Diploma project
on the topic: "Development of technology for the production of casting "Bearing housing" from gray cast iron СЧ15 and planning of the melting department of the foundry"
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Annotation

Casting is one of the main methods of obtaining metal parts (along with forging, cutting, stamping, etc.).

The basic essence of casting is the filling of a special casting mold with liquid metal, which should repeat the configuration, shape and size of the received part - that is, its imprint, with subsequent crystallization of the metal in the mold. After complete hardening, the casting is removed from the mold with further processing to obtain the required part. Cast blanks are used by most industries. The mass of cast parts in machines of various types is on average 40...80%, and the cost and labor intensity of their production does not exceed 25% of all product costs. Castings from ferrous (steel, cast iron) and non-ferrous metals and alloys (magnesium, aluminum, silumin, brass, bronze, tin, etc.) are obtained.

The technology of foundry production covers a complicate complex of phenomena, the physical essence of which is characterized by considerable complexity.

There are many varieties of casting. In addition to the classic traditional casting in sand-clay forms, more accurate methods such as melting models, mold casting, gasification model casting, centrifugal casting, electroslag casting, pressure casting, vacuum casting, jewelry casting, etc. are very popular.

The foundry is engaged in the production of massive castings from gray iron for parts of machine tools, construction machines, and only a very small part of castings of small mass and size is produced for its own internal needs.

The projected capacity of the casting department is 45,000 tons per year of parts of massive and large castings per year, while the shop also produces a small batch of small castings weighing up to 5 kg for its own needs, as mentioned above; at the same time, this project describes the production technology of one of the small castings of the foundry department, namely the "bearing housing" casting. The main mass of litho is produced in liquid self-hardening molds (SSC), and a small part of small castings is in raw sand-clay molds in steam kilns according to the classic scheme for own needs.

The main sources of ensuring the work of the foundry department:

- metal and forming materials – metal bases and bases of forming materials (charge, cast iron, iron scrap, sand, clay, mixtures of RCC, quartzite, etc.;
- water – centralized city supply;
- electricity – TPP;
- heat and gas (boiler and gas stations);
- a centralized local gas network for cleaning, waste water discharge;
- closed water supply and drainage system.