

# Overhead Magnet Crane

## BRAKING SYSTEMS AND DRIVE COMPONENTS

### PROBLEM

A major global industrial crane manufacturer needed multiple robust braking solutions and other power train components for a new overhead magnet crane to be installed at a steel plant in Argentina. The specialized crane utilizes a series of electromagnets to lift and move large, heavy steel plates and bar stock. The dual-drum crane, with a total capacity of 25 tonnes, can be operated remotely from a safe distance away from the load.

### SOLUTION

Stromag engineers collaborated with the OEM to design specific brake models for each of the crane's different braking functionality requirements.

Model SHS 9A spring-applied, hydraulically released brakes, mounted on custom supports utilizing a common Model CE8L HPU, act on a 1.25 dia. disc on each of the crane's twin hoist drums. The emergency brakes hold the load when power is cutoff. Twin Model TDXB-I electrohydraulic thruster disc brakes with proximity sensors, function as service brakes on the crane's hoists. These spring-applied, thruster released fail-safe brakes are designed for heavy duty, restricted space applications. The brakes act on 445 mm discs and are individually-adjusted to 1.700 Nm.

Model SDB 315 service brakes, fitted with electrohydraulic thrusters, provide precise positioning of the hoist trolley as it travels horizontally along the crane's twin cross beams. The brakes, with a 1.200 Nm braking capacity, act on a 350 mm dia. drum, and are equipped with proximity sensors and a HRL (hand release lever). Stromag also provided ACS Series 3 cardan shafts that connect the gearboxes to the 15 kW motors on each of the trolley's four wheel drive assemblies. Model SDB 200 service brakes, with proximity sensors, are installed on the crane's four carriage drives that travel the long rails running the length of the steel plant.

Type PHS hydraulic buffers, with anti-fall devices, were included to dampen the energy resulting from the impact of the crane's various moving components.

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### HIGHLIGHTS

- Model SHS 9A hoist emergency disc brakes
- Model CE8L hydraulic power unit (HPU)
- Model TDXB hoist service thruster disc brakes
- Model SDB 315 hoist trolley service drum brakes
- Model SDB 200 long travel carriage service drum brakes
- ACS Series 3 cardan shafts
- Type PHS hydraulic buffers with anti-fall device

