VARIABLE RATE IRRIGATION

PRECISION IRRIGATION FOR MULTIPLE FIELD SCENARIOS

Reinke
MORE RIGHT THAN RAIN

OPTIMIZING WATER DISTRIBUTION

MAXIMIZE EVERY PLANT'S POTENTIAL

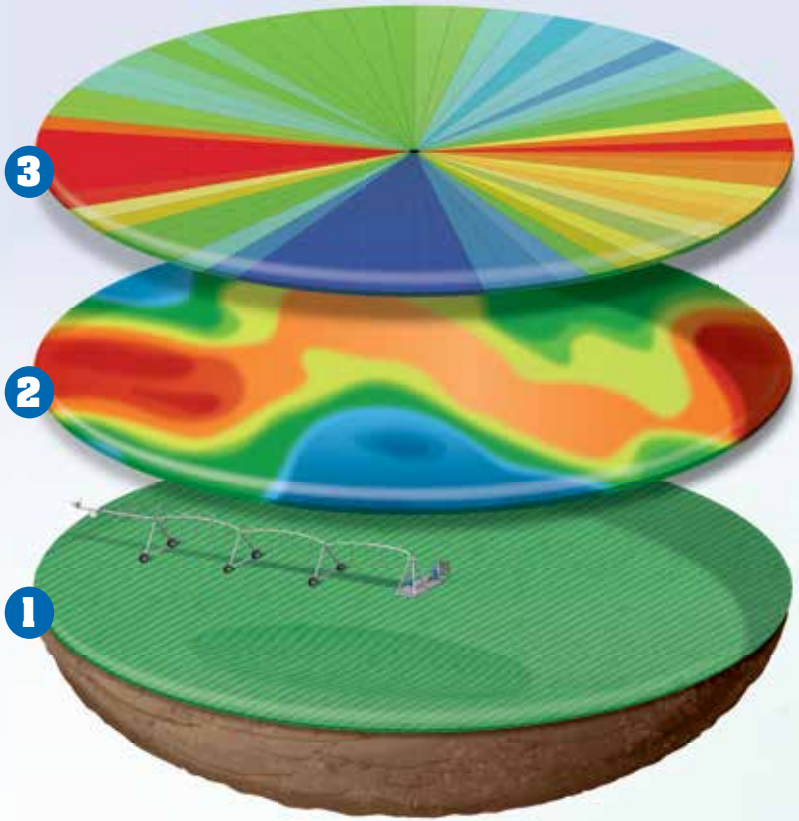
Variable Rate Irrigation (VRI) technology allows for the total control of water applied to your fields, by varying the system speed or by turning sprinklers on and off to achieve a desired result.

Whether you have multiple crops in one field, rolling terrain or experience a drought, Variable Rate Irrigation (VRI) technology provides you with the ability to have multiple prescriptions for each field. Each prescription precisely matches the unique attributes of your fields (soil variables, slope, drainage) crop and changing weather. This allows you to select the prescription that most accurately fits your current irrigation needs that day with the flexibility to easily switch prescriptions if conditions change.

BOTTOM LINE: There's never been a better way to efficiently and responsibly manage the application of water to maximize yield potential and minimize loss.

VRI PROVIDES PRECISION APPLICATION FOR:

- Soil type
- Slope
- Drainage
- Crop
- Seed population
- Rain events
- Drought



1. FIELD VARIABLES
2. FIELD SCAN DATA
3. FINAL FIELD PRESCRIPTION

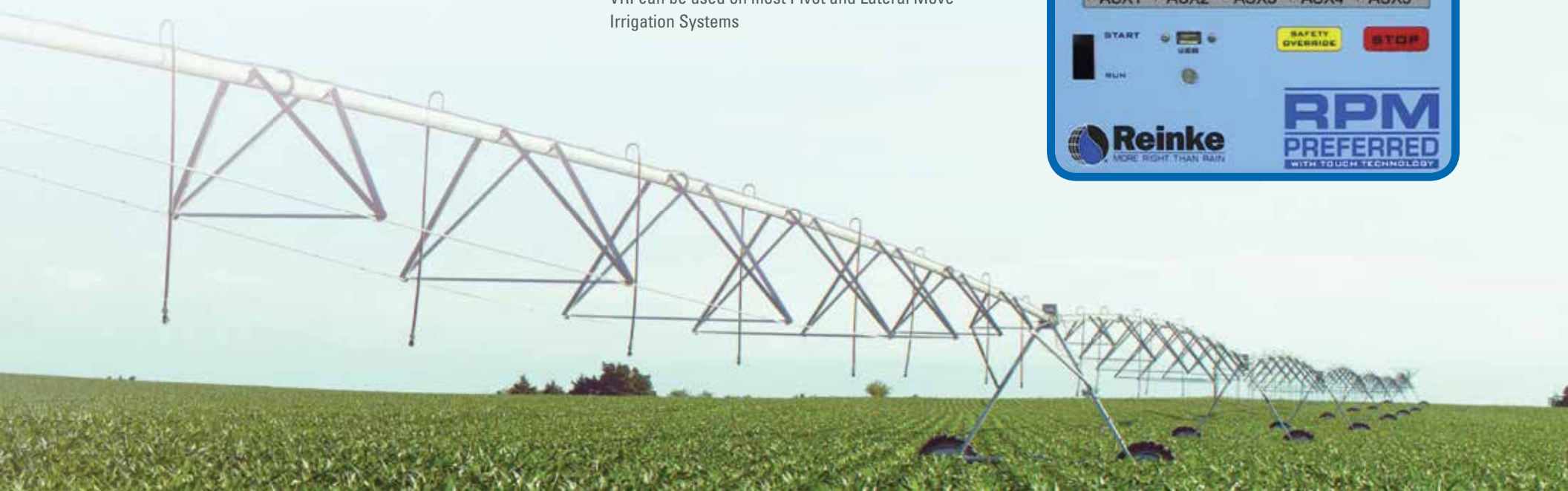
WHY REINKE VARIABLE RATE IRRIGATION

THE ONLY SYSTEM WITH A PRESCRIPTION YOU CAN SEE AT THE PANEL

Reinke was the **first** to successfully introduce GPS technology into the control and management of center pivot irrigation systems in 2002. Reinke was also the **first** to introduce touch screen technology to the pivot irrigation industry in 2009. Now Reinke is the **first** in the industry to integrate Variable Rate Irrigation (VRI) with touch screen control and end-of-system GPS. If you already have a Reinke Touch Screen control panel and Navigator GPS, you can get started using VRI without any additional components.

REINKE VRI ADVANTAGE:

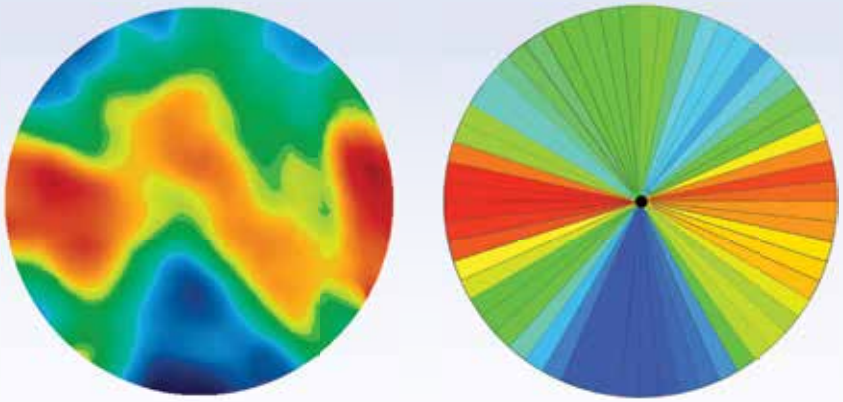
- Upload and store several Rxs via USB flash drive
- Two Rxs can run at the same time: one for Forward and one for Reverse
- Easily validate prescription is running as programmed
- Unprecedented accuracy of system location and control with Navigator GPS
- Precision to one-tenth of a degree with pivot systems; precision in one-foot increments with lateral systems
- Full-color display shows the VRI Prescription (Rx) and system positions
- 84-zone capability allows creation of more than 300,000 Optimally Managed Irrigation Zones
- Data accurately logged and can be graphed
- Fertigation Rxs can be created with the Reinke VRI Rx Program
- Most Reinke Touch Screens sold since 2009 can attain VRI with a firmware upgrade
- VRI can be used on most Pivot and Lateral Move Irrigation Systems



CENTER PIVOT VRI

OPTION 1: SPEED VRI

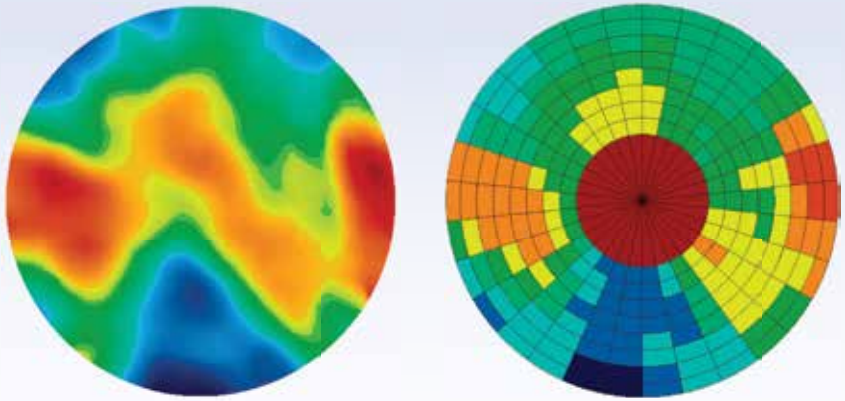
SLICE THE CENTER PIVOT PIE



Speed VRI is economically accomplished by segmenting the pivot path into multiple pie-like slices (sectors). Each unique irrigation depth is achieved by altering the pivot speed at each slice. The Rx may concentrate on the outer 30 to 50 percent of the pivot circle, which accounts for 50 to 75 percent of the total area within each slice. Each slice can also be accurately proportioned down to one-tenth of a degree (3,600 increments) to provide maximum control of the water being applied. Base application depth can be easily adjusted higher or lower without changing the Rx.

OPTION 2: ZONE VRI

BE MORE SPECIFIC AND FIND NEW POTENTIAL

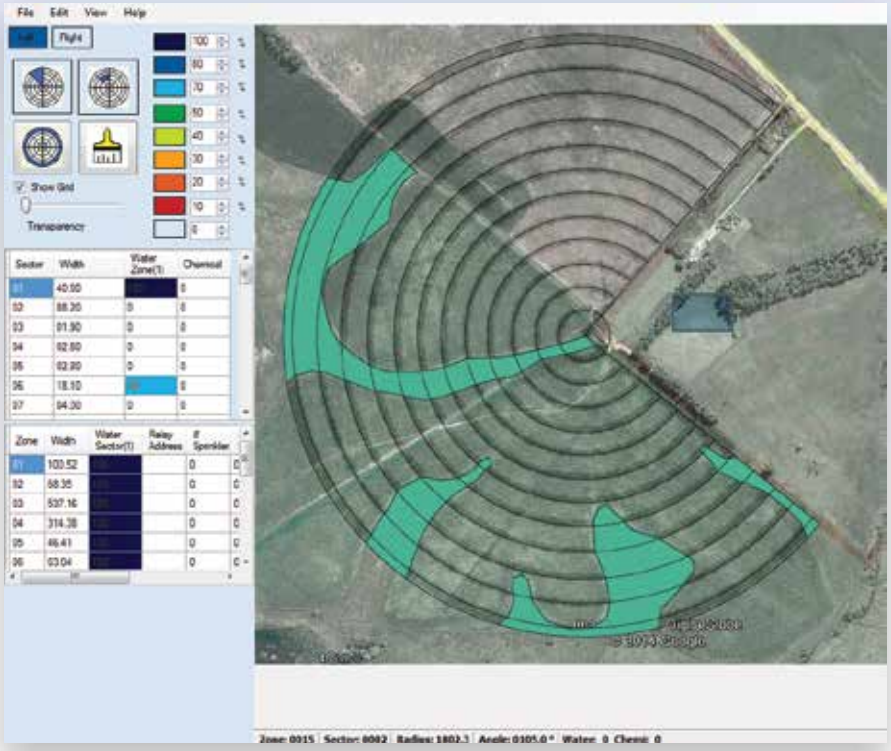


Zone VRI divides the pivot coverage area into two or more rings (zones) around the pivot point. Reinke VRI can control as many as 84 zones. When combined with the segmenting sectors, an even higher level of precision is possible by creating several or up to more than 300,000 independently managed zones within the field. Irrigation rates are achieved through individually controlled sprinkler banks, allowing an almost unlimited number of precision water application combinations. Variable Frequency Drive Pumps may be required and are recommended to minimize pressure fluctuations from the changing rate of system flow resulting from turning a large number of sprinklers off at any one time. Additional components required for Zone VRI include independently controlled sprinkler valves, sprinkler control valve boxes and air compressor.

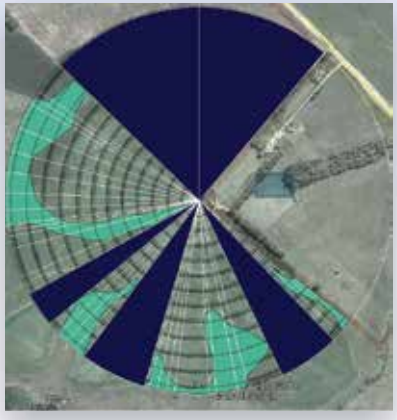
REINKE VRI PRESCRIPTION PROGRAM SOFTWARE

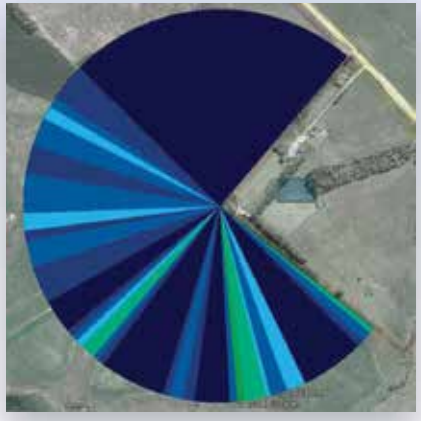
This software is available for use with every RPM Touch Screen panel and gives you the ability to personally create all needed irrigation prescriptions. Field information in the form of JPEG images representing yield data, soil variations and terrain changes can be used to determine the percentage of water to be applied at any location within the system coverage area of the field.

AN EXAMPLE:



Aerial images are easily imported into the VRI Rx Program software. The turquoise-shaded area shows where reduced application amounts may be desired.





A Speed VRI Rx was easily created from the aerial image. Sectors were incrementally inserted to one-tenth of a degree to divide the field into manageable areas that can be independently controlled. The areas unaffected were colored for 100 pecrent application.

The remaining sectors are colored to match the desired percent reduction of water based on the total area within each sector. The greater the area is affected, the lighter the color representing amount of water being applied.

LATERAL MOVE VRI

OPTION 1: SPEED VRI

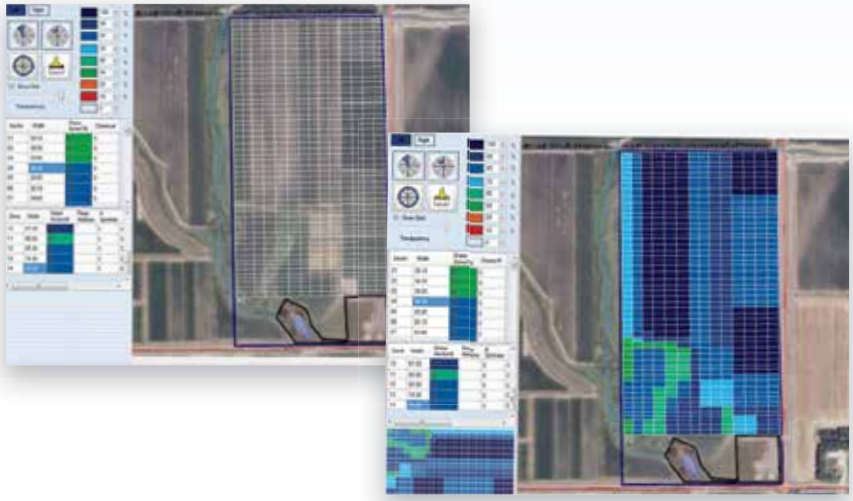
SLICE THE FIELD INTO MANAGEABLE STRIPS

Speed VRI is economically accomplished by segmenting the field into multiple strips parallel to the lateral move system. Each unique irrigation depth is achieved by altering the lateral move speed at each strip. The Rx may concentrate on the greatest percent of area within each strip. The width of each parallel strip can be precisely adjusted in one-foot increments to provide maximum control of the water being applied. Base application depth can be easily adjusted higher or lower on the panel without changing the actual Rx.

OPTION 2: ZONE VRI

BE MORE SPECIFIC AND FIND NEW POTENTIAL

Zone VRI divides the lateral move area into two or more strips (zones) perpendicular to the system length. Reinke VRI can control as many as 84 zones. When combined with the segmenting parallel strips, an even higher level of precision is possible by creating several or up to more than 600,000 independently managed zones within the field. Irrigation rates are achieved through individually controlled sprinkler banks, allowing an almost unlimited number of water application combinations. Variable Frequency Drive Pumps may be required to minimize pressure fluctuations from the changing rate of system flow resulting from turning a large number of sprinklers off. Additional components required for Zone VRI include independently controlled sprinkler valves, sprinkler control valve boxes and air compressor.

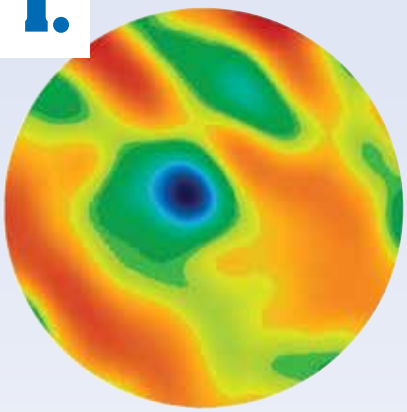


THIRD-PARTY VRI OPTIMIZATION SOFTWARE

Utilizing a professional service to gather soil, elevation and other hard data to create multiple, extremely accurate prescriptions provides the ability to determine the approximate return on investment of both Speed and Zone VRI.

IN JUST A FEW STEPS, YOUR FIELD CHARACTERISTICS GO FROM RAW DATA, TO A FINAL PRESCRIPTION, TO RUNNING ON YOUR TOUCH SCREEN CONTROL PANEL.

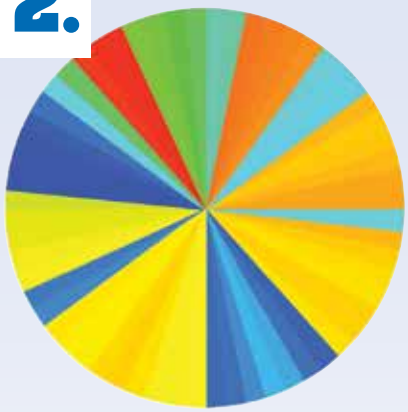
1.



COLLECT FIELD DATA

Electrical conductivity and RTK GPS elevation surveys are conducted to determine topography and soil variables. These surveys are available through local independent soil sampling services.

2.



IDENTIFY FIELD DATA

The mapped field data is then processed and analyzed by Precision Data Specialists, such as CropMetrics®. They will identify factors related to water-holding capacity and yield productivity, and then specify the best locations for soil moisture monitoring to optimize irrigation scheduling.

3.

OPTIMIZE VRI APPLICATIONS

Specialized agronomic software tools are utilized to generate Speed VRI or Zone VRI prescriptions to optimize the water application. Precision Data Specialists will then continue to assist you throughout the growing season with additional prescriptions as needed.

Images courtesy of CropMetrics®

Reinke Manufacturing Company, Inc.

National Sales Office
1040 Road 5300
PO Box 566
Deshler, Nebraska 68340

Phone: (402) 365-7251

www.reinke.com

Manufacturing Facilities:
- Deshler, Nebraska
- Belleville, Kansas
- Beijing, China

Warehouse Facilities:
- Deshler, Nebraska
- Amarillo, Texas
- Brisbane, Australia
- Johannesburg, South Africa
- Rostov, Russia

Office Locations:
- Deshler, Nebraska
- Beijing, China
- San Luis Potosi, Mexico
- Moshav Korazim, Israel
- Rostov, Russia
- Venado Tuerto, Argentina

1/2014