

ALO 191-MS-4

Induction tooth hardening with bend straightening and mechanical pinch roller straightening unit



HIGHLIGHTS:

- High efficiency and low energy consumption generator with air-cooled oscillator tube.
- Automatic anode current control keep the anode current constant during the whole coil.
- Automatic flash guard protect the system against damage from flash-overs.
- Band feeder with a pulling 4-wheel drive system designed for accurate speed and guiding.
- Electromagnetic brake for optimal control of band tension.
- High reproducibility due to accurate digital/analogue settings of power, speed and work coils.
- Fast and easy start up and change over.

THE SYSTEM COMPRISES:

Band feed unit
 Hardening generator and inductor
 Closed coolant system
 Closed quench system
 Bend straightening unit
 Pinch roller straightening unit

CAPACITY:

Band width 6 - 38 mm
 Band thickness 0.4 - 1.3 mm
 Tooth pitch 3 - 18 tpi
 Capacity: 5-15 m/min
 Hardening generator frequency: 27 MHz.
 Tempering generator frequency: 1.5 Mhz. (option)

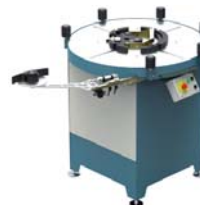
OPTIONS / ACCESSORIES:



ALO 90915/16/17/18
Collapsible coil center



ALO 831
Double coiler



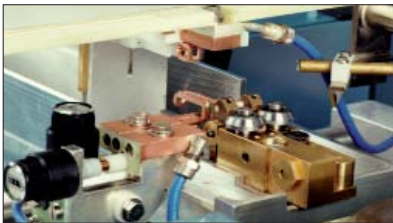
ALO 880
Electric coiler



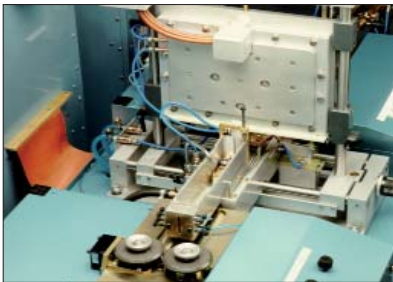
ALO 106 CUBE
Coil handling system



Tooth hardening generator



Inductor



Quench system



Pinch roller straightening unit

MACHINE DESCRIPTION

Band feeder

The band feeder consists of two units, one 4-wheel feed unit, the other as an adjustable brake to control the band tension by using an electro magnetic friction brake. Both units are equipped with two pairs of inclined rolls. The four rolls on the feed unit are driven by an asynchronous motor, and the speed is controlled by a frequency controller. The oscillating circuit with the inductor is located between the brake and the feed units such that the band is pulled through the inductor at a controlled tension.

Generator

The hardening generator is enclosed in separate aluminium cabinets, equipped with separate oscillating circuits connected to the cabinets via coaxial cables. The generator is air cooled, thus limiting the cooling water requirements to inductor and oscillating circuit only. The hardening generator is equipped with an automatic anode current regulator, thus ensuring a stable power during the hardening operation.

Inductors

The inductors are made of copper tubing and can be custom made for different pitches and band gauges. The inductors are interchangeable and can easily be replaced from one type to another.

Quench system

The system is designed for liquid quenching, such as oil or polymer quenchants.

Bend straightening unit

A section of the bench are hinged in such manner that the band can be bent over a high point to counteract camber effect during teeth hardening on the most narrow bands, typically 6-12mm width.

Mechanical pinch roller straightening unit

The second straightening device consists of a pair of rolls situated after the quench tank. The mechanical straightening unit are best suited to work within the band widths of 12-20 mm, thickness of 0,45-0,6 mm with TPI between 3-6 TPI.

TECHNICAL SPECIFICATION:

Band width:	6 - 38 mm	(other widths on request)
Band thickness:	0.4 - 1.3 mm	
Tooth pitch:	3 - 18 tpi	
Capacity:	5 - 15 m/min	
Air pressure:	6.3 bar	91 psi
Standard voltage:	400VAC \pm 10% 3-phase, 50-60 Hz \pm 1% directly earthed system, other voltages available upon request.	

Power consumption (at max output power): 10 kVA

Other customer requirements may be discussed between customer and ALO.

