TECHNOLOGICAL PROCESS OF KNOCKOUT AND CONSTRUCTION OF INERTIAL GRID

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By using foundry technologies a large part of blanks for further processing is made mechanical processing and receiving of ready-made mechanical engineering parts.

In order to avoid distortion of the configuration, formation of cracks and other defects of castings, punching should be carried out only after the completion of the processes of crystallization of the melt and the formation of castings in the mold.

Punching molds from furnaces and castings from molds is the most difficult operation of the entire cycle of manufacturing castings in terms of sanitary and hygienic conditions, as it is accompanied by a large dust, gas and heat release and a high level of noise. Therefore, the mechanization and automation of punching operations are the primary tasks.

The most common way of punching molds and rods in modern conditions continues to be punching on punching grids. The poured form of the foundry, which is to be punched, is fed to the punching grid, which either oscillate continuously or are turned on for the punching time.

It is usually inertial knockout the lattice is a lattice frame that rests on shock absorbers. She is brought to the oscillating room movements from the shaft of imbalance. The shaft rotates in bearings, which mounted on the frame lattice and tki, and rotates from a stationary electric motor using V- belts transfers.

Lattice oscillations are transmitted to the cast form. The combination of the masses of the grid, the punched form, the vibration mode are calculated and selected so that the form is thrown up to a certain height, and when it falls, it collides with the punching grids.

The impact and inertial impulses that arise at the same time first shake and break the connections between the casting, mixture, rods and blocks, if the form is open , and then different accelerations are created in the separated elements due to the difference in their masses, the number of collisions appears and increases between them. Under these conditions, the compacted form and rods, which have less strength than metal, are intensively destroyed.

Lumps are crushed both from collisions with gratings, castings, and cracks, and from collisions with each other. The crushed used molding and rod mixture falls through the mesh of the grid onto the mixture cleaning conveyor. After the punching is finished, the castings and slags remain on the grates.

One of the main elements of knock-out grates is a node that causes oscillations: the grates have one or two unbalanced inertial shafts with imbalance adjustment.