

PRESS RELEASE

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Large-diameter pipe mill

starts production at Zhongyou BSS Petropipe

SMS Meer's fourth L-SAW pipe mill in China successfully commissioned

A large-diameter pipe mill, supplied by SMS Meer, Germany, has been successfully commissioned at Zhongyou BSS Petropipe Co. Ltd. in Qinhuangdao about 300 km east of Beijing, China. The company is a JV between the Malaysian UMW group and Baoji Petroleum Steel Pipe Co. Ltd., a subsidiary of CNPC, China's largest oil and gas producer and supplier.

The new JCO[®] mill has an annual capacity of up to 150,000 t and is the most modern of its kind in China. It will be used to produce longitudinal submerged arc welded (L-SAW) steel pipes with diameters from 508 up to 1,422 mm and wall thicknesses up to 40 mm in lengths of max. 12.2 m and material grades up to X100.

SMS Meer supplied and installed the key machines for the plant including a plate edge milling machine, the technological components of the crimping press, a JCO[®] pipe forming press, a hydraulically adjustable tack welding machine and a mechanical expander.

The JCO[®] pipe forming press is designed as a short-stroke version and operates with a maximum press force of 65 MN. The plate with milled and subsequently crimped edges is stepwise formed over its whole length by a patented forming tool. This results in an open-seam pipe with parallel longitudinal edges offering optimum preconditions for pipe welding.

In the roller cage of the tack welding machine the gap between the two longitudinal edges of the open-seam pipe is continuously adjusted parallel and tack welded under inert gas. This tack weld serves during the subsequent submerged arc welding process as a weld pool backing. To ensure that the plate longitudinal edges are brought optimally together the roller beams of the roller cage are individually adjustable servo-hydraulically even under load, if necessary. This hydraulic machine concept is being delivered for the first time to China.

The main tasks of the mechanical expander are sizing and straightening of the pipes. Through gradual cold forming with an expanding head the pipes are straightened over their whole length and given an accurate roundness with an exact inside diameter. This simplifies the later laying of the pipes in the field as the cross-sections fit perfectly together, even when cut in the field as the pipes are sized uniformly over their full length. During the deformation of the pipe the yield strength of the material is exceeded by plastic deformation between 1 and 1.5 %. Thus the mechanical properties are improved by strain-hardening and compensation of residual stresses created during the forming process.

Crucial aspects for the placement of the order in 2007 were the advantages offered by the JCO[®] pipe forming press as main forming aggregate. The JCO[®] process developed by SMS Meer has established itself on the market worldwide in competition with the UO process and three-roll bending process due to its higher flexibility with the highest product quality and lower investment costs. It has been employed in many pipe mills in recent years and is the most suitable process for also being able to produce small pipe diameters with high wall thicknesses. Therefore, the market segment for offshore pipelines can also be served.

Following erection and commissioning of the key machines, the acceptance tests were carried out smoothly and on schedule. All guaranteed contract values could be achieved, thus Zhongyou BSS Petropipe Co. Ltd. successfully started pipe production beginning of June 2009.

The commissioned equipment is suitable to produce pipes that meet all the relevant international standards such as API, ISO, DNV. The pipes will be applied i. a. in pipelines transporting oil and gas from Chinese rigs in the northeast of the country to the major cities in the east and southeast.

(65 lines with max. 55 letters)

SMS Meer GmbH is a company of the SMS group, which is, under the roof of the holding SMS GmbH, a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry. It consists of the two Business Areas SMS Siemag and SMS Meer. In 2008, some 8,900 employees worldwide generated a turnover of more than EUR 3.6 bn.