

awv

american warming and ventilating



all of your industry needs in one place.



industrial dampers for **custom applications**

1904

Created as a division of American Furnace and Foundry Company in Bloomington, IN. Started as a regional contractor for the installation of gravity heating systems.



AWV remained a contractor until the mid 1940's when the development of forced warm air heating systems dictated a change in direction. This change was brought about by the purchase of AWV by Fred A. Merry, who diversified into the manufacture of air control equipment. Furnace contracting was gradually phased out and full emphasis was placed on the design and manufacture of louvers, dampers and shutters. Merry moved the company to Toledo, OH.

1940's

1954

The company again changed hands and under the direction of E.H. Johnson, in 14 years sales increased by 800%. During this time, lasting relationships were established, and in 1962, manufacturing was transferred to 2 new facilities in Ohio and Michigan.



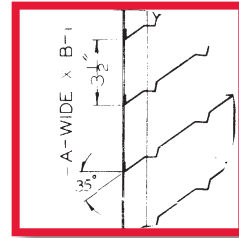
Manufacturing and office facility in Toledo, Ohio.

1963

In 1963, AWV Patented the first Drainable Blade Louver.

1968

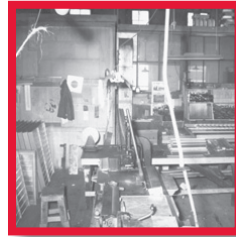
AWV became a wholly owned subsidiary of ENTELCO, where an extensive representation was built throughout the US, and in Canada, Spain, Puerto Rico and South Africa.



In 1963, AWV patented the first Drainable Blade Louver.

1978

Completion of AWV's 5,000 sq. ft. AMCA Certified testing facility at the Bradner, Ohio plant. This facility exceeds standards set by AMCA. AWV also took a leading role in the establishment of AMCA Division Five (louver, damper and shutter group).



AWV's first manufacturing facility – an upstairs loft.

When selecting a supplier, you look for a company with the proven engineering and manufacturing skills necessary to provide products with the quality you require, the efficiency to deliver them on time at competitive prices, and the corporate stability that you can depend upon.

For over 100 years, American Warming and Ventilating has been such a supplier.

all of your industry needs in one place.

1980



Headquarters moved from downtown Toledo, Ohio to brand new office facilities in Maumee, Ohio. Record growth occurred due to one of the finest design-engineering groups in the industry. Product line expanded to include custom air control equipment for use in multiple fields, including Commercial and Industrial Construction, Fossil and Nuclear Power Generation facilities, Institutional and Health Care units, and Educational Buildings.

1987

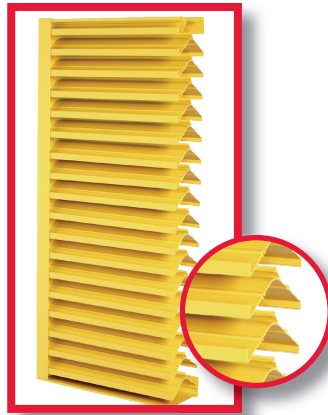


AWV became one of 5 independently operating companies acquired by Mestek, Inc. These companies manufacture standard and custom louvers and dampers to satisfy most every need for intake control, light and heavy duty industrial applications, and sophisticated fire/smoke control.

1990



Received patent for the LE-52 Sightproof Drainable Blade Louver.



2012



AWV provides Stainless Steel Tunnel Dampers for 1 World Trade Center, formerly known as the Freedom Tower, in New York City.

2014



AWV opens branch office in Hong Kong, called AWV International. Today AWV continues to gain momentum by providing dampers around the world.

2014



American Warming and Ventilating, founded in 1904, designs and manufactures a comprehensive line of commercial and specialized industrial and heavy duty dampers. From the inception of new products to the refinement of exciting designs, the key to AWV's growth is the knowledge, vision, and pursuit of excellence of its engineering, manufacturing, sales, and support staff. A staff that anticipates changing customer requirements by continually updating facilities. Facilities which include modern production equipment, and one of the most sophisticated product development and testing laboratories in the air control industry.

Regardless of size, shape, material or finish, you can rely on American Warming and Ventilating to meet all your requirements.



VC-51 Industrial Rectangular Damper



Industrial Rectangular Dampers

applications

Parallel Blade

- Fan inlets, outlets.
- Precipitator or scrubber outlets.
- Low leak isolation for stacks and mills.

Opposed Blade

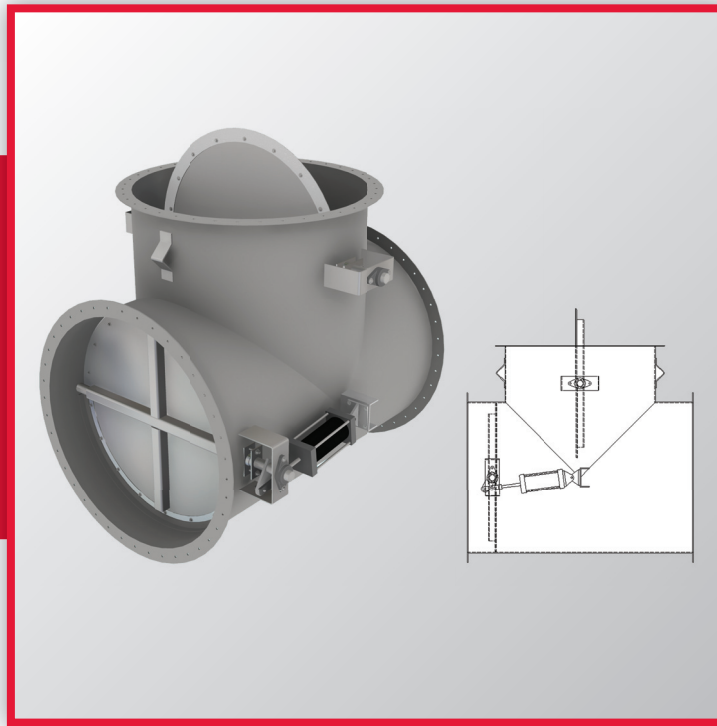
- Modulation application fan outlets.
- Bypass applications.
- Boiler inlets and bypasses.

The selection of the type of damper to perform a particular function is the single most important decision that directly affects reliable, long term operation. American Warming and Ventilating's Industrial Louvered Dampers are an excellent solution to applications requiring light, medium and heavy qualities.

Structural qualities include parallel and opposed blades, single panels, double panels and airfoil and single thickness blades. These dampers have good control characteristics, fast or slow operating speeds and simple drive mechanisms. The space requirements around the ducts is minimal with no leakage to ambient.

all of your industry needs in one place.

Face & Bypass Damper



Industrial Round Dampers

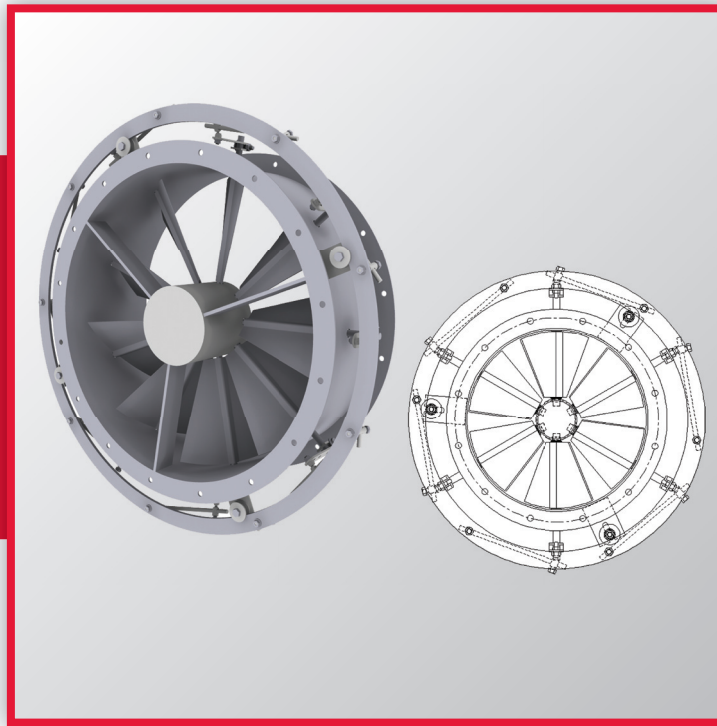
applications

- Flow control of dirty gas to pollution control systems in steel mills.
- Flow control of gas from bag houses.
- Flow control and/or leakage of process or flue gases at extremely high temperatures typically found in refining, incinerating and smelting operations.
- High pressure butterfly dampers for control of clean air and isolation of radioactive gases in nuclear electricity generating power stations.

Round dampers designed and manufactured by American Warming and Ventilating are primarily used for flow control and low leakage applications in systems handling clean gas or with light particulate loading. However, designs are available for installations where the transient gases contain highly corrosive and abrasive elements.

Many applications in the Utility and Process Industries can be satisfied by the use of relatively simple round dampers. Although butterfly type equipment inherently possesses few components, full particulars of the intended service should be provided to insure satisfactory design and operation.

VC-81 Inlet Vane Damper



Energy Applications | Inlet Vane Dampers

features

VC-81

- Maximum velocity is 3,000 fpm.
- Maximum size is 100" diameter.
- Maximum pressure is 7 in. wg.

VC-82

- Maximum velocity is 4,000 fpm.
- Maximum size is 48" diameter.
- Maximum pressure is 10 in. wg.

VC-83

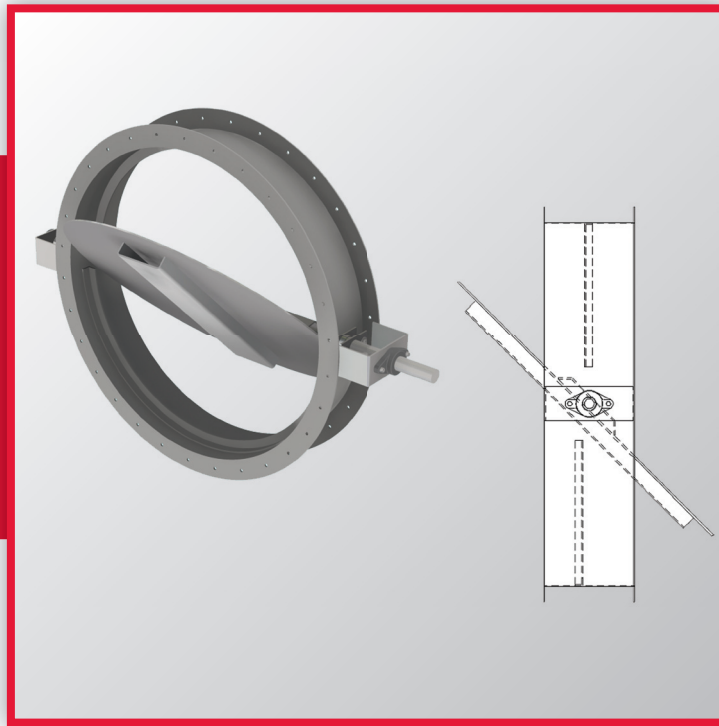
- Maximum velocity is 10,000 fpm.
- Maximum size is 80" diameter.
- Maximum pressure is 90 in. wg.

Inlet vane dampers are typically mounted on the inlet of an industrial fan to pre-spin the air entering the fan system. This blade action directs the airflow into the fan which allows the fan to perform more efficiently. Operators can be electric, pneumatic or manual.

AWV manufactures four standard types of inlet vane products: VC-81, VC-82, VC-83, and VC-84.

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VC-56ISO Isolation Damper



Energy Applications | Isolation Dampers

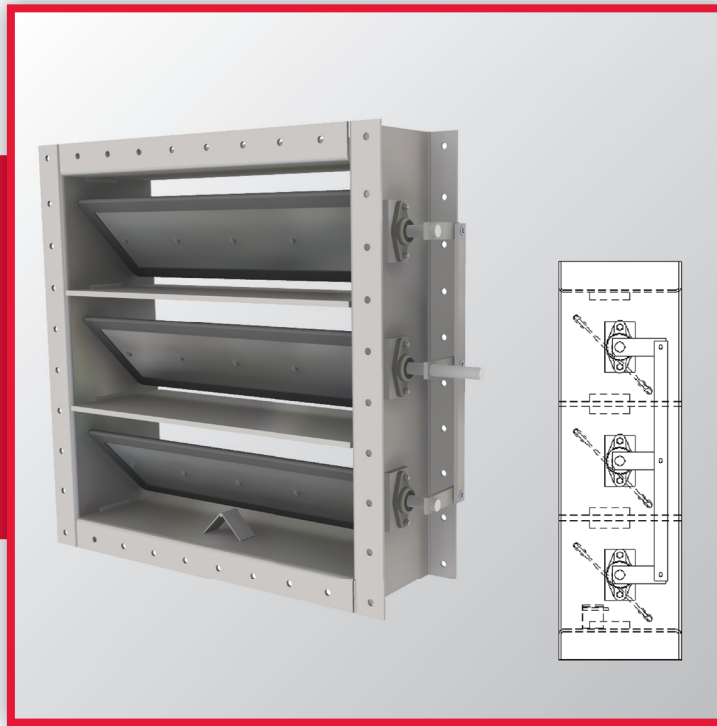
features

Isolation Dampers can be found in many places, such as, but not limited to:

- Pharmaceutical Facilities
- Biotech Labs
- Industrial Process Exhaust Systems
- Nuclear Facilities
- Hospital Isolation
- Military Facilities

Many applications in clean or dirty environments require the use of isolation dampers, whether for access by personnel for maintenance, or other requirements. AWW's broad range of Louver, Butterfly, Diverter, or Guillotine dampers can be fabricated to your specifications for up to 100% isolation or bubble-tight protection.

SL-100BT Damper



Power Facility Applications | Nuclear

features

- Safety & Non Safety-Related fabricated dampers
- Pressure Relief Dampers
- Tornado Dampers
- Fire Dampers
- Backdraft Dampers
- Vernier Dampers
- Bubble Tight Isolation Dampers
- Volume Control Dampers

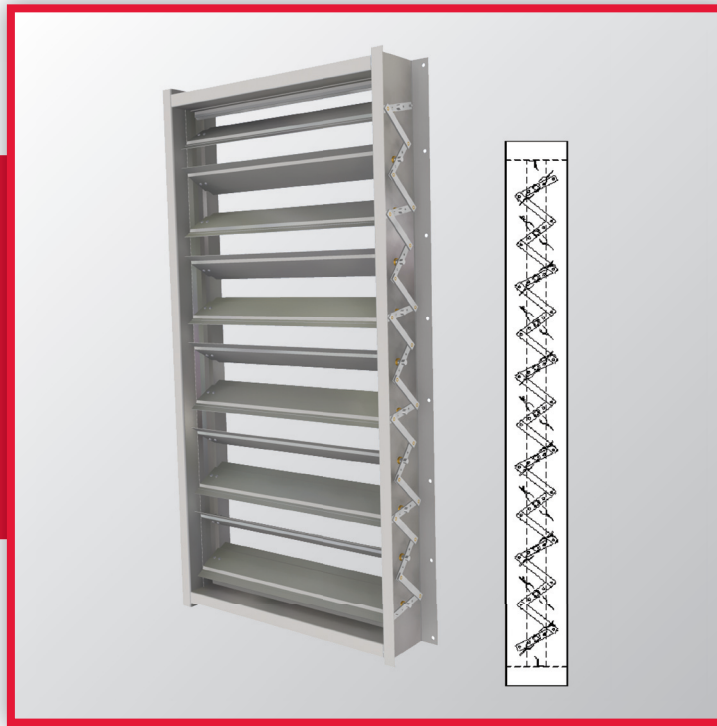
AWV's experience serving the Nuclear Industry covers almost every nuclear facility in the United States, and many internationally. Our nuclear products have been through and passed the most rigorous requirements of seismic and environmental events.

Derived from equipment fabricated and tested for nuclear and fossil fuel HVAC applications, AWW nuclear damper products are intended wherever durability, reliability, and high performance are required.

We meet 10CFR 50 Appendix B, and NQA-1 requirements, and are regularly audited by NUPIC.

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TFD-75 Tunnel Damper



Transit Applications

Tunnel fire dampers are designed to be used as life saving equipment to ensure that the extraction of smoke and toxic fumes during a fire are efficiently maintained during the evacuation of passengers. These dampers also provide a protective barrier to keep fire away from other capital investments such as ventilating fans and silencers.

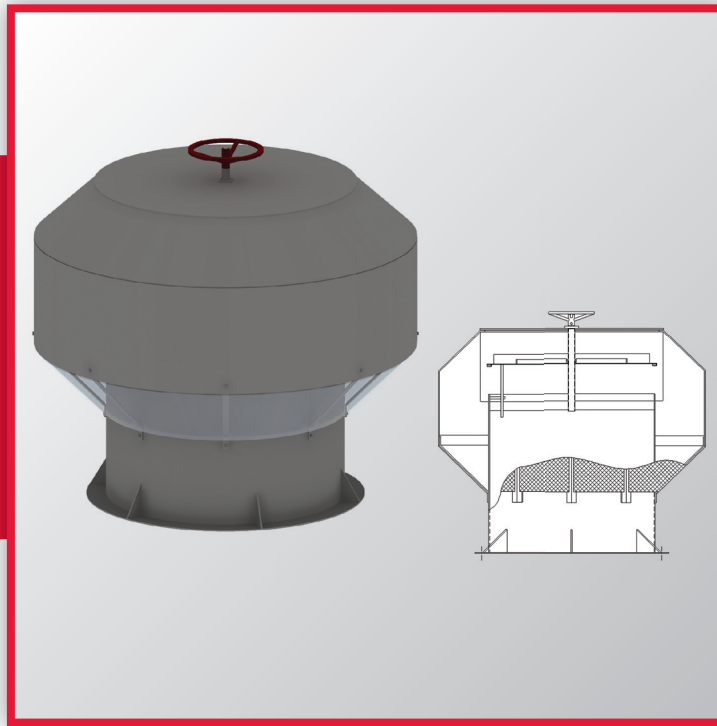
The TFD-75 and TFD-75C are especially designed for use in large scale projects such as road tunnels, rail tunnels and underground metro stations. They are very robust, multi-bladed dampers which can operate reliably in the severest environments. They can be operated by a range of actuators, both pneumatic and electric and can “Fail Safe” in either the open or closed position.

Fully enclosed position indication switches can also be provided to communicate damper blade positions back to the main system controls. The TFD-75 and TFD-75C dampers have been successfully tested to meet the stringent requirements for a four hour rating to BS476, Part 20 (1987); “Fire Resistance Performance,” the one hour rating of NFPA 130 and Class I & II leakage as determined by UL555S.

A fire damper, compared to most capital equipment, is not an expensive item, unless it fails! AWV tests and tests again...

SAFETY FIRST!

Mushroom Damper



Marine Applications

features

- Standard duty air control dampers
- Airfoil blade control dampers
- Intake drainable stationary louvers
- Forced draft shutter dampers
- Round control dampers
- Dampers for CO2 and Halon fire systems
- Mushroom Ventilators

In the marine industry, AWV has an exceptional record of supplying its products to the US Navy, Coast Guard, offshore oil platform construction, and shipbuilders worldwide.

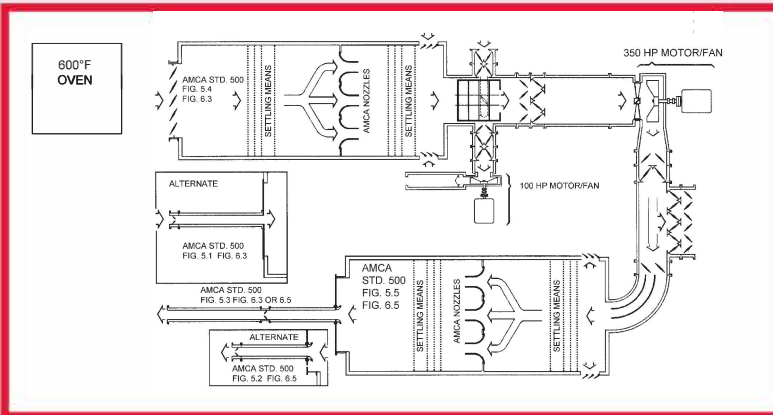
For over 40 years, we have designed and manufactured marine dampers and louvers for use in emergency generator systems, air distribution and fire control, engine room ventilation, combustion air (boilers), nonmagnetic areas, airtight closures for toxic gas systems and other related applications. In addition, the majority of our dampers meet MIL-S-901C/D high shock specifications, US Maritime Commission Standards S38-1-31 and 32; and US Coast Guard requirements.

Product Development and Testing Laboratory



An AMCA Registered Laboratory

Airflow: To 80,000 CFM
 Static Pressure: To 50" wg
 Temperature: To 600°F



Bradner Ohio Test Facility Floor Plan | Approved to conduct performance rating tests in accordance with AMCA Standard 500.

Manufacturers, architects, mechanical engineers, contractors and facility owners rely upon Ohio Independent Laboratories to meet their ever changing damper and louver designs and cost requirements through product innovation and technological advancement.

Being both an AMCA Accredited Laboratory and a UL Data Acceptance Program participant, the Product Development and Testing Laboratory is proof of our pursuit of product excellence. Here, new product concepts and refinements to existing designs undergo rigorous testing before introduction to the marketplace. Designed and built in 1977 to test dampers to the exacting requirements of the nuclear power industry, the Laboratory has one of the largest flow and pressure capabilities of any laboratory in the damper, shutter and louver industries.

Tests are performed following the AMCA Standard 500 Test Procedure, which is highly regarded by customers and contract users alike. AMCA audits the calibration of equipment, performance testing of products and the laboratory itself every 3 years. Test results are audited each time a contract test is performed and witnessed.

Tests conducted on our Elevated Temperature Test Chamber are performed following UL Standard 555S and/or tests performed to UL Standard 181 can be coordinated and administered with UL as witnessed testing for product certification.

Contract customers receive all necessary documentation of test results.

The Product Development and Testing Laboratory is an AMCA Registered Laboratory approved for testing in accordance with AMCA Standard 500.

Tests are conducted in accordance with:

- AMCA Standard 500 for Louvers, Dampers and Shutters.
- AMCA Standard 210 Laboratory Methods of Testing Fans for Rating. Flow testing only.
- AMCA Standard 220 Test Methods for Air Curtains. Flow testing only.
- ASTM E477-80 Flow Testing only.
- UL 555 S Leakage Rated Dampers for use in Smoke Control Systems.
- UL 181 Standard for Factory-Made Air Ducts and Air Connectors.

tests run:

- Air Duct Erosion of Fiberglass-lined Duct.
- Bubble Tight Leakage.
- Cycle.
- Deflection.
- Differential Pressures to 50 in. wg.
- Endurance Limit and Fatigue.
- Flow rates to 80,000 CFM.
- High Velocity Pressure Testing on tempering air nozzles and quenchers.
- Leakage Measurement.
- Micro Strain Measurement.

- Open & Close Timing.
- Pressure Decay.
- Reverse Bend Fatigue.
- Slam shut under maximum air flow and close-off pressure on chamber and in-duct pressure drop.
- Elevated temperature tests to 500°F.
- Thermal Shock.

products tested:

- Air Curtains.
- Air to Air energy recovery equipment.

- Air or gas distribution and control devices.
- Baghouse Components.
- Tempering Air Nozzles and Quenchers.
- Dampers—Backdraft, Combination Fire/Smoke and Leakage Rated, Isolation, Pressure Relief, Volume Control.
- Guillotines, and Specialty.
- Diffusers.
- Fans.
- Fiberglass Dampers and Louvers.

- Fiberglass-lined duct.
- Filters.
- Inertial Separators.
- Heat Exchangers.
- Louvers—Adjustable and Stationary.
- Mechanical Dust Collectors.
- Penthouses.
- Precipitators.
- Other HVAC system components.
- Other flue and process gas components.

industrial dampers for custom applications

Locally represented by:



our project résumé.

The following listing gives an indication of our significant experience in supplying custom dampers and louvers to the various industries below in recent years. We believe that our experience and proven expertise in these highly specialized fields cannot be matched by any other manufacturer in our industry.

Hartsfield Atlanta International Airport Smoke Removal System Modifications

Owner: *City of Atlanta, Department of Aviation*

- Damper Model(s): VC-51 Heavy Duty Industrial Dampers.
- Hot dipped galvanized structural steel channel frames, stainless steel blades, 4-bolt reimbursable ball bearings, and 2-position electric actuators.
- Special Requirements: NFPA-130, 250°C/1 hr. operation.

New York City Freedom Tower

Owner: *NJNY Port Authority*

- Damper Model: TFD-75 Transit Dampers.
- Formed 316 stainless steel frame and airfoil blades, graphite sleeve bearings, and spring return electric actuators.
- Special Requirements: 250° C/1 hr. operation.
- Fire resistance to BS-476, Part 20 for four hours.

Toronto Spadina Extension

Owner: *Toronto Transit Commission*

- Damper Model: VC-51 Heavy Duty Dampers.
- Formed 304 stainless steel frame and airfoil blades, graphite sleeve bearings, and 2-position electric actuators.
- Special Requirements: 250° C/2 hr. operation.

Kingsford Co.

Owner: *Kingsford Co.*

- Damper Model(s): VC-56 Refractory Lined Control Damper
- Refractory lined, 2-blade round damper 304 stainless steel construction, Elomatic actuator and Westlock Intelligent Positioner; one fail open, one fail close.

Crystal River Nuclear Unit #3

Owner: *Florida Power Corp.*

- Damper Model(s): NVC-42 Control Damper System.
- Galvanized steel construction with copper tubing central lube, O-ring stuffing boxes, and Bettis pneumatic actuators.
- Special Requirements: Non-safety related application.

Savannah River Power Plant

Owner: *Westinghouse Savannah River Co.*

- Damper Model(s): SL100-BT bubble tight damper.
- 304 stainless steel construction, manual locking quadrant operator.
- Special Requirements: Bubble tight testing, non-safety related application.

Savannah River Power Plant

Owner: *Westinghouse Savannah River Co.*

- Damper Model(s): Diversion Damper.
- Configuration consisting of (2) VC-41 dampers in a specially fabricated "tee" section, ASTM A653 galvanized steel material, and one Valvon actuator interconnected between the two dampers.
- Special Requirements: Non-safety related application.

Revised: December 2014