

The Rain Bird story is based on the ever-present need to use water intelligently, and the response of one company to that challenge



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**RAIN BIRD.**

## Continuous innovation and improvement

– how the world's first impact sprinkler evolved into the world's best gear-drive rotor



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The development of the Eagle wind-tolerant nozzle means that performance like this with bigger droplet size, greater throw and a lower angle, is now available to any course that experiences extreme wind conditions.

## Continuous innovation and improvement

– how the world’s first impact sprinkler evolved into the world’s best gear-drive rotor

The Rain Bird story is based on the ever-present need to use water intelligently, and the response of one company to that challenge.



**Rain Bird’s very first impact sprinkler was the result of Clem LeFetra’s belief in the invention he first saw in 1933, and his determination that it would revolutionise irrigation as it was then practised. Rain Bird received its first patent in 1935 for the original horizontal action Impact Drive Sprinkler, and one of the first commercial applications to benefit was the famous Los Angeles Country Club golf course. In 1990, recognition of the importance of the original impact sprinkler came when it was designated a historic landmark by the American Society of Agricultural Engineers, such was its contribution to the intelligent and efficient use of a precious resource – water.**

### Constant innovation and development

Rain Bird continually developed the impact sprinkler by introducing full and part circle types, and in 1941 the first pop-up, a brass and stainless steel impact. The 50s saw the introduction of models like the Do-All Impact Morning Glory top, which was the first sprinkler with height and distance control that was easy to change. New kinds of bearing washers were developed to seal out sand and silt and reduce friction, bringing increased reliability to all Rain Bird models.

### Stop-a-matic Valve, and insertion in sprinkler heads

In the 60s, an important landmark was made with the Stop-a-matic Valve, the predecessor of the Sealomatic valve of today, which by cutting off at 1.38 Bar automatically cut water loss from run-off and prevented flooding. The 70s saw the introduction of the TriPact Rotor with an internal impact drive and a diecast brass body, and the development of both electric and hydraulic remote control valves.

But the most significant innovation for golf course sprinklers came in 1974 with the insertion of the Stop-a-Matic Valve into the head of the pop-up impact sprinkler. The Hydraulic Valve-in-Head impact sprinkler, including individual automatic control of each sprinkler head throughout an irrigation system, became a Rain Bird hallmark, and paved the way for the Eagle Series of golf rotors.

### Rain Bird’s first gear-drive: the Eagle series arrives

In 1991, all these developments were incorporated into Rain Bird’s first gear-drive rotor, the Eagle 900 series. Building on our knowledge and experience with impact rotors and their ability to work with grey or dirty water, the Eagle range soon became the rotor of choice for golf courses around the world.



Constant exposure to the prevailing winds is no longer a problem for La Reserva: the installation of the Eagle dual spreader nozzles ensures even distribution of water to the playing surfaces.

### A model to deal with any conditions

The 900 version featured true closed case and valve-in-head design, followed soon after by the 950, 700/750 and 500/550 series.

Since 1991 the Eagle series have been continually enhanced incorporating many of the features that were originally unique to the impact.

The closed case construction of the Eagle rotors dramatically extends the life of the rotor by protecting the motor from debris, sand or silt, along with outside elements and environmental changes due to hot or cold weather conditions.

Today, it is still the irrigation industry’s only rotor to have a true self-flushing mode at pop-up and pop-down, adding another barrier to debris, and which is crucial for usage on courses built on fine sand and silty soil types.

We know from many years of usage by our customers around the world that Rain Bird’s gear drive rotors are technically superior to our old impact type. Closed case technology, lower unit prices, better performance, quieter delivery, smaller footprint and greater range of product add up to one thing: whatever kind of water you’re using, and whatever kind of conditions your course is dealing with, gear drive is best.

## Eagle gear drive rotors outperform old fashioned impact’s

The evolution of impact to gear drive and the many enhancements made as a result of feed back from end users make the Eagle Series the best gear drive on the market.

### Here are just some of the Eagle Series unique features:

- The Eagle’s closed case design and unique flushing action ensure positive retraction when covered by top-dressing or bunker sand. No extra cleaning or maintenance, or problems stored for the future.
- Gear drive rotors have built-in filtration to allow filtered water – including recycled water - into the motor to lubricate the gears. The water then flows around the outside of the gearbox motor to the nozzle and out. Water lubrication is environmentally friendly compared with oil lubrication.
- Patented Top-Serviceable Rock Screen and Replaceable Valve Seat allow for debris removal during installation or due to build-up over time.
- Eagle 700/750 dual spreader nozzle designed to provide a similar distribution profile to that of an impact- wind or otherwise.
- The Eagle 700/750 Wind Tolerant nozzle with 12° low angle trajectory and innovative flow channel (to provide a larger droplet size) is designed to outperform anything else in extreme wind conditions.

### Windy conditions: Eagle dual spreader nozzles are better

Since the release of the Eagle 700 dual spreader nozzle in 2000 and the Eagle 750 dual spreader nozzle a few years later, golf courses constructed in windy areas of Europe have benefited dramatically from the level of wind resistance that the dual spreader nozzle provides.

But don’t just take our word for it: situated in Southern Spain on the Costa del Sol, La Reserva, Almenara and Real Club de Golf Sotogrande all use Rain Bird equipment. Together, the three courses are irrigated by over five thousand of the Rain Bird Eagle Series rotors.

Situated in two valleys in the hills over looking the Mediterranean the 18-hole course of La Reserva is in an exposed elevated position susceptible to wind from a number of directions.

As Head Greenkeeper Javier Gutierrez says *‘because the golf course is located in the hills above the coast it can suffer from very windy conditions with the wind being funnelled through the valleys. The greens are irrigated with Eagle 900/950 rotors, tees with Eagle 500’s and fairways using Eagle 700’s fitted with dual spreader nozzles and since the golf course was opened in 2003 the system has provided even coverage throughout the golf course regardless of the wind conditions’*

### Extreme wind conditions: Eagle Wind Tolerant nozzles are the best

There are a number of courses where extreme wind conditions affect either specific areas of the course or in exceptional circumstances the whole of the course.

A prime example of this situation is on the Atlantic coast of North Morocco. To deal with the much windier conditions that prevail in this part of the world, in 2005 Rain Bird released the Eagle 700/750 Wind Tolerant Nozzle, designed to out-perform any other nozzle when used in these extreme conditions.



Olafur Agustsson

In a very different latitude but having to deal with much the same sort of wind conditions because it’s located on the coast of Iceland close to Reykjavik, Keilir Golf Club is fully exposed to the Atlantic winds and none more so than the 11th green. As Head Greenkeeper Olafur Agustsson is keen to point out ‘...even with the Eagles fitted with dual spreader nozzles we struggled to get water on this green when the wind is really blowing hard. We fitted Wind Tolerant Nozzles last year and they have performed beyond our expectations’

### Summary: Eagle Gear Drive rotors out-perform impact rotors

The misconceptions about the ability to handle poor water quality and windy conditions simply don’t apply to the Rain Bird Eagle range of gear drive rotors.

With the innovations and developments since their introduction in 1991, they’re actually significantly better than impact sprinklers when used with water of reasonable quality and in windy or even extremely windy conditions. It’s a fact, and Rain Bird’s own customers are telling us that this is the case.

Combine these advantages with those of working with modern closed case technology, lower unit prices, quieter delivery, smaller footprint and a greater range of product add up to one thing: whichever way you look at it, gear drive rotors are the best choice for your course.





