



**SCHMIDT
KRANZ &
Co. GmbH**





Prof. Karl Glinz
Founder of SK



Dr. Hans-Karl Glinz
Developer of SK



Dr. Hans-Caspar Glinz
Founder of SK Group



Pia-Sophie Yankah & Mortimer Glinz
4th Generation



**SCHMIDT
KRANZ &
Co. GmbH**



SK plant in Nordhausen 1890



SK-Maximator plant Nordhausen in 2014

Schmidt, Kranz & Co. GmbH ("SK") was founded by Messrs. Schmidt and Kranz in 1885, producing shaft sinking equipment for the potash & salt industry as well as tunnel drilling machines. In 1922 Professor Karl Glinz acquired SK and extended the product range to processing and conditioning plants, agricultural tractors ("Normag"), as well as coal mining equipment.

Mining engineer, Dr. Hans-Karl Glinz, took over the company in 1937 and added drilling machines for gas drainage and production.

His son Dr. Hans-Caspar Glinz joined the company in 1981. He integrated hydraulic & pneumatic products ("Maximator") into the product offering. Furthermore, he re-organized SK into a Holding structure, transferring the brands Perforator and Maximator into independent companies alongside the newly acquired GHH, Hazemag and Fest.

Mortimer Glinz and his sister Pia-Sophie Yankah recently came aboard as fourth generation. While Mortimer started off in the mining companies, Pia supports the business development of all companies. Today, SK Holding consists of a group of companies focussing on the following industries:

- Mining, Construction & Tunnelling
- Recycling
- Hydraulic & Pneumatic solutions
- Automation
- Related Services



Johann-Christian Schmiereck
CEO GSES GmbH



Glückauf Sondershausen Entwicklungs- und Sicherungsgesellschaft (GSES)

Salt production & Waste Deposit

GSES has its origins in the potassium and salt industry of Central Germany over 100 years ago. Since being privatized in 1995, GSES has developed into a modern service provider in various mining related business areas such as:

- **Backfill** | the main business of GSES is backfilling in order to avoid landscape settings as well as securing underground workings.
- **Underground Disposal** | Long term, safe storage of waste materials in its underground class I-V which is separated by various barriers from the rest of the backfilled field.
- **Rock salt mining** | The main product is de-icing salt for winter road clearance with grain sizes between 0 and 5mm.
- **Open Waste Dump** | Open waste dump for building waste and polluted excavated earth.
- **You want to go underground?**
Visit GSES adventure mine (Erlebnisbergwerk) and enjoy the adventure.





Iron Miner, 1920

1885

1928

1942

1960

1990

1999

2001

2001

2002

SK was founded
by Mr Schmidt,
Mr Kranz



Dr. H.-K. Glinz
develops
Normag Tractors



Invention &
development of
PERFORATOR



SK acquires
HAZEMAG



Prof. Karl Glinz
acquires SK



Invention and
development of
Maximator
MAXIMATOR
Maximum Pressure.

SK acquires
GHH
FAHRZEUGE

Schmidt, Kranz is
transformed into a
holding structure



SCHMIDT
KRANZ &
Co. GmbH

SK acquires





mts Perforator, 2012

2004

2006

2009

2009

2011

2011

2013

2014

SK Holding
acquires



SK and GHH
found



SK/ HAZEMAG
acquires



SK acquires



Sinoma international
acquires 29,9% of
Hazemag Group
(IMS, allmineral)

SINOMA

SK acquires
75% of GSES



SK and HAZEMAG
acquire 75% of

allmineral

SK and GHH
acquire shares
at Mine Master



Underground Mining

GHH
FAHRZEUGE



LHD, Dump Truck, Scaler, Mixer

mine
master



Drilling & Bolting Rigs

HAZEMAG



Turmag Drill

HAZEMAG



Dinters, Loaders

Mineral & Processing

HAZEMAG



Sizer, Impact Crusher, Feeder Breaker,...

IMSV
ENGINEERING



Cone and Gyratory Crusher

allmineral



Beneficiation Plants

FEST
ANTRIEBSYSTEME



Electric Automation of Plants (Container)

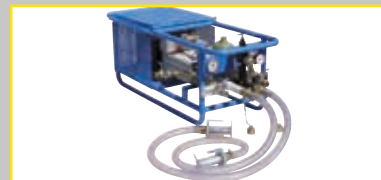
Tunneling & Construction

mts
tunneling systems
your solution



Micro Tunneling Machines

PERFORATOR
ROD



Injection Equipment

GHH
FAHRZEUGE



Dump Truck

HAZEMAG



Mobile Crushing Maschine

Automation & Industrial Processing



Modernisation of Plants



Automation of Plants



Drive Technology



Modernization of Plants

High Pressure Hydraulic / Pneumatic Systems

MAXIMATOR
Maximum Pressure.



High Pressure Test Systems

MAXIMATOR
Maximum Pressure.



Pumps, Booster & Amplifier

MAXIMATOR
Maximum Pressure.



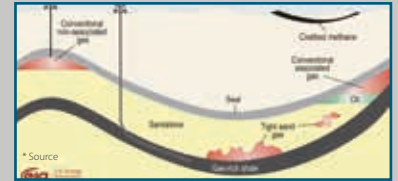
Valves, Fittings, Tubings

MAXIMATOR
Maximum Pressure.



High Pressure Units

Services



Exploration



Backfill | Underground Disposal | Rock salt mining



Rental, Rebuilds & Operation

MAXIMATOR
Maximum Pressure.



Testing & Production Service



Mortimer Glinz
CEO

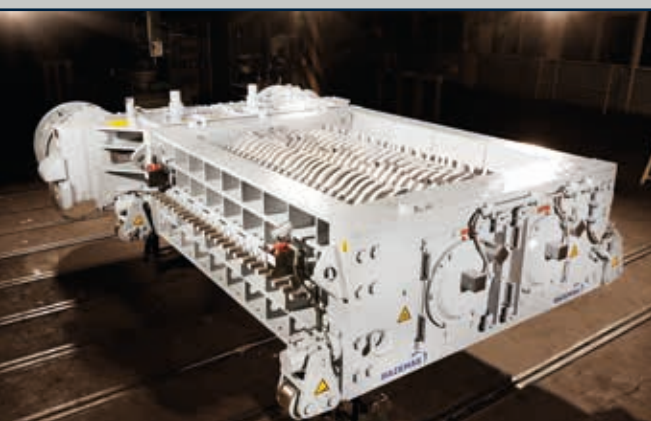


Hammerfall Dolomitt A/S

HAZEMAG
G R O U P



Lafarge



Center Sizer HCS

Hazemag Group with its headquarters in Dülmen, Germany, dates back to 1842, when Eisenhütte Prinz Rudolf ("EPR") was founded. From 1930 onwards EPR became a leading supplier in the business of coal handling and mining machines. Later on it merged with Hazemag, which was founded in 1946, producing the first impact crusher.

Following the acquisitions of IMS and allmineral, Hazemag & EPR was transformed into the Hazemag Group, being able to offer a wide range of comminution, classifying and sorting technologies. Today Hazemag not only integrates the product portfolio of its group companies but also offers complete plants and turnkey solutions.

No matter if it is soft-rock or hard-rock Hazemag can serve customers of all industries: from cement to kimberlite. Together with its local subsidiaries and partners Hazemag is building a complete service solution connecting customers in remote locations with industry experts from all over the world.

In 2014 Sinoma International Engineering Co. Ltd. bought 29,9% of the Hazemag Group. This strategic partnership enables Hazemag to extend their commercial capabilities beyond the limitations of medium sized companies. Furthermore Sinoma adds competitive products and solutions to Hazemag's offering making it even more complete.



Sizer HCS



Salzgitter



Hazemag Components

Hazemag Minerals offers solutions developed from the well-known Hazemag crushers famous for the quality and performance in soft and medium-hard crushing. Recent addition include hard rock crushers of Kawasaki® through the acquisition of IMS Engineering and the development of sizer for medium/hard-rock applications. The product portfolio includes:

- Impact-, Roll - and Hammer Crusher
- Gyratory, Cone and Jaw Crusher
- Feeder Breaker and Sizer
- Chain Conveyor, Apron Feeder, Roller Screens
- Rapid Dryers

Hazemag Mining is focusing on underground and open pit coal and medium-hard rock mining. It offers solutions consisting of the following brands:

- **Hausherr:** Dinting Loaders
- **Salzgitter:** Side-tipping Loaders and Multipurpose Drilling and Loading Machines
- **Turmag:** Deep Hole and Big Hole Drilling Machines
- **MinPro:** Mobile and Semi-Mobile Crushers for In-Pit-Crushing and Conveying Solutions



Primary Impact Crusher HPI



Roller Screen HRS



Dr. -Ing. Heribert Breuer
CEO allmineral



iron ore beneficiation | Sishen, South-Africa

allmineral

Hazemag Industrial Plants

Hazemag Group's acquisition of allmineral has brought expertise in the field of turnkey plants. allmineral is accepted worldwide as a specialist for density (wet and dry) and magnetic separation of gravel, sand, coal and all kinds of ore. The company is considered as an approved problem solver with regard to recycling and applied ecology with its products of alljigs®, allflux®, allairs® and gaustecs®.

Hazemag Group recently installed a complete beneficiation plant for one of the largest iron ore manufacturers in South Africa. In this plant a primary roller crusher, two secondary roller crushers and four tertiary cone crushers reduce the iron ore down to <30 mm. The plant was completed by the supply of a complete processing plant based on the allmineral technology, this creating the world's biggest iron-ore beneficiation plant with a total of 24 alljigs®.



iron ore beneficiation | Sishen, South-Africa



coal beneficiation | Spain



IMS office

Paul Bracher
CEO IMS

IMS South Africa

IMS Engineering, part of Hazemag Group, was founded in 1949 in South Africa and provides crushing solutions from concept to design, through to end of plant. Its key to success has been its focus on end product requirements and use of its process and engineering expertise for each application, including crushing, briquetting and compaction, separation and sorting, feeding, drying, recycling and tube - cleaning systems.

In addition to having access to the full range of Hazemag products, IMS has distribution agreements with many of the world's leading comminution and separation technology providers including Kawasaki (Primary and Secondary Gyratory Crushers, Cone Crushers, Jaw Crushers and specialised Horizontal Ball and Rod Mills), Koeppern (HPGR and Briquetting equipment), Tapprogge (Steam Tube Cleaning System), Steinert (Traditional Magnetic Separators, Sensor Sorting machines), and more recently allmineral (Jigging machines, Fluidized Bed Separators, Air Pulsed Jigging Machines and Magnetic Separators).

IMS has completed more than 600 installations in the mining and minerals processing, construction materials (aggregate, sand, clay, and limestone) and recycling (concrete, rubble and scrap metal) segments. The company has installations in Botswana, Zambia, Zimbabwe, Mozambique, a recently established branch in Cameroon and expansion plans for East, West and Central Africa.



Cone Crusher



Cone Crusher



Oliver Apelt
CEO GHH Fahrzeuge



GHH Dump Truck MK-A35, India

GHH FAHRZEUGE

Underground Mining and Tunneling Equipment



GHH Scaler at K+S Germany

GHH Fahrzeuge is headquartered in Gelsenkirchen, Germany. Since 1964 GHH LHDs and dump trucks have been utilized around the world in mining and drill & blast tunneling. GHH equipment is manufactured in Germany and is designed for maximum quality and durability resulting in minimum lifecycle cost.

GHH offers tailor-made „high- tech“ or „proven technology“ solutions including Full Service Packages in almost every region of the world. In addition to its dealer network, GHH subsidiaries are located in Australia, Chile, China, Germany, Poland, Russia and South Africa. The trade name GHH originates from the former company „Gute Hoffnungs Hütte“ (Good Hope Plant).



GHH LHD LF-17E



GHH Super Low Profile LHD SLP-12H

Product range

GHH's product range consists of tailor made solutions for your mining and tunneling applications: Hard or Soft Rock, High Tech or Proven Technology:

- Compact Load Haul and Dump Vehicles (LHDs) with payloads from 3 to 20 tonnes
- Super Low Profile LHDs with payloads of 4 to 14 tonnes
- Electric LHDs with cables up to 350 m and payloads up to 20 tonnes
- Dumpers with payloads up to 55 tonnes
- Drilling and Bolting Rigs (Mine Master)
- Special Vehicles such as Roof Scalers, telescopic Dump Trucks or Trolleys

Dumpers – You name it, they have done it!



GHH Dump Truck MK-A20 and LHD LF-11H at El Teniente, Chile



GHH Mixer at El Teniente, Chile



Raymond Tink
CEO GHH Mining Machines



GHH LF-10 & MK-A20



Underground Mining and Tunneling Equipment, South Africa

GHH Fahrzeuge began its history in South Africa in 1987. In 2004 GHH Mining Machines Ltd. was founded as a joint venture company between GHH Fahrzeuge and Mine Machines in Johannesburg to serve the hard rock and tunneling markets in sub-Saharan Africa.

GHH Mining Machines offers a full suite of underground equipment and solutions covering the complete mining cycle: from drilling through charging, blasting, loading, hauling, feeding, scaling, roof support and bolting to ventilation.

The company delivers tailor-made productivity-enhancing solutions, leveraging an understanding of local conditions as well as technology partnerships with leading international suppliers – e.g. GHH Fahrzeuge, Mine Master, UV Botswana, and Fletcher.

The customer centric application know-how is based on a track record spanning more than two decades in African mining.



GHH LHD LF-4.2 fleet in Zimbabwe



GHH LHD SLP-5



Drilling Rig – Face Master 1.7

Jerzy Nadolny
CEO Mine Master

Underground Mining and Tunneling Equipment, Poland

Mine Master, a well known Polish Mining Capital Equipment company, produces an extensive program for hard rock mining and tunneling.

In 2006 the ex Boart Longyear SP. z o.o. company was taken over through a management buyout supported by GHH and SK.

For the last 18 years Mine Master has engineered and manufactured its products of:

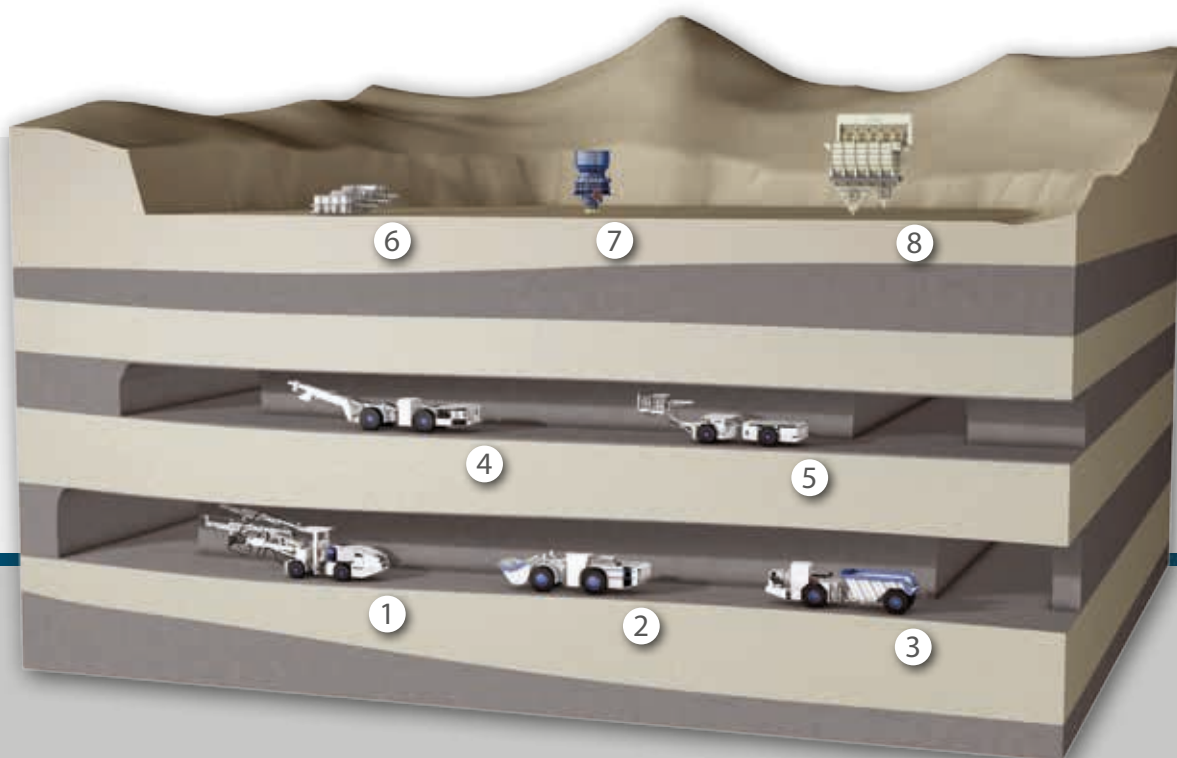
- Facedrills (one and two boom mechanized drill rigs for low and ultralow profile) for underground blast hole drilling
- Roofbolters (low and ultralow with automatic mast /diesel and electric) for underground roof support
- Drilling Attachments (drifter, hydraulic rock drilling models, tools for mining and civil engineering works) for drilling.



Bolting Rig – Roof Master



Drilling Rig – Face Master 2.3



Screening & Feeding



Hazemag Roller Screen

Crushing



IMS Cone Crusher

Separation



allmineral alljig®

Scaling



GHH Scaler

Rock Bolting



mineMaster Bolter

Drilling



mineMaster Drill

Loading



GHH LHD

Transportation



GHH Dump Truck



Drill Pipes

Wolfgang Schmidt
CEO PERFORATOR

Drill Pipes, Drilling Tools and Injection Pumps

PERFORATOR a German manufacturer of drilling products belongs to the traditional core business of the SK Group with its headquarter in Walkenried.

Drill Pipes, Tools and Auger Systems for challenging conditions

- Drill Pipes for Oil and Gas Field
- Drill Pipes & Tools for Mineral Exploration, Blast Hole and Geothermal Drilling
- Drill Pipes and Tools for Rotary and DTH Drilling
- HDD Drill Pipes and Accessories
- Pipe & Tool Joint Material, Friction Welding, Hardbanding
- Dry Drilling & Flushing Augers, Hollow Stern & Continuous Flight Augers

PERFORATOR Injection Technique

sealing against leakages of water inflow, stabilizing rock formation, filling hollow areas with resin or cement.

Hardware: Pumps for resin, cement and foam as well as accessories



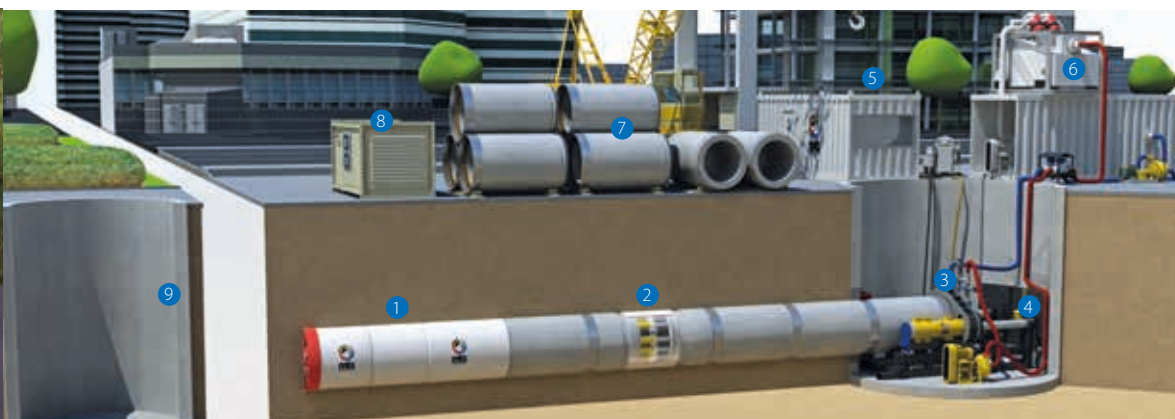
OCTG Drill Pipes



Injection Pump



Gilbert Kimpel and Nikolai von Loeper
General Management



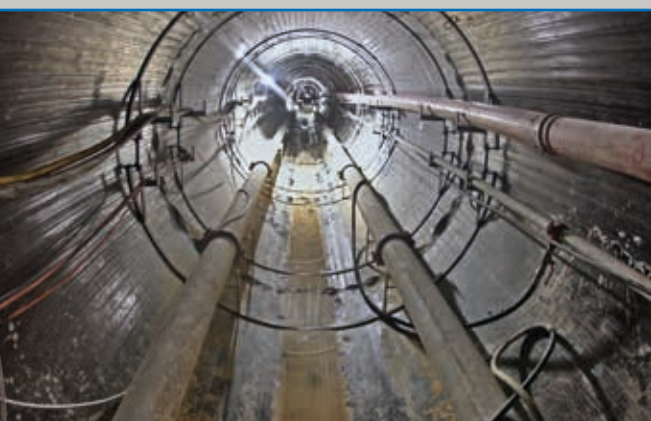
- 1 Cutter head
- 2 Intermediate jacking station
- 3 Jacking unit

- 4 Laser
- 5 Control container / Product pipes
- 6 Separation plant

- 7 Product pipes
- 8 Generator
- 9 Target shaft



mts1800S3 with Skin Up 1800/2000mm, Rzeszów, Poland



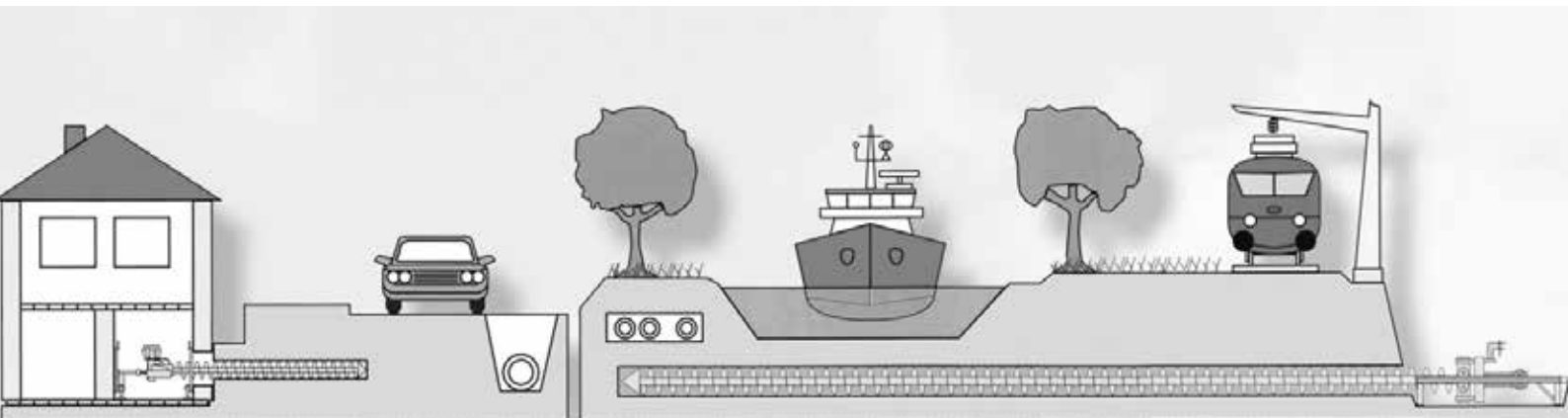
mts2000S3 in Moscow, Russia,
Tunnel with Supply Lines

At mts Perforator tradition meets latest technology. Situated in Northern Germany, in the heart of Europe, an experienced team of engineers and technicians designs, manufactures and maintains innovative tunnel boring machines for the trenchless installation of supply and disposal tunnels using the pipe jacking and/or segmental lining method.

We are following up on a more than 100 years old tradition of the Schmidt, Kranz Group which started to build mining and tunneling systems already in the 19th Century.

As there is no standardized ground you will not receive a standardized machine from us but rather one that perfectly suits your requirements.

mts Perforator GmbH designs, manufactures and distributes tunneling systems ranging from diameter 250 mm to 4000 mm and more. mts machines operate successfully in the summer heat of the Middle East and in the cold of the Russian winter. mtsSlurryTec® guarantees a safe operation in all ground conditions.



Thrust Boring Technique

Thrust Boring Technique

Designed for auger drilling with simultaneous pipe jacking to facilitate construction of underground Pipeline projects where cutting would result in a disruption of trac and services, and also in cases where damage to local environment must be minimized.

- Horizontal Thrust Boring Machines from 324 mm up to OD 1,6m
- Pipe Bursting Systems
- Pipe Steering Systems
- Hydraulic Power Pacs
- Bentonite Pumps



Thrust Boring Machine



Thrust Boring Machine



Henning Willig
CEO



High Pressure Pump

MAXIMATOR® **Maximum Pressure.**

In the 1960s MAXIMATOR started as a supplier to the Central German potash mining industry and has developed into a high-quality system supplier for high pressure technology, testing equipment, hydraulics and pneumatics.

Due to the performance capabilities and longevity of its products MAXIMATOR has been among the market leaders in high-pressure equipment for more than 30 years based on a verified and certified quality management system (DIN EN ISO 9001).

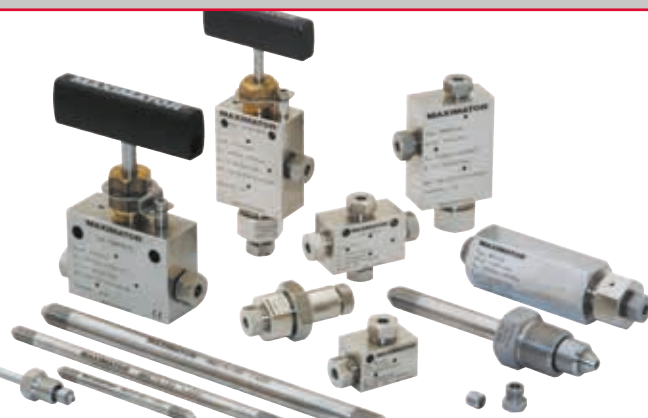
At its headquarters in Nordhausen MAXIMATOR GmbH develops, designs and manufactures high-pressure equipment such as air driven fluid pumps, air amplifiers, gas boosters, valves, fittings and tubings that are employed in process engineering applications. More than 340 qualified and reliable company members are ensuring top achievements in the fields of HP, testing, hydraulic and pneumatic equipment.

Maximator Components

- High Pressure Pumps up to 7.000 bar
- Gas Boosters up to 2.400 bar
- Air Amplifiers up to 100 bar
- Valves, Fittings and Tubings up to 10.500 bar



High Pressure Pumps



Valves, Fittings, Tubings



Test System for Subsea Control Modules (SCM)

MAXIMATOR Units

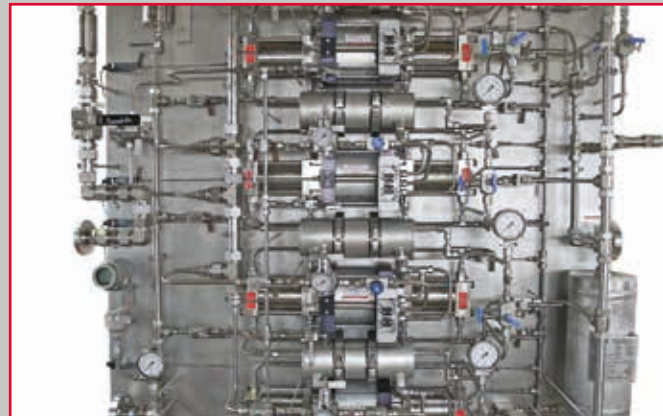
MAXIMATOR supports with general engineering the following applications:

- Compact hydraulic units for clamping and testing appl.
- Gas booster stations for gas filling and testing applications
- Hydraulic units and gas booster stations in stainless steel design
- Units for On and Offshore applications (e.g. Wellhead Control Panels, test and supply systems for Sub Sea Control Modules)
- Support Systems for mechanical seals
- Gas and Water Assisted Molding Technology
- High Pressure Compressors for breathing air

MAXIMATOR Systems

MAXIMATOR successfully develops complex systems in high pressure and testing technology as market leaders. With their top services, they are a partner to well-known companies in the automobile and supplying industry, as well as the chemicals, plastic, oil and gas industry

- Autofrettage Machines (up to 20.000 bar)
- Pressure fatigue testing systems (6.000 bar)
- Leak testing and burst pressure systems
- Assembly and functional test systems, Expansion units
- High pressure generation units for hydroforming appl.
- Testing technology for high pressure carrying components in Hydrogen mobility Hydraulic expansion



Seal Gas Booster System



Hydraulic Expansion of Camshafts



Knut Störmer
CEO



Steel Converter



Automation and Drive Technology

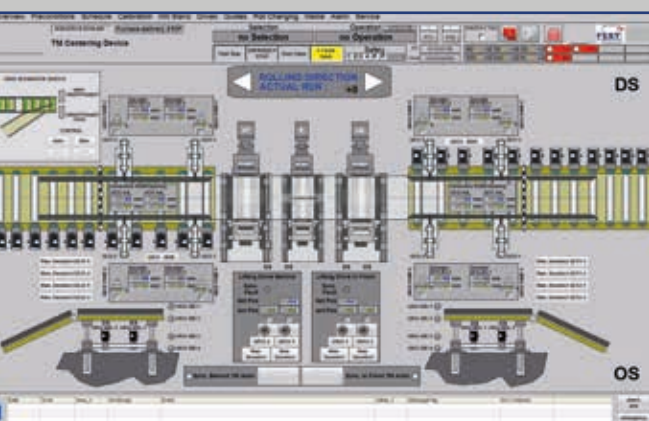
Fest AG, based in Goslar, Germany, has been developing software for the control and automation of large scale plants for more than 40 years. Today Fest AG with its 210 employees has established subsidiaries in

- **Germany** | Berlin, Hamm, Reddeber, Marienheide
- **Austria** | Vienna
- **China** | Beijing
- **Russia** | Liepezk

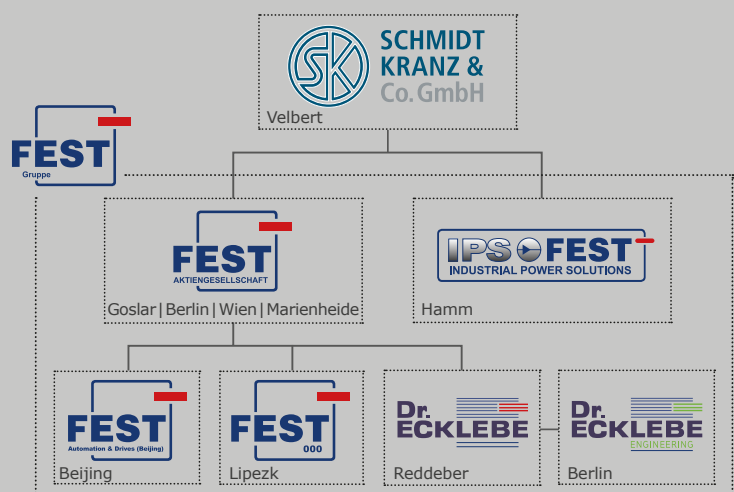
to provide worldwide individual and holistic solutions for all categories of automation and drive technology in iron & steel, chemical and food industries as well as in the fields of building and synthetic materials.

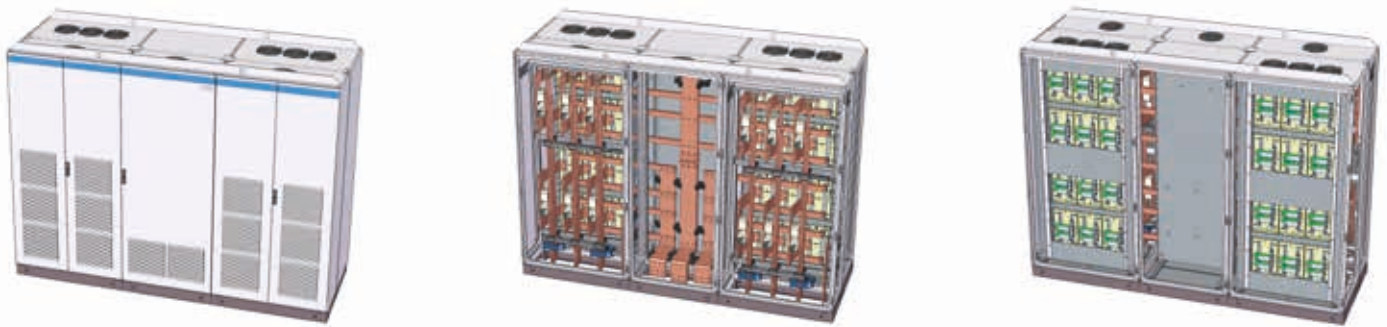


Control and monitoring desk



Plant Visualization in HMI





DC Converter

Fest AG – The complete supplier for automation and drive technology

Electronic plant engineering for large-scale machines and interlinked manufacturing plants – we have the know-how for:

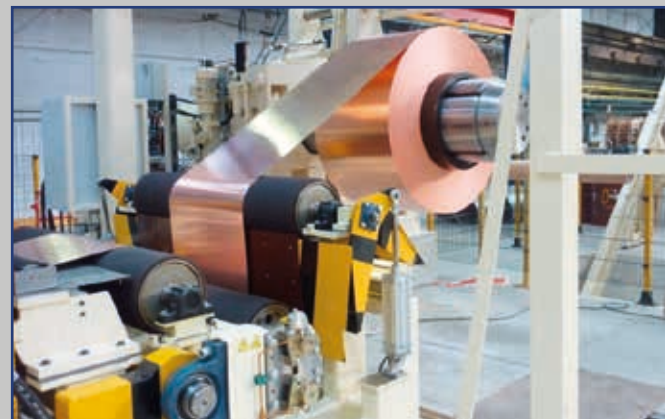
Construction of new plants and modernisation of old plants

- replacement of drive systems and control units

Improvement of complete manufacturing processes

- increase of production output
- improvement of plant safety
- solution of control technical problems

The Fest AG is your partner for projects in any size even as general contractor for the whole job.



Coiler section of non-ferrous strip processing line



Drive train of hydroelectric power plant



Maximin von Schubert
CEO PVG



Resources Services & Management

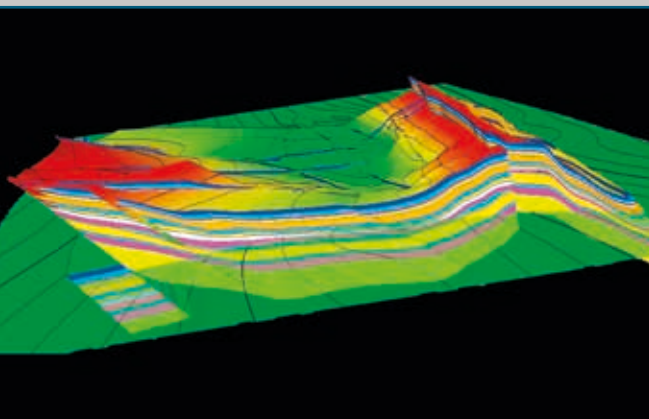
The PVG develops and offers patented methods for the detailed evaluation of hydrocarbon (*CBM/CMM/Tight Gas*) deposits and the optimization of well planning and production, resulting in more efficient project planning. The exclusive core competence – the Tectomechanical Methods – enables us to construct detailed rock geometry and to detect natural underground migration paths in mainly CBM, CMM and tight gas deposits.

The two main pillars of the company are services and initiation, accompaniment of own projects.

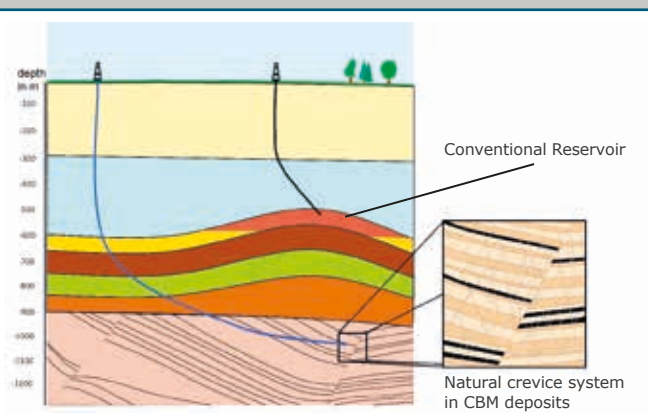
Our experience and expertise are based on patented analysis methods developed in Germany's hard coal mining industry, the Tectomechanical Methods, and modern structural geology. By connecting these specialized types of knowledge, it is possible to map detailed deposit models and so forecast the geotechnical characteristics of their rocks.

Services

- Detailed analysis of deposits and fracture network properties
- Volumetric analysis of reservoirs
- Interpretation of migration paths
- Well optimization



Structural model of a folded CBM deposit with a high fault density



Generalized example of different hydrocarbon reservoirs



Projects

HammGas | prospecting, extracting and utilizing hydrocarbons (*coal bed methane and coal mine methane*). The Hamm-Gas License holds a total of about 100 billion m³ of methane of which roughly 10% can be extracted. The production of the License will be conducted in an environmentally friendly, sustainable and transparent manner without fracking and under the ongoing information of all citizens.

WeselGas | The PVG and Thyssen Vermögensverwaltung GmbH (TVV) investigate hydrocarbon deposits and possible natural gas extraction in the authorized 321 km³ large WeselGas area of the Lower Rhine region.

LauenhagenGas | The License LauenhagenGas is PVGs first CBM License in Lower Saxony. Exploration will commence in 2015 with the detailed deposit analysis and later on the optimization of well sites.

Energiespeicher Niederrhein | Another PVG and TVV corporation for the development and possible use of salt deposit for building underground chambers or caverns for the storage of energy (*compressed air*).

For more information see our website: www.pvg-ep.de



HammGas | Released and requested permission block instruments



WeselGas | awarded permission boundaries



• **mts Perforator GmbH**

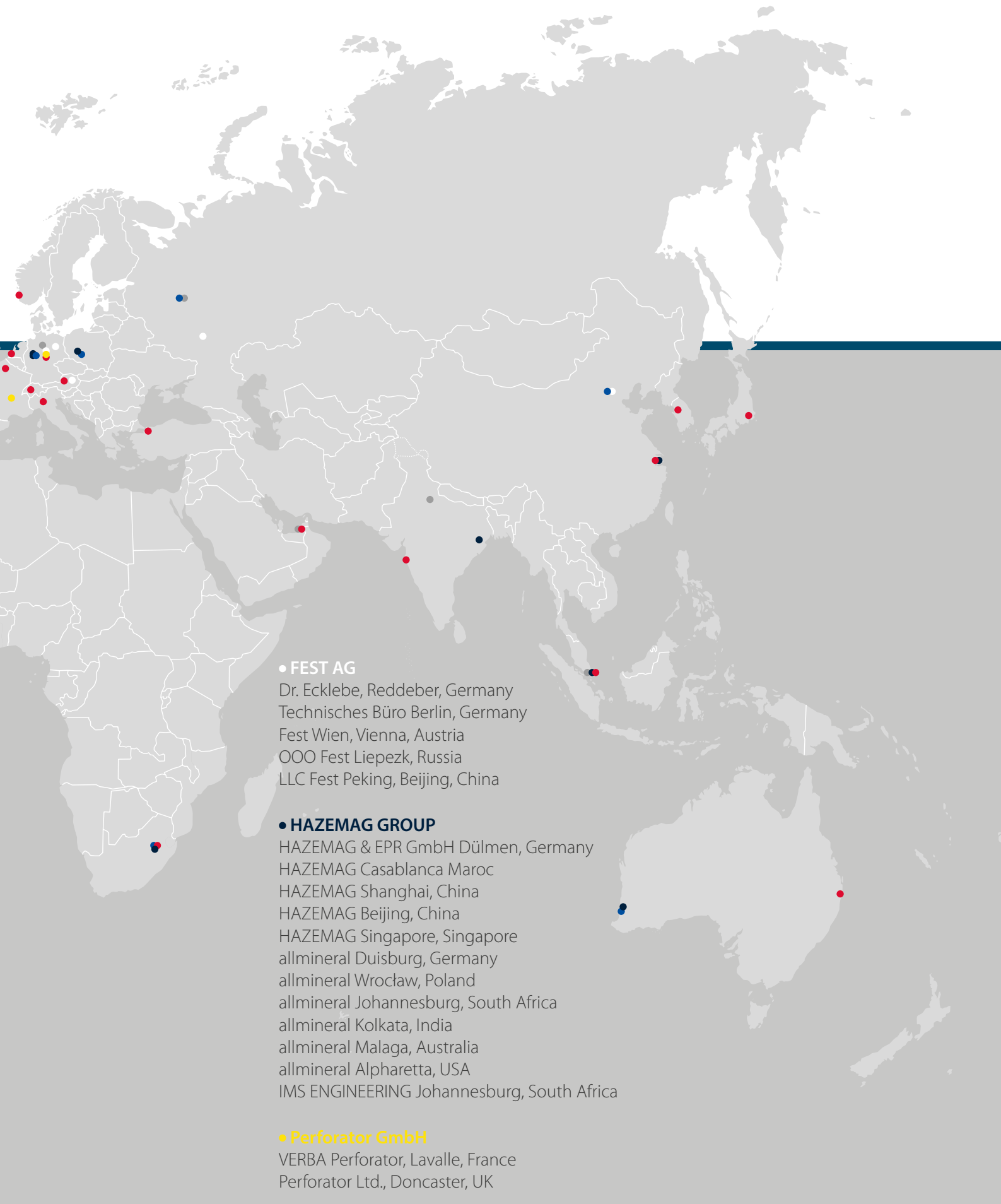
mts do Brasil, Sao Paulo, Brazil
mts Middle East, Abu Dhabi, UAE
mts Russia, Moscow, Russia
mts India, New Delhi, India
mts Asia, Singapore

• **MAXIMATOR GmbH**

Maximator Australia Pty Ltd, Acacia Ridge, Australia
Maximator GmbH Abu Dhabi Branch, UAE
MAXIMATOR INDIA Private Limited, Mumbai, India
MAXIMATOR Far East Pte Ltd, Singapore
MAXIMATOR (Shanghai) Fluid Engineering Co Ltd, Shanghai, China
MAXIMATOR Yüksek Basınc Sistemleri, Bursa, Turkey
MAXIFLOW PRESSURE TECHN.(PTY) LTD, Johannesburg, South Africa
MAXIMATOR Hochdrucktechnik Ges.mb.H, Marchtrenk, Austria
MAXIMATOR Benelux BV, PJ Wateringen, Netherlands
MAXIMATOR AS, Randaberg, Norway
MAXITECH, Rantigny, France
Maxiflo Technologies Ltd, South Shields, UK
MAXIMATOR ITALY SRL, Villa d'Adda (BG), Italy
MAXIMATOR Schweiz AG, Düringen, Switzerland
MAXIMATOR South America, Indaiatuba/SP, Brazil
MAXPRO Technologies Inc., Fairview, USA
MAXPRO South, Houston, Texas USA
MAXIMATOR Test LLC, Gurnee, IL, USA
MAXIMATOR Iberia, Barcelona, Spain
MAXIMATOR Korea Corporation, Seongnam, South Korea
MAXIMATOR Fluid Technologies Limited, Tokyo, Japan

• **GHH Fahrzeuge GmbH**

GHH Mining Machines SA Ltd., Johannesburg, South Africa
GHH Machinery & Co., Ltd. Beijing, China
OOO GHH Fahrzeuge, Moscow, Russia
Mine Master Sp. z o.o, Wilkow, Poland
GHH Chile SpA, Santiago de Chile, Chile
GHH Australia Pty Ltd., Ellenbrook, Australia





**SCHMIDT
KRANZ &
Co. GmbH**



MAXIMATOR®
Maximum Pressure.

