## Scraper Valves Wellheads

Fittings Oil Well Christmas Trees

Wellhead Flange Technology Ball Valves

Twin Ball Valves

Onshore and Offshore FPSO Crude Oil and Natural Gas Cavern Storage Facilities

CO<sub>2</sub>-Injection Chemical Industry Extreme Temperatures

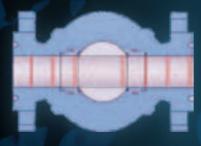
#### Deep Geothermal Energy

Food Industry Mining Industry Petro-Chemical Industry Power Plant Technology

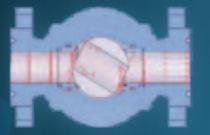


# Stay Tough The "Zero Bubbles" Ball Valve – Maintenance-free, highest

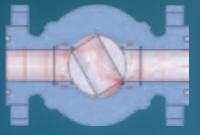
For many applications the ball valve is superior to the gate valve. But the ball valve can only achieve the necessary tight seal when fitted with a true "metal to metal" seal.



open



partly open

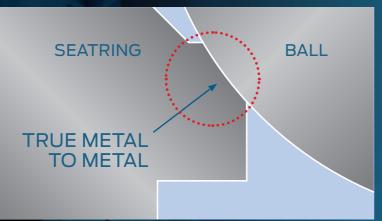


just before closing

#### The Matter with Soft Sealing Valves

Solid particles in the fluid as well as thermal effects can lead to damage of the of the exposed soft seals.

Result: The ball surface becomes marked or grooved and the valve is consequently no longer fully tight. A repair is necessary thus reducing the operational reliability.



# The "Hartmann" solution

Our true metal to metal sealing system ensures a ZERO BUBBLE SEAL which is both reliable and maintenance-free.

#### **Operating Safety and Long Service Life**

### The Hard Facts:

reliable sealing even with high levels of solid particles

### low operating costs

bubble-tight, double-sided sealing under all pressure conditions

for use up to a working pressure of API 10,000 PSI (700 bar)

#### high-resistant materials for aggressive fluids

suitable for temperatures ranging from -110°C to +550°C

#### suitable for extreme temperature differences

ANSI 150 to ANSI 2500

#### fire resistance

automatic ball valves SAV / POV / MOV also available as quick-closing valves or ESD suitable for both sweet and sour gases

split body design

diameter from 1/2 inch to 40 inches

#### maintenance-free

forged steel throughout

successfully tested endurance for more than 100,000 operational cycles

#### extremely long service life

choice of materials for each component dependent on the particular use

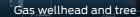
## highest operational reliability

# Hard Work Our Solutions for



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Offshore Equipment



Quick-closing valves for H₂S-operations

## the Oil and Gas Industry

The robust design of all Hartmann products ensures resisting the most challenging aggressive and heavily contaminated fluids and conditions. Our equipment is reliable under all environments.

Our wellheads, valves, fittings and ball valves have been developed to meet the exacting standard necessary for exploration, production and storage in the oil and gas industry. Furthermore, we deliver oil field accessories such as wellhead equipment and rotary devices for riser pipes and polished rods.

Hartmann delivers custom-made products, special designs as well as complex system solutions.

# Exacting design and development: Components for the chemical and petro-chemical industries

In order to guarantee reliability plant components must meet the very highest requirements for the chemical processes associated with the refining of oil and gas.

Based on an appropriate choice and combination of material, special coating and surface treatment, Hartmann ball valves have proven fully capable under extreme operating conditions in contact with aggressive media, high temperatures and demanding switching frequencies (high cycle).



# Tough Stuff

## Wellheads for Deep Geothermal Applications

Hartmann geothermal products have been in operation for more than 25 years. Hartman geothermal wellheads are suitable for temperatures up to +550 °C and withstand aggressive media and extreme temperature variations. Consequently the highest operational reliability is guaranteed.

Our wellheads are manufactured out of forged steel throughout and comprise a purely metal sealing system. We are the experts for geothermal wellheads and production trees.

#### Pioneers in Geothermal Energy



In the 1980s Hartmann was a partner in a joint project with the European Union, Germany, the German state of Baden-Württemberg and the Bruchsal Energy and Water Authority.

Our equipment is operated maintenance-free for 25 years and thus ensured an extremely high production reliability.



Geothermal Project Kirchwaidach



Geothermal Wellhead 5,000 PSI



Federal Ministry of Education and Research

We are member of the Geothermal Wellhead Development Project

#### GeoEnergy Celle e.V.

Kompetenz in Erdől, Erdgas, Erdwärme

Hartmann Valves is a founding member of GeoEnergy Celle e.V.

# Hard Shell, Soft Core Durable Equipment for Cavern Wellheads

Our wellhead equipment and valves with their gas-tight components and long service life are ideally suited for surface installations of underground gas storage facilities.

Therefore, Hartmann Valves has become one of the most important suppliers to gas storage projects: Wellhead flanges and wellhead equipment meet API 6 A requirements for gas and oil cavern storage, porous reservoirs, aquifers, compressed air and CO<sub>2</sub> storage.

Our systems are internationally installed for solution mining, debrining and gas storage operation of salt caverns.



Wing valve: true metal to metal: 9" x 9" x 9" 5,000 PSI

Master valve: true metal to metal: Ball Valve 11" x 10" x 11" 5,000 PSI

Tension-System: 20 <sup>3</sup>/<sub>4</sub> x 13 <sup>5</sup>/<sub>8</sub> 5,000 PSI for casing 9 <sup>5</sup>/<sub>8</sub> with a maximum load-bearing up to 350 tons

#### Close to the limit: Our mining equipment

Hartmann offers customised solutions for the high demands associated with construction, material choice and function in the mining industry.

For instance, in the pressurised coal gasification and diamond mining industry true metal to metal sealing ball valves in various materials with a range of surface treatments are employed.

# Hartmann Valves & Wellheads A family-owned Company since 1946







Work-based seminars in modern training facilities: Enhancing detailed knowledge of the Hartmann technical innovations and of the optimal use of the Hartmann products



Co-operation partners: Leibniz University, Hannover; Freiburg University; Clausthal University

Founding member of GeoEnergy Celle e.V.





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**Burgdorf-Ehlershausen Facilities** 



**Celle Facilities**