

# 360 RAIN



## Adaptive Irrigation

IRRIGATION AND NUTRIENT APPLICATION REDEFINED





“With 360 RAIN in the  
field every day, ready  
to go, we have some  
happy crops.”

MIKE PERRY // WISCONSIN





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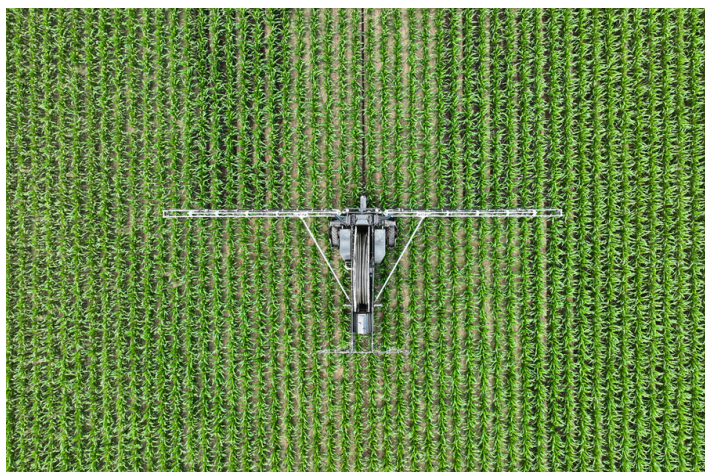
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## Irrigation Adapted to You

# 360 RAIN

**Irrigation** (noun): the process of supplying water to land or crops to aid in growth, typically through artificial means.

Irrigation is a cornerstone of modern agriculture. It supplements rainfall, ensures consistent moisture levels for plants, and enhances crop productivity. At 360 Yield Center we've taken this essential practice to the next level, redefining its potential to meet the unique and dynamic needs of your crops. This is where adaptation comes into play.







**Adapt** (verb): the ability to adjust, modify, or change in response to new conditions, environments, or challenges. It describes flexibility and the capacity to evolve or tailor actions and systems to meet changing needs effectively.

**Introducing 360 RAIN** – more than just a tool... it's an adaptive irrigation solution designed to address the specific demands of your fields and crops.





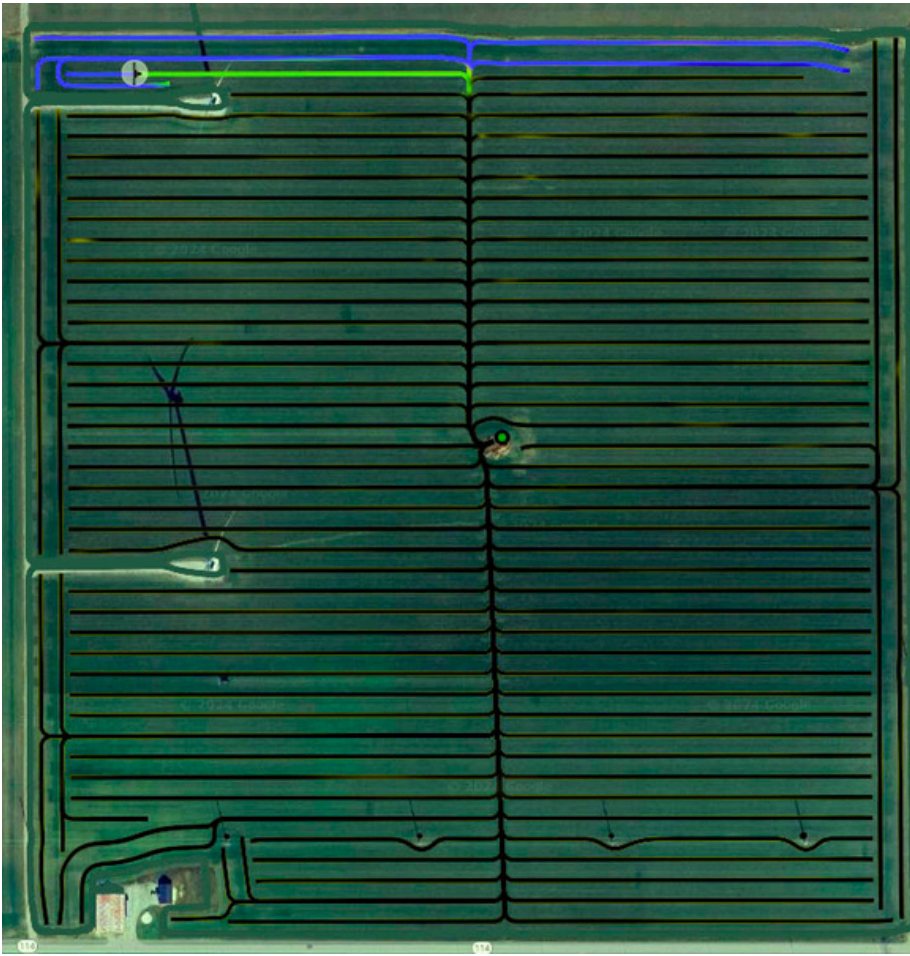
360 RAIN is irrigation adapted to your unique:

-  **Field Shapes:** Whether your fields are square or irregular, we've got you covered.
-  **Field Obstacles:** Path design allows for navigation around trees, tile risers, or other obstacles.
-  **Water Application Needs:** You set the rate and adjust as needed throughout the season.
-  **Nutrient Application Goals:** Integrate fertilization seamlessly into the irrigation process.
-  **Manure Application Needs:** Safely and efficiently incorporate manure application into your watering schedule, making use of this valuable resource and emptying pits and lagoons in-season.
-  **Seasonal Stresses:** Respond to weather changes, drought conditions, or unexpected challenges with agility.

360 RAIN is changing the way we think about irrigation. It's an innovation built to grow alongside your ambitions and adapt to the challenges each season brings. It's not just about watering your crops; it's about using water to deliver the exact resources your crops need, when and where they need them, for maximum yield and efficiency.

**360 RAIN is your adaptive irrigation solution.**





“Our 360 RAIN is in a nice square 160 acre field; however, there’s a building lot, there’s two windmills and there’s a row of transmission lines - so there’s quite a few obstacles in the field. We knew it would benefit from irrigation and we thought 360 RAIN was the best fit.”

*Trent Stoffer / Ohio*

360 RAIN is irrigation adapted to...

## Your Odd-Shaped Field and Obstacles

The value of irrigation is obvious, but field shape and obstacles prevent traditional irrigation from being a good fit for many operations.

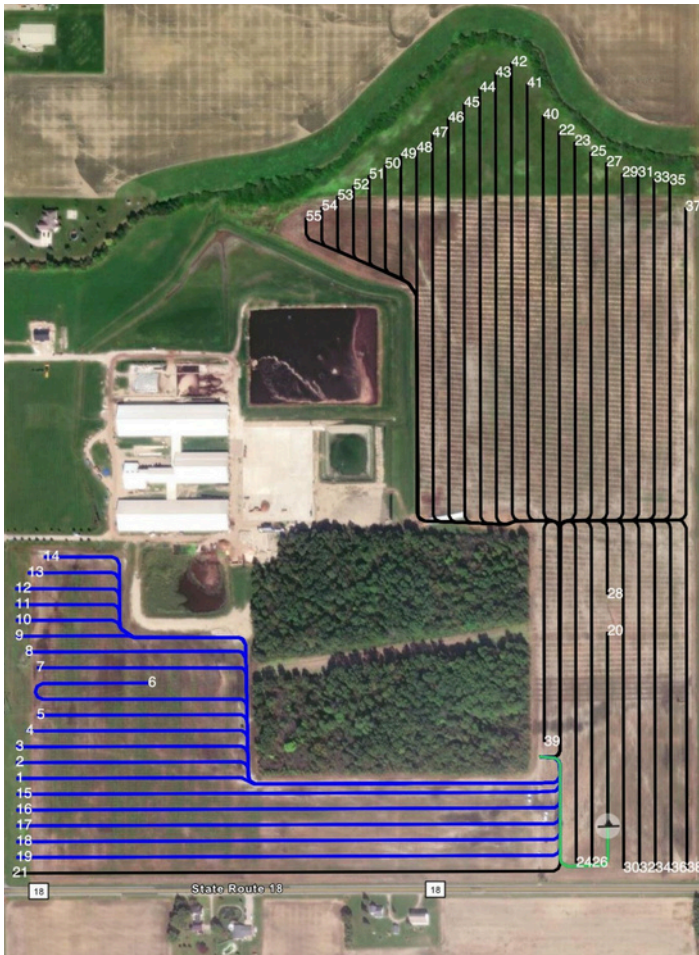
### 360 RAIN IS DIFFERENT.

Programed to follow paths around obstacles, 360 RAIN can cover any field shape - including the corners. 360 RAIN is operated through cellular and dedicated RTK networks and moves through your field following paths created by your planter pass.



*Want to see what 360 RAIN coverage could look like in your field?  
Download the 360 RAIN app and map your field today.*





The vertical hose reel uses advanced sensor systems to lay hose as it moves along a backbone path away from the well or hydrant and then picks up the hose as it moves back toward the water source.

A manifold on the machine distributes the water and nutrients along the boom to drops that lay the water/nutrients in a 15" band, directly over the root zone.

As the machine moves forward through your field, the row shutoff system allows flow to run through the outer drops on the boom. When the machine reverses, that system shifts to allow flow to run through the center drops ensuring that the machine drives on dry ground.

## 360 RAIN AT A GLANCE



### COMMUNICATIONS

360 RAIN is operated through cellular and dedicated RTK networks.



### HOSE SYSTEM

With 3,000 ft of 3" hose, 360 RAIN can cover up to 200 acres.



### ENGINE

With two, 150-gallon fuel tanks and using only 1/2 gallon of diesel fuel per hour, 360 RAIN can run up to 600 hours or 25 days of continuous operation on each fill.





360 RAIN is irrigation adapted to...

## Your Water Availability

Where water and nutrients are applied in a growing crop dictates the total amount needed for application and has a tremendous effect on the efficiency of the application.

360 RAIN delivers water and nutrients in a 15" band at the base of the plant. By doing so, the plant benefits from the power of banding - seeing 2x the amount of water compared to a broadcast application.

Banding directly over the root zone eliminates evaporation common in pivot irrigation systems - allowing many growers to use less and still achieve the same or better yield results.

“On windy days, we aren’t able to run our center pivot irrigation because of the wind blowing the water and manure around. With the RAIN unit it’s not problem as it lays it right at the base of the plant.”

*Trent Stoffer / Ohio*





## WATER RECOMMENDATIONS

360 RAIN operates with wells supplying, on average, just 150-200 gallons per minute - easily half the volume required for center pivot systems. There are a wide variety of ways to provide that water. The system can be connected directly to a well, connected to a riser and pipeline fed from outside your field, or supplied by surface water.

## TYPICAL DAYS TO COVER A FIELD

The time it takes the 360 RAIN machine to completely cover your field is dependent on the rate of liquid being applied in combination with the total acres being covered.

Application Rate	40 Acres 200 GPM	80 Acres 200 GPM	160 Acres 200 GPM
0.35 in	1.3 Days	2.6 Days	5.3 Days
0.45 in	1.7 Days	3.4 Days	6.8 Days
0.55 in	2.1 days	4.2 Days	8.3 Days

## YIELD RESULTS

Scan the QR codes for full trial details.



### 360 RAIN vs. Natural Rainfall

Martin County, Minnesota

360 RAIN: 221.8 bu/ac

Natural Rainfall: 169.8 bu/ac

**+52 bu/ac**



### 360 RAIN vs. Pivot

McLeod, North Dakota

360 RAIN: 233 bu/ac

Pivot: 215 bu/ac

**+18 bu/ac**





## 360 Injection Skid Components

### Base Skid Components:

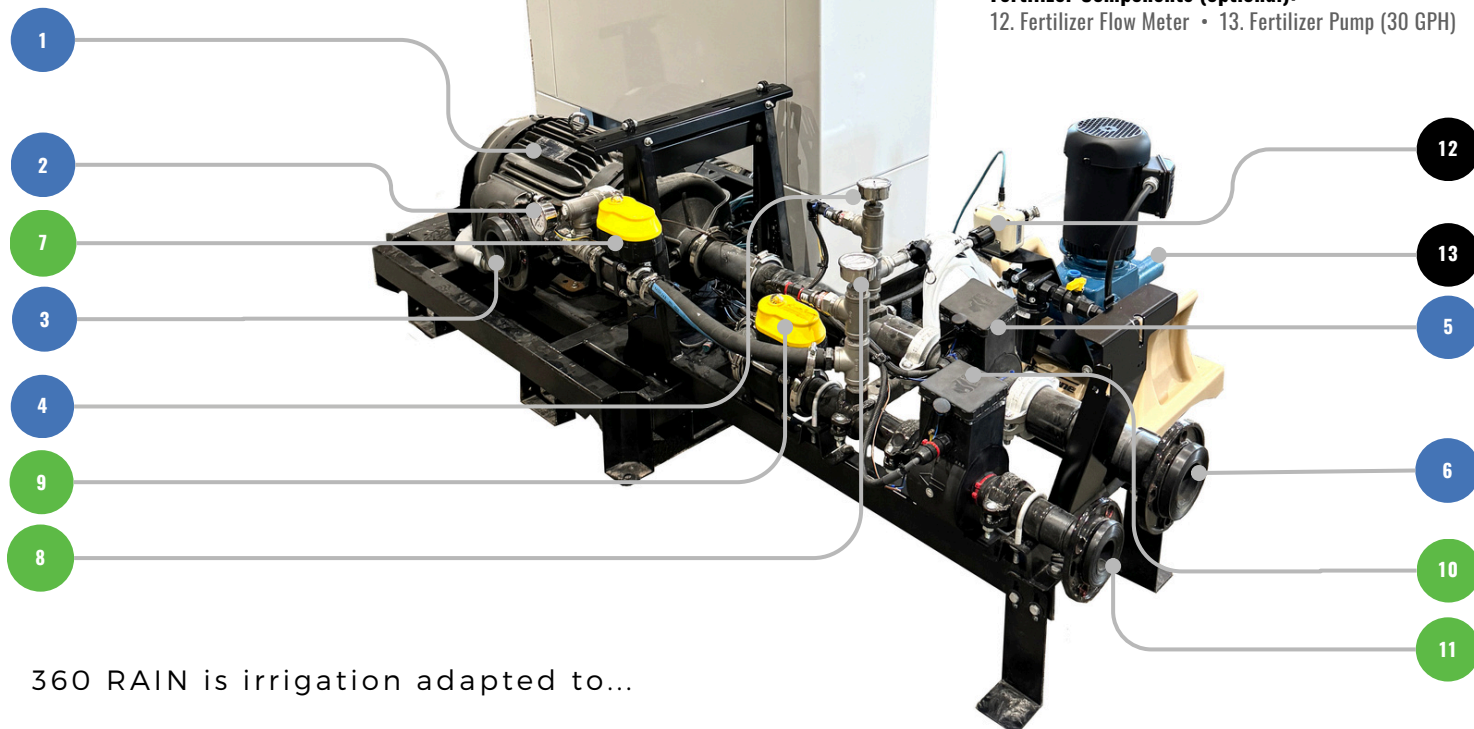
- 1. Booster Pump • 2. Outlet Pressure
- 3. Outlet (to RAIN Machine) ~120 PSI • 4. Inlet Pressure
- 5. Water Flow Meter • 6. Water Inlet

### Manure Components (optional):

- 7. Back-flush Valve • 8. Manure Pressure • 9. Manure Valve
- 10. Manure Flow Meter • 11. Manure Inlet (up to 80 GPM)

### Fertilizer Components (optional):

- 12. Fertilizer Flow Meter • 13. Fertilizer Pump (30 GPH)



360 RAIN is irrigation adapted to...

# Your Application Goals

Designed to provide precise application control of water, fertilizer, and other essential nutrients, the 360 Injection Skid pairs perfectly with 360 RAIN.

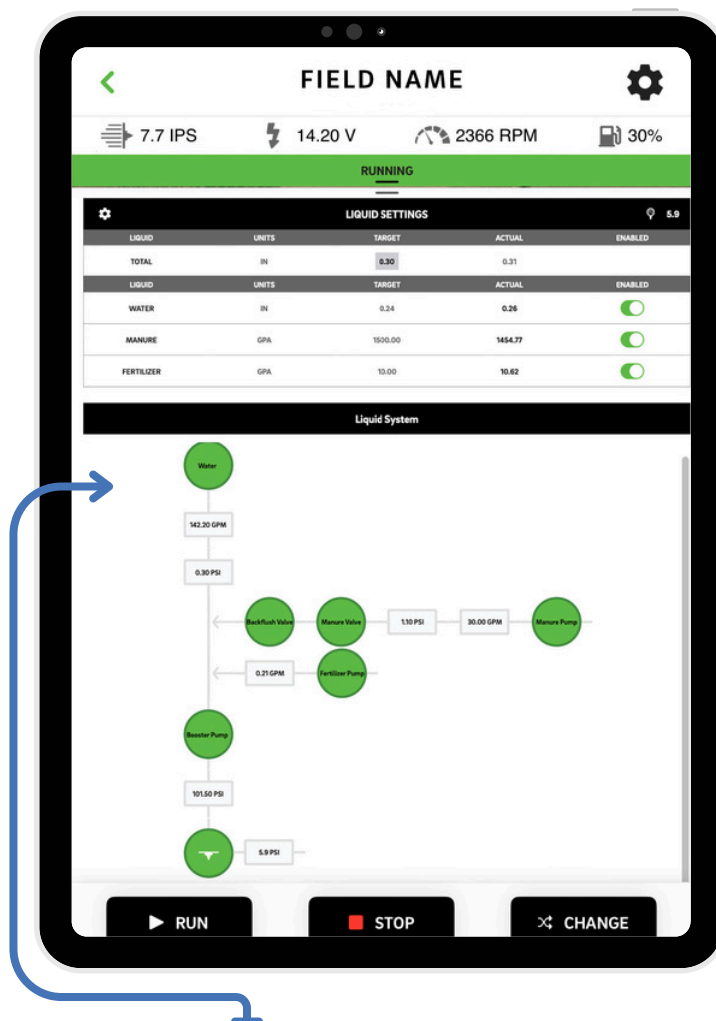
The 360 Injection Skid consists of a combination of advanced pumping technology and controls. With variable frequency drive (VFD) technology, users can adjust the pump speed to meet specific application needs, optimizing liquid usage and efficiency.

Multiple voltage options make the 360 Injection Skid adaptable to diverse operational conditions around the world.

“The skid puts us in full control of manure and nutrient application rates. This allows us to turn the dials from year to year according to what each crop needs.”

*Ryan Schmitmeyer / Ohio*





The system is complemented by its integration with the 360 RAIN app for iPhone and iPad, giving farmers the ability to remotely monitor and control the operation of the 360 Injection Skid from anywhere. Through the app, users can adjust settings for water, manure and nutrient delivery, track the system's performance, and receive alerts for maintenance or operation issues. The app also provides analytics and real-time data on the amount of nutrients and water being applied, allowing farmers to make data driven decisions that improve efficiency and sustainability.

### **WATER PUMP OPTIONS**

3 HP Pond Pump • 7.75" Impeller • 200 GPM at 20 PSI  
or a VFD to control one of the following: 5-7.5 HP Well • 10-15 HP Well • 20-25 HP Well

### **MANURE PUMP OPTIONS**

Razor: 2HP • 5.56" Impeller • 40 GPM at 35 PSI  
Blade: 5HP • 5.25" Impeller • 80 GPM at 38 PSI

### **FERTILIZER PUMP OPTIONS**

1 HP • 34 GPH at 100 PSI  
In use with a 60 ft boom at 3"/sec can apply 145lbs/acre or at 8"/sec can apply 55lbs/acre  
In use with a 80 ft boom at 3"/sec can apply 110lbs/acre or at 8"/sec can apply 40lbs/acre

### **NEW BETA FEATURE - VARIABLE RATE**

Experience even more control over your 360 RAIN application with the new variable rate feature, now in its exclusive beta season for 2025. Available to a limited number of customers, this feature offers personalized application control to optimize input application and maximize your yield potential.





360 RAIN is irrigation adapted to...

## Your Dairy Manure Application Needs

For the first time, dairy producers can empty lagoons in season, using 360 RAIN to deliver manure to the growing crop. That eliminates fall spreading costs and puts the manure to work in season boosting silage and forage tonnage.

360 RAIN can apply a wide range of manure from dairy operations including leachate water, separated liquid manure from a lagoon, and even pure manure. The unit can tolerate up to **10% solids** as long as particle size is less than 3/4".

The 360 RAIN system gives us a lot more flexibility on getting manure out on different crops at different times in the year and that reduces the amount of manure storage we need as well.

*Ryan Schmitzeyer / Ohio*





360 RAIN units equipped for manure application include a manure manifold and bucket with an impeller. The impeller breaks up solids and is the final step in eliminating solids and foreign material just before the stream enters the boom distribution lines, eliminating most plugging. Additional screening may still be recommended.

Application is positioned at the base of the plant, reducing the risk of bacterial growth. Rapid uptake by the growing plant also reduces the risk of runoff. And it smells better too!

Get more insight into your manure application by integrating the 360 Injection Skid. The system allows for seamless mixing and application, helping to optimize inputs and reduce waste. With its precise control, you can easily dial in your desired manure-to-water ratio and adjust it throughout the growing season to respond to changing conditions and crop needs. This adaptability ensures your application remains efficient and effective, no matter the challenges or opportunities the season brings.

## MANURE PUMP OPTIONS

Razor: 2HP • 5.56" Impeller • 40 GPM at 35 PSI  
 Blade: 5HP • 5.25" Impeller • 80 GPM at 38 PSI  
 Pump Pontoon

## YIELD RESULTS



### **\$410 Total Revenue Boost Per Acre**

*Markesan, Wisconsin*

Reduced Purchased Nitrogen: \$80/ac savings  
 Eliminated Custom App Cost: \$150/ac savings  
 Equivalent of 30 bu/ac yield gain x \$6/bu: +\$180/ac



### **Total Silage Yield Increase Per Acre**

*Versailles, Ohio*

2023 + **4 ton/acre** silage yield  
 2024 + **5 ton/acre** silage yield





360 RAIN is irrigation adapted to...

## Your Hog Manure Application Needs

360 RAIN machines make hog and beef cow manure application possible with the capability to handle up to **10% solids** as long as particle size is less than 3/4".

While not eliminating the need for screening, a manure manifold uses an impeller to reduce plugging risks from solids, bedding and foreign objects.

Since hog and beef cow manure often contains more foreign material, we've got you covered with our razor grinding pump. This pump helps break down those materials, enabling you to inject manure into the waterline for seamless delivery to your 360 RAIN machine.

Before we invested in a 360 RAIN system, we needed to make spring manure applications to ensure our pits had enough capacity to get us to fall. We use tankers so spring applications often lead to significant soil compaction worries. Now with 360 RAIN, we no longer have to dedicate the precious time in the spring to the task of manure application or risk compaction in our fields with our tankers. Instead, we are able to hold that manure for application through the RAIN unit!

*Steve & Mitchell Bowers / Iowa*





Emptying pits in season can be a huge money saver, compared to traditional fall application. Not only does this reduce the amount of storage needed but it also makes better use of the nutrient value in the manure by getting it to the crop when it can use it.

By injecting manure into the water stream, odor is reduced as the water/manure blend soaks quickly into the soil.

Get more insight into your manure application by integrating the 360 Injection Skid. The system allows for seamless mixing and application which helps optimize inputs and reduce waste. With its precise control, you can easily dial in your desired manure-to-water ratio and adjust it throughout the growing season to respond to changing conditions and crop needs. Using a combination of advanced pumping technology and control systems ensures accurate delivery of manure to the plant based on real-time data.

### MANURE PUMP OPTIONS

Razor: 2HP • 5.56" Impeller • 40 GPM at 35 PSI  
 Blade: 5HP • 5.25" Impeller • 80 GPM at 38 PSI  
 Hog Confinement Mount





360 RAIN is irrigation adapted to...

## Your Digestate Management Needs

Digestate is an organic source of nutrients for which nitrogen is more available than undigested slurry. However, a proper and optimized management of digestate application is required to exploit its full potential.

Applying digestate promotes sustainability by reducing the amount of synthetic nitrogen needed. Making that application with 360 RAIN improves the nutrient efficiency, reduces leaching, improves soil health, and decreases application odors.



### **NUTRIENT EFFICIENCY**

360 RAIN makes multiple applications throughout the crop cycle.



### **APPROPRIATE RATE**

Apply the appropriate rate adapted to the crop requirements.



### **BANDED APPLICATION**

Banded application over the root zone improves soil health.





Applying digestate throughout the crop cycle with 360 RAIN offers a powerful way to deliver essential mineralized nitrogen and organic matter, significantly improving nutrient efficiency. This practice reduces the reliance on synthetic nitrogen fertilizers, aligning with sustainable farming goals.

The RAIN system takes this a step further by enabling farmers to tailor application rates to the specific requirements of their crops. This adaptive approach ensures that nutrients are available precisely when plants need them, maximizing their uptake and minimizing waste.

Using smaller, frequent applications of digestate blended with water during crop growth offers additional benefits. It dramatically reduces nitrate leaching compared to traditional methods, such as slurry tankers or umbilical systems.

360 RAIN's banded application enhances soil health by building organic carbon in the root zone, leveraging the high humification potential of digestate's organic compounds. This not only improves the soil's capacity to retain water and nutrients, but also bolsters its resilience.

Blending water with digestate mitigates odors and reduces gaseous ammonia emissions during application, making nutrient management more efficient and environmentally friendly.





360 RAIN is irrigation adapted to...

## Your Specialty Crops

Spoon-feeding and watering higher-value crops like organic corn offers significant advantages, particularly when managing nutrients and water with precision. By delivering small, frequent amounts of water and nutrients directly to your crop throughout its growing season, you can ensure the plants receive what they need exactly when they need it. This reduces waste and increases the efficiency of inputs, leading to healthier plants and higher yields. In premium crops where margins are higher and quality is paramount, that's a huge win.

“For us as organic farmers we're really excited to use RAIN to put manure on in-season. We're limited on what we can use for products so just the fact that we can get an in-season application of manure through the system is huge for us. Even on a year where we may not need the extra water, just having that fertility can return big dividends for us.”

*Abram Frankel Iowa*





Organic crop systems rely on natural fertilizers, like manure, which can be difficult to manage effectively in large applications. Spoon-feeding allows nutrients to be delivered incrementally, avoiding nutrient runoff and maximizing plant uptake. This is particularly beneficial for organic corn, which often requires meticulous care to meet market standards for quality and sustainability.

360 RAIN has currently been used on a wide variety of specialty crops including seed corn, organic corn, small grains, and onions.

It's easy to match the drop style to your application. 360 RAIN offers multiple applicator options including a 360 Y-DROP style banding drop and a flat-fan style drop. The banding drop applies liquid in a 15" band at the base of the row crops. The flat-fan style drop is ideal for an evenly distributed application on solid seeded and hay crops. Drops are sized to allow manure solids to flow consistently to the crop without plugging. As 360 RAIN is being used on new crops each season, additional drops may be designed in the future.

## YIELD RESULTS



### 360 RAIN (Water Only and Water + Manure) vs. Natural Rainfall

*West Bend, Iowa*

Natural rainfall: 200 bu/ac

360 RAIN - water only: 230 bu/ac = **+30 bu/ac**

360 RAIN - water + manure: 245 bu/ac = **+45 bu/ac**



	STANDARD	METRIC
<b>DIMENSIONS</b>		
Distance Between Rear Tires (Centers)	120 in (30 in Row Spacing) 144 in (36 in Row Spacing)	305 cm (76.2 cm Row Spacing) 280 cm (70 cm Row Spacing) 286 cm (52.5 cm Row Spacing)
Tire Spacing	320/85R38	320/85R38
Transport Width	142 in	3.6 m
Transport Length (Frame)	285 in	7.25 m
Transport Length (Frame and 60' Boom)	340 in	8.6 m
Height with Reel	16 ft 1 in	4.8 m
Under Frame Clearance	7 ft 6 in	2.25 m
Under Boom Clearance	10 ft	3.1 m
Weight without Water and without Fuel (Shipping Weight)	12,400 lbs	5,630 kg
Weight with Water and Fuel (3,000' or 900 m of hose)	26,300 lbs	11,940 kg
Hose Type	Polyethylene	Polyethylene
Hose Size	3 in	7.62 cm
Hose Length (Max)	3,000 ft	900 m
<b>BOOM SYSTEM</b>		
60 ft Boom   18 m Boom For use with 6/12/24 Row Planters	30 in Row Spacing	75 cm Row Spacing
80 ft Boom   24 m Boom For use with 8/16 Row Planters	30 in Row Spacing 36 in Row Spacing	75 cm Row Spacing
<b>DROP OPTIONS</b>		
Banded Drop - Water Only		
Banded Drop - Manure		
Flat Fan Drop		



	STANDARD	METRIC
POWER SYSTEM		
Diesel Engine Horsepower	24 HP	24 HP
Diesel Fuel Tank Capacity	300 gallons	1,140 Liters
Average Fuel Consumption	0.5 Gallon/Hour (estimated)	2 Liters/Hour (estimated)
Control System Voltage Drive Train System Voltage	12 V 56 V	12V 56 V
Electric Motors: <ul style="list-style-type: none"><li>• Drive Motors</li><li>• Reel Motor</li><li>• Dispenser Motor</li><li>• Manure Motor with Manure Option</li></ul>	3 1 1 1	3 1 1 1
COMMUNICATION SYSTEM		
Planter GPS Package	<ul style="list-style-type: none"><li>• Receiver</li><li>• GPS Tower of Mount System</li><li>• Lift Switch</li><li>• Harness</li></ul>	
Base Station Package	Power needs 110V AC Inputs: up to four pressure or flow sensors Outputs: up to six on/off relays for well, booster pump, injector pumps, or valves (purchased separately)	
Cellular Service Needs	Requires annual subscription to data plan managed by 360 Yield Center.	
Range	Machine controls require line of sight for proper communication.	
PERFORMANCE		
Acres Covered Per Day	Up to 37 acres with 60ft boom Up to 50 acres with 80ft boom	Up to 15 ha with 18 m boom Up to 20 ha with 24 m boom
Liquid Supply Recommendations	2000 ft of Hose = 250 GPM at 115 PSI 3000 ft of Hose = 200 GPM at 115 PSI	600 m of Hose = 950 lpm at 9 bar 900 m of Hose = 760 lpm at 9 bar
Distribution Plumbing Size	3 in main delivery line with equal distribution to individual row drops.	7.62 cm main delivery line with equal distribution to individual row drops.
Approved Liquids	Water, Nutrients, and Manure (sized less than 0.75 in output orifice)	Water, Nutrients, and Manure (sized less than 19 mm output orifice)
Speed Range	0.05 to 0.45 MPH (1 - 8 in/second)	0.08 to 0.72 km/h (0.02 - 0.2 m/s)
Watering Band	15 in centered at the base of the plant	38 cm centered at the base of the plant
Non-Towable Must be Hauled on Semi		



## 360 RAIN INJECTION SKID SPECIFICATIONS

Common Parts Assembly	Frame Enclosure Base Plumbing Water Flow Meter
Communication Kit <ul style="list-style-type: none"> <li>Base Station Communication Kit</li> <li>Remote Station Communication Kit</li> </ul>	900 MHz Antenna GPS Globe (if applicable) Appropriate Mounting Hardware

## BOOSTER PUMP OPTIONS

Closed Impeller (recommended for clear water): <ul style="list-style-type: none"> <li>30 HP</li> <li>9" Impeller</li> <li>200 GPM at 147 PSI</li> </ul>	Disconnect Booster and Drive Back Panel 120V Transformer Rectifier (if applicable) Cooling Fans
Open Impeller (recommended for manure): <ul style="list-style-type: none"> <li>30 HP</li> <li>8" Impeller</li> <li>200 GPM at 132 PSI</li> </ul>	

## WATER OPTIONS

5-7.5 HP Well (Customer Supplied Pump)	VFD Pump (If applicable) Wiring Breaker
10-15 HP Well (Customer Supplied Pump)	
20-25 HP Well (Customer Supplied Pump)	
Pond Pump (Pump offered optionally by 360) <ul style="list-style-type: none"> <li>3 HP</li> <li>7.75" Impeller</li> <li>200 GPM at 20 PSI</li> </ul>	

## MANURE OPTIONS

Razor Pump <ul style="list-style-type: none"> <li>2 HP</li> <li>5.56" Impeller</li> <li>40 GPM at 35 PSI</li> </ul>	VFD Pump(s) Wiring Breaker Flow Meter Plumbing Valves
Blade Pump <ul style="list-style-type: none"> <li>5 HP</li> <li>5.25" Impeller</li> <li>80 GPM at 38 PSI</li> </ul>	



## FERTILIZER OPTIONS

Fertilizer Pump (offered optionally by 360)

- 1 HP
- 34 GPH at 100 PSI
- In use with 60 ft boom at 3"/sec can apply 145 lbs/acre or at 8"/sec can apply 55 lbs/acre.
- In use with 80 ft boom at 3"/sec can apply 110 lbs/acre or at 8"/sec can apply 40 lbs/acre.

VFD  
Pump(s)  
Wiring  
Breaker  
Flow Meter  
Mounting Base

## OTHER OPTIONS

Pump Pontoon (used for either pond or manure pumps supplied by 360)

Confinement Mount

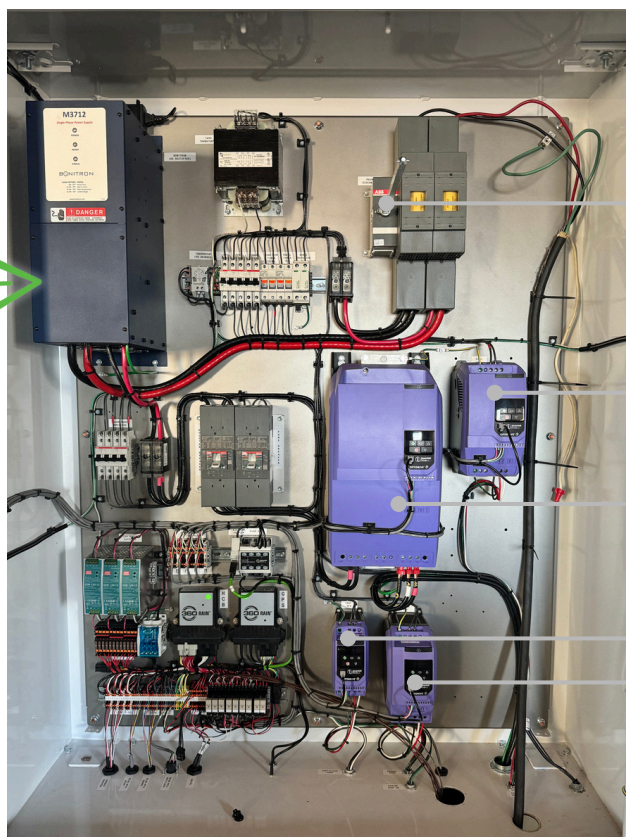
3" Inlet Electric Ball Valve Kit

100 ft Pond Extension Cord

200 ft Pond Extension Cord

100 ft Manure Extension Cord Set

200 ft Manure Extension Cord Set



MAIN DISCONNECT

POND VFD

BOOSTER VFD

FERTILIZER VFD

MANURE VFD





*Learn more at*  
**360RAIN.COM**

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