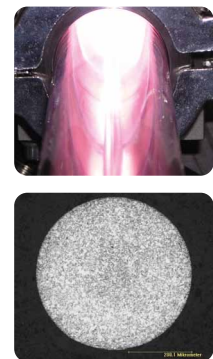
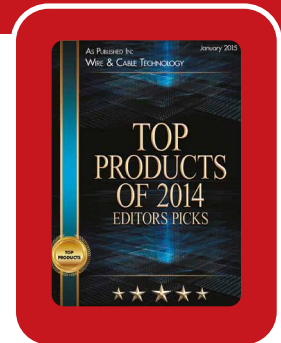


PlasmaANNEALER HPA10/HPA20

For continuous heat treatment of stainless steel



High-speed annealing of stainless steel and nickel alloy wire, tube, rope or strip

Bright heat treatment for scratch-free, superior surface finish

Annealing in-line with drawing, rolling or stranding



Small workshop space per kg of output, less work in progress, less material manipulation

Heat and Surface Treatment Applications

Material	Stainless steels, duplex, nickel alloys, heating and resistive alloys, alloy steel
Material Form	Wire, rod, tube, rectangular and shaped wire, stranded conductors, ropes, narrow strips
Plasma Treatment	Annealing, stress-relieving, hardening, surface heat-treatment, heating
Example Applications	Welding, fine wire for filters, mesh, braid, knitting, brush wire, wires for ropes and strands Spring wires, medical wires and tubes, precision and structural materials Precision profiles, wire and tubes for jewellery, watch, and precision applications Cold heading wires and fasteners, welding wires, resistive/heating wires and tubes
Industry Sectors	Medical, automotive, aerospace, aviation, energy, oil and gas, marine, homeware goods, defence, mining, food processing, jewellery, chemical engineering, instrumentation

Machine Specifications

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Dimension Range	Wire/rod: 0.1 mm - 10 mm Tube OD: 0.2 mm - 12 mm Rectangular: 0.1 mm - 30 mm Other dimensions and forms on request																		
Machine Dimensions	Length: 6 m - 15 m, subject to cooling type and application Width: 1 m - 1.5 m Height: max 2.1 m Horizontal or vertical line configuration subject to space availability Line configuration subject to application																		
Production Output	Indicative outputs for recrystallization annealing of stainless steel wire/tube: HPA10 max 35 kg/h (austenitic) / max 45 kg/h (martensitic) HPA20 max 80 kg/h (austenitic) / max 100 kg/h (martensitic) Higher outputs for stress-relieving, semi-soft annealing and hardening																		
Production Speed	Max 1500 m/min, subject to cross-section, process temperature and application Max Production Speed for recrystallization annealing of stainless steel wire 304 <table><thead><tr><th>Wire Diameter</th><th>[mm]</th><th>0.1</th><th>0.3</th><th>1</th><th>3</th></tr></thead><tbody><tr><td>HPA10</td><td>[m/min]</td><td>1500</td><td>650</td><td>60</td><td>11</td></tr><tr><td>HPA20</td><td>[m/min]</td><td>1500</td><td>1300</td><td>120</td><td>23</td></tr></tbody></table>	Wire Diameter	[mm]	0.1	0.3	1	3	HPA10	[m/min]	1500	650	60	11	HPA20	[m/min]	1500	1300	120	23
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HPA10	[m/min]	1500	650	60	11														
HPA20	[m/min]	1500	1300	120	23														
Heating Power	Max 10 kW / 20 kW Single or multiple heating modules Tempering module for custom temperature profile																		
Cooling	Gas cooling (inert atmosphere) Combined gas and water cooling Rapid cooling for quench hardening																		
Atmosphere	Hydrogen, argon, helium, forming gas, gas mixtures Type of purging gas subject to application																		
Controls	PLC controls with user-friendly, touch-screen HMI Production recipe database and computer based surface quality control																		
Safety	ECE/UL mark Compliant to EU and USA safety regulations  																		

Key Features

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- Bright annealing with superior surface finish
- No surface damaged, no surface scratches or piles
- Simultaneous oil degreasing and fine oxide removal
- Variable finished material softness levels
- Small and uniform grain size
- Fewer wire breaks on subsequent drawing
- Less drawing die wear
- High production output/speed
- In-line operation with drawing, rolling or coating
- Less working capital locked in processed materials
- No warming-up/cooling-down time
- Low power consumption, smaller power connection
- Low purging gas and maintenance costs
- Environment and operator friendly production
- High production output per square meter of floor space
- Compact machine design
- Short installation and commissioning times
- Computer enabled surface quality control