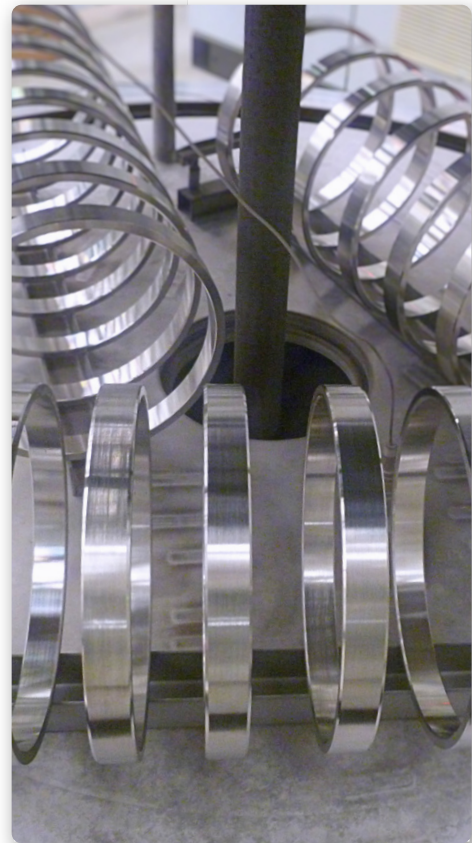


# Pumping Industry

Plasma (Ion) Nitriding in the Pumping Industry



## Parts:

- **Plungers**
- **Pistons**
- **Valves**
  
- **Gears**
- **Screws**
- **Impellers**
- **Rotors**
- **Shafts**
  
- **Bushings and Sleeves**
- **Case Rings**

## Requirements:

- For high **Hardness**
- For high **Wear resistance**
- For high **Fatigue strength**
- For **Lower friction**
- For **Corrosion Resistance**

## Ion Nitriding Solutions:

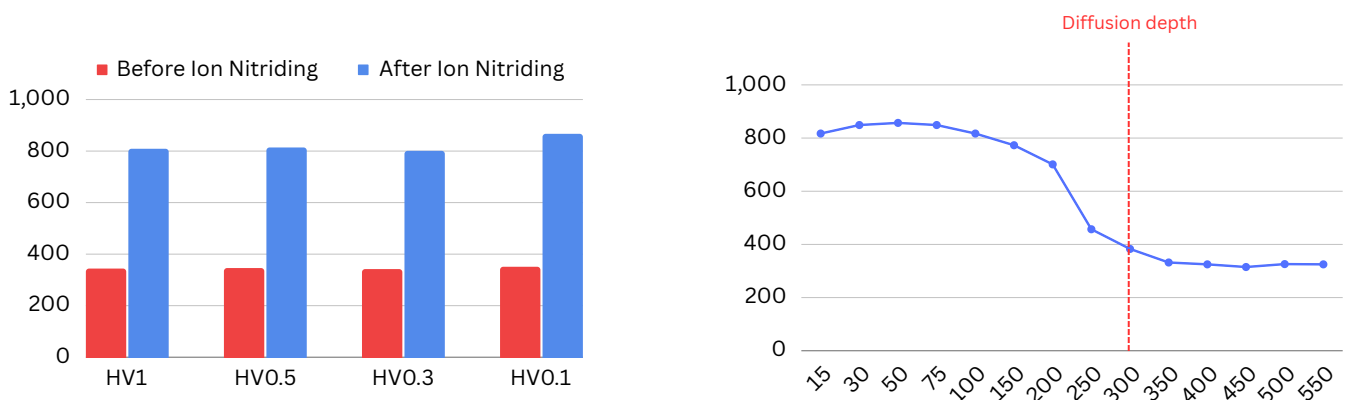
- **Significantly increasing the surface hardness, wear resistance and fatigue life of the parts, improving their lifespan and performance.**
- **Reducing the friction coefficient.**
- **Increasing the corrosion resistance.**
- Post-Oxidation can be done after nitriding in the same process for **further increase in corrosion resistance.**

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

## Steel Grades Used:

Steel Grade	Surface Hardness, HV	Case Depth, um
31CrMoV9	750 - 900	150 - 350
41CrAlMo7-10	900 - 1100	150 - 350
4142 / 42CrMo4	650 - 750	150 - 400
4340	650 - 800	150 - 400
9310	600 - 800	150 - 400
6150 / 51CrV4	650 - 800	150 - 400
5115 / 16MnCr5	650 - 750	150 - 500
5120 / 20MnCr5	650 - 750	150 - 500
4Cr13	950 - 1250	20 - 80
431 / X17CrNi16-2	950 - 1250	20 - 80
304 / X5CrNi18-10	900 - 1200	20 - 80
316 / X5CrNiMo17-12-2	900 - 1200	20 - 80
321 / X6CrNiTi18-10	900 - 1200	20 - 80
2205 / X2CrNiMoN22-5-3	900 - 1100	10 - 40

- 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 steel **31CrMoV9** 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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