Spiral Casting Cooler

Machine dynamics:
A cylindrical machine body equipped with a continuous helical conveying chute on one edge is oscillated in a rotary and vertical motion by discrete, unbalance exciter blocks. This particular oscillation pattern ensures the castings are conveyed slowly on the rising helical chute with no micro throw movements.

Thermodynamics:
An air-mass flow is directed along the helical chute in the opposite direction to the flow of the castings and thereby cools them. The basic principle is based on a counterflow heat exchange between the cast iron / air, whereby the total surface area of all the castings currently in the helical chute represents the total available heat exchanging surface. In physical terms, counterflow heat exchange is the most efficient and effective method of thermal transfer.

Design:
The transport surface for the castings consists of segmented, overlapping circular sections which are made of wear-resistant heavy-walled manganese steel and are fixed to a supporting structure.

Drives:
Two stationary standard three-phase motors mounted on a floor console drive the discrete unbalanced exciter blocks in the opposite direction of rotation via two drive shafts. The desired helical oscillating motion is achieved via appropriate geometrical arrangement of the flyweights on the shafts.

ADVANTAGES

- Cooling of castings in the smallest possible space
- Compact unit
- Also provides increased conveyor height
- Suitable for disk-shaped castings, e.g. brake discs

TECHNICAL DATA

- Dimensions and design features are tailored to the customer's specific requirements

APPLICATION

- Green Sand Molding Process

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