

## TO THE POKOVAKS THERMAL AND THERMOMECHANICAL PROCESSING TO GIVE

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**Abstract:** If the elimination of initially formed defects and reduction of the hardness level is carried out by the initial heat treatment method, the required properties for a billet made of ingot can be provided by a finished heat treatment.

In the practice of manufacturing enterprises, steel sheets are subjected to annealing, normalizing, and tempering to obtain the desired structure and properties. normalization and high at temperature release with to beat is applied.

**Keywords:** For carbon steel shells, a type of heat treatment with normalization with annealing is used, that is, to obtain the required properties, it was considered important to increase the effect of the finishing heat treatment, only then the main results will be ensured. Heat treatment for alloy steel shells consists of two stages - preliminary and final.

**Introduction:** In general when receiving to the pokovkas thermal processing of giving all procedures  $Ac_3$  (or  $Ac_1$ ) is carried out based on the technological process of heating to a high temperature of  $30 \div 50^\circ C$  at the critical point and holding at this temperature for a certain time. This allows the formation of a uniform fine-grained structure as a result of spatial recrystallization. In some cases, heat treatment and cooling are carried out together, the aim of which is to utilize the heat from forging and shorten the technological process. High temperature annealing of steel shells in the completed heat treatment with normalization or release with to beat thermal processing to give types are used together.

Tempering temperature and holding time for annealing or normalizing the coating on time harvest was internal voltage from the situation come out is selected.

In practice, a high-temperature annealing process of 400 - 680 ° C is often used. Discharge process cleaning cooled from time to time 2 - 4 hour to be transferred without passing recommendation is being done. Discharge in the process the pokovkas to heat every 100 mm size It is set at 2 - 3 hours . In some cases, 400 mm thick carbon steel shells are subjected to normalizing heat treatment. release No heat treatment is performed. Steel plates with a small thickness ( $< 250\text{ mm}$ ) that are prone to brittleness during the release heat treatment are not used. release at temperatures heated in oil, heated in the water and Air cooling is recommended.

Heat treatment of small parts used in tractor construction, agricultural machinery, and automotive engineering serves two purposes: blanks cut processing to give status improve and necessary It is required to meet the size and property requirements. For this purpose, annealing, annealing, isothermal annealing, and improvement heat treatments are used.

Normalization process carbonaceous and low alloy branded in steel (20, 30, 35, 40, 45, 20X, 40X) is held, from them fork, bracket, bushing, cross, the arrow and other details are prepared.

Alloyed steel in the pods normalization thermal processing to give type to form a bainite internal structure in the upper part (12XN3A, 20XNTP, 25NGNM, 40XGTP, 38X2MYuA), that is cut processing to give process difficult was In order to eliminate such defects that occur in alloyed steels, high-temperature (600 - 700 ° C) tempering heat treatment is performed after normalizing heat treatment.

Isothermal soften thermal processing type cut processing surrender to the process great attention to be done in the pods will be held. Such to the pokovkas 15XF, 15XGN2TA, 18XGT, 20X2N4AN4V, 25XGM, 25XGNM, 25XGNMT branded Examples include gear wheels and their couplings, reducers of moving parts, and shafts operating in active environments, which are obtained from steel by forging. Isothermal softening type of heat treatment temperature cooled austenite with ferrite-carbide to the structure decomposition intermediate temperature (620 - 670 ° C) based on In some cases, when high

hardness and strength are required, the improve, to beat and release thermal processing types is held. Often such thermal processing to give types 45, 40X, 40XN, 40XTP grade steels hammering from the process held connecting rod, lever, bushing, cup and

other details in receiving is applied.

Normalizing heat treatment purpose of the type – during hammering harvest The purpose of this is to reduce residual stress, crush grains, and thereby increase the mechanical properties of the coatings.

To obtain high-quality coatings, it is necessary to ensure the complete transformation of the austenite structure into a ferrite-carbide structure, in this case, the hydrogen is eliminated from the surface areas of the coating, the amount of hydrogen is evenly distributed in the internal area, and the cutting properties are improved. If the austenite, which has high strength in the cooled state of coatings made of steels, is heated to a temperature of 250 - 350 °C and held for a certain time, then the austenite on cooling bainite to the structure turns and cleaning from the composition hydrogen no The process of splitting is activated. Heating to a temperature of 550 - 650 °C and cooling slowly together with the furnace prevents the formation of irregular internal cracks (flocculation).

Forgings made from tool steels are usually made by hammering. soften thermal processing is held, goal - grains grinding and granular perlite internal structures harvest to do. Such softening The type of heat treatment prevents various types of fractures in steels. Some eutectic after in steel soften thermal processing transfer known under the circumstances Used for grinding carbide meshes.

Stamped steel bags thermal processing to give to be unkind, carried out by annealing or high-temperature tempering, the choice of which type depends on the steel grade, shape and dimensions of the shell.

Instead of annealing heat treatment, small-sized parts obtained by stamping using stamps with a non-complex shape are subjected to high tempering heat treatment is held, as a result The heat treatment time is reduced, and the formation

of insoluble WC carbide is prevented when heating for decarburization and tempering of tungsten steels. For complex-shaped shells, that is, when it is required to reduce deformation during heat treatment, it is recommended to use isothermal annealing heat treatment.

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