

REFERENCE GAS STORAGE WELLHEAD EQUIPMENT FOR HIGH DEMANDS

Durable wellheads with pure metallic sealing ball valves provide a high level of flexibility and availability in the Jemgum gas cavern storage



With the new build of the storage plant in the Lower Saxony town of Jemgum, EWE Gasspeicher GmbH commissioned Hartmann Valves GmbH to supply all brine and gas wellheads, diverse special ball valves and the associated assembly and maintenance service. The „Hartmann concept“, i.e. the use of pure metallic sealing ball valves as wellhead shut-off valves which are absolutely gas-tight even in large nominal bores, had already proven itself in the equipping of other storage plants as highly durable and virtually maintenance-free.



“In order to secure maximum availability and technical flexibility in the Jemgum natural gas storage, we count on high-performance engineering and trustful cooperation with our suppliers. Hartmann Valves impressed us in the project with their reliability, adherence to deadlines and engineering quality.”



Paul Grönefeld
Technical Managing
Director,
EWE GASSPEICHER
GmbH

Technical data

Plant	The EWE GASSPEICHER GmbH cavern gas storage, Jemgum (Germany)
Working gas capacity	approx. 350 million m ³ *
Max. injection rate	200.000 m ³ /h*
Max. withdrawal rate	250.000 m ³ /h*
Connection	3 market areas, 4 long-distance network operators
Project	
Engineering partners	Underground: KBB Underground Technologies GmbH Above-ground: PSE Engineering GmbH
Timetable	Commencement of leaching phase: 2010; Commencement of gas first fill: 2013; Operational readiness: 2013 (caverns 1-4) and 2015 (caverns 5-8)
Hartmann products	
Brine plant	All brine wellheads and equipment on the cavern pads Ball valves DN 200 and DN 600
Brine pipeline line	Ball valves DN 500 and DN 900
Gas plant	All gas wellheads Shut-off valves with throttling function DN 200, 250, 300, 400

*under standard conditions

HIGH TECHNICAL DEMANDS

Due to the special geological situation the Jemgum natural gas storage consists of two cavern pools with different cavern sizes. In injection and withdrawal operation an appropriately high level of flexibility and maximum availability must be secured. In selecting the components, therefore, emphasis was placed on reliable engineering and proven suppliers from the start. This strategy paid off: the first construction phase was implemented during 2013/15 with a total of 8 caverns with no deadline delay and within the planned budget.

SWIFT PROJECT EXECUTION DUE TO STANDARDS

The successful collaboration on the Huntorf, Rüdersdorf, Heckelberg and Nüttermoor gas storage projects in Germany qualified Hartmann with EWE as a system supplier for wellheads and ball valves. A fixed standard was devised in advance in close cooperation with the EWE technical underground group and the respective engineering partners. This not only had the advantage that the Jemgum project could be implemented very swiftly but moreover that the solid design and the multiple use of identical components saved on the provision of replacement parts.

MAINTENANCE-FREE CONCEPT: WELLHEAD WITH GAS-TIGHT BALL VALVES

The fitting of the Hartmann wellheads with gas-tight ball valves and their pure metallic sealing system has proved itself on the market to be a very successful concept. The system is characterised by its low maintenance and long service life and, in particular for gas at large nominal bores and high pressure ratings, exhibits numerous advantages over the deployment of gate valves. The installation in Jemgum was carried out by Hartmann Service who also provided support with comprehensive technical guidance and documentation in addition to training by request. The experienced team is available around the clock for maintenance work or urgent requirements.

BALL VALVES WITH THROTTLING FUNCTION FOR CONTROLLED PRESSURISATION

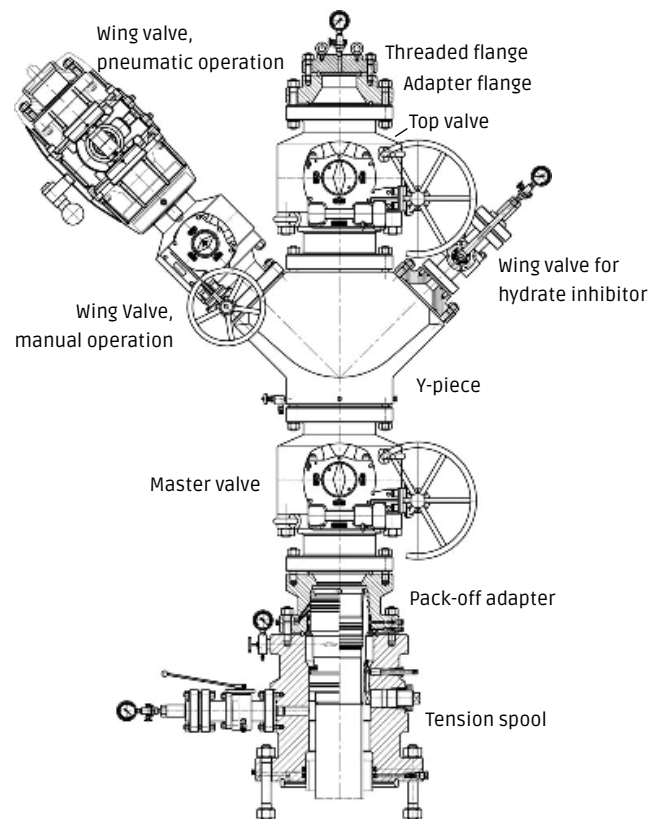
The ball valves in the Jemgum gas plant have an innovative throttling function for controlled pressurisation of pipe sections which Hartmann had already developed jointly with EWE for the Huntorf II storage plant. This enables the main gas line to be opened at full differential pressure. During throttling operation the ball valve is used for controlled pressurisation afterwards the full pipeline cross section is available. Due to this optimised mode of operation which saves on elaborate bypass lines, considerable cost advantages in the EI&C engineering could also be realised.

CORROSION RESISTANT

Deployment in the Jemgum-Rysum brine plant and pipeline places particularly high demands on the valves due to the corrosive stress caused by the saturated salt solution. In order to guarantee a maximum service in this case, the Hartmann special valves, besides the pure metallic sealing system, has an additional internal plastic coating.

REFERENCES

As a manufacturer of special ball valves, Hartmann Valves has been active in the oil and gas sector since its foundation in 1946. The product range was expanded at the end of the 1990's to include wellheads. The impressive quality in successful projects has enabled Hartmann Valves to establish itself not only with EWE as a system supplier of wellhead equipment – the market share throughout Germany is estimated at 90%. In Europe also, numerous storage plants have been furnished with Hartmann equipment, including Denmark, Portugal, England, the Netherlands, the Czech Republic, and Slovakia. This success is currently continuing with projects in Turkey and China.



Hartmann wellhead for gas storage operation