

Printer shaft

CLIN™ technologies are liquid nitrocarburizing treatments offered by the HEF Group. They benefit from the circular economy model thanks to the ECO-CLIN™ innovation. The CLIN™ family includes all ARCOR™, TENIFER™, SURSULF™, QPQ™, TUFFTRIDE™, NUTRIDE™, MELONITE™ processes developed and patented by HEF.

Specifications:

Improvements in terms of **friction, corrosion protection, fatigue, abrasive and adhesive wear resistance** (seizure). Very good adhesion of rubber on the treated part.

ARCOR™: a flexible range of industrial treatments. Developed to answer customer needs and issues (technical, economic, and environmental). ARCOR™ process parameters are adaptable to achieve the desired performance.

All types of ferrous materials can be treated, from cast iron to high-alloy steels. Depending on the steel, you may obtain a compound layer between 1 and 35µm, a surface hardness up to 1000HV, and good corrosion resistance. To guarantee shaft roughness (Ra & Rz) according to requirements, a customized polishing step can be done.

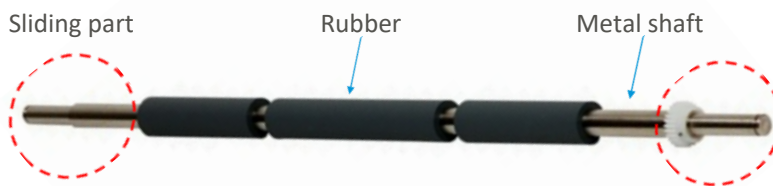
Environmental impact

CLIN™ processes release no VOCs or NOx and do not use any PFAS substances. HEF Group has developed and patented its ECO-CLIN™ process, an innovation that makes it possible to recycle treatment line waste and transform it into new consumables that can be directly used on the treatment line.

CLIN™ technologies are part of a **circular economy** model:

- Limiting the impact on natural resources
- Secure supply of raw materials
- Maintaining and anticipating regulatory compliance

Advantages of CLIN™ technologies: competitive processes capable of substituting processes such as electroless nickel plating, hard chromium plating or gas nitriding.



	Wear resistance		Corrosion resistance	Ductility under bending	Friction properties	Resistance to peeling
	Abrasive	Adhesive				
Hard chromium	++	++	+	-	++	-
Electroless nickel (low phosphorus)	+++	+	+	-	+	-
Electroless nickel (high phosphorus)	+	+	+++	-	+	-
Gas nitriding	++	++	++	++	++	+++
CLIN	++	+++	+++	++	+++	+++