

Unit NanoARC^{master}900 for application of coatings

Application

NanoARC^{master}900 unit is designed for vacuum arc (controlled and uncontrolled arc) application and magnetron sputtering of high-hardness (TiN, AlTiN, TiAlN, CrN, CrC, TiCN and others) protective and tribotechnical coatings on cutting tools and equipment parts used in machine building, power engineering, aerospace and nuclear sectors.

High-hardness coatings are intended for protection of heavy loaded machinery parts operating under conditions of intensive wear-out and cyclically varying load, high temperatures and aggressive media (shutoff and control valves, molds for pressing, blades of aero and steam turbines) and cutting tools (milling tools, drilling bits, tooth cutting and rolling tools).

Advantages

High quality of coatings. The unit makes it possible to increase wear-resistance of cutting tools and equipment parts and accordingly extend their service life at a reasonable cost of the unit.

Forms of cooperation

Supply of a standard ready-made product, design, manufacturing and supply of a customized product.

Vacuum coatings are widely applied in different spheres of life, for example: medicine (coatings on titanium implants), petrochemical sector (various stop valves), aircraft engineering (heat-resistant coating of turbine blades), shipbuilding (anti-cavitation coating of propellers), military equipment, instrumentation engineering etc. Depending on the requirements to a particular item and operation conditions we can apply any protective coating.



Main parameters*

Parameter	Value	Note
Thickness of applied coating, μm	Up to 50	
Coating hardness, N/mm^2	20000-38000	
Chamber inner dimensions, $L \times W \times H$, mm	900×900×1100	Chamber shape- vertical octagon
No. of vacuum-arc multi-cathode evaporators, pcs.	2-4	
Number of end vacuum-arc sources in a vacuum-arc multi-cathode evaporator, pcs.	3	Vacuum-arc evaporators with controlled and/or uncontrolled arc
Total multi-cathode vacuum-arc evaporator current, A	300-360	3x100-120
Cathode sizes, Diameter ×thickness, mm	130×26	
No. of sputter guns, pcs.	2-4	Unbalanced magnet systems
Sizes of sputtering targets $L \times W \times H$, mm	700×130×10	
Sputter gun supply power, KW	18	Current, voltage, capacity stabilization. Possibility to work in pulse mode
Ion source, type	Closed loop electron drift device, Radical)	
Output operating characteristics of power supply of ion source, V/A	2000/3	
Bias feeder, V/A	1200/30	
	24	
Ultimate vacuum, Pa	1.33×10^{-3}	
Vacuum pumping to ultimate vacuum speed, min	30	
No. of gas puffing channels, pcs.	3	
Control/ visualization	Automatic	LCD touch screen monitor 19"
Installed power requirement, KW	90	3ph. ×380V+N, 50/60Hz
Hot/ cold water flow rate, l/min	25/40	
Compressed air, MPa	0.4-0.6	

* The manufacturer may make the equipment design adjustment that does not impair the operational and service properties.