

Techno Split S.r.l., 38050 Ospedaletto (Trento), Italy

New splitting line starts operation in Switzerland

In mid-March 2016, the Swiss Müller-Steinag Group commissioned the latest generation Techno Split automatic manufacturing line for the production of split concrete blocks at its Rickenbach factory in the Luzern region. Techno Split, a company with an increasingly strong presence in the markets of Northern Europe and especially in German-speaking countries, delivered a splitting machine with a Comau robot to the Müller-Steinag Group.

The Müller-Steinag Group is a privately owned and independent enterprise with over 750 employees at twelve locations and one of the leading manufacturers of concrete products in Switzerland and is well-known for the high quality of its products. Additional areas of operation include prefabricated concrete products, natural building materials, recycling, waste management and water engineering and technologies.

With the new Techno Split splitting line, the Rickenbach location is placing its emphasis on increasing and optimising production of

goods for horticulture and landscaping, such as split concrete blocks for walls, stairs, steps and palisades.

Description of system operation

The robot takes one concrete block at a time from the pallet and deposits it on the chain conveyor belt of the splitting line. Several concrete blocks can be placed side by side, which are then jointly split. The robot has a Techno Split pneumatic gripper with symmetrical locking mechanism. Once the concrete blocks have been positioned on the conveyor belt, they are pushed

under the splitting machine blades. The concrete blocks are then split and transferred to the outfeed conveyor. Production waste is removed via a conveyor belt.

Empty pallets are picked up by the robot gripper and placed next to the production line. Up to 10 pallets are stacked at each storage point. These stacks are then removed using a manually operated pallet stacking truck.

The safety of the system is ensured by a barrier and controlled access gates.



Techno Split splitting line equipped with a Comau robot



Techno Split pneumatic gripper



Products to be split loaded onto the infeed table



Splitting process

Components of the production line

Comau robot with pneumatic gripper from Techno Split

The gripper, developed, designed and built entirely by Techno Split for handling concrete products, has a load capacity of 200 kg and a symmetrical locking system for the clamping jaws with an M3 dual rack. The jaw width has a minimum - maximum range of 700 - 1,300 mm and the clamping height range is 50 - 250 mm.

Comau robot Model Smart5 NJ 290-3.0

- High performance with low energy consumption
- Modular system for controllers, I/O and fieldbus devices
- Compact dimensions
- No external transformers
- Longer MTBF
- Shorter MTRR thanks to the modular system
- reduced noise level

Chain conveyor with pusher (1,775 x 1,400 mm)

Once the concrete blocks to be split have been placed on the worktable, they are pushed quickly and accurately under the splitting machine blade by means of the SEW servomotor-driven chain conveyor with pusher. Positions and speed can be programmed via the touchscreen control panel. The maximum feed speed is 400mm/s.

TS 136 / 40-120T splitting machine

With a blade length of 1,360 mm and a maximum splitting height of 400 mm, the splitting force is 120 tons. The high quality of the Techno Split system is characterized by the following features:

- System robustness of the system and high durability of all components
- Clever design for better guidance of splitting blade
- When splitting from bottom to top, high quality of split is achieved
- Splitting blade adjusts by up to 2° to surface irregularities of the concrete block
- Both blades have a positioning system capable of the two blades into a rigid position
- Splitting height can be changed quickly

Roller conveyor (4,500x1,300mm)

To remove the splitting waste, the entire roller conveyor moves forward and the splitting waste drops down onto the dedicated conveyor belt underneath the splitting machine. Then the roller conveyor moves back and the split products can be transported from the splitting machine. ■

FURTHER INFORMATION



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