

NORDMECCANICA VACUUM “N-Gen™”: Industry changing innovation in Vacuum Metallization



Introducing **N-Gen™** the evolution of the product range of Nordmeccanica Vacuum Metallizers. A platform of Metallizers covering widths from 1300 mm to 3600 mm. In a fast-changing industry vacuum metallization became one of the focal points of the most advanced packaging innovation. Market trends and the introduction of new packaging technologies required the vacuum metallizer to be evolved into a new generation. Targets have been identified in reducing change over time, improving performances, bringing output quality to new levels, boosting machine flexibility of use up to new levels. We, at Nordmeccanica, did it and the result is: **N-Gen™**.

It took the creativity and know-how of the team behind the Vacuum Division of Nordmeccanica. A team made by technologists acknowledged by the industry as the top experts in our industry, supported by the technological and industrial strength of the world leading manufacturing Group in the converting machinery industry.

The newly evolved **N-Gen™** product range features all of the most advanced technical solutions and allows for top of the industry performances in productivity and quality on traditional materials; as well the **N-Gen™** product line has been conceived to offer nothing but the excellence in handling substrates that are less conventional in metallization such as Polyethylene and cast Polyolefin for mono-materials sustainable packaging. On the high barrier side, the fastest growing segment in metallization, the focus has been on the proprietary “**Multizone Barrier+Bond™**” for the ultimate uniformity of metal deposition; and on metal oxides with the proprietary “**1 to 1 AlOx™**” for the ultimate process control and final deposition clarity, superior performances and the fastest set-up time. The range of applications is then completed with upgrades for applications such as: holograms; security; functional films using non-conventional coatings, ZnS and copper in example. Last but not least: paper, the material that, because of sustainable packaging, is experiencing exponential demand growth.

It is not a generic product upgrade, it is the unfolding of a new era. **N-Gen™** is Vacuum Metallization made simpler, offering superior quality output for the fastest ROI ever featured in the industry, guaranteed to deliver performances through time. The Nordmeccanica unique machine design approach at its best.

The **N-Gen™** product platform, offers significant innovations in all machine sections.

- **Web Handling.** With the support of the know-how developed in Nordmeccanica, the World Leader in web handling design for flexible substrates, this critical part of the process has been evolved to cutting edge performances. Multiple tension zones for an unsurpassable accuracy and versatility in handling a broader range of films, from the thinnest and extensible materials up to the thicker and rigid substrates to include paper.
- **Evaporation System.** Features the quicker set up and effective operator handling, covering low deposition, such as for AlOx, all the way to high-rate evaporation for thicker layers or high-speed metallization. It is complemented by deposition layers sensors, optical and resistant type, suitable for transparent (e.g., AlOx) to heavy deposited metals. The automatic deposition control software has been tuned up to a robust and consistent tool for any operator skill level.
- **Vacuum Generation System.** The top of the industry high-capacity pumping set-up, traditionally featured by our products, has been further evolved to respond to multiple application requirements (web related gas releases, gas injection for cooling and reaction). The **N-Gen™** metallizers range is ready to perform even within the toughest environmental conditions. The newly conceived set up for pumps and cryogenic units (number and specifications) represent the ultimate evolution in the industry and offers the quicker time to vacuum, a performance proved to remain constant through years of use.
- **High Efficiency Cooling System.** This crucial part of the metallization process has been subject in the **N-Gen™** design of innovations targeted to the handling of the entire panel of webs now available in the industry, to include the most innovative ones recently developed. Thin and thermally sensible substrates will be properly metallized thanks to the new set up of the cooling system, highly efficient both in performances and in energy efficiency. The **N-Gen™** release offers optimized features delivering a perfect isothermal conversion achieved by the optimization of cooling surfaces area, the flexibility of temperature set-up, the multiple temperature zones configuration, and the metered gas injection to promote efficiency of heat exchange.
- **Machine set up for ultimate Energy Efficiency.** Informed by the Nordmeccanica traditional top of the industry performances in energy savings, this segment of our innovative **N-Gen™** range of products has been further enhanced to offer top of the industry energy savings and the related cost reduction advantages. **N-Gen™** Includes as a standard the Energy saving module, a proprietary technology now optimized for this new product release.
- **The Modular Concept.** Nordmeccanica introduced to the industry the concept of modularity since the early days of the Company back in the 70s. One of the best-kept secrets behind the one of a kind market share of our Group. Modularity allows for countless advantages, ease of maintenance and service, reliability, flexibility and much more. All of the above now optimized in the **N-Gen™** release.
- **Consistency through time.** The platform of Nordmeccanica Vacuum metallizers has traditionally proven to customer impressive consistency of performances through time. With the **N-Gen™** release such feature has been moved one step ahead. The selection of components, the dimensioning of ancillaries and the experience in engineering vacuum metallizers allowed to offer improved stability in time to vacuum performances and consistency in the quality of the output for decades of use.

To the impressive set of features offered by the standard **N-Gen™** set up a list of optional units can be added to optimize customization and versatility: **"Multizone Barrier+Bond™"** a proprietary technology to improve both bond strength and barrier properties on a broad range of polymers offering the ultimate uniformity of metal deposition; **"1 to 1 AlOx™"**: the ultimate evolution with unique performances in set up time, regularity of the deposited profile, optical clarity; **"Defect Monitoring"** by high dynamic camera systems; **"Zinc Sulphide evaporators"** as High refractive index layer for holograms; "Plasma" pre and post treatment; **"Paper Configuration"** to metallize selected papers.

N-Gen™ claims can be put to the test by visiting the Nordmeccanica Demo Center for a custom run. Our recommendation will be to demo-run using your own webs and compare.