



RESEARCH AND PRODUCTION CENTER «TITAN» OF E.O. PATON ELECTRIC WELDING INSTITUTE

State Company «Research and Production Center «Titan» of E.O. Paton Electric Welding Institute of the NAS of Ukraine» was established in 1996, in keeping with the decision of academician Borys E. Paton, PWI Director, for research and production development of technologies and equipment in the field of electron beam melting of metals and alloys and their further introduction in the Ukrainian enterprises, as well as for intensification of research and experimental design work in the field of titanium metallurgy under self-financing conditions.

In the production facilities of SC «RPC «Titan» six electron beam installations are in operation, including: three electron beam installations, each of the annual capacity of 500 t; specialized electron beam installation of 1500 t annual capacity; electron beam installation for surface flashing of ingots of both round and rectangular cross-section; laboratory electron beam installation for development of new alloys, based on iron, nickel, titanium and other metals, as well as optimization of their production technologies.

The installations are fitted with axial electron beam guns Paton-300 of 300 kW nominal power, which have differential pumping that allows conducting the melting process in a stable uninterrupted mode.

In order to produce titanium alloy ingots, the following can be used as the initial charge: titanium sponge (briquetted, loose, unbroken blocks), titanium scrap, and alloying components in the form of master alloys.

SC «RPC «Titan» has introduced the technology of electron beam melting of high-quality ingots of titanium alloys, which contain inclusions of low and high density, of a guaranteed composition.

In order to reduce metal losses, SC «RPC «Titan», instead of machining, uses the technology of flashing the side surface of ingots of both the round and rectangular cross-sections. Application of the technology of electron beam melting of the ingot side surface allows removing the surface defects without machining the ingot surface that increases the metal yield up to 15 %, depending on ingot weight.

Each ingot is subjected to visual control and ultrasonic testing.



Electron beam installation UE5812



All-purpose electron beam installation UE5810



Electron beam installation UE121



Electron beam guns Paton-300



Remelting sponge titanium briquettes into 400 mm diameter ingot of Grade 2



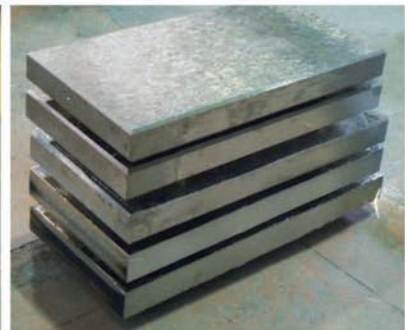
Producing 165×950×2500 mm slab-ingot of PT-3V titanium alloy



Titanium ingots of 100–600 mm diameter



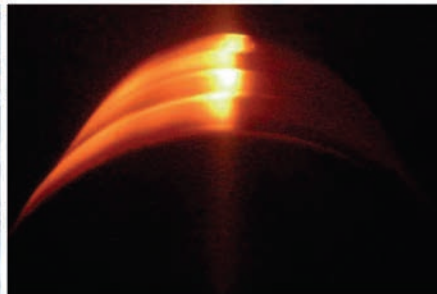
Titanium ingot of 1100 mm diameter



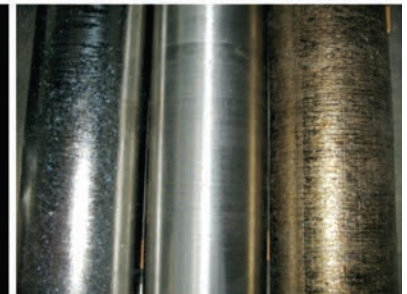
Titanium slab-ingots of 165×950×1500 mm dimensions



Electron beam installation UE185 for melting the ingot surface



Process of surface melting of titanium ingot of 1100 mm diameter



Titanium ingot surface: surface-melted; machined; cast

Product range of SC «RPC «Titan»

Range	Alloy grades
165×950×4000 mm; 150×530×4000 mm; diameter 80, 110, 150, 195, 300, 400, 500, 600, 830, 1100 mm, up to 4000 mm length	VT1-0, VT1-00, VT3-1, VT5, VT6, VT8, VT14, VT20, VT22, PT3V, PT7M, PT1M, 3M, ET3, Grade 1, Grade 2, Grade 5

Chemical composition of the ingots meets the requirements of national and foreign standards (DSTU, ASTM, AMS, etc.) Other alloy grades can be produced by agreement with the Customer.

Contact Information: 26 Raketna Str., 03028, Kyiv, Ukraine
Tel: (38044) 524-95-43, Fax: (38044) 524-10-96; E-mail: titan.paton@gmail.com

