MAINTAINING YOUR SYSTEM

Watermation's guide to keeping their irrigation system trouble free

Year round maintenance of irrigation system will pay huge dividends at the time when water is needed most. During dry or hot spells, to keep the turf live, healthy and growing.
Around the sprinkler heads, keep the grass close trimmed.
Ensure that the turf is level and slightly above the edge of the sprinkler so that the mower will not foul. Build up ground settlement around the sprinkler area.
Avoid running over the sprinkler with tractor wheels, particularly during the first two or three years after installation.
Keep the sprinkler bucket clear of sand, which might tend to accumulate on sprinklers mounted near bunkers and ensure drainage from the sprinkler bucket is maintained.
No maintenance is necessary with the controllers apart from ensuring that the outside of the case and the panel is kept clean. Normally leave the unit running 365 days per year so there will be some heat within the case, avoiding condensation problems.
During severe electrical storms to avoid possible lightning damage, switch off the main supply and put Rain switch to omit. In winter set controller to all stations one minute and set it to operate during the day once per week. Make sure pump is turned off. This will keep the solenoid valves free.
Clear the Rainstat cup of dead leaves, twigs and other debris. To clean Rainstat, carefully lift out the ceramic wick in the centre of the plastic cup and remove any pieces of dirt gently with the finger. If the wick is coated with algae, wash it carefully in warm detergent and scrub with a small nail brush. Making sure the wick is dry before replacing it in the cup.
Systems fitted with Grundfos - Godwin - British Guinard pumps, no maintenance of the pump unit itself is required. Those with grease nipples should be greased with two shots from a normal grease gun every two years - NOT MORE OFTEN.
The horizontal spindle end suction Monglide type is fitted with a packed gland. This gland will need replacing with new cotton packing of the correct size approximately every two years.
The correct setting of the gland tension allows a slow drip of water into the gland bowl. When adjusting the gland tension nuts, only tighten one flat of the nut on each side at a time and then run the pump to test the setting. If the gland gets hot, the gland nuts are too tight. The motors require two shots on the grease nipples, once every two years. Check also that all the holding down bolts on the pump and motor feet are tight. If these have become loose then the coupling must be checked for wear and the motor and pump carefully realigned.
The low voltage control cable network is installed at approximately 12" to 15" below the ground along the line of the pipe run. No maintenance of this is necessary but great care must be taken when carrying out any digging operations along the pipe run.
On many up-date systems two wires are laid by mole plough on different routes to the pipes. Be careful of the use of a verti-drain machine.
Once a year the motor starter contacts should be checked for wear and replaced if necessary and all rewirable type fuses should be rewired. This work should be entrused to a competent electrician. Trunk mains are installed at a depth of approximately 2ft, to minimise frost damage. Where this has not been possible, then suitable drain off points will have been provided. The main point to protect from frost is the pump-house.

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"The Way Forward" - TORO COMMENT

The recently published R & A document entitled "The Way Forward" is both evocative and timely. Concentrating as it does on the deteriorating condition of many of this country's golf courses, the report slams club green's committee attitudes to the vital area of greenkeeping.
"Disorganised, penny-pinching and arrogant" are stong words indeed but as experience has shown, the playing conditions at many courses are dictated by the whim of Green Committee who, I understand, often make far reaching decisions without even having their club's head greenkeeper present at such deliberations...
I recently met an enthusiastic assistant greenkeepr who told me that he was not allowed to play on the course which he helped to maintain!
He also told me that he had to attend evening classes in his own time and at his expense to further his education in the art of greenkeeping - his employers would not allow him the facility for day-release studies.
Accepting that these examples may not be typical, it nevertheless indicates the level of indifference which can be achieved by club officials in their approach to the all important aspects of greenkeeping.
The R & A document was more to the point. The average club committee's technical knowledge is "non-existent or at best woefully primitive!" it says. In contrast, I doff my hat to the many clubs who paid the travelling expenses of youg assistants competing in the finals of the 'Toro Young Greenkeeper of the Year' competition or those who not only allowed their senior greenkeeping staff time to attend one of the pre-Christmas four 5-day, residential training courses run by the Greenkeepers Association, at Aldwark Manor, but actually paid fees involved.
In essence 'The Way Forward!" is all about education - from the megastar professionals who, it is alleged, are not interested in the long term condition of courses, (apart from tournament days) club officials - many of whom use their authority to influence the preparation of greens - to the poor greenkeeper who is caught between using his experience to maintain the course or having his proposals countermanded or ignored!
The report was, interestingly, more critical about the 2p club member levy paid towards greenkeeping training. "Totally inadequate" was how the document described it. It is recommended that the sum be increased to 50p and ultimately, one pound.
Equally important is the recommendation that 'green committees' should be pruned drastically and comprise of just three members; the chairman of the management committee, club secretary and head greenkeeper. That would be progress!
All in all, 'The Way Forward' has I hear, caused much comment in greenkeeping circles. If nothing else, it offers individual greenkeepers a platform and the opportunity to make their personal views known publicly - and collectively, lobby for more technical education, enhanced professional status - and the financial rewards which should follow.
The last words are left to those contained within the document. "If the game is to survive in the form we know and cherish, failure to tackle greenkeeping problems cannot be contemplated."
Peter Roberts, General Manager, Toro Irrigation Ltd.

<< 1. Close the stop cock on the incoming water main.
2. Open the small drain valve at the bottom of the galvanised steel riser pipe on to which is mounted the ball valve.
3. Discharge water from the storage tank, through a hydrant on the course or on to the greens as required. Pump at least 1ft level down in the tank so that the ball valve is in the open position. Some clients prefer to completely drain the storage tank.
4. Close the suction sluice valve on the pump.
5. Remove the drain plug at the bottom of the pump and leave it out.
6. Open all drain taps visible in the pump house. Leave the delivery sluice valve open.
7. Cover over the pump gate valve and its pipework down to floor level with some sacking.

Spring Commissioning

1. Close all drain valves
2. Open up incoming main and allow tank to fill.
3. Close the pump suction valve
4. Open the pump suction valve.
5. Prime the pump and start up. Open delivery valve one turn only. Allow the pump to run from about fifteen minutes and then gently open the delivery valve and let the pump run until the delivery pressure gauge indicates the normal closed valve pressure.
7. Set the controller to a short watering period, and check the complete course. There will probably be quite a lot of air expelled through the sprinklers, particularly if the main has been drained.

Troubleshooting

Sprinklers will sometimes not turn because of over pressure. The answer is either to adjust the regulator or to slightly increase the spring tension by pulling approximately 1/8" of spring through the retaining hole and bend with a pair of narrow pliers or adjust the spring tension by the device fitted to GN2/3/4. NEVER oil sprinklers.

Quick Coupler Valves

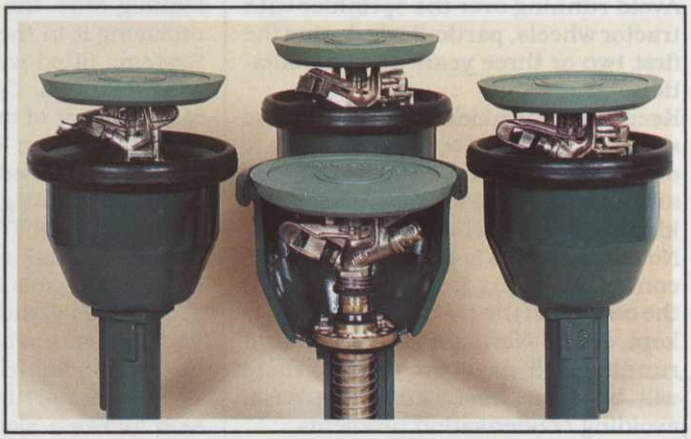
If the valve leaks it is usually because dirt has entered into the body and jammed under the seat. Try clearing by rotating the coupler key two or three times quickly.

Pumps

If the pump is turning but not delivering water, this will be due to the loss of prime. Make sure that there is enough water in the tank and that the suction sluice valve is open. Sometimes vertical pumps become air locked. Switch off, then clear the air by removing the top plug. If pumps will not start electrically, check that the isolating switch is closed, check that the selector switch is correctly positioned, check that the fuses are not blown. If the pressure is low, check for correct rotation and/or leaks on the system.

A full maintenance advice guide can be obtained from Watermation, Monument Way East, Woking, Surrey or any of their European offices.

Below: Watermation's GN series sprinklers



OVERWATERING

If you have read the 'small print' contained within the pages of the R & A's new publication, 'The Way Forward', you will doubtless have noted the comment - nay, criticism that "Over watering has been a major cause - greater perhaps than that of increased play - of the deterioration of British greens over the last two decades".

Obviously linked to the high increase in the use of automatic watering systems which we have witnessed on our golf courses, this critical view needs to be qualified. Far from being an attack on the principles of automatic watering systems, it is, in my opinion, a telling comment about the manner in which systems are designed and used.

The truth is this. Any automatic watering system should be looked at as a management tool. Assuming the design is right and it is used intelligently, it will provide all the 'instant' benefits which greenkeepers seek to assist their task of course maintenance.

Used without thought, (or poorly designed) an automatic watering system will put on too much (or too little) water - with the obvious long term consequences...

Having said that, we then enter the murky waters of comparing competitive irrigation systems. Without doubt, the quality of a system's design, its component parts, standard of installation, operation and equally important, regular maintenance all contribute to the system's (and operator's) ability to control the amounts of moisture used relative to the weather and local conditions.

For years, Toro Technical Sales Engineers have been trying to get this vital message across to club's only interested in buying an irrigation system - at the lowest possible price. Entitled "The Thinking Man's Guide to Golf Course Watering", Toro even produced a booklet on the subject, aimed primarily at educating green committees. It stressed the long term sense of purchasing a system designed not just to supplement average rainfall, (as many do) but to be capable of not only providing maximum coverage but stepping-up its performance overnight to meet the sudden demands of long, dry periods - such as last summer.

Such a system usually costs more money up-front but, unlike systems designed down to a price - and only capable of providing supplemental watering - the more expensive system provides ultimate flexibility of performance as and when the need arises.

Cedric Johns says systems are designed as a management tool. Used correctly overwatering problems can be eliminated.

Such a system also substantially reduces the risk of over watering and because it is properly 'balanced', its ability to provide consistent coverage all around the golf course is enhanced. Add the sophistication of 'Single head control' - which enables the selective use of groups or single sprinklers to be switched 'on' or 'off' around the course and greenkeeping staff can really 'play tunes' on the system! These refinements not only save water and energy costs, they demand a higher premium at the point of purchase. In the longer term however, additional money is not subsequently wasted by clubs pushed into improving the inferior performance of a system purchased on the lower price principle.

An irrigation system should be regarded as an efficient management tool - providing clubs are prepared to invest in a good quality design plus high standards of installation - and maintenance. Get that right and then put the system in the hands of greenkeeping staff who know how to use it correctly then the danger of over watering is virtually eliminated.

Remember, like most other "systems" in daily use in business or industry, the effective end product is in the hands of the people who design, install and operate it. So apart from insisting that your club's system meet your course's requirements (not someone else's) make sure that all the other vitally important factors are fulfilled. If you or your greens staff are not totally certain how to obtain optimum results ask your nearest Distributor to arrange further training.

No doubt many of you are aware that a rain gauge - electronically linked to an irrigation system's controller, will, if the amount of rainfall detected exceeds the column of water already planned for distribution via sprinklers, cancel the set programme.

That's one way of safeguarding against over watering - especially if the heavens open up during the night...

Now, Toro are introducing an even more sophisticated method of preventing soil moisture levels rising above (or falling below) optimum levels during the summer months.

The 'Moist-o-Matic Soil Sensor Kit', it comprises an adjustable sensor unit which is electrically wired up to the irrigation system's main controller. Set to pre-determined 'wet' or 'dry' moisture levels, the sensor is buried under a green (usually that nearest to the controller) where it will automatically read the sub-soil moisture content. In other words, it 'thinks' for you!

The benefits are these:- **1.** Overwatering is eliminated. **2.** Infestation of annual meadow grass will be reduced.. **3.** Greens will be firmer, more resilient and less prone to disease.. **4.** Water wastage is controlled, reducing costs. **5.** It reduces pumping requirements - and the cost of running the pumps.. **6.** The Soil Sensor Kit provides even tighter control of watering programmes.

The sensor can be wired up to any existing electro-mechanical or solid state controller. Cost? Around £425 plus VAT plus installation charge.