FCCU VALVES
Fluidized Catalytic Cracking Unit
• LARGE DIAMETERS
• SEVERE SERVICE
• HIGH TEMPERATURE VALVES
Our Worldwide Presence

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Zimmermann & Jansen is based on a successful family tradition developed over the last one hundred years and has produced valves since its foundation.

An early specialization in products for the iron and steel industry has expanded into other high temperature, severe service areas including the refining, chemical and glass industries.

**Zimmermann & Jansen Milestones**

- **1850** The iron foundry and machine shop of Daciers Frères started operation.
- **1873** The company was purchased by Zimmermann and Brandenburg.
- **1877** Wilhelm Jansen joined the company and name changed to Zimmermann & Jansen.
- **1895** The Jansen family became the sole owners and their descendents still own the company.
- **1927** The company had 45 employees in the office and 200 in the shop.
- **1945** The family and employees rebuilt the damaged plant and establish strong business contacts in the U.S. and U.K.
- **1961** Opened a manufacturing plant in the United States of America.
- **1972** Opened a manufacturing plant in South Africa.
- **2002** In June 2002 the Deutsche Beteiligungs AG took over parts of the Zimmermann & Jansen GmbH and is now governed by the Hochtemperatur Engineering GmbH (HT-Engineering). The company name was changed to Z&J Technologies GmbH.

Zimmermann & Jansen has become known worldwide as an outstanding manufacturer of large diameter, high temperature, severe service valves for the steel, glass, refining, chemical and petrochemical industries.

Today, Zimmermann & Jansen’s main task is to supply engineered solutions to the valve problems affecting our customers.

Our many years of experience and the most advanced engineering and design methods serve as a sound basis for this activity.

Z&J continues to lead in customized valves for the Refining Industry.
The Zimmermann & Jansen Engineering and Design Departments at our various locations remain in constant contact and share technological advances through our engineer ex-change program. We upgrade our engineering and design capabilities after extensive review and testing of new software, continued education, in house training and quality programs based on ISO-9001.

Z & J complies fully with customer and process licensor specifications, additionally providing the advantages of its design patents.

The design process starts with our customer specification. It continues with Z&J's long history of specialized design, along with the results of our Research and Development Department.

The latest CAD and FEA software are utilized. Quality checks continue throughout the design, engineering and drafting phases. All designs are checked with Finite Element Analysis for Mechanical and Thermal Stresses before being presented to our customer for review prior to manufacture.
Zimmermann & Jansen’s designers and drafts people have worked for years in close co-operation with both the Manufacturing and Quality departments, who utilize the latest equipment and documentation for scheduling, tracking and process control.

Zimmermann & Jansen’s welding technology is characterised by investment in equipment and Know-How. This includes the latest developments in Submerged Arc and Plasma Welding units, for weldments and overlays.

Zimmermann & Jansen’s machine shops, employ state-of-the-art equipment, ranging from manual control to CNC machines, including very large vertical and horizontal mills, lathes and grinding machines.

Spacious bays, equipped with large lifting capacity overhead cranes, enable the assembly and testing departments to complete the products.

QA/QC control all phases of manufacture.
The Quality Assurance and Quality Control Departments of Zimmermann & Jansen, at all locations, report directly to the President or Managing Director. All programs are in accordance with ISO-9001. The Düren, Germany and Houston, Texas locations are both ISO-9001 certified since 1994. The Vanderbijlpark plant is certified since 1999.

Quality Assurance starts with the receipt of inquiry, providing a proposal, order entry, engineering, design and drafting. The Q/A continues through material purchase, receiving and inspection along with material certifications. It controls manufacturing including fabrication, welding, heat treatment machining, assembly, testing, document packages-data books and shipping according to ISO-9001 procedures and documentation.

Zimmermann & Jansen’s Quality Assurance is known for its close co-operation with customer’s inspection teams and designated third party inspectors.
Performance and function testing under closely simulated operating conditions at our modern test centers complete and prove our products.

Tests include:

• Positive Material Identification
• Hydrostatic Pressure Tests
• Pneumatic Pressure Tests
• Seat Leakage Tests
• Actuator Operating Tests
• Cold Function Testing
• Hot Stroke Testing
• Guide/Disc Friction Tests
• Simulated Operation Tests
Application of Z&J valves in Fluidized Catalytic Cracking Units
High Temperature Critical Service Valves for the Refinery

- Catalyst Slide Valves
  Single Disc Design
- Flue Gas Slide Valves
  Double Disc Design
- Flue Gas Diverter Valves
- Flue Gas Butterfly Valves
- Isolation Valves
  - Automatic Blind Plate/Goggle Type Valve Design
  - Flue Gas Guillotine Type Valve Design
  - Double Disc Through Conduit Type Valve Design
  - Double Disc Wedge-Within-Wedge Type Valve Design
- Special Check Valves

Application of Zimmermann & Jansen Valves in Fluidized Catalytic Cracking Units (FCCU)

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Catalyst Slide Valves

**Single Disc Design**
- Spent Catalyst Service
- Regenerated Catalyst Service
- Recirculation Catalyst Service
- Cooled Catalyst Service

**Flue Gas Slide Valves**

**Double Disc Design**
- Regenerator Pressure Control
**Flue Gas Diverter Valves**

**Different Design Types**
- CO-Boiler/Waste Heat Boiler Inlet/Bypass
- E-Precipitator Inlet/Bypass

**Isolation Valves**

**Automatic Blind/Goggle Type Valve Design**
- Expander Inlet/Bypass/Outlet
- CO-Boiler/Waste Heat Boiler Inlet/Bypass/Outlet
- Flue Gas Cooler Inlet/Bypass/Outlet
- E.-Precipitator Inlet/Bypass/Outlet
**Isolation Valves**

*Guillotine Type Valve Design*
- CO-Boiler/Incinerator Inlet/Bypass/Outlet, de Nox ECO Bypass

*Double Disc Through Conduit Type Valve Design*
- Reactor Overhead Line (Fractionator Inlet)
- Fractionator Bottom Line (Fractionator Outlet)

**Shut-off Valves**

*Double Disc Wedge-Wedge Type Valve Design*
- Bottom Pumps
- Catalyst Dumping
- Catalyst Sampling
Flue Gas Butterfly Valves

Swing Through and Step Seated Design

- Expander Inlet/Bypass
- CO-Boiler/Waste Heat Boiler Inlet/Bypass
- E.-Precipitator Inlet/Bypass

Special Check Valves

- Main Air Blower
- Air to First Stage Regenerator
- Air to Second Stage Regenerator
Slide Valves • Single Disc Design

Cold Wall and Hot Wall Design
Temperatures: up to 788 °C (1450 °F)
Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification
Services: Catalyst
Applications: • Regenerated Catalyst
              • Spent Catalyst
              • Recirculated Catalyst
              • Cooled Catalyst

Slide Valves • Double Disc Design

Cold Wall and Hot Wall Design
Temperatures: up to 788 °C (1450 °F)
Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification
Services: Flue Gas
Applications: Regenerator
Pressure Control

Diverter Valves • Different Design Types

Cold Wall and Hot Wall Design
Temperatures: up to 788 °C (1450 °F)
Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification
Design Types: Pendulum
              Linear
              Flip-Flop
              Double Butterfly "Tee"
Services: Flue Gas
Applications: • CO Boiler
              • Electrostatic Precipitator
              • Stack
Diverter Valves • Different Design Types

Cold Wall and Hot Wall Design

Temperatures: up to 788 °C (1450 °F)

Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification

Design Types: Pendulum
Linear
Flip - Flop
Double Butterfly “Tee”

Services: Flue Gas

Applications: • CO Boiler
• Electrostatic Precipitator
• Stack

Isolation Valves • Goggle Valve - Automatic Blind Plate Design

Cold Wall or Hot Wall Design

Temperatures: up to 788 °C (1450 °F)

Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification

Services: Flue Gas

Applications: • Expander
• CO Boiler/Waste Heat Boiler
• Flue Gas Cooler
• Electrostatic Precipitator
• Stack

Features: • Man Safe Isolation
• Large Diameter (up to 4 meter / 160 inch)
• Suitable for installation in all orientations:
  • Horizontal, Vertical, Inclined
  • Fast Stroke Operation
  • Flanged or Weld-ends
Isolation Valves • Guillotine Valve Design

Cold Wall and Hot Wall Design

Temperatures: up to 788 °C (1450 °F)

Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification

Services: Flue Gas

Applications:
- CO Boiler
- Electrostatic Precipitator
- Stack

Features:
- Double Block and Bleed
- Metal Seating
- Large Diameter (up to 5 meter / 200 inch)
- Fast Stroke operation
- Duct Configurations: Rectangular and Circular

Isolation Valves • Double Disc Wedge-Within-Wedge Valve Design

Temperatures: up to 750 °C (1400 °F)

Materials: Carbon steel, chrome steel, stainless steel in fabricated design and castings according to design conditions and specification

Services: different services

Applications:
- FCCU-Bottom Discharge Pump Isolation
- Catofin / MTBE
- ISOSIV / TIP
- Powerformer
- Ethylene
- Others

Features:
- Double Block and Bleed
- Metal Seating
- Dual Disc Design
- Large Diameter (up to 3 meter / 120 inch)
- Flange Rating up to 600#
- Flanged or Weld-ends
- Standards: ANSI and German
- Rising Stem
- Non-Self Locking
- Fast Stroke Operation
- High Frequency Operation
Isolation Valves • Double Disc Through Conduit Valve Design

Cold Wall and Hot Wall Design

Temperatures: up to 788 °C (1450 °F)
Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification
Services: different services
Applications: • FCCU-Overhead Line Isolation (Fractionator inlet) Bottom Line Isolation (Fractionator Bottom)
• Any Hot Gas or Catalyst Service
• Ethylene
Features: • Double Block and Bleed
• Full Bore Through Conduit
• Metal Seating
• Double Disc Design
• Large Diameter
• Flange Rating - all Flange Ratings
• Flanged or Weld-ends
• Rising Stem
• Non-Self Locking
• Fast Stroke Operation
• Suitable for installation in all orientations: Horizontal, Vertical, Inclined

Butterfly Valves

Cold Wall and Hot Wall Design

Temperatures: up to 788 °C (1450 °F)
Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification
Services: Flue Gas
Applications: • Expander Inlet/Bypass
• Co-Boiler/Waste Heat Boiler Inlet/Bypass
• E.-Precipitator Inlet/Bypass
Features: • Metal Seating
• Large Diameter
• Fabricated Design
• Flanged or Weld-ends
• Step Seated - Hard Surface Overlay
• Swing Through
• Configurations: Concentric, Single Eccentric, Double Eccentric
Special Check Valves

Temperatures: up to 650 °C (1200 °F)

Materials: Carbon steel, chrome steel, stainless steel according to design conditions and specification

Services: Air

Applications: FCCU - Air Blower

Features:
- Metal Seating
- Combination Weight and Cylinder Actuated
- Large Diameter
- Fabricated Design
- Flanged or Weld-ends
Our Service At your Service

Professional service for you:

In terms of service you benefit from decades of experience accumulated by our highly motivated staff.

Having a Service Division integrated within our company means that you can rely on our employees always being familiar with the latest manufacturing techniques and products.

Service work that cannot be performed on site at your plant, is transferred to our in-house service facilities.

Just as with a new construction project, a very individual work schedule is precisely defined, executed to the relevant quality standards and subsequently fully documented.

Service Performance:

- Valve Spare Parts
- Shop Service
- Field Service

Valve Service for:

- Zimmermann & Jansen Valves
- other Valve Brands
- Actuators

Scope of Shop Service:

- Valve Refurbishment
  Cleaning/Disassembling
  Analysis of Valve Condition
  Determination of Repair Work
- Valve Repair
- Valve Modification
- Spare Parts Fabrication/Installation
- Valve Test
  Hydrostatic Test
  Function Test
  Hot Stroke Test
- Documentation
  Scope of repair Work
  Repair Work Procedures
  Material Certificates
  Annealing Reports
  Test Certificates

Field service is understood by our specialist team as being available on site within the shortest-possible time - complete with portable equipment container, erection equipment and special tooling. We are particularly well equipped to undertake all types of Special Valves, various types of Drive Systems and the servicing of Blast Furnace plants, oil refineries, chemical plants and float glass units.

We guarantee you a high quality service.

Scope of Field Service:

- Valve Maintenance
- Valve Refurbishment
  Cleaning/Disassembling
  Analysis of Valve Conditions
  Determination of Repair
  Scope with Customer
- Valve Repair
- Valve Modification
- Spare Parts Installation
- Commissioning
- Function Test
- Support during Unit Start-up
Product Range

Valves for the Iron and Steel Industry

Valves for the Petrochemical and Refining Industries

Valves for the Energy Industry and Environmental Protection

Valves and Equipment for the Glass Industry

Our Service for your Company