordance with ANSI/AMCA 500-D, Figure 5.3

Torque

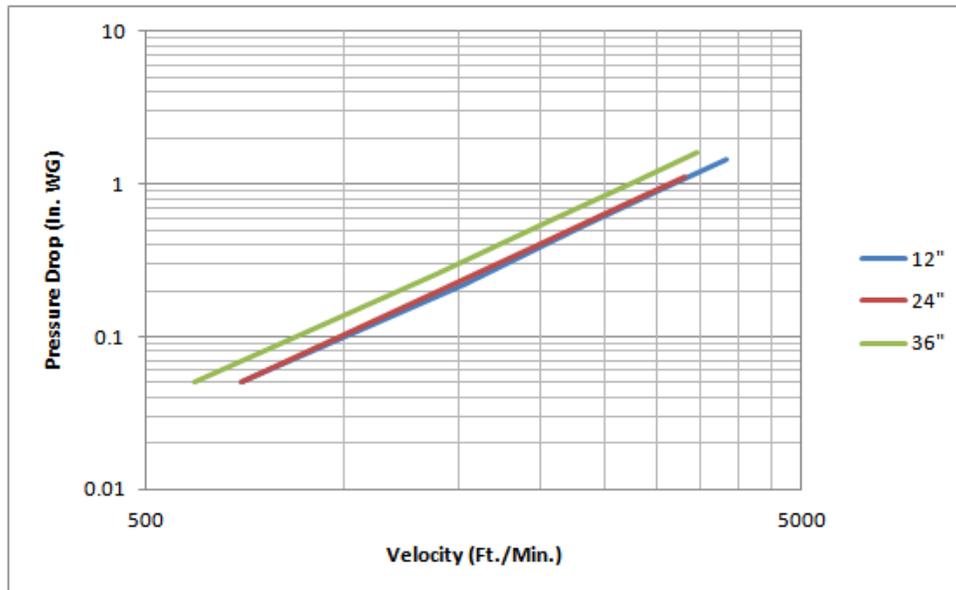
Data are based on maximum torque of 680 in-lb/ft² applied to close and seat the 72" damper during the test.

Leakage Performance

Damper Dia.	Leakage Class			
	1" wg	4" wg	10" wg	30" wg
4"-72"	1A	1	1	1

AMCA Allowable Air Leakage To Achieve Leakage Classification (cfm/ft ²)				
Leakage Class	1" wg	4" wg	10" wg	30" wg
1A	3	N/A	N/A	N/A
1	4	8	12.6	21.9
2	10	20	31.6	54.8
3	40	80	126.5	219.1

Air Performance



SPECIFICATION FOR STAINLESS STEEL CONTROL DAMPERS

VIRON® VI-A-TROL™ VCD SERIES

Furnish and install SSteelcoat® control dampers at locations indicated on the drawings and as described herein.

The SSteelcoat® damper components shall be fabricated using 300 series stainless steel material coated with ECTFE fluoropolymer resin suitable to provide corrosion resistance for the intended service. Dampers shall be approved to carry the FM label for exhaust duct suitable for installation without sprinklers for fire protection. Dampers shall have a flame spread rating of no more than 25 and a smoke development rating of less than 50 when tested in accordance with ASTM E 84.

Damper housings shall be one-piece construction and supplied with Van Stone flange connections. Flange material shall be 304 stainless steel. The stainless steel damper shall be fabricated in accordance with the standards listed below utilizing SMACNA construction tables for desired vacuum/pressure service. All longitudinal seams shall be machine fusion welded. Hand welds and/or MIG welds are not acceptable. Traverse seams shall be continuously TIG welded. All Van Stone ends shall be machine turned to provide uniformity. All interior welds shall be ground and polished smooth prior to coating. The interior surfaces shall be completely "sandblasted" prior to coating to ensure an adequate bonding surface. The electrostatically applied ECTFE fluoropolymer coating must be applied in two steps; the first applying a primer coat of 3-4 mils, and the second to apply a top coat of 8-9 mils for an average coating thickness of 12 mils on all interior surfaces.

Damper blades shall be one piece, center pivot design with a full length axle permanently fastened at the blade centerline. The blade shall be fabricated using the same stainless steel materials as the housing. The maximum blade deflection at 30" W.G. shall be no more than 1/180th of the blade's span. If necessary to limit blade deflection, blade stiffeners will be of the same material as the blade. The axle is to be continuous through the damper and will be solid 300 series stainless steel. All interior surfaces will be completely encapsulated with ECTFE fluoropolymer resin coating. Axle penetrations will include molded PTFE bearings to insure smooth blade rotation. Axle seals will be accessible for inspection and replacement. Blade seals will be PTFE or EPDM continuous perimeter wiper type fastened to the blade with ECTFE coated stainless steel hardware. When equipped with the EPDM blade seal the damper shall meet a minimum AMCA Class 1 Leakage. Leakage shall not exceed 4 cm per square foot. At 30" w.g. all dampers shall be licensed to bear the AMCA Seal for Leakage and Performance when tested in accordance with AMCA Publication 500. Dampers not bearing the AMCA Seal are not acceptable.

Dampers shall be provided by a manufacturer regularly engaged in the manufacturing/fabrication of ECTFE fluoropolymer coated stainless steel duct/dampers for a minimum of five (5) years. The damper supplier will have the facilities to fabricate the stainless steel dampers and be certified to apply the ECTFE fluoropolymer coating. Sub contracted services, including metal work and/or coating is not allowed.

Viron VCD dampers are designed and manufactured with respect to the following industry standards:

- *SMACNA-01 Accepted Industry Practice for Industrial Duct Construction
- *SMACNA-06 HVAC Duct Construction Standards
- *SMACNA Round Duct Construction Standards
- *Factory Mutual Research Corporation (FMC) 4922
- *ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- *ANSI/AMCA 500-D Laboratory Methods for Testing Dampers for Rating

• **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



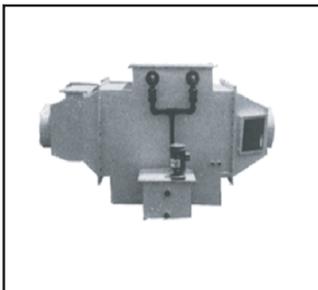
Roof Ventilator
VRV-900



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



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