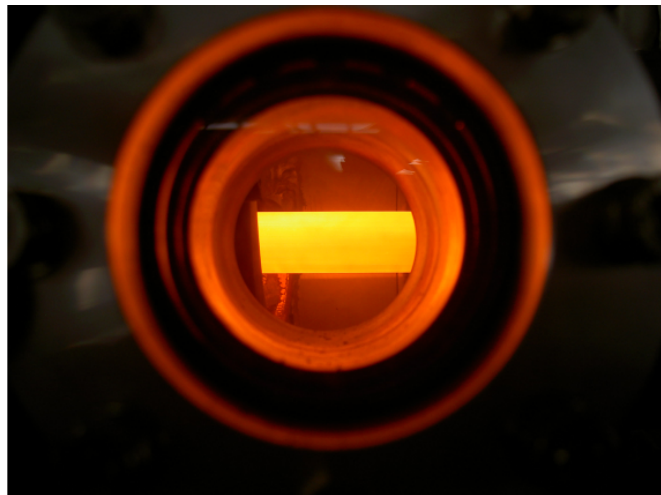




**KUHNTec**  
SWITZERLAND

**IN-LINE TUBE BRIGHT ANNEALING PLANT**  
**For Stainless Steel and Titanium tubes**  
**TYP BGK – 40 / 80 / 120**



**For TIG and LASER Tube Mills**



## General Description

### IN-LINE TUBE BRIGHT ANNEALING PLANT TYPE BGK - 40/80/120

The plant is a self-contained unit which may be retrofitted to existing tube mills or integrated into new tube mill lay-outs.

Once installed, tube manufacturing can be made with or without annealing.

#### FUNCTION

The tube exits from the welding and the first sizing machine to enter a tube **DEGREASING UNIT** (Optional, but normally required to guarantee bright tube surfaces).

The tube exits from the degreasing unit to enter the **BRIGHT ANNEALING CHAMBER**.

In the **BRIGHT ANNEALING CHAMBER** the tube is heated by means of an induction coil in a neutral or reducing atmosphere to a temperature suited to the tube stainless steel grade. After a short time, the red-hot glowing tube is rapidly cooled down to below oxidation temperature by means of special designed heads which carry the cooling element inserts. These special cooling element inserts are arranged in a radial way around the tube for efficient rapid contact cooling. These cooling elements can be removed for maintenance or to adjust to a new tube size.

The inert or reducing atmosphere in the **BRIGHT ANNEALING CHAMBER** is maintained by Argon or Hydrogen gas, the latter being flamed-off. A safety over-pressure device is installed to protect the chamber. Argon gas coming from the welding protects the tube inside surface from oxidation.

The tube temperature is surveyed via a safety-glass protected observation window for visual control and an infrared sensing apparatus (Infrared Pyrometer). The latter is wired to a temperature indicating instrument, showing the effective annealing temperature in °C (or °F) of the tube leaving the induction coil. Hi- and low temperature alarms are fitted, as well as an over temperature safety switch, which cuts off the induction power if necessary.

The induction power is generated by a MF (Medium Frequency) solid state generator. The heat required (depending on SS-grade, tube dimension and production speed), is manually adjusted with a remote-control potentiometer. All relevant instruments and control buttons for the generator and cooling circuits are fitted in panel with touch screen, situated within operator's reach.

The tube exits from the **BRIGHT ANNEALING CHAMBER** and enters the final tube-sizing and straightening machine.

Sophisticated software permits save and automatic running of the plant.

KUHNTec In-Line Bright Annealing Plants are available in different sizes for tubes  $\varnothing$  8 – 127 mm.

Induction generators from 50 – 1200 kW for trough put > 2000 kg/hr

