

ALO 198-PREHEAT-C

Induction pre-heating of band saw blades



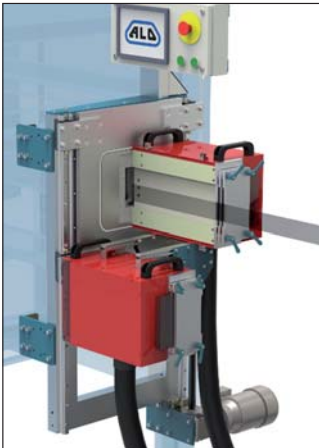
THE SYSTEM COMPRISES:

Work coil and generator
Work coil against furnace muffle assembly
HMI

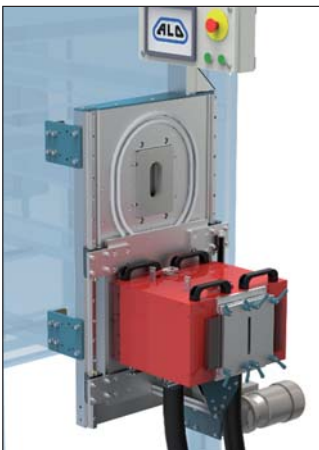
CAPACITY:

Band width: 20 - 85mm
Band thickness: 0.6 - 1.6mm
Heating capacity: up to 750° C

- Can be integrated to any existing hardening or tempering furnace to boost the output rate
- High efficiency rate, some 85% or more by use of Litz coils imbedded in magnetic flow material SM²C®!
- The heater have in principle no magnetic stray fields eliminating medical risks
- Work coils are very robust and easy to service and operate
- Reduce energy consumption (compared with conventional induction heaters with efficiencies of 55%)



The work coil open up easy in separate halves for service



The work coils can be lowered out of the way to a service pos.

MACHINE DESCRIPTION

Heaters

By the new Induction technology it's possible to design inductors as separate flat coils on both sides of the band saw blade allowing easy access for service. In the gap for the band insulation material eliminates heat to reflect back from the band to the heaters. The SM2C®-material is the essential magnet flux leader which with correctly adopted permeability induces the right temperature in the band.

The heater is mounted against a motorized mounting plate that can be lowered to a service position giving access to the furnace muffle. The individual heaters can easily be dismantled giving access for service of for example the heaters insulation. The heater and the mounting plate should be assembled to an existing furnace/muffle and will keep the protective gas atmosphere since the unit are mounted against muffle and sealed on the band entrance side.

Internal cooling

Even if the system delivers over 85% of energy to the band it's still required with an inductor water cooling system. Cooling tubes for the excess heat are integrated into the inductors, and the internal water/liquid heat exchanger in cabinet generates cooling for inverters, inductors and supply lines.

HMI

The system is supplied with a Siemens PLC and operator terminal where parameterizing are made.

Environment and Economy

An important aspect in choosing a heater constructed by casting Litz coils into soft magnetic composite material, SM2C®, is the reduced energy consumption. This heaters high efficiency of 85% or more shall be compared with efficiencies of 55% for conventional induction heaters.

By using of this type of Induction heating equipment in two shift/day, means in comparison to existing induction alternatives an energy savings in the range of 90 MWh per year.

TECHNICAL SPECIFICATION:

Band width:	20 - 85mm
Band thickness:	0.6 - 1.6mm
Heating capacity:	Up to 750° C
Heating capacity/speed example:	27x0,9mm @5m/min 600° C
PLC system:	Siemens S7 1200
Voltage:	400 VAC 3-phase, 50-60 Hz direct earthed system
Max power consumption	14 kVA

The system requires an external cooling system

