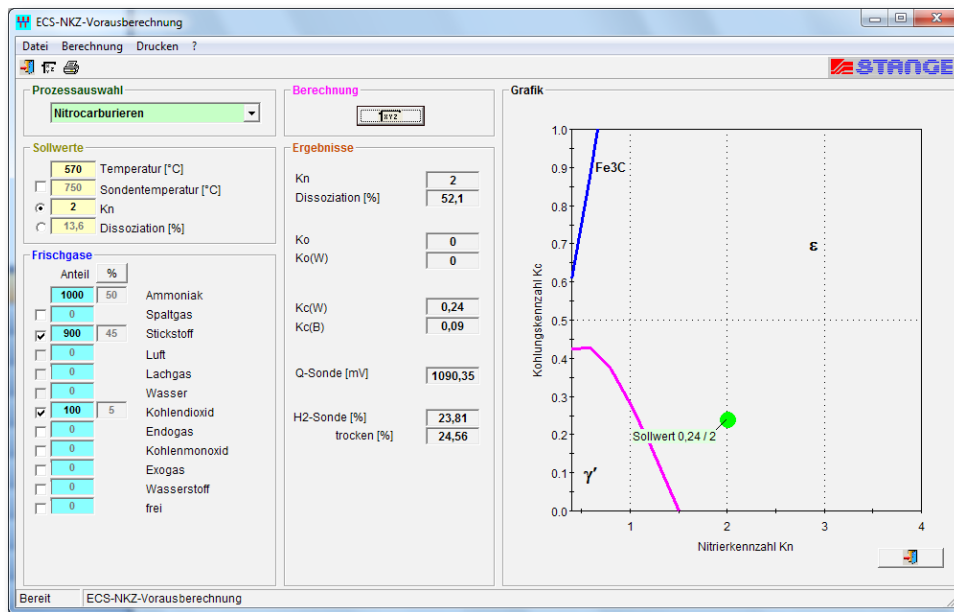


Nitriding Potential Module OffLine ECS-NKZ

Nitriding potential module for fast determination of process parameters



Nitriding Potential Module OffLine

According to the desired type of treatment and process data input, the module calculates code numbers such as nitriding potential Kn, Ko etc., the expected layer structure is graphically represented in a diagram (Lehrer/Kunze) and the operating point is faded in. This operating point can be purposefully affected, optimal parameters can be determined by a change of process data.

The calculated potentials and probe signals (Q and H2) can be connected to a program controller for the control of heat treatment processes.

Setting the optimal treatment conditions enables a targeted activation of part surfaces as well as an optimization of gas and energy consumption.

Reproducible results and economical gas and energy consumption as well as the graphic representation of the expected layer composition, embody the advantages of the nitriding potential control.

Overview of the functional characteristics:

- Type of treatment selection
- Selection and/or input of process data such as Kn, temperature, fresh gas quantities with plausibility check
- Display of the calculation results (classification numbers, probe signals Q and H2)
- Graphic representation of the expected layer compositions in component after nitriding
- Depending on the nitriding procedure the expected working point is graphically represented in the corresponding diagram (Lehrer-/Kunze)
- Option of combining nitriding procedures (X nitriding)

FUNCTIONS

- 1) Process Selection:
 - Classical Nitriding
 - Nitrocarburizing
 - Oxynitriding
 - X-Nitriding
 - Pre-oxidation
 - Post-oxidation
- 2) Presetting of the set values:
 - Temperature [°C]
 - Temperature of probe [°C]
 - Nitriding potential Kn
 - Dissociation
- 3) Input of the fresh gas proportion:
 - Ammonia
 - Dissociated Ammonia
 - Nitrogen
 - Air
 - Nitrous oxide
 - Water
 - Carbon dioxide
 - Endogas
 - Carbon monoxide
 - Exogas
 - Hydrogen
 - Free
- 4) Calculation Results:
 - Nitriding potential Kn
 - Oxygen potential Ko
 - Oxygen potential Ko(W)
 - Carbon potential Kc(W)
 - Carbon potential Kc(B)
 - Q probe [mV]
 - H2 sensor [mV]
- 5) Graphic Representation
 - Lehrer and/or Kunze diagram

