**Q-ROBOT ZINC**

**Solutions for hot-dip galvanizing lines**

**BENEFITS**
- Significant zinc savings, due to the optimized and repetitive zinc cross skimming operation
- Reduction of operators’ injuries resulting from repetitive operations
- Continuous, repetitive and flexible efficient zinc cross removal
- Automatic adaption to the bath level
- Best line operators’ focusing on galvanizing process, because the cross skimming operation is fully automatic, and linked to the line speed variations
- Compact dimensions
- Low maintenance
- ROI < 1 year

**PROCESS**

The Q-Robot ZINC represents a set of robotized solutions that covers the entry and the process sections. These solutions are employed for coil destrapping, cross skimming and ingot loading.

**Process Section:**
The working principle of Q-Robot ZINC SKIM is based on an industrial 6-axis anthropomorphic robot with its own control system that, using a specially designed tool, skims the surface of the zinc bath in order to remove dross. The removed dross is collected in a dross container. The Robot continuously makes cyclic passes across the surface of the zinc bath, controlled by sensors and/or direct human intervention. Q-Robot ZINC SKIM can be supervised by a PLC for integration in L1 automation.

Q-ROBOT ZINC INGOTS is used to feed the zinc pot with small zinc and aluminum ingots, or jumbo premixed ingots up to 1,200 kg. Main advantages are:
- automatic control of zinc pot recipe (%Al, %Zn);
- automatic report of zinc and aluminum consumption;
- high accuracy zinc-pot level control;
- reduction of pot waves during the jumbo ingot loading;
- reduction of cold spot around jumbo ingot loading position;
- increased efficiency of the air knives and then reduction of dross production.

**Entry Section:**
Q-ROBOT ZINC DESTRAP cell is designed to automatically remove straps from steel coils, profiles or tube bundles. The use of the machine significantly increases the safety and improves the labor conditions making manual intervention for the destrapping operation unnecessary.

The machine automatically detects the number and the position of straps and safely cut them. Then, the strap is wound up to produce a small scrap pack, which can be thrown away safely.

**EQUIPMENT**

The system consists of an anthropomorphic robot equipped with different tools, each designed for a specific task.

A skimming tool is used to remove the dross from the zinc pot, an air cutter for removing straps, and a lifting equipment for loading ingots.

- 6-axis industrial robot with control system;
- special protection cover for robot;
- special tool;
- local control station for on field control;
- complete safety solution for robot area and zinc pot.

**PERFORMANCE ACHIEVEMENTS**

- Improvement between 10% and 25% in zinc savings within the dross;
- Full automatic operation;
- 100% increased safety.