



TCR

BOWLING GREEN KITS

BG4 AND BG9

THE BG4 AND BG9 DESIGNS IN BRIEF

The two designs enclosed are two options in watering a bowling green. We have designed both watering systems that automatically water twenty-five millimetres (one inch) per week, over seven nights using pop-up sprinklers.

When designing and selecting the materials, both systems are designed using the latest technology to reduce the running costs. With this, we would like to note, in both options the sprinklers are Rain Bird Eagle series and the pump will be a submersible that is located in the tank.

The BG4 design, is by far the most popular, but doesn't effectively water the entire green and when the weather is particularly hot and dry will require additional watering. The four sprinklers will be located in the centre of each back and throw water 23.2 metres (normally 4 metres out site the green at the corners). We have quoted a separate price for the system where the sprinklers throw water 21.7 metres. Because of the requirement for hand watering in dry conditions we include a watering point, but no hose or additional sprinklers. However, we would be pleased to quote for them if required.

The BG9 design effectively waters the entire green. It does this by using nine sprinklers. One sprinkler in each corner, one sprinkler half way down each side and a portable sprinkler on a hose for the centre.

Both systems have a water storage tank that has been sized to require a small inflow which is stated. We have also given a saving in cost for a small tank. This would mean the tank would require a greater inflow or be run twice per night (allowing for the tank to be refilled), each time applying half the amount of water. There is no effect on the efficiency of the system.

In addition, when designing the system we have taken particular attention to:

- 1) The system uses high performance / durable sprinkler heads.
- 2) All products working within manufacturer's recommendations.
- 3) Low running costs.
- 4) The best products available.
- 5) The system is easily serviced

SYSTEM SPECIFICS: BG4

The system has four Rain Bird Eagle 950 electric valve in head sprinklers located half way down each bank and will use 5.3m³ (1,166 gallons) of water per night to apply 3.5 mm of water over the greens as detailed within this quotation within 52 minutes. The sprinklers with a 23.3m throw, apply water with a distribution uniformity of 64%.

With a tank that holds 5.455m³ (1,200gal) of water, the system will require an inflow that is greater than 1.5m³/h (5.5gpm) for the system to apply it's nightly application in one go.

The components in brief:

- 1) Water storage tank and tank fill
- 2) Submersible pump and manifold
- 3) Pump starter and controller to be located within ten metres of the tank
- 4) An MDPE distribution main, leading from the pump location to the sprinklers
- 5) Gear drive sprinklers to be located around the green
- 6) Hand watering point

BG4 MATERIALS SCHEDULE

Water storage tank consisting of:

5.455 m ³ polyethylene water tank (2.1m H x 2m Dai.)	1 No.
MDPE water main	25 metres
Tank fill and ball valve	1 No.
Fittings	Item

Pumping station consisting of:

Submersible 1-phase pump with a 2.2kW motor (max)	1 No.
Delivery pipe work	Item
All necessary valves, fittings and ancillaries	Item
Starter panel	Item

Mains consisting of:

MDPE pipe 10 Bar rated	200 metres
Main line pipe fittings	Item
1mm 6 core control cable	200 metres
All necessary fittings	Item
Watering point	1 No.

BG4 MATERIALS SCHEDULE Cont...

Sprinkler assemblies consisting of:

Rain Bird Eagle 950E gear drive sprinklers	4 No.
Rain Bird triple swing assemblies	4 No.
All necessary fittings	Item

Supply all materials for control system consisting of:

Rain Bird multi-wire four station controller	1 No.
Rain Trip Rain Sensor	1 No.
Cable jointing materials	Item

SYSTEM SPECIFICS: BG9

The system has eight Rain Bird Eagle 750 electric valves in head sprinklers located half way down each bank and one in each corner. In addition, there is a Rain Bird 7005 sprinkler to be positioned in the centre of the green on a sledge and connected by a hose. All nine sprinklers will use 5.18m³ (1,140 gallons) of water per night to apply 3.5 mm of water over the greens as detailed within this quotation within 1hr. 13 minutes. The sprinklers apply water with a distribution uniformity of 78% (considerably better than the BG4 design).

The system will require an inflow that is greater than 1m³/h (3.6gpm) for the system to apply it's nightly application in one go.

The components in brief:

- 1) Water storage tank with tank fill
- 2) Submersible pump and manifold
- 3) Pump starter and controller to be located within five metres of the tank
- 4) An MDPE distribution main leading from the pump location to the sprinklers
- 5) Gear drive sprinklers to be located around the green
- 6) Sprinkler located on a sledge with hose

BG9 MATERIALS SCHEDULE

Water storage tank consisting of:

5.455 m ³ polyethylene water tank (2.1m H x 2m Dai.)	1 No.
MDPE water main	25 metres
Tank fill and ball valve	1 No.
Fittings	Item

Pumping station consisting of:

Grundfos submersible 1-phase pump with a 1.2kW motor	1 No.
Delivery pipe work	Item
All necessary valves, fittings and ancillaries	Item
Starter panel	Item

Mains consisting of:

MDPE pipe 10 Bar rated	200 metres
Main line pipe fittings	Item
1mm 8 core control cable	250 metres
All necessary fittings	Item

BG9 MATERIALS SCHEDULE Cont...

Sprinkler assemblies consisting of:

Rain Bird 750E gear drive sprinklers	8 No.
Rain Bird 7005 gear drive sprinklers	1 No.
Rain Bird triple swing assemblies	8 No.
Sprinkler sledge	1 No.
1 ½" Hose 10 bar rated	25m
Rain Bird PGA valve assemble	1 No.
Quick coupler valve	1 No.
All necessary fittings	Item

Supply all materials for control system consisting of:

Rain Bird multi-wire 9 station controller	1 No.
Rain Trip Rain Sensor	1 No.
Cable jointing materials	Item

SPECIFICATION

System design & materials:

We have designed a system especially for your requirements. Secondly, our design will evenly apply water to your front and rear gardens. The system design far exceeds all manufacturers' and the irrigation industry's minimum standards. All the components selected are known for their rugged reliability and serviceability. This ensures your system is durable and reliable.

All products have a materials defect warranty of five years excluding the pump which has one year.

Water storage tank:



Balmoral Tanks

- Seamless polyethylene tanks
- Full enclosed

The tank shall consist of a polyurethane construction capable of storing 5.455m³ (1,198 gallons) of water. It has a diameter of 2m and a height of 2.1m, and has a lid that prevents foreign articles falling inside.

Pump set:



Submersible pump

- Rugged reliability
- High efficiency

At the heart of your system is the pump. The submersible pump gives you the ultimate performance by matching to the flow required. This results in less wear on the pump and in turn longer life for the pump. The pump is constructed from stainless steel and has a 2.2 kW (Max) single-phase motor. This highly efficient pump has built in full protection and is operated by its unique controller.

SPECIFICATION Cont...

Controller:



Rain Bird Ec Controller

- Solid state controller
- Large LCD display
- Water budgeting (0% to 200%)
- Battery back up

The Ec controller comes as a four, six or nine station controller The Ec can be programmed to operate on specified days of the week, even/odd days or every other day, every third day, up to every seventh day.

Rain Sensor



Rain Trip Rain Sensor

The Rain Trip switches over rides your controller when sufficient rain has fallen and then allows your controller to continue when required saving water and preventing over watering.

Control cable:



Multi Core cable

- Solid core cable
- 1mm Thick
- Insulated by polyethylene

The mains control cable shall be multi-core 1mm cable. A solid bare copper wire is individually insulated with a polyethylene heat shrunk plastic sleeve. Over this is an outer coating tough durable polyethylene.

Cable jointing:



The cables shall be joined using grease filled connectors. Every joint is housed within a hydrant chamber or cable jointing box.

SPECIFICATION Cont...

Gear Drive heads for the rear garden:



Rain Bird Eagle Series gear drive sprinkler

- Electric valve in head
- Top serviceable
- Enhanced Nozzles for windy locations
- Heavy-duty cover assembly for extra durability

The Eagle Series Rotor is a rugged mid-range gear-drive rotor, offering durability, performance, and the convenience of arc adjustment from the top, for sports turf applications ; with a throw from 10.1 metres to 35.1 metres.

Rain Bird 7005 gear drive sprinkler (BG 9 only):



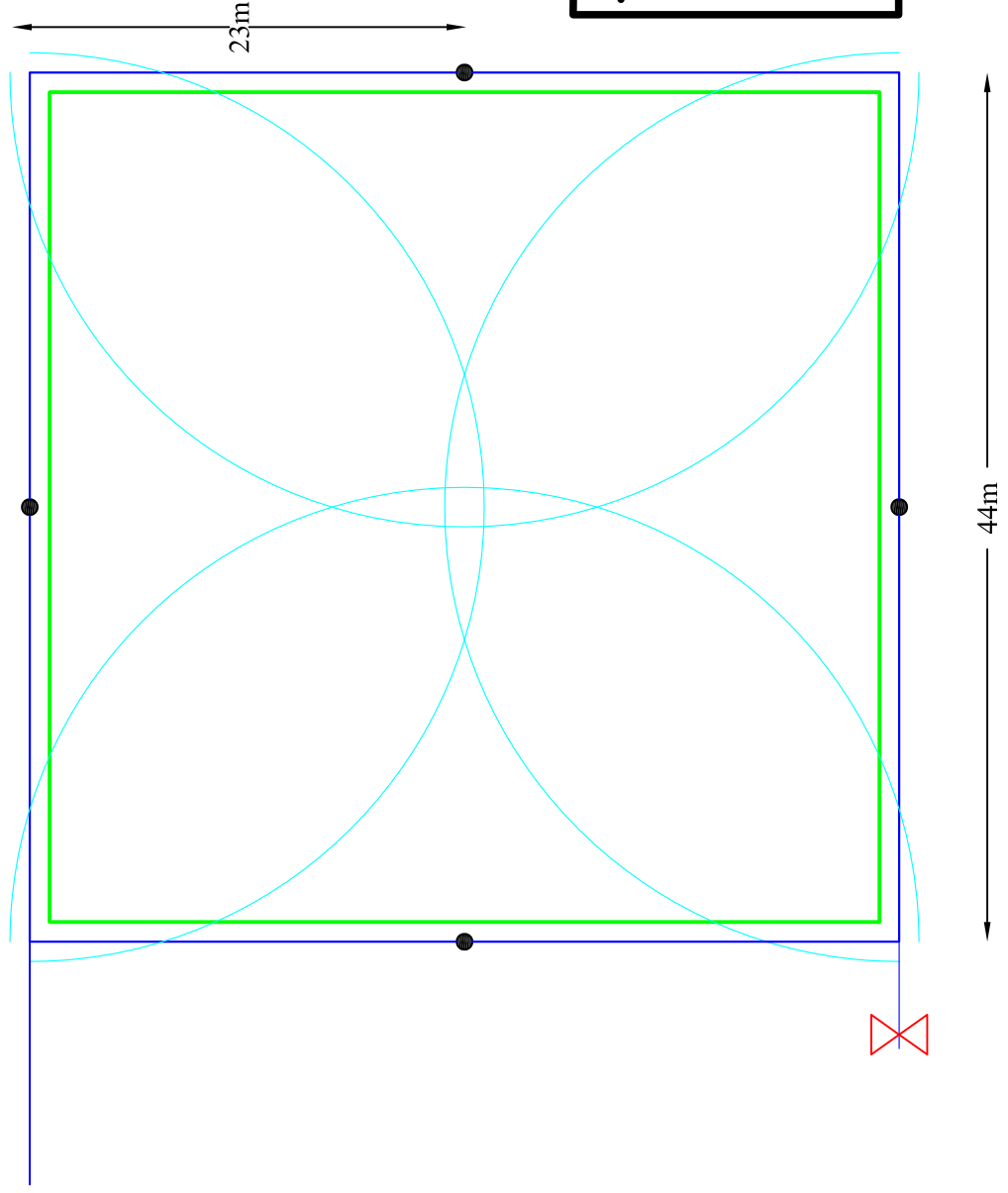
Rain Bird 7005

- Five year trade warranty.
- Memory Arc® returns the rotor to its original arc setting.
- Non-strippable drive mechanism prevents damage from vandals.
- Brass reinforcing shaft of the nozzle turret to riser withstands vandal kick.
- Optional stainless steel riser model helps deter vandalism on public turf areas.

The Rain Bird 7005 rotor is built rugged to withstand the harsh conditions and vandalism present in commercial rotor applications. It has been designed and tested to ensure the high reliability demanded by the market today. This throws from 11.3 metres to 21.7 metres.

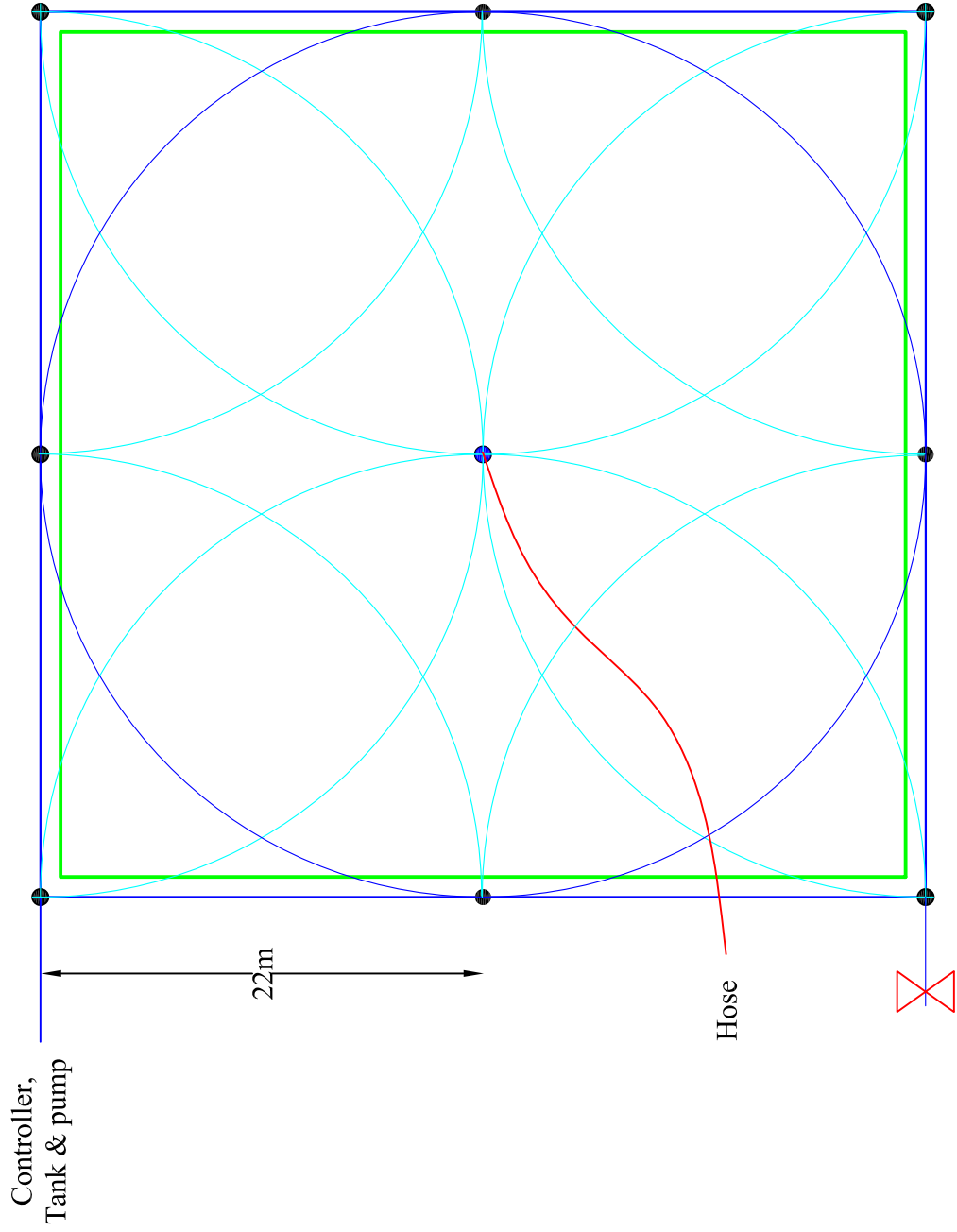
BG 4

Controller,
Tank & pump

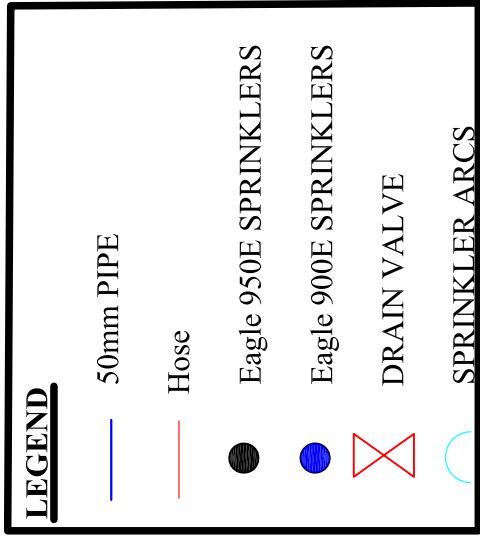


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BIG 9

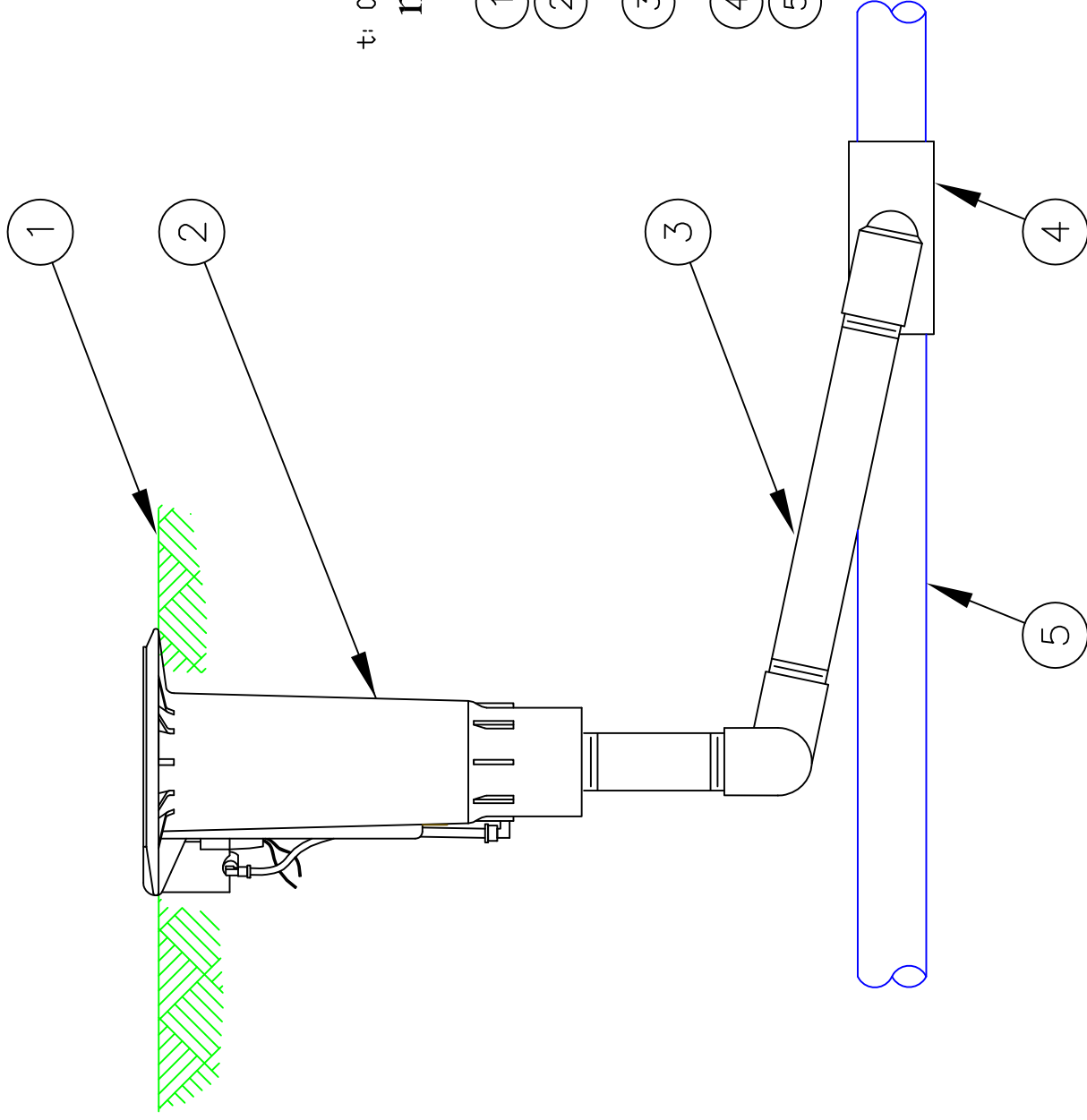


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- ① GROUND LEVEL
- ② RAIN BIRD EAGLE 900E
- ③ TRIPLE SWING ASSEMBLY
- ④ COMPRESION TEE
- ⑤ MDPE MAINS PIPE

RAIN BIRD EAGLE 900E