



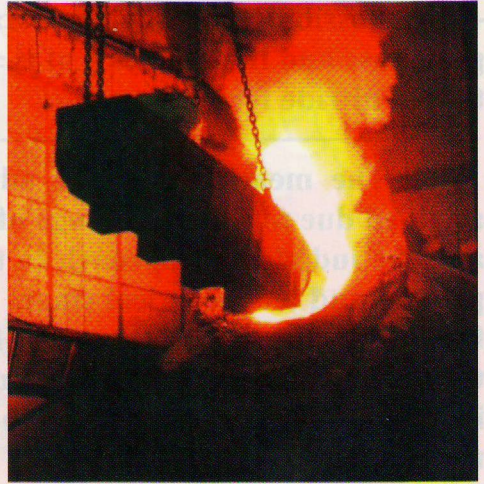
Converter Production of Stainless Steels (GOR process)

The technology of gas-oxygen refining (GOR process) is realized at the converter with bottom or combined blowing facilities. The technology is noticeable with its ability to provide the high rate of all the refining processes. In comparison with the known analogies (AOD and VOD processes), the GOR technology has higher efficiency, wider technological possibilities and guarantees high quality of final product, on the level of the best world standards. The

GOR technology is implemented at Electrometallurgical plant Dneprospectal (60-ton converter), at machine-building plant Armaprom (5-ton converter), and at South-West Stainless Steel Company in China (Sichuan province, 60-ton converter).

The main advantages of the GOR technology are:

- Productivity is in 1.5-2.0 times higher in comparison with AOD process. This provides essential reduction of specific investments for construction.
- Technological flexibility allows usage for production of steel of liquid semi-products, which can be either the cheapest scrap or high-carbon ferroalloys (no limitations on the initial carbon content), or 100% of stainless steels wastes.
- Argon consumption for the GOR technology is 1.5-2.0 times lower than for AOD process.
- This universal nature of technology allows to produce not only stainless steels and alloys (including ultra low carbon grades) but also almost all high steels grades for various applications, in particular



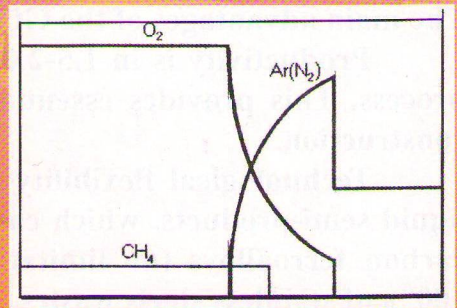
carbon steels, low alloy steels and alloy steels.

- Possibility to realize optimal temperature and slag regimes of the -heat depends on product grade and a GOR unit capacity, including small 5t GOR converter.
- Possibility of the separate tappings of metal and slag, and consequently for successful deep desulphurization of steel and alloying with titanium or other elements which are easy to oxidize.
- Possibility of alloying of stainless steels with the nitrogen from the gas phase and the accuracy of is ± 0.01 mass of nitrogen without application of nitride ferroalloys.

The mentioned above advantages of the GOR technology are attained due to the wide range of energy facilities of the GOR converter and the individual approach to the manufactured product through the process and technological stages of refining and blowing. Gas carrying facilities of the GOR converter provide introduction of and control over, the gas carriers, namely oxygen, natural gas, argon and nitrogen. Oxidizing potential of the blowing can be modified widely from 100% of oxygen up to pure neutral gas.

The process is easy to duplicate, well operable and it realizes with the developed automation system. Thanks to the converter nature of the GOR technology, minimal capital investments and operation costs are required on the steel making stage of metal production.

Fig. 1 Scheme of blowing composition change during refining of high-alloy melt by means of the GOR technology.



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