INTERNATIONAL

Volume #16, 2007

Hunter® Headlines

Irrigation News & Insights

Water Solutions for Golf:

New Technologies for Golf Course Irrigation

Around the world, forward thinking planners and architects are working to conserve our most precious of resources: water. With demand increasing and supply diminishing, pro-active golf course architects and developers are turning to unconventional water sources and new technologies to keep courses in top condition.

More with Less

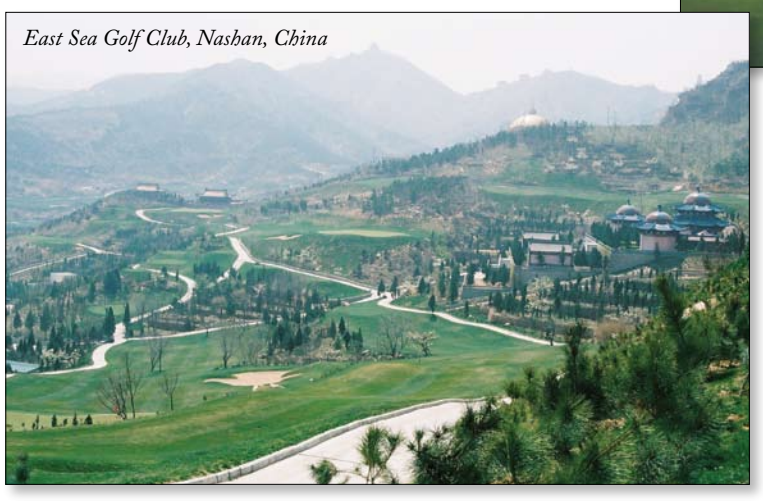
A typical golf course can use a considerable amount of water! Of course, the operative word here is "can." When a golf course has an efficient system that applies water uniformly and has a water-conscious superintendent who schedules the applications creatively, the course can be very water-efficient.

Carnoustie Links, Scotland

Carnoustie Links in Scotland, home of "The Open" this year, undertook a detailed study of their irrigation system at the end of 2000 with a view to updating and improving the irrigation system efficiency to all 54 holes.

After an on site test of the competitive options, Hunter G875E, G90E, and G70B rotors were chosen, due to their superior water distribution and highly efficient performance characteristics; all the main's pipe-work was replaced to eliminate leakage; a variable speed pump station was installed to reduce power consumption; and, in the coming months, a weather station will be installed to provide accurate climatic data for more accurate irrigation scheduling

"The Open" at Carnoustie Links



East Sea Golf Club, Nashan, China

Today the world's largest golf course is the 225-hole **East Sea Golf Club** in Nanshan, China. This course uses water efficient Hunter G70E and G880E Total Top Service rotors and the entire project is controlled through Hunter's Central Control software. This control system maximizes operational efficiencies and implements water saving programs over the full 820 hectares of carefully irrigated turf.

East Sea Golf Club, Nashan, China

Wastewater Recycling in Action

The success of irrigating with recycled water has been seen recently in France, Spain, Italy, and Germany.

The French city of Spérone, in Corsica, boasts a water purification station capable of treating 208 cubic metres of wastewater per day. The reclaimed water is subsequently used to irrigate the nearby 18-hole course, **Golf de Spérone**.

Another example is the **Golf de la Rochelle**, where Hunter's institutional I-41-ON and I-20 Ultra rotary sprinklers irrigate the turf supplied by a combination of city and recycled water. Hunter's high quality I-Series product line has proven to perform exceptionally well in these mixed source water applications.

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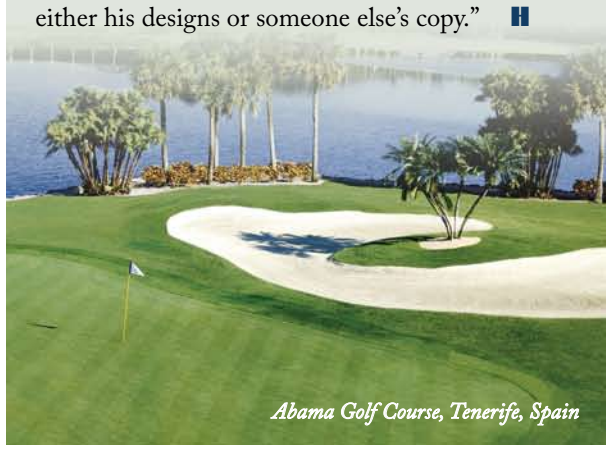
GCBAA Gives Prestigious Rossi Award to Ed Hunter

Richard Hunter, president and CEO of Hunter Industries, accepted the Don A. Rossi Award on his father's behalf at the Golf Course Builders Association of America's (GCBAA) annual banquet, held in February at the conclusion of the Golf Industry Show in Anaheim, California.

Presented annually by the GCBAA, the award is given to an individual who has made significant and long-lasting contributions to the sport of golf. The late Ed Hunter (1917-1998) became the first person with a background in the field of irrigation to be so honored. Past recipients of the Rossi Award include course designer Robert Trent Jones Sr., tour professionals Arnold Palmer and Jack Nicklaus, and turfgrass specialist Dr. James Beard.

Ed's inventive contributions to the golf industry include the first all-plastic gear-driven sprinklers, electric valve-in-head rotor technology, and the first Windows™-based central control system.

Glenn Grizzle, founder and president of Grizzle & Hunter Plastics, a veteran of the irrigation industry, and a long-time associate of Ed Hunter, summed up the legacy that Ed has left on the golf course industry. "Every golf course in the world today has his products on them in some form, either his designs or someone else's copy." H



Abama Golf Course, Tenerife, Spain

Using Alternative Technologies

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Desalinization: From Salt to Fresh Water

To combat the trend of increased population and higher water demands, another option is *desalinization*, or the removing of salt from water. Desalinization is not a revolutionary idea, as certain plants and animals have been capable of this for millions of years. People, however, began to mechanically desalt water in the early 18th century and by the 1960's, five desalinization plants had been built.

There are active research projects working to reduce the process cost as the desalinization market is expected to grow to $570 billion in the next 20 years.

Desalinated water is being put to use in the Canary Islands. One of the more recent examples can be found at Tenerife's 5-star luxury hotel and golf course, the **Abama Resort**. The resort property and 18 hole championship course is irrigated with Hunter G-870-E rotors and efficiently managed using Hunter's Surveyor central control software.

Abama Golf Course, Tenerife, Spain

Rainwater Harvesting

Although the majority of rainwater harvesting techniques are frequently found in agricultural applications, this method is also gaining popularity on golf courses and commercial applications.

Abama Golf Course, Tenerife, Spain

Examples in France are the 18-hole courses **Golf de Gourdan** and **Golf Dijon Jacques Lafitte** where both pump collected rainwater to their irrigation systems. The water is harvested in an attractive "lake" in the middle of the course. The economical and environmental savings that come from such a structure make it easy to see why many golf courses worldwide are quick to reproduce the same.

What Does the Future Hold in Store?

With the world's population ever increasing and the amount of fresh water limited, the need for more efficient management and the need to find alternative sources of water for irrigation is a must. Courses that have instituted new water efficient irrigation methods and use the latest water-efficient irrigation equipment already have a head start on the future.

New Technologies in Golf Irrigation

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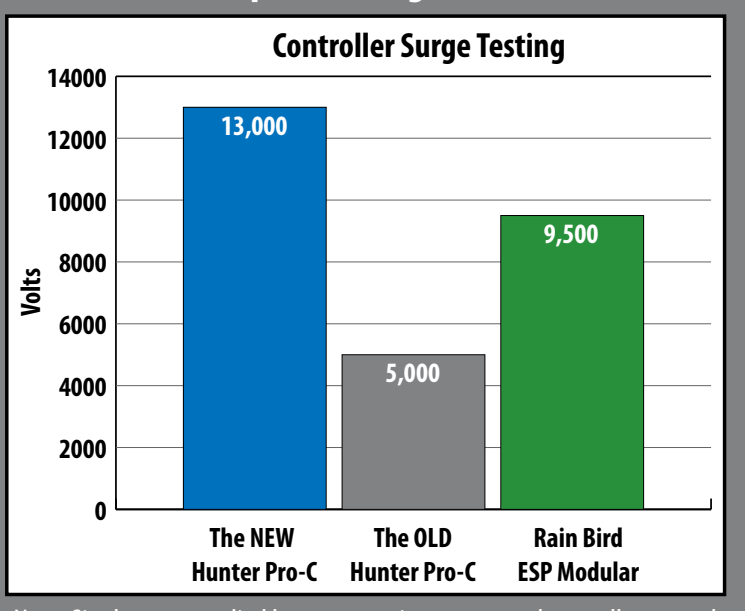
Improvements Make Pro-C the Leading Controller in Surge Protection

Ongoing enhancements to the Pro-C have resulted in a level of surge protection that is far superior to any other controller in its class. Recent test results demonstrate how the new Pro-C modules provide surge protection that is 160% higher than the original version of Pro-C modules. Likewise, the new Pro-C tests 35% higher than the leading competitor's controller modules.

Why is superior surge protection so important? Lightning strikes or electrical spikes can knock out the functions on many controllers and, on occasion, literally fry the entire unit. A controller that can withstand the most extreme surges in power is more likely to survive even minor and moderate surges, protecting the product's vital microcircuits and ensuring it will avoid damage or destruction.

Pro-C Improved Surge Protection



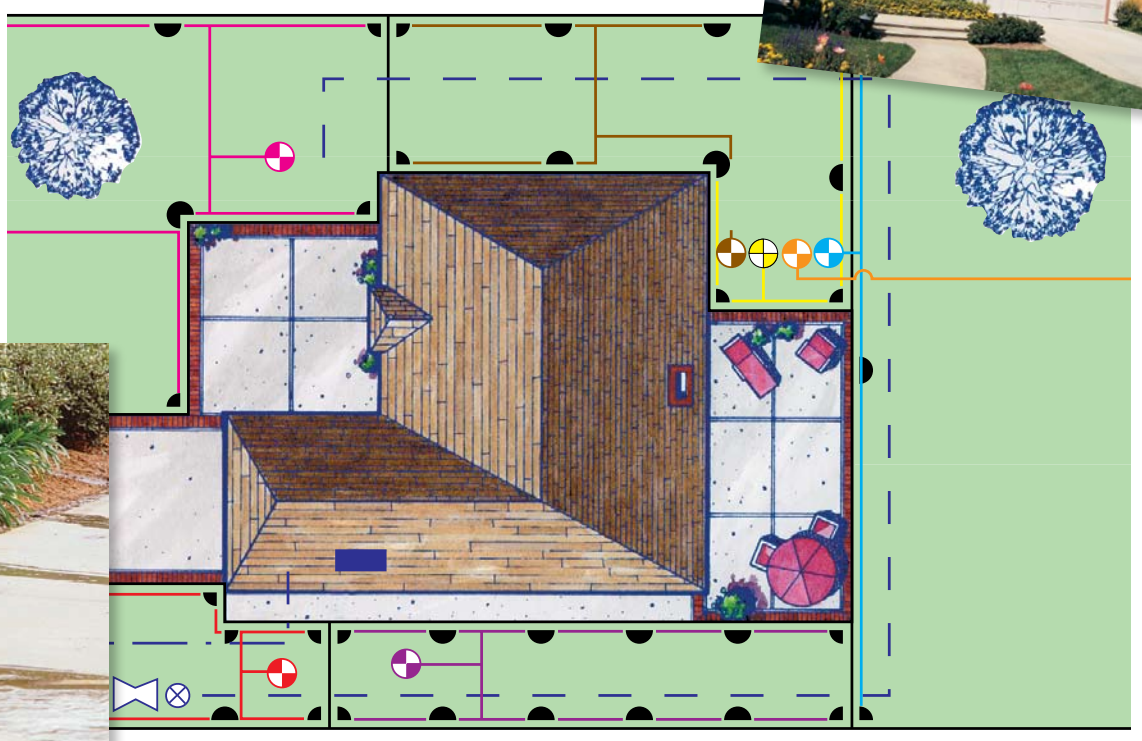
Note: Single surge applied between station output and controller ground

Save a Lot of Water with Check Valves

Most irrigation systems are located on a slope or uneven ground, so we have to consider low sprinkler head drainage—when the system is shut off, the water that remains in the pipes flows to the lowest point of the system and then "leaks" out of the sprinkler.

Installing a check valve can **put an end to that problem and save water** in the process.

Check Valve



Run-off and wasted water when check valves are not installed.

A typical residential irrigation system has*

- 150 metres of 25 mm (1") pipe
- 25 mm pipe holds 51 litres of water per 100 metres

Therefore...

76.5 litres drains every day
(or every time the system shuts down)

if we have 180 irrigation days per year, then either...

(a) 13,770 litres of water per year are wasted

OR

(b) 13,770 litres of water saved per year if check valves are installed!!!

FYI: Every Hunter sprinkler and spray head either comes with a check valve already installed or can be field retrofitted with check valves.

*Litres of water held in 100 metres of pipe

25 mm (1") pipe	51
40 mm (1½") pipe	114
50 mm (2") pipe	203
80 mm (3") pipe	456
100 mm (4") pipe	810

PHOTO CONTEST

Win a Digital Camera!

Share your stunning landscape photos where Hunter products are used, and you could win a CASIO Exilim EX-Z30! As long as it shows off Hunter products in action. Simply get your camera, tell your winning landscapes to smile and send us the photo.

Send your digital images (JPG files up to 1MB each) by Aug. 1, 2007 to **tsano@hunterindustries.com** or on a CD-ROM to:

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We welcome your comments on this publication.

IN THIS ISSUE:

NEW! Root Zone Watering System

Starts New Plantings Right with Near Surface and Deep Root Irrigation

Hunter is introducing a new system designed specifically for irrigating trees and shrubs use on trees, most notably new and young plantings. The new RZWS Root Zone Watering System is ideally suited for use in urban environments.

The RZWS allows water, oxygen, and nutrients to bypass compacted soil and reach tree and shrub root systems directly, encouraging roots to grow deep and remain below the surface. The RZWS comes pre-assembled, saving you valuable time on installation. It's also versatile (can be used with drip emitters or bubblers) and vandal resistant (features an enclosed design with a grate-locking feature that protects irrigation hardware).

Patented StrataRoot design
Innovative internal baffle system distributes water near surface and to deep roots

Pre-assembled watering system
Each unit is ready to install, quickly and easily

Premium pressure compensating bubbler
Two options: 0.06 m^3/hr (0.9 l/min) or 0.11 m^3/hr (1.9 l/min)

Built-in swing joint on bubbler models
For maximum flexibility and ease of installation

Sturdy removable end cap
Offers protection while allowing for bubbler and check valve serviceability

Durable pre-installed check valve option
Prevents low head drainage

Optional fabric filter screen
Keeps sandy soil out of the irrigation well