

EMMETI

3D MaintenEasy – 4.0 maintenance for cold-end lines

Founded in 1982, EMMETI is a leading company at international level with regards to palettizing and depalettizing systems for the glass industry. The synergy between EMMETI and its sister-company SIPAC enable to offer a complete range of automatic and semi-automatic push- or grip palettizers, with loading from above or below, as well as depalettizers and transport lines. EMMETI and SIPAC design, assemble and test complete cold-end lines directly at their production facilities.

Following its continuous attention to technological innovation, EMMETI has recently decided to focus on a series of Industry 4.0 developments that support the services and maintenance needs of hollow glass production lines.

THE IDEA

Even if the Machinery Directive states that the manual of use and maintenance of the machine must also have a spare parts manual limited to safety systems only, EMMETI decided quite a while ago to offer its customers

Speaking about machinery development and evolution, and - of course - Industry 4.0, does not always cover all aspects of glassmaking operations. We all know that machines require important maintenance operations so why not include this 'work in Industry 4.0 too. This is exactly what our readers can find out about in this article from EMMETI.



complete spare parts catalogues for all installed components, positioning the company as one that delivers a high-value service.

In the past, EMMETI prepared non-interactive spare parts catalogues manually, taking about two weeks for catalogues of machines made to order. This resulted in a 2D non-interactive PDF catalogue, which forced customers to order the missing components by phone or via e-mail, entering data manually and with high probability of errors during the data entry phase.

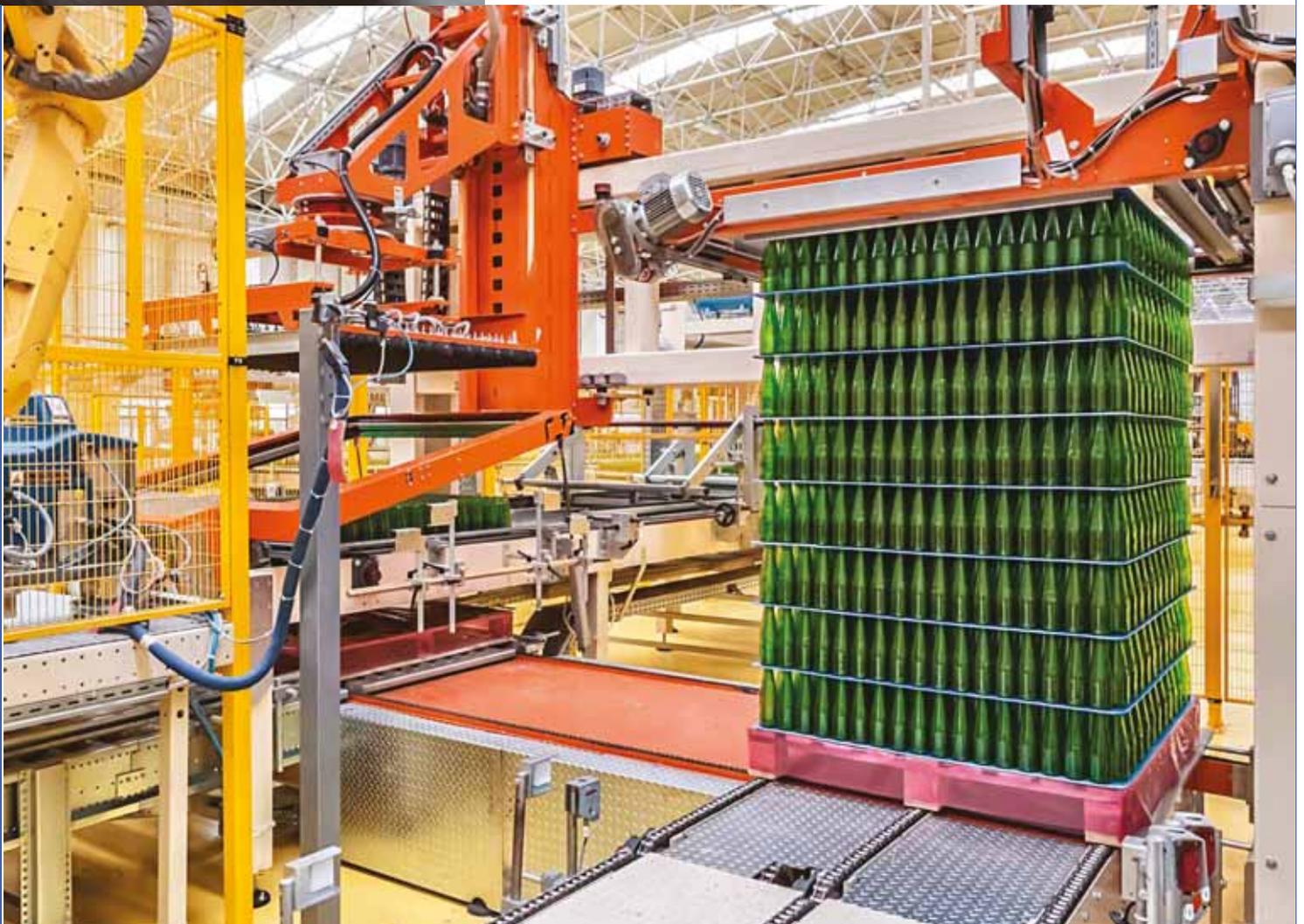
In order to optimize costs, times and benefits, Emmeti needed a system to automatically generate interactive spare parts catalogues, increasing spare parts sales and customer satisfaction rates.

FIRST STEP. MOVING TO THE 3D CATALOGUE

EMMETI and its technological partner SYGEST have developed together a project to increase the efficiency and automation of spare parts services, by means of a program supplied to the customer at the time of purchase, which allows to navigate 'inside' the machine, identifying the necessary item to order (also by zooming and rotating or hiding parts of the machine), highlighting the characteristics of the item required and relative codes.

By searching or selecting the component, it is also possible to easily fill out the purchase order of the spare parts; the software

EMMETI MT598 palettizer



COLD-END EQUIPMENT EVOLUTION

EMMETI 3D MaintenEasy – interactive 3D catalogue

for each machine reports where the individual components are used and also provides a comprehensive overview of the parts of first and second necessity. One of the important functions of the 3D catalog is the possibility of highlighting the lubrication points of the machine, facilitating the work of maintenance technicians considerably.

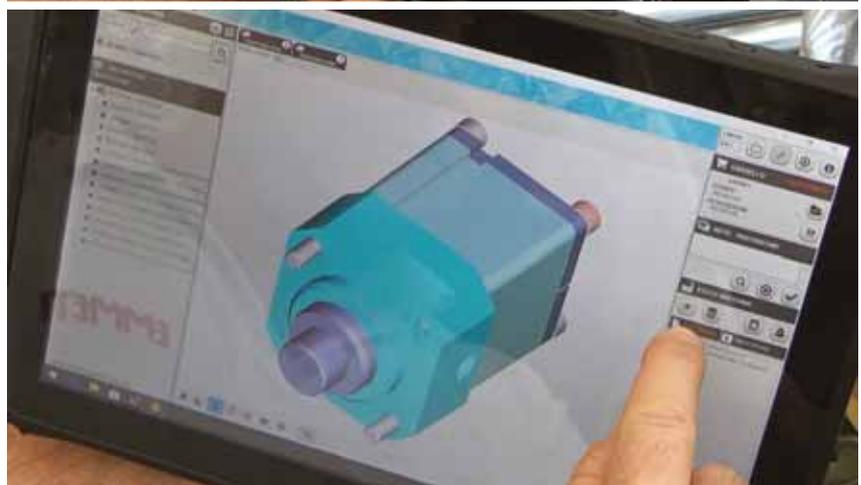
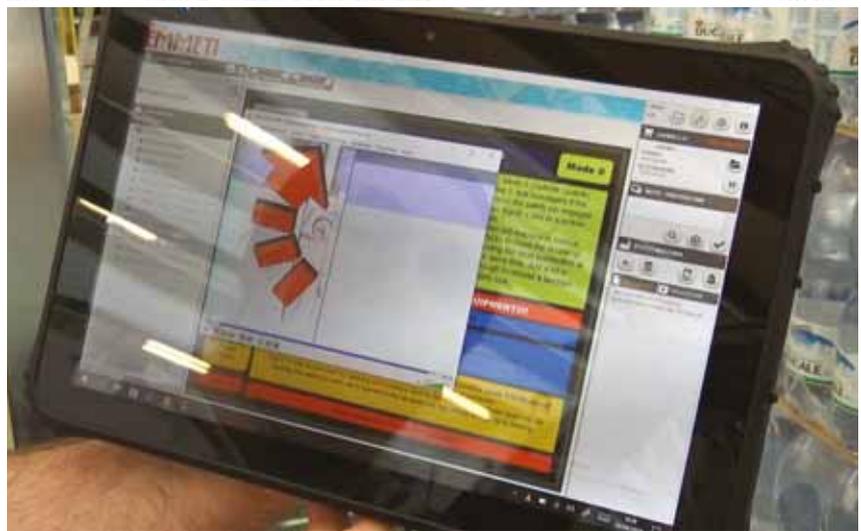
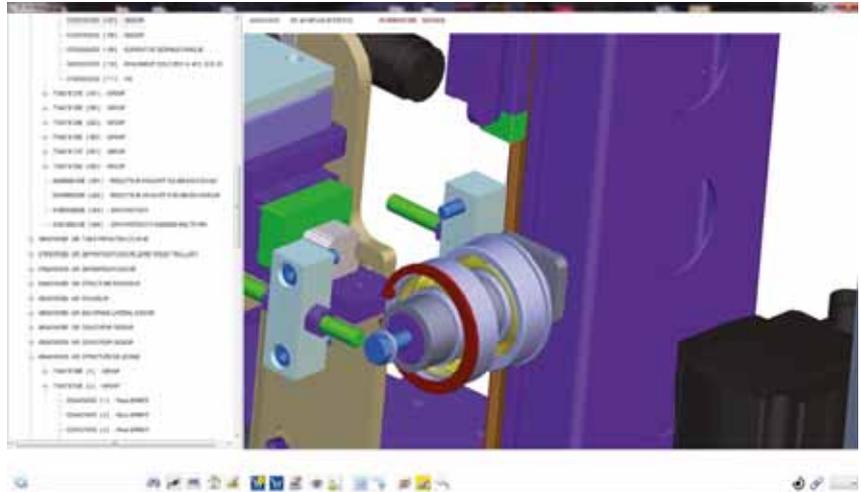
The software is so complete that it also integrates the interactive electrical scheme of the machine, the technical specifications of components/lubricants (enabling to find alternatives with the same features if the components in question are not available on the market), not to mention the connection to the classic manual of use and maintenance in PDF for a quick reference.

The development of the 3D MaintenEasy project has enabled to:

- automate the internal processes of generating spare parts catalogues, reducing the time required from two weeks to four hours;



EMMETI palletizer operations and maintenance manual



- free employees from low value-added operations;
- provide customers with easy-to-use and intuitive 3D tools, avoiding wasted time for both customers when searching for components, or the company, which receives error-free data and codes;

EMMETI 3D MaintenEasy – in-the-field tablet

- create a better perception of the spare parts service for the customer, increasing customer loyalty and business opportunities.

EMMETI 3D MaintenEasy – reporting failures, advanced maintenance indicators

In this way, Emmeti is positioned as one of the most innovative players in the industry, not only in terms of products, but also in terms of service.

SECOND STEP: IN-THE-FIELD TABLET

To offer the valid support that technicians involved in maintenance operations often need, EMMETI has decided to further develop the 3D MaintenEasy project with the use of an in-the-field tablet.

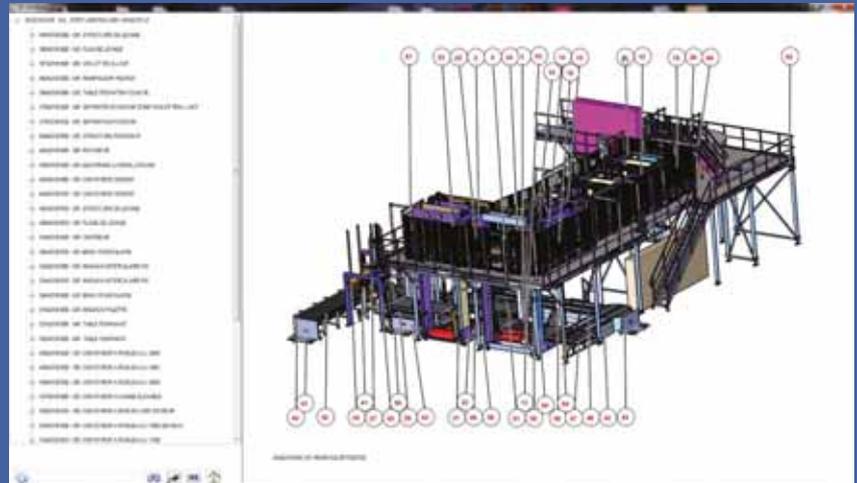
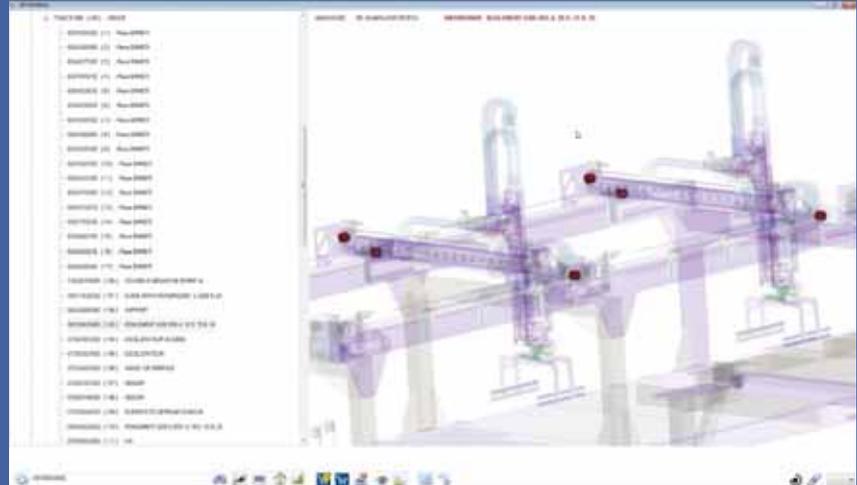
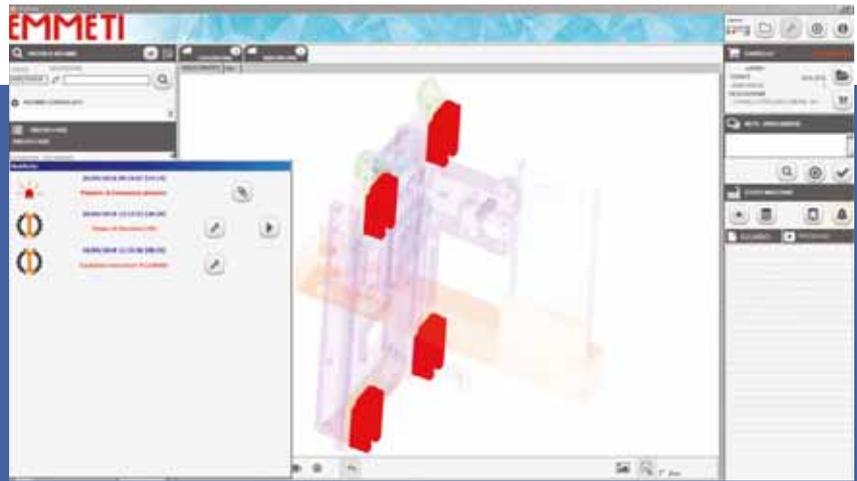
The tablet, available to plant managers and/or maintenance technicians, allows access to all functions and tools of the 3D catalogue directly on the production line, providing concrete help in maintenance processes so as to significantly reduce machine downtimes. An additional function of the tablet is the ability to quickly recognize the components by reading QR codes applied to the different parts of the machine. In addition to 3D visualization, if available, maintenance procedures and video tutorials are also available to facilitate operations.

The video tutorials and procedures also enable to obtain faster and more effective and precise format change operations, fundamental for cold-end systems, thus saving time and thereby increasing daily productivity of the lines.

THIRD STEP: MACHINE-DRIVEN MAINTENANCE

An additional evolutionary step is given by the possibility of equipping the machines with wireless communication equipment, so as to be able to converse with the available operator tablet.

This evolution leads to several interesting scenarios: on the one hand, the sending of production



COLD-END EQUIPMENT EVOLUTION

Cold-end equipment evolution



information in real time allows plant managers to always be in control of all performance indicators and, thanks to recorded and stored data, understand how to react to optimize the production cycle.

On the other hand, all alarm signals and preventive failure indicators (based on the hours of work and the use of components) allow maintenance technicians to intervene promptly to ensure production continuity.

The tablet also contains a fault-setting ticketing system: opera-

tors can open a fault report, so technicians can intervene quickly to re-establish machine operations and communicate progress or completion of work, while production managers have the updated picture of the situation under control and can check the level of business efficiency.

We can therefore start talking about real machine-driven maintenance, where the machine itself provides information on its operations and requires assistance from the operator when it is really necessary.

NON-STOP EVOLUTION

The next step in the evolution of the 3D MaintenEasy project will be to equip the machines with "intelligent" sensors, so as to monitor the wear and tear of the components by means of noise/vibrations/... and warn in advance of possible breakages. Predictive maintenance and statistics applied to the history of recorded data will thus make it easier to identify the components most prone to failure, thus ensuring for the future the possibility of having more reliable, performing and long-lasting cold-end lines. ■

EMMETI

EMMETI S.P.A.

Via G. Galilei, 29
42027 Montecchio Emilia (RE) - Italy
Tel.: +39 - 0522 - 861911
Fax: +39 - 0522 - 861912
E-mail: emmeti@emmeti-spa.it

www.emmeti-spa.it