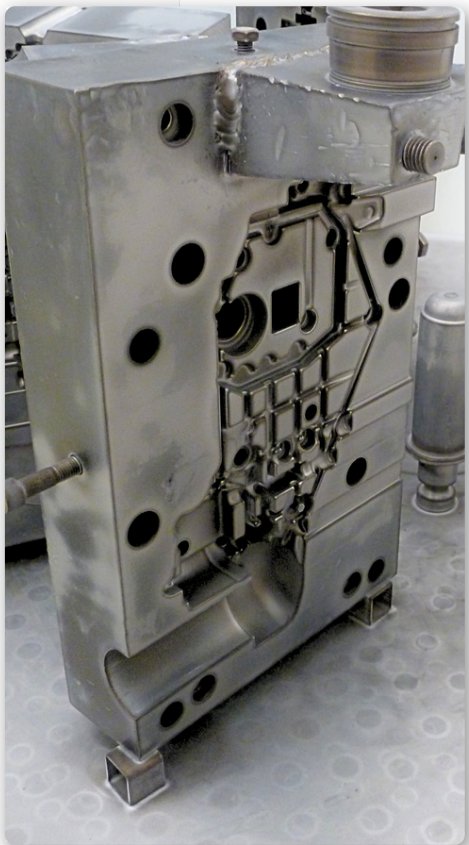


# Die Casting Industry

Plasma (Ion) Nitriding in the Die Casting Industry



## Parts:

- **Die Casting Dies** (Hot- and Cold-Chamber Die Casting)
- **Cores**
- **Sprue parts**
- **Nozzle**
- **Plunger shot sleeve**
- **Ejector Pins**
- **Holder blocks**
  
- **Bushings and guide pillars**

## Requirements:

- For high **Hardness**
- For high **Wear resistance**
- For high **Fatigue strength**
- For **Thermal fatigue resistance**
- For **Reduction of soldering**
- For **Plastic deformation resistance**

## Ion Nitriding Solutions:

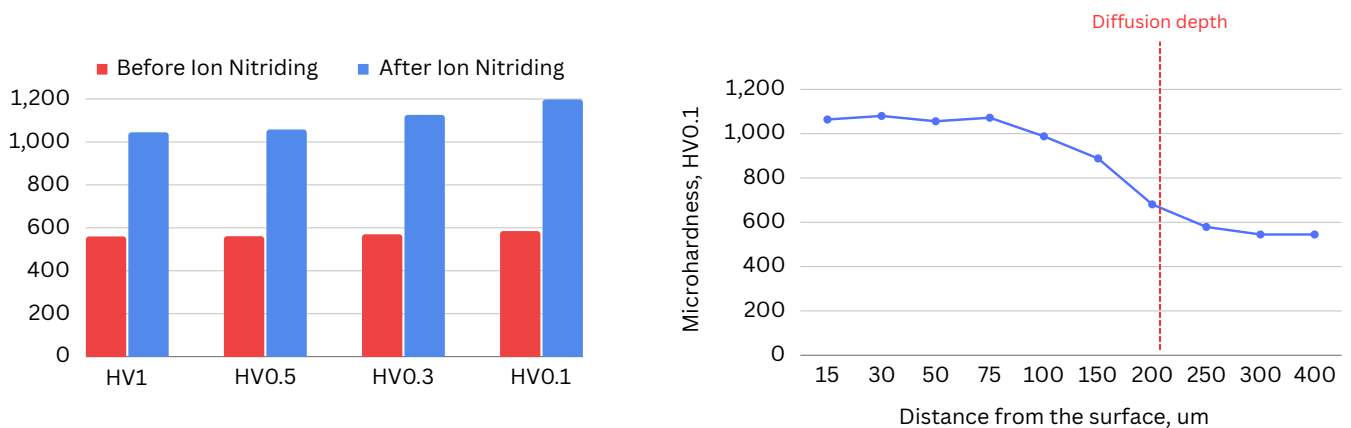
- **Significantly increasing the surface hardness, wear (abrasive and adhesive) resistance and fatigue life of the tools, improving their lifespan and performance.**
- **Improving the thermal fatigue resistance** of the tools.
- **Reducing the friction coefficient** needed both for the tools and for the bushings and guide pillars.
- **Lowering the wettability and adhesion.**
- **Reducing the soldering** of the cast material to the tools.
- **Increasing the corrosion resistance** which is needed if the die sets are working in environments with moisture or corrosive substances.

Improving these parameters **will save from downtime and maintenance costs.**

## Steel Grades Used:

Steel Grade	Surface Hardness, HV	Case Depth, um
H-13 / X40CrMoV5-1/ SKD61	900 - 1200	40 - 200
H-11 / X37CrMoV5-1	900 - 1200	40 - 200
H-10/ X32CrMoV12-28	900 - 1100	40 - 200
H-21/X30WCr-V3/ SKD5	850 - 1000	50 - 250
X38CrMoV5-1 / 1.2367	800 - 1000	50 - 200
D2 / X153CrMoV12 / SKD 11	900 - 1200	40 - 150
P20 / 3Cr2Mo / 1.2311	700 - 900	100 - 250
420	950 - 1200	50 - 150
4140	650 - 750	150 - 400
4142 / 42CrMo4	650 - 750	150 - 400

- Hardness and depth values are recommended for the industry and exact values will depend on the nitriding process parameters.
- This is not a full list of used steel grades



- Example of H13 tool steel after Ion Nitriding - surface hardness and diffusion depth





## Equipment and Technology

Developed state of the art both Hot-Wall and Cold-Wall furnaces for Plasma (Ion) Nitriding.

## Know-How and Expertise

We share our knowledge and expertise on nitriding different steel grades and parts, gathered for more than 45 years.

## Support

We give full-time support.



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