Plasmait

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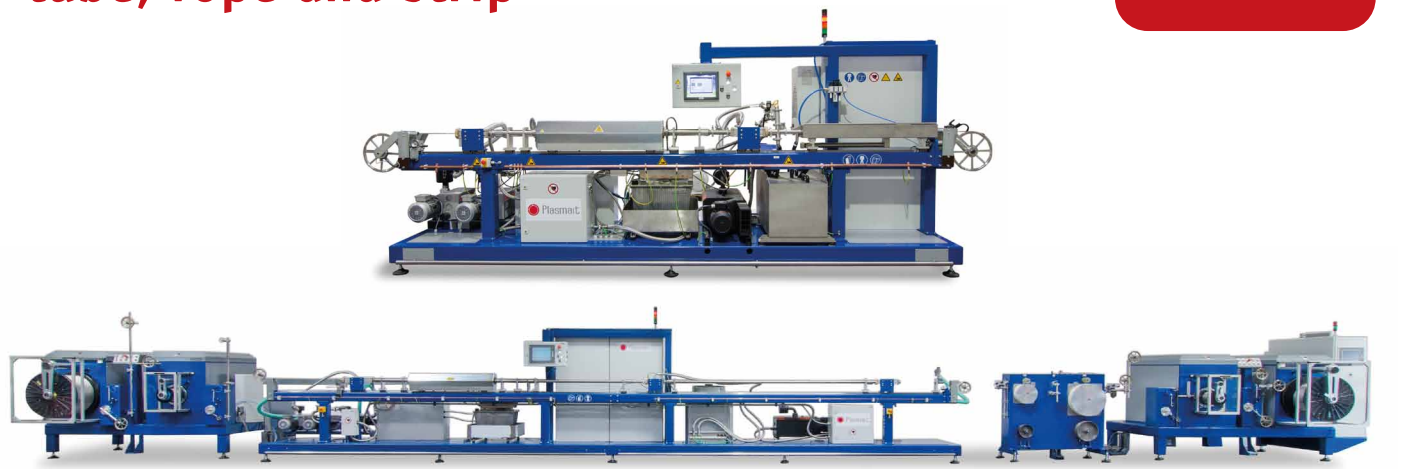
PlasmaANNEALER

For continuous heat treatment of wire, tube, rope and strip



High-speed annealing of stainless steel, aluminium or coper alloys
Bright heat treatment for scratch-free, superior surface finish
In-line with drawing/rolling/stranding/plating for wire, tube, rope or strip

Heat and Surface Treatment Applications

Material	Stainless steels, duplex, nickel alloys, heating and resistive alloys, alloy steel Copper and copper alloys, copper clad aluminium and steel Aluminium and aluminium alloys, other alloys
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 Conductors for power and signalling cables i.e. solid, rectangular, braided, bunched Magnet and enamelled wires, coated, plated, taped conductors
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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Machine Types	HPA3 / HPA10 / HPA20 / HPA40 / HPA80
Dimension Range	Wire/rod: 0.1 mm - 20 mm Tube OD: 0.2 mm - 25 mm Rectangular: 0.1 mm - 30 mm Other dimensions and forms on request
Machine Dimensions	Length in horizontal design: 4 m - 15 m, subject to application Length in vertical design: 1 m - 4 m, subject to application
Production Output	Indicative outputs for recrystallization annealing on HPA40: Austenitic stainless steel: max 170 kg/h Martensitic stainless steel: max 225 kg/h Copper alloys: max 800 kg/h Higher outputs for stress-relieving, semi-soft annealing, hardening and heating
Production Speed	Production speeds, subject to cross-section, process temperature and application

Max Production Speed for recrystallization annealing

Machine type / [m/min]		HPA3	HPA10	HPA20	HPA40
Stainless Steel wire 304	0.2 mm	300	1200	1500	-
Stainless Steel wire 304	1 mm	15	60	120	240
Stainless Steel wire 304	5 mm	-	4	9	18
Copper wire OFC/ETP	0.2 mm	2000	2100	-	-
Copper wire OFC/ETP	1 mm	63	250	500	1000
Copper wire OFC/ETP	5 mm	5	20	40	80

Heating Power	Max 3 kW / 10 kW / 20 kW / 40 kW / 80 kW Single or multiple heating modules, tempering module for custom temperature profile
Cooling	Gas cooling (inert atmosphere) Water or combined gas/water cooling Rapid cooling for quench hardening
Atmosphere	Hydrogen, nitrogen, forming gas, argon, helium, 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	CE/UL mark. Compliant to EU and USA safety regulations CE UL

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