

MHISA

Innovative Heat Treating

Vision

To be known by the customer as a leading company in the innovation of heat treatment, its control and manufacturing with a Zero-pollution approach and competitive price

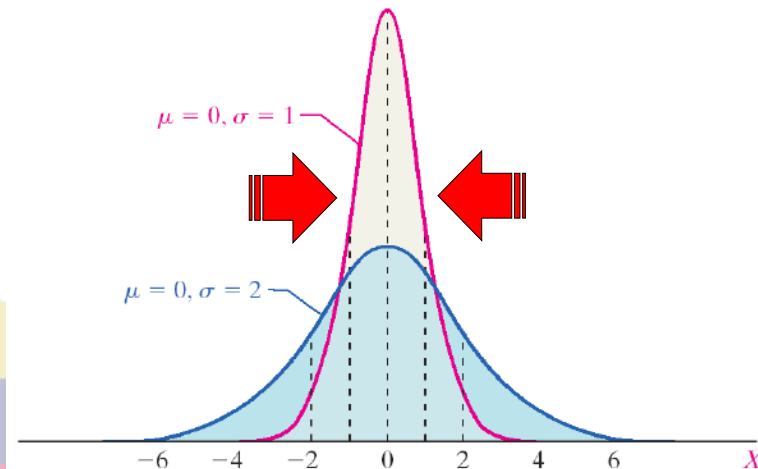
Philosophy

Our working style

- ❖ Know how is good, but... Know why is better.
- ❖ If you are going to do something, do it well, otherwise, don't do it...
- ❖ Do it right the first time...
- ❖ Use only what is necessary:
 - Energy
 - Temperature
 - Timing
 - Flow
 - Pressure
 - Materials
 - Space
- ❖ Zero-pollution
 - Manufacturing process
 - Management

Introduction

- In the Metalworking Industry tolerances for each manufacturing process are becoming more stringent, therefore we require heat treating processes which are more precise and have less variability in the metallurgical and dimensional properties.
- One of the main challenges for manufacturing process, including heat treating, nowadays, is how reduce variability to a minimum, not only that of control process variables but mainly the variability in the results obtained by those processes, such as microstructure, size grain, hardness and distortion.



Introduction

High variability on Microstructure, Hardness & Distortion after heat treating (Normalizing/Annealing) affects negatively on manufacturing process such as:

Machining

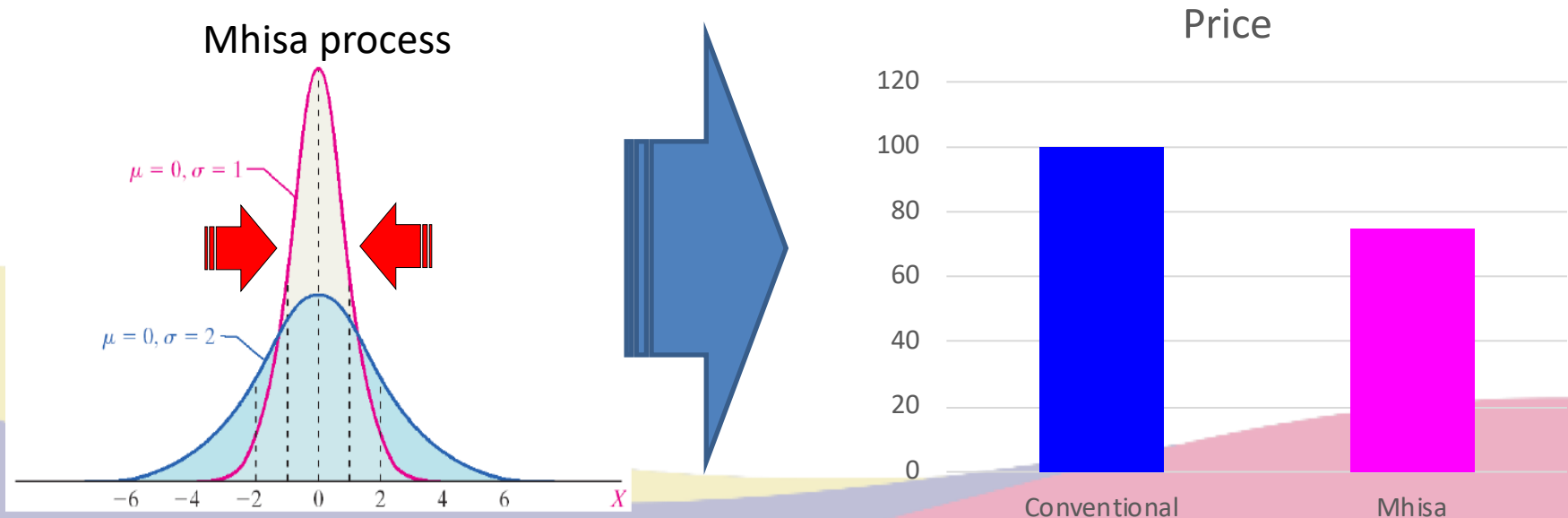
- Excessive cost on blades
- Excessive residual stress
- Bad finishes
- Scrap
- Additional operations (re-works, inspections)

Carburizing

- Distortion due to:
 - High residual stress
 - Variation in Microstructure
 - Variation in hardness
- Straightening
- High cycle time in grinding & lapping
- Excessive remove stock material
- Additional operations (Inspections, Re-works)
- Scrap

Mhisa Process

- Mhisa process is a new Lean Manufacturing heat treating process (under CQI-9 requirements) focused to reduce variability of metallurgical characteristics and dimensional after heat treating to improve tool life, distortion through competitive price.
- Non Pollution Heat treating process
- Low Energy consumption



Mhisa Technology

Mhisa Process

One Piece
Flow Mfg
Process

Controlled
Cooling on
Normalizing
& Annealing

Accelerated
Carburizing

Single
Dynamic &
Interrupted
Quenching
System

Material

Fine Austenitic Size Grain
ASTM > 8

Homogeneous
Transformation
(Less variation)
inside part, part by part &
lot by lot

Homogeneous Hardness
(Less variation)
 $C_p > 2.0$ inside part, part
to part & lot to lot

No decarburation or scale
after Normalizing &
Annealing

Manufacturing

Lower price

Cost reduction due tool
life increased

Less Distortion

Cost Reduction due
cycle time reduction of
Straightening, Grinding
& Lapping operations

More consistency on
mechanical properties

Innovation Patents

Mhisa is an innovative company who has several patents in progress for heat treating process.

- 1.- Automatic system piece by piece for heat treating of steel forges . Registro No. MX/a/2019/009138**
- 2.- Automatic system piece by piece for controlled cooling of steel forges . MX/a/2020/00278.**
- 3.- Automatic system piece by piece for Austempering of shafts through induction heating and single quench system. MX/a/2020/00279**
- 4.- Quench Polymer system for Continuous and batch conventional carburizing furnaces MX/a/2020/00280**
- 5.- Automatic system piece by piece for Quench & Temper for steel shaft & stabilized bars. MX/a/2020/00282**

Innovación Patents

Mhisa is an innovative company who has several patents and some in progress for heat treating process.

6.- Automatic system piece by piece for Quench & Temper with gravity quenching system for ring and bearing . In Progress

7.- Automatic system one piece flow for Accelerated Carburizing with Single Dynamic Interrupted gas quench and temper. In Progress

8.- Automatic system piece by piece for Hybrid Austempering. In Progress

9.- Automatic system for cooking tortillas with electric elements powered by solar panels. MX/a/2023/006277

10.- Automatic Gas quenching system for stabilizers bars and shafts of steel. In progress

11.- Automatic gas Quench & Temper furnace for tooling with controlled cooling system. In progress.

Scope

- Design & Manufacturing HT lines (*)
- Commercial Heat Treating One Piece Flow
 - Normalizing with controlled cooling,
 - Isothermal Annealing,
 - Quench & Temper,
 - Austempering,
 - Carburizing / Carbonitriding
 - Laser Cleaning
- Sales Customized Heat treating Lines
- Outsourcing In-House
- Leasing of heat treating Lines
- Improve current heat treating process of customer
- Technical support with personnel with experience in the HT Industry

(*) In accordance with Standard CQI-9

Contact us

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