



PROCESS AND EXHAUST GAS CONTROL SOLUTIONS

Gas Turbine Exhaust Systems

SCR and FGD Bypass Systems

Expansion Joints

APC Damper Systems





Innovation



Clyde Bergemann Auburn has earned a preeminent position in the competitive world market for dampers and expansion joints for:

- Gas Turbine Exhaust Systems
- APC Damper Systems
- SCR and FGD Bypass Systems
- Petrochemical and Industrial Process Systems

The Clyde Bergemann team of dedicated engineers, designers, technicians, and craftsmen work closely with our customers to develop exceptional solutions to the most difficult challenges, whether technical or economic. This effort starts with the development of the initial design concepts, and continues through to site erection assistance and commissioning of the supplied equipment.

The innovative approach by the Clyde Bergemann team assures you will receive the most leading edge, reliable equipment appropriate for your applications.

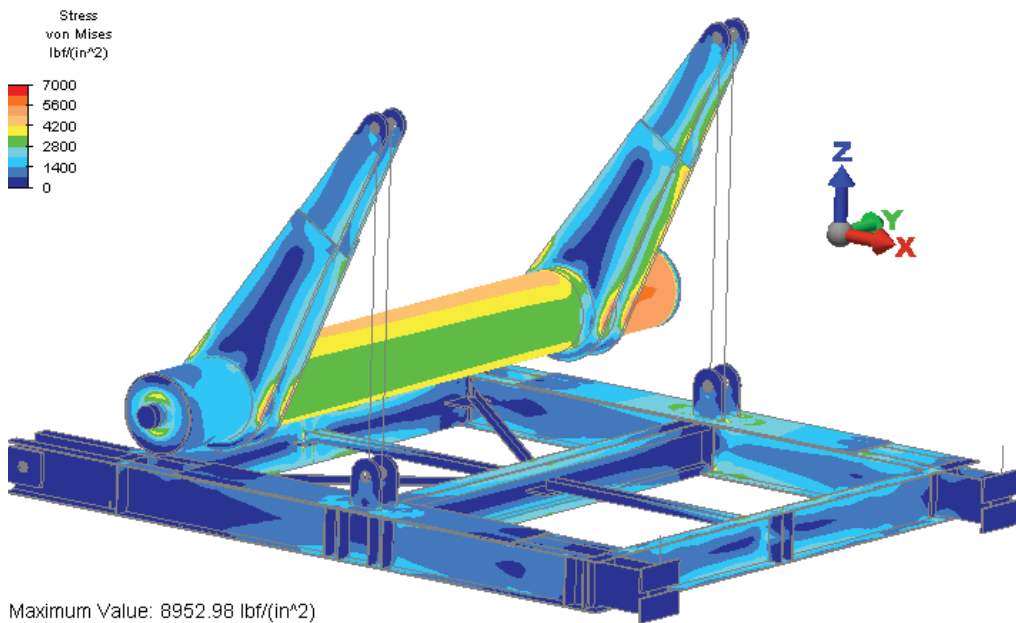
No matter where in the world your project is located, Clyde Bergemann can be of service to you.

Our Bachmann® equipment currently operates on six of the seven continents of the world. No project is too distant.

Whether your project is in the power generation, petrochemical, or industrial field, you can be assured that Clyde Bergemann will provide the quality air-gas handling equipment and service that have become a worldwide trademark.

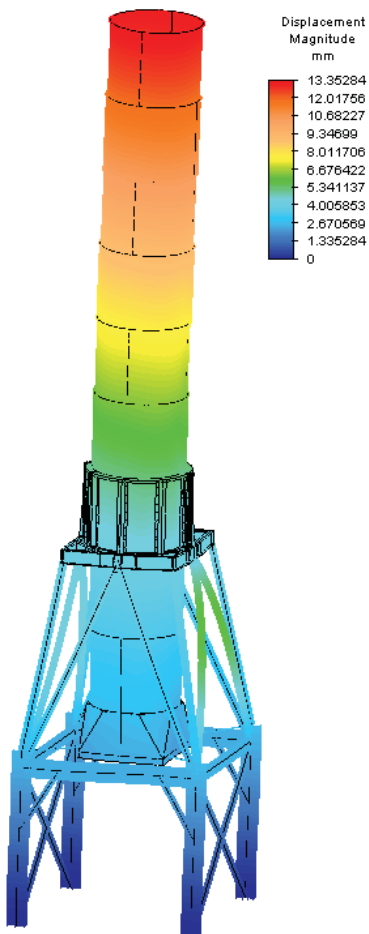
Clyde Bergemann Auburn is committed to providing customers the latest and most innovative technology. In order to ensure that this technology is sound, we perform Finite Element Analysis (FEA) of our designs to ensure that they will meet or exceed each customer's expectations. Several examples of the analysis performed by Clyde Bergemann Auburn can be seen here.



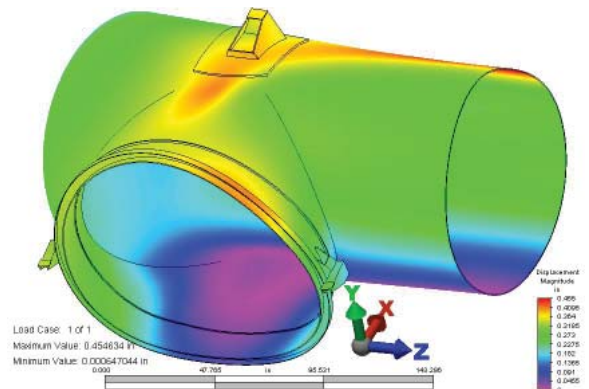


Maximum Value: 8952.98 lbf/(in²)
FEA of GT Diverter Blade and Toggle Drive

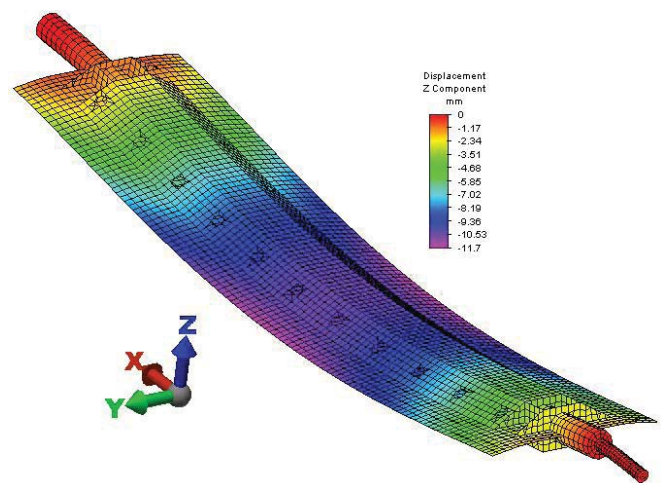
LOAD COMBINATION #1.1.



FEA of Gas Turbine Exhaust Stack



FEA of Tee Duct Section at Inlet of CO Boiler



FEA of Gas Turbine Louver Damper Blade



Gas Turbine Exhaust Systems...



Clyde Bergemann's Bachmann® Gas Turbine Exhaust Systems and components provide a complete package of equipment, from the Gas Turbine exhaust flange to the HRSG inlet flange. Depending upon the client's specific requirement, the systems are supplied as entire units or as individual components. The list of components includes:

- Diffusers
- Equalizers
- Transitions
- Diverters
- Expansion Joints
- Elbows
- Blanking Guillotines and Plates
- Duct Extensions
- Bypass Stacks
- Silencers
- Stack Dampers
- Louver Dampers
- Flap Dampers
- Guillotines

No matter the size of the gas turbine, Clyde Bergemann Auburn can provide the custom solution to your Gas Turbine Exhaust needs. We have provided equipment from the smallest to the largest gas turbines on the market today throughout the world.



Conversion of simple cycle elbow to fully functional diverter for an Alstom GT13E2 in Viet Nam



...and Components

Above: GT bypass system for a GE 9E GT in Argentina



Diverter for a Siemens SGT6 - 4000F GT in Peru



Convertible simple cycle exhaust stack in Venezuela



SCR (DeNO_x) Bypass Systems and Components



Clyde Bergemann Auburn's innovative, patented 4-port diverter system is an excellent solution for providing a SCR Bypass System.

This system is comprised of a self-contained housing with an inlet port from the boiler, an SCR bypass port, SCR return port, and an exit port to the air heater. The 4-port diverter contains only two (2) single blade flap dampers. This diverter provides SCR online or bypass functions, with flow modulation and 100% isolation in the flap end positions. Since the flaps rotate out of the gas path there is reduced system pressure drop and abrasion to the equipment in comparison to louver dampers.

In addition to the 4-port diverter system, Clyde Bergemann Auburn offers Flaps, Louvers, and Guillotines in their place. Each of these components is designed to stand up to the harsh environment of SCR service.

Clyde Bergemann Auburn offers a variety of solutions for FGD Bypass Louver and Guillotine dampers. The dampers can be supplied in a variety of alloys and seal arrangements to meet any application.

Above: Bachmann® SCR Diverter (9 foot 6 inch wide by 66 foot 10 inch flap) with more than 20 workers standing on the flap. This diverter was later shipped and placed into service in the United States.

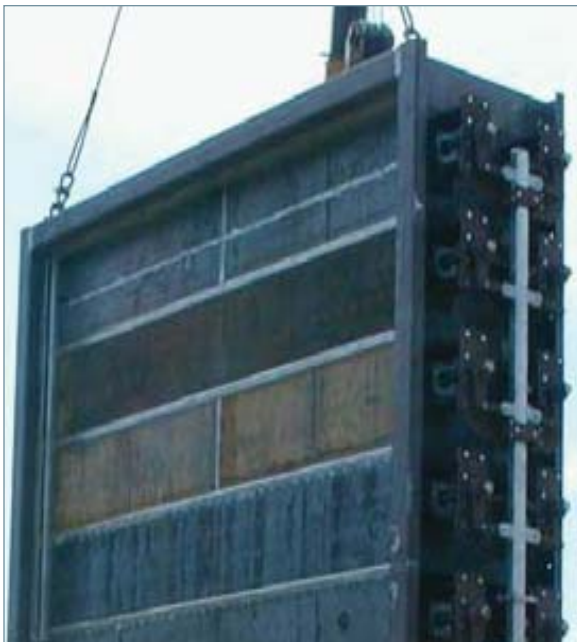


SCR Louver Damper for the United States



FGD (DeSO_x) Bypass Systems

The innovative Clyde Bergemann Auburn tandem seal design offers the best technical solution for FGD isolation at an economical price. The tandem seal design offers all of the advantages of the double louver damper but at a reduced initial cost, operating and maintenance cost.



FGD Double Louver Damper for Canada



Bachmann® FGD Tandem louver seal

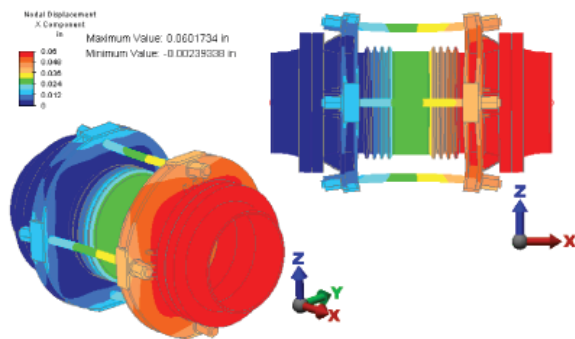


Metallic Expansion Joints



Clyde Bergemann's Bachmann® Metallic Expansion Joints are designed and manufactured in strict accordance with the EJMA Standards unless specified otherwise.

From simple flue gas breaching arrangements to the highly engineered designs required for refinery FCCU service, we have the experience and talent, and can provide solutions for the most difficult expansion joint problems.



FEA of 36 inch diameter Universal Expansion Joint



Ø36 inch diameter Universal expansion joint for a cycle gas service. Inco 600 redundant ply testable bellows with root rings. 422 psig at 302°F



120 inch square hinged refractory lined universal expansion joint for a refinery. Inco 600 bellows with rounded corners. 2 psig at 1200°F

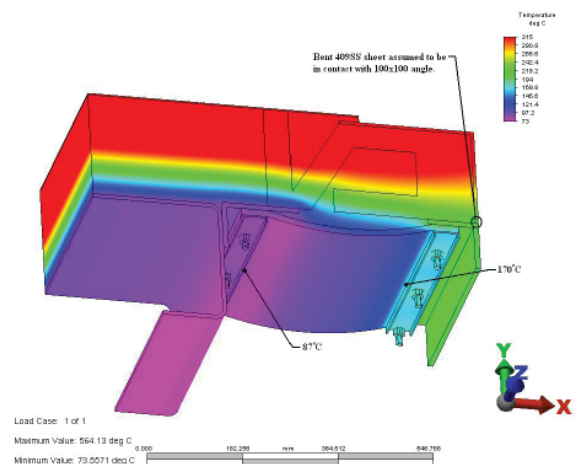


Fabric Expansion Joints

Clyde Bergemann's Bachmann® Fabric Expansion Joints provide a proven solution for tough applications. Each flexible element (molded flanges, flat belt, or diaphragms) is designed for the specified temperature and chemical environment. Each metal frame design (hot frame, cold frame, telescoping liner) has specific longevity and application advantages. Let our experts properly guide you to the best solution.



Ø89 inch diameter Gas Turbine Exhaust Expansion Joint with Hot to Cold Frame. 25 in wc at 980°F



Heat Transfer Analysis of Gas Turbine Cold-to-Cold Fabric Expansion Joint



8 foot square boiler flue gas expansion joint. 20 in wc at 800°F



Dampers



Clyde Bergemann Auburn provides expertly engineered, custom designed and manufactured Bachmann® dampers to heavy industrial markets such as Pulp & Paper, Mining, and Petrochemical-Chemical. Unlike many of our competitors, we are a financially strong, responsive, service-oriented company offering long term proven technology coupled with current, state of the art advances in design and production techniques. We can and will truly customize to your unique system design needs.





Technical Services & Plant Surveys

We offer Professional Plant Surveys, performing hands-on system walk-downs and evaluations of all types of power and industrial plants. We specialize in objective, unbiased surveys on combustion systems, exhaust duct systems and associated components. Typical surveys are:

- Technical Field Service Supervision and Assistance
- Problem Solving/Troubleshooting Surveys
- Specification Development
- Corrosion Surveys
- Efficiency Surveys
- Modernizing Review Surveys
- Maintenance Surveys
- Vendor Expediting Service
- General Plant Survey, General Condition of Plant

Clyde Bergemann is represented in over 40 countries worldwide.



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