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## Pipe production on the highest level for Japanese pipemaker



High quality pipes in twin production

If it comes to quality, pipe makers in Japan do not accept compromise. According to this demand to produce vertical drycast concrete pipes in the today best possible quality and appearance was only one of the numerous requests which the pipe-machinery manufacturer Schlüsselbauer, Gaspoltshofen, Austria, got from a precast concrete element maker located near the town of Osaka on the Japanese main island Honshu. A few weeks ago the plant went into regular production. The result is more than satisfactory, the customer is already thinking about enlarging the production program on this versatile plant.

The delivered Precise 2500 was tailor made to the typical requirements of the Japanese market in general and especially to the specific needs of this customer. It is a further improved version of the already well known Schlüsselbauer model Precise 2500. Two characteristics predestinate this plant for the Japanese market - its versatility which could be maintained in connection with the high level of automation and the high product quality which this production machine delivers with its industrial Exact-production process.

It can produce the well known reinforced- and non-reinforced circular pipes with flat base and manhole components as well as other, in its geometry by far more complex precast concrete elements.

Just to mention a few examples: pipes with flat top and flat base, they are distributed in Japan under the brand name power pipe, pipes with square and additionally notched external- and circular internal shape, they are well known in Japan as Road side channels and are produced with or without openings (water inlet), square or rectangular manhole components, joint elements as well as monolithic manhole bases and other road drainage components.

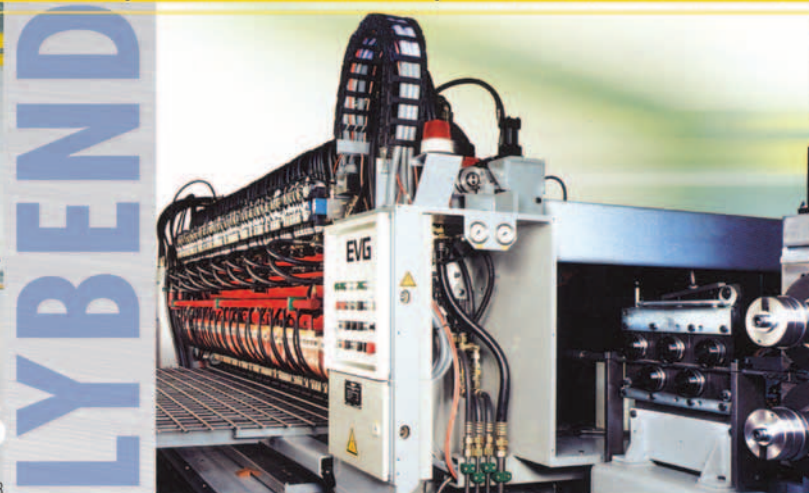
Highly Flexible Equipment for Rebar Processing and Reinforcing Pre-cast Elements



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Concrete Rebar Straightening, Cutting and Bending Equipment - Reinforcing Mesh Welding Machines - Fine and Light Mesh Welding Machines - Industrial Mesh Welding Machines - Special Welding Machines



The expectations of the Japanese customers regarding product appearance (surface quality and dimensional tolerances) and product quality in general are compared to our European standard extraordinary high. Still today the majority of these above mentioned products are wet-cast in Japan. A low output and high costs per piece are the consequence.

Schlüsselbauer has answered to these high requirements with the development of the Solid Compaction Technology (SCT) as well as the 'Exact production method, which allows now also Japanese manufacturers to take advantage of the high cost efficiency of the vertical dry-casting process. These technologies enable now both: to obtain a - even for Japanese standards - acceptable surface quality on the entire product and excellent dimensional tolerances and surfaces in the bell and on the spigot. If these two essential criteria can not be met it is for Japanese concrete element makers practically impossible to market a drycast product successfully.

On the Precise 2500 products with a maximum outer diameter of 1500 mm (60") can be produced in single production. The maximum products outer diameter for twin production is 670 mm (26"), for triple production it is 440 mm (17"). The maximum effective product height is 2500 mm (96").

The here introduced plant produces for the time being reinforced circular pipes

with flat base with different nominal diameters. The production process is fully automated, both - the pallets and the headers - are fed from magazines automatically into the production machine. The headers remain - as it is typical for the Exact process - during the entire curing period on the product. By doing so the best possible surface quality on the spigot end can be guaranteed for each single pipe just like the closest roundness tolerances in the joints.

The in-factory transportation of the fresh, green as well as the cured products is done by means of an electrical pipe transporter. It is the linking element between production plant and de palletizing system.

The pipes which are cured get automatically de palletized the next morning. This means that the header and the pallet are removed, and a gripper rotates then the pipes from vertical in horizontal position. Subsequently they get automatically marked and transferred on a conveyor outside of the production building.

In the meanwhile the headers and pallets get cleaned and subsequently oiled and



*A freshly demoulded flat base pipe DN 600x2500mm*

stacked on transport pallets. This means that they are only minutes after having been removed from the cured products again available for production.

The described level of automation allows to operate this plant with only two people. Another workplace exists at the cage welding machine where the reinforcement cages for the pipes are fabricated. The

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Automatic pipe manipulation

complete new installed batching plant is also controlled by the operator being responsible for the production machine. Herewith he is given the possibility to influence directly the mix design which is essential for optimum production results. To date Schlüsselbauer has already installed different versions of Precise plants. They range from simple stand-alone concepts – a production machine only without automated depalletising – where the products are transported with a manually driven electrical pipe transporter to complete fully automated production



Organized mould storage

plants. In these cases not only the production process itself is automated but also the entire product handling. The fresh, green products and the cured ones are also handled automatically by the already well known and proven 'Transexact' robot crane. Besides the product handling this robot crane takes also care of the pallet and header management.

The concept of standard function modules developed by Schlüsselbauer makes it

possible for the owner of the plant to extend and automate the plant step by step. The Austrian company is not only - as it is common in this industry - the manufacturer of production machines. Schlüsselbauer also develops, builds and sells all handling-specific function modules by themselves. According to Schlüsselbauer this unique concept gives optimal security to the investor. ■



Product outfeed conveyor belt

Further information:

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