

## The world's most advanced diverter and control valves for Coal Liquefaction

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Frankfurt, June 18, 2009 – The SchuF Fetterolf Group has successfully installed the worlds most advanced diverter and control valves in the Shenhua coal liquefaction plant in Inner Mongolia.

Coal Liquefaction is the process to convert coal powder into liquid hydrocarbons (gasoline, diesel and Kerosene). The process was invented in Germany by Friedrich Bergius in 1913. It is the most severe refinery conversion process with temperatures of 500°C (932°F), high pressure to 240bar (3480 psi) and a high degree of solids content in the medium. These conditions push equipment to their absolute natural limits as a result of extreme erosion.

The multi million dollar contracts were awarded in 2006 and SchuF delivered the core diverter valve and multiple pressure letdown and level control valves in 2008. The core diverter valve is a five way valve, weighs sixteen tons, and is six meter wide and six meters long. The valve has an 80mm wall thickness and solid Tungsten Carbide seats.

The special design pressure letdown control valves weighed three tons each and were equipped with a solid Tungsten Carbide severe service trim and a unique disc design.

The SchuF Fetterolf valve solution has proven to be far more efficient than a previously tested solution based on a series of ball valves. The previous solution led to such high erosion rates that critical control valves had to be replaced within days of operation, or had to be run at half capacity. The SchuF control valves have shown no signs of erosion after the first live process run over a fourteen day trial period in 2009 and the plant output has exceeded all expectations. This is in part a result of the unique diverter valve design that prevents build up of unwanted solids that can collect in dead spaces in conventional valves or t-piece piping.

Dr. Martin Frank – CEO of the SchuF Fetterolf Group commented: “We are very pleased with the SchuF valve performance. We have worked very closely with the Shenhua Coal Group over the past 3 years to get the design perfectly aligned to the Shenhua coal liquefaction process. We look forward to further coal liquefaction challenges in the coming years”.

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SchuF Fetterolf is a leading global supplier of speciality valves to the chemical, pharmaceutical, oil, gas and petrochemical industries. The company was founded in 1911 by the inventor of the flush bottom outlet and lift plug valves – Josef Frank. Today SchuF Fetterolf employs 320 people (of which 50 are design engineers). Headquartered in Eppstein, Germany, SchuF has design and manufacturing facilities in Germany, Ireland, USA, Brazil and India and sales and representative offices in over 60 countries.

SchuF produces a broad range of custom industrial valves and is a world leader in control and diverter valves for PTA, Polymers, Coal Gasification & Liquefaction and many chemical processes.

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