



**BACHMANN**  
I n d u s t r i e s I n c

**Gas Turbine Exhaust Systems**

**SCR Damper Systems**

**FGD Damper Systems**

**Expansion Joints**

**Dampers**



# BACHMANN Industries, Inc.

Bachmann Industries, Inc. has earned a preeminent position in the competitive world market for dampers and expansion joints for:

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

The Bachmann Industries team of dedicated engineers, designers, technicians, and craftsmen work closely with their 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 the site erection assistance and commissioning of the supplied equipment.

The innovative approach by the Bachmann Industries team is exhibited by the number of revolutionary inventions and patents awarded to their engineers. This capability assures Bachmann Industries' clients will receive the most leading edge and reliable equipment appropriate for their applications.

No matter where your project is located Bachmann Industries can be of service to you. Currently there is equipment from Bachmann Industries operating on six of the seven continents of the world. No project is too distant for Bachmann Industries

Whether your project is in the power generation, petrochemical, or industrial field, you can be assured that Bachmann Industries will provide the quality and service that has become a worldwide trademark.



GT Exhaust System being installed in Argentina



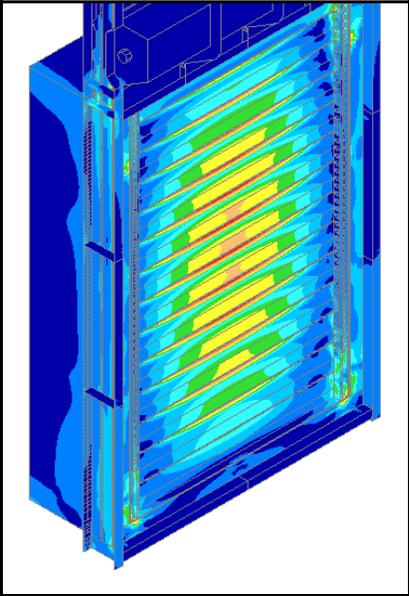
SCR Bypass System installed in the United States



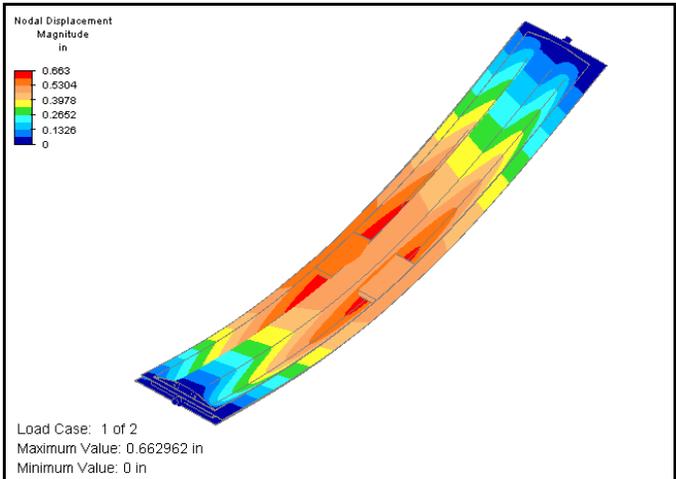
FGD Bypass System Installation in China

*Defining the leading edge....*

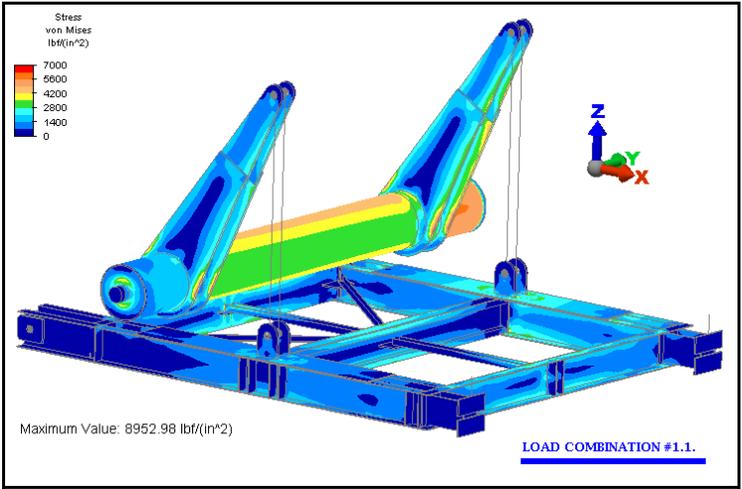
**B**achmann Industries is committed to providing the latest and most innovative technology to its customers. In order to ensure that this technology is sound, Bachmann Industries performs Finite Element Analysis (FEA) of its designs to ensure that they will meet or exceed customers expectations. Several examples of the analysis performed by Bachmann Industries can be seen below.



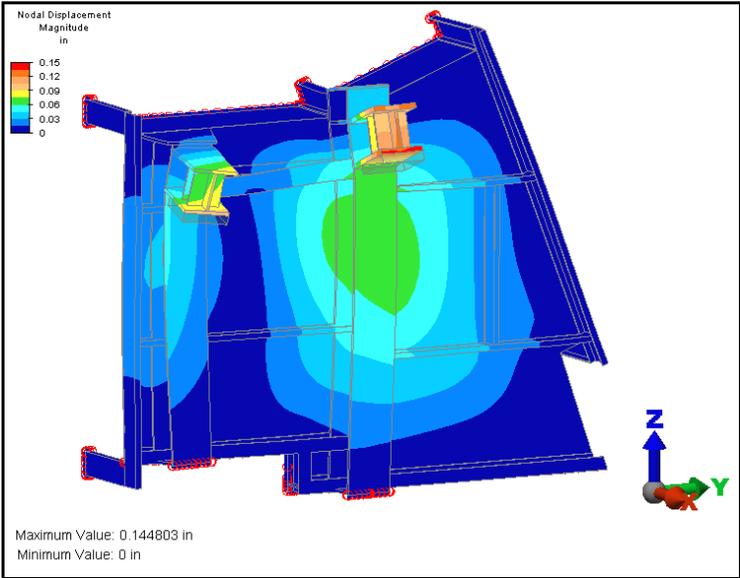
FEA of SCR Guillotine Blade



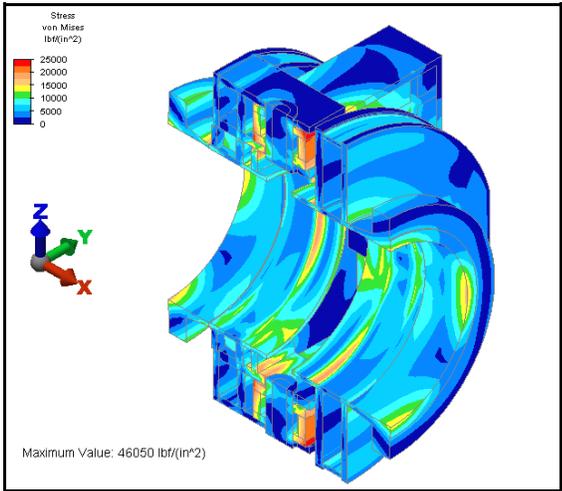
FEA of FGD Louver Damper Blade



FEA of GT Diverter Blade and Toggle Drive



FEA of SCR Diverter Housing



FEA of Round Metallic Expansion Joint

*...in technology and economy worldwide*

# Gas Turbine Exhaust Systems. . . .

Bachmann Industries Gas Turbine Exhaust Systems and components provide the customer with 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, Bachmann Industries 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.



Complete GT Exhaust System for WEC 501D5 in the United States



GT Diverter Bypass System for Alstom GT13E2 in Greece



GT Diverters being prepared for shipment for Solar turbines



GT Diverter Bypass System for GE 7FA in the United States

*Defining the leading edge....*

# ...and Components



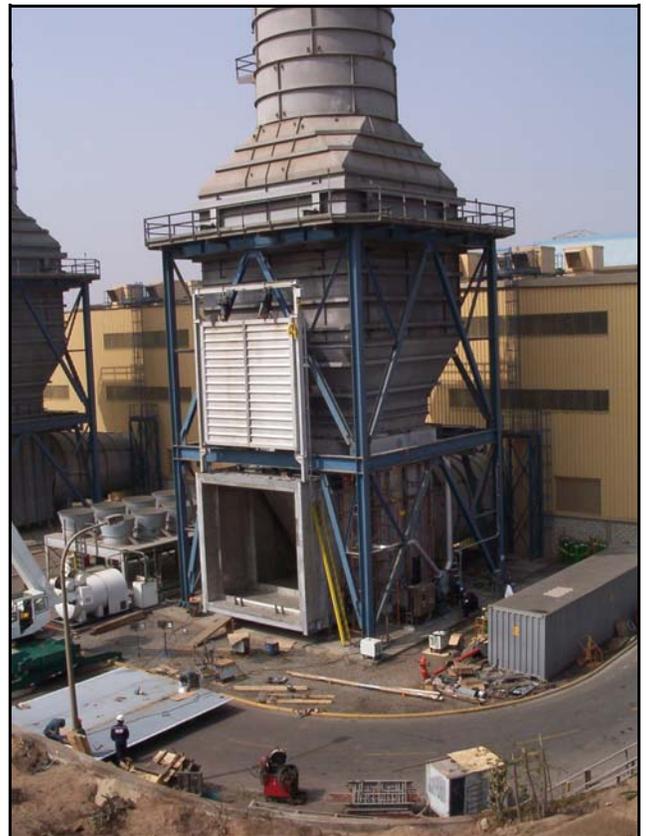
HRSG Stack Damper for a GE 7F in the United States being shop tested



GT Guillotine Bypass System for GE LM6000 in Canada



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



GT Diverter and Blanking Guillotine for Siemens V84.3A in Perú for future conversion from simple cycle to combined cycle operation

*...in technology and economy worldwide*

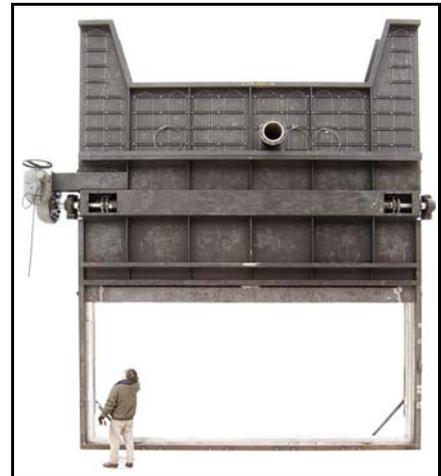
# SCR (DeNO<sub>x</sub>) Bypass Systems and Components

Bachmann Industries 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, Bachmann Industries can offer flaps, louvers, and guillotines in their place. Each of these components are designed to stand up to the harsh environment of the SCR service.



SCR 4-port diverter module being lifted into place in the United States



SCR Guillotine for the United States



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

*Defining the leading edge....*

# FGD (DeSO<sub>x</sub>) Bypass Systems

Bachmann Industries offers a variety of solutions for FGD Bypass Louver Dampers and Guillotines. The dampers can be supplied in a variety of alloys and seal arrangements to meet any application.

The innovative Bachmann Industries 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.



The Bachmann Industries FGD Tandem louver seal



FGD Tandem Bypass Damper being installed in China



FGD Pneumatic Tandem Damper



Shop test of the a FGD Tandem seal damper. The damper was later installed in Cyprus.



FGD Double Louver Damper for Canada

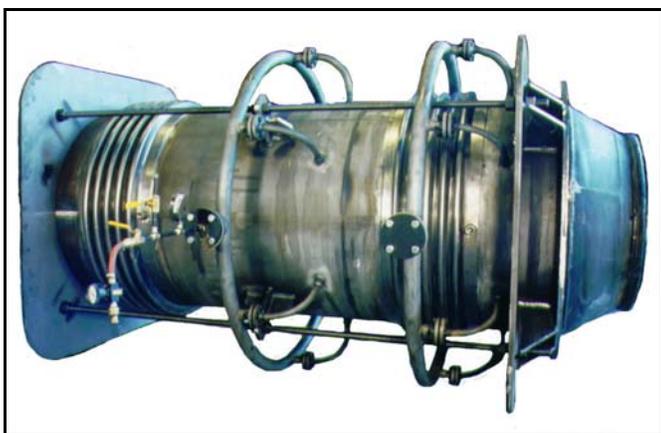
*...in technology and economy worldwide*

# Metallic Expansion Joints

Bachmann Industries 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, Bachmann Industries has the experience and talent, and can provide solutions for the most difficult expansion joint problems.



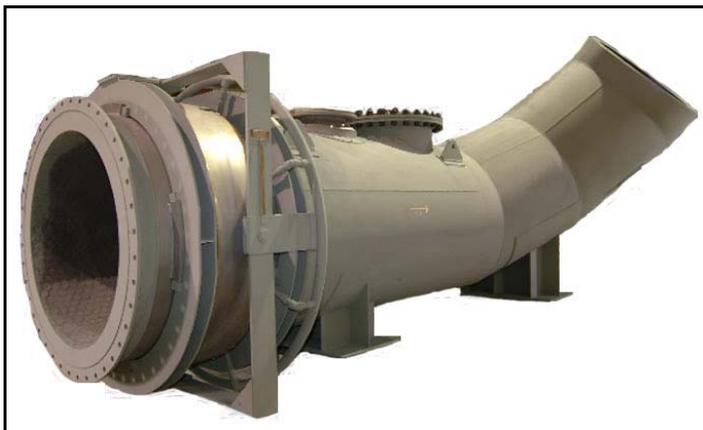
Ø36 inch diameter Universal expansion joint for a cycle gas service. Inco 600 redundant ply testable bellows with root rings. 422 psig at 302°F.



Ø40 inch diameter Universal refractory lined expansion joint for Styrene Monomer service. Two ply Inco 800HT monitored bellows with purged liners. -15 to 29 psig at 1202°F.



Ø82-1/2 inch diameter single refractory lined expansion joint for steel mill hot blast main. Inco 600 bellows with 12 inch thick refractory. 50 psig at 1900°F.



Ø56 inch diameter refractory lined gimbal expansion joint for refinery scrubber inlet. Inco 617 bellows with purged liners. 3 psig at 1450°F.



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

*Defining the leading edge....*

# Fabric Expansion Joints

Bachmann Industries Fabric Expansion Joints are 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.



Ø120 inch diameter Gas Turbine Expansion Joint during installation. 25 in wc at 1070°F.



Bachmann Field Service Personnel assisting with the installation of a gas turbine expansion joint.



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



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



Various non-metallic expansion joints for boiler flue gas application awaiting shipment.

*...in technology and economy worldwide*

# Dampers

Bachmann Industries provides professionally engineered, custom designed and manufactured dampers to Heavy-Industrial markets such as Pulp & Paper, mining, and Petrochemical-Chemical.

Bachmann Industries, 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. Many competitors offer only "standardized" cut-and-paste products whereas BII can and will truly customize to your system design needs.



*Defining the leading edge....*

# Technical Services & Plant Surveys

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

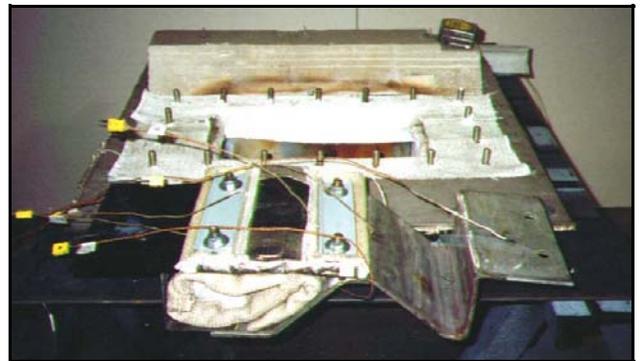
- Technical Field Service Supervision and Assistance
- Problem Solving/Troubleshooting Surveys
- Specification Development
- Corrosion Surveys
- Efficiency Surveys
- Modernizing Review Surveys
- Maintenance Surveys
- Vendor Expediting Service
- General Plant Survey, General Condition of Plant



# Research and Development

Bachmann Industries “Defines the Leading Edge in Technology” with ongoing research and development. An atmosphere of innovation encourages an elite team of inventors, engineers, and craftsmen to develop product improvements and new concepts.

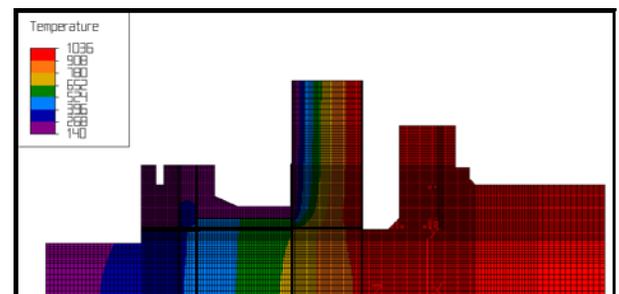
Research and development includes, for example, finite element analysis, thermal transient analysis, cycle and fatigue testing, leakage and performance testing and flow characteristic and acoustical analysis.



Thermal Transient Testing of Bachmann Fabric Expansion Joint



Pressure Testing of Bachmann Metal Expansion Joint



Thermal Analysis of GT Diverter Drive Assembly

*...in technology and economy worldwide*

**Bachmann Industries, Inc.**

416 Lewiston Junction Road  
Auburn, ME 04210 USA

Mail address  
PO Box 2150  
Auburn, ME 04211-2150

Tel: +1 207 784 1903  
Fax: +1 207 784 1904

[www.bachmannusa.com](http://www.bachmannusa.com)

**Bachmann Industries Canada, Inc.**

303 Lombard  
Rosemere, Montreal  
Quebec, Canada J7A 2B9

Tel: +1 450 965 0133  
Fax: +1 450 965 0199