

# Heat and Surface Treatment

We always use state-of-the-art technology to respond to diverse and advanced heat and surface treatment needs.

## Product Lineup



Heat Treatment



Surface Treatment

### Heat treatment

#### Vacuum heat treatment

- Surface quality stability

#### Atmosphere heat treatment

- Atmosphere is controlled according to the material

#### Salt-bath heat treatment

- Improve toughness and minimize warping using short-term constant-temperature quenching
- Ideal for high-speed tool steel

#### Bright heat treatment

- Atmosphere controlled with high precision
- Surface quality stability

### Surface Treatment

#### Diffusion method

##### Ion nitriding

- Nitriding using vacuum glow discharge
- Good surface quality

##### PS & PW salt bath nitriding

- PW: improves wear resistance
- PS: improves galling and welding resistance

##### Gas nitriding treatment

- Increases the life of die casting molds through stable treatment
- Improves heat checking resistance
- Ideal for complex shapes such as deep holes, blind holes, and fine holes

##### Aminite DS

- Duplex surface processing performed through the application of high-pressure compression stress
- Heat resistance, the biggest issue with die casting molds

##### Radical nitriding

- Minimal and clean surface treatment
- Nitriding treatment that does not form a compound layer

#### Coating method

##### Chemical deposition, Serac C

- Formation of single or multiple layers of TiC, TiCN, or TiN from gas chemical reactions under low pressure
- Ultra-high wear resistance, high adhesion

##### Physical deposition, Serac P

- Ion plating method that applies vacuum deposition and other technologies
- Formation of a single layer of TiN, TiCN, or CrN
- No changes in properties, no changes in dimensions, uniform quality, homogeneous

##### PPW

- Plasma and powder cladding technologies
- Co-based, Ni-based, or powdered high-speed tool steel cladding