



OEMs in the  
agricultural sector:  
the challenges of  
efficient irrigation

**caprari**

# OEMs in the agricultural sector: the challenges of efficient irrigation

Those in the manufacturing sector love to see their product “embedded” in complex systems, which are an expression of **technology** and **innovation** in different fields.

Supplying components for the OEM sector means being part of a supply chain with the highest quality standards and the most closely cooperative approach, embracing the manufacturer’s challenges and supporting them in delivering products that can compete effectively in the market.

## Environmentally friendly systems: a question of performance

There are two major challenges to efficient irrigation: saving water and saving energy. These are the attributes required of environmentally friendly irrigation systems, the adoption of which has become increasingly important and urgent due to the changing global situation.

The United Nations 2030 Agenda has summarised the open issues with regard to water efficiency and water resources in Goal 6. In particular, Goal 6.4 aims to substantially increase water-use efficiency across all sectors, so as to significantly reduce the number of people suffering from water scarcity.

70% of the world’s water consumption is for agricultural use. This figure alone is enough to illustrate how the use of sustainable practices in this sector can help make a difference. The efficient and effective use of water in irrigation systems is crucial for sustainable agricultural development, food security and overall economic

growth, especially in light of global population growth, climate change and competing demands for water from other economic sectors.

This represents a paradigm shift, which cannot be postponed, and which is why technological innovation is the best ally in which to invest, whether in terms of system yields or the integrated management of data and information towards increasingly digital irrigation.

This requires study, research, synergy between different professions and skills. And it is precisely within this context that our idea of collaboration with OEM customers in the agricultural sector is based.

To achieve efficient systems, the OEM customer first and foremost needs pumps that provide precise flow rate and pressure levels. The added value of working with fluid handling professionals is that it is possible to apply to your system a pump capable of operating at the required operating point using the least amount of power. Needless to say, being able to count on a wide range of pumps makes it easier to select the perfect model to achieve the best performance and thus exploit the irrigation system in the best possible way.

European legislation “Delegated Regulation 518/2022” has already established certain efficiency requirements with the transition to Stage V for all agricultural engines. The hydraulic efficiency requirements for irrigation pumps, on the other hand, have not yet been set, although it is understood that the eco-design directives will also involve this area. The choice of products designed according to high-performance hydraulics is therefore strategic, as well as enhancing the sustainability results already achieved with engine efficiency.

Finally, it should not be overlooked that motor pump units used in irrigation systems sometimes need additional pumps to supply water. In this case, it is a major advantage to be able to rely on a single, trusted supplier, because this allows the end customer’s needs to be met with efficient and reliable products for the entire irrigation chain, from water withdrawal to distribution.



Sources

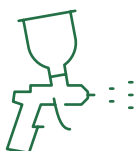
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Caprari has many years of experience serving agricultural OEMs with dedicated applications. The comprehensive know-how in fluid handling, together with the ability to adapt it to the requirements of a specific context, are at the heart of the collaboration with major national and international players. We want to be their reliable and proactive technical partner. This primarily means being prepared to meet the needs of a sector where the search for products that improve productivity and optimise operations is of increasing strategic importance. Indeed, it is well known that cooperation between industry, research and agriculture is one of the major issues at the forefront of sustainable development goals and the adoption of production models that respect natural resources.

## Tailor-made products

Customisation is the keyword when it comes to OEM solutions. A **flexible** and tailor-made **approach** increases the value of the product offered, both in terms of optimised performance and the ability to respond to specific needs.

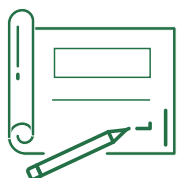
From the initial feasibility studies to the moment of delivery, listening to the customer and continuous dialogue enable us to achieve solutions that are perfectly in line with requirements and functional to the applications for which they are intended. Customisation can touch on details such as labels and pump colour, right up to the study of the most suitable materials and actual co-design work.



### COLOUR

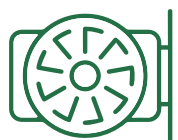
We offer an exclusive painting service covering a wide range of colours. The customised products are made of high-quality materials and guarantee excellent strength and durability. Painting is carried out in our

main factory and performed using a state-of-the-art automated system, in compliance with the highest environmental standards.



### LABELS

A customisation service is available for labels featuring the customer's logo. This allows the customer to promote its brand and maintain visual consistency towards the end user.



### CUSTOMISED IMPELLERS

Cast iron, bronze, stainless steel... There are many factors that influence the choice of material for an impeller, primarily the operating conditions and the specific requirements of the application. Thanks to

our experience in this field, we can provide advice on the selection of the most suitable material to ensure efficient operation over time. The material is not the only thing that can be customised. The impeller diameter is also calibrated to specific requirements so that the pump operating curve can be adjusted to the desired operating point. This is essential if the system is to guarantee the required flow rate and operate in the area of the highest output.



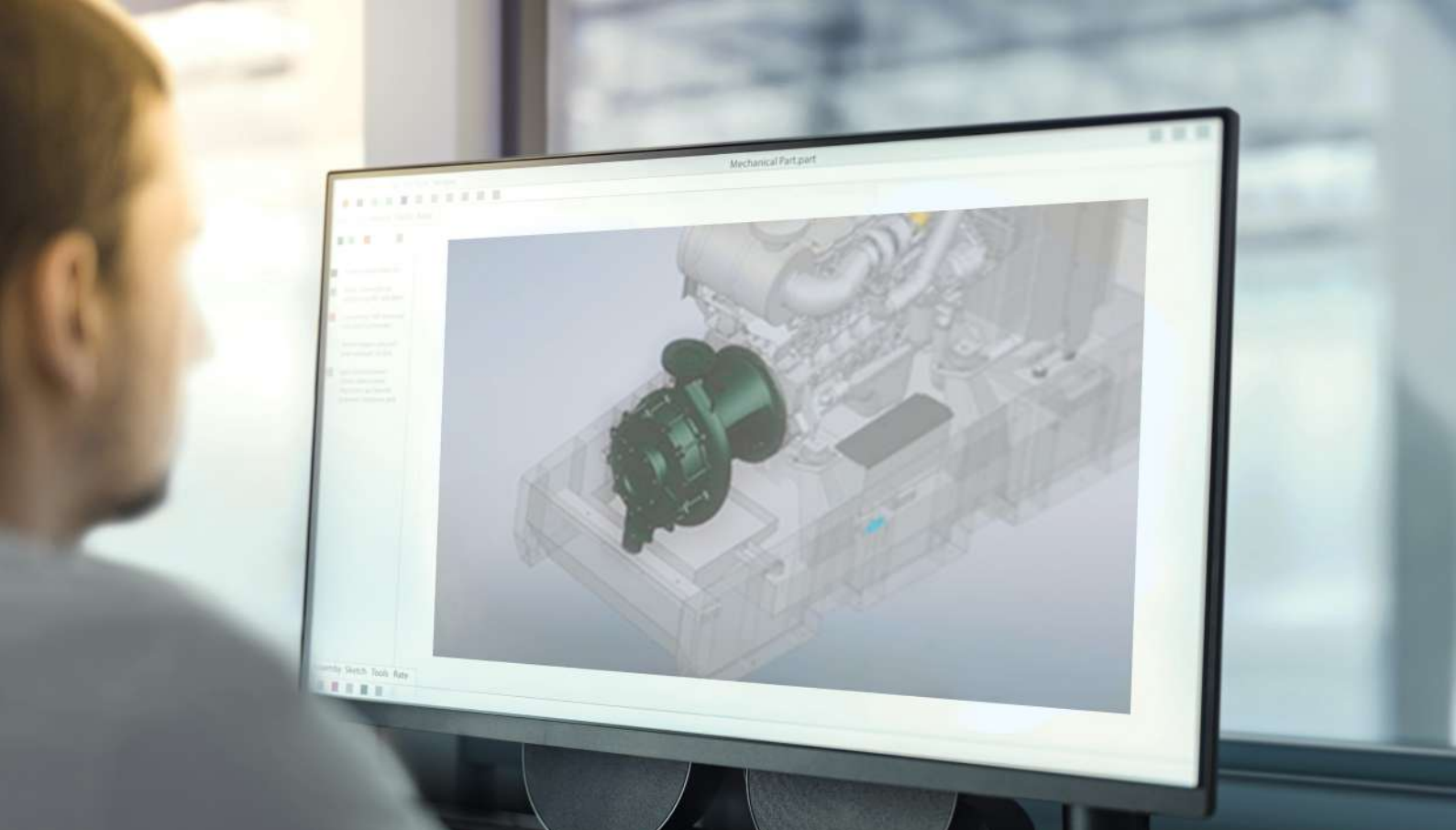
### DESIGN INTERVENTIONS

Our technical department is ready to support customers in assessing implementations to optimise solutions in line with their specific requirements. Through a dedicated OEM team, this co-design activity allows interventions to be carried out on schedule.

CUSTOM-MADE  
SOLUTIONS







## Components for a valuable partnership

Wide range of product customisation and engineering services

Quality control at every stage of the productive process

Comprehensive pre-sales and after-sales support

Guaranteed deliveries at maximum speed





## AVAILABILITY OF MATERIALS

Our customers can count on the continuous availability of products and spare parts, which is fundamental for maintaining continuity of operations. This service contributes to reducing downtime and ensuring effective and fast after-sales support.

## SERVICE NETWORK

We have a worldwide service network. Thanks to an efficient and well-structured logistics service, we can provide fast after-sales service and prompt responses to all our customers, regardless of their location.

## RELIABILITY

This is the pillar on which we base every aspect of our work. We are committed to finding products that exceed our customers' expectations in terms of performance, durability and satisfaction. We want to put our expertise at the service of our customers' ability to compete. This is why every stage of the production process is rigorously controlled. From the selection of raw materials to the

implementation of state-of-the-art technology, we ensure that each product is synonymous with excellence. Each pump or motor undergoes rigorous testing and verification to guarantee maximum reliability

## QUALITY CONTROL

Caprari employs a quality management system for in-house processes that enables us to guarantee a high level of product reliability.

On request, all products can be certified for hydraulic efficiency according to standard UNI EN ISO 9906 Grade 1B-2B-3B.

Our testing and inspection area is fitted with modern measuring equipment and data acquisition systems. All new designs must comply with high standards of reliability. We have four test rooms and perform end-of-line tests for 100 per cent of our submersible motors.

## AFTER-SALES SERVICE

We provide a preventive and extraordinary maintenance service, directly from the premises or by means of specialised workshops, worldwide service centres and on-site inspections.







# Diesel motor pumps: Custom-made products and solutions

We contribute to the production of **diesel motor** pumps that are widely used in irrigation, as well as in dewatering and water emergency management activities. Extensive agriculture facilities, farms and land reclamation and irrigation consortia are the end users of these solutions where our pumps are fitted, each with precise characteristics that are ideal for a given application.

Diesel motor pumps are widely used to power **self-propelled sprinklers, pivots** and **rain wings**. These irrigation systems have become very popular as they ensure efficiency, cost savings, reliability and precision. To OEMs, who are committed to meeting these challenges, we offer a **wide range of pumps and services**, from design to maintenance and spare parts management, all with the utmost customisation. The aim? Support them in creating **specific and unique solutions** that can make a difference in the market.



# Main products for the construction of motor pumps

## The new generation of pumps for diesel engines

For diesel motor pumps that draw water from canals, rivers or lakes and manage the pressure for various irrigation systems such as pivots, self-propelled sprinklers and rain wings, we have designed a **range of specific**, particularly **robust** and **reliable** pumps.

All MEC AG - MEC MG - BHG series flanged pumps with diesel engines are manufactured with a cast iron pump casing and impeller and are equipped with SAE-type modular flanging.

The following versions are available:

- ▶ **MEC-AG:** single-stage pumps
- ▶ **MEC-MG:** multi-stage pumps
- ▶ **BHG:** single-stage pumps for high flow rates

### The strengths of these pumps

- ▶ They are suitable for all irrigation systems
- ▶ They are able to operate in different conditions
- ▶ They have excellent hydraulic performance
- ▶ They allow considerable energy savings
- ▶ They are easy to install
- ▶ They guarantee easy maintenance

### MAXIMUM FLEXIBILITY

The first was the SAE 3 monobloc version, a historic Caprari pump recognised for its extreme reliability and durability. This was later joined by the version with modular support SAE3 - SAE4 - SAE5. Thanks to the **interchangeable connection flange**, a single pump model becomes the ideal solution for all types of diesel engines. Pumps with modular bearing support are also available in LIGHT VERSION SAE3 - SAE4 - SAE5, a compact version without bearing support, which is very easy to install.

### EASE OF MAINTENANCE

Thanks to our **patented EASY FIT system**, it is possible to remove the gland without disassembling the pump, by operating directly on the system. This solution is standard on all models of the MEC-AG, MEC-MG and BHG series. In addition, the cataphoresis treatment of the components ensures high corrosion resistance.



# Pumps operating with both electric motors and diesel engines

## MEC A SERIES HORIZONTAL SURFACE PUMPS

These are versatile pumps, and besides irrigation are also used for water supply of waterworks, industries, irrigation systems and fire-fighting units.

These single-stage horizontal lineshaft centrifugal pumps are made with cast iron wet end and a steel shaft. They can be coupled to both diesel engines and 2-pole and 4-pole electric motors and are available with either a packing seal or mechanical seal.

## MEC-MR SERIES HORIZONTAL SURFACE PUMPS

Multi-stage centrifugal pumps with horizontal lineshaft, suitable for coupling with both diesel engines and 2- and 4-pole electric motors. They are available with either a packing seal or a mechanical seal. These pumps are also very versatile and can be used for all types of lifting and distribution of clean water.

## BHR SERIES HORIZONTAL SURFACE PUMPS

Horizontal lineshaft single-impeller centrifugal pumps. Can be coupled to both 6- and 4-pole electric motors and to engines. Pumps that deliver high flow rates have applications in irrigation, fish farming and industry in general.



# Centrifugal wheel-mounted pumps

The **MEC D series pumps** are designed to be attached to a two-wheel trolley or directly to a tractor lift or self-propelled sprinkler. They are horizontal lineshaft centrifugal pumps with volute delivery casing and one or two impellers in series. Suitable for pumping water in mobile or semi-mobile irrigation systems, they are reliable pumps with consistent performance over time. The coupling is safe and quick, easily removable after pumping.

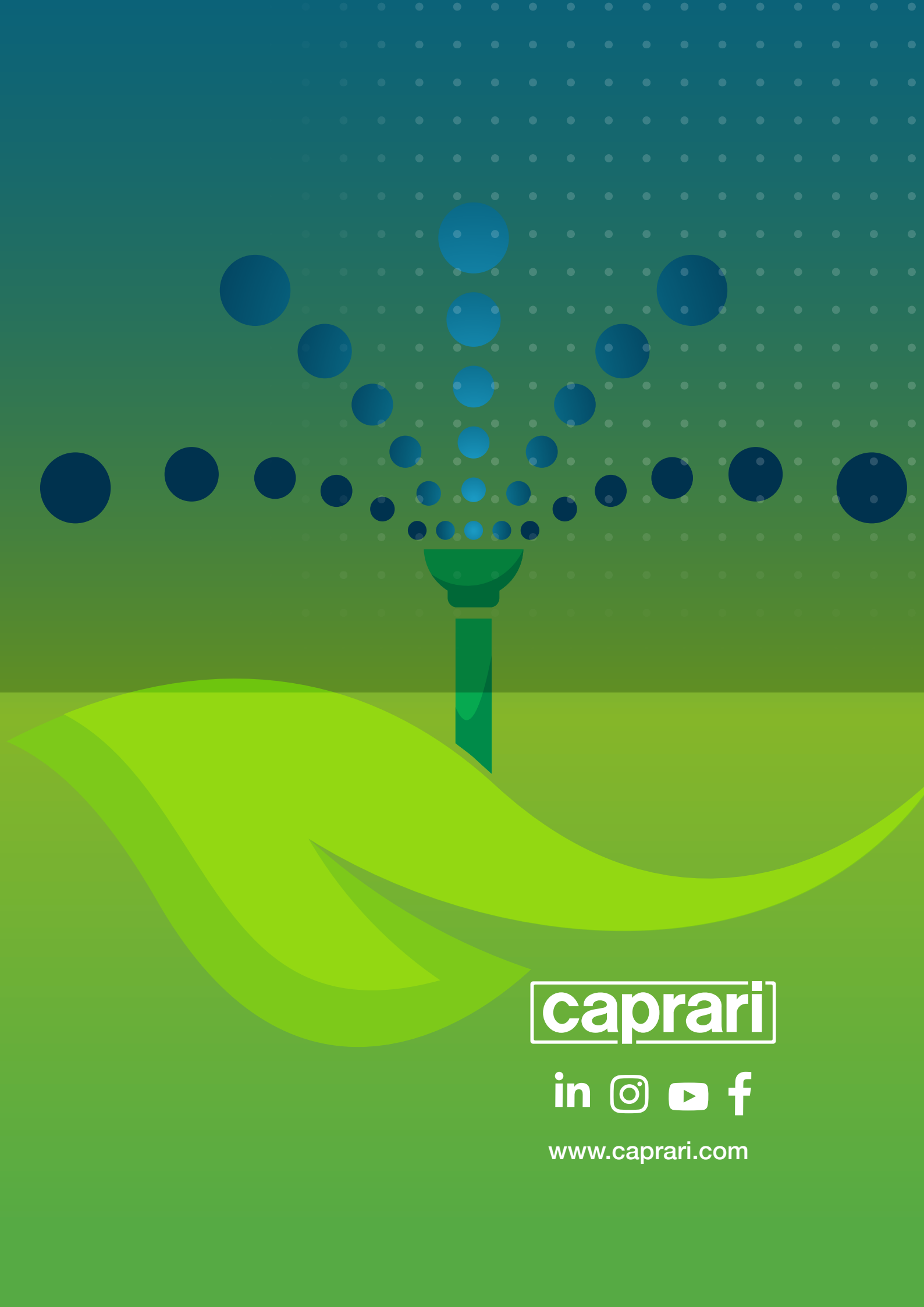


# Normalised pumps

**Normalised EN 733 series NC/NCD centrifugal pumps** are also an excellent solution when it comes to irrigation. These products are manufactured according to the 2009/125/EC Directive (EcoDesign - ErP), thus geared towards high energy savings. Contributing to this are both excellent hydraulic efficiencies and motors in efficiency classes IE3 or IE4. They are robust and reliable pumps, both in terms of corrosion resistance and low mechanical stress. Maintenance is also very easy thanks to the back Pull-Out system that allows inspection and repair without disconnecting the motor and pump from the piping.







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