



# G-Set Irrigation

The Ultimate Variable Rate Irrigation Solution



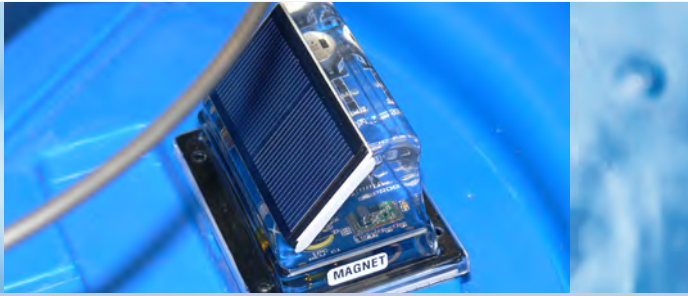
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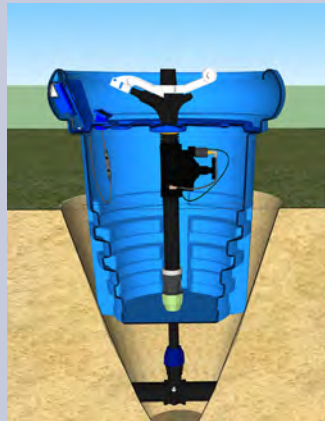




## K-Line™ G-Set™

Perfect for use on awkward-shaped terrains, pivot corners and steep hills, the K-Line G-Set is a smarter solution to solid set irrigation.

The system is capable of operating in many environments where terrain or field shape create issues for traditional irrigators and can also work in conjunction with an existing irrigation install, e.g. pivots, linear etc.



Standard installation

### G-Set was designed taking into account

- The operating pressure of the system and durability in the field
- Protecting expensive valve, control and sprinklers from stock damage
- Efficient water use
- Individual variable rate

### How does it work?

The G-Set Pod install is started with a polythene sub-lateral (ring main) pipe, which is ploughed into the ground with G-Sets attached by a tapping saddle. Buried in the ground, the durable G-Set enjoys excellent hold and stability thanks to the unique ribbing on its surface.

The G-Set is high enough above the soil surface to get good performance from the sprinklers, but low enough so as not to have damage from stock rubbing, also for dairy cows, it is high enough that they don't step into G-Set, protecting your investment.

## Polyethylene Pipe

63mm Polypipe - RX has a range from 15mm - 63mm to suit many requirements, but for G-Set 63mm has been proven excellent for the ringmain. When on flat ground up to 24 G-Sets can generally be installed in one ring with low headloss.



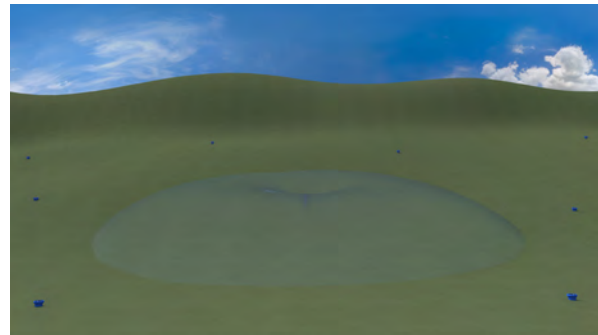
## Installation and water distribution



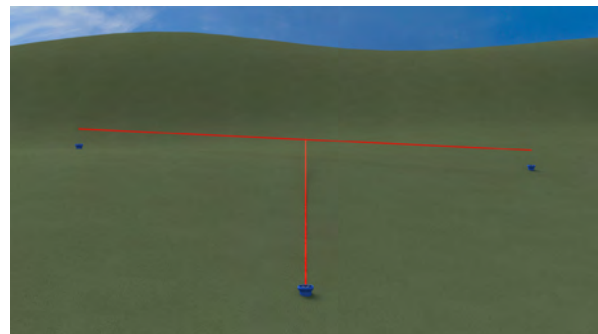
- G-Set generally installed on 63mm MD ring-main pipe. G-Set attached (not to scale).



- A ring-main allows small diameter 63mm MD pipe to be used.
- 63mm MD pipe suits mole plough or trench installation.
- G-Set is generally installed in situ above mainline pipe.



- Individually control each sprinkler and operate one after another on the ring main.
- Apply water where required.
- Can achieve DU and CU (uniformities) in excess of 90%.



- 35 - 42 metres ring main head spacing (40m average).
- 30 - 35 metres triangular off set row spacing (35m average).

## The Irrigation Management System

The K-Line G-Set Irrigation Management System is based on solar assisted, battery powered control units that sit in each pod. These operate low power latching solenoids to control the irrigation sprinkler inside the G-Set pod. These units are independent: meaning that when given information (for example run for 30 minutes at 10am) they will continue to do this until given a new instruction. RX Plastics offers two choices of control devices for the pods:-

### 1. Baccara Pod Controller (KLG.S.C-1013)

The Baccara is a specially manufactured controller from Baccara, custom built for G-Set. It has a high accuracy clock maintaining clock synchronicity between devices over periods of greater than a year, to ensure optimal use of pump resources. i.e. not putting too much load on the water pump or spreading out the time that the pump is required to supply water.

The system operates on a simple basis of up to two separate durations per day, every day, minimising programming and set up time. Ultimate control is afforded by being able to turn the pump or supply on or off depending on weather conditions. No harm will occur to the controller or the G-Set in this situation.

#### Baccara Applications

The Baccara solution is particularly suited to properties with smaller G-Set installations. For example, when they are used as pivot corner irrigation when numbers of G-Sets are small (eg 70 or less).

#### Features

- Solar panel and 9V storage battery NIMH
- Electronics and battery sealed behind silicone seals
- Latch solenoid operation (Baccara 3way only 4  $\Omega$  -12V)
- Real time clock on board - high accuracy
- Maximum of 99 minutes per irrigation and 2 start times

#### Benefits

- Low maintenance
  - Electronic components are sealed
- Low running costs
  - Connected to a renewable power source
- Many independent controllers
  - No risk of one device causing an entire system to fail



Baccara Pod Controller  
(KLG.S.C-1013)

### 2. Q-Tech Irrigation Pod Controller (KLG.S.RX2000)

The QTech system provides a low cost wireless controller (IPC) at each G-Set Pod. The IPC is self-contained, powered from an on-board Lithium battery, with an attached solar cell. All of the IPCs can, should you require, communicate via a 900Mhz mesh radio network, allowing watering schedules to be centrally managed. The management of this system is on the basis of hardware and software suite of products used to configure (schedule) and control the G-Set installation making this the ultimate in variable rate irrigation.

#### Q Tech Applications

QTech is ideally suited to larger installations of G-Set on a variety of terrains as maintenance and management can be handled from the centralised Irrigation Network Controller. QTech installations can typically range from 1 - 3000+ G-Set units.

#### Features

- Solar panel and lithium polymer storage battery
- Fully encapsulated electronics
- ARM integrated controller CPU
- Latch solenoid operation (Baccara 3way only 4  $\Omega$ -12V)
- Real time clock on board - high accuracy
- Maximum of 255 minutes per irrigation and up to 16 operational slots

#### Benefits

- Low maintenance
  - Electronic components are encapsulated
- Low running costs
  - Connected to a renewable power source
- Many independent IPC's
  - No risk of one device causing an entire system to fail



Q-Tech Wireless  
Irrigation Pod Controller  
(KLG.S.RX2000)

The Baccara (left) is fully independent and the QTech (right) can be updated from a distance. The QTech uses a sophisticated mesh network which enables updates over difficult terrain to all G-Set units from a single location.

Both of the solutions, whilst built for G-Set, can also be used for post mounted, solid set irrigation systems.

## Additional Components available for QTech Control

### EP3 Hand Held Programme Device

EP3 Data Manager is a wireless configuration device for configuring K-Line™ G-Set™ Irrigation Pod controllers (IPCs). Configuration files (for pod lists, schedules and firmware upgrades) can be transferred to the individual IPC devices using the SD card.

#### Features

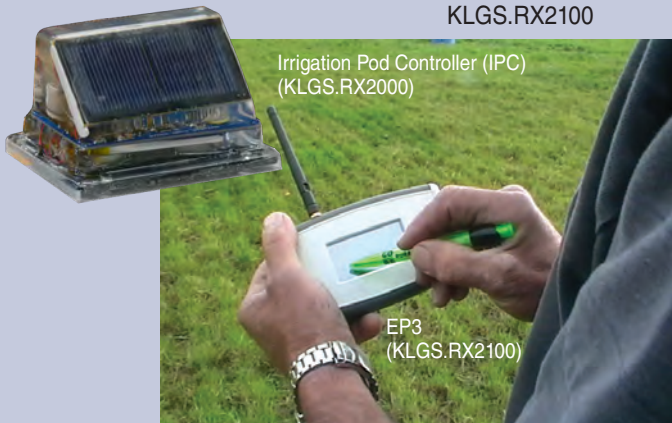
- The display is a touch sensitive mono-colour LCD
- Its various screens and functions are accessible through softkeys on the display
- The device is supplied with a stylus making the operation quick and responsive

#### Benefits

- Simple update of the schedule
- IPC status easily checked in the field
- Operation by Mesh enables the system to update IPC's that are not directly visible to the EP3
- Fault find tool



KLGS.RX2100



Irrigation Pod Controller (IPC)  
(KLGS.RX2000)

EP3  
(KLGS.RX2100)



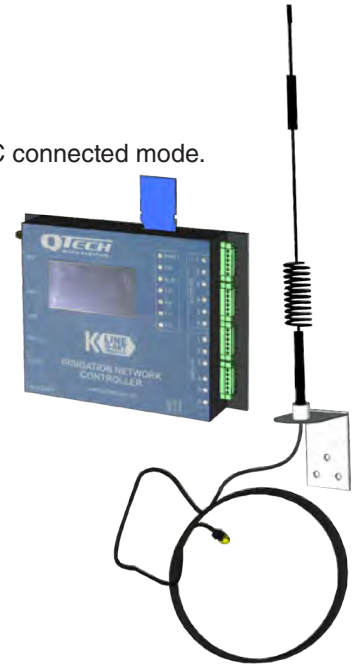
### INC Network Unit - Stand Alone

#### Features

- Can be stand alone or in a PC connected mode.
- Details the state of the IPC network.

#### Benefits

- Ease of system configuration.
- PC connectivity option, data collection and records of system function.
- Easy update of IPC's due to a poll process to all devices.



### INC Network Unit - PC Connected (Internet Capable)

#### Features

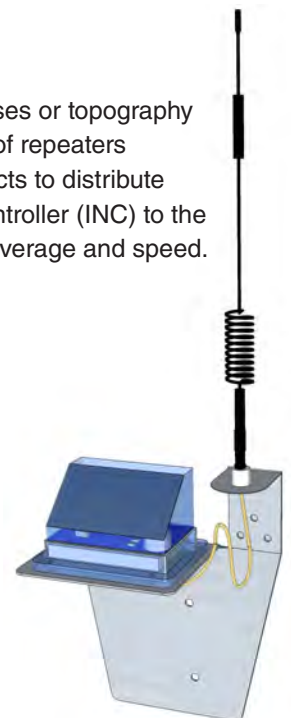
- The above INC can be linked to a NUC PC providing greater functionality with direct connection to the scheduling software. Connection to the internet will then allow external network interrogation of each IPC.

#### Benefits

- The NUC can be communicated to from the internet using TeamViewer™ enabling remote activation, adjustment of scheduling, fault finding and direct communication to the IPC Network.

### Repeater

As the size of application increases or topography becomes more difficult, the use of repeaters becomes critical. The repeater acts to distribute information from the network controller (INC) to the local area to improve network coverage and speed.



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